

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

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In the Matter of )  
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Telephone Number Portability )  
Policies )

CC Docket No. 95-116  
RM 8535

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COMMENTS

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## SUMMARY

Service provider portability is important for competition among providers of local services. MCI believes the Commission, the state commissions and industry participants should collectively develop provider portability. MCI suggests that the Commission adopt guidelines to assist industry and state regulators in the development process.

MCI advocates a solution using a combination of the Carrier Portability Code proposal leading to the Location Routing Number proposal. MCI states that architecture and administration of provider portability should not impede competition.

MCI supports portability for 900 and 500 services, but believes location portability should be considered an application for further investigation.

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**COMMENTS**

MCI Telecommunications Corporation and MCImetro (collectively referred to as MCI)<sup>1</sup> respectfully submits these comments in the captioned proceeding. Briefly, MCI states that the Federal Communications Commission (FCC or Commission) should play an active role in establishing guidelines for development of service provider number portability.<sup>2</sup> However, industry participants should continue to produce proposals for provider portability and these proposals should be examined and implemented at the state level. MCI supports portability for nongeographic (900 and 500) numbers.

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<sup>1</sup> MCI has expanded from its core long distance business and today provides a wide array of consumer and business long distance and local services, data and video communications, on-line information, electronic mail, network management services and communications software.

<sup>2</sup> Throughout this pleading, MCI will use the term "provider portability" rather than the more cumbersome and potentially confusing term "service provider number portability." As agreed by participants in the Industry Numbering Committee's (INC's) Local Number Portability Workshop, provider portability refers to the ability of customers to take their numbers with them as they change providers of local service, while remaining in the same geographic location.

**I. IMPORTANCE OF PROVIDER PORTABILITY**

**A. Provider Portability Is Essential to Competition among Local Service Providers**

MCI agrees with the Commission's conclusion (NPRM, ¶ 19) that number portability benefits consumers by providing greater flexibility in the use of telecommunications services and by contributing to competition among providers. It is apparent that provider portability is critical to the success of local competition given its importance to all types of potential customers. Because customers attach significant value to retaining their assigned telephone number, the lack of portability would deter entry by competitive providers of local services.

The NPRM (at ¶ 22) discusses a nationwide poll performed by Gallup which concluded that a large majority of residential and business customers would be unlikely to change local providers if they also had to change their telephone number. A copy of pertinent portions of the survey is attached hereto as Attachment A. In that survey, commissioned by MCI, businesses and residential consumers were asked their likelihood to switch service providers under various scenarios. The survey found that 83% of business customers believed that retaining their telephone numbers when switching service providers was very important; only 5% stated that it was not important at all. Among residential customers, 80% reported that they would be very unlikely or somewhat unlikely to switch service providers if

they had to incur a number change.<sup>3</sup>

**B. Provider Portability Is Important for Competition among Wireless Service Providers**

As for wireless services (NPRM at ¶ 24), provider portability is important for the development of competition both between wireless providers and among wireline and wireless service providers. Today most cellular markets have two providers, but a customer of one cannot change providers without changing the associated number. Nor can a customer of wireline telephone service carry that number to a wireless service provider.

There may be technical nuances required to achieve provider portability for wireless services. Wireless equipment in use today is programmed to accept a carrier identifier and a specific NXX for the customer. To accommodate provider portability, individual handsets in use would need to be reprogrammed, and the method of programming the handsets would need to be modified going forward.

Nevertheless, MCI emphasizes that provider portability

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<sup>3</sup> Pacific Bell submitted to the Industry Numbering Committee in August a poll which substantiates the results of the Gallup survey. It shows that even a substantial discount (5% to 25%) offered by the competitive local provider would not be sufficient to yield the same opportunity for market penetration as would provider portability. Pacific Bell, "Analysis of Potential Local Access Competition in the Pacific Bell Residence and Business Markets," dated August 3, 1995. Pacific's chart (p. 21) is attached hereto as Attachment B (showing that 11% of incumbent LEC's customers would not switch providers even if the competitive local provider were to offer a 25% discount).

can and should proceed while a technical solution is being worked out for wireless equipment.

**C. Number Churn Does Not Create Opportunity for Providers of Local Services To Compete for Customers**

The Commission asks (NPRM at ¶ 23) to what extent "number churn" would enable providers to compete for customers without provider portability. Although this issue is raised by some parties in the discussion of number portability, it is a "red herring" that does not merit lengthy consideration by the Commission.

Number churn alone cannot and does not provide opportunity for a competing carrier to enter the local exchange market. Number churn may result from any number of situations, primarily the customer moving to a location served by a different wire center.

