

**Arab regional Forum on
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**Net Neutrality:
developments and challenges in the
EU and US**

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**The views expressed in this presentation are purely personal*

Outline

- Introduction & conceptual framework*
- Recent developments in the EU
- Recent developments in the US
- The key role of broadband competition
- Concluding remarks

** Based on J. Scott Marcus, 'Net Neutrality Revisited: Challenges and Responses in the EU and in the US', Study for the IMCO Committee, December 2014*

What is Net Neutrality?



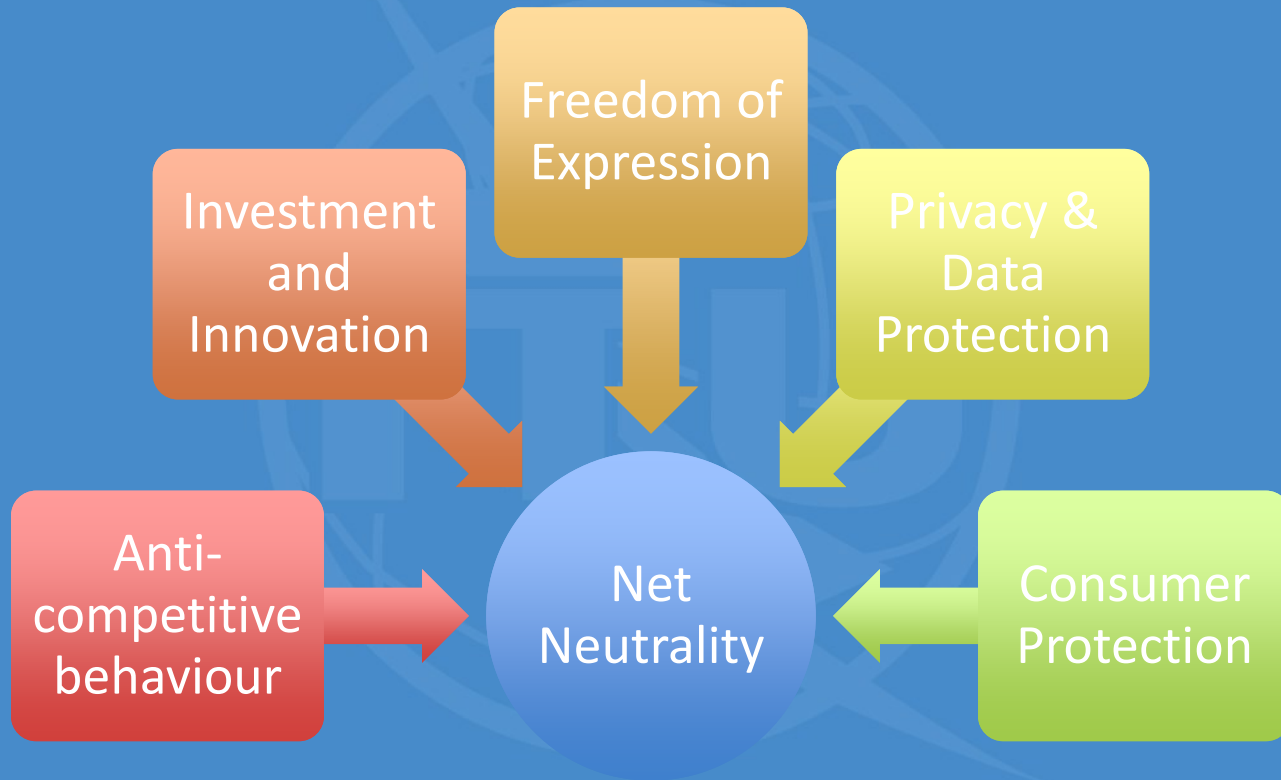
Several definitions in use with different focus and policy implications:

- What users of a network must be allowed to do versus what providers must refrain from doing
- Limit quality differentiation in general versus prevent harmful or anti-competitive discrimination (Is quality differentiation concerning *per se* or only forms of differentiation which are anticompetitive or unreasonable? When is it acceptable/reasonable?)

The ability of all Internet end-users ‘... to access and distribute information or run applications and services of their choice.’ (Art. 8 EU Framework Directive)

Traffic ‘... should be treated equally, without discrimination, restriction or interference, independent of the sender, receiver, type, content, device, service or application.’ (EC TSM draft Regulation)

Why does Net Neutrality matter?



