Situazione e prospettive della "net neutrality"

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Iniziative AGCOM sui Contenuti

Programma di Ricerca ISBUL (*)
(2008-2010)

Indagine Conoscitiva Contenuti Digitali (**)

Indagini Conoscitive VoIP/ P2P e Net Neutrality (****)

Indagine Conoscitiva Tutela Diritto d'Autore (***)

Programma di Ricerca SCREEN (*****)
(2011-2012)

(*) http://www.agcom.it/Default.aspx?message=contenuto&DCId=416
(**) http://www.agcom.it/default.aspx?DocID=5558&Search=libro_bianco_contenuti
(***) http://www.agcom.it/default.aspx?DocID=3970; http://www.agcom.it/default.aspx?DocID=5919
(****) http://www.agcom.it/default.aspx?DocID=5766; http://www.agcom.it/default.aspx?DocID=5770
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Outline

1. Background / Definitions
2. Net Neutrality and Traffic Management
3. International Benchmarking on NN
4. Italy Prospects / Conclusions

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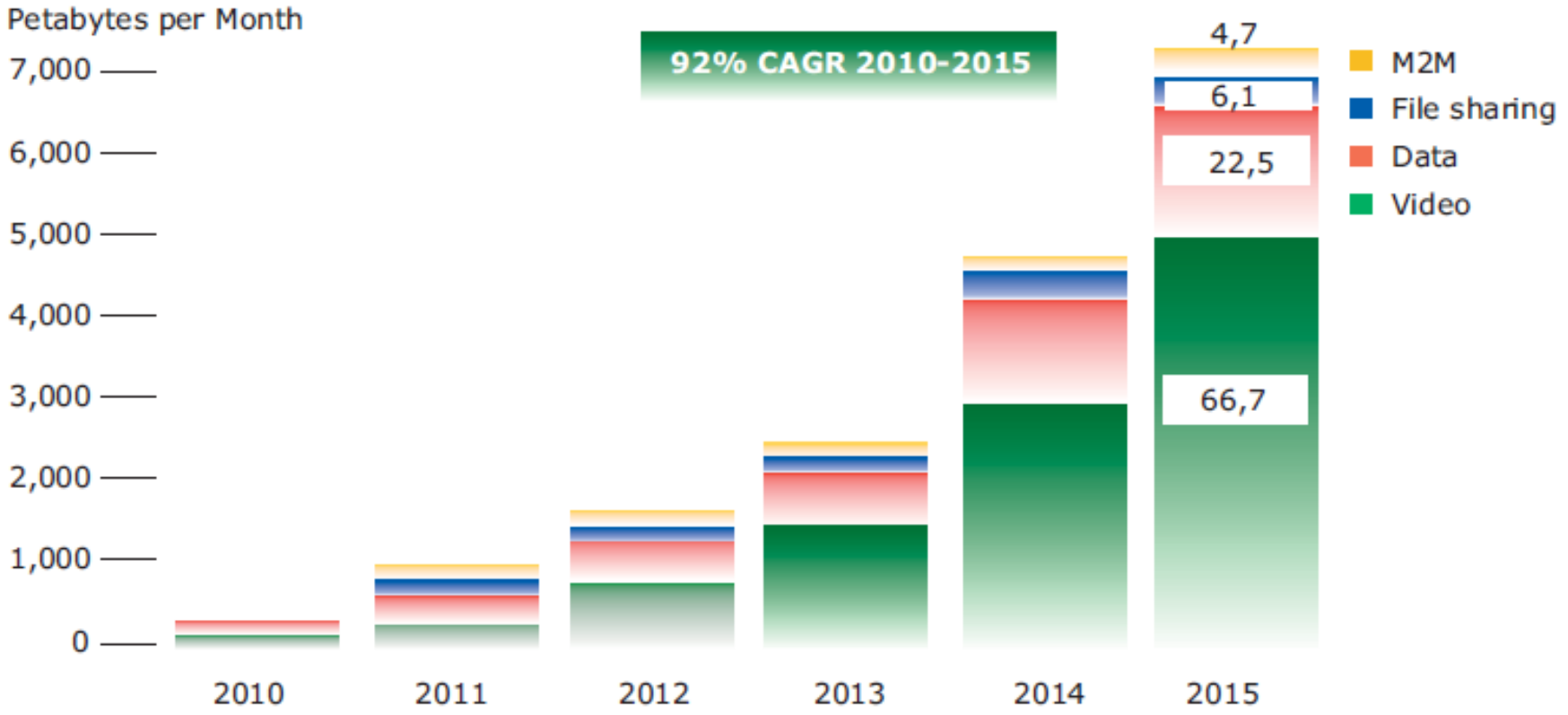
Data traffic definitions

kilobyte	kB	10^3 bytes
megabyte	MB	10^6 bytes
gigabyte	GB	10^9 bytes
terabyte	TB	10^{12} bytes
petabyte	PB	10^{15} bytes
exabyte	EB	10^{18} bytes
zettabyte	ZB	10^{21} bytes
yottabyte	YB	10^{24} bytes

The Market (1/4)

Global IP traffic will quadruple from 2009 to 2014. Overall, IP traffic is expected to grow at a compound annual growth rate (CAGR) of 34 percent [Ref.1]. Mobile data traffic is expected to increase at an even higher rate [Ref.2].



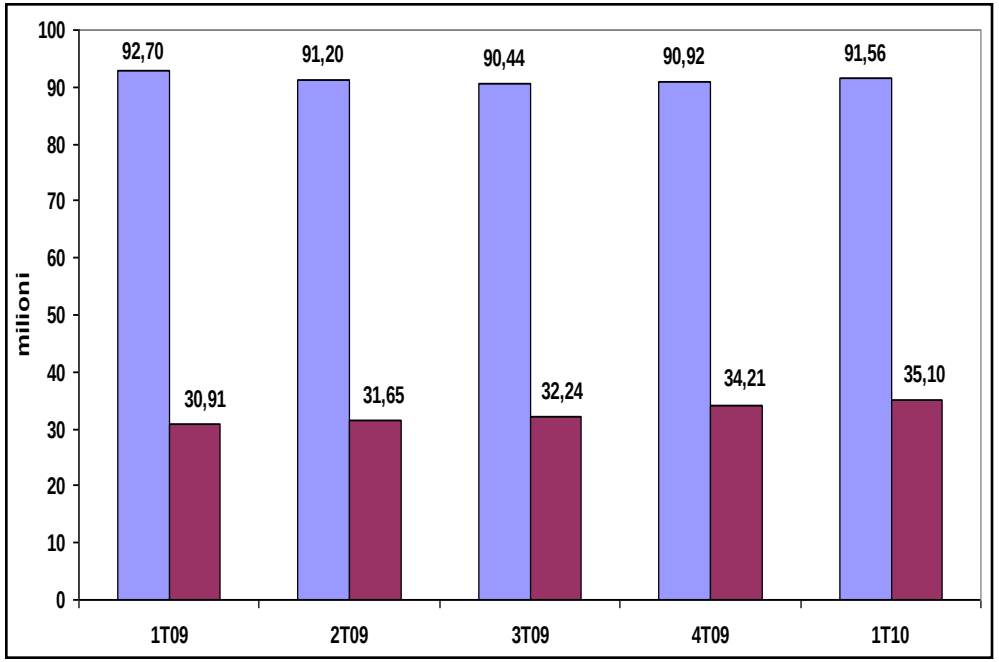
World Mobile Data Traffic Forecast (2010-2015)

Source: Cisco 2011

The Market (2/4)