When a customer is moving from one residence or office to another, no opportunity is created for a competing carrier. The incumbent LEC is the only carrier with information on when its customer is changing addresses. The customer notifies the incumbent LEC in advance that a move will take place. The incumbent LEC decides whether the customer can keep the number or whether the customer will need a number from a different central office. If a new number is needed, the incumbent LEC assigns the customer a number from the appropriate central office. There is no point in this process at which a competing carrier would

have the opportunity to offer this customer its services.

In any event, number churn does not shed light on the customer's willingness to change the telephone number. The fact that the customer has changed numbers due to a physical move does not imply that the customer was willing to change numbers. In fact, the customer is not given the choice to keep the number; the decision is made by the incumbent LEC. If the customer were given the choice to keep the number, all indications are that (s)he would.

One of the reasons customers raise frequently for not wanting to change telephone numbers is the expense and inconvenience of having to change stationery, business cards, and other printed materials. When the customer moves to a new business location, the telephone number change becomes just one additional line change on printed materials. However, if a customer were to change service providers but keep the same address, the expense and inconvenience of changing all published materials would be directly related to the change of telephone numbers. Clearly, this would be factored in by any customer considering a change of service providers, while it is not an issue for the customer who is usually the subject of number churn.

**II. INDUSTRY PARTICIPANTS, STATE REGULATORS AND THE FCC SHOULD COLLECTIVELY DEVELOP PROVIDER PORTABILITY**

The NPRM (at ¶ 28-34) asks for comments on the

appropriate role for the FCC and others in the development of number portability. MCI believes the Commission can and should play an important role in guiding the industry and state commissions in developing number portability solutions. However, the state commissions should continue to play the pivotal role in selection of the portability model to be used in their states. Moreover, industry participants should continue to develop their proposals and present them to regulators and customers for acceptance.

MCI agrees with the Commission's conclusion (NPRM at ¶ 28) that market forces alone will not drive the development and deployment of provider portability. Regulatory intervention has been, and may continue to be, necessary.

To that end, MCI believes the Commission should take several actions to advance provider portability. First, MCI urges the Commission to find that the concept of service provider portability is in the public interest.

Second, MCI recommends that the FCC encourage state commissions to make a decision on implementation of provider portability by one year after release of the FCC's order. It is MCI's firm belief that provider portability can be accomplished in the current telecommunications network within a year if the FCC orders its deployment and ensures, along with state regulators, that incumbents work diligently to accomplish this objective.

On the other hand, the FCC should not select the

technical model to be used for provider portability. In the case of 800 number portability, the FCC did not select a technical solution but instead directed the industry to develop a solution within a given timeframe.<sup>4</sup> A similar approach, with state commission involvement, would be suitable here. Therefore, as discussed below, state regulatory examination of technical proposals and market circumstances should determine which solution will be used in each state.

Instead of selecting a solution itself, MCI recommends that the Commission issue guidelines that will assist industry participants and state regulators in the development process. There is precedent for this approach in the proceeding involving number plan area code relief plans, IAD File No. 94-102.<sup>5</sup>

MCI suggests that the Commission adopt the following guidelines:

1. Portability must be transparent to the users. There should be no loss of quality, functionality, or access to services caused by the portability solution itself;
2. Existing network infrastructure and standards should be used to the extent technically and economically feasible;
3. The solution should allow for open competition in

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<sup>4</sup> Provision of Access for 800 Service, Memorandum Opinion and Order on Reconsideration, 6 FCC Rcd 5421, 5425-27 (1991).

<sup>5</sup> Proposed 708 Relief Plan and 630 Numbering Plan Area Code by Ameritech - Illinois, Declaratory Ruling and Order, IAD File No. 94-102, FC 95-19, released Jan. 23, 1995.

the vendor community; the solution should not be proprietary or have licensing fees associated with it;

4. All local exchange providers should be benefitted in the same way and should be required to deploy the same network capabilities to enable provider portability;

5. The solution should immediately support wireline service provider portability within the chosen geographic area. It should be capable of expanding to accommodate wireless service, location and service portability within a fixed period of time;

6. The solution should have minimal impact on the numbering resource;

7. Call rating should not change as a result of the portability solution;

8. Calls originating from nonportability-capable providers must be accommodated;

9. The solution should support any national standards adopted for provider portability;<sup>6</sup>

10. The industry's provisioning databases should be built, deployed and administered in a neutral manner;

11. Database information must be accessible to all service providers.

The FCC should not require a uniform solution nationwide (NPRM at ¶ 28). Mandating a nationwide solution at this time may, in fact, delay implementation of viable portability models that are already underway or under consideration in the states.

