



INTERCARRIER COMPENSATION IN A DIVERSE COMPETITIVE ENVIRONMENT

prepared for

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Preface

INTERCARRIER COMPENSATION IN A DIVERSE COMPETITIVE ENVIRONMENT

Four years ago, Economics and Technology, Inc. was asked by Pac-West Telecomm, Inc., Focal Communications Corporation, and US LEC Corp. to undertake a comprehensive examination of “intercarrier compensation,” the complex and often arcane process by which revenues generated by telecommunications services produced jointly by several interconnected carriers are shared among the participating service providers. Existing intercarrier compensation rules vary according to the type of service involved, the applicable jurisdiction, the technology being used to provide the service, and the use to which the provided service is to be put. ETI’s August 2001 report, *Efficient Intercarrier Compensation Mechanisms for the Competitive Environment*, was the result of that effort.

Much has happened in the intervening four years since our earlier work was completed. The traditional distinction between “local” and “long distance” calling – a key element of the existing intercarrier compensation regime – has become blurred both as a result of the entry of the Regional Bells (“RBOCs”) into the long distance market, and the “bundling” of local and long distance services by wireline LECs as well as by wireless carriers. New technologies, such as Voice over Internet Protocol (“VoIP”), together with expanded wireless “roaming” service plans, weaken the linkage between telephone numbers and geographic location, making traditional distinctions between “local” call termination and “long distance” access charges less meaningful.

In March 2005, the FCC issued a *Further Notice of Proposed Rulemaking* in WC Docket No. 01-92 in an attempt to formulate and establish a *unified* approach to intercarrier compensation, one that would be linked to the specific *functions* being performed by each of the participating carriers rather than to the nature of the ultimate service being provided or the manner in which it is to be used by the ultimate consumer. A central element of the FCC Staff’s proposal is the adoption of a so-called “bill-and-keep” solution that would shift responsibility for payment for call termination from the carrier – and customer – that had originated the call to the carrier – and customer – to which it was directed. While bill-and-keep may well resolve some of the specific deficiencies in the existing compensation scheme, it will create a number of new sources of inefficiency and regulatory gaming, and would require a comprehensive realignment of *retail* pricing of end-user services, an issue that the new *Rulemaking* effort seems to have completely ignored.

Intercarrier Compensation in a Diverse Competitive Environment

This paper updates our previous report and specifically addresses the issues currently before the Commission in the *FNPRM*. It was prepared by Lee L. Selwyn and Helen E. Golding. The authors gratefully acknowledge the contributions and valuable assistance provided by Pac-West Telecomm, Inc. and US LEC Corp. in the preparation of this report. The views expressed herein are, however, those of the authors.

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Executive Summary

INTERCARRIER COMPENSATION IN A DIVERSE COMPETITIVE ENVIRONMENT

Intercarrier Compensation in perspective

Interconnection is the cornerstone of competition in a networked environment, such as telecommunications. Because competition for various services developed at different times, under differing regulatory conditions, the rates, terms and conditions for interconnection came to vary by jurisdiction, technology, and service. While there was a certain logic in each of these separate interconnection regimes at the time they were adopted, it has become clear to regulators, carriers, and customers that having disparate rates for essentially similar functions sends inaccurate economic signals and interferes with efficient competition. Thus, as the FCC prepares to receive comments in response to its *Further Notice of Proposed Rulemaking* (FNPRM) in the *Unified Intercarrier Compensation Rulemaking*, there is virtual unanimity on the central goal of the proceeding – to create “a technologically and competitively neutral intercarrier compensation regime that is consistent with network developments” and that can “be implemented in a manner that will provide regulatory certainty, limit the need for regulatory intervention, and preserve universal service.”

There is still considerable controversy, however, as to the best way to reach this goal. Up to now, intercarrier compensation has reflected the principle of “sent-paid” pricing, where the calling party pays its carrier for the entirety of the service being purchased, and the calling party’s carrier remits a portion of that payment to others participating in the call. Under a *unified* approach to intercarrier compensation, the amounts of such payments would be based upon the functions being provided by each participating carrier, rather than, as in the existing structure, the nature of the retail service being purchased. Alternatively, the Commission’s Staff seems to be advocating an arrangement referred to as “bill-and-keep,” in which the recipient’s carrier would look to its own customer for payment (of some form) for delivery of the inbound call, thus eliminating intercarrier payments altogether.

