

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 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 VONAGE HOLDINGS CORP.

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August 8, 2011

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COMMENTS OF VONAGE HOLDINGS CORPORATION

I. Introduction and Summary

Vonage Holdings Corporation (“Vonage”) recognizes and supports the Commission’s commitment to the reliability and resiliency of our national communications infrastructure.¹ The Commission’s proposed extension of outage reporting rules to providers like Vonage will not further these goals. Instead, the rules as currently proposed would require Vonage to report many conditions that cause no noticeable service degradation, much less a loss of communications capability. This is because Vonage has successfully designed its service to deliver high-quality and reliable communications even when faced with high levels of jitter, latency, and packet loss. Requiring “outage” reporting when customers do not experience outages will not further the Commission’s goals. To the contrary, it will consume scarce

¹ *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*, Notice of Proposed Rulemaking, 26 FCC Rcd. 7166 (2011) (“*NPRM*”).

Commission resources, impose unnecessary costs on providers, and sow customer confusion that may harm providers in the marketplace.

The Commission should first consider whether an extension of its outage reporting requirements to interconnected VoIP providers is warranted. Providers like Vonage already face market-based incentives to provide reliable and quality service. These incentives have led Vonage to design a service that can deliver reliable communications in the most challenging network conditions. Adding reporting requirements will not increase those incentives.

If the Commission nonetheless decides to impose outage reporting requirements on interconnected VoIP providers, they must be tailored to require reporting only where users experience a loss of communications. The Commission should therefore define an outage as the loss of a user's ability to make or receive a call. The Commission should not adopt quality of service (QoS) proxies for outages – like the proposed jitter, latency and packet loss standards – as these proxies would not accurately capture outages. Instead, the Commission should simply require providers to report outages experienced by their users. This approach would avoid inaccurate and overinclusive outage reporting by providers like Vonage that can tolerate high levels of jitter, latency, and packet loss as well as ensure that providers less able to tolerate these conditions are nonetheless held to the same standards. It would also avoid the ongoing need to revise standards as providers continue to improve performance.

Finally, the Commission should not require interconnected VoIP providers to report on outages occurring on other providers' networks. Vonage's service rides over the top of the public Internet and its end-users' broadband connections. Vonage, and providers like it, have no visibility into other providers' networks; even if they did, requiring reporting by both the

underlying and over-the-top service providers would result in burdensome and duplicative reporting.

II. Outage Reporting Requirements for Over-the-Top Interconnected VoIP Providers Are Unnecessary.

Outage reporting requirements are unnecessary for over-the-top interconnected VoIP service. The rationales that justified imposing outage reporting on wireline telephone service providers simply do not make sense in the context of over-the-top interconnected VoIP services. Vonage is already highly incentivized to actively prevent outages. Imposing outage reporting requirements will not change that.

A. Vonage Has Strong Market-Based Incentives To Prevent Outages.

Though outage reporting may make sense in the context of traditional wireline service, it is unnecessary for services like interconnected VoIP, where market forces provide particular accountability. Interconnected VoIP, unlike traditional wireline and wireless service, is a competitive service, with low barriers to entry and a high level of innovation.² This vibrant and competitive free market for IP-based voice service means that providers like Vonage face the risk of lost customers whenever their services cease to be reliable.

Vonage's experience bears this out. Vonage no longer requires annual service contracts, meaning that its customers can cancel service at any time, with no penalty,³ making the risk of customer churn a very real one. And interconnected VoIP customers can, and do, switch providers readily. They are well-informed and provide feedback directly to other customers, on message boards and via other online forums and will readily warn potential customers of reliability problems. If interconnected VoIP providers like Vonage do not provide a quality

² Cf. 47 U.S.C. § 230(b)(2).

³ See Vonage Support, *Does Vonage Have an Annual Contract or Money Back Guarantee?*, https://support.vonage.com/app/answers/detail/a_id/983/~/-does-vonage-have-an-annual-contract-or-money-back-guarantee%3F.

service that is reliable, customers will simply cancel their service and find a new provider.