MCI believes the states should continue their

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<sup>6</sup> Some of these points are contained in the guidelines that have been proposed to the Illinois Commerce Commission for portability within Illinois. "Number Portability Guidelines," submitted by ICC Staff July 31, 1995.

examination of provider portability models and should select which model best suits the particular market. Market forces and industry proposals will necessarily influence the portability solution that is selected for that market. It is logical to conclude that this will lead to a standard approach to portability, or at least approaches that can technically coexist.

It would be appropriate for the FCC to encourage the state commissions to follow the FCC-established guidelines in selecting a solution for their states. This approach would be consistent with the Commission's recognition (NPRM at ¶ 32) that state regulators have legitimate interests in the development of number portability and that they are already conducting tests and deploying number portability measures.

Industry groups and individual participants have played a major role in advancing provider portability. The FCC notes (NPRM at ¶¶ 36-39) that various portability proposals have been presented to the Industry Numbering Committee (INC) portability workshop and to certain state commissions. The state portability proceedings have consistently included representatives of the same parties: MCImetro, AT&T, Metropolitan Fiber Systems, Teleport Communications Group, Sprint, Time Warner, GTE and the Regional Bell Operating Company (RBOC) serving the state. MCI believes these parties and others should continue to drive the development

of provider portability.

The INC has contributed to the process of developing provider portability by serving as a sounding board for industry proposals. However, the INC participants have extensively discussed the issues relating to provider portability and have declined to endorse a particular plan. Therefore, the FCC should not consider the INC to be a likely forum to decide a portability implementation plan.

To the extent there are technical and performance standards issues related to provider portability that need to be resolved, MCI believes these issues should be referred to the appropriate T1 standards committee (for example, the T1S1 Subcommittee for signatory issues), which functions under the auspices of the Alliance for Telecommunications Industry Solutions (ATIS). As discussed below, the approaches advocated by MCI and AT&T would require only minimal, if any, network standards modification in the long run and no such modification for the initial implementation phase.

**III. THE MOST EFFICIENT NUMBER PORTABILITY SOLUTION IS A COMBINATION OF MCI'S CARRIER PORTABILITY CODE APPROACH LEADING TO THE AT&T LOCATION ROUTING NUMBER APPROACH**

MCI believes that the industry should support implementation of MCI's Carrier Portability Code (CPC) approach as a critical first step toward implementation of AT&T's longer-term Location Routing Number (LRN) approach.

As discussed below, CPC can be implemented by early 1996 because it requires relatively minor switch development. LRN is advantageous because it will deliver a full range of capabilities when it becomes available at a future date.

**A. MCI's Proposal Can Be Implemented in Today's Network**

A multi-company task force convened by MCImetro has developed a workable prototype for provider portability.<sup>7</sup> The Intelligent Network/Advanced Intelligent Network (IN/AIN) solution uses a number portability database to obtain the information necessary to route calls to subscribers who have changed service providers.

The key aspect of MCImetro's single-number solution is a series of three-digit identification numbers, one for each of the service providers within a particular Numbering Plan Area (NPA). These identifying numbers, the CPCs, are stored in the database with the ported subscriber's directory number and, when needed, replace NPAs for call-routing purposes.<sup>8</sup> See Attachment C hereto for representation of

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<sup>7</sup> In addition to MCImetro, team members include Siemens Stromberg-Carlson, Northern Telecom, Tandem Computers, and DSC Communications.

<sup>8</sup> The FCC (NPRM at ¶ 36) states that the MCImetro proposal uses two NPA codes and precludes the use of the second code for other purposes. MCImetro has two points to clarify this statement. The use of the CPC is internal to the network and therefore, for most current switching systems, does not prevent the use of the NPA in areas outside the area of portability coverage. Also, with the approach advocated by MCI, the use of the CPC will be in effect only temporarily, until the Location Routing Number approach is implemented.

call-flows using the CPC.

The CPC transparently replaces the three-digit NPA for the purpose of routing the calls to the appropriate local provider's end office. When a call is initiated to a ported subscriber, the carrier routing the call into an area where provider portability has been deployed would know from the NXX code of the dialed number that the telephone number may have been transferred to another local service provider. The carrier would query a database serving that area, which would return a three-digit carrier portability code corresponding to the service provider serving the dialed number. The carrier then would route the call according to the combination of the CPC and the dialed NXX code.

The CPC approach maximizes the probability of rapid broad-scale implementation of provider portability. It has a number of advantages, the most important of which may be its reliance on, and integration with, existing networks and switches, with no significant increase in network complexity. As a single-number solution, CPC would have minimal impact on current and future network services and underlying operational support systems compared with dual number solutions. The CPC solution uses existing signalling and protocol standards and can query the network's Signalling Control Point (SCP) using either TCAP 800 IN or AIN Release 0.1 protocols and triggers. This eliminates the need for any significant development in switching systems.