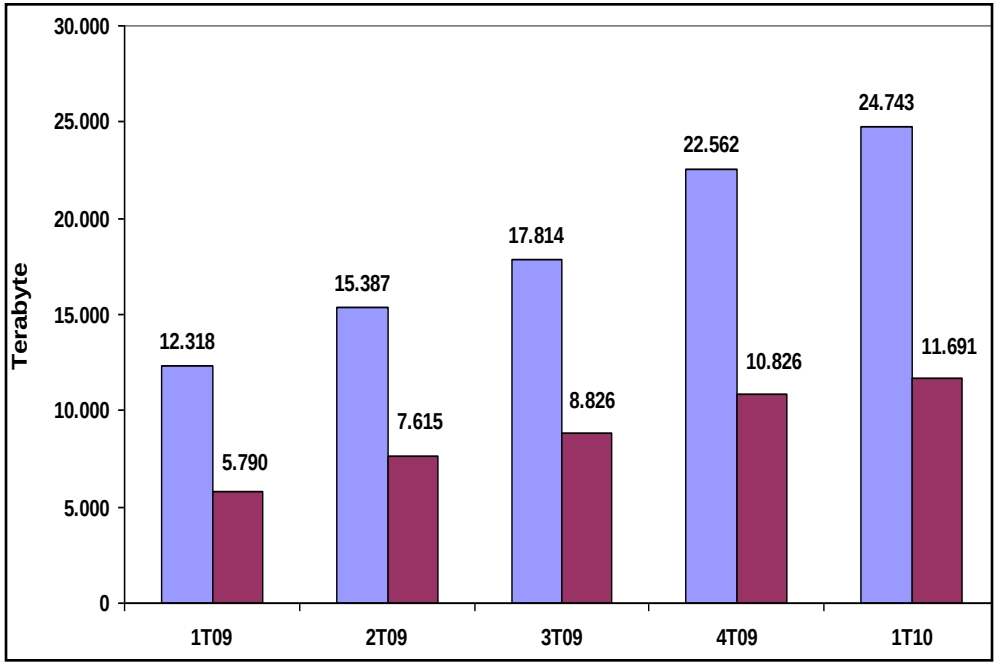
According to AGCOM recent study [Ref.3], in **Italy** there are more than 90M mobile lines -- a third with 3G technology. While mobile lines have been quietly stable during last years, mobile data volume is rapidly growing, reaching 25 Petabyte in Q01'10.

Mobile lines in Italy (Q109-Q110)



Source: Agcom 2011

Mobile Data Traffic in Italy (Q109-Q110)



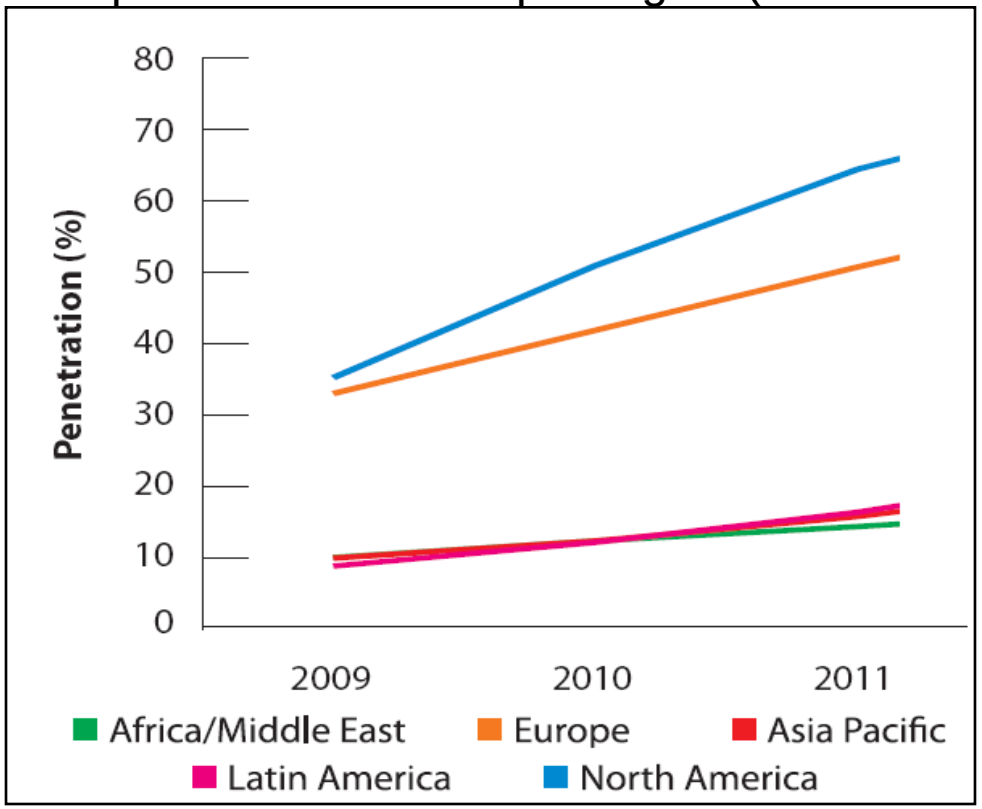
Source: Agcom 2011

Mobile **UMTS / HSPA**

The Market (3/4)

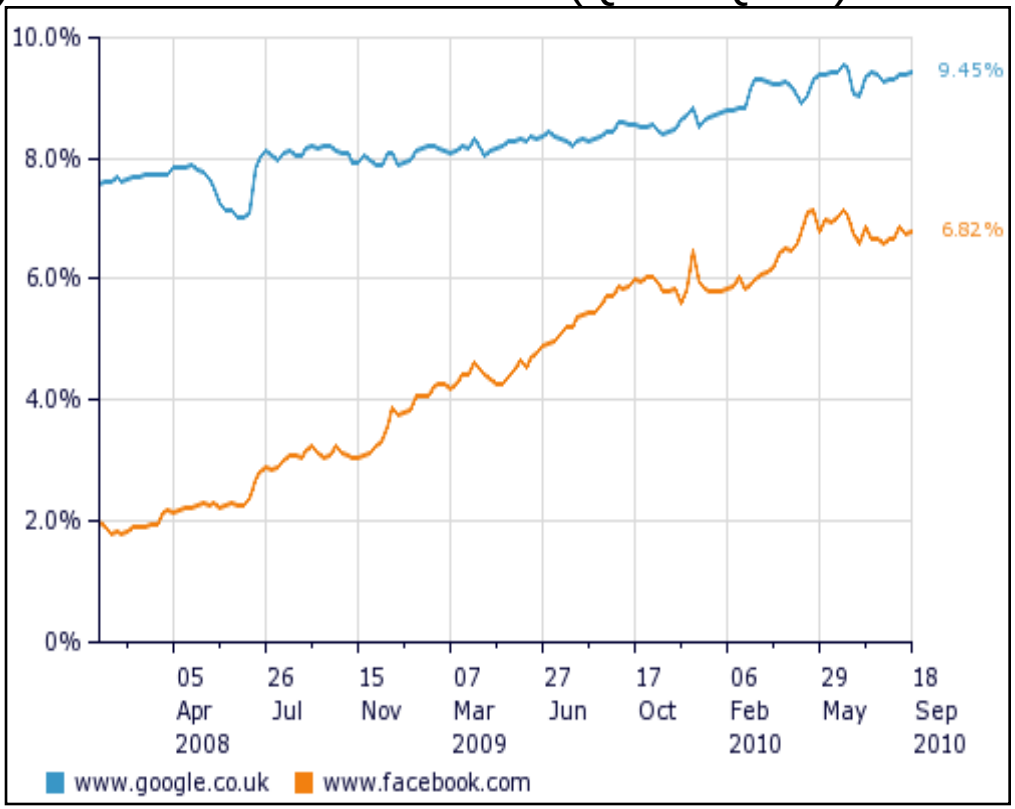
Possible key factors are new devices (e.g. smartphone) and new online activities (e.g. Facebook).

Smartphone Penetration per region (2009-2011)



Source: Informa Telecoms and Media 2010

UK Internet Visits (Q208-Q310)

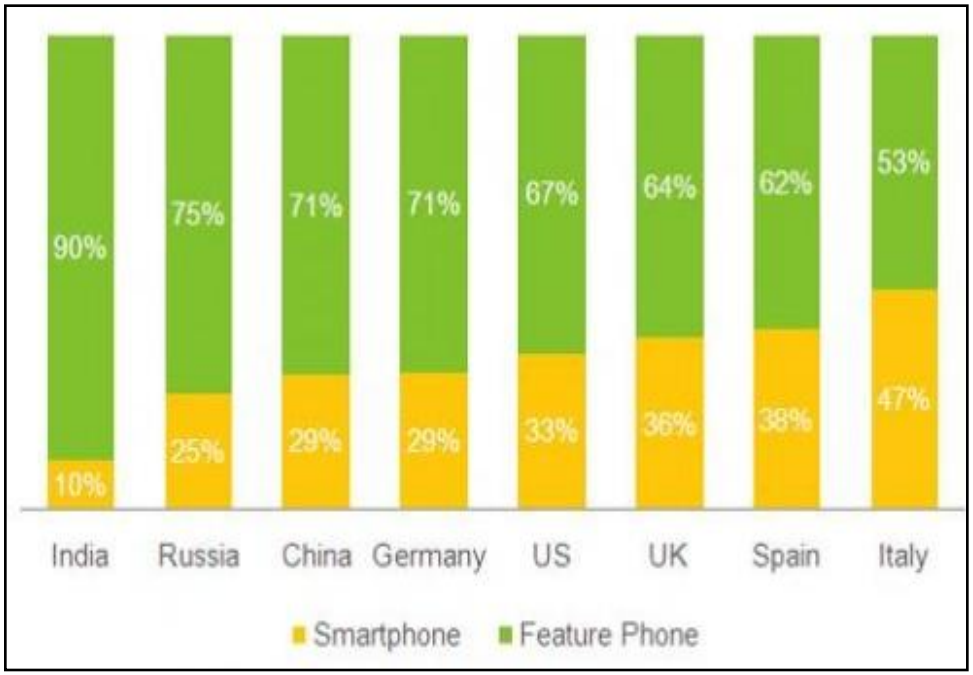


Source: Experian Hitwise 2010

The Market (4/4)

Both factors are relevant in Italy, because of significant smartphone penetration among young people and Facebook activity [Ref.3].

