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FOR EFFECTIVE LOCAL COMPETITION**

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PERMANENT NUMBER PORTABILITY: A NECESSARY ELEMENT FOR EFFECTIVE LOCAL COMPETITION

Christopher Waldron¹

I. Introduction

The Telecommunications Act of 1996 (the "1996 Act") promised to open local telephone service to competition.¹ However, true competition in the local market cannot develop without permanent number portability. Permanent number portability for consumers has been defined as "the ability of users of telecommunications services to retain existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another."² Currently, if a consumer were to change his local telephone service provider, he would have to receive a new phone number. Requiring subscribers to change their phone numbers once they change their service provider is inconvenient and places an economic hardship on the subscriber. This inconvenience and economic hardship placed upon subscribers would place new service providers at a competitive disadvantage when it comes to obtaining new customers. Thus, new service providers will not be able to compete with current local service providers on a level playing field without permanent member portability. Therefore, without number portability, competition in local telephone service will not develop.

II. Background: Permanent Number Portability Has Promoted Competition in 800 Number Service

Permanent number portability first served to foster competition in the 800 number service market. Permanent number portability granted 800 number service providers an opportunity to provide competitive and efficient toll-free service to customers. In providing this service, 800 number service providers realized that permanent number portability fostered competition by permitting market participants to compete on price and service, as consumers

who chose to change their 800 number service provider could retain their 800 telephone number.

A. 800 Numbers: The Beginning of Permanent Number Portability

At first, the "NXX" screening methodology³ was used to provide 800 number service. However, it did not use permanent number portability nor did it promote significant competition. The original NXX screening methodology allowed the service provider to give a consumer an 800 number (i.e., 1-800-FLOWERS) which was identified in a manner not known to the consumer.⁴ The identification number allowed for the proper routing of the call and identification of who was the service provider.⁵

Currently, 800 number service is provided through the use of permanent number portability database system.⁶ Standards placed on the database system ensure that the public would receive adequate and efficient service even if the service provider is changed.⁷

Once permanent number portability became available

³ The NXX screening methodology used by Local Exchange Carriers routing 800 number calls is based on the NXX portion of the number dialed (i.e., 1 (800) NXX-XXXX). The NXX portion of the 800 number was associated with particular interexchange carriers (IXCs). 6 F.C.C. Rec. 5421, 5425 (1991).

⁴ 4 F.C.C. Rec. 2824, 2825 (1989).

⁵ Before the database system was developed, the NXX system routed 800 calls. In order to properly route, the call consumers had to dial 1-800-NXX-XXXX. The "NXX" portion of the 800 number was associated with particular interexchange carriers (IXCs), and prior to May 1, 1993, when the database system replaced the NXX system, under the NXX method if a business wired for 800 service wanted to change carriers, they had to abandon their old 800 number for a new one that had been assigned to its new carrier. 6 F.C.C. Rec. 5421, 5425 (1991).

⁶ The database system allows ten digit screening of the numbers in order to properly route the call, determine the least cost carrier and direct the LEC to route it accordingly, and generate statistical information; no one has to give up their 800 number if they decide to change their service provider. This differs from the NXX method in that the consumer, meaning the business using the 800 number, had to give up its 800 number if they changed their service provider. 4 F.C.C. Rec. 2824, 2825 (1989).

⁷ The Federal Communications Commission decided to allow the LECs to withdraw NXX access in favor of database access, if a LEC can reduce access times for 97% of its originating 800 data base access traffic to five seconds or less as long as within two years, (a) none of the database access traffic experienced delays of more than five seconds and (b) the mean access time for the traffic was 2.5 seconds. In addition, the BOCs and GTE are required to meet this standard within eighteen months from the date of release of the order, so that a nationwide database system of access that permits number portability can be implemented at this point in time. 6 F.C.C. Rec. 5421, 5425 (1991).

¹ Christopher Waldron is a Third year student at New York Law School and the recipient of the Minority Media Law fellowship sponsored by Teleport Communications Group. He is currently employed by Teleport Communications Group.

² Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996), § 251.

³ 142 Cong. Rec. H 1078, H1079 (1996).

immediately began to provide 800 number service. Additionally, Sprint and Allnet accused AT&T of attempting to undermine the Federal Communications Commission's (the "Commission") 800 number portability policies to ensure its dominance of the 800 number service market. The two companies claimed that AT&T had failed to switch customers who requested a different service provider within the required time period; 18 percent of its 800 number consumers wished to use competitive providers. Congress believes that the same explosion of competition will take place in the local telephone market once permanent number portability is in place.

