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JUN 15 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Charon J. Harris

June 15, 1995

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street N.W.
Room 222
Washington, D.C. 20554

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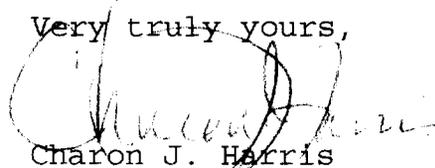
RE: Interconnection and Resale Obligations
Pertaining to Commercial Mobile Radio
Services, CC Docket No. 94-54

Dear Mr. Caton:

Enclosed please find an original and nine copies of the original signed declarations of Kurt C. Maass and Roderick Nelson that should be attached as Exhibits 2 and 3, respectively, to AT&T Corp.'s comments filed yesterday, June 14, 1995, in the referenced proceeding. The signature pages of these declarations that were filed yesterday were facsimile copies.

Please let me know if you have any questions regarding this matter.

Very truly yours,



Charon J. Harris

Attachments

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JUN 15 1995

DECLARATION OF RODERICK NELSON

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

1. I am Vice President - Engineering of McCaw Cellular Communications, Inc. ("McCaw"), a wholly-owned subsidiary of AT&T Corp. In this capacity, I am responsible for the technical evolution of McCaw's cellular network and the development of new network services and products. Prior to assuming this position, I worked on cellular radio planning, capital budgeting, procurement and other aspects of engineering for cellular systems.

2. I have reviewed specific reseller switch proposals that have been submitted to subsidiaries of McCaw located in California. Based on my review of these proposals, I believe that the technical and other issues raised by the resellers' proposals typify the serious questions that must be addressed before any conclusion can be reached that such interconnection arrangements are reasonable or rational. Many of these questions arise from the resellers' professed need to handle all aspects of the call. However, under existing technical specifications many of the call features and functions cannot be extended to the reseller for handling by the reseller switch. My analysis of the reseller switch proposal suggests that it would likely reduce service quality for resellers' customers from its present level. Moreover, the proposal would increase the risk of system congestion because of the involvement of two separate entities in the necessary planning of end-to-end facilities used by customers to complete a call. The following paragraphs illustrate the technical and other issues raised by the reseller switch proposals.

TECHNICAL ISSUES

Call Handling

3. There are several serious questions raised by the resellers' proposal for call handling. First, the resellers' switch proposals indicate that they will provide all vertical features to their own subscribers. However, in many cases this is not possible. For example, features such as call waiting, three-way calling, and call transfer are provided by the cellular MTSO. Call waiting and three-way calling are features resident in both mobile location data bases -- the Home Location Register ("HLR") and Visited Location Register ("VLR"). Reseller switches will not have VLRs; these databases are available only in MTSOs, i.e., the switches that actually perform radio channel assignments to wireless end users, manage call hand-offs, and otherwise control communications between mobile terminals and base stations. Moreover, activation and deactivation of service features from mobile handsets of reseller subscribers must also be processed by the serving MTSO.

Second, the reseller proposals indicate that intercept messages will be provided by their switch. Neither existing standards (such as IS-41), nor provisions by manufacturers allow for this. For example, congestion messages related to the interconnection to the reseller switch can only be provided by the carrier switch. As these issues illustrate, reseller proposals cannot be met without significant changes to existing standards and manufacturers' equipment. Furthermore, the proposals do not, in

any significant way, simplify the processing necessary by the carriers' switch to provide service to the resellers' customers.

4. Operation, Maintenance and Testing

The proposals contain no specifications for operation and maintenance of the integrated networks. Interconnected network facilities must have operation and maintenance specifications that are compatible. Without such compatible specifications, testing is not possible. Testing is necessary for new capabilities and after hardware or software changes have been made in the networks.

5. 911 Service

The reseller switch proposals do not contain provisions for the handling of 911 calls when the reseller switch is not functioning or the incoming trunk group is congested. In both of these instances subscribers would require special applications and back-up service by the cellular MTSO in order for the 911 call to be completed.

6. Hammering

Reseller switch malfunctions will lead to "hammerings". Hammering occurs when the reseller switch is malfunctioning and end users make repeated attempts to access the reseller switch. Hammering will generate voice channel allocations and reduce the number of voice channels available to the cellular carrier's customers. Moreover, unless rerouting capability is contracted for by the switch reseller, the reseller subscriber's calls will not be completed when the reseller's switch is out of service.

7. **Fraud**

Technical specifications to protect against fraud are vital. Fraud is estimated to cost carriers and consumers many millions per year. The reseller switch proposals have not offered any technical interconnection specifications or procedures to address fraud. Reseller switch subscribers and cellular carriers must have an understanding of how they will be protected against fraud.