Given the constant threat of losing customers, Vonage has every incentive to actively prevent outages on its network.

Customer churn also carries the risk of fallout in the financial markets, a critical concern for publicly traded companies like Vonage. Not only does Vonage have no desire to lose customers, it also is acutely aware of the effect customer churn will have on its stock prices.⁴ In short, outage reporting will not provide Vonage with any additional motivation to ensure that its service is reliable – Vonage is already doing so and will continue to do so.

B. Vonage Has Designed Its Service To Work When Other Services Can Or Will Not.

Vonage's service is also already more reliable in many ways than traditional telephone service. Vonage provides clear, reliable calling over the public Internet. But because Vonage must rely on facilities controlled by others to provide its service, it has had to design its service to work even when other services might suffer an outage. That makes Vonage's service much less vulnerable to physical outages than most traditional wireline services. For instance, unlike traditional DID services that depend on the continued function of a fixed central office switching node, Vonage's service will work wherever that customer has access to broadband and does not depend on the continued function of a dedicated physical node.

Moreover, Vonage has designed its own network components with sufficient redundancy that an outage that is due to failure of Vonage-controlled network components is extremely unlikely. In order for Vonage-controlled network components to cause an outage, Vonage would

⁴ Cf. Josh Long, *Vonage Cuts Churn, Increases Subscriber Numbers*, Vision2Mobile, Feb. 16, 2011, <http://www.vision2mobile.com/news/2011/02/vonage-cuts-churn-increases-subscriber-numbers.aspx> (reporting low customer churn along with increased revenues for Vonage, and an accompanying rise in share prices).

have to suffer a simultaneous failure of all of its Sip proxies, which are located at four disparate sites.

Because of Vonage's built-in adaptability and redundancy, it can provide service when other providers cannot. Indeed, after Hurricane Katrina, city leaders relied virtually entirely on VoIP services for five days after the failure of basic landline phone service.⁵ Vonage was able to deliver service when many wireline and wireless services were completely inaccessible.

Because of the inherent flexibility of interconnected VoIP, it is much less likely to suffer outages. Imposing reporting requirements on providers like Vonage will do very little to further the Commission's stated goal in improving communications resiliency and emergency readiness. Indeed, imposing reporting requirements is likely to have a detrimental effect, as interconnected VoIP providers will be compelled to divert resources away from preventing outages and toward providing outage reports to the Commission.

III. The Commission Should Not Impose Quality of Service Reporting As A Proxy for Reporting of True Outages on VoIP Providers' Own Networks.

The *NPRM* does not actually propose outage reporting for interconnected VoIP. Instead, it uses QoS thresholds as a proxy for outage conditions, recommending that providers submit reports whenever they experience certain amounts of latency, packet loss, and jitter. While there may be, in some instances, overlap between QoS problems and true service outages, the thresholds proposed in the *NPRM* ensure that interconnected VoIP providers like Vonage will be

⁵ See Christopher Rhoads, *Cut Off: At Center Of Crisis, City Officials Faced Struggle To Keep In Touch*, Wall Street Journal, Sept. 9, 2005, at A1 (describing how New Orleans city leaders relied virtually entirely on VoIP services for five days after the failure of basic landline phone service, and mobile and satellite phones, which eventually lost battery power and could not be recharged), David F. Carr, *New Orleans: Picking Up the IT Pieces*, Baseline, Mar. 6, 2006, <http://www.baselinemag.com/c/a/Projects-Processes/New-Orleans-Picking-Up-the-IT-Pieces/> (describing the New Orleans government's use of Vonage VoIP to restore telephone service in the aftermath of Hurricane Katrina); see also Reply Comments of The Voice On the Net Coalition, Exhibit A, *VoIP: Proving To Be Effective In Katrina Emergency*, WC Docket No. 04-36, WC Docket No. 05-196 (filed Sept. 12, 2005).

required to report on conditions that do *not* affect users' ability to make and receive calls. Indeed, the proposed thresholds are well within the normal operating parameters for Vonage's service and have no discernible impact on calling. The Commission's goals and the record do not support such burdensome requirements.

