An hourglass-shaped graphic with a globe inside. The top bulb is dark blue, and the bottom bulb is light blue. The globe is centered in the narrow neck of the hourglass. The text is overlaid on this graphic.

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*Intercarrier Compensation: One Component of Telecom
Reform*

Charles B. Goldfarb, Resources, Science, and Industry Division

April 28, 2005

Abstract. Nondiscriminatory intercarrier compensation - the payments that interconnected carriers make to one another when more than one carrier's network must be used to complete a telephone call or other electronic communication - is the linchpin of a competitively neutral regulatory regime. Under current statutory requirements and regulatory rules, these payments vary widely (from 0.1 cents to 5.1 cents per minute), depending on whether the interconnecting party is a local exchange carrier, a long distance carrier, a wireless carrier, or an information service provider, and whether the service is classified as telecommunications or information, local or long distance, or interstate or intrastate - even though in each case basically the same transport and switching functions are provided.

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Intercarrier Compensation: One Component of Telecom Reform

April 28, 2005

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Intercarrier Compensation: One Component of Telecom Reform

Summary

Nondiscriminatory intercarrier compensation — the payments that interconnected carriers make to one another when more than one carrier's network must be used to complete a telephone call or other electronic communication — is the linchpin of a competitively neutral regulatory regime. Under current statutory requirements and regulatory rules, these payments vary widely (from 0.1 cents to 5.1 cents per minute), depending on whether the interconnecting party is a local exchange carrier, a long distance carrier, a wireless carrier, or an information service provider, and whether the service is classified as telecommunications or information, local or long distance, or interstate or intrastate — even though in each case basically the same transport and switching functions are provided.

There is general agreement that in today's competitive environment, intercarrier compensation reform is needed because the current regime:

- distorts investment decisions and undermines efficient competition by providing artificial advantages/disadvantages to those service providers that happen to be subject to favorable/unfavorable intercarrier compensation rules;
- fails to provide innovators certainty about the intercarrier compensation regime to which their services will be subject;
- encourages uneconomic arbitrage — that is, providers making business decisions based on the artificial rates set for intercarrier compensation, rather than on true underlying costs;
- creates an artificial cost structure, based on minutes of use, which appears to be inconsistent with actual cost causation in networks and which renders it difficult for carriers to meet the preferences of many consumers for offerings consisting of large baskets of minutes or unlimited calling at a fixed price;
- requires carriers to expend millions of dollars and scarce information technology resources developing systems to identify, measure, monitor, bill, reconcile, audit, and dispute the classification of traffic; and
- undermines the stability of universal service subsidy funds.

At the same time, in some quarters there is resistance to comprehensive intercarrier compensation reform because of concerns that some carriers and some consumers may be harmed by the changes.

- Reform is likely to result in an increase in end-user subscriber line charges, which consumer groups argue would unfairly burden low usage and low income customers.
- Reform is likely to reduce the intercarrier compensation revenues of rural local exchange carriers and increase their need for universal service funding at a time when rural wireless carriers also are seeking access to a potentially limited amount of total universal service funds.
- Reform is likely to require modification of intrastate intercarrier compensation rates, but since these have been within the jurisdiction of state regulatory commissions, some observers have questioned whether the Federal Communications Commission can undertake such reform without active state involvement.

This report will not be updated.

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Intercarrier Compensation: One Component of Telecom Reform

Overview

Over the past 30 years, telecommunications policy in the United States slowly has evolved from government sanctioned monopoly provision of all telecommunications services to competitive provision of most telecommunications services. Congress explicitly mandated this competitive market approach in the Telecommunications Act of 1996.¹ These competing providers have had to interconnect their networks and, today, most telephone calls and electronic communications travel over more than one carrier's network to get from the calling party to the called party. Since the calling party only pays the carrier to which it subscribes for service, a system of intercarrier compensation has been needed to compensate any other carrier whose network facilities are used to complete the call.

The telecommunications sector today is characterized by the deployment of new digital technologies that are driving the convergence of previously distinct markets. These new technologies are being deployed in — and carried over — wireline, wireless, and cable networks that are becoming increasingly capable of providing voice, data, and video services over a single broadband platform. With these new technologies, costs are no longer driven by distance, and traffic no longer stays within national boundaries, no less state or local boundaries. There is a consensus that the current framework of telecommunications statutes and regulatory rules, based on outdated classifications that do not conform to marketplace realities, no longer fosters such fundamental public policy objectives as competition, universal service, and rapid innovation.

Perhaps the most significant such set of legacy rules involves intercarrier compensation, which affects telecommunications competition, innovation, and efficiency, as well as the universal availability of telecommunications services. Nondiscriminatory interconnection is a prerequisite for competitive telecommunications markets and nondiscriminatory intercarrier compensation is the linchpin of a competitively neutral regulatory regime.

The current system of intercarrier compensation was implemented on a piecemeal basis, as specific existing telecommunications services were opened to competitive provision or providers offering entirely new services (such as wireless service) were allowed to interconnect with the public switched telephone network. Today, these intercarrier compensation payments vary widely, depending on:

¹ Telecommunications Act of 1996, P.L. 104-104, 110 Stat. 56 (“1996 Act”).

- whether the interconnecting party is a local exchange carrier (“LEC”),² an interexchange (long distance) carrier, a commercial mobile radio service (“CMRS” or wireless) carrier, or an information service provider (“ISP”), and
- whether the service is classified as telecommunications or information, local or long distance, or interstate or intrastate,

even though in each case basically the same transport and switching functions are provided.

As shown in Figure 1, a chart prepared by the Intercarrier Compensation Forum (“ICF”),³ today the *average* intercarrier compensation rate ranges from 0.1 cents per minute for traffic bound to an ISP to 5.1 cents per minute for intrastate traffic bound to a subscriber of a small (rural) incumbent local exchange carrier; individual rates can be as low as zero and as high as 35.9 cents per minute.⁴ These intercarrier compensation charges can represent a substantial portion of the costs of providing certain services and, in the case of long distance calls that interexchange carriers are

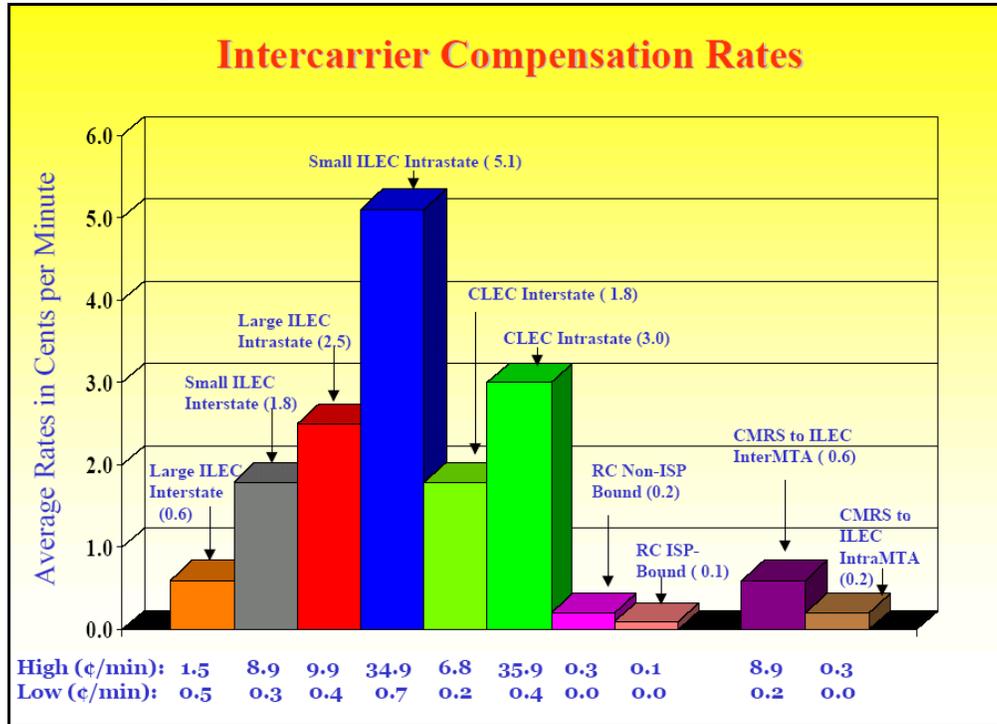
² These payments vary even among LECs, depending on whether the carrier is an incumbent local exchange carrier (“ILEC”), that is one of the legacy LECs that was a government sanctioned local monopoly provider prior to the implementation of the 1996 Act; a small LEC (sometimes referred to as a rural LEC), that is an ILEC serving a small rural area; or a competitive local exchange (“CLEC”), that is a new competitive provider of local exchange service that was allowed to enter the market as a result of enactment of the 1996 Act.

³ The ICF is a group of carriers from different segments of the telecommunications industry that has submitted a proposal for comprehensive intercarrier compensation reform, *In the Matter of Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, Ex-Parte Brief of the Intercarrier Compensation Forum in Support of the Intercarrier Compensation and Universal Reform Plan (“ICF Plan”), October 5, 2004.

⁴ ICF Plan at Appendix C, p. 2. In Figure 1, “RC” refers to “reciprocal compensation,” the cost-based system for intercarrier compensation between providers of local service mandated by the 1996 Act (47 U.S.C. §§ 251(b)(5), 252(d)(1)(A), and 252(d)(2)(A)). “IntraMTA” and “InterMTA” refer to the distinction between those calls originating on wireless networks that are treated as local vs. long distance for intercarrier compensation purposes, as discussed in greater detail below. All classifications with the words “intrastate” or “interstate” refer to intercarrier compensation rates for long distance calls.

required by statute and Federal Communications Commission (“FCC”) rule to offer at a single rate nationally,⁵ can exceed the retail price for the service.⁶

Figure 1: Current Inter-carrier Compensation Rates



Source: Inter-carrier Compensation Forum

Given the wide variation in inter-carrier compensation rules applied to carriers and technologies that are now competing with one another, the FCC adopted a

⁵ In section 254(g) of the 1996 Act, 47 U.S.C. § 254(g), Congress instructed the FCC to “adopt rules to require that the rates charged by providers of interexchange telecommunications services to subscribers in rural and high cost areas shall be no higher than the rates charged by each such provider to its subscribers in urban areas. Such rules shall also require that a provider of interstate interexchange telecommunications services shall provide such services to its subscribers in each State at rates no higher than the rates charged to its subscribers in any other State.” To implement this statutory instruction, the FCC adopted a geographic rate averaging rule and a rate integration rule. (47 C.F.R. § 64.180.)

⁶ The “access charges” that some rural local exchange carriers charge long distance carriers for originating the long distance calls made by customers located in those rural areas, or for terminating the long distance calls made to customers located in those rural areas, exceed the nationally averaged price that the long distance carriers charge their subscribers for those calls, and thus the long distance carriers lose money on each long distance call into or out of those rural exchanges. As a result, long distance carriers are reluctant to make available to customers in those areas service packages that are likely to be attractive to heavy long distance users.

