

Digicel

Digicel's Response to the Recommendation of the Eastern Caribbean Telecommunications Authority ("ECTEL") To the National Telecommunications Regulatory Commission to consult on Internet Neutrality Consultation Document 01 /N0.

28 October 2013



The comments as provided herein are not exhaustive and Digicel's decision not to respond to any particular issue(s) raised in the consultation or any particular issue(s) raised by any party relating to the subject matter generally does not necessarily represent agreement, in whole or in part with the Authority or any party on those issues; nor does any position taken by Digicel in this document represent a waiver or concession of any sort of Digicel's rights in any way. Digicel expressly reserves all its rights in this matter generally.

We thank you for inviting Digicel to provide its comments on this consultation and of course are available for any questions you may have.

Please do not hesitate to refer any questions or remarks that may arise as a result of these comments by Digicel to:

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Introduction

The Internet, and the delivery of services and content over it using Internet Protocol (IP), has been a fantastically successful and unregulated phenomenon. Reasonable traffic management practices, in particular over wireless networks, are a very important part of that success. Traffic management via Deep Packet Inspection (DPI) enables best value for money service delivery for consumers and ensures that the interests of the many are not prejudiced by the actions of a few. As a result of DPI all customers benefit from lower priced, higher quality services. DPI therefore directly contributes to, and is vital for, consumer enfranchisement, access to the Information Society and meeting Universal Service objectives. An extremely high burden of proof of harm would have to be met before contemplating limiting, through regulation, the liberalized environment in which IP services and content and the Internet have developed. However there is no proof of any harm, only of very significant benefits.

ECTEL's consultation appears to be predicated on the assumption that services and content delivered using Internet Protocol will continue to be packaged to customers under the name "Internet" or "Internet Access" in the future. While this basic "vanilla" way of packaging may remain one option, the large diversity of packages may in future relate to specific services and content. This level of choice is all to the good and provides customers with what they want whilst at the same time enabling providers to operate their networks efficiently, and therefore at lowest cost, which in turn helps to keep prices to consumers down. We assume that there would be no objection by ECTEL to customer choice and to upfront agreement by customers to packages that provided specific services and content using IP?

With respect to IP services and content delivered to customers under generic titles such as "Internet Access" we have explained below why and what traffic management practices Digicel considers are reasonable and in the best interests of consumers and industry. It is inappropriate to use the term "throttling" in the context of traffic management approaches which benefit the vast majority. The term is clearly pejorative and can incorrectly frame traffic management and DPI approaches in a bad light. DPI technology is an important part of the 3GPP standards and is necessary to manage traffic over wireless networks in particular where capacity and costs become much more of an issue than delivery over fibre.

We are also concerned that ECTEL has framed some questions in a leading way which prompts respondents to give a certain response viz: *"indicate whether you consider DPI an interference with your right to privacy"*. A polling firm would confirm to the Authority that this will bias respondents to say "yes" and that the responses to this question are therefore difficult to rely on to provide meaningful answers for public policy purposes.



We focus below mainly on the approach to packages which have generic labels such as “Internet” or “Internet Access”. Nonetheless, since we are not sure that ECTEL intends to let customers sign up to packages that enable them to access specific services and content only, we provide justification why ECTEL should not prevent the development of such diverse offerings.



The Fundamental Questions to Ask

It is naturally very important to establish clearly what are the objectives before contemplating regulatory intervention with respect to the heretofore entirely regulation free manner in which the Internet has developed with tremendous success and changed the World for the better. We note in this context that despite the consultation title, ECTEL does not seem to have proposed its own definition for the term “Internet Neutrality” or for that matter “Network Neutrality”. This casts doubt in our minds on ECTEL’s ultimate objectives.

In our view the fundamental questions we need to address before looking any further are the following:

1. How do we ensure customers get the services and content they want?
2. How do customers get best value for money?
3. How do we keep competition healthy?
4. How do we meet customer requirements for privacy?

The first thing to note before looking at these questions individually is that the term “Internet Neutrality” has emerged in the context of the past environment in which IP services and content have been delivered to customers. This has been in the form of packages that are marketed to consumers as generic “Internet Access” type offerings. The very concept of a service called merely “Internet Access” may in future be seen merely as the initial basic way in which IP delivered services and content were consumed.

