Traffic Management and 'Net Neutrality'

A response from Alcatel-Lucent to the Ofcom consultation

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Introduction

Alcatel-Lucent considers congestion will be an on-going characteristic of networks.

The location of congestion, the periods of congestion and the consumers impacted by congestion will vary over time with technical innovations, as investments in capacity are made in networks and as users demands evolve. But by the temporary and unpredictable nature of some congestion, and costs of increasing bandwidth means that it is impractical to address congestion solely by investing in more capacity.

Traffic management is not new or confined to public networks. Traffic management is required to ensure network integrity and maximise service availability in public and private networks. Currently, some of leading-edge research and development (including investments made by Alcatel-Lucent) suggest that innovations in traffic management will enable many new services to be carried over networks. Traffic management solutions enable more economical and technically efficient use of networks.

Below are responses to the consultation questions:

1 How enduring do you think congestion problems are likely to be on different networks and for different players?

There will always be congestion in networks, but not always in the same place. The points in any network experiencing congestion will change over time.

Congestion is often temporary and unpredictable. For example, if a large group of people gather in a small area - such as in a traffic jam, or at a concert- there will likely be temporary congestion on mobile networks. If, in a residential or rural area, a new small business or a primary school uses bandwidth hungry applications, it is likely fixed networks will experience congestion too.

Congestion can still be a challenge when it is predictable, since the cost of easing congestion by increasing bandwidth maybe prohibitive. Forecasts suggest demand on public networks will increase 5-fold by 2013, a phenomenon known as 'Exaflood'. Even with this foresight, network providers maybe unable to increase capacity where congestion results from the physical bandwidth limits of copper or spectrum, or the physical width of ducts. Capacity constraints of this type require significant investment.

<u>Increasing capacity in a network takes time and is not a practical solution to all network congestion.</u>

2 What do you think are possible incentives for potentially unfair discrimination?

Alcatel-Lucent considers there are very limited incentives for any service provider to discriminate unfairly in a competitive market. The only situation where such an incentive might be present is if a service provider were to possess market power.

3 Can you provide any evidence of economic and or consumer value generated by traffic management

Traffic management is already prevalent in private networks, and limited examples of traffic management have been a feature of public networks for many years.

Traffic management in private networks has, among other benefits, enabled enterprises to consolidate their voice and data networks (known as Unified Communications), and save money. Public PSTN networks have been engineered to prioritise emergency calls to save lives and some content providers (eg the BBC) avoid internet congestion by reaching commercial peering (interconnection) deals directly with ISPs.

Application of innovative traffic management tools in public networks will generate more social and economic benefits.

Mirroring the benefits already achieved using traffic management solutions; greater traffic management may enable service providers to prioritise VoIP emergency calls to save lives or to save money by consolidating voice and data networks. Indeed, it might be argued the Telecoms Framework requires service providers to manage traffic so that they can prioritise emergency calls, and ensure the availability of voice services.

But advanced traffic management will bring many new social and economic benefits too.

Differentiation of data packets travelling over public networks using traffic management techniques will be more economically efficient; it will address free riding. Service providers already price differentially on the basis of the capacity (examples include inclusive call packages or broadband download limits). Traffic management technology will enable service providers to package services to reflect other dimensions of a broadband service, such as latency and packet loss. In the absence of traffic management users who require high-quality bandwidth (eg for watching IPTV) pay no more than users who use the internet principally for emails. Consequently, innovative traffic management in public networks may result in lower prices to low bandwidth users.

Traffic management will also stimulate innovation, and new jobs. From our first hand experience, we can provide evidence of R&D investment, and jobs created by the opportunity to exploit network assets more efficiently. In Alcatel-Lucent we call this business strategy High Leveraged Networks and by exposing application programming interfaces of networks to content creators and service innovators we foresee significant innovation. Across the breadth of our customers in communications and other

strategic industries, we are witnessing excitement about the new businesses, business models and jobs which will be created by the introduction of traffic management tools in public networks.

4   Conversely, do you think that unconstrained traffic management has the potential for (or is already causing) consumer/citizen harm? Please include any relevant evidence?

In a competitive market, with effective transparency measures there is no rationale for – or evidence of - service providers using traffic management to cause consumers harm. As a consequence Alcatel-Lucent does not consider traffic management should be constrained when there is effective competition. In the event unforeseen scams or unfair practices materialise, Alcatel-Lucent would support necessary and proportionate measures to protect consumers.

5   Can you provide any evidence that allowing traffic management has a negative impact on innovation?

To the contrary, we can provide significant evidence (including patents and patent applications) that traffic management has a positive impact on innovation.

