



**TRAFFIC MANAGEMENT AND 'NET
NEUTRALITY'**
CONSULTATION RESPONSE TO OFCOM

September 2010

1. EXECUTIVE SUMMARY

Colt welcomes Ofcom's discussion document on Traffic Management and 'net neutrality'.

Traffic management runs close to the very heart of what a network provider does. Imposing restrictions on this can threaten to undermine the autonomy of network providers in a way which could inhibit consumer choice and reduce overall quality or service to the consumer. Distributed Denial of Service (DDoS) attacks are an example of a serious issue that requires immediate traffic management (diverting or black-holing DDoS traffic). As security threats evolve and develop it is vital that network providers maintain their autonomy in order to manage traffic and respond to threats as they see best.

- In the business-to-business market place within which Colt operates traffic management is beneficial to customers and content-providers alike and is a well accepted and understood practice.
- Colt urges Ofcom to distinguish clearly between consumer and business markets with regard to traffic management. Given the sophistication of business customers we would like Ofcom to avoid imposing consumer protection measures in the business marketplace.
- Congestion will continue to be an issue for large fixed and mobile consumer networks as investment lags market trends making the need for traffic management a priority.
- In the current uncertain economic climate network providers may struggle to fund major network upgrades which will in turn affect bandwidth supply. It is therefore critical that there should be an underpinning regulatory approach which incentivises and rewards network investment in order to meet customer needs.
- Those networks hosting major content may seek to force other networks to pay higher charges to interconnect/peer, or even refuse connection/peering. Colt's experience in Europe is that fixed network incumbents are most likely to apply such practices.
- Colt believes that issues relating to access to space for competitors equipment will continue to create bottlenecks and impact customer access in the future, especially for Next Generation Network (NGN) interconnection and Fibre-to-the-Home (FTTH). These issues may also spill over into new areas proposed by Ofcom such as duct and infrastructure sharing
- The internet will need to become more sophisticated in order to cope with many different traffic types, so forcing it to treat all traffic in the same way is likely to inhibit the end user experience which in turn will inhibit the development of the internet itself.
- In making policy decisions about traffic management we believe it is important to understand the needs of the different customer market segments first. Without this understanding there is a risk that any policy may fall short and have unintended consequences.
- It is difficult to see how consumers could derive a reasonable understanding of the true implications of any traffic management activity on the part of any

given provider. Promoting a greater understanding of how the Internet works in general amongst the population can only be a good thing, however highlighting the specific actions of network providers will not necessarily achieve this goal. We believe this will cause confusion.

- Colt does advocate providing information that is meaningful to consumers such as what the contention ratio is and what this means for the customer, also what services, if any, the ISP blocks. Our advice would be to ensure that any requirement is kept simple and is relatively low cost for operators to introduce.
- Any attempt to provide consumers with information on traffic management should ideally focus on specific restrictions on their own access. We believe that clear and concise marketing is the best route for consumers to enable them to make decisions.
- Developing traffic management policies for a network could be very difficult to track without adding a problematic level of bureaucracy to the day-to-day business of managing a network. Traffic management techniques and policies change on a regular basis and documenting these changes in a transparent fashion will not be easy.

2. HOW ENDURING DO YOU THINK CONGESTION PROBLEMS ARE LIKELY TO BE ON DIFFERENT NETWORKS AND FOR DIFFERENT PLAYERS?

Traffic management

Traffic management is a key and necessary aspect of managing a network in the Business-to-Business marketplace. Traffic management is beneficial to customers and content-providers alike and is a well accepted and understood practice. When traffic prioritisation takes place it is usually in relation to customer access and is linked to the traffic type. An example is an IPVPN service where real-time voice traffic must have a high priority through the network in order to ensure the service is successfully delivered. Within the business marketplace customers are prepared to pay a premium to guarantee the quality of their content, bandwidth and speed of connectivity.

There is a tension between industry's ability to, on the one hand, forecast the impact and rate of major social and technological changes on network traffic and, on the other hand, to access the necessary level of investment required to upgrade networks. Colt forecasts that congestion will continue to be an issue for large fixed and mobile consumer networks as investment lags market trends making the need for traffic management a priority.

Such changes also create uncertainty regarding operators' future revenues and market shares. In the current uncertain economic climate network providers may struggle to fund major network upgrades which will in turn affect bandwidth supply. It is therefore critical that there should be an underpinning regulatory approach which incentivises and rewards network investment in order to meet customer needs.