If the Commission imposes outage reporting on interconnected VoIP providers, it should require only reporting of actual loss of communications due to a failure on the provider's own network. Such a tailored approach would avoid the heavy burden represented by QoS reporting while also conserving scarce resources.

A. The Proposed Reporting Requirements Would Capture Non-Outage Conditions on the Vonage Network.

The Commission proposes to require outage reporting when an interconnected VoIP provider experiences "packet loss of one percent or more, round-trip latency of 100 ms or more, or jitter of 4 ms or more from the source to the destination host."⁶ Vonage, however, has designed its network to accommodate packet loss, latency, and jitter above each of these thresholds without significant degradation in call quality. The proposed standards for packet loss, latency, and jitter would simply not constitute an outage on Vonage's network.⁷

Reporting requirements triggered at the proposed thresholds would put Vonage in the position of being in a constant "outage" state. Essentially, the outage reporting requirements would penalize Vonage for delivering a reliable and high quality service over the public Internet, and would trigger reporting requirements because of *other providers'* inability to tolerate latency, packet loss, and jitter. Further, even if the thresholds were adjusted upwards to avoid this consequence, it is likely they would quickly be out of date, as Vonage – and other

⁶ *NPRM* at ¶ 42.

⁷ See Declaration of Mike Mayernik at ¶¶ 3-6, attached as Attachment 1.

interconnected VoIP providers and broadband service providers – upgrade their networks and systems to improve service quality and tolerance to packet loss, latency, and jitter.⁸

Even now, any QoS proxy for outages will not result in consistent, accurate or reliable outage reporting, as there are no industry standards for capturing, calculating and reporting these metrics. Without such standards, individual providers’ reported measurements may be inconsistent, inaccurate or unreliable. The Commission should be particularly reluctant to rely on such imperfect proxies for true outages in light of the heavy burden that adopting QoS proxy reporting would place on VoIP providers. The Commission will get better data at a lower cost to industry by simply requiring providers to report outages as experienced by their end users.

B. The Record Does Not Support Quality of Service Reporting Requirements.

The proposed reporting requirements go far beyond the Commission’s stated goals in extending the Part 4 rules to interconnected VoIP and broadband service providers. The outage reporting rules in Part 4 are intended to “address communication system vulnerabilities and help prevent future outages.”⁹ And collecting outage information has allowed the Commission to reduce lost 911 calls.¹⁰ Those results are commendable. But requesting quality of service information from interconnected VoIP providers will not provide the Commission with worthwhile information about potential loss of emergency calling ability. Instead, it will provide the Commission with a surfeit of information about call quality that is unlikely to indicate if and when interconnected VoIP customers have actually experienced an inability to call 911.

Further, the benefits of *outage* reporting in the wireline and wireless context¹¹ tell us nothing about the benefits of *QoS reporting*. The Commission has never collected QoS

⁸ See *id.* ¶ 7.

⁹ *NPRM* at ¶ 15.

¹⁰ *Id.* ¶ 16.

¹¹ See *id.* ¶ 16-17.

information from providers. Instead, the *NPRM* cites reporting of outages, and only of outages, as providing the factual predicate for its proposed requirements.¹² And in discussing the proposed benefits of extending Part 4 to interconnected VoIP and broadband service providers, the *NPRM* does not discuss call quality at all. It instead notes that extending outage reporting requirements would “allow the Commission...to track and analyze information on *outages* affecting broadband networks.”¹³

Imposing QoS reporting would go far beyond the Commission’s stated goal of extending existing requirements to interconnected VoIP and broadband providers. The existing requirements extend only to service outages.¹⁴ QoS reporting, in contrast, would require providers to report on conditions under which service quality might be slightly degraded but which do not affect a user’s ability to make and receive calls. The record does not support such reporting.