This approach minimizes costs for other interested carriers and suppliers, encouraging their participation. It minimizes service/feature interaction issues and also minimizes impacts on billing records systems. It can be introduced into local service areas without the major development effort required by other portability concepts. This approach is nonproprietary to MCImetro or any of the participating companies. Their interest is in creating a competitive arena for local and long-distance services not in benefitting financially from selection of CPC as the industry solution.

The team successfully demonstrated the prototype on April 6, 1995, in Richardson, Texas. The demonstration achieved number portability -- i.e., calls to the original directory number were routed to the proper local service provider -- without subscribers perceiving any change in service.

Furthermore, the New York Public Service Commission's Local Number Portability Task Force has recognized the advantages of the MCImetro proposal over others and has selected this approach for a real-world test which is scheduled to begin in February of 1996. Other state commission endorsed workshops -- notably, in Illinois, Maryland, California -- are favorably considering this approach as well.

As regards questions raised by the Commission about the

capabilities of the CPC solution (NPRM at ¶ 36), MCI provides the following information. The CPC solution does not affect the handling of operator functions requiring a query of the Line Information Database (LIDB), such as busy line verification, collect calls, calling card calls, and third-party billing. Because CPC does not affect the format of the called-party number, it does not affect the LIDB. Operator service calls would be handled as usual with the CPC single-number solution. Once the operator services platform hands the call off to its serving switch, a database query occurs and the call will complete via the new service provider.

In the case of busy line verification, the operator services platform will need to query the database to determine the CPC for the service provider and then forward the call to that service provider's operator services position where a verification trunk to the terminating switch can be accessed.

Collect calls can be completed by the serving switch for the operator services platform performing the database query. Downstream billing for these calls will require incorporating the database content with the billing/call processing information. A similar process is required for third party billing. In the case of calling card calls and LIDB issues, a logical solution is to require the LIDB owner where the NPA-NXX is assigned to provide the LIDB capability

at a tariffed cost to those competitors that have numbers ported to them with that NPA-NXX combination. Collect, third party billed and calling card calls all require database access. In the absence of the solution given above, 10-digit Global Title Translations will be required in the STP or the SCP to determine which LIDB database to query. The database dip and call processing for these calls would be the same as for operator services calls.

In addition, the FCC considers it a disadvantage that MCImetro's proposal would only permit portability within the area served by the number portability database. This is true of any database solution. The FCC's premise is apparently that nationwide coverage is necessary. However, as discussed in these comments, it is not necessary to have nationwide coverage to have effective provider portability.

**B. MCI Supports AT&T's Location Routing Number Proposal as a Longer-Term Portability Solution**

AT&T submitted at the INC portability workshop (Dec. 1994 and June 1995 meetings) a database method for providing provider portability on a regional basis. AT&T's approach to provider portability is also a single-number solution that assigns a network routing address on a per-switch basis rather than the per-line basis typically used.

AT&T designates its approach the Location Routing Number (LRN) approach. The LRN is the means of routing the call through the network to the terminating switch using a

10-digit number in the format NPA-NXX-XXXX as currently used in network routing. LRN routing would preserve the NPA-NXX of the called party number. These first six digits would identify the local exchange end office serving the called party. The last four digits would not be the same as in the dialed number, and would not be the same number across all switches used in routing the call.

By relying on the first six digits currently used, this approach would minimize the impact on carriers' existing infrastructures, thus controlling costs. Switch modifications and signalling impacts would be minimal. No changes would be necessary in the existing AIN 0.1 TCAP messages to accommodate LRN. This approach would also minimize the impact on the NANP number resources since only one number per NXX is the LRN for that switch. Even so, it would allow full functionality to customers of ported numbers.

When the call arrives at the terminating switch, the switch will recognize the LRN because the NPA-NXX-XXXX will be the one signifying that this is a call to a ported number. The switch would then look in the Signalling System 7 (SS7) generic address parameter for the actual called-party number to deliver the call.

**IV. ARCHITECTURE AND ADMINISTRATION OF PROVIDER PORTABILITY SHOULD NOT IMPEDE COMPETITION**

**A. The Management and Administration of Provider Portability Databases Should Be Competitively Neutral**

MCI believes that the 800 portability management system, which employs a common industry database and individual carrier (Responsible Organization) databases, should be used as a model for the provider portability service management system (SMS). The industry's provider portability databases should be built, deployed and administered by a neutral third party.

