ANACOM CONFERENCE NET NEUTRALITY: NETWORK REGULATION AND CONTENT REGULATION
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Network management and access to content and applications

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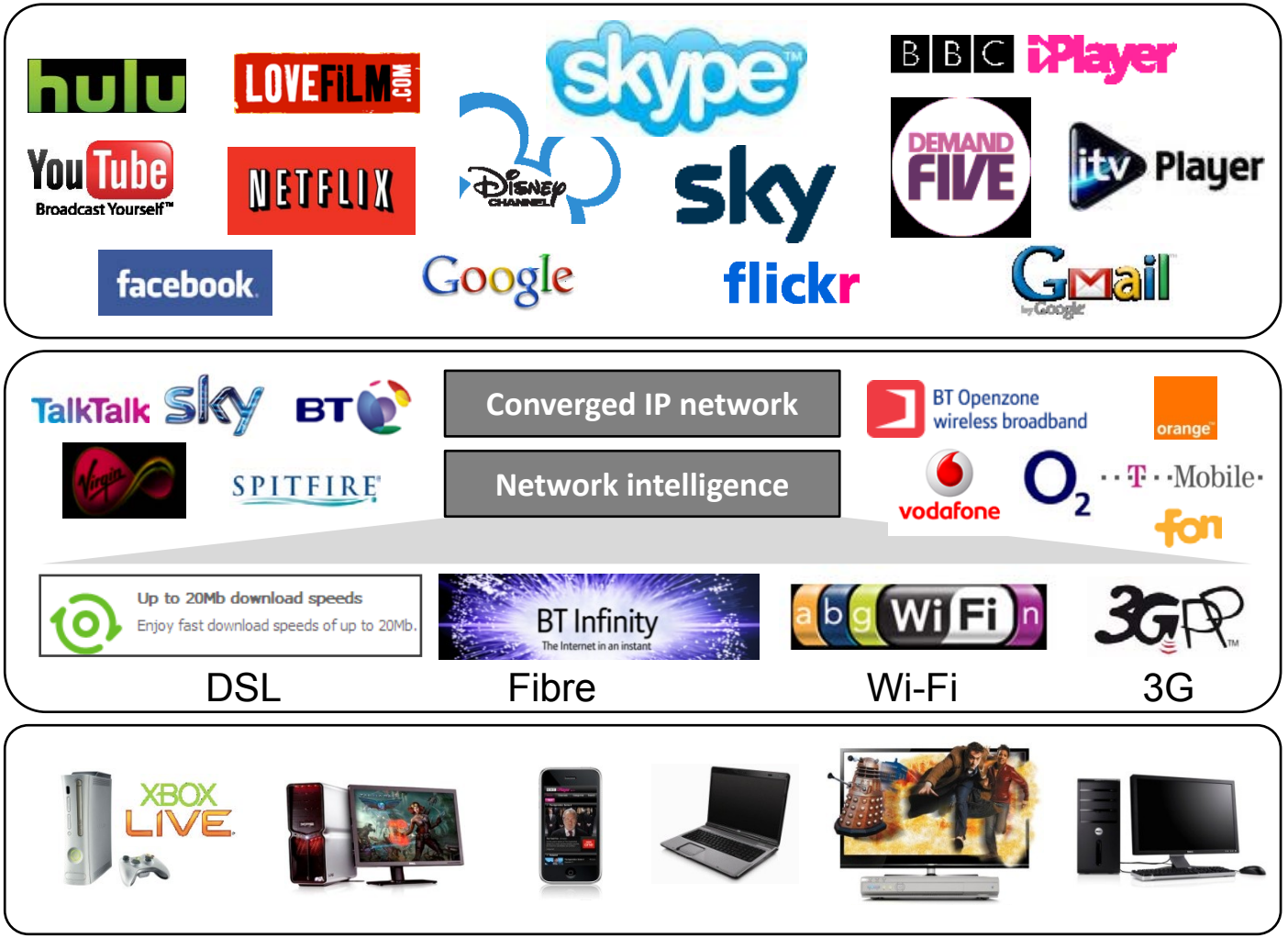
Our industry is connecting consumers with an incredible array of services

