

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of:

The Proposed Extension of Part 4 of the
Commission's Rules Regarding Outage
Reporting to Interconnected Voice Over
Internet Protocol Service Providers and
Broadband Internet Service Providers

PS Docket No. 11-82

Comments of XO Communications, LLC

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SUMMARY

Because of the pace at which the technical and commercial standards for Internet Protocol (“IP”)-based networks and services are evolving, the proposed expansion of the Part 4 reporting requirements to cover broadband backbone service providers likely would not provide the Federal Communications Commission (“FCC” or “Commission”) with significant useful information about industry network performance. The burdens on service providers associated with the additional reporting would be more extensive than the Commission has estimated, and the proposed requirements could interfere with the evolution of the technologies used to provide the services. Further, the industry is already coordinating both among itself and with the government to protect the integrity and robustness of the network. Both backbone IP networks and the market for those backbone services are robust, and even the complete failure of one provider’s network can be compensated for almost immediately by rerouting the traffic to the remaining network providers. Nothing in the record before the Commission suggests that there is a need for, or meaningful benefit from, extending these requirements to backbone providers. Accordingly, the burdens associated with the proposed additional reporting requirements would exceed the potential benefits.

In any event, the Commission lacks the authority to extend the reporting requirements beyond providers of interconnected VoIP services, which are already required to offer 9-1-1 services. In the Notice of Proposed Rulemaking, the Commission attempts to use its authority over 9-1-1 services to justify its assertion of jurisdiction over all Internet Service Providers. However, this assertion of jurisdiction is inconsistent with Supreme Court and recent D.C. Circuit decisions, and must be rejected as overreaching. Therefore, XO respectfully submits that the Part 4 reporting requirements should not be expanded at this time.

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Comments of XO Communications, LLC

XO Communications, LLC, ("XO") by its attorneys, hereby submits these comments in the above-captioned proceeding in response to the Notice of Proposed Rulemaking ("NPRM") issued on May 13, 2011 by the Federal Communications Commission ("FCC" or "Commission").¹ XO respectfully submits that expansion of the Commission's Part 4 outage reporting rules is not necessary or advisable at this time.

Due to the pace at which the technical and commercial standards for Internet Protocol ("IP")-based networks and services are evolving, the proposed expansion of the Part 4 reporting requirements likely would not provide the Commission with significant useful information about "industry network performance."² The burdens associated with the additional reporting requirements would be more extensive than the Commission has estimated,³ and the proposed requirements could inadvertently interfere with the evolution of the technologies used

¹ See *The Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, PS Docket No. 11-82, NPRM, FCC 11-74 (rel. May 13, 2011) (NPRM).

² NPRM ¶ 8.

³ NPRM ¶ 21 (noting that reporting requirements are "significantly less intrusive than those associated with direct operational mandates" and that "such burdens can be mitigated through online, automated reporting mechanisms").

to provide the services.⁴ Accordingly, the burdens and harms associated with the proposed additional reporting requirements likely would exceed the potential benefits. In any event, the Commission lacks the authority to extend the reporting requirements beyond providers of interconnected Voice over Internet Protocol (“VoIP”) services, which are already required to offer 9-1-1 services. Therefore, XO respectfully submits that the Part 4 reporting requirements should not be expanded at this time

I. THE COMMISSION SHOULD NOT EXPAND ITS PART 4 RULES TO COVER BROADBAND BACKBONE NETWORKS

A. The Record Does Not Support the Expansion of the FCC’s Part 4 Rules to Broadband Backbone Networks.

The record in this proceeding does not justify the extension of the legacy reporting requirements designed for circuit-switched networks to broadband backbone networks as the Commission now proposes. Specifically, nothing in the record reflects any systematic outage problems that could more easily be addressed with additional data generated by the proposed outage reporting requirements. Similarly, the anecdotal evidence cited in the NPRM does not suggest any recurring problems or provide evidence that outage reporting would help providers reduce broadband service outages.⁵

The existing Part 4 rules reflect monopoly-era expectations that carriers lack sufficient incentives to ensure the reliability of their network. XO respectfully disagrees with the Commission’s suggestion that operators of broadband networks lack sufficient economic

⁴ Service providers are working with vendors and each other to hone technical requirements and the means for measuring service quality across networks used to provide wholesale and retail IP-based services. If regulations require operators of broadband networks to monitor specific metrics at specific points in the network for the purpose of generating outage reports, network operators may not be as willing to innovate and thus better means for ensuring service quality may develop more slowly.