Analytical Framework

In our 2001 paper examining intercarrier compensation, *Efficient Intercarrier Compensation Mechanisms for the Competitive Environment*, we proposed a set of core principles that should be satisfied by a unified intercarrier compensation regime. We concluded that this regime should:

- (1) Stimulate efficient economic decisions, encouraging entrants to compete in those areas where they can be more efficient than the incumbent LEC.
- (2) Be competitively neutral (not preferring or advantaging any carrier by virtue of its incumbency, network architecture, scale or scope).
- (3) Recognize the potential for market diversity, innovation, and experimentation (and as such not embrace, reflect, or impose any one particular market outcome, such as “in-balance” traffic).
- (4) Be comprehensive and consistent across all network functions having substantially similar economic and technical characteristics and costs.
- (5) To the extent possible, accommodate and harmonize with preexisting retail market pricing practices (where this is not achievable, new pricing structures should only be implemented concurrently with a comprehensive revision of retail pricing embracing all services and all jurisdictions).
- (6) Be relatively simple and straightforward – capable of being implemented and administered efficiently and with a minimum of transaction-related costs.
- (7) Be transparent to the end user, creating no differentiation in retail end user pricing of services based upon whether the end-to-end call is completed by one or by more than one carrier.
- (8) Be maintained in place (subject only to ministerial changes) on a very long-term basis, so that carriers can rely upon it as a basis for their long-run investment decisions.

In this report, we again delve into the economic and policy bases for intercarrier compensation arrangements for all carriers participating in today’s evolving market environment. Applying the principles described above, we evaluate the merits of a unified compensation regime under which each carrier would be permitted to recover its long-run incremental costs associated with termination of traffic originated on another carrier’s network, vs. the alternative “bill-and-keep” framework, in which the intercarrier compensation rate would

be zero and the called party's carrier would be responsible for recovering its costs on a retail basis.

Principal Findings

We conclude that the unified inter-carrier compensation regime should be based upon long-run incremental costs, not "bill-and-keep." In that regard, we show, among other things, that:

- There is a positive, measurable, and *significant* cost associated with the termination of traffic, cost that the terminating carrier has a right to recover, that is properly measured based upon long-run incremental cost.
- Establishing pricing signals based upon long-run incremental costs is the most certain way to eliminate arbitrage and reduce opportunities for anticompetitive practices by carriers with significant market power.
- Because call termination costs are driven more by capacity demand than by aggregate minutes-of-use, a compensation regime based upon fixed capacity costs may provide an alternative to the present usage-based charges, provided that the originating carrier orders and pays for call termination capacity sufficient to handle its traffic requirements at a network standard grade of service.
- The system of calling party's network pays (CPNP) and sent-paid retail pricing has a logical basis, as demonstrated by the pricing practices in many other industries. Moreover, any arguable regulatory benefits of moving from this well-established regime to bill-and-keep are outweighed by the additional regulatory and other transactional costs that would be required.
- Encouragement of business models involving a balance of inbound and outbound traffic is not appropriate as an explicit goal of regulatory policy. So long as the inter-carrier compensation system is generating pricing signals based upon long-run incremental costs, carriers will appropriately pursue specialization where they can be most economically efficient.
- The proposed mergers of AT&T with SBC and MCI with Verizon heighten the need to preserve accurate economic signals for wholesale transactions between carriers and competitors, as well as carriers and their affiliates. Requiring that ILECs buy or sell "access" (whether local or long distance) services at a rate equal to their long-run incremental cost would make them indifferent as to whether they perform these functions themselves or purchase them from a competitor.

We continue to find serious weaknesses in the bill-and-keep approach, despite the new arguments raised in the Staff Report (Appendix C to the FNPRM) and echoed in parts of the ILEC-dominated Intercarrier Compensation Forum's *ex parte* brief.

