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January 26, 2015

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Room TW-A325
Washington, D.C. 20554

Re: CC Docket No. 95-116; WC Docket No. 09-109

Dear Ms. Dortch:

On January 22, 2015, Lisa Hook, CEO, Len Kennedy, General Counsel, Scott Deutchman, Deputy General Counsel, all of Neustar, Inc., and I met with FCC Chief of Staff Ruth Milkman and the Chairman's Wireline Legal Adviser Daniel Alvarez to discuss issues related to the 2015 Local Number Portability Administrator ("LNPA") RFP process.

Neustar stated that it currently offers a suite of numbering services that are very complex, going well beyond the important number portability function that was the initial focus of the Telecommunications Act of 1996. Those services enable the routing, rating, billing, and network management of virtually every phone call and text message – 12 billion calls and text messages every day. This is no longer an exception database. Rather, the NPAC ensures the delivery of calls and text messages in the United States. In addition, NPAC services are relied on by more than 2000 service providers, public safety organizations, and law enforcement agencies. Our users agree that these services today run incredibly well.

In light of that, there is no good reason for the FCC to choose to require a transition. No one is claiming that Ericsson is going to provide a better or more capable NPAC than Neustar offers. Yet any potential transition will be costly and could have dire consequences. Porting would be delayed and calls would not complete; identifying the source of malfunctions will be time-consuming and leave customers with impaired service. Law enforcement and public safety organizations could lose an important investigative tool; 911 operations could be affected; disaster recovery could be delayed. The RFP and responses to it were not sufficiently robust to

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address today's cyber security threats.¹ Further, any impairment in the portability process will affect competition for new subscribers. Because retaining Neustar as the LNPA avoids those costs and risks, Neustar, not Ericsson, is offering the lower cost option for the industry and the public.²

Neustar also referenced the attached "Addendum to 'Estimating the Costs Associated with a Change in Local Number Portability Administration,'" prepared by Dr. Hal Singer of Economists Incorporated. In March 2013, Dr. Singer estimated the impact for both carriers and consumers of changing the number portability administrator based on the size of the Number Portability Administration Center (NPAC) telephone number database and the number of NPAC transactions processed during 2011.³ At Neustar's request, Dr. Singer updated his estimates to reflect the significant increases that have occurred in the NPAC database and its level of usage by carriers since 2011. Dr. Singer's revised model predicts that approximately 12 million customers could be adversely affected by the transition, an increase of 68% relative to Dr. Singer's original estimate of slightly over 7 million customers based on 2011 data. Dr. Singer's work is the only attempt to quantify consumer disruption that would result from reasonable predicted degradation in NPAC service – which underscores the inadequacy of the evaluation performed by the NAPM, LLC, and the NANC.

Based on 2011 data, Dr. Singer predicted that there would be a \$719 million increase in operating costs for the carriers in the first year of a transition. Now, based on 2014 data, he predicts a \$1.136 billion increase in operating costs for carriers in the first year, some of which might be passed onto consumers in the form of higher prices. This represents a 58% increase from his earlier estimate.

At a minimum, before the Commission takes an action that puts the nation's telecommunications infrastructure at risk, it should undertake a complete and independent

¹ See Letter of Aaron M. Panner, Counsel to Neustar, to Marlene H. Dortch, FCC, CC Docket No. 96-116, WC Docket 09-109 (filed Jan. 23, 2015).

² Any evaluation of the relative cost of competing proposals requires consideration of all costs; to the extent additional material costs are added after the fact – including to implement necessary security measures – that would invalidate the recommendation. See Letter from Stewart A. Baker & Michael A. Sussman, Counsel to Neustar, to Marlene H. Dortch, FCC, WC Docket No. 09-109, CC Docket No. 95-116 (filed Nov. 6, 2014); Comments of Neustar, Inc., WC Docket No. 09-109, CC Docket 95-116, 84-88 (filed July 25, 2014).

³ Hal Singer, "Estimating the Costs Associated with a Change in Local Number Portability Administration," March 2013, *available at* <http://www.ei.com/downloadables/SingerCarrierTransition.pdf>.

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evaluation of the costs and risks of a potential transition. And the Commission also should insist that there is proper accountability to ensure that the potential risks of transition are mitigated.

Neustar also reviewed some of the key reasons that a decision to select Ericsson on the present record would be unlawful. First, the Commission has an obligation to issue a Notice of Proposed Rulemaking to frame the issues implicated by a potential selection decision and provide interested parties a fair opportunity to comment. Second, the NANC-led process violated the Federal Advisory Committee Act, including obligations related to transparency and public access. These violations preclude the Commission's reliance on the NANC recommendation. Third, Ericsson is not neutral under the Commission's rules and precedents because it is aligned with the wireless industry and especially the largest carriers.

Pursuant to Section 1.1206 of the Commission's rules, 47 C.F.R. § 1.1206, a copy of this letter is being filed via ECFS. If you have any questions, please do not hesitate to contact me.

Sincerely,

Handwritten signature of Aaron M. Panner in cursive script, followed by a forward slash and the initials 'cmw'.

Aaron M. Panner

cc: Ruth Milkman
Daniel Alvarez

Attachment

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January 26, 2015

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Addendum to
“Estimating the Costs Associated with a Change in Local Number Portability Administration”

In March 2013, I estimated the impact for both carriers and consumers of changing the number-portability administrator based on the size of the Number Portability Administration Center (NPAC) telephone number database and the number of NPAC transactions processed during 2011.¹ Although other studies have sought to estimate transition-related costs to carriers, I am not aware of any other attempt to model the consumer impacts of a number portability change. Due to the length of time that has passed since the analysis was completed, I have been asked by Neustar to revise my estimates to reflect the significant increases that have occurred in the NPAC database and its level of usage by carriers since 2011. By December 2014, the number of relevant NPAC records and transactions increased by 28% and 79%, respectively. The revised model predicts that approximately 12 million customers could be adversely affected by the transition, an increase of 68% relative to my original estimate of slightly over 7 million customers based on 2011 data.