⁵ NPRM ¶ 3 (noting unrelated outages by CenturyLink, which was caused by bringing a redundant connection online, AT&T, which was caused by a server crash, and Comcast, where the cause was not identified in the NPRM or the press).

justification to minimize outages and do not consider network externalities.⁶ In reality, operators of broadband IP-based networks and providers of IP-based services are the offspring of an unregulated and competitive marketplace in which customers have a wide range of choices of service providers. In this marketplace, the reliability of the networks is an important competitive differentiator among different service providers, including VoIP providers and broadband Internet access service providers (“IASPs”). Competitors that fail to provide consistently reliable service will quickly lose customers and market share. Accordingly, additional reporting requirements are not needed to change incentives, because the marketplace already creates far greater incentives to prevent outages than the proposed regulations.

IP-based networks are also fundamentally different than traditional networks in ways that materially impact the potential usefulness of outage reporting and the ability of broadband network operators to detect and report outages. IP-based networks are designed from the beginning to permit network operators and service providers to minimize the impact of disruptions and ensure that failures affect the fewest users possible. When faced with physical damage or network overload, providers typically can route traffic around the problem areas through a variety of means, including through the use of dynamic routing (both within backbones and between different backbone networks), backup and redundant equipment, and multiple access points to reach fiber and other facilities. Accordingly, failure of any specific facility within an IP-based broadband network typically does not correlate to end user impact the way a failure in a circuit-switched network can. Therefore, the data gathered from the proposed outage reporting requirements likely could not be relied upon to draw accurate and complete conclusions about end user impact.

⁶ NPRM ¶ 20.

The record similarly lacks any credible evidence that end users would benefit from the proposed extension of the outage reporting requirements. In the NPRM, the Commission asserts that the proposed changes would allow the Commission “to track and analyze information on outages affecting broadband networks” so as to “identify recurring problems, determine whether action can be taken . . . and ensure to the extent possible that broadband networks are prepared for natural and man-made disasters.”⁷ As discussed above, however, even recurring problems in IP-based networks may not materially impact the ability of end users to reach emergency services, and operators of IP-based networks and providers of IP-based services already have far greater market-based incentives to eliminate outages than the proposed reporting requirements would provide. The NPRM suggests that requiring providers to make informational filings is a useful end unto itself, but the monitoring, compiling and reporting of data also requires providers to incur significant costs that ultimately harm consumers. For example, AT&T has estimated that it spends a minimum of 12 hours per outage to comply with existing regulations,⁸ which is consistent with XO’s own experiences. Here, the complexities of IP-based networks will make the reporting requirements even more onerous, and the costs of additional reporting requirements would far outweigh the potential benefits.

The steps that the industry is already taking to gain the intended benefits of the proposed additional reporting requirements provide further confirmation that the existing rules do not need to be changed. Indeed, there is ongoing, industry-wide cooperation to address the issues identified in the NPRM, and the FCC is regularly kept informed of the efforts. For example, the FCC works closely with the Communications Security, Reliability, and Interoperability Council (“CSRIC”), an advisory council with many industry members which

⁷ NPRM ¶ 11.