Multitude of content and applications

Delivered via a converged broadband network

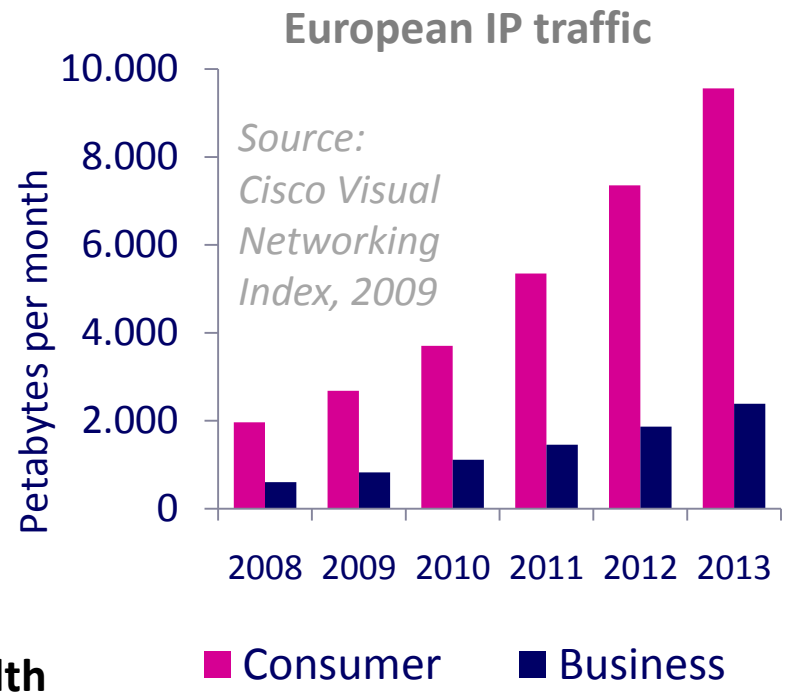
Consumed where you choose on your device



This is driving an unceasing increase in bandwidth demand

All trends are underpinned by an increasing need for bandwidth

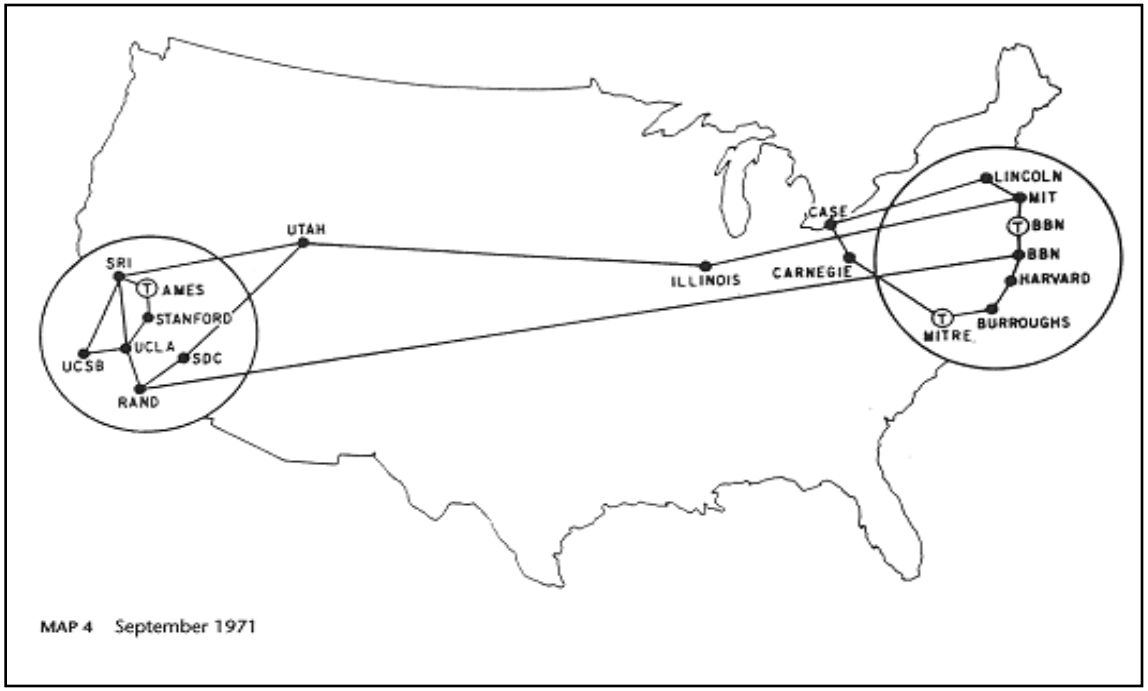
- More customers connected
- More often
- From more places
- On more devices
- For a wider variety of applications
- With an increasing element of video
- All driving an **<u>increasing demand for bandwidth</u>**



…as the last 10 years has shown us

Domain	Metric	2000	2010
Internet (UK)	% of UK pop using Internet	26%	80%
	Typical UK data rate (fixed)	56 kbit/s	4 Mbit/s
	Typical data rate (mobile)	9.6 kbit/s	1 Mbit/s
Markets (UK)	Mobile Penetration	50%	~ 130%
	Ratio of “fixed minutes” to “mobile minutes”	**6.7x**	**<1**
Devices	Mobile Communications		
	Portable Music		
	TV	 1% of TV licences still B&W	 HD