OTHER ISSUES

8. **Roaming Capability**

It is unclear from the proposals how roaming would be handled for reseller switch subscribers. All customers of resellers today are served by the switches and HLRs of the underlying carriers; resellers' customers accordingly receive roaming services under the terms of the intercarrier agreements that have been established by the underlying carriers. According to the resellers' switch proposals, resellers would assume control over their customers' roaming activities. Technically, resellers expect to rely on their own HLRs to define where their customers can roam and to control fraud. However, if resellers intend to assume these functions, they must first establish their own roaming agreements. The underlying carriers that currently support roaming by reseller customers cannot be expected to do so in the future, since they will have yielded (under the resellers' proposal) the ability to control the roaming activities of reseller customers to the resellers' own HLRs.

9. **Billing**

Billing for cellular calls is measured based on the V&H coordinates from the cell site where the call originated. The cellular switch cannot provide billing information to the reseller switch indicating from which cell site the call originated. Under McCaw's existing technical specifications, every call from a reseller switch will look the same.

10. **Conclusion**

If cellular carriers were forced to make interconnection available pursuant to the resellers' proposals, it would not create a significant reduction in costs for cellular operator networks. Many of the capabilities sought by the reseller switch proposals cannot be supported by existing carrier network technology. In order to implement these proposals, cellular carriers would incur significant costs in research and development to design technical specifications in order to interconnect with the reseller switch in a manner that allowed all features and functions of the cellular carrier's system to be extended to the reseller. The carriers' limited resources that would otherwise be used to expand their systems, plan for digital conversions, and improve customer services would have to be redirected to reseller interconnection.

More importantly, mandating reseller interconnection raises concerns about licensed CMRS providers' continued ability to modernize and reconfigure their networks. In the past few years, cellular networks have evolved considerably in order to achieve operating efficiencies and support new service offerings. CMRS

networks should not be restricted in the future from continuing to develop by the constraints of having to support mandatory interconnections (and associated software and hardware modifications) for resellers.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 14, 1995.

A handwritten signature in cursive script, appearing to read "Roderick Nelson", written over a horizontal line.

Roderick Nelson

Declaration of Kurt C. Maass

1. My name is Kurt C. Maass. I am Vice President - External Affairs for McCaw Cellular Communications, Inc. ("McCaw"). McCaw is a wholly-owned subsidiary of AT&T Corp. As Vice President - External Affairs, I am responsible, among other things, for our interconnections with other telephone carriers, including both landline local exchange and wireless telephone companies. In this role, I develop our policies with respect to our business relationships with other telephone companies, and negotiate those business arrangements.

2. McCaw Cellular systems interconnect, or have considered interconnecting, with numerous entities in the course of doing business. These entities include, but are not limited to, incumbent local exchange telephone companies ("LECs"), interexchange companies ("IXCs"), competitive access providers ("CAPs"), other CMRS providers, public safety answering points ("PSAP"), large customers, and resellers. Each of these interconnections provide a different function and require a different set of hardware and software protocols in order to work. I will discuss a few of these interconnections below.

3. Interconnection with LECs is accomplished through a variety of means, most of which are described in Bellcore's Technical Reference TR-NPL-000145 (Compatibility Information for Interconnection of a Wireless Services Provider and Local Exchange Carrier (Issue 2), December, 1993). This document describes the technical arrangements and standards for LEC-CMRS interconnection, including, among others, Type 1 (PBX-like), Type 2A (tandem) and Type 2B (end office). The document does not address the financial or business arrangements necessary to implement these technical standards, however. These business arrangements are the subject of negotiations between CMRS providers LECs.

4. McCaw works with its LEC interconnectors on an individual basis to determine the most technically efficient and economical arrangements possible. In the vast majority of cases, these interconnections are supported by high capacity DS-1 or DS-3 digital circuits connected via ports to our switches.
5. In the majority of cases, landline LECs do not compensate CMRS providers for traffic originated by a customer on the landline network and destined for a customer of a CMRS provider. And, in some cases, the LECs actually charge CMRS providers for landline-originated traffic. For traffic originated on the CMRS network and destined for the landline network, CMRS providers always compensate the LECs, either in the form of flat rate per circuit charges (sometimes levied on Type 1 facilities), or, as is most commonly the case, on a combination of facilities and per minute of use charges (typical on Type 2A and Type 2B facilities).
6. CMRS providers also interconnect with IXCs. This interconnection can also be accomplished through a variety of technical arrangements, depending on the desires of the parties. In some cases, CMRS providers connect directly with IXCs, usually using facilities (DS-1 or DS-3 high capacity circuitry, for example) provided by the LECs or, in some rare instances, by CAPs. Alternatively, CMRS providers may choose to route traffic through a LEC for delivery to a particular IXC. In still other cases, the CMRS provider may route traffic destined for IXCs in general through the LEC on an equal access basis, utilizing Feature Group D protocols. These interconnections also require and are supported by detailed business arrangements.
7. Finally, CMRS providers can also interconnect with other CMRS providers. While this is not a widespread practice at the present, the

growth of CMRS over the past 10 years has made the option increasingly more efficient. As a carrier's traffic to a particular destination grows, it reaches a point at which it becomes economical and efficient to route that traffic directly to its destination rather than through a middleman for delivery and termination. The LECs have employed direct routing for years on the landline network, resulting in a series of end office and tandem switch connections, depending on traffic volumes, redundancy requirements, and availability of ports. CMRS providers are beginning to employ this concept in their networks as well, evidenced by an increasing number of Type 2B connections (interconnections directly to landline end offices rather than through LEC tandem switches) and direct connections to other CMRS providers. McCaw has directly interconnected with other CMRS providers in several instances, and is exploring additional opportunities at this time. At McCaw, we consider these arrangements when traffic volumes to another CMRS provider would justify and support a dedicated DS-1 circuit between the carriers. These are objective and measurable criteria that can be analyzed from a technical and engineering perspective.