⁸ AT&T Comments, ET Docket No. 04-35 at 4 (filed Aug. 2, 2010).

exists “to provide recommendations to the FCC to ensure, among other things, optimal security and reliability of communications systems, including telecommunications, media, and public safety.”⁹ Similarly, the Alliance for Telecommunications Industry Solutions (“ATIS”) develops industry standards and best practices for the telecommunications and information services industries, and regularly shares this information with industry members. Another important venue where such coordination and information sharing takes place is the National Security Telecommunications Advisory Committee (“NSTAC”).¹⁰ For over 25 years, the NSTAC has brought together up to 30 industry chief executives from major telecommunications companies, network service providers, information technology, finance, and aerospace companies to consider, evaluate, and share information on the U.S. telecommunications network. These efforts demonstrate that operators of IP-based broadband networks and providers of IP-based services already have sufficient incentives and means to cooperate to eliminate outages without additional reporting requirements.

B. Broadband Backbone Service Providers Should Not Be Subject To The Same Reporting Requirements as Last-Mile Providers.

Broadband backbone providers should not be subject to the same types of reporting requirements as last-mile service providers. As an initial matter, the long haul services provided by broadband backbone providers are not subject to disruption in the same manner as the last-mile services provided by IASPs and traditional local exchange carriers. When there is a fiber cut or a disruption in the last mile of service, end users may lose service or suffer severe degradation of that service. In contrast, the market for, and network providing, backbone services

⁹ <http://transition.fcc.gov/pshs/advisory/csric/>.

¹⁰ See, NSTAC website, (<http://www.ncs.gov/nstac/nstac.html>) (visited August 2, 2011). See also the Communications, Security, Reliability, and Interoperability Council (CSIRC), which was created to provide recommendations to the Commission to ensure “optimal security and reliability of communications systems.”

is robust, and even the complete failure of one provider's network can be compensated for almost immediately by rerouting the traffic to the remaining network providers. Indeed, this is one of the core strengths of the Internet. As such, an "outage" in backbone services from the perspective of an end user is unlikely to ever occur, as the end user's traffic will simply be rerouted.

Further, unlike for IASPs and traditional local exchange carriers, to the extent an outage does occur, it will be impossible for a backbone provider to meaningfully calculate the number of end users affected, both because it is unlikely that any end users will actually be affected and because any outages are likely to be caused by facilities that are generally open to all traffic, making the number of potentially affected end users as large as the number of Internet users. In addition, outages at one backbone provider's facilities that do not result in a catastrophic failure of the broadband backbone provider's entire system may only lead to that broadband backbone provider suffering a temporary reduction in its theoretical capacity, without a single packet ever affected by the outage. To the extent that this occurs, there is no useful purpose to reporting these outages to the FCC. Similarly, and as discussed above, even if a backbone provider does suffer a catastrophic failure of its network, other broadband backbone providers are likely to be able to handle the traffic without the loss of a significant number of packets, making both the number of end users affected and the amount of capacity lost essentially academic. As such, the data would not need to be reported to the Commission.

II. THE FCC LACKS THE AUTHORITY TO MANDATE OUTAGE REPORTING FOR ENTITIES THAT ARE NOT PROVIDING TELECOMMUNICATIONS OR INTERCONNECTED VOIP SERVICES

A. The Commission Lacks Jurisdiction to Impose Outage Reporting Requirements on all Broadband Service Providers.

The Commission’s assertion in the NPRM that it has legal authority under the Communications Act to promulgate reporting rules for the entire broadband industry by virtue of its authority to implement 9-1-1 service regulations governing providers of interconnected VoIP services is based on a misreading of *Comcast v. FCC*.¹¹ Specifically, the Commission claims that the imposition of “network outage reporting proposals for broadband Internet service providers are reasonably ancillary to ensuring that interconnected VoIP providers are able to satisfy their 9-1-1 duties under the Act” because “if a broadband network fails, interconnected VoIP traffic – including calls to 9-1-1 – cannot travel over that network.”¹² However, this level of attenuation does not comport with the D.C. Circuit’s decision in *Comcast*.