- While the cost of terminating any particular call may be very small, the costs of call termination – in the aggregate and long-run – can hardly be deemed *de minimis*. Using the “nationally uniform call termination charge” for large wire centers as proposed by NARUC of \$0.002 (i.e., two-tenths of one cent) per minute – which NARUC described as “reasonable approximations of the rates that meet the Section 252(d)(2) standard of ‘additional costs’ of such calls” – the aggregate cost of terminating the roughly *four trillion* annual wireline and wireless minutes would be in the range of eight billion dollars.
- Costs are truly *de minimis* only when capacity is fixed, which occurs only in the short run. Capacity costs consist of switches, trunks and associated multiplexing and termination equipment – hardly an insubstantial investment. While all existing intercarrier compensation regimes involve *per-minute, per call*, or other *usage*-based charges, conversion to a *capacity-based* compensation scheme could address Staff’s concerns about “average costs,” while providing cost-based compensation to those participating carriers that are not direct recipients of end-user revenues.
- The attempt to assess the extent to which a called party benefits from receiving a call is too metaphysical a notion upon which to pin a reversal of the long-standing retail practice of collecting revenues from the calling party and the calling party’s carrier. Even today, receiving a call is not cost-free to the recipient. Moreover, in considering the putative advantages of shifting costs to the called retail customer, one must consider the additional cost to customers of the services and devices that would permit them to avoid (less than all of) their unwanted calls.
- Bill-and-keep proponents vastly underestimate the disruptive effects upon retail rate structures that would result from abandoning CPNP in favor of bill-and-keep. The incompatibility of the prevailing retail pricing regime of sent-paid local calling with intercarrier bill-and-keep would necessitate changes in retail pricing for *all* calls – those calls exchanged between interconnected LECs and those handled entirely by a single LEC. Moreover, the transition to charging end users for their incoming calls would clearly be more disruptive to some providers than to others.
- The transition to retail recovery of call termination costs would hardly minimize regulatory involvement. Any attempt to comprehensively align retail local exchange tariffs to a bill-and-keep intercarrier compensation mechanism would create a massive regulatory burden for state public utility commissions (PUCs) that have jurisdiction

over local rates, and the transition plans in many of the bill-and-keep proposals would require this realignment to occur multiple times.

- Bill-and-keep has no inherent advantages with respect to encouraging the deployment of efficient technologies.

Conclusion

Reforming intercarrier compensation may be the single most important factor in shaping how – and if – innovation and economic efficiency will shape competition in telecommunications over the next decade. Economic efficiency and competitive neutrality must be closely coupled for this new regime to achieve the desired result. A regime that reflects long-run incremental costs – whether expressed on a per-minute or a capacity basis – will allow this to occur.

On the other hand, zero-level “compensation” does not reflect the carriers’ actual costs – particularly in the long term – of terminating traffic delivered to them by other carriers. It thus sends inaccurate economic signals, which will ultimately result in market distortions that will threaten the economic efficiency of market decisions in the future. The use of bill-and-keep is also not justified by the novel rationalization that the calling party is not the sole beneficiary. Even if the issue of carriers’ real costs could be defined away by shifting the focus to the “benefits” received by the retail participants in the call – at best, an imprecise assessment – it would not justify incurring the costs associated with the massive realignment of retail pricing structures for the purpose of producing a policy outcome with little or no actual economic merit.

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1

WHEN CARRIERS COLLABORATE IN PROVIDING SERVICE

When several carriers participate in completing a call for a customer, they are each entitled to an equitable share of the revenues jointly realized from the service

Interconnection – the ability to interchange traffic among multiple telecommunications networks – is the cornerstone of a competitive, multi-carrier telecommunications marketplace. The value of a telecommunications network is a function of the number of individual users that are connected to it, either directly or via an inter-network connection. Carriers with large, ubiquitous networks, such as incumbent local exchange carriers (ILECs), would thus possess a formidable market advantage over smaller rivals were the new entrants prevented from interconnecting their networks with those of the ILECs. Indeed, there is probably no realistic scenario under which a carrier could survive whose network does not offer its users the same level of connectivity as is available from ILECs.¹

Before they faced competition, ILECs interconnected their non-overlapping networks and exchanged traffic. The non-overlapping incumbent monopolies readily interconnected *with one another*, because by so doing each would make its own network far more valuable to its customers – and thus capable of generating substantially more revenue overall – than would be the case if each carrier's network were operating as an island, isolated from anything beyond its necessarily limited geographic footprint. The problem, of course, was that membership in this exclusive “club” was strictly limited to incumbent monopolies; no competing carriers whose serving areas overlapped with any incumbents were invited to join.