... and linkages e.g. to Internet Governance, Broadband Policy.

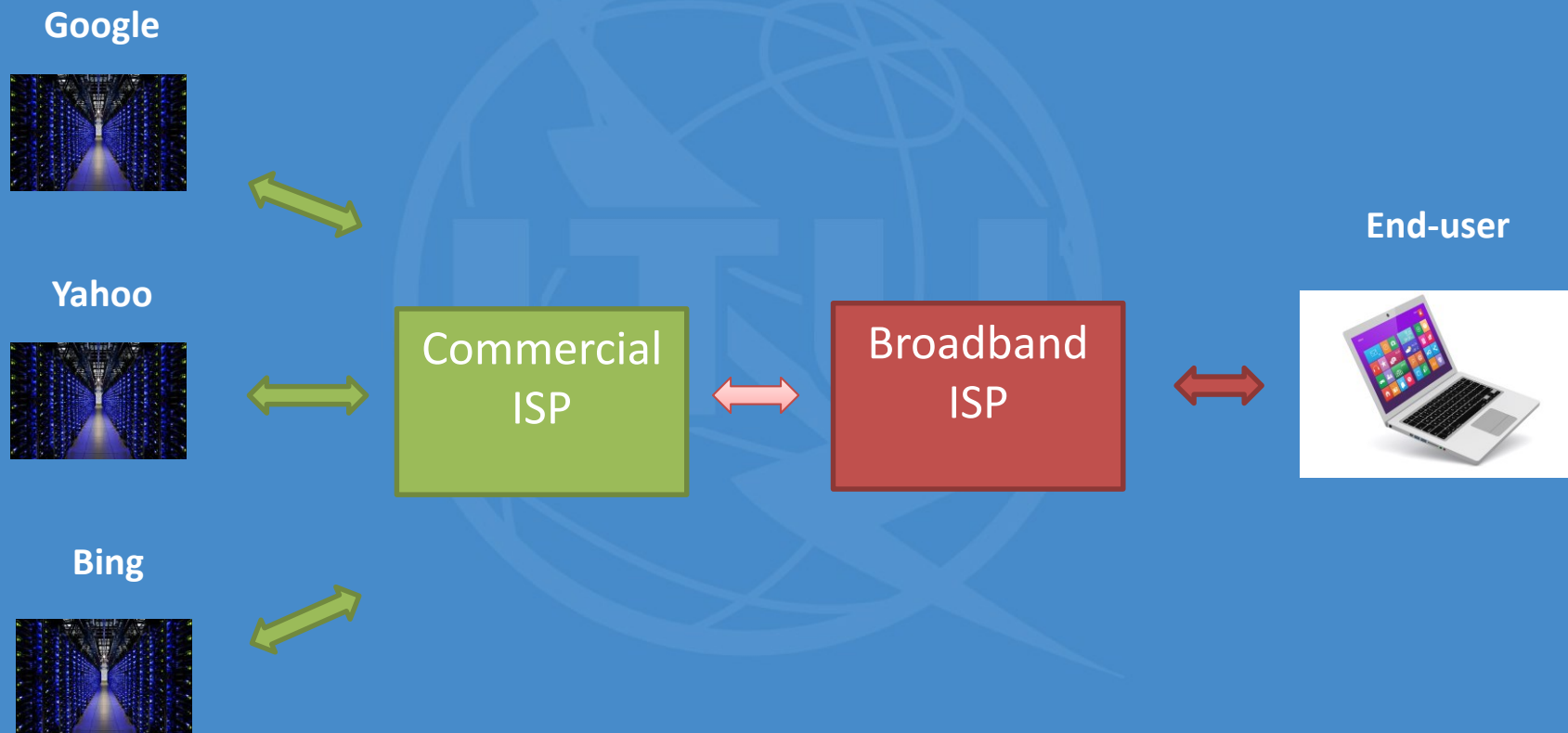
What is QoS in an IP based packet network?

- Quality of Service (QoS) parameters in IP-based packet networks: bandwidth, propagation delay, average and variance of queuing delay, packet loss.
- Some applications are more heavily dependent on QoS than others:
 - ✓ email (tolerant of high delay)
 - ✓ VoIP & video-conferencing (very sensitive to delay)
 - ✓ Video (depends on user expectations)
- The Quality of Experience (QoE) for the user depends on the application being used i.e. how sensitive it is to delay or loss.
- QoS dependent applications are not necessarily high bandwidth services (e.g. VoIP versus IP video)

Is quality differentiation/prioritisation harmful *per se*?

