 FCC 96-286

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Telephone Number Portability	)	CC Docket No. 95-116
	)	RM 8535
	)	

FIRST REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING

Adopted: June 27, 1996 Released: July 2, 1996

Comment Date: August 16, 1996
Reply Comment Date: September 16, 1996

By the Commission:

Table of Contents

I. INTRODUCTION

1. We initiated this proceeding on July 13, 1995, when we adopted a Notice of Proposed Rulemaking seeking comment on a wide variety of policy and technical issues related to telephone number portability.[1] Since our adoption of the Notice, the Telecommunications Act of 1996 became law.[2] Section 251, added by the 1996 Act, requires all local exchange carriers (LECs), both incumbents and new entrants, to offer number portability in accordance with requirements prescribed by the Commission.[3] On March 14, 1996, the Common Carrier Bureau released a Public Notice seeking comment on how the passage of the 1996 Act may have affected the issues raised in the Notice.[4]

---

[1] Telephone Number Portability, CC Docket No. 95-116, 10 FCC Rcd 12350 (1995) (Notice). A list of parties filing comments and reply comments in response to the Notice is attached below as Appendix A.

[2] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (1996 Act).

[3] 47 U.S.C. § 251(b)(2).

[4] Further Comments: Telephone Number Portability, Public Notice, CC Docket No. 95-116, DA 96-358, 61 Fed. Reg. 11,174 (1996) (Public Notice). A list of parties filing comments and reply comments in response to the Public Notice is included in Appendix A, below.

Comments in response to the Public Notice were received on March 29, 1996, and reply comments were filed on April 5, 1996. In addition, efforts to implement number portability at the state level have progressed since adoption of the Notice.

2. The Telecommunications Act of 1996 establishes "a pro-competitive, de-regulatory national policy framework" that is intended to "promote competition and reduce regulation . . . to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies."[5] The statute imposes obligations and responsibilities on telecommunications carriers, particularly incumbent local exchange carriers, that are designed to open monopoly telecommunications markets to competitive entry and to promote competition in markets that already are open to new competitors.[6] In particular, section 251(b) imposes specific obligations on all local exchange carriers to open their networks to competitors. The Act envisions that removing legal and regulatory barriers to entry and reducing economic impediments to entry will enable competitors to enter markets freely, encourage technological development, and ensure that a firm's prowess in satisfying consumer demand will determine its success or failure in the marketplace. In implementing the statute, the Commission has the responsibility to adopt the rules that will implement most quickly and effectively the national telecommunications policy embodied in the 1996 Act. Number portability is one of the obligations that Congress imposed on all local exchange carriers, both incumbents and new entrants, in order to promote the pro-competitive, deregulatory markets it envisioned. Congress has recognized that number portability will lower barriers to entry and promote competition in the local exchange marketplace. In its report, the Senate Committee on Commerce, Science, and Transportation concluded that the "minimum requirements [for interconnection set forth in new section 251(b), including number portability,] are necessary for opening the local exchange market to competition."[7] Likewise, the House of Representatives Committee on Commerce determined that "the ability to change

---

[5] S. Conf. Rep. No. 230, 104th Cong., 2d Sess. 1 (1996).

[6] According to Senator Larry Pressler, "[t]he more open access takes hold, the less other government intervention is needed to protect competition. Open access is the principle establishing a fair method to move local phone monopolies and the oligopolistic long distance industry into full competition with one another." 141 Cong. Rec. S7889 (daily ed. June 7, 1995) (statement of Sen. Pressler). Senator Ernest F. Hollings has said, "[c]ompetition is the best regulator of the marketplace. But until that competition exists, until the markets are opened, monopoly-provided services must not be able to exploit the monopoly power to the consumers' disadvantage. Competitors are ready and willing to enter the new markets as soon as they are opened." Id. at S7984 (statement of Sen. Hollings).

[7] Senate Comm. on Commerce, Science, and Transportation Report on S. 652 at 19-20 (Mar. 30, 1995) (Senate Report).

service providers is only meaningful if a customer can retain his or her local telephone number."[8]

3. In this Order, we promulgate rules and regulations implementing this congressional directive. Although we decline to choose a particular technology for providing number portability, we establish in this First Report and Order performance criteria that any long-term number portability method selected by a LEC must meet. Pursuant to the statutory requirement in section 251 to provide number portability, we require all LECs to begin to implement a long-term service provider portability solution that meets our performance criteria in the 100 largest Metropolitan Statistical Areas (MSAs) no later than October 1, 1997, and to complete deployment in those MSAs by December 31, 1998, in accordance with a phased schedule set forth below. Number portability must be provided in these areas by all LECs to all telecommunications carriers, including commercial mobile radio services (CMRS) providers.

4. The statute explicitly excludes CMRS providers from the definition of local exchange carriers, and therefore from the section 251(b) obligations to provide number portability, unless the Commission concludes that they should be included in the definition of local exchange carrier.[9] Our recent Notice of Proposed Rulemaking on interconnection issues raised by the 1996 Act sought comment generally on whether, and to what extent, CMRS providers should be classified as LECs.[10] Because we conclude that we have independent authority under sections 1, 2, 4(i), and 332 of the Communications Act of 1934, as amended,[11] to require cellular providers, broadband personal communications services (PCS), and covered Specialized Mobile Radio (SMR) providers[12] to provide long-term service provider portability, we need not decide here whether CMRS providers must provide number portability as local exchange carriers under section 251(b). We require all cellular, broadband PCS, and covered SMR providers to have the capability of delivering calls from their networks to ported numbers anywhere in the country by December 31, 1998, and to offer service provider portability, including the ability to support roaming, throughout their networks by June 30, 1999.

5. We conclude that a system of regional databases that are managed by an independent administrator will serve the public interest. We direct the North American

---

[8] House of Rep. Comm. on Commerce Report on H.R. 1555 at 72 (July 24, 1995) (House Report).

[9] See 47 U.S.C. § 153(26).

[10] Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, Notice of Proposed Rulemaking, CC Docket No. 96-98, FCC 96-182, ¶ 195 (rel. Apr. 19, 1996) (Interconnection NPRM).

[11] 47 U.S.C. §§ 151, 152, 154, 332.

[12] For an explanation of "covered SMR providers," see infra note 449.

Numbering Council (NANC) to provide initial oversight of this regional database system. We direct the NANC to determine the number and location of the regional databases and to select one or more administrators responsible for deploying the database system. Any state that prefers to develop its own statewide database rather than participate in a regionally-deployed database, however, may opt out of its designated regional database and implement a state-specific database. We will retain authority to override a state's decision to develop a statewide database if an affected carrier can demonstrate that the state's proposal would significantly delay deployment of a long-term method or impose unreasonable costs on affected carriers.