In *Comcast*, the D.C. Circuit made clear that it is incumbent upon the Commission to identify a clear statutory basis for any proposed regulation of an information service prior to promulgating that regulation.¹³ Once the Commission has identified that statutory basis, the Commission must determine whether the proposed regulation of the information services “would be ‘reasonably ancillary to the Commission’s effective performance of its statutorily mandated responsibilities.’”¹⁴ In the NPRM, the sole source of statutory authority identified by the Commission in the Act to justify the proposed reporting requirements is Section 615a-1, which charges the Commission with ensuring that interconnected VoIP providers satisfy

¹¹ NPRM ¶¶ 67-69 (citing *Comcast v. FCC*, 600 F.3d 642 (D.C. Cir. 2010)).

¹² NPRM ¶ 69.

¹³ *Comcast*, 600 F.3d at 648.

¹⁴ *Id.* (citing *Am. Library Ass’n v. FCC* 406 F.3d 689, 692 (D.C. Cir 2005)).

their 9-1-1-obligations.¹⁵ The FCC’s attempted reliance on this limited authority to adopt rules implementing the 9-1-1 mandate for interconnected VoIP providers to justify its assertion of jurisdiction over all backbone providers and IASPs is like the tail wagging the dog.

To justify this leap from a specific obligation to a sweeping assertion of jurisdiction over the entire Internet, the Commission notes simply that interconnected VoIP services can run over any IP network connected to the Internet.¹⁶ In so doing, the Commission ignores several crucial facts:

- interconnected VoIP services make up only a small portion of all Internet traffic,¹⁷
- interconnected VoIP providers are only a fraction of the total number of backbone providers and IASPs over which the Commission proposes to exercise jurisdiction; and, perhaps most importantly,
- the failure of any piece of equipment or service in an IP-based network does not necessarily prevent end users from using the network to place a 9-1-1 call.

Accordingly, the relationship between the Commission’s articulated goal and the proposed action is extremely tenuous, at best.

Further, the Commission’s reasoning would provide virtually unfettered authority to regulate almost any Internet practice. Indeed, taken to its logical conclusion, the authority to ensure interconnected VoIP providers offer access to 9-1-1 services could provide the Commission with authority to regulate any practice on the Internet that conceivably affects VoIP services, including traffic shaping, network neutrality practices, and file sharing, all of which could conceivably affect the availability of the network to handle 9-1-1 calls. This reasoning is

¹⁵ 47 U.S.C. § 615a-1.

¹⁶ NPRM ¶ 69.

¹⁷ Sandvine Intelligent Broadband Networks, *Global Internet Phenomena Report – Spring 2011*, Peak Period Aggregate Traffic Composition (North America, Fixed Access), at 5 fig. 1 (Spring 2011) (showing that “real-time communications” took up less than 2.9% of peak period aggregate traffic on the Internet).

equivalent to suggesting that the fact that VoIP providers also rely upon electricity to power their servers provides the FCC with jurisdiction over all electric companies. Simply put, the logical leap from jurisdiction over 9-1-1 services to jurisdiction over the entire Internet is simply too large to be sustained under the current legal framework governing the FCC's regulation of IP-based networks. The Commission likewise cannot claim that its general authority over "communication by wire and radio" provides it with sufficient authority, because all information services are provided using wire or wireless services.¹⁸ Such a generalized grant of authority without more is insufficient to justify the imposition of regulations on non-common carriers, as the court in *Comcast* emphasized.¹⁹ Therefore, the justifications for the proposed action that the Commission set forth in the NPRM cannot survive scrutiny under the standards established by the United States Court of Appeals for the District of Columbia in *Comcast*.

B. Any Extension of the Reporting Requirements Must Be Narrowly Tailored To Reflect the Bounds of the Commission's Authority.

Although additional reporting requirements are unnecessary at this time, XO agrees that the Commission has sufficient ancillary jurisdiction to require providers of interconnected VoIP services to report outages of their mandatory 9-1-1 services.²⁰ However, the Commission would have to limit the scope of the additional reporting requirements to providers of interconnected VoIP services as currently defined in the FCC's rules since the agency's ancillary jurisdiction does not support extension of the reporting requirements beyond providers of telecommunications and interconnected VoIP services. For the same reason, the reporting

¹⁸ NPRM ¶¶ 68, 69 (citing 47 U.S.C. § 152).