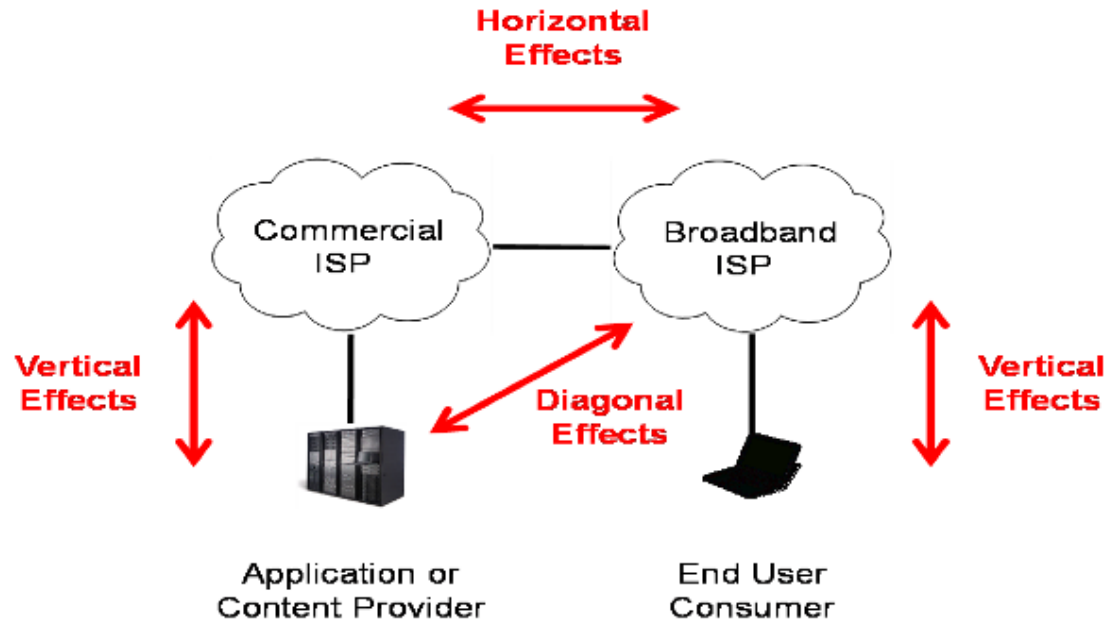
- QoS characteristics can be tailored to achieve QoE requirements of a specific service through quality differentiation (e.g. *prioritisation within the network*)
- *What is prioritisation?*
 - ✓ High priority IP packets are moved to the head of the transmission queue within a router, or
 - ✓ Delay-sensitive packets are not dropped if router has insufficient storage to buffer all packets waiting for transmission
- Differentiated QoS was always considered in the design of the internet. Prioritisation not harmful *per se*, can benefit network operators, content providers and also consumers (manage congestion; enhanced QoS for applications that need it; mission critical applications). Important is to avoid harmful discrimination.