6. Until long-term service provider portability is available, we require LECs to provide currently available number portability measures, such as Remote Call Forwarding (RCF) and Direct Inward Dialing (DID), upon specific request from another carrier. We conclude, however, that commercial mobile radio service providers need not provide such measures due to technical considerations specific to the CMRS industry. We enunciate principles that ensure that the costs of currently available measures are borne by all telecommunications carriers on a competitively neutral basis, and we conclude that states may utilize various cost recovery mechanisms, so long as they are consistent with these statutory requirements. We decline at this time to require the provision of either service or location portability. We conclude that, while the statute requires LECs to implement 500 and 900 number portability, there is insufficient record evidence to determine whether LEC provision of portability for 500 and 900 numbers is technically feasible. As a result, we refer the issue to the Industry Numbering Committee (INC), which must report its findings to the Commission within 12 months of the effective date of this Order. Finally, we adopt a Further Notice of Proposed Rulemaking regarding cost recovery for long-term number portability.

II. BACKGROUND

A. Telecommunications Act of 1996

7. New section 251(b)(2) of the Communications Act of 1934, as added by the 1996 Act, directs each local exchange carrier "to provide, to the extent technically feasible, number portability in accordance with requirements prescribed by the Commission."[13] The 1996 Act defines the term "local exchange carrier" as:

> any person that is engaged in the provision of telephone exchange service or exchange access. Such term does not include a [commercial mobile service provider,] as defined under section 332(c), except to the extent that

[13] 47 U.S.C. § 251(b)(2).

the Commission finds that such provider should be included in the definition of such term.[14]

The 1996 Act defines "number portability" as "the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another."[15]

8. The 1996 Act defines the term "telecommunications carrier" as "any provider of telecommunications services, except that such term does not include aggregators of telecommunications services (as defined in section 226)."[16] The term "telecommunications service" is defined by the 1996 Act as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used."[17] Because the 1996 Act's definition of number portability requires LECs to provide number portability when customers switch from any telecommunications carrier to any other,[18] the statutory obligation of LECs to provide number portability runs to other telecommunications carriers. Because CMRS falls within the statutory definition of telecommunications service, CMRS carriers are telecommunications carriers under the 1996 Act. As a result, LECs are obligated under the statute to provide number portability to customers seeking to switch to CMRS carriers.

9. In addition to the duties imposed by section 251(b) on all LECs, section 251(c)(1) imposes upon incumbent LECs, inter alia, the "duty to negotiate in good faith . . . the terms and conditions of agreements to fulfill" the section 251(b) obligations, including the duty to provide number portability.[19] An incumbent LEC is defined as a carrier that was providing exchange access service in a particular area on February 8, 1996, and was a member of the National Exchange Carrier Association (NECA) pursuant

---

[14] See 47 U.S.C. § 153(26).

[15] See 47 U.S.C. § 153(30). In our Notice, we defined three types of number portability: (1) service provider - the ability to retain one's number when changing service providers; (2) service - the ability to retain one's number when changing services; and (3) location - the ability to retain one's number when changing physical locations. Notice, 10 FCC Rcd at 12355-56.

[16] See 47 U.S.C. § 153(44).

[17] See 47 U.S.C. § 153(46). The term "telecommunications" means "the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." 47 U.S.C. § 153(43).

[18] See 47 U.S.C. § 153(30)

[19] See 47 U.S.C. § 251(c)(1).

to section 69.601(b) of the Commission's regulations.[20] The 1996 Act creates an exemption from the obligations of section 251(c) for rural telephone companies,[21] and allows LECs with fewer than two percent of the nation's subscriber lines to petition a state commission for suspension or modification of the application of sections 251(b) and (c).[22]

10. Section 251(e)(1) reinforces the Commission's authority over matters relating to the administration of numbering resources by giving the Commission exclusive jurisdiction over those portions of the North American Numbering Plan (NANP) that pertain to the United States.[23] This subsection also requires the Commission to "create or designate one or more impartial entities to administer telecommunications numbering and to make such numbers available on an equitable basis."[24] Moreover, section 251(e)(2) provides that the cost of "number portability shall be borne by all telecommunications carriers on a competitively neutral basis as determined by the Commission."[25]

11. Finally, new section 271(c)(2)(B) establishes a "competitive checklist" of requirements that the Bell Operating Companies (BOCs) must meet to provide in-region interLATA services.[26] One of the requirements that the BOCs must satisfy is the provision of "interim number portability through remote call forwarding, direct inward

---

[20] 47 U.S.C. § 251(h)(1); 47 C.F.R. § 69.601(b).

[21] A "rural telephone company" is a LEC that "(A) provides common carrier service to any local exchange carrier study area that does not include either -- (i) any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics of the Bureau of the Census; or (ii) any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993; (B) provides telephone exchange service, including exchange access, to fewer than 50,000 access lines; (C) provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines; or (D) has less than 15 percent of its access lines in communities of more than 50,000 on [February 8, 1996]." See 47 U.S.C. § 153(37).

[22] See 47 U.S.C. § 251(f)(1)-(2).

[23] See 47 U.S.C. § 251(e)(1). Section 251(e)(1) further states that the provision does not preclude the Commission from delegating jurisdiction to the states or other entities. Id. Under the 1996 Act, the term "United States," "means the several States and Territories, the District of Columbia, and the possessions of the United States, but does not include the Canal Zone." See 47 U.S.C. § 153(50).

[24] 47 U.S.C. § 251(e)(1).

[25] See 47 U.S.C. § 251(e)(2).

[26] See 47 U.S.C. § 271(c)(2)(B). "InterLATA service" means telecommunications between a point located in a local access and transport area (LATA) and a point located outside such area. 47 U.S.C. § 153(21). The term "in-region" means an area in which a BOC or any of its affiliates was authorized to provide wireline telephone exchange service pursuant to the reorganization plan approved under the AT&T Consent Decree, as in effect on the day before the date of enactment of the 1996 Act. 47 U.S.C. § 271(i)(1).

dialing trunks, or other comparable arrangements, with as little impairment of functioning, quality, reliability, and convenience as possible" until the Commission issues regulations pursuant to section 251 to implement the statute's number portability requirements. Section 271(c)(2)(B)(xi) directs the BOCs to comply fully with the regulations implemented by the Commission.[27]

B. Proposed Number Portability Methods

12. Because most telephone numbers within the NANP are associated with a particular switch operated by a particular service provider, they currently cannot be transferred outside the service area of a particular switch or between switches operated by different service providers without technical changes to the switch or network.[28] Several methods exist, or are being developed, to provide telephone number portability. These methods generally consist of two types: database and non-database methods.[29]

1. Database methods

13. Several industry participants have proposed methods for providing service provider portability that use databases containing the customer routing information necessary to route telephone calls to the proper terminating locations. All these methods depend on Intelligent Network (IN) or Advanced Intelligent Network (AIN) capabilities.[30] Before the release of our Notice, AT&T proposed a Location Routing Number (LRN) method to the Industry Numbering Committee (INC), an industry body that provides an open forum to address and resolve industry-wide issues associated with the non-policy-related planning, administration, allocation, assignment, and use of numbering resources within the NANP area. Since it proposed LRN to the INC, AT&T has continued to develop and refine this method.[31] Essentially, LRN assigns a unique 10-digit telephone

---

[27] See 47 U.S.C. § 271(c)(2)(B)(xi).