B. Permanent Number Portability Must Accompany Increased Competition

Increased competition in telecommunications is the result of the growing importance of telecommunications in modern society and pro-competitive federal legislation. The Telecommunications Act of 1996 promoted competition in the local phone service market by allowing long distance telephone companies to provide local telephone service.⁸ In addition, the need for phone numbers has increased as the result of the rising use of faxes, cellular phones and beepers. Eventually, the result of this increased use of telephone numbers will be telephone number exhaust. Permanent number portability can help limit telephone number exhaust, allow for the development of true competition in the local market and alleviate the need for telephone number exhaust solutions.

III. Permanent Number Portability In A Competitive Environment

Without permanent number portability there will not be a level playing field for telecommunications providers to offer their services. A telecommunications company that provides permanent number portability allows consumers to easily switch their service provider without incurring the time and expense associated with changing their telephone number, thereby allowing competition to be based on price and service.⁹ The Commission has concluded that this competition between service providers must exist on a national level, requiring national portability standards.

A. Interim Arrangements for Number Portability

Interim number portability arrangements fail to meet

⁸ Telecommunications Act of 1996, § 253.
⁹ Craig D. Dingwall, "The Last Mile: A Race for Local Telecommunications Competition Policy," 48 Fed. Com. L.J. 105, 124 (1995).

the needs of the changing local phone service market. Additionally, mandatory interim arrangements deny Competitive Local Exchange Carriers (CLECs) the opportunity to explore other solutions to number portability by requiring the implementation of costly methods of interim number portability. This adds another barrier to entry in the market -- raising the costs to compete with other service providers. The California Public Utilities Commission has stated that interim number portability methods are not an adequate substitute for full number portability because of technical and economic drawbacks -- such as the cost involved in providing the service.¹⁰

B. Interim Arrangements are Insufficient

True competition in the local market can not take place as long as interim arrangements for number portability remain. Interim number portability methods are not an adequate substitute for full number portability due to technical and economic drawbacks that accelerate the exhaustion of available numbers causing: (1) call transmission degradation; (2) loss of some Custom Local Area Signaling Service features; (3) simultaneous call limitations to individual numbers; (4) additional call set up time; (5) problematic 911 routing; (6) an impact on operator services; and (7) potential billing confusion.¹¹

To alleviate these problems, companies like Teleport Communications Group ("TCG") have developed their own solutions to the problem of number exhaust.¹² While the Commission is requiring the use of interim number portability methods, TCG is suggesting several methods to alleviate the problem of number exhaust which can only truly be alleviated with the introduction of permanent number portability:

- (1) NXX codes are assigned to rate centers in 1000 number blocks;
- (2) Entire NXX codes are assigned at the time of request;
- (3) Blocks of 100 numbers are assigned as contiguous numbers (i.e., 0000-0999)
- (4) Entire NXX codes are to be assigned within a single NPA;
- (5) Entire NXX codes are to be assigned within a single 911 tandem serving area;

¹⁰ Order Instituting Rulemaking On The Commission's Own Motion Into Competition For Local Exchange Service; Order Instituting Investigation On The Commission's Own Motion Into Competition For Local Exchange Service. 1996 Cal. PUC LEXIS 848, *36 (August 2, 1996).
¹¹ Order Instituting Rulemaking on the Commission's Own Motion Into Competition for Local Exchange Service. PUC Lexis 848 (Cal. 1996).
¹² THE NUMBER CRUNCH: A TCG SOLUTION, (May 1996).

- (6) A logical grouping area is to be assigned an NXX code and shall utilize a default rate center; and
- (7) A central creation and distribution organization is to be created to administer and implement the solution.¹³

However, interim solutions should not take the place of a permanent policy.

C. Interim Solutions Don't Meet Regulatory Requirements

Congress has addressed the need for permanent number portability, but has yet to determine how best to implement an effective strategy. The task of devising precise terms of an effective permanent number portability policy will be largely determined by the Commission, with input from state commissions and the telecommunications industry. However, Congress has offered some guidance. Congress stated that one method to determine how number portability would work in the local market is through market tests in the local and interexchange telecommunications markets:

... We will learn much about whether local competition will develop to such an extent that harm to interexchange competition can be avoided, with or without other safeguards. We will also enhance our understanding of the importance of factors such as call set-up and transmission delays resulting from interim forms of number portability, consumer demand for one-stop shopping, the terms and conditions of interconnection, and the pricing of network elements in the development of such competition. If competition is not sufficient to be self-policing, we may learn how difficult and costly it is to monitor and prevent discrimination and cross-subsidization. We will also learn about what kinds of safeguards are effective and/or necessary.