Exemplifying harmful discrimination/ economic foreclosure



Net Neutrality & different dimensions of conflicts

Figure 8: Vertical, horizontal, and diagonal network neutrality effects



Source: Scott Marcus, Study for the IMCO Committee, 2014

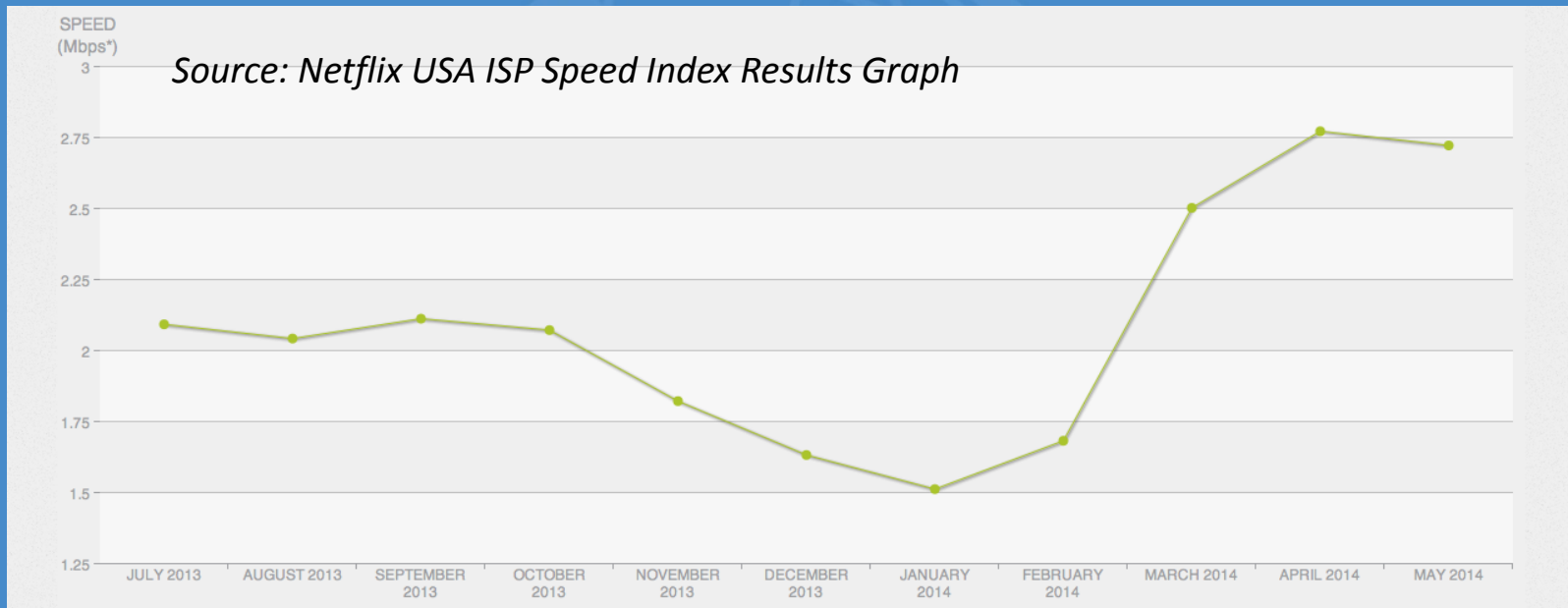
Diagonal conflict



versus

NETFLIX

Performance of Netflix traffic to customer over the Comcast network (July 2013-May 2014)



Dispute: Payments for video streaming, limitation to interconnection capacity (Cogent) slowing down traffic to Netflix customers. Agreement payments to Comcast (Feb. 2014). Performance customers increased sharply. Payment not for QoS but interconnection. Peering dispute? Eco foreclosure? Merger Comcast/Time Warner?

Developments at EU level



Legal framework

- EU Regulatory Framework (2002) – obligations imposed *ex ante* on operators with significant market power in relevant markets.; aims to ensure *inter alia* that retail broadband markets are competitive.
- 2009 review of the Regulatory Framework - changes introduced which relate to Net Neutrality:
 - ✓ The ability of end users to access content, applications and services of their choice made an explicit goal of EU policy (Art. 8 FD)
 - ✓ Providers of electronic communications services must inform their end-users of practices regarding traffic management and the right to switch in case practices are changed (Art. 20 USD)
 - ✓ EU Regulators may impose minimum QoS obligations on network operators (Art. 22 (3) USD)
 - ✓ Regulators empowered to deal with interconnection issues (even in absence of SMP – Art. 5 AD)

Experience to date and recent developments

- Cases of blocking notably by mobile operators (e.g. VoIP, P2P traffic – for anticompetitive considerations?). Traffic management used. Board of EU Regulators has considered that regulators have sufficient tools to tackle Net Neutrality issues that might arise.
- Some Member States have enacted Net Neutrality legislation (e.g. The Netherlands and Slovenia). In January 2015 both the Dutch and Slovenian Regulators found breaches of Net Neutrality (ACM fined KPN and Vodafone over blocking and zero rating; AKOS found breaches by Telekom Slovenije and Si.mobil over zero-rating).
- EU Commission proposal for Telecoms Single Market Regulation (2013)
 - ✓ Inclusion of Net Neutrality in order to address the concern of a possible proliferation of potentially incompatible and inconsistent regulation
 - ✓ Free access to content; no blocking, throttling, or discriminating; possibility to offer specialised services; reasonable traffic management allowed.
 - ✓ Negotiations on-going between the co-legislators (Council of the EU and EU Parliament)

Developments in the US



FCC Open Internet Rules & Order (February 2015)



Next steps?