[28] Under the NANP, telephone numbers consist of ten digits in the form NPA-NXX-XXXX, where N may be any number from 2 to 9 and X may be any number from 0 to 9. Numbering plan areas (or NPAs) are known commonly as area codes. The second three digits of a telephone number are known as the NXX code. Typically, the NXX code identifies the central office switch to which the telephone number had been assigned or central office code (CO). Administration of the North American Numbering Plan, Report and Order, 11 FCC Rcd 2588, 2593-94 (1995) (Numbering Plan Order).

[29] For a more detailed description of these methods, see infra app. E.

[30] See generally Intelligent Networks, Notice of Proposed Rulemaking, 8 FCC Rcd 6813 (1993). IN refers to a general call processing architecture in which a centralized database performs some aspect of call setup. Databases supporting IN services are built to support a specific call processing application. AIN describes a specific model of IN developed by Bellcore in which the database is a general purpose platform capable of supporting multiple call processing services.

[31] See Notice, 10 FCC Rcd at 12364. See also AT&T Comments at 18-23.

number to each switch in a defined geographic area. The location routing number serves as a network address. Carriers routing telephone calls to customers that have transferred their telephone numbers from one carrier to another perform a database query to obtain the location routing number that corresponds to the dialed telephone number. The database query is performed for all calls to switches from which at least one number has been ported.[32] The carrier then would route the call to the new carrier based on the location routing number.[33]

14. MCI, DSC Communications, Nortel, Tandem Computers, and Siemens Stromberg-Carlson have developed a method referred to as the Carrier Portability Code (CPC) method.[34] This method operates in a similar manner to LRN. Under CPC, however, the database associates the dialed telephone number with a 3-digit carrier portability code identifying the particular carrier to whom the dialed number has been transferred, rather than a particular switch. As described below, many of the parties in this proceeding and staff of some state commissions consider the CPC method to be an interim database solution.[35]

15. Stratus Computer and US Intelco have developed another database method commonly referred to as Local Area Number Portability (LANP).[36] This method uses two "domains" of 10-digit numbers to route telephone calls to customers that have transferred their numbers to new carriers or new geographic locations. Specifically, LANP assigns a ten-digit customer number address (CNA) to each end user; this is the number that callers would dial to place telephone calls to the particular end user. It also assigns each customer a 10-digit network node address (NNA) that identifies where in the telephone network to reach the particular end user. Both the CNA and the NNA are stored in routing databases so that carriers can determine from the dialed telephone number where in the network to reach the called party.

---

[32] We use the term "ported" in this context to mean the transfer of a telephone number from one carrier's switch to another carrier's switch, which enables a customer to retain his or her number when transferring from one carrier to another.

[33] GTE and Pacific Bell refer to LRN as an addressing scheme which assigns a routing number that uniquely identifies a ported number in network routing databases. See GTE Further Reply Comments at 6; Pacific Bell Further Comments at 3. Other parties refer to LRN as the addressing scheme and triggering mechanism which determines under what circumstances a database query should be executed. See AT&T Comments at 18-19; MCI Comments at 15-16.

[34] See Notice, 10 FCC Rcd at 12363-64. See also MCI Comments at 10-15.

[35] See infra ¶ 23, app. E.

[36] See Notice, 10 FCC Rcd at 12364-65. See also US Intelco Comments at 1-2, 6.

16. GTE has proposed both on the record in this proceeding and before the INC what it refers to as the Non-Geographic Number (NGN) method.[37] While this method uses a database, it operates in a fundamentally different manner from CPC, LRN, and LANP. The NGN method would provide service provider and location portability to end users by assigning them non-geographic telephone numbers, such as an INPA (interchangeable numbering plan area) code that has been assigned for non-geographic numbers.[38] Telephone calls to such end users would be routed in much the same way as toll free calls are today, by performing a database query to determine the geographic telephone number corresponding to the dialed non-geographic telephone number, and routing the call to the appropriate geographic number.

17. Pacific Bell has proposed a triggering mechanism which operates in conjunction with the same addressing scheme utilized in AT&T's LRN method. This mechanism, called Query on Release (QOR) or Look Ahead, determines under what circumstances a database query is performed.[39] Under QOR, the signalling used to set up a telephone call is routed to the end office switch to which the dialed telephone number was originally assigned (the release switch), i.e., according to the NPA-NXX of the dialed number. If the dialed number has been transferred to another carrier's switch, the previous switch in the call path queries the database to obtain the routing information. The call is then completed to the new carrier's switch.

18. Another number portability method triggering mechanism that is similar to QOR is Release-to-Pivot (RTP).[40] RTP differs from QOR in that when a number has been ported from the release switch, the release switch -- rather than the previous switch in the call path -- returns the address information necessary for routing the call. The information regarding where to route the telephone call, if the number has been transferred, may be contained either in the release switch or an external database.

2. Non-database methods

19. In our Notice, we discussed two currently available methods of providing service provider portability that do not use databases: Remote Call Forwarding and Flexible Direct Inward Dialing.[41] These methods are commonly referred to as "interim

---

[37] See Notice, 10 FCC Rcd at 12365. See also GTE Comments at 14-18.

[38] See Industry Numbering Committee, Number Portability (Proposed Final Draft) at 104, filed June 19, 1996 in CC Docket No. 95-116 (INC Report). An INPA, also known as an interchangeable area code, is an area code in which the second digit is not 0 or 1. Numbering Plan Order, 11 FCC Rcd at 2593.

[39] See Pacific Bell Further Comments at 3-4.

[40] See Pacific Bell Comments at 19.

[41] See Notice, 10 FCC Rcd at 12369.

measures." While most LECs currently are able to port numbers to other service providers using these methods, they suffer from certain limitations that make them unsuitable for long-term number portability.[42] RCF redirects calls to telephone numbers that have been transferred by essentially placing a second telephone call to the new network location. DID routes the second call over a dedicated facility to the new service provider's switch, instead of translating the dialed number to a new number.

20. In the Notice, we also discussed three derivative methods of RCF and DID (enhanced remote call forwarding, route index/portability hub, and hub routing with AIN), all of which require routing incoming calls to the terminating switch identified by the NPA-NXX code of the dialed phone number. Unlike RCF and DID, they use LEC tandem switches to aggregate calls to a particular competing service provider before those calls are routed to that provider.[43] In addition, LECs in several states reportedly are providing Directory Number Route Indexing (DNRI), which first routes incoming calls to the switch to which the NPA-NXX code was originally assigned, then routes ported calls to the new service provider either through a direct trunk or by attaching a pseudo NPA to the number and using a tandem, depending on availability.[44]

C. Current State Efforts

1. State Task Forces and Implementation

21. Parties to this proceeding report that several states have established task forces of industry participants or are otherwise beginning to investigate the development and implementation of long-term number portability methods. Those states include: Alabama, Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kansas, Maryland, Michigan, Minnesota, New York, Ohio, Oregon, Texas, Utah, Virginia, Washington, Wisconsin, and Wyoming. Of these states, the task forces in Colorado, Florida, Georgia, Illinois, Maryland, and New York have all selected AT&T's Location Routing Number method for implementing service provider number portability in areas within their states' boundaries.[45] In addition, the state commissions of Colorado,

---

[42] See id. at 12368-71; infra app. E.