The first competition that required ILECs to interconnect with competitors occurred in the 1970's, in connection with competitive long distance services. Even here, the competitive equilibrium was greatly aided by the fact that, for the decade and a half between the time of the

1. See *Specialized Common Carrier Services, First Report and Order*, 29 FCC 2d 870, 940 (1971); *recon. denied*, 31 FCC 2d 1106 (1971); *aff'd sub nom. Washington Utilities & Transportation Commission v. FCC*, 513 F. 2d 1142 (9th Cir. 1975).

Modified Final Judgment (1984) and the time when the RBOCs obtained Section 271 authority, the largest of the ILECs had no direct competitive stake in interLATA calling.

The *Telecommunications Act of 1996* (as well as pioneering state legislation that in some cases predated the *Act*) created a new era by establishing a legal right for new market participants, the competitive local exchange carriers (CLECs), to secure interconnection with the incumbent LECs (ILECs). However, it was the FCC's August, 1996 *Local Competition Order* that implemented the *Act's* new interconnection requirements.² In brief, the *Local Competition Order* established a system of explicit reciprocal compensation payments between ILECs and CLECs, with rate levels to be determined on the basis of the ILEC's costs (calculated in accordance with the "Total Element Long Run Incremental Cost" (TELRIC) methodology). Importantly, interconnection rates were to be applied symmetrically, so that the same cost-based rate applied to locally-rated traffic exchanged in either direction.³ Acting under these guidelines, state regulators approved numerous interconnection agreements between ILECs and CLECs that have allowed CLECs to enter the market and attempt to compete for local exchange service customers.

The FCC gave serious consideration to bill-and-keep, but declined to endorse this approach as the best solution for reciprocal compensation. In the *Local Competition Order*, the Commission found that:

carriers incur costs in terminating traffic that are not *de minimis*, and consequently, bill-and-keep arrangements that lack any provisions for compensation do not provide for recovery of costs. In addition, as long as the cost of terminating traffic is positive, bill-and-keep arrangements are not economically efficient because they distort carriers' incentives, encouraging them to overuse competing carriers' termination facilities by seeking customers that primarily originate traffic.⁴

The Commission permitted states to adopt bill-and-keep if they could find that "traffic is roughly balanced in the two directions and neither carrier has rebutted the presumption of symmetrical

2. *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, rel. August 8, 1996, 11 FCC Rcd 15499, 15844-15856 and 16217-16219 (*Local Competition Order*), aff'd in part and vacated in part sub nom., *Competitive Telecommunications Ass'n v. FCC*, 117 F.3d 1068 (8th Cir. 1997) and *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997), aff'd in part and remanded, *AT&T v. Iowa Utils. Bd.*, 119 S. Ct. 721 (1999).

3. *Id.*, at paras. 1085-1089.

4. *Id.*, at para. 1112.

rates.”⁵ In addition, carriers were free to consent, through the terms of a negotiated interconnection agreement, to adopt this mode of traffic exchange.⁶

As ETI’s August 2001 paper, *Efficient Intercarrier Compensation Mechanisms for the Competitive Environment*, discusses at length, the ILECs clearly expected to be net recipients of traffic from CLECs, and they aggressively sought to set their rates for terminating calls accordingly. The ILECs bet heavily on this outcome, and were plainly surprised when some CLECs specialized in handling inbound ISP traffic. Rather than admit to their mispricing of terminating access, the ILECs sought to portray unbalanced traffic flows not only as opportunistic – which they arguably were – but also as uneconomic – which they were not, given that the RBOCs themselves were the ones to determine the prices that CLECs responded to. Nonetheless, swayed by this portrayal of unbalanced traffic, the FCC responded by setting artificial caps on reciprocal compensation for CLECs handling ISP-bound traffic.⁷

Over time, as the fate of many CLECs – particularly those competing directly with the ILECs for customers most likely to have in-balance traffic – became more and more tenuous, the ILECs saw even less reason to pay competitors for traffic termination and became more committed to pursuing the compensation model that had worked for them when they were the only game in town – i.e., bill-and-keep.