Any regulation based on a service called “Internet Access” requires looking at only one of the universe of potential ways of utilizing and consuming IP services and content. While providers may still provide a vanilla service called “Internet Access” as one option for customers in the future, the vast majority of offerings to customers may be specific to particular services and content. We underline that customers would explicitly sign up in advance to get access to specific services and content. For instance, Caribbean providers could offer a package called “Caribbean News” which would offer access to Caribbean on-line news sources and services. Giving customers this kind of choice would also for example enable them to choose to prevent, at the network level, access to some of the more insidious content that can be found on the World Wide Web.

Any form of regulation that constrained a provider to provide only one generic “Internet Access” unmanaged package for access to IP services and content may keep prices higher than would otherwise have been possible. That is because a generic product will have to handle the usual very intensive load that is placed on it by a small proportion of subscribers. As a rough guide 5% of users may consume 50% of the available network bandwidth unless traffic is



managed. The intensive and unmanaged use by the small minority either degrades the experience of the majority, or drives up prices unfairly for the majority. A one type only access product only would not be in consumers' interests and would be akin to the lack of choice consumers might face in a monopoly environment.

As indicated in the introduction, we do not think that it is ECTEL's intent to force providers to provide only generic "Internet Access" services or to prevent providers from supplying packages of particular services and content. Nonetheless we believe it is useful to consider the consequences of such a step as it throws light on the issues. A person using a Torrent Service for example could potentially download hundreds of files at the same time on a 24/7 basis. Even if a relatively small number of people acted in like fashion that would drive up average usage significantly including at peak network usage times. Peak usage determines the cost of dimensioning the network. Higher average use also raises running costs. Suppose that without the small percentage of customers who use torrent services intensively in this manner average usage was 2 Mbps, whereas with torrent usage by this group the average usage went up to 4 Mbps. That would mean that the entire network would have to be dimensioned to twice the capacity just to accommodate a very small percentage of the customer base. This directly impacts costs and therefore prices for subscribers. This may keep prices out of the reach of many people and in general keep prices higher for everyone. It would effectively therefore disenfranchise people from the Information Society and undermine Universal Service objectives. Alternatively, if providers adopted a laissez-faire attitude and did not build more capacity in order to avoid an increase in prices, services for all users would be degraded heavily as a result of the actions of a small percentage of subscribers.

Why Data Caps Are Not A Solution By Themselves

In terms of a consumer centric approach data caps, which are used by Digicel, are not by themselves a best solution to manage data networks for two main reasons.

Firstly, the small percentage of very heavy users engaging in downloading of data using for example, torrent software, will place a very large and potentially very degrading load on the network at peak times if the traffic is not managed. Thus peak data volumes would be driven up significantly. It is the level of usage at peak times and which can drive usage to capacity ceilings that causes the major issue and which raises costs for everyone. All customers would have to pay significantly more to ensure that a few customers were able eg to download 20 films consecutively. This is a particular issue over wireless networks. Data caps do not limit usage



around the times of day which stretch network capacities to the limit, therefore they are not by themselves a satisfactory solution.

Another major reason that limiting people's usage using a data cap is not by itself particularly desirable is that it may be meaningless to talk to people in terms of Gigabytes or at best be extremely difficult to convey a helpful message using such terminology. It is not practical for customers to visualize whether or not and when they will reach a data cap which then results in their service being cut. Digicel sends warnings to the phones of mobile customers about data usage but any such message depends on the customer seeing them, and we cannot get messages to users of WiMax and fixed line services in a way that is likely easily to capture people's attention. Consequently, access can be cut off at highly inconvenient times where data caps are used and this may be very irksome and even economically costly to subscribers, depending on what a customer is trying to do at the time of the data cut off.

We turn now to the questions we set out above.

1/ How do we ensure customers get the services and content they want?

We must enable the full and natural development of IP service and content offerings and the richness of the future universe they promise. Providers should be able to offer innovative specific services and content packages. They should also be able to provide a basic or "vanilla" package or packages which gives access to all IP services and content within reason, and which is fairly managed on a transparent basis. The Regulator would have the ability to consult on and modify the management approach for generic access packages if necessary.