Smartphone Penetration among 15-24 (Q210)



Source: Nielsen Mobile Insight 2010

Facebook Connection (Q410)

Source: Paul Butler 2010

Definitions of "Net Neutrality"(1/3)

- **Absolute non-discrimination**
  - ✓ Tim Wu, 2003: «*Network neutrality is best defined as a network design principle. The idea is that a maximally useful public information network aspires to* ***treat all content, sites, and platforms equally*** ».
  - ✓ Suzanne P. Crawford, 2009: «*A neutral Internet must forward packets on a* ***first-come, first served*** *basis, without regard for QoS considerations*».
  - ✓ The "*end-to-end principle*": the Internet's original design is based on the end-to-end principle as a way to maximize the efficiency and *minimize the cost of the network*. This has arguably been one of the key elements of its success. J.Saltzer, D. Reed, and D. Clark in a seminal paper in 1981 propose a model where the *intelligence and processing power* of a network reside *at the outer edges* while the *inner network* itself remains *as simple as possible*.
- Others favor **limited discrimination without QoS tiering** or (Tim Berners Lee, 2006) **with higher fees for QoS** as long as there is no exclusivity in service contracts.

Definitions of "Net Neutrality"(2/3)

- Official documents by the **FCC** refer to "**Internet freedom and openness** " as the main objective underlying the concept of Net Neutrality: «*the absence of any gatekeeper blocking lawful uses of the network or picking winners and losers online.* ***The Internet is a level playing field.*** *Consumers can make their own choices about what applications and services to use and are free to decide what content they want to access, create, or share with others*.»
- In the **Commission Declaration on Net Neutrality in the 2009 EU telecoms reform package**, the European Commission set out its commitment to «*preserving the open and neutral character of the internet, taking full account of the will of the co-legislators now to enshrine net neutrality as a policy objective and regulatory principle to be promoted by national regulatory authorities… promoting the ability of end-users to access and distribute information or run applications and services of their choice (****Article 8(4)(g) Framework Directive****).*»

Definitions of "Net Neutrality"(3/3)

- The debate on Network Neutrality concerns issues on how network operators and ISPs may manage traffic flowing over their networks (through a set of practices commonly referred to as "network management" or "**traffic management**").
- **Ofcom** Discussion Document on "Traffic Management and net neutrality", issued June 2010, highlights that: «*All definitions of 'net neutrality' see discrimination by network operators and ISPs between traffic as the core problem which 'net neutrality' policies should address. The* ***purest version*** *of 'net neutrality' assumes that:*
  - ✓ *there should be no prioritisation of any type of traffic by network operators;*
  - ✓ *those providing content, applications and services via the open internet should not be charged by network operators / ISPs for the distribution of that content to the network operator / ISPs' customer base.*»

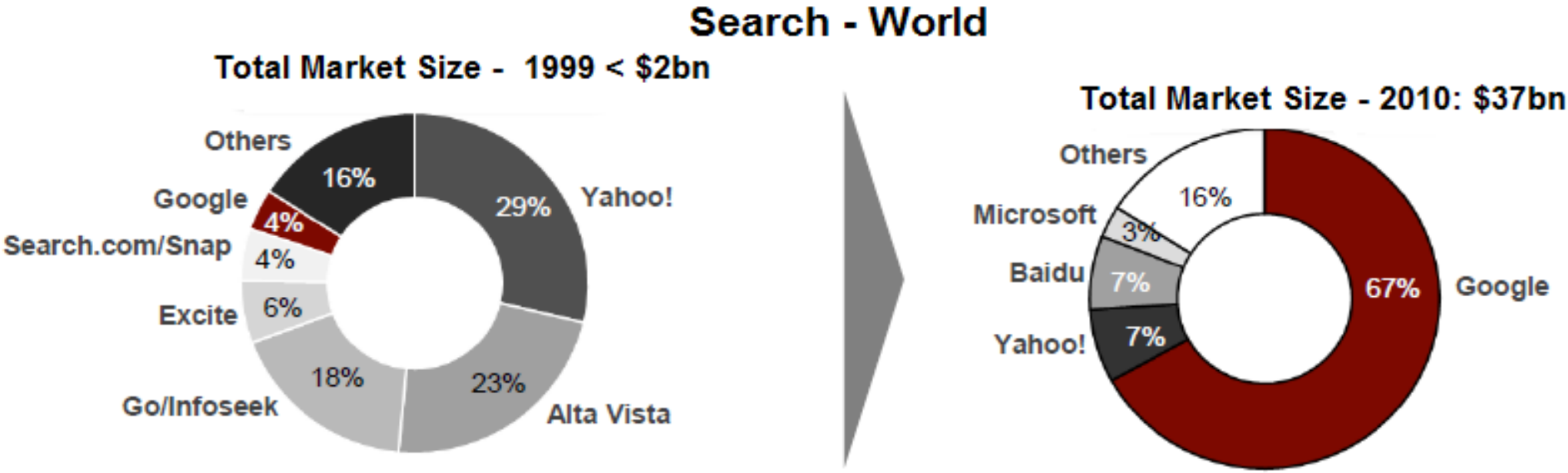
"Net Freedom" and collective values

- «*Net neutrality touches on a number of rights and principles enshrined in the EU Charter of Fundamental Rights, in particular the respect for private and family life, the protection of personal data and freedom of expression and information. For this reason, any legislative proposals in this area will be subject to an in-depth assessment of their impact on fundamental rights and of their compliance with the Charter of Fundamental Rights of the EU9.*» Communication from the European Commission, April 19, 2011.
- The principle of "Net Neutrality" is often associated to the "**Net Freedom**" principle:
  1. freedom of access to contents, applications and services of one's choice which are available over fixed and wireless networks;
  2. freedom of communication and of expression (pluralism of information);
  3. freedom of aggregation
- Internet access has become necessary to take full part in a modern democratic society: it is a powerful communication medium which can facilitate personal expression, creativity, political participation and social activism (e.g. through social network sites).

Beyond network neutrality (1/2)

The debate on Internet openness should not be limited to the "network layer":

- ✓ **Search engine neutrality**: is a principle that search engines should keep the "organic search" results (results returned because of their relevance to the search terms, as opposed to results sponsored by advertising), implementing an objective and automatic algorithm. Search engines play a significant role in influencing and limiting consumers's access to online content, applications and services. Search providers could leverage on their preeminence in the search and online advertising markets to determine which web sites users will visit.



Source: UseIT, JP Morgan, eMarketer, ComScore, A.T. Kearney Analysis.

Beyond network neutrality (2/2)

- ✓ **Device / App.Stores neutrality:** concerns arise about the existence of walled gardens on mobile handsets that limit the list and kinds of applications that can be installed, the browsers that can be used and the sites that can be accessed, and this in a manner that is relatively independent of the operator.

- Operators are working to promote common platforms that operate independently from the devices, which are open to all applications developers online: ***Wholesale Applications Community*** was announced by 24 mobile operators at the *Mobile World Congress* in Barcelona in February 2010 and supported by the GSMA (*Global System for Mobile Communications Association*).