Before any market tests and full implementation of permanent number portability, certain bright line rules had to be established in order to ensure that all competitors would start at the same level, thereby promoting true competition.

IV. Permanent Number Portability - Problems In Implementation

As with any new technology that promises to alter the

market and promote competition, there will be problems with implementing new policies to support the technology. To successfully implement permanent number portability, technological and economic problems must be overcome.

A. Cost of Permanent Number Portability

Cost issues are an important consideration in providing true competition in the local market through number portability. While Congress mandated number portability, it left the implementation of charges up to the Commission and the state commissions until there is full implementation of permanent number portability. In Florida, carriers have negotiated appropriate rates for currently available measures of cost recovery as telecommunication companies interconnect with each other to provide service to the public. Louisiana has a two-tiered approach to pricing which allows the Public Service Commission to step in and determine an appropriate rate.¹⁴ Bell Atlantic (BA) estimates the range of the cost of providing number portability to range from \$64 million to \$124 million simply for its own network and support system upgrades.¹⁵ The cost of providing number portability may present regulatory and economic issues which act as a barrier to companies that choose to provide service in the local market, but they are necessary to ensure true competition in the local market.

Essentially, there are two kinds of cost involved in providing permanent number portability in the local market: 1) common or shared costs incurred to establish commonly-used databases and associated facilities and 2) costs that each individual carrier incurs to conform its own network to number portability.¹⁶ These costs include significant network upgrades, including installation of number portability-specific switch software, implementation of SS7 and IN (Intelligent Network) or AIN (Advanced Intelligent Network) capability and the construction of multiple number portability databases.¹⁷

The costs for providing efficient service are immediately incurred solely by the carrier providing the forwarding service. In the long term, all carriers will be required to incur the costs associated with the installation of number portability software and the construction of number portability databases.¹⁸ This is the only fair way to ensure that all members of the industry equally contribute

¹⁴ 11 F.C.C.Rcd. 8352, 8416 (1996).

¹⁵ *Telecom Act Mandate; Industry Feuds Over Cost And Timing of Number Portability*, COMMUNICATIONS DAILY, April 3, 1996, at p. 3.

¹⁶ *Id.*

¹⁷ Software such as IN which is short for an Intelligent Network or AIN which stands for Artificial Intelligence Network allows the switches to route calls quickly and efficiently. 11 F.C.C.Rcd. 8352, 8415 (1996).

¹⁸ *Id.*

¹³ *Id.*

to the development of competition in the local market.

B. The Commission's Solution To Promote Competition

The Commission's solution to promote competition is to allow the states the flexibility to adopt a variety of approaches in cost recovery methods during the interim period. The Commission has articulated general criteria to conform these methods to statutory requirements.¹⁹ The overreaching principle that the Commission is using is that the carriers are to share in the access revenues received for a ported call.²⁰

The Commission is looking for the states to play a very important role in giving them a full understanding of the developments of the local phone market -- acting somewhat as a court of first impression.²¹ Colorado's Public Utility Commission's (PUC) has already taken steps to bring about competition by establishing a Local Number Portability Task Force that has proposed a long term solution to solve local portability problems.²² Thus, the Colorado PUC is facilitating the creation of competition in the local market, ensuring that number portability is in place as the 1996 Act requires. The introduction of alternate service providers, such as wireless companies, will further increase the need for number portability. Wireless service providers are competing in the local exchange market by ensuring that number portability provisions extend to consumers who are switching from wireline to wireless services.²³ MCI has stated that interim solutions probably would not be very useful for true competition and the only real solution would be to develop a database similar to the one used for 800 number service portability.²⁴ Having wireless service providers competing in the local market is an additional way to ensure competition, however it will only be effective once permanent number portability has been established.

The Commission interfered with some state commission's plans when it required the use of the Total Element Long Run Incremental Cost (TELRIC) method to calculate the costs that an incumbent LEC incurs in making

its facilities available to competitors.²⁵ The state commissions and many members of the telecommunications industry opposed the use of the TELRIC method along with other requirements the Commission placed on the industry in its drive to implement the 1996 Act. The state commissions and many members of the telecommunications industry won a victory against the FCC when the 8th Circuit decided to stay the rule implementations of the Commission.²⁶ However, with this victory, the state commissions may have only temporarily delayed the true local phone service competition that will develop as a result of number portability.