Further Notice of Proposed Rulemaking in February 2005 to review and reform its rules with the goal of constructing a unified intercarrier compensation regime.⁷ The FCC seeks public comment on nine comprehensive intercarrier compensation reform proposals or sets of principles that have been submitted to the FCC as well as a staff proposal.⁸ The issues raised in the ICC FNPRM are not new to the Federal Communications Commission. In 2001, the FCC opened a rulemaking proceeding and adopted a Notice of Proposed Rulemaking seeking information on how to develop a unified intercarrier compensation regime.⁹

There is general agreement that intercarrier compensation reform is needed because:

- *The current regime distorts investment decisions and undermines efficient competition* by providing artificial advantages/disadvantages to those service providers that happen to be subject to favorable/unfavorable intercarrier compensation rules. For example, for non-local calls made within any of the 51 Metropolitan Trading Areas (“MTAs”) in the United States,¹⁰ if the

⁷ *In the Matter of Developing a Unified Intercarrier Compensation Regime*, Further Notice of Proposed Rulemaking (“ICC FNPRM”), adopted February 10, 2005, released March 3, 2005.

⁸ See the following documents filed with the FCC in the Intercarrier Compensation proceeding: The National Association of Regulatory Utility Commissioners (“NARUC”) Study Committee on Intercarrier Compensation Goals for a New Intercarrier Compensation System, May 5, 2004; Cost Based Intercarrier Compensation Coalition (“CBICC”) Proposal, September 2, 2004; Ex Parte Brief of the Intercarrier Compensation Forum in Support of the Intercarrier Compensation and Universal Service Reform Plan, October 5, 2004; The Intercarrier Compensation and Reform Plan of the Alliance for Rational Intercarrier Compensation, October 25, 2004; A Comprehensive Plan for Intercarrier Compensation Reform Developed by the Expanded Portland Group, November 2, 2004; Western Wireless Intercarrier Compensation Reform Plan, December 1, 2004; Updated Ex Parte of Home Telephone Company, Inc. and PBT Telecom, November 2, 2004; Ex Parte of CTIA — The Wireless Association, November 29, 2004; the National Association of State Utility Consumer Advocates (“NASUCA”) Intercarrier Compensation Plan, December 17, 2004; “A Bill-and-Keep Approach to Intercarrier Compensation Reform,” ICC FNPRM, Appendix C.

⁹ *In the Matter of Developing a Unified Intercarrier Compensation Regime*, Docket No. 01-92, Notice of Proposed Rulemaking (“ICC NPRM”), 16 FCC Rcd at 965.

¹⁰ Rand McNally & Co. has formulated 493 non-overlapping Basic Trading Areas (“BTAs”) that cover the entire United States and its territories. Each BTA represents a geographic region, defined by a group of counties that surround a city, which is the area’s basic trading center. The FCC has used these BTAs to determine service areas for PCS wireless licenses. In turn, these 493 BTAs are aggregated into 51 Major Trading Areas (“MTAs”), usually composed of several contiguous basic trading areas. Individual MTAs are quite large, and can encompass several states. For a map showing the MTA boundaries, see [<http://wireless.fcc.gov/auctions/data/maps/mta.pdf>] (viewed on 4/14/05). The intercarrier compensation rules are different for intraMTA wireless calls that originate and terminate within an MTA and interMTA wireless calls that originate and terminate in

(continued...)

caller uses a wireless telephone, the caller's wireless carrier is subject to a cost based "reciprocal compensation" charge for the termination of that call; but if the caller made an identical call, from the same location to the same called party, using a wireline telephone (and hence a wireline long distance carrier), that carrier would be subject to an above cost "access charge" for the termination of the call. As another example, when a long distance call is made to a called party's wireline telephone, that party's wireline local exchange carrier can charge the calling party's long distance carrier an above cost access charge for terminating the call; but if an identical long distance call were made to the same called party, from and to the same physical location, but to the called party's wireless telephone, the called party's wireless carrier is not allowed to charge the calling party's long distance carrier any access charge for terminating the call.

- *The current regime fails to provide innovators certainty about the intercarrier compensation regime to which their services will be subject.* For example, since voice over Internet protocol ("VoIP") service is, on one hand, an application of an information service and, on the other hand, functionally equivalent to a traditional voice telephone call, it arguably fits into two different classifications for the purposes of intercarrier compensation. Information services are not subject to access charges; long distance telephone calls are. The business plans of VoIP providers will be strongly affected by the ultimate decision about how they are classified for intercarrier compensation purposes.
- *The current regime encourages uneconomic arbitrage* — that is, providers making business decisions based on the artificial rates set for intercarrier compensation, rather than on true underlying costs. For example, because of the traffic patterns of ISPs and some anomalies in the rules,¹¹ some CLECs have pursued the market strategy of targeting ISPs as customers. They have offered ISPs service at what may have been below-cost rates because they could more than recoup any losses by charging above-cost rates to the carriers of the ISPs' subscribers for terminating the large volume of

¹⁰ (...continued)
different MTAs.

¹¹ Specifically, (1) ISPs are treated like end users; (2) ISPs receive far more calls than they make, so an ISP's LEC will terminate far more calls from the ISP's subscribers than it originates from the ISP; (3) for many of those terminated calls, the ISP's LEC can charge the carriers serving the ISP's end user customers above-cost access charges; and (4) the ISP's LEC can choose a single point of interconnection with the carriers serving the ISP's end user customers in a way that requires those carriers to bear most of the costs of transporting the traffic to the ISP. The specifics of this are discussed in the section below on "Where should networks be allowed, or required, to interconnect with one another?"

subscriber calls to those ISPs.¹² Regulators also may seek to exploit uneconomic arbitrage. For example, state regulators as well as rural LECs may have the incentive to limit the scope of rural local calling areas since calls that are classified as long distance will generate more revenues (through toll charges or access charges) than they would if classified as local and also will tend to move the burden of cost recovery from local rural customers to urban long distance customers (since long distance rates are averaged and thus urban customers who can be served at low cost face higher averaged rates that contribute to the recovery of higher rural costs).

- *The current regime creates an artificial cost structure, based on minutes of use, which appears to be inconsistent with actual cost causation in networks and which renders it difficult for carriers to meet the preferences of many consumers for offerings consisting of large baskets of minutes or unlimited calling at a fixed price. For example, under the current access charge regime, interexchange carriers are charged on a per-minute-of-use basis for the switching used to originate and terminate their customers' calls, making the interexchange carriers' underlying cost structure usage-sensitive even though the preponderance of those switching costs appear not to be usage-sensitive.¹³ But by facing these artificially imposed usage-based costs, long distance carriers are discouraged from offering large baskets of minutes or unlimited calling at a fixed price since they would lose money when serving high usage customers, who are the customers most likely to select such packages.¹⁴*
- *The current regime requires carriers to expend millions of dollars and scarce information technology resources developing systems to identify, measure, monitor, bill, reconcile, audit and dispute the*

¹² In its 2001 ISP Report and Order, the FCC found that “under the current carrier-to-carrier recovery mechanism, it is conceivable that a carrier could serve an ISP free of charge and recover all of its costs from originating carriers.” The ILECs were somewhat constrained in their ability to compete with the CLECs for these ISP customers because in certain situations they are not allowed to negotiate individual contracts with customers, but rather are limited to offering services through tariffs that are generally available to all customers.

¹³ A more detailed discussion of switching costs is presented below in the section entitled, “What is the underlying cost structure of the transport and switching functions?”

¹⁴ The long distance carriers assert that the Bell operating companies, which are now allowed to offer long distance service and typically do so as part of a package of local and long distance service, do not face the same problem. The long distance carriers claim that, even if the Bell companies' long distance arms must pay the same usage-based access charges to their local operating companies as the long distance carriers pay, the underlying costs to the Bells are not usage-sensitive. That is, any losses that the Bells' long distance arms might suffer, when serving a high usage customer, by having to pay minute-of-use access charges while offering large baskets of minutes or unlimited calling at a fixed price, are matched by the additional profits that the Bells' local operating companies generate from those minute-of-use access charges (since their underlying costs are not increasing with usage).

classification of traffic as local or toll, intrastate or interstate, intraMTA or interMTA,¹⁵ information service or telecommunications service, etc., in order to determine which intercarrier compensation rules apply. It also encourages wasteful litigation as carriers fight among themselves about that classification of traffic. These costly nonproductive activities will continue to grow as providers respond to consumer demand for bundled offerings of services that fit into different classifications.

- *The current regime undermines the stability of universal service subsidy funds.* Where ILECs rely at least in part on the profits from above cost access charges to defray the cost of providing universal service, this funding source is in jeopardy because the number of minutes subject to access charges is declining as carriers with more favorable intercarrier compensation treatment (for example, wireless and VoIP carriers) are gaining market share and traditional long distance carriers have an incentive to manipulate the complex packages of services that they offer to minimize their exposure to access charges.

At the same time, in some quarters there is resistance to comprehensive intercarrier compensation reform because of concerns that some carriers and some consumers may be harmed by the changes. In this view:

- If the access charges currently imposed by local exchange carriers on interexchange carriers to originate and terminate long distance calls were reformed to more accurately reflect the low proportion of switching costs that appear to be usage-sensitive (and the high proportion that appear to be fixed), per-minute access charges imposed on the long distance carriers would fall, but the fixed costs of switching would likely be recovered by raising the subscriber line charge imposed on end users for connecting to the network. Consumer groups have consistently opposed line charges of any sort, arguing that such charges unfairly burden low usage and low income customers.¹⁶
- The access charges that long distance carriers must pay to small rural local exchange carriers for originating or terminating the long distance calls of the rural carriers' customers tend to be higher than the access charges paid to urban carriers. This is in part because the small rural carriers' underlying costs are higher than those of urban carriers due to the lack of population density and lack of scale economies and in part due to efforts by regulators to keep rural end

¹⁵ The intercarrier compensation rules are different for intraMTA wireless calls that originate and terminate within an MTA and interMTA wireless calls that originate and terminate in different MTAs.

¹⁶ See, for example, "Jessica Zufolo: Emerging VoIP Policy is Driving Investment," *Telecom Policy Report*, September 29, 2004.

users' local rates low. Also, the rural carriers' local calling areas tend to be narrowly defined and to serve only a small number of households. Many of their customers' incoming and outgoing calls therefore are classified as toll (long distance) calls, for which the rural LECs receive above-cost minute-of-use access charges from long distance carriers, rather than the fixed end-user charge typical of local service. As a result, the small rural LECs historically have generated a much larger portion of their total revenues from access charges than have urban LECs.¹⁷ Since the access charges of rural LECs exceed costs by more than those of urban LECs, and since rural LECs have depended on access charges more than urban LECs, reforming access charges to bring them down to cost would place a greater revenue burden on rural LECs than on urban LECs. Absent another revenue source, end-user line charges would have to be raised more in rural areas than in urban areas. To keep line charges from growing to the point where local service becomes unaffordable or non-comparable with urban rates, a new universal service funding mechanism would be needed to replace the implicit universal service funding currently in the rural carriers' access charges. Although all the proposals for intercarrier compensation reform have included new universal service funding mechanisms, the rural LECs prefer not to have to rely so heavily on an explicit universal service funding mechanism. They generally prefer to have three revenue sources — line charges, universal service funds, and above-cost access charges — rather than just the first two. In part, this is because they prefer to recover a larger portion of their costs from long distance carriers (whose averaged rates subsidize rural customers) than from their own end-user customers in subscriber line charges. And in part it is because they are concerned about relying too heavily on universal service funds, which they consider a potentially unstable source of revenue, especially now that rural wireless carriers are seeking these same universal service funds.