- **Reclassification of internet access as a telecommunications service**
 - **No Blocking:** broadband providers may not block access to legal content, applications, services, or non-harmful devices.
 - **No Throttling:** broadband providers may not impair or degrade lawful Internet traffic on the basis of content, applications, services, or non-harmful devices.
 - **No Paid Prioritization:** broadband providers may not favour some lawful Internet traffic over other lawful traffic in exchange for consideration of any kind—in other words, no "fast lanes." This rule also bans ISPs from prioritizing content and services of their affiliates.
- + Transparency, Jurisdiction over Interconnection

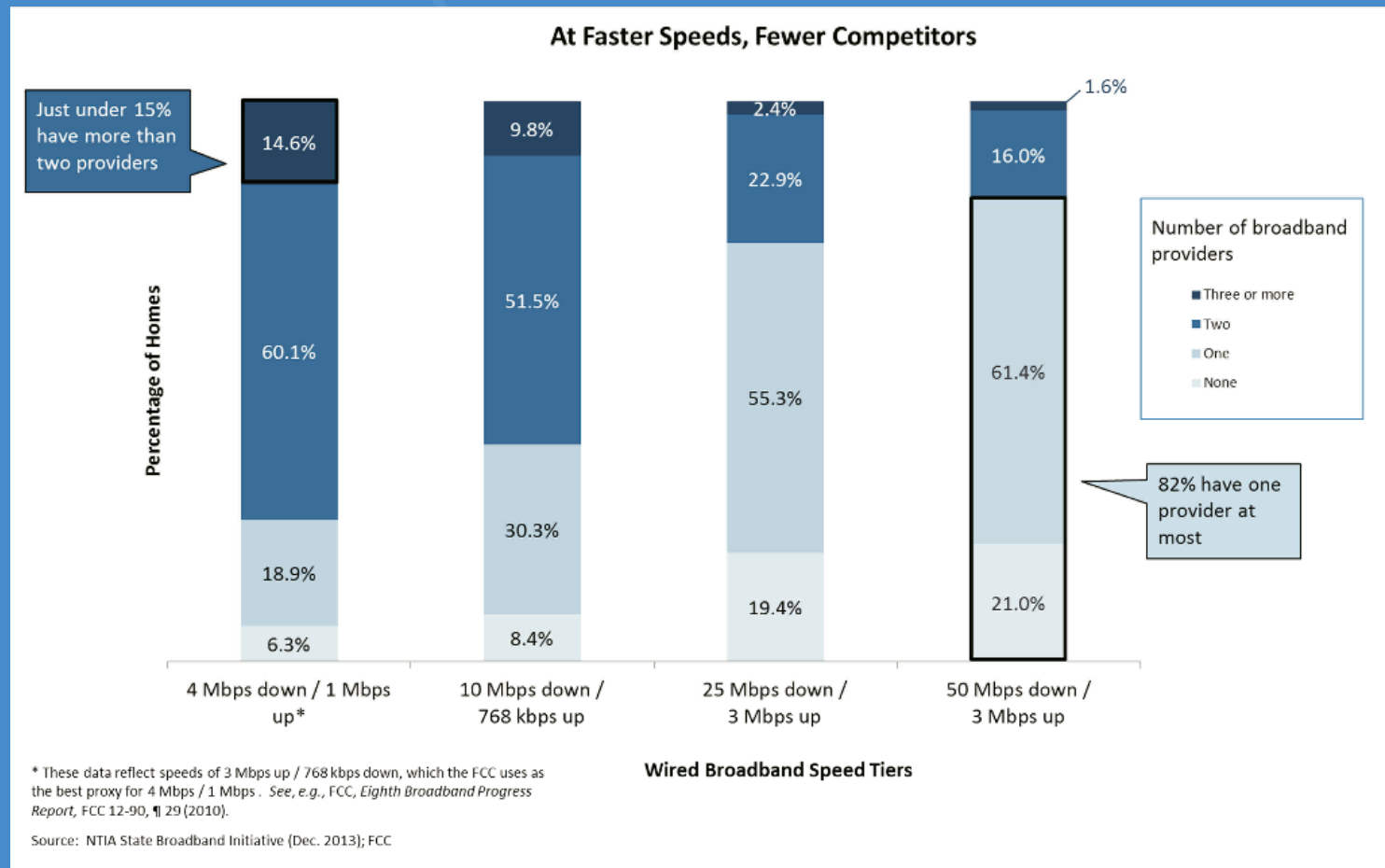
Why does broadband competition matter?