C. Technical Criteria For Permanent Number Portability

In developing rules to govern number portability, the Commission made many tentative conclusions. The Commission concluded that: 1) There is a significant interest in promoting the nationwide availability of number portability; 2) It is within the Commission's jurisdiction to ensure that the portability of telephone numbers within the numbering system is handled efficiently and fairly; 3) There is a federal interest in this area because deployment of different number portability solutions across the country would have a significant impact on the provision of interstate telecommunications services; and 4) the Commission has a federal interest in fostering the development of number portability.²⁷ While the Commission's conclusions were very broad and general it allowed them to make more specific rules when it released the order governing number portability that will help to ensure competition in the local marketplace.

The Commission's "technology-neutral" approach may be the best way to allow competition to develop.²⁸ The Commission chose the "technology-neutral" approach because it felt that there was sufficient momentum in the industry toward the deployment of compatible methods.²⁹ The performance criteria for compatible number portability systems should: 1) support existing network services and features; 2) provide efficient use of numbering resources; 3) not route carrier's traffic through competing carrier's facilities; 4) not result in unreasonable degradation of service quality or network reliability; and 5) not give any

¹⁹ 11 F.C.C.Rcd. 8352, 8422-8423 (1996).

²⁰ *Id.* at 8424.

²¹ Reed E. Hundt, Before the Subcommittee on Telecommunications & Finance Committee on Commerce, U.S. House of Representatives, (July 18, 1996).

²² COMMUNICATIONS DAILY, April 25, 1996, at p. 5 (Task force consists of LECs, long distance and cable companies, PUC, Office of Consumer Council, and the Colorado 911 Task Force).

²³ Michele C. Farquhar, Before the Personal Communications Industry Association '96 Conference, "Laying the Foundation For A Wireless Future," (September 20, 1996).

²⁴ *Industry Solution Sought; Ameritech Offers Plan to Solve Number Portability Problems*, COMMUNICATIONS DAILY, February 10, 1995, at p. 4.

²⁵ *Iowa Utilities Board v. FCC*, 1996 U.S. App. LEXIS 27953 at *4 (8th Cir. Ct. App. 1996).

²⁶ *Id.*

²⁷ 60 Fed. Reg. 39136, 39137 (1995).

²⁸ *Technology-Neutral Approach; FCC Mandates Long-Term Number Portability, Sets Standards*, COMMUNICATIONS DAILY, June 28, 1996, at p. 1.

²⁹ *Id.*

carrier proprietary interest.³⁰

The technology-neutral approach supports the existing network standards by using existing technology. This would ensure that service providers could compete in the local market no matter what degree of market penetration they may currently have. Since the technology-neutral approach meets the performance criteria and allows for the full development of number portability, it should promote true competition in the local market.

D. Problems With The Telecommunications Act of 1996

The sections of the 1996 Act that are most relevant to number portability are §§ 251, 261 and 271. These sections require that all LECs provide number portability, negotiate in good faith, and bear the costs of number portability on a competitively neutral basis. Section 271(c)(2)(B)(xi) gives LECs a small reprieve from instituting full number portability until the Commission sets a permanent date for its implementation. More than anything, the 1996 Act requires that competitors negotiate interconnection agreements with each other. Practically applied, the 1996 Act necessitated that clauses governing number portability be incorporated into negotiated agreements between telecommunications companies.

1. Reasons Behind the Mandate

Congress chose to nurture competition by proscribing requirements for telecommunications providers that use number portability. Congress required the Commission to prescribe regulations to ensure that: 1) telecommunications number portability shall be available, upon request, as soon as technically feasible and 2) an impartial entity shall administer telecommunications numbering and make such numbers available on an equitable basis.³¹ Congress made it very clear that it wants number portability to be a part of the services provided by local telephone service providers but that they do not want unfettered competition. Unfettered competition most likely would lead to actions by telecommunications carriers that are not in the best interests of the public.

2. The Commission's Implementation Schedule

The Commission sought to accelerate competition in the local market by requiring LECs operating in the 100 largest Metropolitan Service Areas (MSAs) to offer long-

term service provider portability commencing upon October 1, 1997 and concluding by December 31, 1998.³² The Commission sees its phased deployment schedule in the 100 largest MSAs as being in the public interest, and it is allowing competition to determine the rate of implementation that will take place in the other markets.³³ The requirement to have implementation by these dates was resisted when first proposed. Bell South argued for a delay of implementation for three to five years.³⁴ However, their argument failed as the Commission sought to implement number portability as soon as possible.