The Unified Intercarrier Compensation Rulemaking and December 2000 OPP Working Papers

In April 2001, the FCC released the NPRM initiating its *Unified Intercarrier Compensation* rulemaking. Several months earlier, in December 2000, two staff working papers were published by the FCC’s Office of Plans and Policy. The papers, which were cited frequently in the NPRM, each proposed an approach to intercarrier compensation based upon bill-and-keep. Although the authors expressed different views as to the division of responsibility for transport costs, they relied upon many common arguments with respect to their core support for a bill-and-keep-based regime.

5. *Id.*

6. *Id.*

7. *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996 and Intercarrier Compensation for ISP-Bound Traffic*, Order on Remand and Report and Order, 16 FCC Rcd 9151 (2001).

When Carriers Collaborate in Providing Service

In *Efficient Intercarrier Compensation Mechanisms for the Competitive Environment*,⁸ ETI provided a comprehensive overview of interconnection arrangements as they have developed over the years and, from its analysis of that framework, derived a set of core principles that would make for an economically efficient unified compensation regime. Those core principles were:

- (1) The compensation arrangement should stimulate efficient economic decisions by entrants, encouraging them to compete with incumbents in those areas where they are or can be more efficient than the incumbent LEC.⁹
- (2) The compensation arrangement should be competitively neutral, conferring no special benefit or exacting any specific disadvantage upon any party merely by virtue of its incumbency, network architecture, scale or scope.
- (3) The compensation arrangement should expressly recognize the potential for market diversity, innovation, and experimentation, and as such should not embrace, reflect, or impose any predisposition as to any one particular market outcome (such as one in which balanced originating/terminating traffic for each CLEC is achieved) or that would penalize any party for deviating from, or failing to achieve, that result.
- (4) The compensation arrangement should be comprehensive and consistent across all network functions having substantially similar economic and technical characteristics and costs.

8. L. Selwyn and S. Lundquist, *Efficient Intercarrier Compensation Mechanisms for the Competitive Environment*, Economics and Technology, Inc., August 2001.

9. In fact, the core principles identified by ETI capture (albeit in somewhat more detail) the principles enumerated by the FCC in its NPRM (*In the Matter of Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Notice of Proposed Rulemaking*, 16 FCC Rcd 9610 (2001) (NPRM), and Further Notice of Proposed Rulemaking, including that (1) “any new approach should promote economic efficiency” (*In the Matter of Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, *Further Notice of Proposed Rulemaking*, FCC 05-33, released March 3, 2005 (FNPRM) att para. 31); (2) “any new approach should encourage the efficient use of, and investment in, telecommunications networks, and the development of efficient competition” (*id.*, citing NPRM at para. 2); (3) “Preservation of universal service” (FNPRM at para. 32); (4) “any new intercarrier compensation approach must be competitively and technologically neutral. Given the rapid changes in telecommunications technology, it is imperative that new rules accommodate continuing change in the marketplace and do not distort the opportunity for carriers using different and novel technologies to compete for customers; (5) “we favor an approach that provides regulatory certainty where possible and limits both the need for regulatory intervention” (*id.*); (6) “[s]imilar types of traffic should be subject to similar rules,” “[s]imilar types of functions should be subject to similar cost recovery mechanisms,” and there should be “similar rates for similar functions,” with “a regime that would apply these rates in a uniform manner for all traffic” (*id.*).

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- (5) The compensation arrangement should, to the extent possible, accommodate and harmonize with preexisting retail market pricing practices and, to the extent that the compensation arrangement cannot be conformed to such practices, it should only be implemented if this can occur concurrently with a comprehensive revision of retail pricing embracing all services and all jurisdictions.
- (6) The compensation arrangement should be relatively simple and straightforward and should be capable of being implemented, maintained and administered efficiently and with a minimum of transaction-related costs.
- (7) The compensation arrangement should be transparent to the end user, creating no differentiation in retail end user pricing of services based upon whether the end-to-end call is completed by one or by more than one carrier.
- (8) Once adopted, the compensation arrangement should be maintained in place on an essentially permanent basis, subject only to minor "technical corrections" whose purpose is primarily ministerial in nature.

