

# Network Neutrality: Challenges and Responses in the EU (and the US)

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Concluding remarks



# Why these concerns about network neutrality?

- Network neutrality has taken on various meanings:
  - The ability of all Internet end-users ‘... to access and distribute information or run applications and services of their choice.’
  - Traffic ‘... should be treated equally, without discrimination, restriction or interference, independent of the sender, receiver, type, content, device, service or application.’
  - Absence of unreasonable discrimination on the part of network operators in transmitting Internet traffic.
- These definitions are not exactly equivalent, and their implications for public policy are not exactly equivalent.
- It may be difficult for citizens to fully understand network neutrality, but it is linked to issues that concern the public greatly: freedom of expression, competitive choice, innovation, and more.



# Technical and economic perspectives



# Technical Aspects: Quality of Experience (QoE)

- *Quality of Service (QoS)* parameters and mechanisms are important to enable network operators to design, build and manage their networks, but they are not directly visible to end-users.
- Crucial for end-users, however, is the quality that they personally experience during their use of a service.
- These *Quality of Experience (QoE)* requirements are strongly dependent on the application. Some are sensitive to delay.
  - E-Mail has little sensitivity to packet loss and delay.
  - Real-time two-way Voice over Internet Protocol (VoIP) tends to be highly sensitive – delays greater than some 150 msec cause problems.
  - Real-time two-way videoconferencing is similarly sensitive, and with greater bandwidth consumption.
  - One-way video may or may not be sensitive, depending on user expectations for how quickly the stream starts (zapping time).

➤ *Delay-sensitive applications and mission critical services (police, fire, health, and transport) can benefit from managed Quality of Service (QoS).*



# Economic background of network neutrality

- At least three distinct strands of economic reasoning relates to differentiated quality of service in the Internet.
  - Quality and price differentiation
  - Economic foreclosure
  - Two-sided (or multi-sided) markets
- These interpretations are not necessarily incompatible, but they have different and possibly conflicting implications for public policy.



# Quality and price differentiation

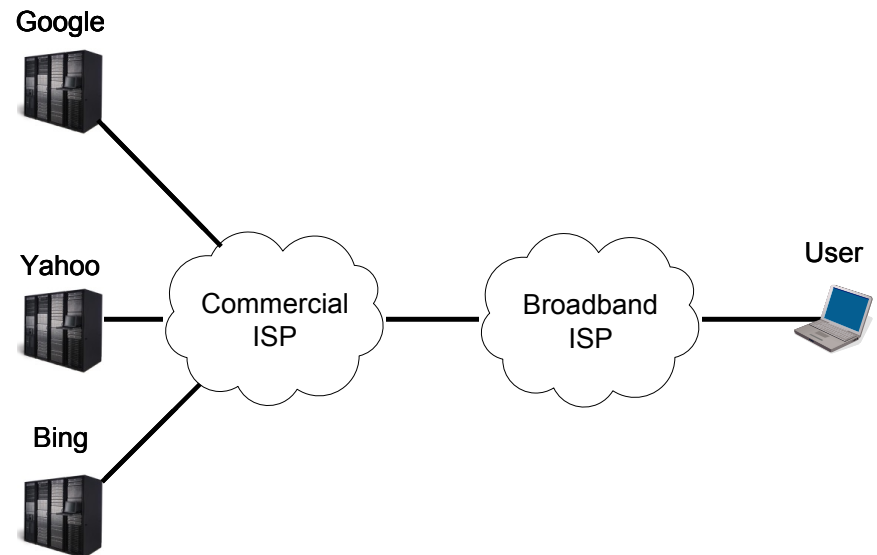
- Quality differentiation and price differentiation are well understood practices (cf. Hotelling (1929)).
- In the absence of anticompetitive discrimination, *differentiation generally benefits both producers and consumers.*
- **BENIGN:** We typically do not consider it problematic if an airline or rail service offers us a choice between first class and second class seats.



# Two-sided markets

The Internet can be thought of as a two-sided market, with the network operators collectively serving as a platform connecting providers of content (e.g. web sites) with consumers (cf. Tirole and Rochet (2004), and also Laffont, Marcus, Rey and Tirole (2003)).