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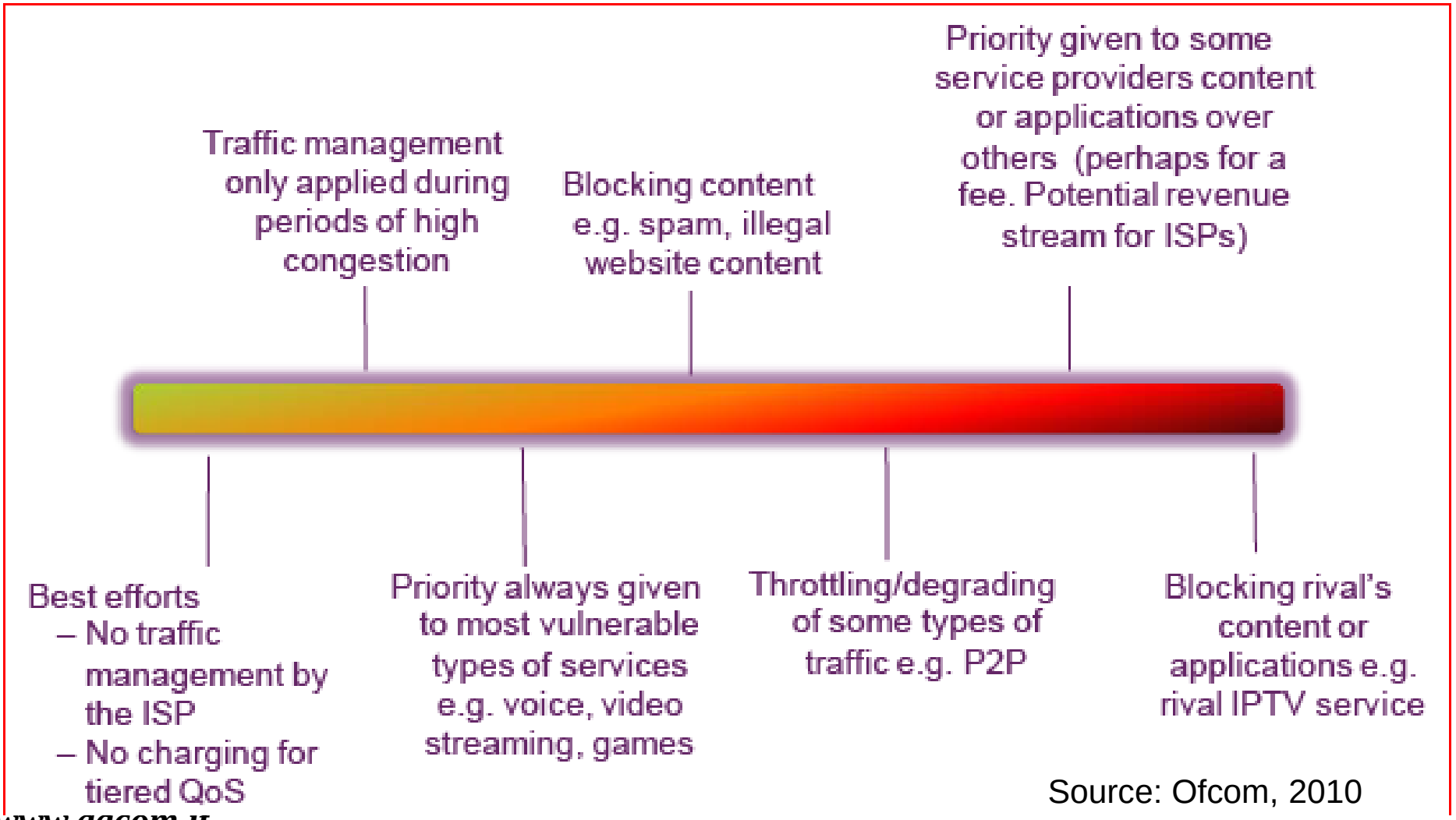
Neutrality-vs-traffic management

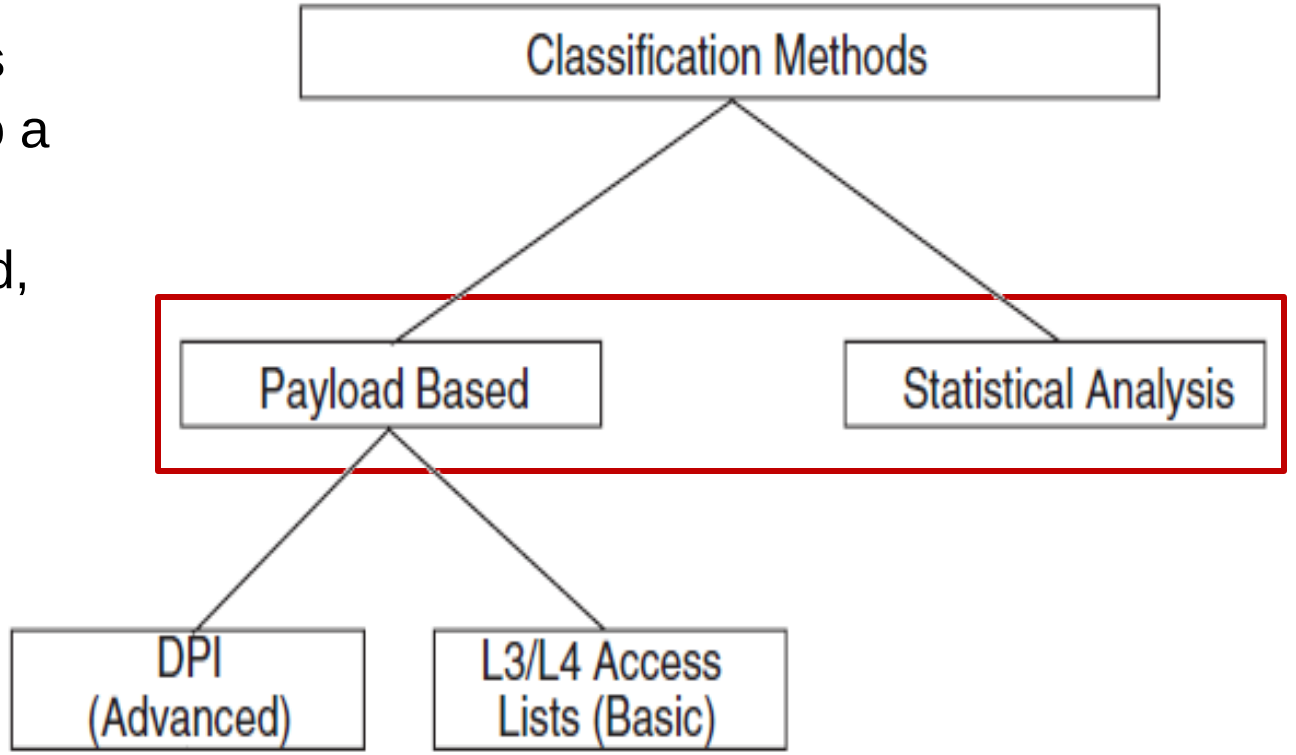
«Traffic management per se is neither good nor bad» (Ofcom 2010). The debate focuses on whether and to what extent traffic management should be allowed



Source: Ofcom, 2010

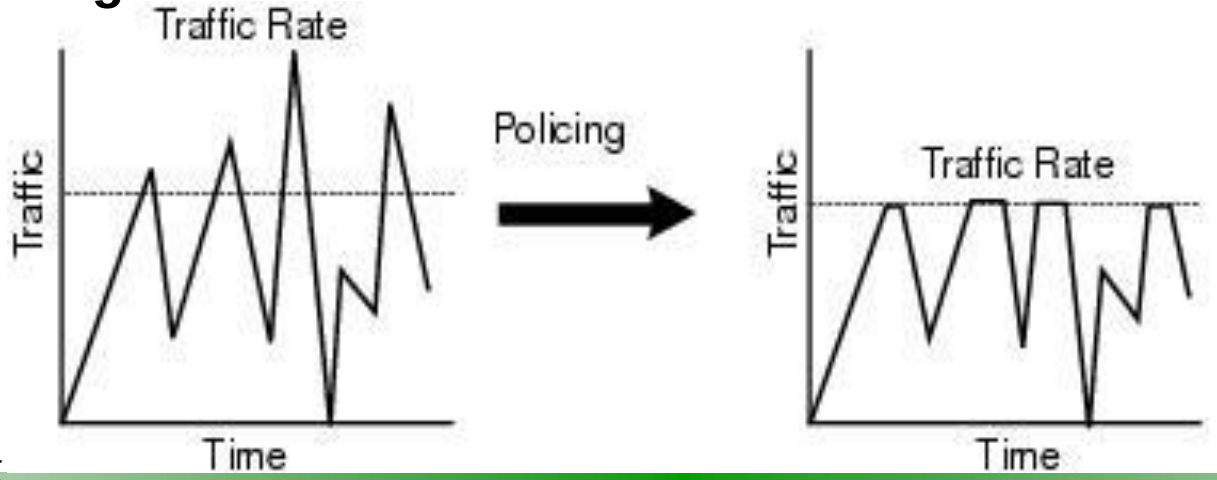
"Traffic Management"(1/3)

