

## APPENDIX B Summary of Past NNP Evaluations

### Competitive Carriers Association (“CCA”)/CTIA Letter to FCC Chairman Wheeler

- On September 25, 2015, CCA and CTIA wrote FCC Chairman Wheeler in response to his request for the wireless industry to identify solutions to address limitations within the existing telephone number porting system that prevents consumers from porting their telephone numbers to wireless providers that do not have a facilities-based presence in the telephone number’s original geographic area.<sup>1</sup> The Wireless Industry acknowledged that, “[a] wireless user may currently have more opportunities than a wireline user when it comes to number porting. But even among wireless competitors, smaller rural and regional carriers are at a disadvantage versus their nationwide competitors. Wireless-to-wireless porting is only possible if the ported-to wireless carrier has a facilities-based presence in the porting customer’s original geographic location, placing smaller, non-nationwide carriers at a disadvantage.”<sup>2</sup>
- The Wireless Industry Letter identified for the FCC Chairman a near-term solution, the need for further evaluation of an interim solution, and long-term solutions associated with the IP Technology transition.<sup>3</sup>
- Regarding a near-term solution, the Wireless Industry Letter highlighted the practical benefits of commercial agreements, wherein a CMRS provider may voluntarily enter contractual agreements with third parties such as local exchange carriers (“LECs”), non-LEC CMRS providers, interconnected VoIP providers, and others that may have access to numbering resources, to offer a wireless provider access to the local area of the telephone number outside of its own network footprint.<sup>4</sup>
- As for further evaluation of an interim solution in which telephone numbers are not confined to a particular rate center or LATA, the Wireless Industry Letter noted that any modifications to the existing telephone number porting system may require changes to federal and state regulation, industry practices and legacy telephone network<sup>5</sup> equipment – not only for CMRS providers but wireline and VoIP providers as well.
- The Wireless Industry Letter noted that as the IP Transition does away with the traditional PSTN, results in significantly fewer points of interconnection, reduces and/or eliminates the LATA and rate center issues, the opportunity to contemporaneously redesign the current LNP architecture materializes.<sup>6</sup>

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<sup>1</sup> See, Letter from Steven K. Berry, President & CEO, Competitive Carrier Association, and Meredith Atwell Baker, President and CEO, CTIA – The Wireless Association, to Tom Wheeler, Chairman, FCC, (Sept. 25, 2015), (“Wireless Industry Letter”), [http://www.nanc-chair.org/docs/mtg\\_docs/Sep\\_15\\_CTIA\\_Letter\\_to\\_FCC\\_092515.pdf](http://www.nanc-chair.org/docs/mtg_docs/Sep_15_CTIA_Letter_to_FCC_092515.pdf).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at 3.

<sup>5</sup> *Id.* at 3-4.

<sup>6</sup> *Id.* at 4.

- Summarily, the Wireless Industry recommended that the Commission seek public comment on the recommendations delivered to the Commission by the NANC and ATIS within one year.
- 2016 National Telephone Cooperative Association (“NTCA”) Letter to North American Numbering Council Chair
  - On March 16, 2016, NTCA sent a letter to the NANC Chair with respect to its concerns regarding NNP and its interest in ensuring that certain items are addressed by the NANC and ATIS.<sup>7</sup>
  - To ensure the transition to an NNP environment is a success for every American, NTCA highlighted a number of routing and networking questions with respect to the implementation of NNP that must be resolved prior to such implementation.<sup>8</sup>
  - As a general matter, NTCA added that any resolution of questions related to NNP implementation must look to the touchstones of public safety, consumer protection, and fundamental fairness in the responsibility for implementation among all affected operators.
  - Per NTCA, the offering of NNP functionality to a consumer by any one carrier must not:
    - lead to confusion for other consumers nor reduce the level of service they expect to receive in terms of the seamless completion of calls or the prices they pay for placement of any given kind of call;
    - impose on other operators any additional, incremental responsibilities or costs (such as routing and transport) associated with such implementation; and
    - the carrier benefitting directly from providing NNP to its customers should then bear the full responsibility for ensuring that functionality does not disrupt the completion of calls or foist costs on other operators.
  - Questions regarding the applicability of tolls, tariffs, and taxes, as well as related matters of costs and cost recovery, must be examined in detail before any action with respect to NNP can be finalized and changes approved by the Commission.
  - NTCA provided several call scenarios for consideration by ATIS, which were included in the ATIS NNP Technical Report.<sup>9</sup>

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<sup>7</sup> Letter from Michael R. Romano and Brian J. Ford to Betty Ann Kane, Chair, NANC, March 16, 2016, <https://www.ntca.org/sites/default/files/legacy/images/stories/Documents/Advocacy/ExParteLetters/03.16.16%20ntca%20letter%20to%20nanc%20re%20nnp.pdf>.

<sup>8</sup> *Id.* at 2.

<sup>9</sup> *See*, ATIS Technical Report, Appendix A.

