From:	Philip Riley
To:	BOCrfc2015
Subject:	Broadband Opportunity Council
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Attachments:	Philip-Riley_Datagrammatics-Inc_To-BOC.pdf

PDF Attached.

Philip J. Riley
phil@datagrammatics.com
Datagrammatics Inc.
Billerica, MA 01821

Philip J. Riley
Datagrammatics Inc.
[redacted]
Billerica, MA 01821
June 9, 2015

Broadband Opportunity Council,
NTIA, U.S. Department of Commerce
1401 Constitution Avenue NW, Room 4626
Washington, DC 20230

RE: Request for Comment

Dear Broadband Opportunity Council,

I am writing in response to the Broadband Opportunity Council's Request for Comment printed in Volume 80, Number 82 of the Federal Register on April 29, 2015.

I will address questions 3, 4, and 27.

Question 3: *What Federal regulations and/or statutes could be modernized or adapted to promote broadband deployment and adoption?*

Response to Question 3: I see the need for 3 essential steps:

- Rescind the FCC's Open Internet order.
- Introduce modern and relevant telecommunications legislation creating a "unified communications service" classification.
- Classify Internet access as a "unified communications service".
- Implement the Universal Service Fund.

The FCC's Open Internet order creates outright bans on useful technology, principally prioritization and resource reservation. Banning the use of such mechanisms, at a time when Internet support for real-time services couldn't be more ready to blossom, is a huge misstep in telecommunications policy. The Open Internet rules effectively remove the ability for broadband service providers to develop and offer service-level agreements that

could guarantee end-to-end performance for customers. They also particularly disadvantage residential and small business, while exempting enterprise.

Introduction of modern and relevant telecommunications legislation is the answer. The problem is that when considering the classifications of "telecommunications service" and "information service", neither reflect the reality of today's Internet. Today's Internet is a "unified communications service" of multiple products with differing requirements. I recommend creating a new, fresh, clean classification which accurately describes today's Internet while leaving room to grow. That classification is a "unified communications service". Such a service should recognize the reality of real-time Internet service requirements, and have no outright bans on particular technology.

Then, classification of mass-market broadband as a "unified communications service" should take place.

Finally, implementation of the Universal Service Fund on such a service would be beneficial to expand the reach and value of the network. In addition to associating myself with the goals of bringing beneficial service to unconnected people, I also firmly agree with theories stating that additional nodes on a network increase overall network value.

Question 4: *As the federal government transitions to delivering more services online, what should government do to provide information and training to those who have not adopted broadband? What should the federal government do to make reasonable accommodations to those without access to broadband?*

Response to Question 4: This is a difficult issue. 4 things should be done:

- Support public Internet access and computer training programs for disadvantaged individuals.
- Explore option of zero-rating data to-and-from online government services.
- Maintain traditional paper filing and correspondence options for now.
- Commission a comprehensive study on the very complicated issue of replacing a government-run correspondence network (The Post Office), with Internet access for essential services.

Within my particular experience, I have seen many homeless and variously disabled persons who have joined state-funded programs that train them in basic computer use, and access public computer labs in hospitals, at social programs, as well as at the local library. They sign up for government programs such as SSI and disability, search for many things such as shelters and housing, and many other essential activities. These programs need to be supported. Also, when a person is homeless, they may not have a physical address to receive correspondence, while email and text messaging services can continue a line of communication. I am strongly in favor of cellular phone and data subsidies/assistance for these individuals.

In the case of any metered-data access (like many wireless or satellite plans), the government should explore the feasibility of zero-rating all access to online government services. This way, no citizen will be charged for access to online government services, and will not have dis-incentive to adopt broadband access for online government information.

Maintaining traditional government postal-based services is still important, and should not be abandoned yet. Please see next paragraph.

What is immediately needed is large-scale and detailed study of the many issues involved in requiring citizen-to-government correspondence and filings to become Internet-only. This essentially is replacing the federal government-run post office with a disparate group of commercial, non-profit/cooperative, and state/regional/local government networks. Also, storage of such correspondence may in fact be physically located in data centers in other regions or countries. This is a complex issue which requires scrutiny of many facets such as privacy, jurisdiction, cost, etc. A full study is needed.

Question 27: *What information about existing broadband services should the Executive Branch collect to inform decisions about broadband investment, deployment, and adoption?*

Response to Question 27: I recommend 3 actions:

- Identify the goal.
- Rescind the FCC's Open Internet rules on network performance metrics reporting.
- Focus information collection efforts on carrier trouble-ticket reports.

The ultimate goal, as I believe it to be, is to ensure customers are receiving the quality service that they are paying for. I believe current efforts are well-intentioned, but heading in the wrong direction.

The FCC's Open Internet rules are beginning down a path of requiring carrier reporting of network metric measurements. I complete disagree with any such approach for many reasons, detailed below.

Network metrics are technology dependent. Every network technology is not created equally, and will have different metrics of measurement. Packets or frames? Buffers? Queues? Packet size? Fragmentation? Collisions? Retransmit countdown? The list is endless. Also, future network technologies may not even use similar terminology, or processes. Unless you want to write a different set of rules for every possible network technology and configuration, this effort will prove futile. The current rules must be rescinded and the FCC's trajectory must be changed.

Different services have different network demands. Some services require low latency from the network. Some require low-jitter. Others require low datagram loss. In other words, metrics are relevant to the service's needs. Trying to fit all services into one universal metrics box is to fundamentally misunderstand the varied needs of current and future services.

Carriers will require equipment vendors to focus on "passing the metrics test" as opposed to other technological developments. Much has been said of schools "teaching to the test" and leaving out critical thinking and problem-solving. And similarly, standardization and publication of network metrics will cause equipment manufacturers to be pressured into designing equipment to simply have "good numbers" at the expense of other options and functionality.

Customers will be confused. Mass-market broadband customers are not network engineers. Giving them a myriad of new metrics to consider is not helpful, it will confuse them. What amount of packet loss is "good"? How little jitter do they "need"? Also, many consumers do not understand that the Internet is a network of networks, and will always blame the carrier they pay the bill to, regardless of the true source of the reported metric's displeasing number.

What needs to be done, is to stop dabbling in technological metrics, and focus on customer trouble ticket reports. Total number of complaints, geographic regions, complaint categories, what problems the carrier technicians find, time to repair, and how the troubles are finally resolved are extremely relevant elements of information. I

strongly suggest a move from requiring technical metrics to exploring customer complaint metrics. Let the equipment manufacturers focus on what they do best, and judge the carrier by customer experience. As a last note, quite importantly, customer complaint metrics are also not directly connected to underlying network technology.

In Summary, I believe the FCC's Open Internet rules to be a well-intentioned mistake. What is needed is a new and modern legislative classification such as a "Unified Communications Service" that encompasses the current and future state of the Internet. The universal service fund should be implemented. Zero-rating of online government services should be pursued. A study should be started to investigate issues related to online-only government information and replacement of the Post Office for communication. Non-adopters of broadband need support for access options. Lastly, the government focus on technical network metrics should be shifted to customer complaint metrics.

Thank you for this opportunity to share my views.

Sincerely,

Philip J. Riley
Datagrammatics Inc.