- The term "Traffic Management" refers to a range of different techniques that network operators and ISPs use to either restrict or ration traffic or give priority to some types of traffic over others.
- Some Traffic Management techniques are:
  - ✓ **Traffic classifying**: technique that identifies packets as belonging to a particular application or protocol; once classified, packets are marked or flagged to help the routers determine appropriate service policies for those flows. Two approaches to classifying traffic :



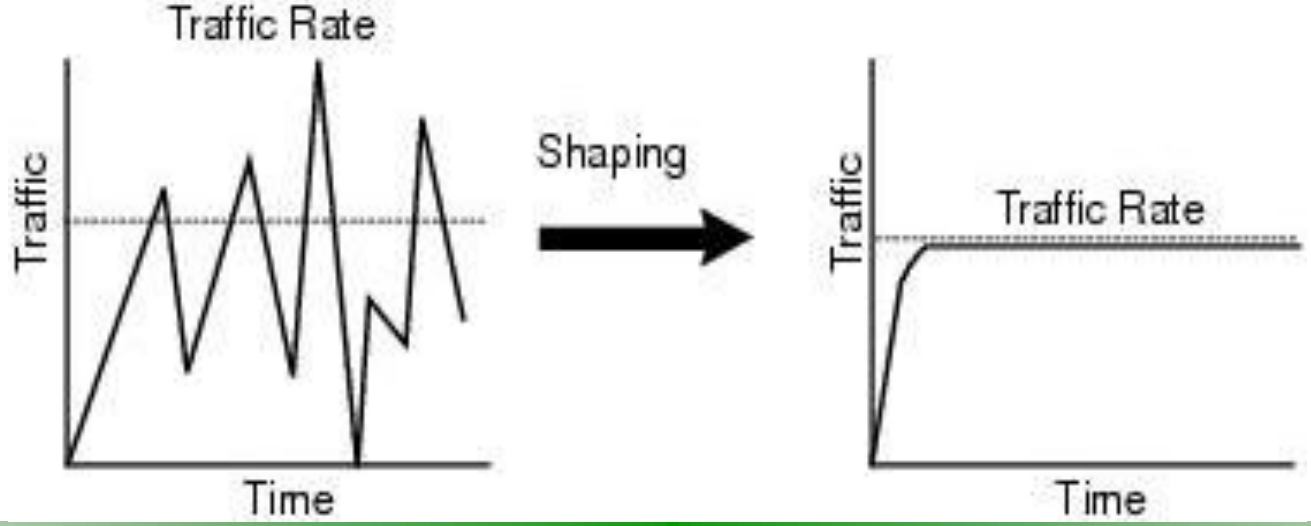
"Traffic Management"(2/3)

- **Traffic scheduling**: is the methodical output of packets (packets are ordered for transmission) at a desired frequency to accomplish a consistent flow of traffic. Traffic scheduling can be applied to different traffic classes to weight the traffic by priority and to control the bandwidth that is allocated to the traffic classes.
- **Filtering** allows an Internet Service Provider to distinguish between "safe" and "harmful" traffic and block the latter before it reaches its intended destination.
- **Partial or total blocking** of services, applications and contents.
- **IP routing** packets via different communication paths to avoid congestion or provide better services -- e.g. an ISP may route packets towards a server (located or not in its network) containing a copy of the requested information.
- **Traffic policing**: traffic rate in excess of the maximum set rate is dropped.



"Traffic Management"(3/3)

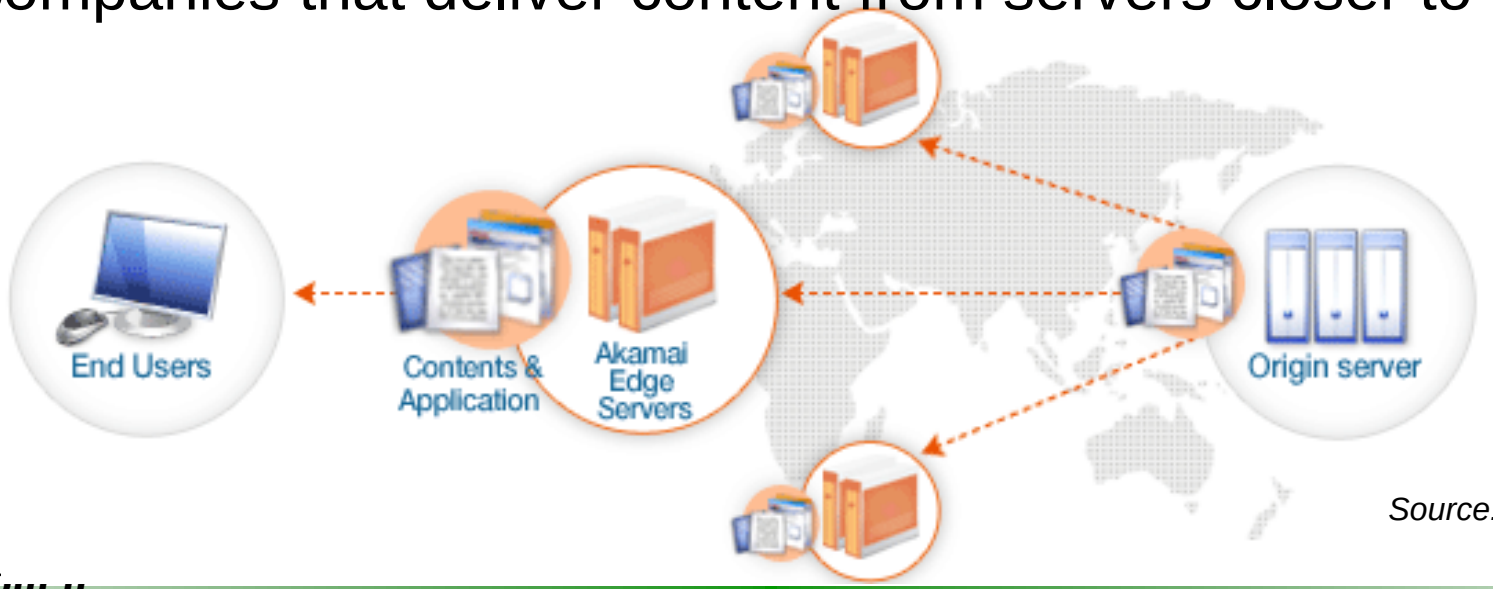
- ✓ **Traffic shaping**: is used by ISPs to structure / regulate network traffic (the result is a smoothed packet output rate), minimize bandwidth congestion and maintain the quality of some delivered services during periods of peak demand, by:
  - *Traffic Prioritisation*: ability to identify types of traffic (data packets) coming onto the network as well as to give certain applications or services priority handling over others by changes in queuing procedures implemented by network routers;
  - *Traffic Deterioration*: degrading performances (latency, jitter) of some types of traffic;
  - *Bandwidth Throttling and Capping*: throttling limits the rate at which a bandwidth intensive device (server) accepts data; capping limits the total data transfer capacity (up/downstream) on a BB internet connection (each node sets an outgoing bandwidth cap) to prevent individuals from consuming the entire transmission capacity.



Implementing TM strategies

- **Tiered pricing**: network operators and ISPs charge consumers on a tiered basis, allowing users to select from a set of tiers at progressively increasing price to receive the products best suited to their needs.

- **Web Caching, CDN** (Content Distribution Networks): content providers commonly use caching and content distribution services from companies that deliver content from servers closer to users.



Source: Akamai

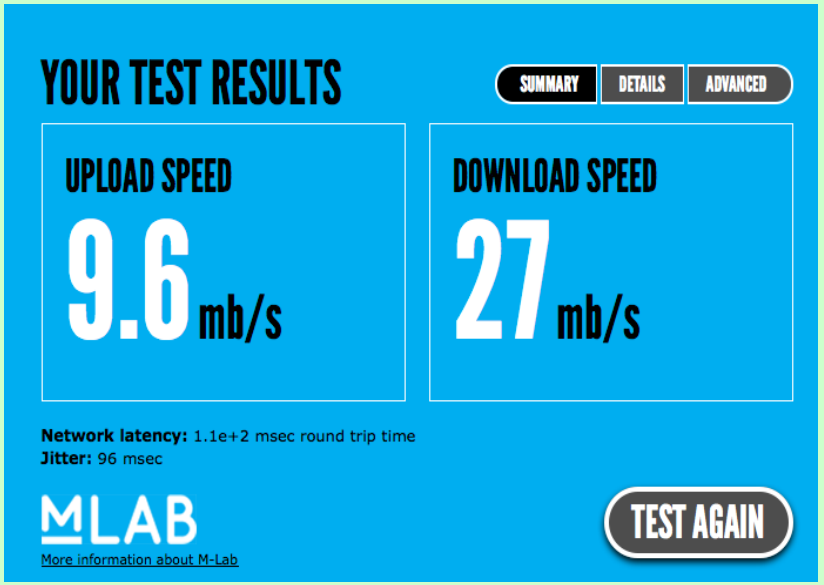
Some commercial practices against the principle of net neutrality (1/3)

- The Body of European Regulators for Electronic Communications (BEREC) notes that there have been cases where equal treatment of all data was NOT ensured. Some of these cases, in BEREC's view, may raise concerns for a competitive market and for society as a whole (*EC Report on the public consultation on "The open internet and net neutrality in Europe", 9 November 2010*).
- BEREC reported cases of:
  - ✓ **throttling of peer-to-peer (P2P) file-sharing or video streaming** in France, Greece, Hungary, Lithuania, Poland and the United Kingdom; and
  - ✓ **blocking, or charging extra for, voice over internet protocol (VoIP) services in mobile networks** by certain mobile operators in Austria, Croatia, Germany, Italy, the Netherlands, Portugal and Romania.
- BEREC's analysis is supported by VoIP providers, consumer and civil society organizations.