- 2016 North American Numbering Council Future of Numbering (“FON”) Working Group Report<sup>10</sup>
  - In May 2016, the NANC transmitted to the FCC’s Wireline Competition Bureau a FON Working Group Report on Nationwide Number Portability.<sup>11</sup>
  - The FON WG Report on NNP made certain assumptions regarding NNP,<sup>12</sup> evaluated certain issues identified by the Wireline Competition Bureau, and recommended actions to “enable NNP through technical modifications to the LRN system used to route originating calls to ported numbers.”<sup>13</sup>
  - The FON WG Report on NNP concluded that changes to the current LRN porting architecture would have potential impact on the following issues:
    - the assessment, collection and remittance of certain existing telecommunications taxes, fees, surcharges, tariffs and tolls, in particular those assessed, collected or which are based exclusively on geography;
    - the existing roles of state regulators which may require additional roles be established in such an NNP environment to ensure there are no impacts to consumers of telecommunications services or the ability of state regulators to comply with individual state laws, including public safety matters related to the provision of emergency services;
    - NNP would likely require changes to all existing industry databases and systems which support the routing of individual telephone calls, as well as, every telecommunications carrier’s specific network facility architecture which ensures the proper routing and delivery of a call;
    - NNP would likely require significant costs to the industry to implement and maintain systems and operations and to consumers;
  - The FON WG Report therefore recommended a more detailed inquiry be launched to enable evaluation by all types and sizes of carriers, vendors of existing national databases and systems (i.e. LERG, BIRRDs, NPAC, *et al.*), consumer advocates and public interest organizations, as well as the need and opportunity to accommodate cost recovery akin to that provided with the initial implementation of local number portability.

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<sup>10</sup> The FON Working Group Report was ultimately incorporated into the *North American Numbering Council Report on NNP* and transmitted to the Wireline Competition Bureau on May 16, 2016, [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-339428A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-339428A1.pdf).

<sup>11</sup> N. Am. Numbering Council, *Future of Numbering Working Group Report to the NANC – Nationwide Number Portability*, (April 15, 2016) (“FON WG Report on NNP”) [http://www.nanc-chair.org/docs/fon/Apr16\\_FoN\\_NNP\\_Final\\_Report.pdf](http://www.nanc-chair.org/docs/fon/Apr16_FoN_NNP_Final_Report.pdf).

<sup>12</sup> Assumptions of FON WG regarding NNP: (1) when the consumer engages in NNP they physically move and their interconnect point is established in their new geography; (2) a consumer is now under the new district (porting to a different rate center or LATA within the same state) or new state laws/regulations; (3) NNP should be implemented up to and including crossing state lines (e.g. porting a number assigned in CA to NY); and (4) the use of LRNs shall continue until such time that alternate preferred industry technical solutions for NNP are defined, adopted and implemented.

<sup>13</sup> See, Letter from Matthew Del Nero, Chief of the FCC Wireline Competition Bureau, to Betty Ann Kane, Chair of the NANC, dated Nov. 16, 2015.

- Accordingly, the FON WG urged the NANC to request that any FCC consideration include evaluation of NNPs impacts to consumers, the competitive marketplace and public safety (i.e., 9-1-1/NG-9-1-1), its related costs on consumers and industry, and overall timing considerations to implement NNP in the context of the ongoing transition of nation’s telecommunications infrastructure to IP - particularly, if such preferred NNP industry technical solutions recommend changes to the existing national porting architecture (i.e., use of LRNs).<sup>14</sup>
- 2016 ATIS Nationwide Number Portability Technical Report
  - In June 2016, ATIS produced a technical report on NNP outlining the characteristics of the current U.S. LNP implementation based on use of the LRN method and explored different approaches for implementing NNP and their impacts.
  - The ATIS Technical Report provides a technical overview of service provider portability in today’s number portability infrastructure, including how number portability is supported in a Common Channel Signaling Network as well as IP Networks.
  - The ATIS Technical Report further detailed:
    - How commercial agreements could support NNP using the facilities of third parties to provide a point of interconnection (“POI”) or facilities footprint in a LATA outside of a provider’s home footprint; however, further work was needed among the ATIS Industry Numbering Committee, the NANC Local Number Portability Working Group, and the Numbering Oversight Working Group to address likely changes in industry databases related to LRNs in such commercial scenarios.
    - How the implementation of a National LRN, which allows LRNs to be used outside of the current LATA boundaries, could allow telephone numbers to be “ported” nationally while minimizing network impacts, administration or assignment of numbering resources.
      - ATIS provided an overview of routing and non-routing impacts to the National LRN approach; however, the report concluded that existing LNP/LRN routing principles can effectively support the routing aspects of NNP.
      - Aspects requiring further evaluation included NPAC system processes, assessment of network equipment (i.e., switches) ability to handle substantially more NPAs, and impact to the N-1 lookup requirement.
      - National LRN non-routing impacts including, impacts to call detail record processing, subscriber billing, caller ID issues, tariffs, toll-free processing, enhanced 9-1-1, as well as, many other processes that key on the relationship of a telephone number to a rate center and/or a

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<sup>14</sup> The FCC NNP Notice incorrectly references the FON WG NNP Report ¶ 18; however, the NNP Notice sought comment on nearly all concerns raised by the FON WG which included likely impacts to: (a) mandated fees and surcharges upon telecommunications service based upon physical address, (b) mandated state and local sales taxes, intrastate tariffed telecommunications services, (c) intrastate tariffed telecommunications services, (d) intrastate toll telecommunications services, ( e) role of state regulators as to tariffs and rulemakings, (f) state coordination and collaboration; (g) ten-digit dialing, (h) customers complaints, (i) public safety, *et al.* NNP Notice ¶¶ 36-66.