Applying these concepts, ETI demonstrated that the bill-and-keep-based proposals set forth in the OPP papers did not comport with these fundamental economic principles. In particular, ETI highlighted analytical flaws in four key areas:

- (1) Neither paper recognizes the intrinsic linkage between the method adopted for intercarrier compensation and the retail prices paid by end users, which causes their analyses to be fundamentally incomplete.
- (2) The two papers share certain assumptions concerning the allocation of the benefits and costs of a call between the calling and called parties, which are unsupported and are most likely wrong as an empirical matter.
- (3) The papers inconsistently combine theoretical and pragmatic considerations to support their concrete proposals for how interconnection should be priced.
- (4) The papers give undue deference to existing architectures and practices of ILECs, in effect requiring entrants to accept what amounts to a "take-it-or-leave-it" set of interconnection conditions, such as existing ILEC local calling area definitions and the premise that inward and outward traffic that is out-of-balance is to be discouraged.

Nonetheless, the revived interest in bill-and-keep continues to be reflected in several of the proposals filed with the FCC on an *ex parte* basis, in the questions raised by the *FNRPM*, and

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particularly in the Staff Report that is attached to the *FNRPM* as Appendix C.¹⁰ These fresh attempts to provide economic rationalizations for bill-and-keep suffer from many of the same flaws as the OPP papers we analyzed in detail in our prior paper.

10. FNPRM, Appendix C, *A Bill-and-Keep Approach to Intercarrier Compensation Reform: An Analysis of Pleadings in CC Docket No. 01-92* by the Staff of the Wireline Competition Bureau (Staff Report).

2

THE UNIFIED INTERCARRIER COMPENSATION RULEMAKING

There is broad consensus supporting a unified approach to Intercarrier Compensation

Many changes have occurred in the telecommunications industry and the regulatory climate between the time of the *Local Competition Order* and the commencement of the *Unified Intercarrier Compensation Rulemaking*. With the entry of the Regional Bells (“RBOCs”) into the interLATA services market, the traditional distinctions between “local” and “long distance” calling – distinctions that are key drivers of *existing* intercarrier compensation rules – have become blurred, particularly with the emergence of “all distance” calling packages that create, at least from the customer’s perspective, “local calling areas” that are nationwide in scope.¹¹ Today, a large percentage of wireline, wireless and Voice over Internet Protocol (“VoIP”) calling plans consist of bundles of minutes or unlimited calling packages, where all usage – local and long distance – is treated the same. New technologies, such as VoIP and “unified messaging services,” weaken the linkage between telephone numbers and geographic location, making traditional distinctions between “local” call termination and “long distance” access charges less meaningful. The growth of wireless roaming has raised similar concerns. Many CLECs expanded rapidly, only to later struggle or even fail under pressure to expand as facilities-based providers. Among the more successful CLECs have been those who have specialized in serving particular customer segments, and have thus found ways to tailor their businesses to the demands of a particular market niche.

In April 2001, the FCC initiated its *Unified Intercarrier Compensation* rulemaking to replace the “existing patchwork of intercarrier compensation rules” with a unified regime – “one that would apply to interconnection arrangements between all types of carriers interconnecting with the local telephone network, and to all types of traffic passing over the local telephone network.” The FCC acknowledged that under its current rules, the applicable intercarrier

11. All distance service introduced and popularized by MCI’s The Neighborhood service. However, as soon as they obtained Section 271 authority, the RBOCs quickly adopted the flat-rate all-distance services as their own vehicle for gaining long distance market share and winning back local exchange customers.

The Unified Intercarrier Compensation Rulemaking

compensation rate level depended upon several factors, including: “(1) the type of traffic at issue; (2) the types of carriers involved; and (3) the end points of the communication.”