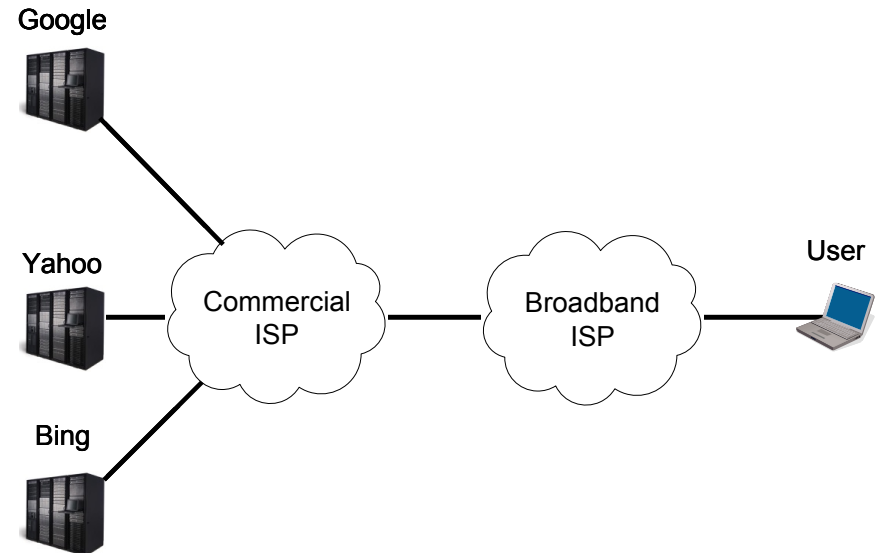
**RELATIVELY BENIGN:** Under this view, some disputes are simply about how costs and profits should be divided between the network operators and the two (or more) sides of the market.



# Economic foreclosure

When a producer with market power in one market segment attempts to project that market power into upstream or downstream segments that would otherwise be competitive, that constitutes economic foreclosure.

**PROBLEMATIC:** Foreclosure harms consumers, and imposes an overall socio-economic deadweight loss on society. Foreclosure could be a concern in markets where effective market power (SMP) is given free rein.





# European stakeholder views



## The public consultation (2012-2013)

- The Commission conducted a public consultation on network neutrality at the end of 2012, with an eye to a legislative initiative in 2013; however, the Commission never published a comprehensive analysis of the results.
- In a recent study for the European Parliament, I analysed the 131 non-confidential textual stakeholder responses, thus in effect completing the public consultation in abbreviated form.
- The Commission's assistance in tabulating more than 400 multiple choice citizen responses is gratefully acknowledged.



# The public consultation (2012-2013): Organisational stakeholder views

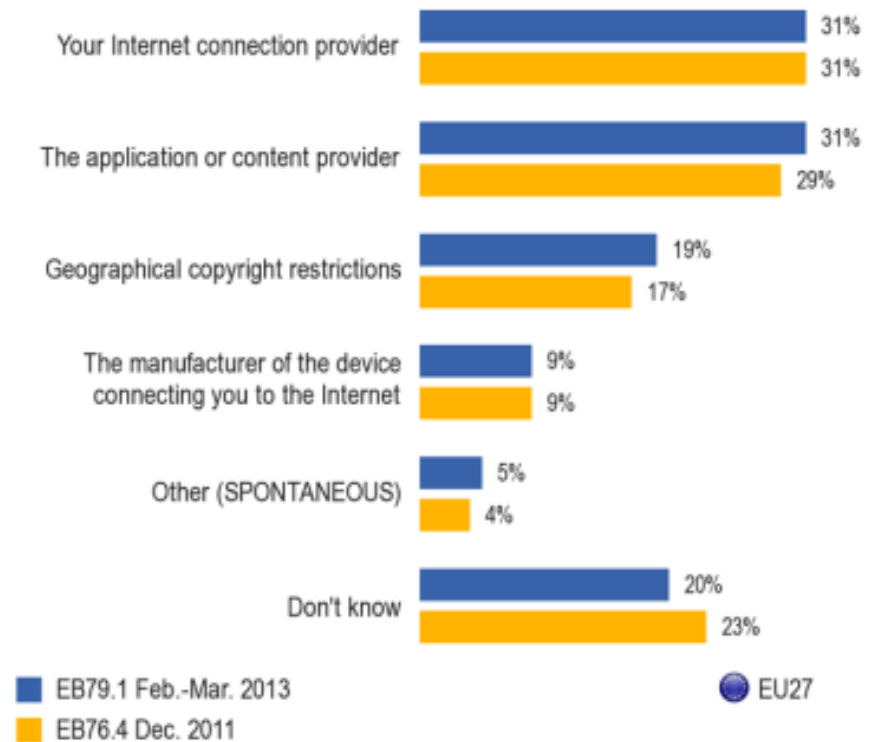
- Most NRAs, ISPs, content providers, and consumer advocates considered traffic management to be appropriate under suitable preconditions.
- Consumer advocates and other civil society organisations appear deeply troubled by limitations on Voice over IP (VoIP); network operators view this differently.
- There was widespread agreement that for a network operator to prioritise its own traffic ahead of traffic for applications that compete with its own services is problematic.
- Many stakeholders felt that for the Member States to implement divergent approaches would carry substantial risk.