In the case of generic packages we envisage that providers would be able to regulate transparently how much bandwidth a particular application or group of applications were using. In that way a small group of users with massive torrent usage would not be able to degrade the experience and drive up the costs of all other users. This will mean regulating the speeds of some applications for some users at particular times in conjunction with fair usage policies. This is not discriminatory. We would be ensuring that available bandwidth was shared more equitably among subscribers. The method of traffic management would be published and therefore be fully transparent. What would be discriminatory in our view would be a situation where traffic was not managed resulting in a few subscribers soaking up the available capacity at the cost of the majority in terms of degraded services or higher prices.

Two vital assurances are provided to customers where they can buy packages which are priced by timeframe (which approach is used over fixed networks and may be used in combination



with data caps over wireless networks) and subjected to reasonable traffic management practices (which requires DPI). They cannot obtain the second of these assurances using data caps alone. The two assurances are:

1/ firstly that their expenditure is capped (not by way of a data cap but by knowing in advance that they can never be charged more than a certain amount for a 24 hour, week or month long period). Thus customers know that will never receive an unexpectedly high bill. This reduces nervousness with respect to using the service and encourages people to take full advantage of what can be offered over the Internet;

2/ secondly that they will never be cut off from internet access during the time frame they have purchased the access. It is vital that a meaningful and memorable way of remembering how the package works is conveyed to customers – access for 24 hours or a week is comprehensible and meaningful. The meaning of a cut off after eg 9 Gigabytes of usage is much more difficult to communicate.

Any cut off could be highly inconvenient and impact the personal and or business lives of consumers. A customer who is cut off may have no option but to wait and then go and physically pay for more access during normal working hours. That is time consuming and difficult. If cut off were to occur out of regular working hours it could result in denial of access for a customer for up to two days. Many of our customers pay for access on a pre-paid only basis for example and may not have ready access to credit cards so on-line payment is not an option.

We think it is inevitable therefore that a data cap only approach would reduce total usage of IP services and content, drive up costs and prices or lead to degraded services for the majority. Consumers would in consequence forgo a significant level of benefits and suffer harm thereby.

The better option for consumers and economically in terms of the manner in which generic Internet Access products are provided is to enable providers to regulate usage of them transparently. Regulators always have backstop powers where necessary.

2/ How do customers get best value for money?

In order to keep costs and therefore prices for consumers down providers configure their networks for what they believe should be a reasonable average level of usage by customers. Thus for example, for a hypothetical network, every customer might be given a service with a maximum theoretic speed of 12 Mbps. If the technology allows for a maximum theoretic download speed of 12 Mbps, the provider will aim to dimension the network to meet the usage



levels of the large majority in order to keep costs and prices for everyone down. In this instance the provider might for example assume that the network should be configured to assume 1 Mbps download on average at all times for all customers. If the provider was forced to provide a network that could handle 12Mbps download for all customers continuously that would drive up the costs of the network and prices tremendously. The consequent increase in prices would leave many people unable to afford Internet Access packages from the provider. It is in the interests of the vast majority that a few users should not be able to drive up the costs of everyone significantly in this manner.

Put another way, if providers are able to manage data flows within reason it will cost less to provide the data as it will be possible to distribute the demand within existing network capacity constraints. Again, capacity issues are particularly important with respect to wireless networks. DPI managed data will therefore be cheaper than unmanaged data. This must also be explained to stakeholders in order to receive a balanced and meaningful response to the appropriateness of the use of DPI.

Thus, in combination with the need for a comprehensible message for consumers, DPI approaches are necessary and desirable in terms of efficient network delivery, lower costs and keener prices for customers. DPI will therefore lead directly to the enfranchisement of more persons by increasing access to the Information Society.

3/ How Do We Keep Competition Healthy?

We believe that the main fears driving the not always clear concept of internet neutrality are that providers might deny access to particular services and content over their networks and thereby carry out a form of censorship. The other fear is that they could start levying higher prices for IP services and content that compete with a provider's own services and content. These situations can be avoided without any need for regulatory limitations in the form of imposed one type only generic Internet Access offerings.