Some commercial practices against the principle of net neutrality (2/3)

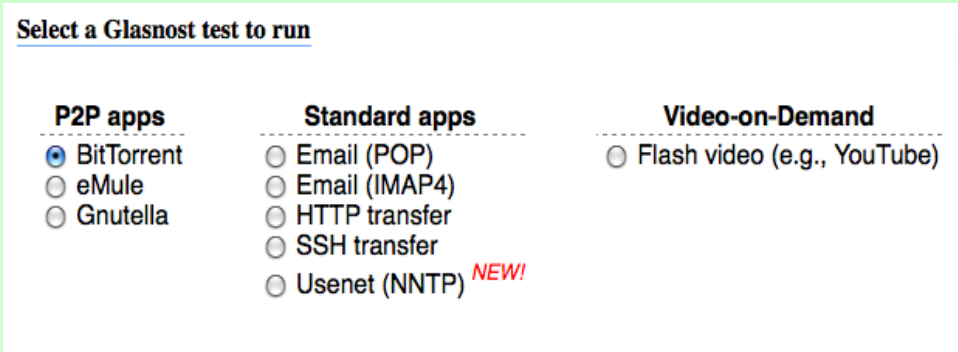
MLAB measurementlab.net

M-Lab is an open, distributed platform for Internet measurement tools.
By enhancing transparency, M-Lab helps sustain a healthy, innovative Internet.



NDT test
Sophisticated diagnostics on last-mile performance.

Glasnost test
Detects application-specific traffic shaping across a number of protocols.



MLAB data show that →:

Some commercial practices against the principle of net neutrality (3/3)

Dave Clark, et. al., MIT

- Analyzed M-Lab's publicly available NDT data, and found among other things that the problems with settings on the user's device were the cause of much user-perceived latency.

Milton Mueller, University of Syracuse and Hadi Asghari, Delft University of Technology

- NSF-funded research, Glasnost test data used to determine that 21% of valid tests showed that DPI was used for BT throttling.

Constantine Dovrolis and Partha Kanuparthy, Georgia Institute of Technology

- Shaperprobe test data used to look into use of traffic shaping by US ISPs. Detected traffic shaping in ISPs that announce its use, and some that don't.

Marcel Dischinger and Krishna Gummadi, et. al., Max Planck Institute

- Glasnost data used to determine that 10% of all test runs showed ISPs differentiated against BitTorrent.

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International Net Neutrality debate

The debate about Net Neutrality arose initially in the USA:

- 2005 - Madison River case: a local US telecoms operator denied access to VoIP services to internet users.
- 2007 - Comcast case: the cable operator Comcast prevented BitTorrent user from uploading files without informing its customers of the policy. FCC decided to sanction Comcast for significantly impeding “consumers’ ability to access the content and use the applications of their choice, and Comcast appealed the decision. In April 2010, the District of Columbia court of appeals ruled that the FCC lacked a sufficient statutory basis for its order.

In several **European countries** VoIP providers have publicly voiced concerns about:

- being blocked or throttled by mobile networks
- VoIP functionality being removed from mobile handsets.

USA – FCC (1/3)

- In Sept. **2005** the FCC released a policy statement with four principles, entitling consumers to: 1) access the lawful Internet content of their choice; 2) run applications and services of their choice, subject to the needs of law enforcement; 3) connect their choice of legal devices that do not harm the network; and 4) enjoy competition among network, application / service and content providers.
- In October **2009** the FCC opened a **public consultation for rulemaking** "In the Matter of Preserving the Open Internet" to consider formally adopting the so-called "Four Freedoms internet policy" and including two more principles: non-discrimination: broadband providers cannot discriminate against particular internet content, services or applications, but may engage in "reasonable" network management; and transparency: providers of broadband internet access must disclose their network management practices to consumers, content, application, and services providers.
- In Dec. **2010** the FCC adopted the **"Report and Order" 10.201** to preserve the Internet as an open platform for innovation, investment, job creation, economic growth, competition, and free expression, and to provide greater clarity and certainty regarding freedom and openness of the Internet. 3 basic rules are adopted: transparency; no blocking; no unreasonable discrimination.

USA – FCC (2/3)

key rules designed to preserve Internet freedom and openness :

1. Transparency rule. Consumers and innovators have a right to know the basic performance characteristics of their Internet access and how their network is being managed in order to make informed choices.
2. No blocking. Consumers and innovators have a right to send and receive lawful traffic – to go where they want, say what they want, experiment with ideas – commercial and social, and use the devices of their choice. The rules thus prohibit the blocking of lawful content, apps, services, and the connection of devices to the network.
3. No unreasonable discrimination. Consumers and innovators have a right to a level playing field. No central authority, public or private, should have the power to pick winners and losers on the Internet; that is the role of the commercial market and the marketplace of ideas. So a ban is adopted on unreasonable discrimination. And it is made clear that FCC does not approve so-called “pay for priority” arrangements involving fast lanes for some companies but not others. The order states that as a general rule such arrangements won’t satisfy the no-unreasonable discrimination standard.

USA – FCC (3/3)

4. Reasonable network management. The rules recognize that broadband providers need meaningful flexibility to manage their networks to deal with congestion, security, and other issues. And FCC also recognizes the importance and value of business-model experimentation, such as tiered pricing. These are practical necessities, and will help promote investment in, and expansion of, high-speed broadband networks. So, for example, the order rules make clear that broadband providers can engage in "reasonable" network management.

5. The principle of Internet openness applies to mobile broadband. There is one Internet, and it must remain an open platform, no matter how consumers and innovators access it. Thus, FCC adopts broadly applicable rules requiring transparency for mobile broadband providers, and prohibiting them from blocking websites or blocking certain competitive applications.

6. FCC order recognizes the importance of vigilance in promptly enforcing the adopted rules and in monitoring developments in areas such as mobile and the market for specialized services, which may affect Internet openness.

Europe (1/6)

In the EU, the issue has been put on the agenda more recently.

In addition to the 2009 Review, other relevant activities are:

- ✓ **BEREC's work programme for 2010.**
- ✓ The key initiatives set out by the **EU Digital Agenda.**
- ✓ **Council of Europe** (human rights organization assembling 47 European and Asian countries including the EU-27) **declaration** on September 29, 2010. It recognized the principle of internet traffic management by network operators but it should be strictly limited to ensure **quality of service, network stability and resilience**, in order to allow citizens to benefit from the largest possible access to internet-based content, applications and services.
- ✓ **Public consultation by the Commission,** launched on "The open internet and net neutrality in Europe", conducted between 30 June and 30 September 2010, in preparation of its report to Parliament and the Council (December 2010).

Europe – BEREC (2/6)

The Body of European Regulators for Electronic Communications (BEREC) responded to the European Commission consultation on net neutrality:

- ✓ BEREC is wary about the introduction of any new processes or measures to address net neutrality issues. BEREC notes that it is difficult to make a definitive evaluation at this time. Incidents so far remain few and for the most part have been resolved without the need for any regulatory intervention. It would be premature for any intervention at the EU level because NRAs have existing regulatory powers to protect consumers.
- ✓ BEREC considers that the current regulatory framework, including new provisions strengthening transparency and minimum quality requirements, can probably address many of the concerns that have been expressed in the context of net neutrality to date.