# The public consultation (2012-2013): Consumer views

- As much as 80% of citizens who responded opposed most forms of traffic management.
- 29% of EU fixed broadband consumers think that they have been blocked at least once; however, not all blockages reflect classic net neutrality issues.
- Caution: The citizens who responded were *self-selected*. A new WIK/Deloitte/You.Gov study on behalf of BEREC will be released shortly.

QA15. In your opinion, which of the following was responsible for the blocking of online content or applications?



Source: Eurobarometer 396 (2013)



# The public consultation (2012-2013): National Regulatory Authority (NRA) views

- BEREC (2014), 'BEREC Annual Reports – 2013': ... very few NRAs have reported specific relevant net neutrality incidents. ... [T]he prevailing approach among ... NRAs is that possible deviations from net neutrality are dealt with on a case-by-case basis. ... [T]here is wide agreement among national regulators that the existing regulatory tools enable NRAs to address competition concerns related to net neutrality for the time being.'
- BEREC (2012), 'Summary of BEREC positions on net neutrality': 'BEREC is committed to the open Internet, and believes that the existing regulatory tools, when fully implemented, should enable NRAs to address net neutrality-related concerns.'



# Regulatory approaches in the EU (and the US)



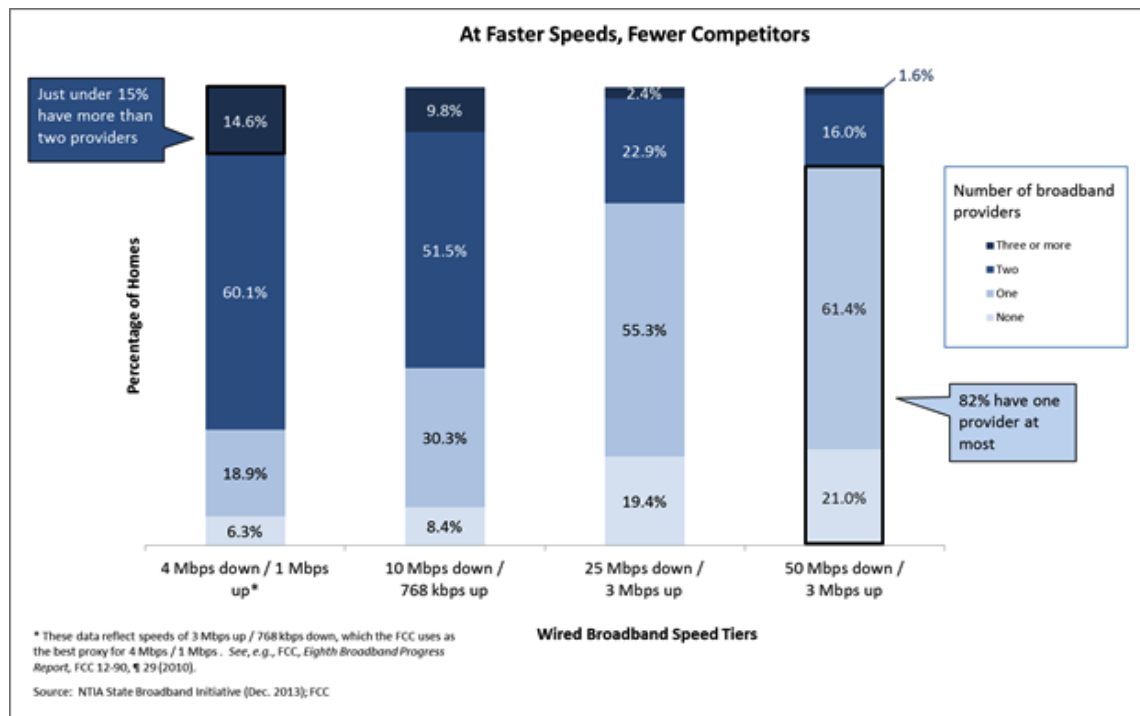
## Differences between the US and the EU