- Although section 254(e) of the 1996 Act requires universal service support to be explicit and sufficient,¹⁸ many state regulators continue to set intrastate access charges — and especially the intrastate access charges of rural carriers — at above-cost rates that exceed interstate access charges, in order to create a revenue source (ultimately borne primarily by customers of long distance carriers that do not live in rural areas) that will help keep local rates low. Some parties question whether the FCC has the authority to modify intrastate

¹⁷ The ICC FNPRM, at paragraph 107, states: “According to NTCA [the National Telecommunications Cooperative Association], rural LECs receive on average 10 percent of their revenue from interstate access charges and 16 percent from intrastate access charges. In comparison, it asserts that the BOCs [Bell Operating Companies] receive only four percent of their revenue from interstate access charges and six percent from intrastate access charges.”

¹⁸ The 1996 Act states at § 254(e): “Any such support should be explicit and sufficient to achieve the purposes of this section.”

access charges (as part of comprehensive intercarrier compensation reform) without the formal involvement of the states.

Given the many affected interests with conflicting views and the impact of intercarrier compensation on so many public policy objectives, Congress could consider oversight or legislation to provide the FCC with guidance as that proceeding evolves. The purpose of this report is to provide a primer on intercarrier compensation.

Historical Background

In a “network industry” such as telecommunications, customers benefit the more people (or companies or websites or databases) they can reach over the network to which they subscribe. Thus, if there is more than one network, consumer benefit is maximized when those networks are interconnected. For most of the 20th century, telephone service was provided by government sanctioned monopoly. When public policy changed and competitive provision of service was permitted, the incumbent providers were required to allow the new entrants to interconnect with their networks in a nondiscriminatory fashion to complete calls made to the incumbents’ customers. Otherwise, the incumbents could have used their dominant position to refuse to interconnect with the smaller networks of the new entrants, or to impose onerous interconnection terms and conditions on the entrants, and the latter would have been impeded in their ability to attract and serve customers.

Today, most electronic communications require the use of more than one carrier’s network to be completed. For example:

- local wireline telephone calls originate on the network of the calling party’s local exchange carrier and terminate on the network of the called party’s local exchange carrier (which may be a competing local exchange carrier or an adjacent local exchange carrier rather than the caller’s local exchange carrier) or the called party’s cellular carrier.
- long distance calls originate on the network of the calling party’s local exchange carrier, pass to the network of the calling party’s long distance carrier, and then terminate on the network of the called party’s local exchange carrier.
- wireless telephone calls originate on the network of the calling party’s wireless carrier, are transported over wirelines (typically leased by the wireless carrier from a wireline carrier),¹⁹ and then terminate on the network of the called party’s local exchange carrier or wireless carrier.

¹⁹ More than 90% of wireless telephone calls travel over wireline facilities during some portion of their route. Even most calls that originate and terminate on wireless networks travel over wireline facilities at some point in their route.

- end-user connections (dial-up or broadband) to information service providers originate on the network of the subscriber's (calling party's) local exchange carrier or broadband provider (wireline, wireless, or cable), may be transported over an intermediate carrier's (transit) network, and terminate on the network of the carrier serving the ISP (the called party).²⁰

While sometimes the calling party and called party have the same local or wireless carrier, or sometimes the calling party purchases its local and long distance service from the same carrier, in most cases completion of a call requires the use of more than one carrier's network.

The calling party only pays the local, long distance, or wireless carrier to which it subscribes; it makes no payments to the called party's carrier. And today only in the case of wireless service does the called party pay anything to its carrier for calls received. As a result, a system is needed to compensate the other carriers whose networks are used to complete the call.

Prior to MCI's successful legal challenge to the old Bell system's government sanctioned telephone monopoly²¹ and the consent decree settlement of the federal government's antitrust suit that resulted in the divestiture of AT&T into separate and independent local and long distance companies,²² there was very limited need for intercarrier compensation since there were very few carriers — only monopoly Bell local operating companies, monopoly independent telephone companies, and AT&T (the monopoly Bell long distance company that served both Bell and non-Bell customers). Local service rates were kept low, to foster the goal of universal service, by setting long distance rates far above cost. Sometimes, when an independent telephone company bordered a Bell company service area, "extended area (local) service" ("EAS") was offered in which a local calling area extended beyond the boundary of the independent telephone company into the Bell service area. EAS service was intended to lower rates to subscribers by allowing calls that otherwise would have been high priced long distance calls to be treated as local calls. When the Bell operating companies terminated EAS calls originating on the independent telephone companies' networks, and vice versa, the companies did not charge one another for such termination, even if the traffic between the two carriers was not in balance. Rather, intercarrier compensation followed a system known as "bill-and-

²⁰ When the ISP receives the communication from a subscriber, it routes that communication over its owned or leased distribution facilities (Internet transport networks) or over a larger ISP's transport network to a Network Access Point, where the communication is routed to another Internet network and may travel over various Internet backbone networks and regional or mid-level networks (which are connected by network access points) and local area networks to reach the appropriate destination host.

²¹ MCI brought several suits against AT&T and also challenged in the courts several FCC decisions. See, for example, *MCI Telecommunications Corporation v. Federal Communication Commission*, 561 F. 2d 365 (D.D.Cir. 1977).

²² Modification of Final Judgment, *United States v. American Telephone and Telegraph Company*, 552 F. Supp 131 (D.D.C. 1982).

keep,” in which no payments were made from one carrier to the other, as if traffic were in balance. With respect to compensation from the long distance division of AT&T to the independent telephone companies for originating and terminating long distance calls, these charges were set based on a complex system of cost “separations” and “settlements” that resulted in the AT&T long distance carrier paying intercarrier compensation rates that far exceeded cost in order to subsidize local service. In the internal accounts of the Bell System, too, payments were made from the long distance division to the various local Bell operating companies that resulted in the AT&T long distance carrier paying origination and termination rates that far exceeded cost.

As competitive provision of telecommunications services has been allowed in a piecemeal fashion over the past 30 years, state and federal regulators have regulated the newly necessary intercarrier compensation rates also on a piecemeal basis, allowing or requiring very high or very low rates in order to foster specific public policy objectives rather than requiring intercarrier compensation rates to be set consistently for all calls. As shown in Figure 1, the resulting rates for performing the same termination functions (transport and switching) vary significantly simply because a particular call is interstate vs. intrastate, or because a service provider has been treated as an end user rather than a carrier, or because a call terminates on a wireless network rather than a wireline network. For example:

- in order to maintain low rates for basic local service — to help meet the goal of universal service — state regulatory commissions and the FCC have allowed local exchange carriers to charge long distance carriers significantly above-cost access charges for originating and terminating intrastate and interstate long distance calls. Although the 1996 Act requires the creation of explicit universal service funding mechanisms,²³ and the FCC has established a transition process that has lowered interstate access charges closer to cost,²⁴ some implicit universal service subsidies remain in certain intercarrier compensation charges, especially in rural LECs’ intrastate access charges that, as shown in Figure 1, average more than five cents per minute.
- in order to promote enhanced services, the FCC has treated enhanced service providers (including ISPs) as end users, rather than carriers. This allows ISPs to purchase lines out of the local carriers’ tariffs for business customers, which do not include usage-based charges, rather than out of the tariffs for interexchange carriers, which have usage-based charges for both originating and terminating calls.

²³ The 1996 Act states at § 254(e): “Any such support should be explicit and sufficient to achieve the purposes of this section.”

²⁴ See, for example, *Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers*, CC Docket Nos. 96-262 and 94-1, Sixth Report and Order, *Low-Volume Long Distance Users*, CC Docket No. 99-249, Report and Order, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Eleventh Report and Order, 15 FCC Rcd 12962, 12991-93, paras. 76-79 (2000).

Since ISP customers often stay online for long periods of time, if ISPs had to pay minute-of-use access rates it would have made it prohibitively expensive to offer flat rated retail service.

- the FCC adopted rules²⁵ to implement statutory language in the 1996 Act requiring reciprocal compensation arrangements for the transport and termination of telecommunications between competing local exchange carriers at rates approximating the “additional costs” of performing those functions.²⁶ These rules covered the local calls of local exchange carriers and the intraMTA calls of CMRS (wireless) carriers.
- since wireless service in the past was seen as a niche service whose customers made a lot of calls but received very few, and not as a substitute for long distance wireline service, wireless providers are required to pay wireline local exchange carriers access charges for the termination of interMTA calls originating on their networks and terminating on wireline networks, but are not allowed to charge other carriers access charges for the termination of interMTA calls received by their subscribers.

These, and other, inconsistencies in intercarrier compensation requirements are incompatible with competitive telecommunications markets.

Comprehensive Intercarrier Compensation Reform: Key Issues

The current intercarrier compensation rules developed in a piecemeal basis as alternative providers, some using new technologies, were granted permission to compete with existing providers and interconnect with the incumbents’ networks. In each case, explicit or implicit decisions were made about, among other things, where and how the interconnections could occur, what the terms, conditions, and rates were for the interconnection, and who should bear the transport and switching costs associated with terminating (and, in the case of long distance service, originating) the traffic. A decision to modify one of these parameters is likely to affect the others. For example, changing the requirements about where carriers may or must interconnect for the exchange of traffic may affect the portion of the cost burden that each carrier should bear and/or the most efficient pricing mechanism for intercarrier compensation. In the debate over alternative intercarrier compensation reform proposals, a number of important — and contentious — issues are likely to be raised.

Should the called party share the cost burden with the calling party?

²⁵ 47 C.F.R. § 51.701.

²⁶ 1996 Act, §§ 251(b)(5), 252(d)(1)(A), and 252(d)(2)(A).

Why this matters.

Most telephone calls and electronic communications benefit both the calling party and the called party, so there could be justification for the calling party and the called party sharing in the cost of the call. But in the United States traditionally only the calling party (and the carrier to which that party subscribes) has paid.²⁷ The FCC refers to this as the “calling-party-network-pays” approach to intercarrier compensation.²⁸ This approach has been justified on several grounds:

- called parties should not have to pay for unwanted and unsolicited calls, such as those from commercial or noncommercial telemarketers and spammers.
- customers should be able to control their monthly local telephone bill, which is more difficult to achieve if they must pay for incoming calls that, unlike outgoing calls, are beyond their control.
- the administrative costs may be higher if the carrier of the calling party and the carrier of the called party each have to bill an end-user customer, rather than just the carrier of the calling party billing its end-user customer and, in turn, the carrier of the called party billing the carrier of the calling party.

