Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matters of:	)	
	)	
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act	)	GN Docket No. 09-137

COMMENTS OF QWEST COMMUNICATIONS INTERNATIONAL INC.
-- NBP PUBLIC NOTICE # 21

I. INTRODUCTION

Qwest Communications International Inc. (Qwest) submits these comments in accord with the Federal Communications Commission's (Commission) *Public Notice* in the above-referenced dockets.[1] We address a single issue raised in the *Public Notice* -- cloud computing as a "model for technology provisioning" with regard to "the portability of data." From a technical perspective, cloud computing -- like the Internet at one time before it -- is in a nascent stage. Regulations that prematurely influence technology or that pre-judge policy issues should be avoided. Now is the time for fact gathering and robust discussion and debate; now is not the time for prescriptive regulations.

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[1] *Public Notice*, GN Docket Nos. 09-47, 09-51, and 09-137 "Comment Sought on Data Portability and Its Relationship to Broadband," NBP Public Notice # 21, DA 09-2433, rel. Nov. 18, 2009.

As noted below, multiple agencies are grappling with the issue of cloud computing and its potential implications for various public policy initiatives. At the same time, other agencies are leading standards development work on the very technical definition of what cloud computing is. Given the variety of interests and perspectives regarding cloud computing, it is best to focus separately on the technology functions from associated policy issues. It may be that one federal agency is best positioned to set the direction regarding the technology and operational details of cloud computing, while another is better situated to address particular policy matters affected by that technology. Accordingly, for the time being, the Commission should limit its participation in cloud computing initiatives to one of gathering information and consulting with other agencies and standards bodies with the objective of determining the best allocation of issues/resolutions. This avenue is likely to be the most efficient and effective for both government and industry.

II. CLOUD COMPUTING IS AN EMERGING TECHNOLOGY, REQUIRING TIME AND FLEXIBILITY TO ADDRESS IT PRUDENTLY

A. Definitions of Cloud Computing.

The *Public Notice* provides a limited definition of cloud computing from the National Institute of Standards and Technology (NIST), an agency under the Department of Commerce.[2] A review of the NIST website confirms the quotation, but the NIST definition is longer than that cited in the *Public Notice*. Beyond the short, declarative description of cloud computing quoted in the *Public Notice*,[3] the NIST's fuller definition suggests more complexity: "[The] cloud

[2] The definition quoted can be found on the NIST website, although the Public Notice # 21, note 8, references comments of the Center for Democracy and Technology as the source of the quotation.

[3] Other simple descriptions can be found at various sources, such as those of the Federal Trade Commission (FTC) in its comments to the Commission in *In the Matter of A National Broadband Plan for Our Future*, GN Docket No. 09-51, filed Sept. 4, 2009, at 15 (defining cloud

model promotes availability and is composed of five essential **characteristics**, three **service models**, and **four deployment models**."[4] According to NIST, each of these bolded items involves sub-considerations. It goes on to clarify that "[c]loud computing is still an evolving paradigm. Its definitions, use cases [sic], underlying technologies, issues, risks, and benefits will be refined in a spirited debate by the public and private sectors. These definitions, attributes, and characteristics will evolve and change over time."[5]

The fact is that, at this time, there is no total agreement on the meaning of cloud computing across technologies, providers and applications. Much work is going on in standards bodies to address and resolve these matters. Regulators also are in a learning mode, not only about the technology but its operational and policy challenges, as well. It is obvious that the public interest will be affected by these challenges. For example, while the Commission raises the issue in the current *Public Notice* with respect to the "portability of data,"[6] the FTC recently

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computing "broadly as the provision of Internet-based computer services . . . [that] allow businesses and consumers to use software and hardware located on remote computer networks operated by third parties." *And see* the FTC's Health Breach Notification Rule, Part II, 74 Fed. Reg. 42962, 42970 n.85 (Aug. 25, 2009) ("Cloud computing is the provision of Internet-based computer services . . . [that] provide[] businesses and consumers with access to software, data storage, and infrastructure services that are hosted remotely.")

[4] This definition can be found at http://csrc.nist.gov/groups/SNS/cloud-computing under the referenced document "NIST Definition of Cloud Computing v15" (bold in the original) (initial page of two-page document that is unnumbered). Last checked Dec. 9, 2009.

[5] *Id.*; this quoted text appears in note 1.

[6] This phrase is not defined in the *Public Notice*. According to external sources, including Wikipedia and the website of the Data Portability Project, "[d]ata portability is the ability for people to reuse their data across interoperable applications -- the ability of people to be able to control their identity, media and other forms of personal data." http://en.wikipedia.org/wiki/DataPortability (last checked Dec. 9, 2009). According to the DataPortability Project, "[w]ith data portability, [a user] can bring [her] identity, friends, conversations, files and histories with [her], without having to manually add them to each new service. Each of the services [she uses] can draw on this information relevant to the context. As [her] experiences accumulate and [she] add[s] or change[s] data, this information will update on other sites and services if [she] permit[s] it, without having to revisit others to re-enter it."

considered cloud computing in the context of health records and their privacy and security.[7] This is testament to the fact that the definition (and technology) of cloud computing is one matter; its application to issues important to policy makers is a separate (but related) matter.