There would also be routing databases, which could be owned by individual carriers or collectively among carriers, or which may be provided by independent vendors. Individual carriers need to be able to access the industry's database to download the routing information for use in their own networks. Access to the databases should be open to all affected carriers. For example, each carrier that has customers who may port to or from its services, and each carrier that needs to know the identity of the terminating local carrier for routing purposes, should have access to the database. Operation of the 800 number management system has taught the industry that every affected carrier must be able to access the database to add or modify routing information as necessary. Additional guidelines for administration of the databases could be agreed through the state activities noted previously.

One critical element which impacts all of the issues noted above is that of the basic architecture used in the provider portability approach. This includes both when and by whom database queries are required and performed. The industry has identified three basic architecture models for which network would perform the query, as noted by the Commission (NPRM at ¶ 43): (1) originating network, (2) terminating network, and (3) next-to-last network (so-called N-1 model). MCI supports the N-1 model, as do most local exchange providers and interexchange carriers.

In the N-1 model, the carrier immediately prior to the terminating service provider would query the database. For a local call, the originating carrier performs the query and routes the call to the correct terminating network. For an interLATA call, the interexchange carrier performs the database query and routes the call to the proper terminating network. As the Commission stated (NPRM at ¶ 46) this N-1 scenario avoids the need to route the call through the incumbent local exchange carrier.

**B. Provider Portability Should Be Limited in Geographic Scope**

MCI believes that provider portability would be most effective if it were contained to a small area (no larger

than a state).<sup>9</sup> The FCC should conclude that it is in the public interest for each state to determine whether the best scope for portability, within its boundaries, is statewide, LATA-wide, or within the local calling area. State commissions would be free to decide whether the ideal scope of provider portability for their jurisdictions would cross state boundaries. In some cases, it may be more effective to have the area of coverage incorporate areas located in more than one jurisdiction.

On the other hand, it is MCI's view that a nationwide solution is not necessary and may not ultimately be the best approach for provider portability. It would be expensive, complex and time-consuming to establish and maintain a nationwide solution. It is not currently feasible to implement a nationwide database solution. The modifications needed to accommodate such an approach would exceed the complexity and expense of 800 number portability by an unknown magnitude. Every local telephone number could potentially be ported to another carrier. The resources that would be consumed in devising a nationwide solution could be better used deploying smaller-scale approaches.

### **C. Costs of Provider Portability and Cost Recovery**

The costs of designing, building, deploying and

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<sup>9</sup> This section is intended to discuss the scope of area for provider portability and should not be confused with location portability, which is discussed in Section VI. below.

operating provider portability will ultimately depend on the implementation model that is selected by each state. Those solutions which make the best use of current technologies should prove to be most cost effective. MCI believes the combination of CPC-LRN meets that objective.

The FCC has recognized in the case of 800 number portability that all customers benefit from portability, not just the customers who ask to port their numbers. Portability increases competition among providers and consequently reduces prices, and increases the availability of innovative new services, for all customers. As a result, these costs should not be borne exclusively by new providers of local services and their customers.

**V. Interim Portability Measures Do Not Offer Customers True Provider Portability**

Some local exchange carriers, primarily the Regional Bell Operating Companies, are advocating what they call "interim" measures. The two most common methods are remote call forwarding (RCF) and flexible direct inward dialing (FDID). The Commission should consider these as nothing more than interim measures to be tolerated until provider portability can be implemented.

Remote call forwarding merely redirects the customer's calls to another telephone number. With RCF, Carrier A's switch translates the dialed number into a number with an NXX corresponding to a switch operated by Carrier B, and

routes the call to Carrier B. The change in carriers is transparent to the caller.

With FDID, the call is routed to the carrier's switch designated by the NXX of the dialed telephone number. Unlike RCF, the original service provider does not translate the dialed number but routes the call to the number over a dedicated facility to the new service provider's switch.

These interim portability measures are discussed in greater detail in Attachment D hereto: Robert W. Traylor, "Local Number Portability: An Overview," dated September 5, 1995. Briefly, the deficiencies of RCF and FDID are caused because RCF and FDID capabilities were designed to provide services and capabilities which are completely unrelated to provider portability. Moreover, RCF and DID approaches both require calls to route through the incumbent LEC's switch, which limits its applicability for purposes of provider portability.

The interim measures degrade transmission quality, making them unsuitable for data transmissions. They add call set-up time. They increase call blocking. They cause loss of Custom Local Area Signalling Service (CLASS) features (such as caller identification, automatic callback and automatic recall) because they place a second call to a transparent telephone number. Use of two numbers accelerates exhaust of NANP resources. They impair 911 and Enhanced 911 compatibility due to the two-number