But the primary reason why policy makers have preferred a calling-party-network-pays regime is that it allows them to set intercarrier compensation rules that foster such public policy objectives as universal services and the protection of nascent services such as Internet services.

For example, under a system of calling-party-network-pays, the costs of terminating a call are borne by the calling party’s carrier — and, as will be discussed below, it is possible to set terminating rates that exceed those costs. In particular, above cost termination rates can be imposed on long distance carriers, and the extra revenues from those above cost termination rates can be used to keep end users’ local rates low. The long distance carriers, in turn, will impose most of the burden of those above cost termination rates on low cost urban customers. Since long distance carriers are required to set nationally averaged retail long distance rates,²⁹ the low cost urban customers will be subsidizing the higher cost rural customers. These above-cost rates for terminating calls, however, create market distortions that may give some providers artificial competitive advantages over other providers.

²⁷ However, as explained in the Historical Background section, prior to the break-up of the Bell System, extended area local service traffic flowing between the Bell local companies and independent telephone companies was exchanged on a bill-and-keep basis, in which the carriers were not compensated for completing calls for one another. (Some Bell operating companies and independent LECs still employ bill-and-keep.) The carriers recovered the costs of terminating these local calls from their own customers — that is, the called party shared the cost.

²⁸ ICC FNPRM, at p. 10, para. 17.

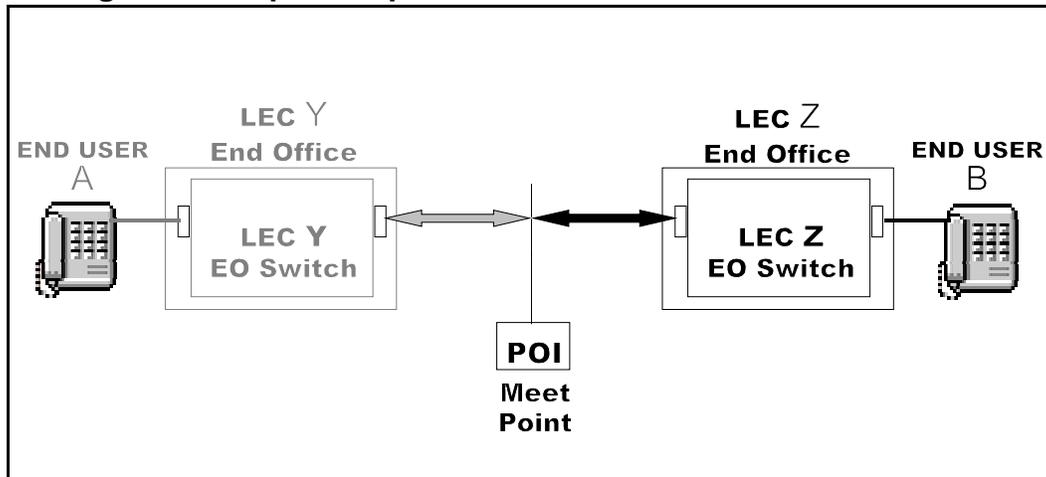
²⁹ See footnotes 5 and 6 above.

In contrast, if the costs of terminating calls are borne by the called party — that is, the end user pays its local carrier for the terminating costs associated with received calls — there is no potential intercarrier source of subsidies. The called party's local service rate would recover those terminating costs, either through an additional line item on the bill or an increase in an existing line item. If the resulting line item(s) are determined by a regulatory body to be unaffordable or non-comparable to urban rates, and thus set at a price below costs, the called party's LEC might receive explicit universal service funding or implicit subsidies from above cost business rates or rates averaged across high cost and low cost customers, but would no longer be able to receive subsidies from other carriers.

Analysis and discussion.

In a normal market, if a provider sets price well above cost, that creates a market incentive for its customers to seek an alternate provider and for other providers to enter the market. But under calling-party-network-pays, there are no built in market forces constraining the price a carrier could charge another carrier for terminating calls.

Consider the simple example, shown in Figure 2, of end user A, who subscribes to LEC Y for local service, making a local call to end user B, who subscribes to LEC Z for local service. Completion of the call requires use of both Y's network and Z's network, but only Y gets paid by the calling party. The call goes over the line from end user A's residence to the end office in LEC Y's network that serves A. It is routed through the switch in that end office to the transport line that goes to the point of interconnection ("POI") or "meet point" between LEC Y's network and LEC Z's network. The call is then transported over LEC Z's network to the end office in Z's network that serves end user B. In that end office, it is switched to the residential line that goes to B's house. Since Z is providing necessary transport and switching functions that its own subscriber B does not pay for, in a calling-party-network-pays regime it will demand compensation from Y for terminating the call. But if Z sets the price it charges Y for terminating the call well above cost, this does not raise the cost for the called party, B, who is not charged for termination. It simply adds to the cost of Y. The latter is a captive customer since it cannot affect B's choice of local exchange carrier. Once B has chosen Z to be its LEC, Y has no actual or potential alternative to Z for terminating that call. Absent regulatory intervention, the terminating carrier — in this case, Z — has the ability to exercise its market power to raise the rates it charges other carriers, such as Y, for terminating calls made by their subscribers.

Figure 2. Simple Telephone Call Over Two Carriers' Networks

Source: Simplified version of a diagram presented in the ICF Plan at Appendix C, p. 5.

Even if there are many competing local exchange carriers offering service to A and B, once B has chosen its local exchange carrier, all calls to B must be terminated over the network of that chosen carrier. B has no incentive to choose its local exchange carrier based on which carrier charges the lowest rates to other carriers for terminating calls to customer B. In fact, B might have the incentive to choose the local exchange carrier that strategically charges very high rates to carriers for terminating calls (since these customers are captive) and uses the extra revenue to set lower rates for end-user customers.

Under calling-party-network-pays, there is one situation in which market forces might constrain how much the called party's carrier will charge to terminate the call. If all carriers' traffic tended to be in balance — in the sense that the number of calls made by their customers (calling parties) to the customers of other carriers was approximately the same as the number of calls received by their customers (called parties) from the customers of other carriers — then the potential revenues and costs from the function of terminating one another's calls would tend to be a wash.³⁰ The incentive to raise the price for terminating calls would likely be constrained because all carriers would face the same market environment in which higher revenues from high termination charges imposed on other carriers would simply be matched by higher costs for high termination charges imposed by other carriers.³¹

³⁰ Balanced traffic need not result in balanced costs if, for example, one of the carriers faced a higher underlying cost structure (due, for example, to low population density or unique terrain problems).

³¹ Carriers, however, could have an incentive to raise termination rates — even if they would be matched by an equal increase in termination costs — if Wall Street values revenue growth rather than (or in addition to) income growth. This condition holds whenever “growth companies” are in ascendancy in the capital markets, as they were in the late 1990s.

But the traffic between carriers is rarely in balance and, as a result, there are no market forces under a calling-party-network-pays pricing regime to constrain termination charges. Indeed, local exchange carriers have the incentive to strategically pursue those customers who receive more calls than they make — for example, ISPs — because then they can take advantage of the fact that the calling party's carrier is a captive customer for terminating service to set rates for termination far above cost with no risk of losing that captive customer.³² A local exchange carrier whose customers receive more calls than they make will profit because it will generate more revenues from terminating calls to its customers that originate on other carriers' networks than it will generate costs to terminate the calls originated by its customers to called parties that subscribe to other carriers.³³ Several small competitive local exchange carriers pursued this strategy to the point where they allegedly provided local service to ISPs at little or no charge, obtaining most or all of their revenues from the charges they made to other carriers for terminating calls.³⁴ The ISPs do not pay for, and will not care about, the charges for terminating service — and might even encourage their local carriers to charge carriers a higher termination price if they can use that to negotiate a lower price for themselves.

Similarly, long distance carriers must make payments to local exchange carriers both to connect to their customers and to complete the calls made by their customers, but do not receive compensation from other carriers. Long distance customers will not care about the rates that their local carriers charge long distance carriers to complete calls to them; long distance carriers have no way to reward those customers who call parties that choose local carriers with low termination charges.³⁵ In a

³² See *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Inter-carrier Compensation for ISP-Bound Traffic*, CC Docket Nos. 96-98 and 99-68, Order on Remand and Report and Order (“2001 ISP Order”), adopted April 18, 2001 and released April 27, 2001, at paragraph 5, which states: “For example, comments in the record indicate that competitive local exchange carriers (CLECs), on average, terminate eighteen times more traffic than they originate, resulting in annual CLEC reciprocal compensation billings of approximately two billion dollars, ninety percent of which is for ISP-bound traffic. Moreover, the traffic imbalances for some competitive carriers are in fact much greater, with several carriers terminating more than forty times more traffic than they originate.” (Footnotes omitted.) In some situations, CLECs enjoyed an advantage over ILECs when competing for these customers because they had complete flexibility in the pricing they could offer while ILECs were subject to regulatory constraints limiting them to sales out of their published tariffs and prohibiting the use of customer-specific contracts.

³³ This is especially so if a CLEC can identify just a single point of interconnection in a large geographic area and the ILEC must bear all the costs of transporting traffic originating on its network to that single POI, which is allowed under the current rule.

³⁴ See 2001 ISP Order, at para. 5, where the FCC found that “under the current carrier-to-carrier recovery mechanism, it is conceivable that a carrier could serve an ISP free of charge and recover all of its costs from originating carriers.”

³⁵ Long distance carriers are in a somewhat less captive position with respect to the originating portion of calls than the termination portion of calls. When a long distance carrier has a very large customer that originates many calls, if that customer's local exchange carrier sets the charges for originating long distance calls far above cost, it may
(continued...)

calling-party-network-pays regime, there are no market forces constraining the price of terminating long distance calls.

As a result, even as competition has developed in many telecommunications markets, allowing regulators to reduce or eliminate their regulation of prices, there is general agreement that under a calling-party-network-pays regime regulation is still needed for intercarrier compensation rates charged for terminating communications on the local telephone network.

But that regulation typically has not taken the form of requiring carriers to pay cost-based termination rates. Rather, it has given regulators the latitude to set intercarrier compensation rates that foster certain public policy goals. As discussed earlier, both interstate and intrastate access charges historically have been set to far exceed cost, especially for rural carriers and intrastate calls, as a means of maintaining low basic local service rates. Similarly, ISPs have been deemed end users specifically to allow them to avoid intercarrier compensation charges.

But this market failure rationale for government intervention in the market to set intercarrier compensation rates may disappear under a regime of called-party-shares. If the called party (rather than the calling party or the carrier to which the calling party subscribes) were responsible for compensating its local exchange carrier for terminating the call, then that called party would have the incentive to choose a local exchange carrier whose termination charges are low. If a carrier set termination rates that far exceeded cost, its subscribers would have the incentive to seek out an alternative carrier. Of course, this market correction could only occur where end users had real competitive alternatives to turn to if their current local carriers raised rates. It is likely, however, that regulation of end-user termination charges will continue until such effective competition develops.