[43] See Notice, 10 FCC Rcd at 12370.

[44] USTA Ex Parte Letter at 2, from Mary McDermott, to William Caton, FCC, CC Docket No. 95-116, filed Apr. 4, 1996 (USTA April 4, 1996 Ex Parte Letter); see also infra app. E.

[45] Ameritech Ex Parte Presentation at 5, 30, CC Docket No. 95-116, filed Feb. 21, 1996 (Ameritech February 21, 1996 Ex Parte Filing); AT&T Ex Parte Letter at 1, from R. Gerard Salemme, to Regina Keeney, FCC, CC Docket No. 95-116, filed Mar. 12, 1996 (AT&T March 12, 1996 Ex Parte Letter); AT&T Ex Parte Presentation at 12, CC Docket No. 95-116, filed Feb. 6, 1996 (AT&T February 6, 1996 Ex Parte Filing); CA Public Utilities Commission, California Local Number Portability Task Force Report, R.95-04-043 & I.95-04-044, filed June 19, 1996 in CC Docket No. 95-116, at 1-4 (rel. Feb. 29, 1996) (CA LNP Task Force Report);

Georgia, Illinois, Maryland, New York, and Ohio have adopted the recommendation of their staff and task forces to implement LRN.[46] Parties to this proceeding assert, moreover, that state task forces or commissions in other states, such as Indiana, Michigan, and Wisconsin, as well as in Canada, are utilizing the results of the Illinois task force's efforts in the area of number portability.[47]

22. Several states have set implementation schedules for the portability methods they have selected. Switch vendors have committed to make available LRN software to carriers in Illinois in the second quarter of 1997.[48] Colorado, Illinois, and Georgia plan

---

Colorado Public Utilities Commission, Order Approving Location Routing Number as the Long Term Database Solution to Local Number Portability, Docket No. 96A-196T, at 2 (rel. May 31, 1996) (CO PUC LNP Order); Georgia Public Service Commission, Local Telephone Number Portability Under Section 2 of the Telecommunications Competition and Development Act of 1995, Docket No. 5840-U, filed June 19, 1996 in CC Docket No. 95-116, at 5 (rel. Feb. 20, 1996); (GA PSC Portability Order); Illinois Commerce Commission, Joint petition for approval of Stipulation and Agreement relating to the implementation of Local Number Portability, Order, No. 96-0089, at 2-4, (rel. Mar. 13, 1996) (ICC LNP Order), submitted in Ameritech Further Comments at Attachment A; Public Service Commission of Maryland, Commission's Investigation into Long-Term Solutions to Number Portability in Maryland, Order, Case No. 8704 at 1-3 (rel. June 24, 1996) (MD PSC Portability Order); Michigan Public Service Commission, On the Commission's own motion, to establish permanent interconnection arrangements between basic local exchange service providers, Opinion and Order, Case No. U-10860, filed June 19, 1996 in CC Docket No. 95-116, at 18-29, 43-44 (adopted June 5, 1996) (MI PSC Interconnection Order); State of New York Department of Public Service, Proceeding on Motion of the Commission to Examine Issues Related to the Continuing Provision of Universal Service and to Develop a Framework for the Transition to Competition in the Local Exchange Market; Number Portability Trial - Progress Report, Case 94-C-0095, at 2, Attachment at 2 (rel. Jan. 23, 1996) (NY DPS Portability Trial Report), submitted in AT&T Ex Parte Presentation, CC Docket No. 95-116, filed Feb. 28, 1996 (AT&T February 28, 1996 Ex Parte Filing); Competition -- The State Experience, vol. 1, at 32, 86, submitted as NARUC Ex Parte Filing at Attachment 1, CC Docket No. 95-116, filed Apr. 17, 1996 (NARUC April 17, 1996 Ex Parte Filing); Ohio PUC Reply Comments at 2; Ohio Public Utilities Commission, Commission Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, Finding and Order, Case No. 95-845-TP-COI, filed June 19, 1996 in CC Docket No. 95-116, at section XIV (rel. June 12, 1996) (Ohio PUC Competition Order); Time Warner Holdings Ex Parte Presentation at 5, CC Docket No. 95-116, filed Feb. 12, 1996 (Time Warner Holdings February 12, 1996 Ex Parte Filing).

[46] GA PSC Portability Order at 5; CO PUC LNP Order at 2; ICC Portability Order at 2-4; MD PSC Portability Order at 1, 6, 8; NY DPS Portability Trial Report at 2; Ohio PUC Competition Order at section XIV.

[47] Ameritech February 21, 1996 Ex Parte Filing at 5.

[48] See Ameritech February 21, 1996 Ex Parte Filing at 54; AT&T Further Comments at 6; Lucent Technologies Ex Parte Letter at 1, from Carol Wilner, to Jeannie Su, FCC, CC Docket No. 95-116, filed May 20, 1996 (Lucent May 20, 1996 Ex Parte Letter); Nortel Ex Parte Letter at 1-2, from Raymond L. Strassburger, to Mindy Littell, FCC, CC Docket No. 95-116, filed May 29, 1996 (Nortel May 29, 1996 Ex Parte Letter); Siemens Stromberg-Carlson Ex Parte Letter at 1, from Terry Jennings, to Mindy Littell, FCC, CC Docket No. 95-116, filed May 20, 1996 (Siemens May 20, 1996 Ex Parte Letter); Ericsson Ex Parte Letter at 1, from David C. Jatlow, to William F. Caton, FCC, CC Docket No. 95-116, filed May 21, 1996 (Ericsson May 21, 1996 Ex Parte Letter). See also infra ¶ 71.

to begin deploying LRN in mid-1997.[49] New York also expects LRN to be generally available for installation in that state in mid-1997, though deployment in certain AT&T switches is expected to begin earlier.[50] Maryland plans to begin implementing LRN by no later than the third quarter of 1997.[51] According to NARUC, Colorado similarly expects LRN availability in the second quarter of 1997 (but plans to monitor switch vendor progress and reevaluate this time frame in the third quarter of 1996).[52] Ohio will use a LRN number portability workshop, to be established within 120 days of the issuance of its June 12, 1996 Order, to establish the time frame and manner of the implementation of LRN in Ohio.[53] Michigan has ordered that implementation of long-term number portability in Michigan start at the same time that implementation begins in Illinois.[54] The Illinois and Maryland task forces are examining various implementation issues, including a deployment schedule, cost recovery, billing and rating, and service management system (SMS) administration.[55] The Illinois task force selected an SMS provider in April 1996.[56] The Maryland and Colorado task forces have been planning to release their requests for proposals for their SMS administrators in the second quarter of 1996.[57]

---

[49] Colorado Public Utilities Commission May 29, 1996 News Release, PUC Approves Long-Term Number Portability Solution, filed June 19, 1996 (CO PUC May 29, 1996 News Release); Ameritech February 21, 1996 Ex Parte Filing at 12, 54; Time Warner Holdings February 12, 1996 Ex Parte Filing at 5; GA PSC Portability Order at 5-7; AT&T Further Comments at 4 n.5, 7.