Colt notes that other issues are emerging with regard to incumbents' networks which will adversely affect consumers internet services and competition.

Access to content and internet peering

Colt has direct experience of fixed incumbents in Europe seeking to levy charges for internet peering where balances of traffic between the incumbents' networks and Colt's are not symmetrical. Some incumbents have also refused to 'peer' because Colt is not a currently a direct customer. We believe this is a growing issue and one which is not in the spirit of net neutrality. Colt asks Ofcom to consider this matter in the review.

Access to space in incumbents' locations

In the UK access technologies such as VDSL are developing and providing viable options for the deployment of LLU. However a major issue is that there is limited availability of space within the incumbents' local exchanges for placement of competitors' DSLAM equipment etc. The incumbent will always have the natural advantage of having already placed their own equipment within these locations, whilst competitors will not. There is an obvious incentive for the incumbent to charge high costs for co-location space within their network unless closely regulated.

The lack of available space for competitors' equipment, and the access restrictions this creates, could easily cause domestic ISPs' networks to become saturated with high volumes of traffic to and from residential customers.

Colt believes that space issues will continue to create bottlenecks and impact customer access in the future, especially for Next Generation Network (NGN) interconnection and Fibre-to-the-Home (FTTH). The issues relating to access to space for competitors' equipment may also spill over into areas proposed by new Ofcom proposals for duct and infrastructure sharing. By way of example duct space is extremely limited in many major UK cities.

3. WHAT DO YOU THINK ARE POSSIBLE INCENTIVES FOR POTENTIALLY UNFAIR DISCRIMINATION?

We would expect the main incentives for unfair discrimination to stem from opportunities for revenue retention and generating new sources of revenue from competitors.

Blocking

Much of industry, including Colt, is witnessing increasing growth in Voice over IP (VoIP) services. As noted in Ofcom's consultation document some networks are blocking these services e.g. some networks may block access to Skype because of cannibalisation of existing voice revenues. Many operators have made material long-term investments in their networks supported by business cases which did not anticipate disruptive technologies weakening them. The issue of blocking is not a straight-forward one and requires careful consideration if Ofcom is to encourage continued and efficient investment in infrastructure to support innovation.

Access to content

As mentioned above we believe those networks hosting major content may seek to force other networks to pay higher charges to interconnect/peer, or even refuse connection/peering. Colt's experience in Europe is that fixed network incumbents are most likely to apply such practices.

Access to scarce resources

Access to scarce resources such as space in exchanges can become a form of discrimination where the incumbent already has the advantage of having their equipment located and in place, thus preferring their own business.

Colt sees access to key locations and facilities as a growing issue which will continue well into the future for areas such as (i) interconnection to incumbents Next Generation Networks (including access to mobile networks), (ii) FTTH, and (iii) duct and infrastructure sharing.

4. CAN YOU PROVIDE ANY EVIDENCE OF ECONOMIC AND OR CONSUMER VALUE GENERATED BY TRAFFIC MANAGEMENT?

As stated earlier, Colt believes traffic management is vital in managing a network. Real-time applications such as voice can be provided over Internet

connections with a reasonable quality. This enables end users to combine voice and data on a single pipe and therefore saves the expense of separate phone lines.

Some areas of traffic management which are important to a B2B provider such as Colt, and which provide consumer benefit are as follows:

- QoS for voice traffic sent over IP networks to ensure end-to-end delivery. VoIP calls are very low cost for customers
- Distributed Denial of Service (DDoS) attacks are an example of a serious issue that requires network providers to immediately deploy traffic management techniques (diverting or black-holing DDoS traffic). As security threats evolve and develop it is vital that network providers maintain the autonomy to manage traffic and respond effectively to these kinds of threats.
- Internet Watch Foundation filtering is a form of traffic management whereby access to certain domains listed by the IWF are blocked by network operators.
- 999 emergency traffic needs to have a priority route through a network for very obvious reasons

5. CAN YOU PROVIDE ANY EVIDENCE THAT ALLOWING TRAFFIC MANAGEMENT HAS A NEGATIVE IMPACT ON INNOVATION?

Colt is not aware of any evidence of this nature, furthermore the answer to the previous question points to the possibility that the opposite could in fact be the case, that a lack of (or inability to use) traffic management may inhibit innovation in terms of preventing the user from doing more with the internet.