Several of the proposals for comprehensive intercarrier compensation reform, as well as the FCC staff proposal, question whether the advantages of calling-party-network-pays still hold and argue that it introduces inefficiencies and distortions that

³⁵ (...continued)

induce the long distance carrier or a competitive access provider to put in a dedicated line between the customer's premise and the long distance carrier's network to carry those calls, thereby avoiding the local exchange carrier's originating access charges. And even for smaller customers, if there are competing local exchange carriers and one of those carriers seeks to charge long distance carriers a very high price for originating access, long distance companies could charge their customers a higher price if they chose the local exchange carrier with high origination access charges. This might entice some customers to switch to a local carrier that has lower rates for originating access — and thus would place market pressure on the local carrier with high originating access rates to lower those rates. In practice, however, this ability of the market to impose price discipline is limited for two reasons: (1) the FCC rules implementing the requirement in section 254(g) of the 1996 Act that long distance carriers set rates in rural areas that are no higher than rates in urban areas, and that rates not vary across states, effectively requires long distance carriers to set nationwide averaged rates, and (2) the administrative costs of varying end user long distance rates based on the individual customer's choice of local exchange carrier may exceed the combination of higher revenues from the higher charges and the costs savings from those end users that actually switch to a LEC that has lower originating access charges.

are inconsistent with competitive markets. First, they argue that under calling-party-network-pays, it is necessary for regulators to set rates for intercarrier compensation, which will always be a contentious and expensive process. Second, they claim that today there are ways for customers to manage their incoming calls — screening services such as caller ID, IP-enabled services that enable customers to determine how and when they will receive calls, do not call registries — to minimize the receipt of calls from which they do not benefit. Third, they claim that most costs associated with terminating calls are not usage-sensitive and therefore termination costs should be recovered through a fixed line charge, not a per-minute-of-use charge. Thus, although the line charge an end user pays would initially increase under a called-party-shares plan, that line charge would not fluctuate with the number of calls received and end users could control their monthly telephone bill. Fourth, administrative costs would not increase if the charge were simply a line charge; the subscriber line charge on each customer's bill might change, but all customers already receive bills with monthly line charges. Fifth, in the 1996 Act, Congress instructed the FCC to remove implicit universal service subsidies from rates and place them in an explicit funding mechanism.³⁶ A called-party-shares approach would facilitate that.

But there are several counter-arguments. First, the available means for customers to manage their incoming calls have associated costs, which (especially when added to a higher subscriber line charge) may be burdensome for low income customers. Second, if all the termination costs are placed on the called party, there is no market disincentive for high volume callers, such as telemarketers and spammers, to increase their usage. As will be discussed later, increased calling volume will increase switching costs during peak periods.

The advantages and disadvantages of a calling-party-network-pays approach vs. a called-party-shares approach will depend on a number of factors, including where interconnection is allowed or required, the underlying cost structure for interconnection and termination, the extent to which termination costs vary across networks, and how easy it is to identify the underlying network cost structure and measure actual costs.³⁷ To the extent these parameters vary with the specific interconnecting networks (for example, do some networks have more usage-sensitive costs than others? is it more efficient for some networks than for others to have multiple interconnection points?), it may be optimal to implement a hybrid intercarrier compensation system. But if a hybrid system is implemented, it will be necessary to ensure that it does not artificially favor one set of providers over another in a competitive market.

Where should networks be allowed, or required, to interconnect with one another?

Why this matters.

³⁶ 47 U.S.C. § 254(e).

³⁷ These issues are addressed in the sections that follow.

Whether the cost burden of completing calls is borne entirely by the calling party's carrier or shared with the called party, the cost of the terminating (or originating) portion of the call will depend on where the carriers are allowed or required to interconnect. Where two carriers' networks are alike, using similar technologies and configured to serve similar customer bases, such similarities might allow them to identify an agreed upon single interconnection point, or set of points, that does not place either carrier at a relative advantage/disadvantage. But the network architectures of the various carriers vary dramatically for a number of reasons: historical (the ILECs were required to build out ubiquitous networks that others need not replicate), technological (some technologies maximize efficiency with greater deployment of switches and smaller connecting transport "pipes" while others are optimized with the use of fewer, larger switches connected by higher capacity transport pipes), geographic (optimal network architecture will differ in urban and rural areas or for carriers serving wide areas vs. those serving narrowly defined areas). As a result, the optimal point(s) of interconnection may be very different for different types of networks. Each carrier will want to set point(s) of interconnection that favor its particular network configuration. If left entirely to market negotiation, the incumbent LECs, who during the transition from monopoly to competitive markets retain some market power, might be able to impose interconnection terms and conditions that would undermine the efficiencies of the entrants' network architectures and technologies.³⁸

The principal situation where distinct network architectures have made it difficult for carriers to reach agreement about where to interconnect and how to structure intercarrier compensation involves the interconnection of ILEC and CLEC networks.³⁹

Analysis and discussion.

Figure 2 shows a very simplified network architecture. The large ILECs, who serve the vast majority of U.S. households and businesses, have extensive and ubiquitous "hierarchical" networks, with a number of tandem switches that aggregate and route traffic to a much larger number of end office switches serving particular neighborhoods, all of which are connected by a very large web of transport facilities. When such an ILEC terminates a call that originates on another carrier's network, the call typically will be routed through one or more of its tandem switches before reaching the end office switch serving the called party. Other carriers (in particular, the competitive local exchange carriers) use newer technologies and have less

³⁸ As explained earlier, as United States telecommunications policy has evolved from government sanctioned monopoly provision to competitive provision of telecommunications services, incumbent providers have been required to allow new entrants to interconnect with their networks in a nondiscriminatory fashion. Otherwise, the incumbents could use their dominant position to refuse to interconnect with the smaller networks or the new entrants, or to impose onerous interconnection terms and conditions on the entrants.

³⁹ There also has been a lot of disagreement between rural LECs and wireless carriers about where and how to interconnect to exchange traffic. But since this disagreement typically involves interconnection through an intermediate (transit) network of a third carrier, it is discussed in a later section on rules for transit networks.

extensive, non-hierarchical networks, often with only a single switch serving a much larger area — with that switch, in effect, providing the functions of both an end office switch and a tandem switch.

Requiring the CLECs to build out their own networks to interconnect at or near every ILEC end office switch (in every local calling area) — or even to interconnect at or near every ILEC tandem switch — would in effect impose the ILEC network architecture on the CLECs, even though the latter use different technologies and have different business plans. What might be an efficient architecture for the ILECs might not be so for the CLECs. Moreover, even a successful CLEC entrant is unlikely to attain the penetration levels of the ILECs for many years and thus will not be able to exploit the scale economies enjoyed by the ILECs; it is not feasible for them to replicate the ILECs' ubiquitous networks.

On the other hand, if the CLECs are only required to interconnect with the ILECs at a single POI in a large geographic region, then ILECs would have to transport traffic well beyond local calling area boundaries to be exchanged. This could be very costly if ILECs bore the cost of transporting traffic originating on its network to the single POI. Also, with a single POI traffic exchange will occur on average further from both the calling party's location and the called party's location; when either the calling party or the called party is an ILEC subscriber communicating with a CLEC subscriber, that will result in greater congestion on the ILECs' ubiquitous networks than with multiple POIs. In addition, if a called-party-shares regime were implemented in conjunction with a single POI, more substantial charges for termination might be imposed on the called party than would be the case if there were many mandated points of interconnection.

The 1996 Act requires an ILEC to allow a requesting local telecommunications carrier to interconnect at any technically feasible point.⁴⁰ The FCC has interpreted this provision to mean that CLECs have the option to interconnect at a single POI per "local access and transport area" ("LATA").⁴¹ In general, LATAs are broader than local calling areas, so an ILEC bringing traffic that originates on its network to a single POI often would be required to transport that traffic outside the local calling area. FCC rules preclude a local exchange carrier from charging other carriers for

⁴⁰ 47 U.S.C. § 251(c)(2)(B).

⁴¹ 15 FCC Rcd 18354, 18390, para. 78, n. 174 (2000). LATAs were created in the 1982 Modified Final Judgment court order breaking up the old Bell System. A LATA was the geographic area in which Regional Bell Operating Companies could offer service. They were prohibited from offering services that extended from a point in their service area to a point beyond a LATA boundary. Such interLATA services were offered by interexchange carriers. LATAs can cover very large geographic areas, even entire states. Today these LATA restrictions no longer hold; all the Regional Bell Operating Companies are allowed to offer interLATA service. But the interconnection rules continue to be based on the LATA boundaries. The FCC rule allowing a CLEC to interconnect with an ILEC at a single POI per LATA does not apply to interexchange (long distance) carriers interconnecting with ILECs.

traffic that originates on the local exchange carrier's network⁴² — that is, it cannot charge another carrier for bringing the traffic to the single POI. At the same time, under the 1996 Act, all LECs have the “duty to establish [cost-based] reciprocal compensation arrangements for the transport and termination of [local] telecommunications.”⁴³ The FCC rules implementing that provision permit a terminating carrier to recover from the originating carrier the cost of certain facilities from an “interconnecting point” to the called party.⁴⁴

In both its 2001 Notice of Proposed Rulemaking and its 2005 Further Notice of Proposed Rulemaking, the FCC sought comment on whether an ILEC should be obligated to bear its own costs of delivering traffic to a single POI when that POI is located outside the local calling area.⁴⁵ The Commission has asked whether a carrier should be required to interconnect in every local calling area or pay the incumbent transport and/or access charges if the location of the single POI requires transport beyond the local calling area.

Not surprisingly, in their comments, most CLECs and wireless carriers favor maintaining a single POI per LATA rule⁴⁶ and the ILECs support a requirement that competitive carriers establish a POI in each calling area or pay the transport costs to reach a POI outside the local calling area.⁴⁷ The current rules may encourage traffic imbalance because terminating networks not only collect reciprocal compensation, they also avoid financial responsibility for the transport facilities needed to bring traffic from the originating ILECs' network all the way to the single POI.⁴⁸ When traffic is out of balance, the cost of interconnection is borne primarily by the originating carrier, and the terminating carrier may lack the incentive to minimize the transport costs associated with connecting the two networks.

As providers from different segments of the industry have come together to attempt to develop consensus positions on intercarrier compensation, compromise positions have been proposed that take into account differences between the network architectures of different carriers. For example, although the ICF Plan proposes a

⁴² 47 C.F.R. § 51.703(b).

⁴³ 47 U.S.C. § 251(b)(5).

⁴⁴ 47 C.F.R. § 51.701. The FCC rules permit recovery of the costs of transport and termination of telecommunications traffic between local exchange carriers and other telecommunications carriers. The rules define “transport” as the “transmission and any necessary tandem switching of telecommunications traffic subject to section 251(b)(5) of the act from the interconnection point between the two carriers to the terminating carrier's end office switch that directly serves the called party, or equivalent facility provided by a carrier other than an incumbent LEC.” The rules define “termination” as the “switching of telecommunications traffic at the terminating carrier's end office switch, or equivalent facility, and delivery of such traffic to the called party's premises.”

⁴⁵ ICC NPRM at para. 113 and ICC FNPRM at paras. 87ff.

⁴⁶ ICC FNPRM at para. 89.