Europe – EC (3/6)

The consultation attracted over 300 responses from a wide range of stakeholders, including network operators, internet content providers, Member States, consumer and civil society organizations as well as a number of individuals. Main output results:

1. **Open Internet:** the 2009 Regulatory Framework is considered capable of dealing with net neutrality problems. Very few ask for additional regulation at this stage. However, many note that it is premature to adopt a firm position before the transposition of the framework is completed.
2. **Traffic Management**:
   - ✓ Consensus that **traffic management is necessary**, e.g.to address congestion and security issues; for some, abuse of traffic management for granting preferential treatment to one service over another is unacceptable. Privacy concerns from traffic management techniques such as deep packet inspection.

Europe – EC (4/6)

- ✓ General agreement on the need for **transparency on traffic management** to allow consumers to make informed decisions. Many stakeholders consider that transparency by itself is not sufficient.
- ✓ Agreement that in principle, the same **traffic management principles** should **apply to both fixed and mobile networks.**
- ✓ General agreement that **additional regulatory measures on managed services are not required** at present. Some respondents ask the Commission to define managed services. Others suggest an industry-led code of conduct as a way of ensuring fairness and non-discrimination. Divergent opinions on whether the same QoS conditions should apply to all managed services.

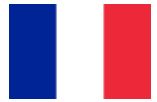
Europe – EC (5/6)

3. **Market structure:** general agreement that the commercial arrangements currently governing the provision of internet access, such as peering arrangements and paid transit, have worked well until now. However, opinion is divided on future approaches: content providers are concerned that a change in market structure leads them to being charged additionally for network access, give operators too much power and represent a “tax on innovation”.
4. **Consumers and QoS:** Many respondents consider that regulatory intervention to set minimum QoS standards for internet access would stifle innovation; for others, it should be implemented where consumers are prevented from accessing the services they want.
5. **Political, cultural and social dimension:** Some consumer organizations and content providers foresee potential problems, relating to freedom of expression, if the effect of new business models such as managed services were to limit the free flow and exchange of information online.

Europe – EC (6/6)
the way forward

- On the basis of the evidence from BEREC's assessments and the implementation of the telecom framework provisions, the Commission will decide, as a matter of priority, on the issue of **additional guidance on net neutrality**.
- If significant and persistent problems are substantiated, and the system as a whole is not ensuring that consumers are easily able to access and distribute content, services and applications of their choice via a single internet subscription, the Commission will assess the need for **more stringent measures to achieve competition and the choice** consumers deserve. Such **additional measures** may take the form of:
  - **guidance or general legislative measures** to enhance competition and consumer choice, such as by further facilitating consumer switching, or, should this prove to be insufficient, by imposing …
  - **specific obligations** regarding unjustified traffic differentiation on the internet applicable to all ISPs irrespective of market power. This could include the prohibition of the blocking of lawful services.

France – ARCEP (1/3)



- **May 2010** - **Public consultation on net neutrality**, with more than 50 public hearings with a multitude of operators, service providers, manufacturers, academics, and consumer/citizens organisations.
- **September 2010 – Guidelines with the aim to guarantee:**
  1. **freedom and quality of Internet access:** to allow end-users to send and receive the content of their choice; to use the services and run the applications of their choice; to connect the hardware and use the programs of their choice, provided they do not harm the network; to provide end users with sufficiently high & transparent quality of service.
  2. **non-discrimination between Internet traffic streams**: no differentiation between access to specific types of content, services, applications, devices or the address of the stream's origin or destination.
  3. **monitoring the quality of the Internet access service**: to set QoS indicators for Internet access and impose an obligation for internet access provider to publish their results.

France – ARCEP (2/3)

4. **monitoring existing traffic management practices**.
5. **supervising Internet traffic management mechanisms**: when ISPs do employ traffic management mechanisms for ensuring access to the Internet, the general principles of relevance, proportionality, efficiency, non discrimination between parties and transparency are to be complied with.
6. **monitoring the data interconnection market**: Internet access providers to grant all reasonable requests for interconnection from service or application providers. Collecting information on data interconnection markets in order to regulate – should the need arise.
7. **managed services**: network operators are allowed to offer "managed services" alongside Internet access to both end users and service providers, provided that they do not degrade the quality of Internet access below a certain satisfactory level, and that vendors act in accordance with existing competition laws and sector-specific regulation.

France – ARCEP (3/3)

8. **increased transparency with respect to end users**: ISPs must provide end users with clear, precise and relevant information on the services and applications they can access; the quality of the internet access; the limitations to the service; any traffic management practices implemented.
9. **accounting for the Independent Software Vendor role in net neutrality**: users' ability to exercise their freedom to choose between offers (services / applications / content) made available by ISVs over the internet implies that these vendors comply with: principle of non-discrimination in the different operators' ability to access these offers; principles of objectivity and transparency with respect to users, in terms of the rules employed, in cases where the ISV selects and / or ranks content coming from third parties -- notably the case with search engines.
10. **increasing the neutrality of devices**: as part of the upcoming review of the RTTE Directive, ARCEP recommends that the opportunity to complete this directive be examined, to take better account of developments in the devices market, particularly the growing importance of the software layers and interactions with ISVs.

The Netherlands

- On 22 June 2011, the Dutch Parliament passed a law stopping mobile operators from blocking or charging extra for voice calling via the network. The bill must now pass through the Dutch Senate.
- So far, the Netherlands is the second Country to enshrine the net neutrality concept into national law, after Chile -- the Chilean bill was approved in July 2010 and finally implemented in May 2011.
- The law was prompted by moves by KPN to levy charges on third-party services such as WhatsApp, a free messaging app, which was believed to be cutting into the operator's SMS revenue.
- Under the new Dutch law, local operators could be fined up to 10 percent of their annual sales for violations by the regulator (OPTA).
- All major mobile network providers, including Vodafone, T-Mobile and the former Dutch state telecom Royal KPN NV, warn that the measure may lead to higher broadband prices in the Netherlands because operators are limited in their ability to structure differentiated data packages based on consumption.

Norway - NPT

NPT published in February 2009 a **voluntary agreement on guidelines** for net neutrality based on three principles:

1. **Basic Internet connection**: whereby internet users are entitled to a connection with a predefined speed and quality. The capacity and quality of the Internet connection is to be clearly specified (transparency). If the physical connection is shared with other services, it must be stated clearly how the capacity is shared between Internet traffic and the other services.
2. **Freedom of use of Internet connection**: whereby Internet users are entitled to send and receive content of their choice, use services and applications of their choice and use software and hardware of their choice that do not harm the network.
3. **Non-discrimination of Internet traffic** with regard to the type of application, service or content or based on the sender's or receiver's address. The principle **does not preclude traffic management** efforts on an operator's own network to block activities that harm the network, comply with orders from the authorities, ensure the QoS for specific applications that require this, deal with special situations of temporary network overload or prioritize traffic on an individual user's connection according to the user's wishes.

Sweden - PTS

PTS produced in November 2009 a report on "*Open Networks and Services*"

1. **openness** creates the prerequisites for innovation and competitiveness but must be balanced against other interests, such as **incentives to invest** and **network security**;
2. securing **non-discrimination and effective competition** is essential.
3. although the differences between the various access technologies and operators are reasonable, it is important that suppliers - in the relevant marketing activities and applicable Terms & Conditions - provide **clear and specific information**.

U.K. – OFCOM (1/2)

Public consultation on "Traffic Management and Net Neutrality" (June – Sept. 2010): discussion document focusing on the issues directly related to OFCOM's current regulatory duties and those potentially arising upon implementation of the Revised Framework.

OFCOM's functions and duties

- NO obligation to introduce restrictions on traffic/network management
- Regulatory powers under the current legal framework:
  i. transparency requirements through imposing General Conditions
  ii. obligations on operators to ensure end-to-end connectivity and impose fair, reasonable and non-discriminatory SMP access conditions which could specify the terms and conditions for access.
- Changes under the revised EU framework:
  i. potentially stronger / more explicit transparency measures on information to consumers, enabling them to make informed choices.
  ii. OFCOM may be empowered to set minimum quality of service requirements on public electronic communications network operators.

U.K. – OFCOM (2/2)

Output results

- Need for caution, particularly when contemplating very broad interventions such as:
  i. a blanket ban on any form of traffic discrimination; or
  ii. the immediate introduction of a guaranteed QoS for the internet.
- By contrast, it is critical that consumers are fully informed of any traffic prioritization, degradation or blocking policies being applied by their network operator or ISP and that they are able to factor these in when making purchasing or switching decisions.
- Only in the event that improved consumer transparency would not alleviate all concerns about traffic management, OFCOM should provide for the imposition of a minimum quality of service.