A delay would not serve to foster competition in the local market nor would it be in the public interest -- particularly when the provision of number portability is technically feasible today.³⁵ The Commission based its implementation schedule upon the representations of switch vendors, who claim they have the ability to support the deployment of number portability software in 50 switches per week.³⁶ Without the switches number portability can not take place and competition would not flourish.

V. Number Portability is Necessary for Competition in the Local Phone Service Market

Over the years federal and state governments have disagreed over whose jurisdiction will govern new technologies that affect both interstate and intrastate telecommunications. The issue raised in Louisiana PSC v. FCC,³⁷ "Can the revolution in the telecommunications industry occasioned by the federal policy of increasing competition be thwarted by state regulators who have to recognize or accept national policy?"³⁸ remains particularly relevant, as the technology that governs number portability affects both inter and intrastate traffic.

To have competition in the local market there has to be an agreement between the federal government and the state commissions about whose rules shall apply. While it might seem obvious that the Commission's conclusions would apply to the states, the Supreme Court has held that the Commission may not act with impunity in effectuating federal policy (i.e., ensuring competition in the local market).³⁹ However, under Section 251(e)(1) of the 1996 Act, Congress gave the Commission this very authority.

³² 11 F.C.C.Red. 8352, 8393 (1996).

³³ *Id.* at 8395.

³⁴ *Id.* at 8392.

³⁵ *Id.*

³⁶ *Id.* at 8393.

³⁷ 476 U.S. 355 (1986).

³⁸ *Id.* at 358.

³⁹ *Id.* at 374.

³⁰ *Id.*

³¹ 142 Cong. Rec. H1078, H1079 (1996).

Because of the conflict between what Congress says the Commission has the power to do and what the Supreme Court stated in Louisiana, the federal and state commissions should work together to avoid conflict that will delay the local phone service competition that will take place once there is permanent number portability.

A. Competing for Consumers

Some members of the telecommunications industry claim that number portability is overrated when it comes to competing for consumers. They believe consumers' main consideration in switching local access providers is price -- not convenience. The Commission took a more objective approach finding that number portability's competitive importance depended upon the value that the consumers assign to their current telephone numbers.⁴⁰

Some LECs are worried that the cost of implementing number portability will affect their ability to compete. US West says that telecommunications providers should not be required to implement more costly local route numbering (LRN) methods unless consumers can perceive the difference and it is enough to justify expenditures of an additional \$500 to \$700 million to deploy LRN.⁴¹ This expense is just one of the reasons cited by several LECs which feel that the Commission's Number Portability Order bars them from using network technology that could reduce costs and improve efficiency.⁴²

Wireless service providers are concerned with how number portability effects their ability to compete in the local phone service market. The Cellular Telecommunications Industry Association is seeking clarification of the requirements placed on wireless service providers as compared to those placed on LECs, because the number portability order requires wireless carriers to provide number portability in every part of the country while wireline carriers (i.e., NYNEX, Bell Atlantic) would have to serve rural areas only if requested.⁴³ The requirements placed on wireless carriers appear to be broader. Given the technological complexities surrounding the provision of number portability across any service providers network, it is conceivable that the service provider will not be able to meet the Commission's goals within the requested time limits.⁴⁴

VI. Conclusion

For members of the telecommunications industry, number portability is essential to developing a competitive local market. With number portability required by the end of 1998, there is a considerable financial burden placed on all service providers. However, this may be a sacrifice the industry will have to make to ensure true competition in the local market. FCC Commissioner Rachelle Chong put it best when she said, "Number portability is crucial to ... compete head-to-head with the local telephone companies."⁴⁵ Without number portability there will be no true local competition.

⁴⁰ 60 Fed. Reg. 39136, 39137 (1995).

⁴¹ *Reconsideration Sought: LECs Say Number Portability Order Impedes Technology*, COMMUNICATIONS DAILY, August 28, 1996 at p. 1.

⁴² *Id.*

⁴³ COMMUNICATIONS DAILY, August 26, 1996, at p. 5.

⁴⁴ *Id.*

⁴⁵ Rachelle Chong, Before the Personal Communications Industry Association 1996 Conference, San Francisco, California (September 19, 1996).

NOTES