⁴⁷ Id. at para. 90.

⁴⁸ Id. at para. 91.

transition to unified intercarrier compensation rates, it explicitly identifies three types of networks — hierarchical networks of the type deployed by the large ILECs, rural networks operated by certain rural carriers, and non-hierarchical networks of the sort deployed by some CLECs — and proposes different requirements and responsibilities for the exchange of traffic for each.⁴⁹

The various reform proposals submitted demonstrate creative approaches to this complex issue. For example, in the ICC FNPRM, the FCC raised an issue about the interrelationship between network interconnection and intercarrier compensation pricing: if the Commission were to adopt a bill-and-keep approach and competitors had to pay the same rate (zero) to terminate calls wherever they connect to the ILEC network, would there be any incentives for CLECs or wireless carriers to interconnect at more than one point of interconnection per LATA — since to do so would increase their network costs but not result in any savings in intercarrier compensation costs?⁵⁰ But, as demonstrated by the ICF Plan, that concern could be addressed by allowing each carrier to identify at least one point (per LATA) in its network where it will receive traffic for routing within its network, and if the originating carrier seeks to interconnect at a point different from the one chosen by the terminating carrier, require the originating carrier to bear the cost burden for transport between those points.⁵¹

What is the underlying cost structure of the transport and switching functions?

Why this matters.

The rates for intercarrier compensation that carriers must pay become part of their costs of providing service, and the rate structure of that compensation will affect the carriers' underlying cost structure. If those charges are usage-sensitive, then the carriers' underlying costs become usage-sensitive — and will make it more difficult for those carriers to offer end users large baskets of minutes or unlimited calling at a fixed price. That will be efficient if, indeed, the underlying transport and switching costs associated with terminating (or originating) a call are in fact usage-sensitive. In that situation, unlimited calling packages at a fixed price would encourage inefficient overuse of the network facilities. On the other hand, if the underlying costs of transporting and switching calls are not usage-sensitive, but the intercarrier compensation charges are usage-based, then carriers could be artificially discouraged from offering fixed price service that consumers seek and, indeed, could be punished in the marketplace for providing a fixed price service offering that would make efficient use of the public switched telephone network. Moreover, if not all carriers are subject to the same intercarrier compensation regime, those that face intercarrier

⁴⁹ See the ICF Plan proposed by the Intercarrier Compensation Forum, submitted in *In the Matter of Developing a Unified Intercarrier Compensation Regime*, Docket No. 01-92, on October 5, 2004.

⁵⁰ ICC FNPRM at para. 96.

⁵¹ ICF Plan at Appendix A, pp. 4, 10-12. The ICF calls this “edge to edge interconnection transport.”

rates that do not reflect underlying costs could be placed at an artificial competitive disadvantage.

Analysis and discussion.

To terminate traffic by routing it from the POI to the called party requires the use of transport and switching facilities. The underlying costs of transport facilities are not usage-sensitive. Once a line between the POI and a tandem or end office switch (or between a tandem and an end office switch, or between an end office switch and an end user's premises) has been put in place, its costs will not vary with usage. Economists and regulators have long recognized that it is not efficient to recover usage-insensitive costs through minute-of-use charges, because such charges will discourage usage, which is not the cost causer. As a result, today the costs associated with transport are almost always recovered through recurring fixed monthly charges.⁵²

There has been much more debate on the extent to which switching costs are usage-sensitive.⁵³ A number of carriers argue that a substantial majority of switching costs do not vary with minutes of use.⁵⁴ The FCC became involved in this debate when it was petitioned to stand in for the state of Virginia, which refused to arbitrate interconnection agreement disputes between Verizon and two CLECs (AT&T and MCI).⁵⁵ One of the disputed issues involved the underlying costs and appropriate rate structure and rates for switching. Verizon asserted that several costs (the "getting started" cost of a switch, equivalent POTS half call ("EPHC") costs, and the right-to-use ("RTU") software costs) should be recovered on a minute-of-use basis. AT&T and MCI disagreed. In its Memorandum and Order, the FCC concluded that (1) the

⁵² When long distance carriers make intercarrier compensation payments to their subscribers' local exchange carriers for use of those carriers' networks to originate long distance calls, there may be some usage-sensitive costs associated with the trunk ports at the LEC's switch. These are sometimes classified as transport costs and sometimes as switching costs.

⁵³ More exactly, the debate has focused on end office switching. It is generally agreed that the underlying cost structure of tandem switches is not usage-sensitive. Tandem switches are usually viewed as part of the transport function, rather than part of the switching function.

⁵⁴ For example, MCI has argued that vendor contracts for switching establish per-line prices, rather than per-minute prices, and thus local exchange carriers do not incur switching costs on a per-minute basis. And digital switches are being produced with such large processor capacity that their costs may no longer vary with minutes of use. See ICC FNPRM at paras. 23, 68.

⁵⁵ *In the Matter of Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc. and for Expedited Arbitration*, CC Docket No. 00-218, and *In the Matter of Petition of AT&T Communications of Virginia, Inc., Pursuant to Section 252(e)(5) of the Communications Act for the Preemption of the Jurisdiction of the Virginia Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc.*, CC Docket No. 00-251, Memorandum Opinion and Order ("FCC's Virginia Arbitration Order"), adopted August 28, 2003, released August 29, 2003.

end office “getting started” switch cost is a fixed cost, which does not vary with the number of ports or the level of usage on the switch, and should be recovered on a per-line port basis;⁵⁶ (2) the EPHC costs should be recovered on a per-line port basis;⁵⁷ and, (3) the RTU fees should be recovered on a per-port basis for the same reasons as the getting started costs.⁵⁸

Verizon, AT&T, and MCI did agree that certain switching costs are usage-sensitive, and that those usage-sensitive costs only applied to usage during peak periods.⁵⁹ But the parties disagreed on how those shared, peak period costs should be recovered. All the parties agreed that it would not be feasible to impose peak period usage charges. Verizon and AT&T argued these costs should be recovered through minute-of-use charges across all time periods; MCI argued that these costs should be recovered through a flat per-port charge.⁶⁰ The FCC concluded that, while neither approach is ideal, the flat per-port charge is better because it would not place any provider at a competitive disadvantage.⁶¹

Based on these conclusions, most of Verizon’s switching costs were deemed not usage-sensitive and an even larger proportion of its switching costs were recovered through port or line charges rather than minute-of-use charges.

However, this FCC conclusion may not fully resolve how switching costs should be treated for intercarrier compensation. There is no specific statutory or regulatory guideline for the costing methodology to use for determining intercarrier compensation. In its Virginia arbitration decision, the FCC used the total element long run incremental cost (“TELRIC”) methodology that it had adopted to determine the costs and rates for unbundled network elements. TELRIC calculates the *average incremental cost of providing the entire demanded quantity of a network element*. By contrast, the statutory cost standard for reciprocal compensation (the intercarrier compensation associated with completion of local calls) is “additional cost,”⁶² which only looks at *the additional incremental quantity of the element* needed for terminating (or originating) traffic. It is possible that some costs that are not usage-sensitive when viewed from the perspective of the entire quantity of switching demanded would be usage-sensitive from the perspective of a smaller increment of switching usage. However, the FCC has concluded that the reciprocal compensation requirements (and hence “additional cost” methodology) in the 1996 Act only apply to local telecommunications traffic and not to access charges.⁶³

⁵⁶ FCC’s Virginia Arbitration Order at para. 463.

⁵⁷ Id. at para. 471.

⁵⁸ Id. at para. 472.

⁵⁹ Id. at para. 473.

⁶⁰ Id. at para. 474.

⁶¹ Id. at paras. 475-477.

⁶² 47 U.S.C. § 252(d)(2)(A)(ii).

⁶³ *In the Matter of Implementation of the Local Competition Provisions in the*
(continued...)

It appears, then, that a significant proportion of the switching costs associated with terminating a call are not usage-sensitive, but there is no consensus on exactly what that proportion is.

Properly identifying the underlying cost structure for switching has four important policy consequences.

First, if the preponderance of switching costs are not usage-sensitive, then the current recovery of most switching costs in per-minute-of-use access charges and reciprocal compensation charges is creating market signals that do not reflect underlying costs. It would be more efficient to recover those switching costs through a fixed line charge that sends a market signal reflecting that it is the additional switching capacity needed to serve additional lines, rather than the additional switching capacity needed to serve increased usage, that is driving switching costs. If this is correct, any per-minute-of-use charge to recover usage-sensitive costs should be quite small.

Second, if the underlying cost structure for transporting and terminating calls is indeed overwhelmingly line-driven, rather than usage-driven, so that the bulk of the costs are caused by the called party hooking up to the network, rather than by usage of the terminating carrier's switch to terminate calls, then this might argue for employing a called-party-shares approach to intercarrier compensation, rather than a per-minute-of-use charge on the calling party's carrier. Such a charge would likely take the form of an increase in the end-user subscriber line charge.

Third, if the proportion of termination costs that are usage-sensitive costs is very small, then even if the interconnecting carriers' traffic and costs are not in exact balance, the distortion from employing bill-and-keep — that is, setting a zero per minute-of-use charge for termination and recovering all costs through end-user subscriber line charges — would be minuscule. In contrast, if a significant proportion of the switching costs associated with transporting and terminating traffic is usage-sensitive, so that significant minute-of-use charges would most closely reflect underlying costs, then a bill-and-keep system, which effectively sets a zero price for termination, would create a distorting market signal that the switch usage for termination is costless. Providers might have the incentive to aggressively pursue customers that make more calls than they receive — for example, telemarketers — because if their traffic were imbalanced toward origination they could generate revenues from subscribers without incurring the costs associated with terminating the large volume of calls made by their subscribers.

Fourth, setting intercarrier compensation rates and rate structure in a fashion that does not reflect underlying costs can have a significant competitive impact. For example, under the current access charge regime, interexchange carriers are charged on a per-minute-of-use basis for the switching used to originate and terminate their

⁶³ (...continued)

Telecommunications Act of 1996, First Report and Order, CC Docket Nos. 96-98 and 95-185, 11 FCC Rcd 15499, 16013 (1996).

customers' calls, making the interexchange carriers' underlying cost structure usage-sensitive even though the preponderance of those switching costs appear not to be usage-sensitive. But by facing these artificially imposed usage-based costs, long distance carriers are discouraged from offering large baskets of minutes or unlimited calling at a fixed price since they would lose money when serving high usage customers, who are the customers most likely to select such packages. The long distance carriers assert that the Bell operating companies, which are now allowed to offer long distance service and typically do so as part of a package of local and long distance service, do not face the same problem. The long distance carriers claim that, even if the Bell companies' long distance arms must pay the same usage-based access charges to their local operating companies as the long distance carriers pay, the underlying costs to the Bells are not usage-sensitive. That is, any losses that the Bells' long distance arms might suffer, when serving a high usage customer, by having to pay minute-of-use access charges while offering large baskets of minutes or unlimited calling at a fixed price, are matched by the additional profits that the Bells' local operating companies generate from those minute-of-use access charges (since their underlying costs are not increasing with usage).