[50] NY DPS Portability Trial Report at 4 ,6, 7, Attachment at 2; AT&T Further Comments at 6 n.10.

[51] MD PSC Portability Order at 1.

[52] NARUC April 17, 1996 Ex Parte Filing at 32.

[53] Ohio PUC Competition Order at section XIV.

[54] MI PSC Interconnection Order at 43.

[55] AT&T February 6, 1996 Ex Parte Presentation at 13; Staff of the Public Service Commission of Maryland, Commission's Investigation into Long Term Solutions to Number Portability in Maryland, Second Quarterly Report of the Maryland Number Portability Consortium, Case No. 8704, filed June 19, 1996 in CC Docket No. 95-116, at 6-23 (rel. Apr. 1996) (MD PSC Report).

[56] Ameritech Ex Parte Presentation at 3, CC Docket No. 95-116, filed May 15, 1996 (Ameritech May 15, 1996 Ex Parte Filing); Time Warner Holdings February 12, 1996 Ex Parte Filing at 5.

[57] MD PSC Report at app. 1 at 17; Colorado Public Utilities Commission May 9, 1996 News Release, Task Force to Seek Bids for Number Portability Administrator, filed June 19, 1996 in CC Docket No. 95-116 (CO PUC May 9, 1996 News Release); CO PUC May 29, 1996 News Release.

2. State Trials

23. Two states have conducted or are conducting number portability trials. As we described in the Notice, ten companies, working with the New York Department of Public Service (NY DPS), jointly initiated two number portability trials, one in Rochester and another in Manhattan.[58] The companies originally planned to test the LANP method of Stratus Computers and US Intelco in Rochester, but that trial was canceled. The Manhattan trial, testing the CPC method, began in early February of this year. The New York DPS, however, now considers CPC to be, at best, an interim method and has changed the trial's emphasis from the technical aspects of the method to the operational and administrative aspects of the intercompany procedures that are required to change a customer from one local exchange provider to another.[59] MCI, one of the original proponents of CPC, no longer views CPC as a viable long-term method.[60]

24. A group of telecommunications service providers conducted a technical trial of the LANP method in Seattle, Washington, during 1995. That trial ended in December 1995.[61] The objective of the technical trial was to identify the technical, operational, and administrative issues that arise when a telephone number is not associated with a specific geographic location. Because the trial revealed certain technical and operational difficulties with the LANP technology, the Washington task force on number portability declined to adopt LANP. The Washington Utilities and Transportation Commission has not adopted LANP, and the companies involved in the trial have ceased advocating LANP.

3. State Interim Measures

25. Carriers are providing interim portability measures in a number of states, either voluntarily or pursuant to state commission orders. According to NARUC and other parties to the proceeding, LECs are providing RCF, DID, and/or other comparable arrangements in Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Maryland, Massachusetts, Michigan, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, Wisconsin,

---

[58] Notice, 10 FCC Rcd at 12356 & n.20, 12357. See also NY DPS Portability Trial Report at 3-4. The ten companies are: AT&T, Cellular One/Genesee Telephone Company, LOCATE, MCI, MFS Intelenet, NYNEX, Rochester Telephone, Sprint Communications Company, Teleport Communications Group, and Time Warner Communications.

[59] NY DPS Portability Trial Report at 6-7.

[60] See MCI Further Comments at 3.

[61] The participants included: US Intelco, Electric Lightwave Inc., US West, Stratus Computer, Teleport Communications Group, GTE-INS, and ITN. Notice, 10 FCC Rcd at 12357 & n.23.

and Wyoming.[62] According to USTA, Alabama and Minnesota are considering interim portability requirements, while North Carolina requires carriers to negotiate interim portability as part of their interconnection agreements.[63]

III. REPORT AND ORDER

A. Importance of Service Provider Number Portability

1. Background

26. In the Notice, we tentatively concluded that number portability benefits consumers of telecommunications services and would contribute to the development of competition among alternative providers of local telephone and other telecommunications services.[64] With respect to service provider portability, we sought comment on the effects that local number portability, or lack thereof, would have on the local exchange marketplace. Specifically, we sought comment on the value consumers place on their telephone numbers, the deterrent effect that a lack of number portability would have on consumer decisions to change service providers, and any resultant effect on competition between incumbent local service providers and new competitors in local markets.[65]

2. Discussion

27. Since we adopted the Notice, Congress passed the 1996 Act, which requires all LECs to "provide, to the extent technically feasible, number portability in accordance with requirements prescribed by the Commission."[66] The 1996 Act defines number portability as "the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to

---

[62] NARUC April 17, 1996 Ex Parte Filing at 4, 29, 59, 72, 74, 77, 86, 100, 114, 118, 130, 135, 139; USTA Ex Parte Letter at 2, from Mary McDermott, to William Caton, FCC, CC Docket No. 95-116, filed Mar. 25, 1996 (USTA March 25, 1996 Ex Parte Letter). See also Ameritech February 21, 1996 Ex Parte Filing at 23; Texas PUC Comments at 4.

[63] USTA March 25, 1996 Ex Parte Letter at 2.

[64] Notice, 10 FCC Rcd at 12358-61.

[65] Id. at 12358.

[66] 47 U.S.C. § 251(b)(2).

another."[67] Accordingly, we hereby modify our proposed definition of number portability to conform to the statutory definition of number portability and note that the statutory definition of this term is synonymous with the Notice's definition of "service provider portability."[68]

28. Although some incumbent LECs assert that local exchange market competition will develop without number portability,[69] the record developed in this proceeding confirms the congressional findings that number portability is essential to meaningful competition in the provision of local exchange services.[70] Several state commissions have also recognized the significant role that number portability will play in the development of local exchange competition.[71] We, therefore, affirm our tentative conclusion that number portability provides consumers flexibility in the way they use their telecommunications services and promotes the development of competition among alternative providers of telephone and other telecommunications services.

29. We note that several studies described in the record demonstrate the reluctance of both business and residential customers to switch carriers if they must change numbers. For example, MCI has stated that, based on a nationwide Gallup survey, 83 percent of business customers and 80 percent of residential customers would be unlikely to change local service providers if they had to change their telephone numbers.[72] Time Warner Holdings states that consumers are 40 percent less likely to change service providers if a number change is required.[73] Citizens Utilities notes that approximately 85 percent of the discussions that its subsidiary, ELI, has with potential customers about switching providers end when those potential customers learn that they must change their telephone numbers.[74] The study commissioned by Pacific Bell

---

[67] 47 U.S.C. § 153(30).

[68] For description of service and location number portability, see infra ¶¶ 172, 174.

[69] Pacific Bell Comments at 6; NYNEX Reply Comments at 11-12; USTA Comments at 1.

[70] See, e.g., ALTS Comments at 2-6; Missouri PSC Comments at 2-3; Michigan PSC Staff Reply Comments at 4; NARUC Comments at 4; NCTA Comments at 4-5; Ohio PUC Comments at 3; CompTel Comments at 1, 3-4.