Current issues at stake:

1. **What stance should OFCOM take on discrimination? (i.e. ex ante / ex post measures)**
2. **What is the best way to deliver consumer transparency? (tiering, one stop shop, …)**

- In November 2010, the UK Communications Minister set out the **government's position** according to which providers should set out in detail the extent of their traffic management and the impact on consumers; be able to manage their networks to ensure a good service and have flexibility in business models – competition is important for ensuring continued openness and choice.

Outline

1. Background / Definitions
2. Net Neutrality and Traffic Management
3. International Benchmarking on NN
4. **Italy Prospects / Conclusions**

Italy (1/5)

- In July 2009 Senators Vita, Vimercati, Finocchiaro, Zanda, Latorre, Filippi, Donaggio, Fistarol, Magistrelli, Morri, Papania, Sircana, Di Giovan Paolo and Perduca presented a bill to Parliament on “Network Neutrality, Free Software and Information Society”.
- In February 2011 Senators Butti, Tancredi, Orsi, De Lillo, Piccone, Barelli, Di Giacomo, Totaro, Gentile, Zanetta and Gallo presented a bill to Parliament to promote the development of broadband services under a three-year investment programme and to ensure transparency for consumers in respect of internet access. Proposal assigns a key role to AGCOM, requesting it to:
  - ✓ ensure that suppliers and providers of internet connection services comply with new transparency rules;
  - ✓ promote cooperation between operators; and
  - ✓ monitor user satisfaction in relation to services from specific suppliers.
- Public consultation on “Garanzie dei consumatori e tutela della concorrenza con riferimento ai servizi VoIP e peer-to-peer su Rete Mobile” – decision 39/11/CONS (February 3, till May 4, 2011)
- Public consultation on Net Neutrality – dec.40/11/CONS (Febr. 3 till May 6, 2011)

Italy – AGCOM (2/5)

Public Consultation on Net Neutrality

1. Quali sono i **profili tecnologici e commerciali** che, in prospettiva, assumeranno maggiore rilievo nell'evoluzione del settore dei servizi dati, in mobilità e in postazione fissa? Tali profili influenzeranno le strategie di mercato formulate dai diversi soggetti economici operanti nel settore, gli ISP e *content provider*? In che modo? Come incideranno i medesimi profili sulle modalità di consumo dei servizi dati da parte dei consumatori?
2. Quali **tipologie di servizi dati** e quali forme di **gestione del traffico** assumono particolare rilievo nell'ambito del dibattito sulla neutralità della rete? Qual è il presumibile impatto che la crescente diffusione delle forme di gestione del traffico di rete per ragioni tecniche o di blocco di applicazioni per motivi commerciali avrà sul principio della neutralità della rete? Quali fattori concorrono alla declinazione della definizione di neutralità della rete?
3. Quali sono **gli obiettivi e gli strumenti**, come definiti nel quadro normativo europeo, ritenuti più rilevanti **ai fini della regolamentazione**, ove opportuno, del rapporto tra forme di gestione del traffico, tecniche commerciali e neutralità della rete? Quali **forme di gestione del traffico** possono essere considerate **ragionevoli**?

Italy – AGCOM (3/5)

Public Consultation on Net Neutrality

4. Nell'ambito delle norme a tutela del consumatore e, in particolare, di quelle a tutela della trasparenza delle condizioni economiche e tecniche dei servizi offerti, quali sono gli elementi rilevanti, ulteriori rispetto alle disposizioni vigenti, che contribuiscono alla piena conoscenza, da parte dell'utente finale, delle caratteristiche dei servizi dati, in mobilità e in postazione fissa, disponibili nel mercato? Quali sono o quali potrebbero essere le modalità tecniche rilevanti al fine di informare gli utenti anche in tempo reale al verificarsi di forme di gestione del traffico e quali, in generale, le **modalità ed i canali informativi minimi per assicurare all'utente finale informazioni trasparenti** in relazione ai servizi dati?
5. Quali sono i potenziali problemi concorrenziali derivanti dalla diffusione delle nuove forme di gestione del traffico? Le norme a tutela della trasparenza delle condizioni economiche e tecniche dei servizi offerti sono sufficienti a prevenire l'attuazione di comportamenti anticoncorrenziali nei mercati dei servizi dati? Ove sia ravvisata l'opportunità della regolamentazione a **tutela della concorrenza**, con quali strumenti a disposizione del *policy maker* sarebbe opportuno porre mano alla regolamentazione?

Italy – AGCOM (4/5)

Public Consultation on Net Neutrality

6. Quali sono gli elementi strutturali che contraddistinguono **l'ecosistema della rete** che potrebbero assumere rilievo qualora i potenziali problemi concorrenziali e le specifiche circostanze del mercato rendano opportuno un intervento del *policy maker* a tutela della concorrenza? Quali fattori incidono sui prezzi e sulle quantità prodotte di servizi dati, nonché sulla capacità a innovare e sugli incentivi ad investire dei diversi soggetti attivi nel settore? Come si sostanzia il rapporto tra *net neutrality* e crescita economica e qual è l'**impatto dell'economia di internet sullo sviluppo della società**?
7. Più in generale, considerati i profili inerenti alla tutela del consumatore e alla tutela della concorrenza, quali modalità di intervento e di regolazione consentono la **salvaguardia del principio della *net freedom***, -- i.e. la natura aperta e libera che contraddistingue la Rete?

Italy – AGCOM (5/5)

Public Consultation on Net Neutrality

8. Quali **forme di intervento** sono ritenute più appropriate ed efficaci, fermi restando i principi di **adeguatezza, necessarietà e stretta proporzionalità dell'intervento** rispetto alle finalità perseguite previsti nel nuovo quadro regolamentare?
9. Come incide la piena attuazione del principio della neutralità della rete sulla **vita sociale, culturale e politica del Paese**? Quali sono i valori generali connessi al dibattito concernente la *net neutrality* che devono essere tenuti in considerazione al fine di garantire la piena attuazione del principio della neutralità della rete? Al riguardo, quali strumenti possono essere utilizzati dall'Autorità?
10. Qual è il rapporto tra le diverse declinazioni del principio della neutralità della rete e il **pluralismo dell'informazione** e, più in generale, le libertà di comunicazione e di manifestazione del pensiero?

Conclusions (1/3)

- The **net neutrality declination** should be based on the principles of:
  - ✓ **freedom of choice**: the ability to make informed choices allows the market to achieve maximum benefit because it ensures fair operation, oriented towards satisfying users needs.
  - ✓ **transparency:** allowing both consumers and market operators to capitalize on the competitive mechanisms, matching the demand for freedom of choice.
  - ✓ **equal treatment** and **non-discrimination of traffic**.
  - ✓ net neutrality provision **at all layers** of the protocol stack by all players along the Internet value chain – network operators, devices / operating system / software / app.stores search engines.

Conclusions (2/3)

- The outlined evolution of supply chain and Internet traffic, as well as the rapid convergence of electronic communications services toward *all-IP* platforms, makes **legacy business models no longer sustainable**, neither technically nor economically.
- There is a broad consensus that the **existing rules** aiming to protect transparency and competition, both in Europe and in the Member States, are **sufficient to prevent anticompetitive behaviors** in the market. As already noted, transparency rules have been even reinforced with the new European Telecom Package.
- Some parties advocate that **rules governing the Internet ecosystem should adapt** to described changes by allowing:
  - ✓ the implementation of traffic management techniques;
  - ✓ the development of *managed* services, with guaranteed QoS, along with *best-effort* connectivity services;
  - ✓ the evolution of retail commercial offers in order to provide users with correct price signals;
  - ✓ the evolution of peering agreements.

Conclusions (3/3)

- The debate focuses on "**reasonable" traffic management techniques**. Some main requirements should be fulfilled by traffic management practices:
  - ✓ they constitute an instrument of rationalization of resources, allowing network operators to manage congestions, to provide users with appropriate quality of service and to minimize the risks to the integrity and security of the networks;
  - ✓ they are implemented in accordance with the principle of total transparency;
  - ✓ they respond to a principle of fairness and equal treatment;
  - ✓ they respond to a principle of necessity;
  - ✓ they are not used for discriminatory purposes or foreclosures -- they do not have the purpose or effect of benefiting vertically integrated services at the expense of similar services offered by third parties;
  - ✓ they do not result in undue deterioration of the usage experience for all or some categories of users;
  - ✓ they do not jeopardize or penalize the functionality of best effort services, but rather they create a value for all stakeholders;
  - ✓ they do not threaten the open and free nature of the network, do not constitute censorship of content, do not hinder information dissemination, do not reduce pluralism or democracy in the network.

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Grazie per l'attenzione

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