LATA, dialing plan consistency, regulatory and service provider responsibilities, liabilities and numbering resource management, state regulations, numerous consumer issues and more.<sup>15</sup>

- How the implementation of Non-Geographic Location Routing Number (“NGLRN”) or a non-geographic area code, could support NNP. The report concluded that NGLRN model requires a new Non-Geographic area code, a network or gateways to host the NGLRNs for call termination and the ability of all service providers to route call to NGLRNs.
  - This solution further proposes: the need for providers to route to IP networks, the ability to assign telephone numbers from the Non-Geographic area code, administrative processes that handle the allocation and addressing of NGLRNs and Non-Geographic telephone numbers, an industry-led certification process for non-geographic gateways, and the voluntary provision of non-geographic capabilities to customers.
  - However, the NGLRN requires further evaluation and decision by the industry to implemented after further consideration of policy, the administration of non-geographic resources, call processing and various gateway considerations.
- ATIS also extensively detailed how NNP breaks the association of a telephone number to a specific geographic area, thereby impacting numerous US policies.<sup>16</sup>
- Note: While ATIS included evaluation of the GR-2982-CORE (GUBB) model for NNP, the NNP WG dispensed with consideration of this model as noted in the Evaluation of NNP Section (see below).
- The ATIS Technical Report considers all ATIS NNP Models’ impacts on regulatory related services, notably emergency services and next-generation 9-1-1 and transitional architectures involving the interconnection of next-generation emergency services networks with legacy originating networks, legacy public safety answering points (“PSAPS”),<sup>17</sup> and National Security/Emergency Preparedness.<sup>18</sup>
- Lastly, ATIS evaluated the feasibility of NNP while maintaining current paradigms or in IP networks.
- 2016 North American Numbering Council Local Number Portability Administration (“LNPA”) Working Group White Paper
  - In August of 2016, the LNPA Working Group issued a White Paper to the NANC on Non-Geographic Number Portability.<sup>19</sup> The White Paper was developed in response

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<sup>15</sup> ATIS NNP Technical Report at 13-14.

<sup>16</sup> *Id.* at 13-14.

<sup>17</sup> *Id.* at 22-26.

<sup>18</sup> *Id.* at 36-39.

<sup>19</sup> “Nationwide number portability” and “non-geographic number portability” are considered two synonymous terms. The NANC prefers the use of the term nationwide number portability (“NNP”), which refers to the ability of users of telecommunications services to keep their assigned telephone numbers when relocating

to a presentation provided by FCC Chief Technology Officer (“CTO”) Henning Schulzrinne entitled, “Technology Transition: Numbering;” and, supported the CTOs request to the NANC for further evaluation of probable issues and impacts of implementing a revised portability architecture to enable the porting of telephone numbers anywhere in the United States without regard to the current geographic architecture.

- The White Paper presented significant regulatory, technical, and consumer impacts, that must be considered with any change to the current LNP architecture.
- In addition, the LNPA WG advised that any change “will necessitate a thorough review for impacts on the underlying number assignment and number portability rules, regulations, systems and processes;”
- The LNPA WG concluded that “the massive complexity and cost of this undertaking will certainly require significant analysis and an extended duration of time to design, re-engineer and implement.”

### 2018 NARUC Resolution

In addition to the above, the National Association of Regulatory Utility Commissioners (“NARUC”) recently revisited NNP in the context of the FCC NNP Notice. At its recent meeting on February 14, 2018, the NARUC adopted a resolution cataloging past evaluations of NNP.<sup>20</sup>

- In addition, the NARUC Resolution highlighted direct engagement by State Regulatory Commissions over the past several years on important consideration and recommendations provided to the FCC via the NANC.
- The NARUC Resolution ultimately focuses on and requests information from the FCC on its consideration of NNP, notably: (1) the costs to consumers to implement NNP; (2) the cost recovery options for NNP implementation; (3) the timeline options for implementing NNP; and (4) the impact of NNP implementation on the IP transition.

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within the United States, regardless of the Rate Center associated with the phone number’s origin, or the distance between the associated Rate Center and the end user’s physical location.

<sup>20</sup> See, National Association of Regulatory Utility Commissioners, *Resolution on Nationwide Number Portability*, adopted February 14, 2018, (“NARUC Resolution”), <https://pubs.naruc.org/pub/E0A7286D-F44E-49DE-0E87-E9E7CD3EF7CE>.