There is no indication that the market will not continue to provide a generic Internet Access product which would provide across the board access to IP delivered services and content subject to reasonable and transparent traffic management practices. Regulatory backstop powers exist if necessary to ensure that traffic management approaches are reasonable. Nor is there any evidence that we are aware of that providers in the Caribbean have blocked access to particular services and content to which subscribers wish to have access. There is therefore no justification for heavy handed intervention to address a problem that does not exist.



We note also the following statements from the Body of European Regulators for Electronic Communications (BEREC) made following several years of investigation in to this area¹:

“Traffic management practices do not intrinsically undermine healthy competition or cause a reduction in consumer welfare. They can be used for legitimate reasons (e.g. in order to guarantee network integrity or to improve efficiency in resource allocation and to permit specialised services when required).”

and

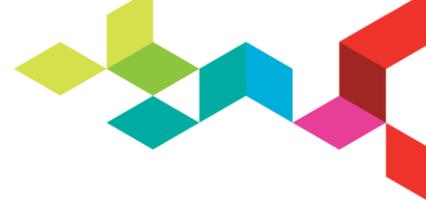
“...BEREC also draws the high-level conclusion that it would neither be appropriate nor relevant within the current regulatory framework to define a priori reasonable and unreasonable traffic management practices (e.g. through whitelists or blacklists). It calls for a case-by-case analysis instead, taking into account not only the practice itself but also the behaviour of parties and market characteristics.”

4/ How do we meet customer requirements for privacy?

Where customers have explicitly agreed to the provision of specific IP services and content upfront then there should not be a privacy issue. At most, where particular content is stipulated by a customer via the contract, DPI would only be used to identify the source of the content being delivered. That is no different from a physical mail courier service which has to know where the physical package is coming from in order to pick it up and deliver it to its end destination. Physical mail deliverers are relied on and permitted to do this. Moreover, in the on-line world, unlike for physical mail, information can easily be encrypted. In contrast anyone can open an envelope.

We are concerned that ECTEL has framed its question about DPI and Privacy in a way that prompts respondents to object to the use of DPI viz: *“indicate whether you consider DPI an interference with your right to privacy”*. This will bias more respondents to say “yes” as a polling company or expert would verify. The pejorative manner in which traffic management has been described as “throttling” instead of using neutral terminology will also bias the responses. The answers to the privacy question cannot therefore reasonably be relied on for public policy decision making purposes. Use of the term throttling within the document will also bias responses generally against DPI. Therefore the results of the consultation in general are going to be somewhat difficult to rely on.

¹ Summary of BEREC positions on Net Neutrality



In order to provide a set of responses that can be relied on the Authority would have had first of all to have provided a more detailed and in our view more balanced view of the context. Firstly, it would be necessary to explain that generally only information identifying the type of data would be checked by DPI. Further, it would have to be explained that even when a customer has explicitly upfront requested that he receives only specific services and content, the only additional check would be the source of the data and not the content of the data. For example if a customer signed up to a package specifying YouTube access then the only information that would be verified was that the data came from YouTube. Secondly, the question itself would have to be framed along the lines of: “Do you believe that the use of DPI is: a/ necessary, or b/ not necessary.” A further question could ask respondents to indicate their reasons for answering a/ or b/.

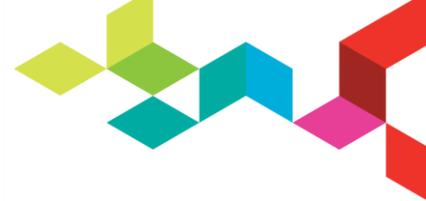
We answer ECTEL’s specific questions for providers below

In responding to ECTEL’s recommendations also indicate whether your company:

(1) Currently utilizes or plans to utilize Deep Packet Inspection (DPI) or similar technologies on your networks and if so please explain in detail your reasons for the use of DPI or similar technologies

DPI is used to provide reports on bandwidth usage, the amount of data passing through a particular radio access network eg 4G v 2G, or particular points in the network such as GPRS nodes. It is also used to shape Peer to Peer (P2P) Traffic.