[71] See supra ¶¶ 21-22. For instance, the New York DPS, in its recent Order adopting LRN, determined that number portability is essential to the development of vigorous local telephone service competition. See NY DPS Portability Trial Report at 2. See also Florida PSC Comments at 1, 4; Maryland PSC Reply Comments at 2; Pennsylvania PUC Reply Comments at 2.

[72] MCI Comments at 2-3. See also Notice, 10 FCC Rcd at 12358; MFS Comments at 2-3, app. A.

[73] Time Warner Holdings Comments at 6.

[74] Citizens Utilities Comments at 3-4.

concludes that, without portability, new entrants would be forced to discount their local exchange service and other competing offerings by at least 12 percent below the incumbent LECs' prices in order to induce customers to switch carriers due to customers' resistance to changing numbers.[75]

30. The ability of end users to retain their telephone numbers when changing service providers gives customers flexibility in the quality, price, and variety of telecommunications services they can choose to purchase. Number portability promotes competition between telecommunications service providers by, among other things, allowing customers to respond to price and service changes without changing their telephone numbers. The resulting competition will benefit all users of telecommunications services. Indeed, competition should foster lower local telephone prices and, consequently, stimulate demand for telecommunications services and increase economic growth.

31. Conversely, the record demonstrates that a lack of number portability likely would deter entry by competitive providers of local service because of the value customers place on retaining their telephone numbers.[76] Business customers, in particular, may be reluctant to incur the administrative, marketing, and goodwill costs associated with changing telephone numbers. As indicated above, several studies show that customers are reluctant to switch carriers if they are required to change telephone numbers.[77] To the extent that customers are reluctant to change service providers due to the absence of number portability, demand for services provided by new entrants will be depressed. This could well discourage entry by new service providers and thereby frustrate the pro-competitive goals of the 1996 Act.

B. The Commission's Role

1. Background

32. In the Notice, we tentatively concluded that the Commission has a significant interest in promoting the nationwide availability of number portability due to its impact on interstate telecommunications.[78] We based this interest on four grounds:

---

[75] See, e.g., MCI Comments at 3 n.3; MFS Reply Comments at 1-2; Pacific Bell Comments at 3-4, 6-8; TRA Reply Comments at 3-4.

[76] See, e.g., Notice, 10 FCC Rcd at 12358-59; Cablevision Lightpath Reply Comments at 4; Maryland PSC Reply Comments at 2; Omnipoint Comments at 1-3.

[77] See supra ¶ 29.

[78] Notice, 10 FCC Rcd at 12361-62.

(1) our obligation to promote an efficient and fair telecommunications system;[79] (2) the inability to separate the impact of number portability between intrastate and interstate telecommunications;[80] (3) the likely adverse impact deploying different number portability solutions across the country would have on the provision of interstate telecommunications services;[81] and (4) the impact that number portability could have on the use of the numbering resource,[82] that is, ensuring that the use of numbers is efficient and does not contribute to area code exhaust.

33. In the 1996 Act, Congress expressly assigned to the Commission exclusive jurisdiction over that portion of the NANP that pertains to the United States.[83] Moreover, Congress directed the Commission to prescribe regulations for LEC provision of number portability: section 251(b)(2) requires carriers "to provide, to the extent technically feasible, number portability in accordance with the requirements prescribed by the Commission."[84]

2. Positions of the Parties

34. Prior to passage of the 1996 Act, some LECs asserted that the Commission should neither adopt, nor direct the adoption of, number portability without performing a thorough cost/benefit analysis.[85] Most parties, however, now agree that the 1996 Act clearly directs this Commission to implement long-term number portability.[86] Moreover, some parties contend that this mandate reflects the fact that Congress has weighed the

---

[79] See 47 U.S.C. § 151 (requiring the Commission to make available to all people of the United States "a rapid, efficient, Nation-wide, and world-wide wire and radio communication service"); 47 U.S.C. § 202 (requiring that the charges, practices, classifications, regulations, facilities, and services of common carriers not be unreasonably discriminatory).

[80] Notice, 10 FCC Rcd at 12361 & n.34.

[81] Id. at 12363.

[82] Id. at 12361-62.

[83] See 47 U.S.C. § 251(e)(1).

[84] 47 U.S.C. § 251(b)(2).

[85] Bell Atlantic Comments at 18-19; NYNEX Comments at 15-16; NYNEX Reply Comments at 14; SBC Communications Comments at 10.

[86] See, e.g., Bell Atlantic Further Comments at 2; NCTA Further Comments at 2; Omnipoint Further Comments at 2. See also BellSouth Further Comments at 4 (Act represents congressional declaration of Commission's exclusive occupation of regulatory field of number resources); MFS Further Comments at 2, 8-9 (section 251(e)(1) gives Commission exclusive jurisdiction over number portability issues, but allows Commission to delegate that authority to states).

costs and benefits of implementing number portability.[87] USTA adds, however, that the Commission may consider economic efficiencies in determining what rules to implement.[88]

35. Several commenters, while agreeing that the Commission should take a leadership role, urge us to leave certain implementation issues to the states.[89] USTA advocates allowing the states to determine their own deployment schedules.[90] The California PUC asserts that the Commission's jurisdiction over number portability is not exclusive, and that states must be allowed to implement number portability methods that are most compatible with local exchange competition in each state.[91]

3. Discussion

36. We believe that Congress has determined that this Commission should develop a national number portability policy and has specifically directed us to prescribe the requirements that all local exchange carriers, both incumbents and others, must meet to satisfy their statutory obligations.[92] Section 251(b)(2) requires LECs "to provide, to the extent technically feasible, number portability in accordance with the requirements prescribed by the Commission."[93] Moreover, section 251(e)(1)'s assignment to the Commission of exclusive jurisdiction over that portion of the NANP that pertains to the United States gives us authority over the implementation of number portability to the extent that such implementation will affect the NANP.[94] Consistent with the role assigned to the Commission by the 1996 Act, the record developed in this proceeding overwhelmingly indicates that the Commission should take a leadership role with respect

---

[87] Omnipoint Further Comments at 7; Time Warner Holdings Further Comments at 1, 3.

[88] USTA Further Reply Comments at 2-3.

[89] California PUC Further Reply Comments at 2; Florida PSC Comments at 2; Michigan PSC Staff Reply Comments at 2; NARUC Reply Comments at 1-2; Ohio PUC Comments at 2; USTA Further Reply Comments at 1, 6-7.

[90] USTA Further Reply Comments at 6-7 (asserting that this is consistent with section 251(f)(2), which allows LECs with less than 2% of the nation's access lines to petition the states for suspension or modification of sections 251(b) or 251(c)).

[91] California PUC Further Reply Comments at 2.

[92] See 47 U.S.C § 251(b)(2), (d).

[93] 47 U.S.C § 251(b)(2).

[94] See 47 U.S.C. § 251(e)(1).

to number portability.[95] We, therefore, affirm our conclusion that we should take a leadership role in developing a national number portability policy. We further note that, in light of Congress's mandate to us to prescribe requirements for number portability, it is not necessary to engage in a cost/benefit analysis as to whether to adopt rules that require LECs to provide number portability in the first instance. We may consider economic and other factors, however, when determining the specific requirements in such rules.