For example, use of techniques called admission control and bandwidth management have driven adoption of new technology such as VoIP and IPTV. The value of these traffic management techniques has been recognised by standards bodies such as 3GPP, ITU and ETSI which is why they have included these functional elements as part of standards based architectures.

6   Ofcom's preliminary view is that there is currently insufficient evidence to justify ex ante regulation to prohibit certain forms of traffic management. Are you aware of evidence that supports or contradicts this view?

Alcatel-Lucent considers most forms of traffic management offer potential benefits for consumers and citizens in the form of new services, greater investment in networks, and cheaper prices for basic internet users.

In competitive markets regulation of these forms of traffic management would clearly diminish competition and be detrimental to consumers. In our view evidence to justify prohibiting any forms of traffic management would need to show the market is uncompetitive, and show a ban is proportionate.

7 Ofcom's preliminary view is that more should be done to increase consumer transparency around traffic management. Do you think doing so would sufficiently address any potential concerns and why?

Alcatel-Lucent considers well-designed transparency measures are an important priority, and sufficient to address concerns discussed in the consultation document.

Well-designed transparency measures will likely address the concerns raised since many users experiencing capacity constraints are relatively technically literate, and so are likely to comprehend clear information on traffic management policies. Further, such customers who act on information about traffic management will provoke ISPs to respond in a manner that will benefit all consumers.

As Ofcom has noted, consumers concerns over capacity constraints vary. Consumers viewing IPTV or making voice calls have a lower tolerance of problems associated with congestion such as packet loss and latency (delay), compared to email users. Therefore, concerns about congestion are not shared equally among users.

In light of this, Alcatel-Lucent concurs with Ofcom that more should be done to increase consumer transparency around traffic management, and that transparency measures will likely be sufficient.

8 Are you aware of any evidence that sheds light on people's ability to understand and act upon information they are given regarding traffic management?

There are many signs that people understand traffic management information;

- the prevalence of tabloid newspaper stories on broadband speeds and usage limits,

- use of speed checker web services,

- lobbying by interest groups and politicians,

- prime time TV adverts and

- inclusion of traffic management information on switching.

However, third parties often have a role in presenting this information to users.

9 How can information on traffic management be presented so that it is accessible and meaningful to consumers, both in understanding any restrictions on their existing offering, and in choosing between rival offerings? Can you give examples of useful approaches to informing consumers about complex issues, including from other sectors?

Industries with complex products often market them by demonstrating how consumers would use the product, rather than promoting the product directly.

For example banks advertise second mortgages as 'home improvement loans' and pension funds explain investment choices by reference to beneficiaries' life stage and appetite for risk. Similarly, Ofcom determined that food labelling should be based on traffic lights. If traffic management policies were explained by reference to how consumers or small businesses might use the service, categories of service might include:

- broadband for viewing IPTV (low latency, high bandwidth downstream),

- services ideal for working from home (secure, with high bandwidth upstream and downstream), and

- basic services for emails or browsing off-peak (lower bandwidth, fewer latency and packet-loss guarantees).

This approach would address concerns about the 'up to' style of marketing, since it requires services to be defined by minimum or average performance rather than maximum capabilities.

10 How can compliance with transparency obligations best be verified?

Alcatel-Lucent supports the Broadband Stakeholders' Group initiative to develop an industry wide approach to transparency. An industry code of would ensure information about services is comparable and easy to find, without being an undue burden on ISPs.

11 Under what circumstances do you think the imposition of a minimum quality of service would be appropriate and why?

In the absence of market power, the only justification for a minimum quality of service standard is a universal service obligation.

Without a universal service obligation in respect of broadband services, it seems premature to consider a minimum quality of service standard. However, a 'right to broadband' would without doubt need to

describe all of the dimensions of that right including quality of service parameters such as latency and packet-loss.

About Alcatel-Lucent

Alcatel-Lucent is one of the biggest inward investors in research and development in the UK and is one of the largest global innovation powerhouses in the communications industry, representing an R&D investment of Euro 2.4 billion, and a portfolio of more than 27,500 active patents spanning virtually every technology area.

At the core of this innovation is Alcatel-Lucent's Bell Labs, an innovation engine with researchers and scientists at the forefront of research into areas such as multimedia and convergent services and applications, new service delivery architectures and platforms, wireless and wireline, broadband access, packet and optical networking and transport, network security, enterprise networking and communication services and fundamental research in areas such as nanotechnology, algorithmic, and computer sciences.

Alcatel-Lucent is the trusted transformation partner of service providers, enterprises, strategic industries such as defence, energy, healthcare, transportation, and governments worldwide, providing solutions to deliver voice, data and video communication services to end-users.