B. The Necessary Involvement of Subject Matter Experts and Standards Bodies.

As important as getting the definition of cloud computing right is getting the technical facts and associated methods and practices agreed to by subject matter and policy experts. A number of organizations are working on developing best practices and standards for cloud computing.[8] The work will translate into network and system protocols, message and data formatting, and new security mechanisms.

At this time, Qwest supports the standards emerging from the Open Grid Forum (OGF), the Internet Engineering Task Force (IETF), the Distributed Management Task Force (DMTF), Cloud Computing Interoperability Forum (CCIF), and the Cloud Security Alliance (CSA). These organizations are at the forefront in the development of ongoing Internet standards generally and cloud computing in particular. For example, DTMF developed Open Virtualization Format (OVF) specification, an open source software project. Similarly the IETF

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http://wiki.dataportability.org/pages/viewpage.action;jsessionid=6A5ABC96F62038CBE348E657CADA3339?pageId=3440714 (last checked Dec. 9, 2009).

[7] *See id.*, note 3, *supra*, 74 Fed. Reg. at 42970 (addressing the fact that a service provider offering cloud computing services might not be aware that it possesses personal health records; as a consequence the FTC required those sending such health records to service providers to identify the records as such).

[8] Among these organizations are: Open Grid Forum (OGF); Internet Engineering Task Force (IETF); Distributed Management Task Force (DMTF); Cloud Computing Interoperability Forum (CCIF); Cloud Security Alliance (CSA); Institute of Electrical and Electronic Engineers (IEEE); Internet Society (ISOC); ITU-T; Liberty Alliance (LA); Metro Ethernet Forum (MEF); Network Centric Operations Industry Forum (NCOIF); Organization for the Advancement of Structured Information Standards (OASIS); Open Cloud Consortium (OCC); Open Cloud Manifesto (OCM); Object Management Group (OMG); Storage Networking Industry Association (SNAI); Telecommunication Management Forum (TMF); Information Technology Infrastructure Library (ITIL).

developed virtualization standards, such as Multiprotocol Label Switching (MPLS) Virtual Private Networks (VPN). Qwest continues to evaluate other standards bodies and consortiums as their influence on cloud computing specifically is still under development.

The Commission understands the importance of standards development.[9] So too does it appreciate that the establishment, sufficiency, and evolution of standards requires more investigation and substantive inquiry than can be accomplished through the type of *Public Notice* under consideration here.[10] Qwest encourages the Commission to establish such broader inquiry.

C. Multiple Proceedings and Involvement of Federal Agencies.

The cloud computing issues raised by the *Public Notice* are similar to those that generated comments in response to the *NOI*,[11] at least in part. While these earlier-filed

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[9] *See Notice of Inquiry, In the Matter of Fostering Innovation and Investment in the Wireless Communications Market: A National Broadband Plan For Our Future*, 24 FCC Rcd 11322, 11342 ¶ 60 (2009) (*NOI*) ("We note that the Commission has long supported flexibility in the standards-setting process, and we do not anticipate altering this overall approach.").

[10] *Compare* the *NOI* referenced above in note 9 and the text associated with technical standards, including those associated with cloud computing: "We also seek comment on how standards can affect the innovation processes. We note that the Commission has long supported flexibility in the standards-setting process, and we do not anticipate altering this overall approach. We are particularly interested in how multiple standards and platforms may affect innovation. For example, do the existence of multiple standards and platforms create additional challenges for introducing new devices? Can the marketplace efficiently resolve issues related to the incompatibility of various standards? Should the Commission play a role in developing, promoting, or seeking to find consensus about standards? We recognize that specific standards do not drive the development of many applications, but that the applications designers instead rely on software application development environments that have simply gained popularity and acceptance in the general marketplace. The open nature of the Internet has fostered the creation and widespread availability of many applications and services under this model. As other approaches, such as cloud computing, evolve, will established standards or *de facto* standards become more important to the applications development process? For example, can a dominant cloud computing position raise the same competitive issues that are now being discussed in the context of network neutrality? Will it be necessary to modify the existing balance between regulatory and market forces to promote further innovation in the development and deployment of new applications and services?" (Footnotes omitted.)