The internet will need to become more sophisticated in order to cope with many different traffic types, so forcing it to treat all traffic the same is likely to inhibit the end user experience which in turn will inhibit the development of the internet itself.

In making policy decisions about traffic management we believe it is important to understand the needs of the different customer market segments first. Without this understanding there is a risk that any policy may fall short and have unintended consequences.

Colt believes there is likely to be more harm caused by competitors suffering constrained access to space and infrastructure on the incumbents network, and high costs of interconnection and internet peering.

6. 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?

Consumer Information

Providing greater transparency in traffic management would require an unrealistic level of consumer understanding of the context in which such measures occur and the issues they are supposed to address. There is a danger that consumers would develop an unbalanced view of network provider activity in this area based on what would be only partial information concerning traffic management.

However, Colt does advocate providing information that is meaningful to consumers such as what the contention ratio is and what this means for the customer, also what services, if any, the ISP blocks. Our advice would be to ensure that any requirement is kept simple and is relatively low cost for operators to introduce.

Business Customers

Colt urges Ofcom to distinguish clearly between consumer and business markets with regard to traffic management. Given the sophistication of business customers we would like Ofcom to avoid imposing consumer protection measures in the business marketplace.

As a B2B provider Colt has sometimes been 'caught' by regulation which is intended for consumers, is not relevant to the customers in our marketplace and which places additional cost and resource burdens upon us. We note that Colt and other operators have previously been caught by consumer regulation intended to aid consumers which has been costly in terms of time and data analysis, but with the end result that the information was not used and the scheme ultimately ceased by Ofcom.

7. ARE YOU AWARE OF ANY EVIDENCE THAT SHEDS LIGHT ON PEOPLES' ABILITY TO UNDERSTAND AND ACT UPON INFORMATION THEY ARE GIVEN REGARDING TRAFFIC MANAGEMENT?

Working upon the assumption that the typical consumer is not an industry insider and therefore does not have a detailed understanding of peering relationships and traffic flows, it is difficult to see how they could derive a reasonable understanding of the true implications of any given traffic management activity on the part of any given provider. Promoting a greater understanding of how the Internet works in general amongst the population can only be a good thing, however highlighting the specific actions of network providers will not necessarily achieve this goal. We believe this will cause confusion.

We found the Ofcom proposals interesting but examples 2, 3 and 4 (page 42–43) all imply a high cost of delivery whether that be by funding an independent body or providing real-time information.

Colt is also anxious to ensure that following the cessation of the Topcomm scheme (which was not widely used by consumers) Ofcom does not introduce

similar schemes which have a high cost of implementation and which are not used by customers. In our opinion examples 2, 3 and 4 all have the potential to become costly, unwieldy and of little interest to consumers.

8. 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?

Any attempt to provide consumers with information on traffic management should ideally focus on specific restrictions on their own access. We believe this is only necessary in the consumer marketplace and not in the business marketplace that Colt serves given that our users are technically astute and well understand the issues.

In the consumer marketplace we believe clear and concise marketing is the best route for consumers to enable them to make decisions.

9. HOW CAN COMPLIANCE WITH TRANSPARENCY OBLIGATIONS BEST BE VERIFIED?

Naturally this depends very much upon what exactly those obligations are. If they are focused upon the network core then it could be very difficult to track without adding a problematic level of bureaucracy to the day-to-day business of managing a network. Traffic management techniques and policies change on a regular basis and documenting these changes in a transparent fashion will not be easy.

Listing the policies in place on a network that MAY affect a residential consumers experience would require a large amount of adoption of technical detail into digestible consumer-based language. This could raise many more questions than it answers and for this reason we believe any such approach should be kept extremely simple.

As already stated Colt would like to see Ofcom exempt large business network providers from any such obligations given the sophistication of the users we deal with.

10. UNDER WHAT CIRCUMSTANCES DO YOU THINK THE IMPOSITION OF A MINIMUM QUALITY OF SERVICE WOULD BE APPROPRIATE AND WHY?

We do not feel that the imposition of a blanket traffic policy on all providers would be either workable, or beneficial to the consumer. Colt's reasons for this are outlined in the answers to the previous questions. We would also strongly suggest that no such policy be implemented for the business marketplace.