Some applications (including P2P Applications) can be used so intensively by a small percentage of customers at peak times (eg by enabling large numbers of files to be downloaded consecutively) that they would if not managed either heavily degrade services for all users, or force the network to be dimensioned for significantly more capacity. In this context it should be noted that a rough guide is that 5% of very heavy users may use 50% of the available bandwidth. This challenge is particularly acute over wireless networks. If the network has to be dimensioned for significantly more capacity that will result in higher prices for the vast majority of customers than would otherwise be necessary. Simply increasing average usage will drive up running costs and prices in addition. Thereby very heavy and unregulated usage by a few could deny a proportion of consumers to IP services and content and consequently deny them access to the Information Society and undermine Universal Service objectives. The alternative to traffic



management would be a laissez faire policy that allowed a few users to heavily degrade or render unbearably slow the services of the majority of other users.

Simple data caps do not get around the problems resulting from intensive use of some services by a small minority as they do not control data usage at peak times or throughput at all. It is peak usage that drives network dimensioning costs. Higher average usage also forces up running costs. Further, data caps are not a particularly comprehensible or customer friendly way to control data usage, although Digicel does make use of data caps as well.

DPI will also be required to deliver specific packages of services and content to consumers to which they would contract up front. Therefore DPI is necessary to enable choice and deepen competition and so that customers are not restricted to vanilla only generic Internet Access packages. Vanilla flavor is excellent for those customers who want it, but everyone should not be forced to consume the same thing.

The best form of “cap” is an expenditure cap by means of a time limited package. This may be used in combination with data caps and throughput regulation as appropriate. Time limited offerings have the great advantage of being very comprehensible to consumers. They also ensure that expenditure is fixed, and, with the help of reasonable DPI traffic management approaches, ensures that the available network capacity is shared equitably among customers. DPI will therefore maximize consumer benefits.

(2) Currently employs traffic management techniques other than DPI and if so please outline the traffic management techniques used.

Digicel uses data caps in addition to DPI. We also may provide bundles of data, after usage of which, and without any kind of discrimination between services, data speeds are regulated so as to ensure bandwidth is being allocated fairly among subscribers. There may be overage payments due after the bundle has been used. Individual markets are free to use any combination they wish to best manage their networks.

DPI may also be used for detecting malware and viruses although currently Digicel does not use it for this purpose. But we think this should certainly remain an option for the future as consumers may demand that such protection is provided.



(3) Would support the introduction of regulations by Parliament to control the use of DPI and similar technologies.

DPI is a legitimate and necessary to provide the services that customers want, and at a price they can afford. Further DPI is built in to the 3GPP standards in recognition that is necessary for proper wireless network management.

If the use of DPI were prevented it would result in a combination of lower quality, more highly priced, generic internet service type only offerings. Large consumer benefits would be denied in terms of the otherwise much greater choice in offerings that could be made to customers in terms of tailored packages of IP services and content, and what otherwise would have been much keener prices from more efficiently managed networks.

A key problem that has to be overcome at the moment, although many others may arise in the future, to which DPI is the key solution, is the intensive use by a small proportion of users who may for example be at any one time downloading multiple, potentially hundreds, of large files. Without DPI that will result in a need to dimension networks to cater just for that small minority at the expense of the vast majority of customers. Higher prices will prevent customers from joining the network and therefore disenfranchise customers and conflict with Universal Service objectives of ubiquitous Broadband Access. Data caps are not a solution by themselves as they do not regulate usage at peak times or prevent usage hitting capacity thresholds which is the determinant of service degradation or raising costs and therefore prices.

Operators are already under a legal obligation to respect the privacy of customer data therefore further regulations are unnecessary. Customers can and should be allowed to choose explicitly to receive only specific services and data and the source of data (and not the content) has to be checked for that purpose using DPI. Explicit customer consent addresses privacy issues.

The better approach is to insist on transparency with respect to DPI practices. Digicel would of course work constructively with ECTEL and national regulators in this respect and do everything it can reasonably to address concerns that may arise. The alternative of preventing the use of DPI will undoubtedly be very harmful for Broadband Development.