[11] *NOI*, 24 FCC Rcd 11342 ¶ 60.

comments were part of the larger discussion of "what is broadband" and "what kind of government intervention should there be in it," the fact is that the issue has surfaced before.[12] The subject is also a matter of inquiry in the proceeding dealing with wireless communications innovation and investment.[13] And arguably, the topic is also implicated by the *Net Neutrality NPRM*.[14]

Notwithstanding these other proceedings, this *Public Notice* inquires about a wide range of cloud computing issues ranging from its technology, to the use of the technology to improve government operations, to the ability of industry self-regulation to protect consumers from potential harms that cloud computing might create. Associated with the concept of self-regulation is the issue of what impact cloud computing might have on privacy. Accordingly, the Commission asks "[w]hat specific privacy concerns are there with user data and cloud

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[12] For example, AT&T argued that there was (a) a need for more narrow and disciplined analysis with respect to the kind of broadband services and features a regulatory agency is addressing, noting that cloud computing was but one particular type; (b) a need for security in cloud computing applications; and (c) that "considerable work" was already being done by the FTC in the area of online privacy generally. AT&T at 13-14, 57 and note 155 (referencing a Wall Street Journal article and a commentary by Electronic Privacy Information Center (EPIC)). Center for Democracy & Technology (CDT) addressed cloud computing in the context of the Electronic Communications Privacy Act (ECPA), arguing that the Act was insufficient as currently written to provide robust privacy protection for such services. CDT at 17. And Microsoft pointed out that cloud computing is not a national but an international phenomena, presenting global challenges. Microsoft Corporation at 4.

[13] *See NOI*, 24 FCC Rcd at 11342 ¶ 60 ("As other approaches, such as cloud computing, evolve, will established standards or *de facto* standards become more important to the applications development process? For example, can a dominant cloud computing position raise the same competitive issues that are now being discussed in the context of network neutrality?"). (Footnote omitted.)

[14] *In the Matter of Preserving the Open Internet; Broadband Industry Practices*, Notice of Proposed Rulemaking, FCC 09-93, GN Docket No. 09-191 and WC Docket No. 07-52, rel. Oct. 22, 2009.

computing?" and "[w]hat precautions should government agencies take to prevent disclosure of personal information when providing data?"[15]

The very privacy issues the *Public Notice* asks about are being addressed by the FTC. Not only has that commission already tackled this issue in the context of a specific rule,[16] but it has hosted discussions on the topic of cloud computing in the context of privacy and security in March 2009; and it expects to take up the topic again in January 2010, at its second Privacy Workshop in Berkeley, CA. While the FTC acknowledges a shared jurisdiction with the Commission on broadband matters,[17] there is no doubt that it sees itself in a leadership role in the policy area of cloud computing as it might implicate privacy and data security.[18]

And other expert federal agencies are seriously involved in the issue of cloud computing. As noted above, the Department of Commerce -- through NIST -- is in the throes of developing technology and standards associated with cloud computing. Those standards will undoubtedly address privacy and security matters, since both are part of the expertise that informs information technology and security.

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[15] NBP Public Notice # 21 ¶ 2.

[16] *See* notes 4 and 5, *supra*.

[17] Comments of the Federal Trade Commission, GN Docket No. 09-51, filed Sept. 4, 2009 at 1.

[18] *See id.* at 16 and note 48 ("Cloud computing is an emerging business model, and the FTC is analyzing the privacy and data security implications for consumers," and referencing a complaint that EPIC filed at the FTC against Google's cloud-computing practices. *And see* similar remarks before Congress, "Prepared Statement of the Federal Trade Commission, 'Legislative Hearing on HR 2221, the Data Accountability and Protection Act, and HR 1319, the Informed P2P User Act,'" Before the Committee on Energy and Commerce, Subcommittee on Commerce, Trade, and Consumer Protection, United States House of Representatives, Washington, DC, May 5, 2009. *And* "Promoting Consumer Privacy: Accountability and Transparency in the Modern World," from Prepared Remarks of David C. Vladeck, Director, FTC Bureau of Consumer Protection, New York University, October 2, 1009 at 6 ("And as responsibility for data protection becomes more diffuse -- as in the case of cloud computing, where invisible service providers may remotely process and store data -- who is responsible for safeguarding it?")

It is clear that the technology of cloud computing can implicate a variety of public policy and regulatory issues. Still on particular issues, it would be helpful for one federal regulatory body to be "appointed" (by the others) as having the leadership role in tackling the matter. On any particular issue, this primary agency would differ. For example, on the matter of cloud computing standards, the Department of Commerce should take the lead. On the issues of cloud computing as it impacts privacy and data security, the FTC should take the lead.

This kind of intra-agency cooperation would advance both policy and marketplace objectives in defining the broadband plan for the future. It would also reduce the burden on regulators and industry members alike by identifying a primary agency with a particular subject, regardless of the regulated/unregulated nature of the service providers or network infrastructure operators. This would enable government and businesses to focus their limited resources on interacting with a lead agency on any given topic and would result in better discussion/debate within the scope of the "appointed" agency. It would have the added benefit of better analyzing the operational and policy impacts on competition across what might appear to be seemingly-similar entities operating under disparate regulatory regimes.

Respectfully submitted,

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December 9, 2009

CERTIFICATE OF SERVICE

I, Richard Grozier, do hereby certify that I have caused the foregoing **COMMENTS OF QWEST COMMUNICATIONS INTERNATIONAL INC. -- NBP PUBLIC NOTICE # 21** to be: 1) filed with the FCC via its Electronic Comment Filing System in GN Docket Nos. 09-47, 09-51 and 09-137; and 2) served via e-mail on the FCC's duplicating contractor, Best Copy and Printing, Inc. at fcc@bcpiweb.com.

/s/Richard Grozier

December 9, 2009