¹⁹ *Comcast*, 600 F.3d at 654-55.

²⁰ NPRM ¶ 68 ("We believe that the Commission has authority to ensure ... that interconnected VoIP providers fulfill their duty to provide 9-1-1 services...").

triggers for interconnected VoIP services would have to be narrowly tailored so that the reporting obligation was triggered only for failures that actually prevent end users from calling 9-1-1.

III. THE COMMISSION SHOULD LIMIT THE COMPLIANCE BURDEN ASSOCIATED WITH ANY REPORTING OBLIGATION IT ADOPTS

A. The Commission Should Continue To Define “Outages” In Terms of End Users Affected.

Since its creation, one of the major advantages of the Internet has been its robust nature. Network problems, and even the loss of whole portions of the network, do not necessarily result in the failure of the network for end users. For this reason, the Commission should not adopt a new definition of “outage” for IP-based networks and services.²¹ Rather, the current Part 4 definition of “outage” as a “significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communications provider’s network” remains the most workable definition available.²² The Commission should reject calls to use alternative network measures such as latency and jitter to determine whether networks are operational or not. Put simply, there is no single metric that correlates with the inability to place a 9-1-1 call, particularly since IP-based networks and services are evolving so rapidly.²³ While the Commission may include the impact on end users of interconnected VoIP services within its current reporting requirements, there is no reason to

²¹ *Contra* NPRM ¶ 27 (discussing the possibility of using “the loss of general useful connectivity” as a standard for determining outages).

²² 47 C.F.R. § 4.5(a).

²³ For instance, latency, which can be generally described as the amount of time it take for a packet of data to get from one designated point to another, is a measure of network functionality between two specific points. Because the network between two points may not reflect the state of the network as a whole, the latency between two points can be quite large while the network continues to operate efficiently. This is particularly true when the latency is measured across the networks of multiple service providers or over large distances. Indeed, every network operator along the chain may be operating within reasonable parameters, but the cumulative delay resulting from the overall connection may still result in a high latency number.

develop a new definition of “outage” or more granular reporting criteria specifically for interconnected VoIP services.

B. The Commission Should Not Require Providers to Report the Same Outage More Than Once.

As numerous carriers have made clear in other dockets, there are significant costs associated with reporting outages under the FCC’s reporting rules.²⁴ Despite the best efforts of the Commission to minimize the compliance burden here, the burden for broadband providers associated with reporting outages will be greatly increased because the flexibility of the network will make exact determinations regarding which end users were affected, how they were affected, and for how long extremely difficult to determine. Indeed, because IP packets carry various types of information to and from different types of customers, it is difficult for a backbone service provider to ascertain what kinds of packets may have been affected by a failure of a network element that handles various types of traffic. Further, if the reporting requirements are extended such that all providers along a route are subject to the reporting requirement, an outage anywhere along the route could subject all providers to multiple reporting requirements. Specifically, providers would have to determine to what extent (if at all) voice services were impacted by the outage. Second, providers would have to determine to what extent data services were impacted by the outage. These determinations are necessarily different, and each will require significant resources.

One way the Commission could address this problem is to provide a unified reporting system as part of any reporting requirement. Carriers should only be responsible for filing a single report, based on a limited set of metrics that can easily be determined. Attempting

²⁴ See, e.g., AT&T Comments, ET Docket No. 04-35 at 4 (filed Aug. 2, 2010); T-Mobile Reply Comments, ET Docket No. 04-35 at 8 (filed Aug. 16, 2010).

to maintain two or more different reporting systems will only result in confusion for carriers and the Commission alike.

IV. CONCLUSION

For the reasons set forth above, XO urges the Commission to reject the proposals published in the NPRM.

Respectfully submitted,

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