8. My belief is that existing CMRS providers possess neither the incentives nor the ability to disadvantage their rivals through denying direct interconnection to them. There are two primary reasons for this belief: (1) under just about any scenario CMRS-CMRS traffic is an extremely tiny percentage of total traffic and thus the ability to materially harm rivals is accordingly very low; and (2) given the fact that current interconnection arrangements with the LEC result in prices which are not reciprocal and are far in excess of cost for mobile to landline traffic, the incentive for existing CMRS providers is to seek out lower cost interconnection options where technically feasible, rather than to deny them in order to disadvantage rivals.

9. First, and probably most telling, is the fact that CMRS to CMRS traffic volumes have been extremely small in the past, are still very small today, and show no signs of increasingly appreciably in the foreseeable future. Based on routine traffic measurements, I estimate that less than one percent of total minutes of use on our systems is intercompany CMRS to CMRS traffic (that is, traffic originated by a customer of one CMRS provider and delivered to a customer of another CMRS provider). While the volumes have been increasing, this is due to the growth of the telecommunications business in general, and does not reflect any fundamental change in proportions of traffic flows. Existing CMRS providers simply do not have the ability to harm their rivals by refusing to directly interconnect with them.

10. The vast majority of traffic - in the range of 95 percent (calculated by subtracting the 1% CMRS-CMRS intercompany traffic and the approximately 4% CMRS-CMRS intracompany traffic from the total) - either originating or terminating on a CMRS device is received from or delivered to the existing LEC network. Since intercompany CMRS to CMRS traffic is such a small portion of the total, existing CMRS providers do not possess the ability to appreciably harm their rivals today by denying them direct interconnection. Consequently, even if one assumed that an existing CMRS provider could raise its rival's costs to deliver CMRS to CMRS traffic by refusing to connect directly with the rival, the actual effect on the rival would be minuscule. It is unlikely that existing CMRS providers could raise a rival's total interconnection costs by as much as even 0.5%. Any impact that such a strategy could have on the rival's total operating costs would, of course, be negligible. It would take a very significant change in circumstances - that is, a very significant change in traffic patterns - for existing CMRS providers to

gain any greater ability to effect rival's costs by denying direct interconnections. The data shows no such patterns emerging.

11. The second reason why CMRS providers are unlikely to deny direct interconnection to their rivals in order to harm them is the perverse nature of LEC interconnection pricing (including the fact that the LECs do not compensate CMRS providers for landline-originated traffic), which drives CMRS providers to seek out opportunities for alternative interconnections, rather than to deny them.
12. CMRS providers have essentially two options for exchanging traffic today - routing through the existing LEC network or directly connecting. When traffic volumes are small, it makes the most sense to route traffic destined for customers of other CMRS providers through the LEC. Even when LEC interconnection prices are far in excess of cost, small traffic volumes do not justify the expense and effort associated with dedicating a port on the switch and arranging and paying for the dedicated DS-1 connection that is required for direct connection. When traffic volumes warrant (that is, when volumes reach a level that justifies a DS-1 connection), McCaw actively seeks opportunities to connect directly with other CMRS providers. In fact, we have several such arrangements either already in place or currently under discussion.
13. Further, unlike the LECs, most CMRS providers are willing to discuss traffic exchange in the context of mutual compensation - that is, each carrier pays the other for traffic originated by its customers and delivered to the customers of the other CMRS provider. Since interconnection costs are a significant expense item for any carrier that must interconnect with the other providers, we are constantly looking for opportunities to reduce our costs. Directly connecting with carriers willing to compensate us for traffic exchange aids this effort because we are provided not only

with the opportunity to negotiate a lower cost for interconnection than currently charged by the LEC, but to be paid for traffic that we receive as well.

14. Reducing expenses in this manner is critical to all CMRS providers, and will be essential if the Commission's vision of ubiquitous, low-cost wireless service is to become a reality. Today a larger carrier, with greater traffic volumes, will arguably have an even greater incentive than smaller rivals to invest incremental resources in establishing separate interconnections that afford alternatives to the LEC. In the future, this will become more critical for existing CMRS providers as they face competition from arguably lower-cost, all-digital competitors. And, as those competitors grow, traffic volumes will grow with them, making intercompany CMRS to CMRS interconnection all the more feasible and efficient. The incentives, both today and in the future, then, are for existing CMRS providers to seek out, rather than deny, interconnection with new rivals.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on June 14, 1995.



Kurt C. Maass