What system is needed for setting intercarrier compensation rates for intermediate (transit) networks?

Why this matters.

More and more networks need to interconnect with one another to complete calls. But in many cases the volume of traffic exchanged between two carriers is not sufficient to justify deployment of dedicated facilities for that exchange. Other carriers, especially ILECs, may already have facilities that interconnect with each of the carriers and that can carry the traffic between the carriers. Presently, there are no rules pertaining to intercarrier compensation of those intermediate (transit) networks.

Analysis and discussion.

Transiting occurs when two carriers that are not directly interconnected exchange traffic by routing the traffic through an intermediary carrier's network.⁶⁴ Transiting can involve local traffic or long distance traffic. Neither the calling party nor the called party subscribes to the transit carrier, and thus in either a calling-party-carrier-pays system or a called-party-shares system there must be a mechanism for compensating any transiting carrier used to complete a call.

Frequently, a CLEC or wireless carrier in a local market will not interconnect with all other CLECs or wireless carriers in that market because it does not exchange sufficient traffic with many of the carriers to justify the investment in facilities. Rather, it will route traffic bound to another CLEC or wireless carrier through its own POI with the ILEC, over the ILEC's tandem switch and transport network to the other CLEC's (or wireless carrier's) POI with the ILEC. This is feasible because all CLECs and wireless carriers will be interconnected to the ILEC's network.

⁶⁴ Much of the discussion in this section comes from the detailed presentation in the FCC's ICC FNPRM, at paras. 120-133.

Also, almost all wireless calls are carried on intermediate wireline facilities before reaching their final destination. The wireless carriers often lease these lines from long distance carriers, but (especially in rural areas where the volume of traffic does not justify leasing a line) the wireless traffic sometimes will be routed directly over the long distance carrier's network (or over the network of a large ILEC located adjacent to the rural LEC) to reach the end user's local exchange.

In each of these situations, the intermediary carrier charges a fee for use of its facilities, but the current rules concerning traffic transiting over an intermediate network differ when the traffic is local or long distance.

Transiting of long distance traffic is governed by the interstate and intrastate access rules, under which access rates are set in tariffs. In contrast, although many ILECs currently provide transit of local traffic pursuant to interconnection agreements, the FCC has not determined whether carriers have a duty to provide such transit service. The reciprocal compensation provisions of the act address the exchange of traffic between an originating carrier and a terminating carrier, but the FCC's reciprocal compensation rules do not directly address how intercarrier compensation should be paid to the transit service provider.

ILECs argue that they are not required to provide transit service under the 1996 Act and that transit service offerings should remain voluntary.⁶⁵ They explain that they limit the availability of such services in order to prevent traffic congestion and exhaust of tandem switch capacity, and to encourage carriers to establish direct interconnection when traffic volumes warrant it. ILECs state that transiting should be treated as an unregulated service offered at market-based prices or, alternatively, at tariffed "special access" rates that are not cost-based.

CLECs and wireless carriers, on the other hand, argue that ILECs are required to provide transit service under the act.⁶⁶ They explain that indirect interconnection via a transit service provider is the most efficient means of interconnection and that the availability of transiting is critical to the development of competition. Wireless carriers in particular argue that the low volume of traffic exchanged with smaller local exchange carriers does not warrant direct interconnection and that transit service is necessary for indirect interconnection. CLECs and wireless carriers state the FCC should set cost-based compensation rates for transit service.

The FCC has determined that the availability of local transit service is increasingly critical to establishing indirect interconnection — a form of interconnection explicitly recognized and supported by the act⁶⁷ — and may provide the only efficient means by which to route traffic between the networks of CLECs, wireless carriers, and rural LECs.⁶⁸ It also has determined that indirect interconnection via a transit service provider is an efficient way to interconnect when

⁶⁵ ICC FNPRM at para. 122.

⁶⁶ Id. at para. 123.

⁶⁷ See 47 U.S.C. § 251(a)(1).

⁶⁸ ICC FNPRM at para. 125.

carriers do not exchange significant amounts of traffic.⁶⁹ But the FCC seeks comment on its legal authority to impose transiting obligations. The FCC also seeks empirical evidence about whether transit service is currently available at reasonable rates, terms, and conditions, to help it determine whether there is a need for it to require and regulate the provision of transit service (contingent on it having authority to do so).⁷⁰

Many rural LECs argue that intraMTA⁷¹ traffic between a wireless carrier and a rural LEC must be routed through an interexchange carrier and therefore should be subject to access charges, rather than reciprocal compensation, even though it never crosses an MTA boundary.⁷² On the other hand, wireless carriers argue that calls that originate and terminate within a single MTA are subject to reciprocal compensation.⁷³ This has become a major issue of contention because it often is not economically feasible for a wireless carrier to interconnect directly with a rural LEC without use of an intermediate carrier network.

Although rural LECs' serving areas sometimes cover large geographic areas, they tend to serve only a relatively small number of customers and often are not located near major population centers. Wireless carriers may deploy towers to serve those same rural areas, but it is not economically feasible to deploy switches in many of those rural areas. Even many of the traditional wireline long distance companies do not interconnect directly within each rural LEC's local calling areas. As a result, often rather than a direct, physical point of interconnection, traffic between rural LECs and wireless carriers (and long distance carriers) is carried over the facilities of an adjacent ILEC or a large long distance carrier that does interconnect directly with the rural LECs. There will be a point where the traffic is exchanged for billing purposes, but it is not a physical interconnection point.

Conflict has arisen because under current rules the interconnection and intercarrier compensation rules differ for local and long distance traffic, and the rural LECs and wireless carriers have the incentive to define and route traffic differently. Consider the example of a subscriber to a rural LEC making a telephone call to a neighbor's wireless telephone, where the wireless carrier's switch is in an adjacent ILEC's serving area and where both the adjacent ILEC and a major long distance carrier directly interconnect with the rural ILEC's network. In that case, the call must be routed from the rural LEC's switch to the wireless carrier's switch outside the rural LEC's calling area and then back to the called party in the rural LEC's calling area.

The wireless carrier will want that traffic to be treated as local (intraMTA) traffic and routed from the rural LEC's switch to the point of interconnection (meet

⁶⁹ Id. at para. 126.

⁷⁰ Id. at para. 129.

⁷¹ See footnote 10 above.

⁷² ICC FNPRM at para. 137.

⁷³ Id. at para. 137.

point) with the adjacent ILEC, where it would then be routed over the adjacent ILEC's facilities until it reached the wireless carrier's switch. The call then would be routed over whatever facilities the wireless carrier had in place to reach its wireless tower in the rural LEC service area and then to the called party's wireless telephone. In this situation, for the origination segment of the call, the rural LEC and ILEC would be exchanging the local traffic using either bill-and-keep (which incurs no charge) or cost-based reciprocal compensation.

In contrast, the rural LEC will want that traffic to be treated as long distance and routed from the rural LEC's switch to the point of interconnection with the long distance carrier's network, which would then either route the traffic directly to the wireless carrier's switch (if there was sufficient traffic with that wireless carrier to justify a dedicated line to the wireless switch) or route the traffic to the adjacent ILEC's network, from where it would be routed to the wireless carrier's switch. As in the previous case, the call then would be routed over whatever facilities the wireless carrier had in place to reach its wireless tower in the rural LEC service area and then to the called party's wireless telephone. In this situation, the rural LEC will claim that use of the long distance carrier's facilities renders the call a long distance call, even if it began and ended in the same MTA (and may never have left that MTA), and therefore it is entitled to receive above-cost originating access charges from the long distance carrier (who would pass those costs along to the wireless carrier as part of its negotiated agreement to provide transit service).

If comprehensive intercarrier compensation reform were implemented and intraMTA/interMTA distinctions were eliminated, this would no longer be an issue. But if the unique requirements of rural areas justify maintenance of some of the current intercarrier compensation rules for rural LECs, this issue of the appropriate intercarrier compensation payments to and by interexchange carriers when they are acting as transiting carriers will remain.

The FCC has sought comment on how to compensate transiting carriers under a bill-and-keep system.⁷⁴ Since end users will not have any relationship with the transiting carrier, the issue becomes how to identify whether the payment responsibility falls on the carrier to which the calling party subscribes or the carrier to which the called party subscribes.

How can intercarrier compensation reform take into account the special needs of rural carriers and universal service funding?

Why this matters.

It has been longstanding U.S. telecommunication policy to keep rates "affordable" for subscribers located in high cost rural areas by allowing rural LECs to charge long distance carriers above-cost access charges and by requiring long distance companies to offer services at nationally averaged rates. If the first of these implicit universal service subsidies is eliminated as part of intercarrier compensation

⁷⁴ ICC NPRM at para. 71 and ICC FNPRM at para. 121.

reform, rural carriers may need a stable and sustainable alternative source of universal service support that is competitively neutral and not likely to be eroded by future market developments.

Analysis and discussion.

According to the National Telecommunications Cooperative Association, rural LECs receive on average 10% of their revenue from interstate access charges and 16% from intrastate access charges. In comparison, the Bell operating companies receive only 4% of their revenue from interstate access charges and 6% from intrastate access charges.⁷⁵ With rural ILECs far more dependent on above-cost intercarrier compensation charges than urban LECs, it is not surprising that three sets of rural carriers have submitted to the FCC proposals for intercarrier compensation that specifically address the needs of rural carriers.⁷⁶ In addition, Western Wireless, a wireless carrier that has been designated as an eligible telecommunication carrier (“ETC”)⁷⁷ in 14 states where it offers service in rural, high cost areas, has submitted a proposal.⁷⁸ (The proposals made by non-rural parties also specifically address rural issues.⁷⁹)

The proposals by rural carriers vary widely.

The Expanded Portland Group (“EPG”) proposal, presented as an alternative to the bill-and-keep proposal in the ICF plan, has three stages. In the first stage, the current access charge exemption for ISPs terminating traffic to the public switched

⁷⁵ ICC FNPRM at para. 107.

⁷⁶ The Intercarrier Compensation Reform Plan of the Alliance for Rational Intercarrier Compensation (“a group of small telecommunications companies providing service in the rural, high-cost areas of the nation”), submitted October 25, 2004; A Comprehensive Plan for Intercarrier Compensation Reform developed by the Expanded Portland Group (“small and mid-size Rural Local Exchange Carriers (RLECs), and consulting organizations serving the RLEC community”), submitted November 2, 2004; and Updated Ex Parte of Home Telephone Company, Inc. and PBT Telecom (two rural LECs), submitted November 2, 2004.

⁷⁷ An ETC is a carrier eligible to receive universal service support funds.

⁷⁸ Western Wireless Intercarrier Compensation Plan, submitted on December 1, 2004.