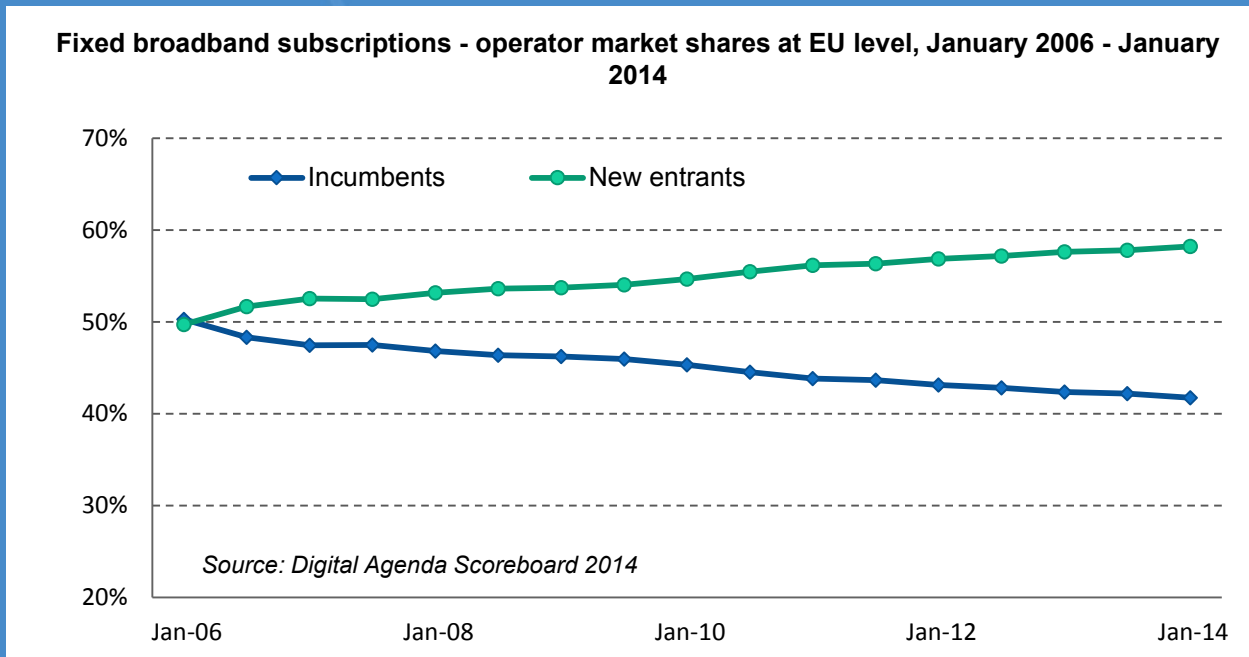
US: Deregulation led to local monopolies...



...and a lack of broadband competition



The EU richer competitive environment



New entrant operators are continuously gaining market share although incumbents still control 42% of the subscriptions. Access regulation is key going forward.

Markets and regulation in the EU and US

	US	EU
Market structure	Duopolistic Most US homes served either by cable television provider or telco	More competitive EU customers can choose between any of a number of broadband providers
Explained by	The removal of access regulation in 2002-2005. Resulted in the disappearance of competitive providers (using LLU or shared access)	Effective regulatory framework for last mile fixed wholesale access (based on LLU, shared access and bitstream)
Likely leading to	Higher level of network neutrality incidents	Lower level of network neutrality incidents

Concluding remarks

- Quality differentiation/prioritisation is not harmful *per se* and can benefit network operators, content providers and also consumers. The key point is to avoid harmful discrimination.
- The EU and US regulatory regimes very different and have produced distinct market outcomes. The EU has a richer competitive environment due to last mile access regulation.
- Competition plays a key role in deterring harmful discrimination. Competitive broadband markets make Net Neutrality problems less likely.



Key bibliography

- J. Scott Marcus, *Net Neutrality Revisited: Challenges and Responses in the EU and in the US, Study for the IMCO Committee, December 2014*
- Prepared Remarks of FCC Chairman Tom Wheeler, *The Facts and Future of Broadband Competition*, 1776 Headquarters, Washington, D.C. September 4, 2014.

Available at: <http://www.fcc.gov/document/chairman-remarks-facts-and-future-broadband-competition>

- The FCC Open Internet Rules and Order (February 2015)