C. The Proposed Requirements Would Impose an Unreasonable and Unnecessary Burden on Providers.

QoS reporting requirements would be inordinately burdensome for interconnected VoIP providers. As noted above, the proposed thresholds capture conditions that can be accommodated by Vonage’s network without discernably affecting its customers’ calls. Because Vonage is an over-the-top provider and does not have control over the broadband service to which its customers subscribe, it has invested heavily in the necessary technology to accommodate latency, packet loss, and jitter. This allows Vonage to provide a clear, reliable service to its customers even when conditions on the broadband networks over which its calls travel may be less than ideal.

¹² *See id.*

¹³ *NPRM* at ¶ 11.

¹⁴ *See, e.g.*, 47 C.F.R. § 4.5(a) (defining outage as “significant degradation in the ability of an end user to establish and maintain a channel of communications...”).

But the proposed thresholds would require Vonage to report on those conditions anyway, conditions that may, in some cases, be persistent. For instance, many of Vonage's customers using satellite broadband will never experience latency of less than 100 ms. Under the proposed rules, Vonage would be required to submit an outage report whenever 900,000 user minutes were affected by that high latency, latency that cannot be overcome and to which those users are accustomed because they use satellite broadband. Reporting the normal, expected conditions as an "outage" would be unhelpful to the Commission and incredibly burdensome to providers. Even more perversely, these requirements could create disincentives to serve satellite broadband customers that may not have any other access to voice services, thereby limiting rather than expanding access to voice communications.

D. Any Reporting Requirement Adopted Must Capture Only True Outages

If the Commission imposes a reporting requirement on interconnected VoIP, it should define an outage to exist only when customers cannot make or receive a phone call. Using QoS thresholds as a proxy for outages will result in vast over-reporting for many providers, as noted above. Instead, the Commission should require interconnected VoIP to submit reports only when its users experience true outages of service. QoS thresholds, if considered at all, should be used only as a safe harbor. Thus, if any QoS thresholds are codified, the rules should also allow providers whose end-users *do not* experience outages at those thresholds to report only when their users do experience outages. Adopting this simple "outage" reporting requirement, rather than attempting to derive a one-size-fits-all proxy, is the only approach that will enable the Commission to accurately capture outages across the ever-changing variety of IP and telecommunications networks.

E. The Commission Should Require Reporting Only of Outages on Facilities the Service Provider Owns or Controls.

Likewise, the Commission should only require outage reporting by providers of outages *on their own networks*. The proposed rule requires reporting when interconnected VoIP providers discover an outage on “any facilities that they own, operate, lease, *or otherwise utilize*.”¹⁵ But this proposal would require providers like Vonage to submit reports when facilities on the public internet experience an outage, or when their customers’ broadband connections are out. Vonage, however, does not have access to outage information on the public internet or on its users’ broadband connections. Nor does Vonage continuously monitor elements such as latency, jitter, and packet loss on its customers’ broadband connections.¹⁶ Finally, Vonage does not have visibility into the details of its carriers’ networks to provide outage information about those networks. Requiring reports on outages to networks and facilities that Vonage does not control will impose an unduly burdensome obligation on over-the-top providers, which often will not even know about such incidents. Even if Vonage was aware of an outage on the public internet or on its customers’ ISPs, the result would again be duplicative reporting, as broadband providers and over-the-top interconnected VoIP providers alike would submit outage reports to the Commission concerning the same incident.

* * *

Outage reporting has served a key role in allowing the Commission to continue to ensure communications resiliency and emergency readiness on wireline and wireless telephone service. But the rationales for imposing outage reporting on legacy circuit-switched communications do not exist for interconnected VoIP, and particularly not for over-the-top interconnected VoIP. IP-

¹⁵ *NPRM* at 4.9(g).

¹⁶ Vonage monitors service quality metrics such as packet loss, latency, and jitter on active calls.

based services like interconnected VoIP already face significant market pressures to maintain reliable and resilient services – services that are, in many cases, already more reliable than traditional circuit-switched voice service. If the Commission imposes any reporting requirement on interconnected VoIP providers, it should do so only for true outages and should not require reporting on outages to other providers’ networks. It should take particular care to avoid using QoS measures that capture normal operating conditions as a proxy for outages.

Respectfully submitted,



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