37. The 1996 Act directs this Commission to adopt regulations to implement number portability,[96] and we believe it is important that we adopt uniform national rules regarding number portability implementation and deployment to ensure efficient and consistent use of number portability methods and numbering resources on a nationwide basis. Implementation of number portability, and its effect on numbering resources, will have an impact on interstate, as well as local, telecommunications services. Ensuring the interoperability of networks is essential for deployment of a national number portability regime, and for the prevention of adverse impacts on the provision of interstate telecommunications services or on the use of the numbering resource. We believe that allowing number portability to develop on a state-by-state basis could potentially thwart the intentions of Congress in mandating a national number portability policy, and could retard the development of competition in the provision of telecommunications services.

C. Performance Criteria for Long-Term Number Portability

1. Background

38. In the Notice, we sought comment on what long-term number portability methods would be in the public interest. Specifically, we sought comment on various number portability proposals offered by different industry participants, including proposals by AT&T, MCI Metro, Stratus Computer and US Intelco, and GTE.[97] We also sought comment on the extent to which these proposals would support certain services that we deemed important. We tentatively concluded that any method should support operator services and emergency services because they are critical to public safety and are important features of the public switched network.[98] We also tentatively concluded that any number portability proposal should efficiently use telephone numbers.[99] In

---

[95] See, e.g., General Communication Comments at 1; Pacific Bell Comments at 9; Texas PUC Comments at 2; US Airwaves Comments at 1

[96] 47 U.S.C. § 251(d)(1).

[97] Notice, 10 FCC Rcd at 12363-65.

[98] Id. at 12365.

[99] Id.

addition, we discussed and sought comment on which of three call processing scenarios (i.e., which carrier performs the database query in a database method), or any alternative, would best serve the public interest.[100] We sought comment on whether telephone numbers should be portable within local calling areas, throughout a particular area code, state-wide, regionally, nationwide, or on some other basis, and how the geographic scope of portability would impact different types of carriers and their billing systems. We also asked whether number portability could be provided nationwide without significant network modifications.[101]

2. Positions of the Parties

39. Performance criteria versus selection of architecture. Commenting parties differ on whether the Commission should establish performance criteria or guidelines that any number portability method must meet, or require the implementation of one national portability method. Many parties, including several state regulatory agencies, cable interests, and LECs, favor establishment of broad guidelines and interoperability criteria for implementing a long-term portability method.[102] NYNEX maintains that this approach would encourage cooperative industry resolutions for a true number portability method and would properly account for legitimate state interests in the deployment of number portability. NYNEX further claims that guidelines would allow the Commission to ensure the implementation of compatible methods, with seamless call flows and service operation, without expending scarce resources by focusing on the detailed implementation of every method in each region of the country.[103] The California Department of Consumer Affairs contends that the 1996 Act's pro-competitive policies mandate that the portability method adopted be flexible and allow for future innovation.[104] GTE urges the Commission to determine the type of routing information to be employed, but leave selection of the triggering mechanism to the individual carriers.[105] SBC Communications asserts that section 251(d)(1) only requires the Commission to outline principles for a

---

[100] Id. at 12365-66. For descriptions of these scenarios, see infra ¶ 42.

[101] Notice, 10 FCC Rcd at 12367.

[102] See, e.g., Cablevision Lightpath Reply Comments at 6; Missouri PSC Comments at 3; Pacific Bell Comments at 9. See also Ericsson Comments at 3 (asserting that there may be other long-term methods the Commission and industry have not yet identified).

[103] NYNEX Comments at 15, 17. See also Pacific Bell Comments at 13-14; USTA Comments at 7.

[104] CA Consumer Affairs Further Reply Comments at 2, 4.

[105] GTE Further Reply Comments at 6; see also Pacific Bell Further Reply Comments at 6.

long-term method within six months of enactment of the 1996 Act, not to adopt a specific method.[106]

40. Conversely, some parties contend that requiring a single, national method would avoid the implementation of numerous inconsistent and inefficient approaches, and the need for carriers to adapt to different requirements in different states.[107] Jones Intercable argues that allowing number portability to develop state-by-state would give the incumbent LECs the opportunity to delay development of local exchange competition.[108] BellSouth and Nortel argue that a single long-term method is necessary to minimize the costs of implementation, operation, and maintenance; to protect billing systems against problems created by use of differing SS7 parameters; and to foster network integrity.[109] PCIA claims that a state-regulated market would inhibit development of a nationwide wireless network.[110] Arch/AirTouch Paging adds that deployment of different portability methods would adversely impact interstate telecommunications.[111] Bell Atlantic and PCIA argue that a national method is more likely to conserve scarce numbering resources.[112] Bell Atlantic further claims, however, that each individual carrier should be allowed the flexibility to utilize whatever architecture or technology within its own network best enables that carrier to implement whatever national method is selected.[113] Moreover, some parties urge the Commission to select a particular method to be implemented nationwide,[114] while others advocate allowing the industry to select the specific method.[115]

41. Commenting parties suggest numerous performance criteria with which any long-term number portability method must comply. These include: (1) the ability to

---

[106] SBC Communications Further Reply Comments at 5; see also USTA Further Reply Comments at 5.

[107] See, e.g., ACTA Comments at 6-7; PCIA Comments at 8; Telecommunications Resellers Comments at 1, 14-15.

[108] Jones Intercable Comments at 2-3; Jones Intercable Reply Comments at 5; PCIA Comments at 8.

[109] BellSouth Comments at 34 Nortel Reply Comments at 2-3.

[110] PCIA Comments at 8 n.23

[111] Arch/AirTouch Paging Comments at 8-9.

[112] Bell Atlantic Comments at 10; PCIA Comments at 8.

[113] Bell Atlantic Comments at 10-11; Bell Atlantic Further Comments at 2; see also Ameritech Further Comments at 9.

[114] See, e.g., AT&T Further Reply Comments at 7; MCI Ex Parte Letter at 1, from Donald F. Evans, to Richard Metzger, FCC, CC Docket No. 95-116, filed June 19, 1996 (MCI June 19, 1996 Ex Parte Letter).

[115] See, e.g., Bell Atlantic Reply Comments at 1-5; BellSouth Comments at 35-36.

support emergency services, i.e., 911 and enhanced 911 (E911) services;[116] (2) the ability to support existing network services and capabilities, (e.g., operator and directory services, vertical and advanced services, custom local area signaling services (also known as "CLASS"), toll free and pay-per-call services, and intercept capabilities);[117] (3) efficient use of numbering resources;[118] (4) no initial change of telephone numbers;[119] (5) no reliance on network facilities of, or services provided by, other service providers (e.g., incumbent LECs) in order to route calls;[120] (6) no degradation in service quality or network reliability (e.g., no significant increase in call set-up time);[121] (7) reliance on existing network infrastructure and functionalities to the extent possible;[122] (8) equal application to both incumbents and new entrants (i.e., carriers who receive ported numbers must also provide portability);[123] (9) no proprietary interests or licensing fees;[124]

---

[116] See, e.g., Arch/AirTouch Paging Reply Comments at 8, 16, Attachment at 12-13 (911 and E911 services are particularly critical for wireless networks); California PUC Comments at 9; NENA Reply Comments at 1-2 (service provider portability will not necessarily affect E911 services, but location portability will); NENA Further Comments at 2-3 (asserting that statutory definition of "number portability" requires supporting emergency services).