- The US regulatory approach to network neutrality responds to different circumstances than those relevant to Europe.
- The overall US regulatory approach is partly a cause and partly a response to a very different marketplace.
- Real consumer choice of an alternative broadband supplier in the US is limited to the point where the threat of consumers switching is no longer felt to constrain the behaviour of network operators.
- The radical US deregulation of 2002-2005 left the US FCC with minimal ability to regulate broadband services; as a result, the US debate has been dominated by issues of legal sustainability rather than by policy goals.



# Market structure: US

- Most Americans can choose *at most* between one cable company and one fixed telecommunications network.
- The effectiveness of mobile as a substitute is limited.
- Informed consumer choice cannot be effective absent choices!



Source: speech by FCC Chairman Wheeler (2014), data based on NTIA State Broadband Initiative RIPE, Amsterdam, 14 May 2015





# Regulation: EU

- In the European framework, market power is a key concern.
  - Regulation addresses last mile market power in the fixed network, both for the PSTN and for Internet, thus fostering competition.
  - Internet interconnection is generally unregulated to the extent that market power does not seem to be a concern.
- Revisions to the regulatory framework were enacted in 2009.
  - The ability of end users to access content, applications or services of their choice is now an explicit goal of European policy.
  - Providers of electronic communication services must inform end users of their practices in regard to traffic management, and provide end users with the right to change providers without penalty if they are dissatisfied with a change in these practices.
  - Empowerment of NRAs to impose, if necessary, minimum QoS obligations on an SMP operator.
- The European approach rests on *informed consumer choice*.



# Europe: The Telecoms Single Market Regulation

- A messy discussion of the Telecoms Single Market (TSM) in Europe was kicked off by a weakly conceptualised European Commission proposal in September 2013.
- A stripped down version was passed by the European Parliament in April 2014, just before elections.
- Network neutrality was a small but important part of the original legislative proposal, but together with mobile roaming is the only portion that appears to have survived the subsequent legislative process.
- Commission net neutrality concerns focused on inconsistent legislation in the Member States (Netherlands, Slovenia), not necessarily on any need for different or stricter legislation.



# Europe: The Telecoms Single Market Regulation

- The Latvian Presidency statement to the Council (heads of state) of 25 February 2015 contains many sensible elements:
  - “[E]nd-users should be free to agree with providers of internet access services on tariffs with specific data volumes and speeds or on other technical or commercial characteristics of the internet access service. ... [S]uch agreements should allow providers of electronic communications to the public to better balance traffic and prevent network congestion. Providers of content, applications and services and end-users should therefore remain free to conclude agreements with providers of electronic communications to the public, which require specific levels of quality of service.”



# Aspects to Consider



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- Does the legislative or regulatory instrument used prevent harmful divergence while providing appropriate flexibility?
- Does it strike the right balance in preventing harmful differentiation, while permitting non-harmful differentiation?
- Does it enable prioritisation of services that might legitimately need it (e.g. mission critical services, and real time voice and videoconferencing over the public Internet)?
- Does it do enough to prevent impediments to VoIP?
- Is it sufficiently future proof and technologically neutral?
- Does it appropriately balance costs against benefits?
- Are all terms defined with adequate clarity?



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