The early Internet had different challenges and was neutral

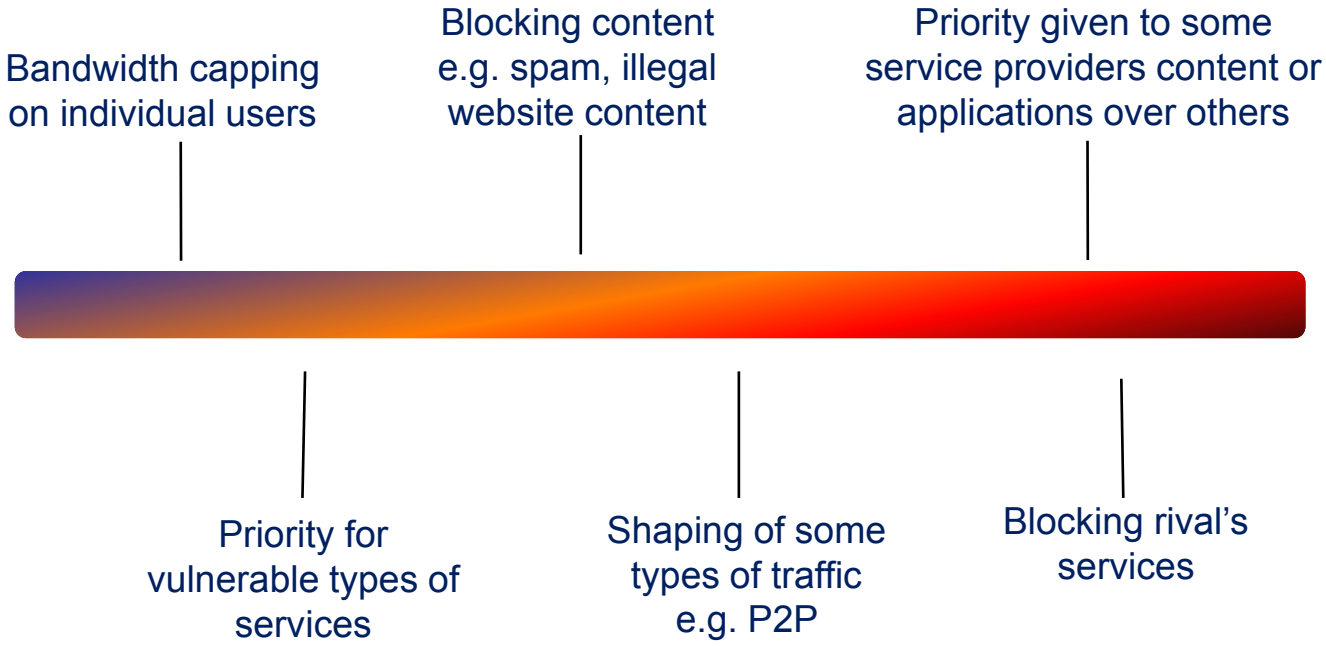


Everything was bit-neutral. No prioritisation or shaping.

But “everything” was only file transfer, email, and computer log-in.

The rise of traffic management

- Computer scientists soon realised that many applications would grab as much bandwidth as they could but that some applications needed a more reliable throughput than others.
- So traffic prioritisation and guaranteed QoS techniques were developed (1994-1998)
- And Deep (but not very deep) Packet Inspection equipment was developed to automatically identify different applications (from ~2000)



The benefits of traffic management

- Speed is not the only factor in customer experience
- If packets have to be dropped because of congestion, those associated with non time-critical applications can be dropped first.
- Non time-critical applications like file transfer can have speed limits imposed at busy times.
- ISPs can offer and enforce different service tiers so that customers need only pay for what they want/need.
- ISPs can experiment with different business models which apportion the network investment costs not only between different types of end-user but also between end-users and content providers.

Should any of these traffic management practices be outlawed?

- Of course not! They safeguard ongoing investment and are potentially of enormous benefit to the end-user.
- There is no evidence of consumer harm.
- Key safeguard is a competitive retail market. Which needs:
  - Wholesale access regulation where there is SMP
  - Transparency about traffic management
  - Ability to switch in response to detrimental change
- ISPs do not want to lose existing customers or fail to win new ones.
  - Basic, best-efforts, service will always have to be good enough. And will have to improve steadily.
  - Basic service will never be crowded out by premium services

How should the industry respond to concerns?

- By developing clear policies and explanations about traffic management.
- By not blocking legal applications on any service tier.
- By developing online pages or a portal that show information about a user's service and potentially about the ISP's network.
- By stating clear principles about what customers can expect from the industry's approach to broadband…..

BT Principles

Principle	Detail
Transparency	Giving customers meaningful information about their network usage (and any network management techniques employed)
Open access	Allowing customers to use their internet connection to access and run content and applications of their choice (provided they are legal) .
Fair competition	Giving customers a wide choice of internet access providers, with the ability to switch between providers without penalty subject to their contracts.
Adaptable networks	Allowing internet access providers the freedom to prioritise traffic over their networks.
Freedom of expression	Allowing customers' freedom of expression (unless they breach legal guidelines).
Commercial activity with no undue constraints to innovation	Allowing broadband providers the freedom to introduce innovative new services and business models without undue constraints.

Any questions?