⁷⁹ The Intercarrier Compensation Forum would replace the current system with a bill-and-keep system, but would explicitly take into account the unique needs of rural carriers and subscribers by setting different interconnection and compensation requirements when one of the interconnecting carriers is a rural carrier (for example, rural LECs would have no obligation to deliver originating traffic beyond the boundaries of their serving areas), by setting a lower limit on the level to which end-user subscriber line charges (“SLCs”) could be increased, by creating two new universal service funding mechanisms to replace the lost revenues from above-cost access charges, and by setting a longer transition period for rural carriers. The CBICC proposal developed by a group of CLECs, which would immediately reduce interstate access charges to total economic long run incremental cost, would let a Joint State-Federal Board determine how to transition intrastate access charges to TELRIC, and would ensure that any reduction in access charge revenues be fully offset by increases in end-user charges and in universal service support.

telephone network would be eliminated. In the second stage, all per-minute rates would be set at the level of interstate access charges and a new Access Restructure Charge (“ARC”) would be implemented. The ARC would be a capacity-based charge for all carriers based on working telephone numbers, but the revenues generated would be distributed only to those carriers that lose access charge revenue (that is, wireline carriers, but not wireless carriers). In the final stage of the EPG plan, the per-minute access charges would be converted to a capacity based “port and link” structure that would be set to recover the average equivalent interstate per-minute rate. The port and link charges would not be cost-based and would not apply to local traffic, including EAS and ISP-bound traffic. Thus, although the separate ARC would replace some of the implicit subsidies currently in usage-based rural LEC access charges, it appears that the port and link charges imposed on interconnecting carriers would continue to include some subsidy level unless interstate access charges had already fallen to cost during the second stage.

The Alliance for Rational Intercarrier Compensation proposal for a Fair Affordable Comprehensive Telecom Solution (“FACTS”) plan proposes a unified per-minute rate for all types of traffic that would be capped at a level based on a carrier’s interoffice embedded costs. The unified rate would be charged to the retail service provider (the originating LEC) on a local call or the interexchange carrier for both origination and termination of long distance calls. The FACTS plan also includes a proposal for extending this compensation regime to IP-enabled services. In addition, it proposes local retail rate rebalancing, which would allow rural LECs to raise local rates to partially counter the reductions in access revenues.

Under the Home Telephone Company and PBT Telecom (“Home/PBT”) proposal, all carriers offering service to customers who make telecommunications calls (including VoIP) would be required to connect to the public switched telephone network and obtain numbers for assignment to customers. The plan would replace existing per-minute access charges and reciprocal compensation with connection-based intercarrier compensation charges. Every carrier would develop a tariffed charge to be assessed on all interconnected carriers based on a DS-0 (voice-grade) level of connection. The connection charge is intended to cover the switching and transport costs for use of the local calling network. If the carrier has an access tandem, it would develop an alternative access tandem connection fee that would include the additional costs of the tandem service. Network interconnection between carriers would be accomplished through one POI per LATA, but where a rural LEC is involved the POI must be within the rural LEC’s serving area (that is, the rural LEC would have no responsibility to transport traffic beyond its serving area border). To help offset revenues lost from elimination of the current intercarrier compensation charges, the Home/PBT proposal permits carriers to increase the subscriber line charge (the current end-user charge intended to recover traffic-insensitive costs) up to the current federal cap. Any remaining revenue shortfall may be recovered from a new intercarrier cost recovery fund, called the high cost connection fund (“HCCF”). The HCCF would be funded through a monthly assessment based on activated telephone numbers and that assessment could be passed through to subscribers. The consequence of this plan appears to be that access charges currently imposed on carriers would be placed on the number which allows connectivity to the network.

Western Wireless proposes a unified bill-and-keep system for all types of traffic. It would reduce per-minute compensation rates to bill-and-keep in equal steps using targeted reductions over a four-year period, with a longer transition period for small rural ILECs. Over those four years, ILECs would be permitted to increase subscriber line charges as proposed in the ICF plan, except that there would be no difference between the SLC caps for rural and non-rural ILECs. At the end of the four years, the SLC would be deregulated for an ILEC that could demonstrate that it is subject to competition. The Western Wireless plan also would replace all existing universal service mechanisms with a unified high cost mechanism based on forward-looking costs. This new support would be fully portable to all designated ETCs and additional portable funds could be disbursed in states with forward-looking costs higher than the national average. The universal service reform also would be phased in over four years — and over six years for the smallest rural ILECs and ETCs.

These proposals show that neither rural carriers nor non-rural carriers are of a single mind about how to implement rural LEC intercarrier compensation reform. They also demonstrate that, even among the parties that prefer cost-based intercarrier compensation rates to a zero-price bill-and-keep system, there is no consensus on the costing methodology that should be employed to set intercarrier compensation rates. Moreover, they highlight several contentious issues.

- Although all parties recognize the need to create new explicit universal service funding mechanisms to help replace the current implicit subsidies in rural LEC access charges, no consensus exists on (1) whether the rural carriers should be guaranteed universal service funds sufficient to replace all lost revenues (sometimes called “revenue neutral” intercarrier compensation reform), (2) what specific structure the new universal service funding mechanisms should take, or (3) whether rural ILECs should have preferential access to those funds over new entrants, such as rural wireless carriers.
- Although all parties agree that the transition period for implementing comprehensive intercarrier compensation reform will have to be longer for rural LECs than for other carriers, there is no consensus on how long that transition should be and the specific steps within the transition.
- Although all parties agree that end-user charges will have to increase, there is no consensus on whether rural subscriber line charges should be lower than urban subscriber line charges because rural local calling areas reach fewer households than urban ones.

Can intrastate intercarrier compensation rates and rate structure be modified by federal action?

The current intercarrier compensation rates that most exceed cost are intrastate access charges imposed on long distance carriers and wireless carriers for the termination of certain calls. In addition to providing inaccurate market signals and

discouraging usage, these high intrastate access charges distort competition. For example, since MTA boundaries are far broader than local calling areas, in many cases when a telephone call is made between two points in a state, those points are in different local calling areas but the same MTA. If the calling party and called party are both using wireline telephone, the calling party's long distance carrier would have to pay the called party's carrier above-cost intrastate access charges. But if the calling party were to use a wireless telephone, which is subject to federal rather than state jurisdiction, the calling party's wireless carrier would only have to pay the called party's carrier cost-based reciprocal compensation rates. This gives the wireless carrier a competitive cost advantage over the wireline long distance carrier.

Some state regulators are likely to prefer to maintain above-cost intrastate access charges, especially for small rural LECs, in order to help keep local rates down. Intrastate access charges, which are imposed on intrastate telecommunications services, historically have been within the sole jurisdiction of state regulatory commissions. But section 254(b)(5) of the 1996 Act⁸⁰ states as a principle that there "should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service" and section 254(e)⁸¹ states that any universal service "support should be explicit and sufficient." Implicit universal service subsidies in access charges do not meet these requirements.

In reviewing each of the intercarrier reform proposals already submitted and the potential compromises or alternatives that may be proposed by parties or by the FCC, it will be necessary to determine (1) whether the FCC would have the statutory authority to implement the specific proposed changes in the rates and rate structure for intrastate services on its own; (2) if involvement of a Joint Federal-State Board in the process would provide sufficient state input to meet statutory requirements; and (3) if there are any aspects of intrastate intercarrier compensation reform that are beyond the authority of the FCC.

Why is intercarrier compensation regulation not needed for the networks that comprise the Internet?

Today, there are specific regulatory intercarrier compensation rules for interconnection arrangements between all types of carriers interconnecting with the local telephone network, and for all types of traffic passing over the local telephone network. But there are no analogous rules for the networks that make up the Internet, which are not regulated and for which intercarrier compensation is left to market negotiations. Why is it possible to rely on the market to set intercarrier compensation rates within the Internet, but not to set intercarrier compensation rates for interconnecting with the local telephone network?

In part, this is the result of historical accident. The Internet, from its inception, has been a network of interconnecting networks, whereas the public switched telephone network was for almost a century a monopoly network with little need for

⁸⁰ 47 U.S.C. § 254(b)(5).

⁸¹ 47 U.S.C. § 254(e).

interconnection. There has never been a single Internet backbone network provider that was so large, relative to other Internet backbone providers that it (1) would benefit from refusing to interconnect with the other Internet backbone networks or (2) could offer its customers beneficial interconnection rates, terms, or quality of service, to the detriment of customers of other Internet backbone networks. When there was concern among the antitrust authorities in the United States and Europe that the merger of WorldCom and Sprint might result in a single Internet backbone network large enough to “tip” the market, the merger was blocked. Similarly, it is likely that the Department of Justice and FCC reviews of the proposed SBC-AT&T and Verizon (or Qwest)-MCI mergers will explicitly address whether the resulting entities would have market power in the Internet backbone market. Thus, the backbone Internet networks are in effect transiting networks for which there are competitive alternatives available.

Also, unlike the situation with the local public switched telephone network, in which a called party will not care if its carrier charges high rates to the calling party’s carrier to terminate communications, the Internet equivalent to the called party — the party providing the database or video stream or other Internet application — will not want Internet backbone providers to charge ISPs high interconnection charges because these would ultimately have to be passed on to end-user customers and thus could dampen demand for their own offerings.

Overarching Issue: How Can the Complexities of Intercarrier Compensation be Most Effectively Addressed in Statutes and in FCC Regulations?

Intercarrier compensation affects all aspects of the telecommunications market — investment decisions, competition, innovation, responsiveness to consumer demands. Given the large number and variety of entities that already interconnect with one another and the currently unknowable directions that technology and creativity may take in the future, most observers agree that it is impossible to project, predict, or devise regulatory rules for all future intercarrier relationships. At the same time, however, in a network industry, the rules of the game for interconnection will either foster or stifle efficient competition and innovation. If, in the absence of regulation, firms with market power are able to dictate the terms and conditions of interconnection, consumers may not be well served.

Policy makers face choices ranging between the extremes of setting complex, detailed rules that prove too inflexible to effectively address all the interconnection permutations that arise in the future and setting overly broad guidelines that fail to provide sufficient marketplace certainty and thus perpetuate the current litigious environment. Fortunately, there are some factors that will affect the relative efficacy of the various approaches to intercarrier compensation.

- Where underlying costs are difficult to measure and thus it is difficult to set regulated prices that provide accurate market signals, intercarrier compensation systems that avoid prices, such as bill-and-keep, may be advantageous. On the other hand, if a zero price masks

serious usage-driven costs, a bill-and-keep approach may be harmful.

- Where effective competition already exists (for example in the Internet backbone), the risk from erring on the side of little or no regulation may be low. On the other hand, where competition is ephemeral, that risk becomes much greater. Market-negotiated intercarrier compensation terms, conditions, and rates avoid the inevitable distortions associated with regulatory fiat, but market-driven results could be even more distorted if one party can negotiate interconnection terms, conditions, and rates from a position of market power.
- Broad principles and detailed rules need not be mutually exclusive. The Intercarrier Compensation Forum has constructed an extremely detailed proposal that begins with default rules based on a small set of basic principles and then expands on these rules for specified exceptions, such as rural local exchange carriers. This type of approach, while far too detailed for statutory language, might prove viable for FCC regulation.
- A crucial evaluative criterion for any proposed intercarrier compensation regime would be its susceptibility to, or inhibition of, extensive litigation. One of the few areas in which there is industry consensus is that a well-defined intercarrier compensation regime is needed that will reduce the current costs of litigation.