To understand how a change in the database affects my estimate, I briefly review how my model generates customer-impacting errors. The bulk of the transition-related effects in the

1. Hal Singer, “Estimating the Costs Associated with a Change in Local Number Portability Administration,” March 2013, available at <http://www.ei.com/downloadables/SingerCarrierTransition.pdf>.

model are attributable to two factors: (1) the database transition itself, which is vulnerable to misinterpretation of database fields and structure; and (2) early-stage operations errors, due to inexperience with porting requests, particularly mass updates. My model conservatively assumes low error rates and that all early stage errors are resolved after the first year. Database transition errors were assumed to occur at a rate of 0.25%,² and only 19%³ of those errors were assumed to impact a customer's service. Relative to an existing administrator, early-stage operations errors were assumed to occur at a rate of 0.81%⁴ for transactions in the first year of the transition, and 63%⁵ of those errors were assumed to impact a customer's service.

Relying on the size and characteristics of the 2011 NPAC database, these assumptions led to 7.14 million impacted customers. Most (72%) would experience problems with service features, and many (21%) would not receive phone calls. A smaller portion (7%) would experience difficulties in porting their numbers. These customer harms do not reflect any estimated increase in operating costs for the carriers attributable to the transition, some of which might be passed onto consumers in the form of higher prices.

2. This estimate was based in part on studies for other database migration projects, including by University of Michigan (finding a 99.4% accuracy rate in the migration to Google email and calendar) and Borselaer.org (finding a 99.2% accuracy rate in the migration to a new version of a financial application). It was also vetted with systems experts inside and outside of Neustar, including Gerry Keith, a former operations expert at SBC. For a qualitative description of errors relating to telephony database migrations, see Alcatel-Lucent, *Solving the NGN Data Migration Challenge* (2007), available at www.webtutorials.com/main/resource/papers/lucent/paper82/NGNDataValidation.pdf.

3. Many fields in the NPAC are informational only (e.g., for carrier record keeping), and thus cannot adversely affect customers. Errors made during database migration will likely take more than one year to fully propagate to carriers because the records are not rebroadcast to carriers until a field needs to be changed; errors that are broadcast beyond the first year of the transition are not considered.

4. This estimate was developed in conjunction with systems experts inside of Neustar. It is a combined rate for the 4,000+ mass migration and change projects Neustar performs each year. The error rates vary by transaction type, from a low of 0.25% for SV disconnects to 1.5% for SV billable modifications. Despite the claims of Telcordia's expert to the contrary, I understand that execution of these operations *without error* is operationally infeasible for a new administrator.

5. Relative to the database transition, the percentage of transaction-related errors that impact a customer is much higher because the carriers are attempting to change fields that often affect a customer's routing or other service features; those changes are being immediately propagated to all the carriers. For the non-impacting errors, these changes are for internal carrier use (e.g., for inventory management).

Table 1 summarizes the consumer and carrier impacts using both the 2011 and 2014 NPAC data.

TABLE 1: ESTIMATE OF CONSUMER IMPACT

	2011 NPAC (millions)	2014 NPAC (millions)	Percent Increase
Impacted customers			
- Database transition	1.46	1.86	27%
- Early-stage operations and system unavailability	5.68	10.16	79%
Total	7.14	12.02	68%
Carrier Transition Costs			
- Database transition	\$182.8	\$233.8	28%
- Early-stage operations and system unavailability	\$465.1	\$831.3	79%
- Testing	\$71.0	\$71.0	No change
Total	\$719.0	\$1,136.1	58%

Assuming the *same* error rates as before, and assuming the *same* percentage of those errors adversely affect a customer, the updated model using 2014 data generates 12.02 million impacted customers, which represents a 68% increase relative to my original estimate of 7.14 million. Once again, these customer harms do not reflect any of the (updated) \$1.136 billion increase in operating costs for the carriers, some of which might be passed onto consumers in the form of higher prices.

Finally, my original estimate presumed that the new administrator would implement a copy of Neustar’s code. In the fall of 2014, Telcordia announced that it was committed to using its own version of the code, built entirely from scratch.⁶ Whereas my original paper was concerned with estimating how modest error rates could affect customers and carriers in the face

6. See, e.g. Telcordia Letter to Ms. Marlene Dortch, Oct. 27, 2014, at 4 (“Telcordia has never proposed to reuse code from foreign operations and has always planned to write its code from scratch.”).

of a fairly smooth transition, Telcordia's announcement substantially increases the much more serious risk of partial or complete project failure. The pronounced change in this risk would not only materially raise the expected costs to both customers and carriers, but it would do so in a way that is not easily calculable. Indeed, Telcordia's own expert acknowledged that new code leads to higher risk and error rates.⁷ By not revising my estimate further in light of this new risk factor, my revision should be interpreted as a lower bound on the number of impacted customers based on a more favorable set of initial assumptions.

7. Eric Burger, Issues and Analysis of a Provider Transition/or the NPAC, S2ERC TECHNICAL REPORT (July 22, 2014), at 14 ("In the case of the NPAC, the database schema and data model remains constant. That is, there are no conversion errors because there is no conversion.").