[117] See, e.g., Bell Atlantic Comments at 12; Competitive Carriers Comments at 7, 23; GO Communications Comments at 6.

[118] See, e.g., California PUC Comments at 9; General Communication Comments at 4; US West Comments at 15-19.

[119] See, e.g., CCTA Reply Comments at 7-8; GO Communications Comments at 6; New York DPS Comments at 8.

[120] See, e.g., AT&T Comments at 15-16; CCTA Reply Comments at 8 (noting that RTP displaces the routing and addressing preferences of new entrants by requiring the use of routing and addressing schemes developed and implemented by incumbent LECs); Sprint Comments at 3, 15-16.

[121] See, e.g., AT&T Comments at 15-16; Bell Atlantic Comments at 12; Teleport Comments at 11. Cincinnati Bell urges that a method that minimizes database queries would best protect system reliability, impairment of which is prohibited by the 1996 Act. Cincinnati Bell Further Reply Comments at 2. Pacific Bell maintains that reasonable differences in delay or variation in treatment between ported and non-ported numbers are permitted by the 1996 Act. Pacific Bell Further Reply Comments at 5 (citing statutory definition of telecommunications service).

[122] See, e.g., BellSouth Comments at 24, 34; ITN Comments at 3-4; MCI Comments at 7-8. Cf. ACTA Comments at 11.

[123] See, e.g., BellSouth Reply Comments at 17-18; Illinois Commerce Commission Comments at 2; Omnipoint Reply Comments at 6-8. But see Time Warner Holdings Further Comments at 2 n.3 (asserting that Commission is authorized to forbear from imposing duty to provide portability on non-incumbent LECs).

[124] See, e.g., Ameritech February 21, 1996 Ex Parte Filing at 8; MCI Comments at 7-8; MFS Comments at 10-11.

(10) the ability to migrate to location and service portability;[125] and (11) no adverse impact in areas where portability has not been deployed.[126]

42. Call processing scenarios. In the Notice, we discussed three call processing scenarios. They were: (1) the terminating "access" provider (TAP) scenario, under which the database query is performed by the terminating access provider (usually the incumbent LEC, who recovers interstate access charges from interexchange carriers (IXCs) for terminating traffic under our existing access charge regime); (2) the originating service provider (OSP) scenario, under which the originating service provider performs the database query; and (3) the "N minus 1" (N-1) scenario, under which the carrier immediately prior to the terminating service provider performs the database query or dip.[127] In addition, ITN suggests a "first-switch-that-can" approach, under which the first switch that handles the call and has the capability to do the database dip performs the query.[128]

43. Pacific Bell and Bell Atlantic recommend that carriers should be permitted to choose a call processing scenario to enable them to implement the QOR triggering mechanism in addition to LRN.[129] These parties assert that QOR would eliminate unnecessary database queries, thereby decreasing the number of databases necessary to provide number portability and the transmission capacity between switches and databases.[130] In contrast, AT&T argues against allowing carriers to choose a call processing scenario, such as QOR, because doing so would delay deployment of a long-term number portability method and would result in significant network interoperability issues.[131] MCI opposes implementation of QOR because it forces competitive LECs to

---

[125] See, e.g., GTE Comments at 23; ITN Reply Comments at 2; MCI Comments at 7-8. Cf. USTA Comments at 9-10 (asserting that equipment costs for service portability would redirect capital away from deployment of services and create upward pressure on service prices).

[126] See, e.g., ITN Comments at 3-4.

[127] Notice, 10 FCC Rcd at 12365-66.

[128] ITN Comments at 1; ITN Reply Comments at 1, 4.

[129] See Bell Atlantic Ex Parte Letter at 3, from Patricia E. Koch, to William Caton, FCC, CC Docket No. 95-116, filed May 13, 1996 (Bell Atlantic May 13, 1996 Ex Parte Letter); Pacific Bell Further Comments at 3-4.

[130] Bell Atlantic May 13, 1996 Ex Parte Letter at 3; Pacific Bell Further Comments at 7-8.

[131] AT&T Ex Parte Letter at 3-5, from Betsy J. Brady, to Jason Karp, FCC, CC Docket No. 95-116, filed Apr. 24, 1996 (AT&T April 24, 1996 Ex Parte Letter).

rely on the incumbent LEC's network and results in inefficient routing.[132] AT&T and MCI also argue against use of the RTP or QOR triggering mechanisms because they treat transferred and non-transferred numbers differently,[133] and significantly increase post-dial delay and the potential for call blocking.[134]

44. Most of the parties that favor the Commission's selection of a particular call processing scenario prefer the N-1 scenario because they believe it allows database queries to be made at the most efficient points in the process of routing telephone calls.[135] In contrast, ITN states that use of the N-1 scenario may hinder the evolution from localized to national number portability environments.[136] BellSouth contends that the Commission need not select a particular scenario because all four triggering mechanisms (OSP, TAP, N-1, and Look-Ahead) could exist simultaneously through engineering and business arrangements.[137] Citizens Utilities and NCTA oppose the TAP scenario because it requires routing most calls to the incumbent LEC networks, thus denying terminating access charges to competitive providers.[138]

45. Rating and billing. Several LECs, MCI, and MFS contend that any long-term method should preserve existing rating and billing systems to minimize costs and impact.[139] Conversely, AT&T and Florida PSC argue that any long-term method should permit flexible rating and billing schemes.[140] Pacific Bell, US West, and BellSouth also argue that the Commission must in this proceeding address billing problems, including issues relating to proper mileage, rating, calling cards, and billing format.[141]

---

[132] MCI Ex Parte Letter at 2-4, from Donald F. Evans, to Richard Metzger, FCC, CC Docket No. 95-116, filed Apr. 23, 1996 (MCI April 23, 1996 Ex Parte Letter).

[133] AT&T Ex Parte Presentation at 11, CC Docket No. 95-116, filed May 22, 1996 (AT&T May 22, 1996 Ex Parte Filing); MCI April 23, 1996 Ex Parte Letter at 3.

[134] AT&T Further Reply Comments at 6; MCI Further Reply Comments at 3-5.

[135] See, e.g., MCI Comments at 18; New York DPS Comments at 9; Time Warner Holdings Comment at 17.

[136] ITN Reply Comments at 1, 4.

[137] BellSouth Comments at 26-27.

[138] NCTA Comments at 10; Citizens Utilities Comments at 12. Cf. Florida PSC Comments at 8 (arguing that the TAP scenario limits the number of carriers that have access to the database and reduces implementation costs by limiting the method to areas where competition is developing).

[139] See, e.g., MCI Comments at 7-8; MFS Comments at 10-11; USTA Comments at 7.

[140] AT&T Comments at 15-16; Florida PSC Comments at 7.

[141] BellSouth Comments at 24-25; Pacific Bell Comments at 18; US West Comments at 24.