In the initial NPRM, the FCC identified the following key objectives for its initiative:

- Increasing the efficiency of intercarrier compensation arrangements;¹²
- Eliminating or at least reducing “the opportunities for regulatory arbitrage created by the existing patchwork of intercarrier compensation rules;”¹³
- Moving away from regulatory intervention in intercarrier compensation, towards more “market-oriented” mechanisms that could be “largely self-administering.”¹⁴

The FCC received many comments and reply comments on its NPRM. In addition, the proceeding led to efforts on the part of several industry groups and individual parties to develop proposals (which were presented to the FCC on an *ex parte* basis) for comprehensive reform of intercarrier compensation regimes. The FCC’s *Further Notice of Proposed Rulemaking*, released March 3, 2005, summarizes the earlier comments and *ex parte* proposals and focuses more specifically upon how disparate forms of intercarrier compensation are increasingly incompatible with competition in the evolving telecommunications industry. However, the FNPRM reaffirms the Commission’s primary objectives with respect to a unified intercarrier compensation regime:

The Commission's goal ... is to ... create a more uniform regime that promotes efficient facilities-based competition in the marketplace. [T]he Commission believes that this goal will be served by creating a technologically and competitively neutral intercarrier compensation regime that is consistent with network developments. It is also critical that this regime be implemented in a manner that will provide regulatory certainty, limit the need for regulatory intervention, and preserve universal service.*try to find quote that doesn't use “facilities-based”¹⁵

12. *Id.*, at para. 33.

13. *Id.*, at para. 11, footnote omitted. By “regulatory arbitrage,” the FCC refers in part to allegations that the CLECs focusing on the ISP market are amassing windfall profits under the existing symmetrically-applied termination rates for reciprocal compensation.

14. *Id.*, at para. 34.

15. FNPRM at para. 146

Proposals for Unified Intercarrier Compensation currently before the FCC

In the intervening period between the FCC's initial NPRM and the recent *Further Notice*, the Commission received proposals from several industry coalitions (primarily carriers, along with state regulators and consumer advocates). The proposals can be loosely categorized as falling into the three general approaches:

- (1) Rural ILEC/"make whole" proposals;
- (2) Bill-and-keep proposals; and
- (3) Proposals for compensation at unified, cost-based rates.

Notably, each of the plans acknowledges the paramount importance of eliminating artificial distinctions in intercarrier charges based upon technology or service classification. The plans vary widely, however, with respect to the emphasis they place upon explicitly protecting existing revenues from access charges, the appropriate level for the unified rate, and their position on the relative advantages of setting intercarrier compensation at a cost-based rate versus using a bill-and-keep approach.

Rural ILEC "make whole" proposals

Several proposals for intercarrier compensation reform were advanced by coalitions of rural ILECs. Like the other proposals, these plans recognize the need for a unified rate for all types of intercarrier compensation.¹⁶ They appropriately identify inequities in the current system, such as unequal payments by wireless carriers and VoIP providers relative to wireline carriers for use of the PSTN. However, in each instance, the plans revolve around the core objective of protecting the rural ILECs' revenues, and afford a considerably lower priority to the goals of bringing competitive efficiency and equity to the industry as a whole. While all plans acknowledge that there will be some universal service impacts from comprehensive intercarrier compensation restructuring, in the case of the rural ILECs there is a tendency for universal service to become "the tail that wags the dog."

Rural carriers ("RLECs") receive a significant portion of their revenues from access charges paid by other (primarily interexchange) carriers for calls originated from or terminated to the rural ILECs' customers. For this reason, the RLECs are particularly resistant to the idea of rolling back access charges to cost-based levels and seek assurances that their revenues will

16. Expanded Portland Group Plan (November 2, 2004) at 9-10; ARIC Plan (October 25, 2004) at 4; Home/PBT (November 2, 2004) at 6-7.

remain constant in the event of any such realignment. Two of these proposals are quite convincing in their opposition to “bill-and-keep,” but they promote a concept of the costs to be recovered by inter-carrier compensation that is incompatible both with the specific provisions of the *Telecommunications Act* and, more generally, with the advancement of competition.

The Expanded Portland Group (“EPG”) proposal exemplifies the priority given by the rural LECs to assuring that they are “made whole.” Although the EPG plan pays lip service to the concept of unifying inter-carrier compensation rates, it would retain the existing distinctions between “access charges” and “reciprocal compensation” for long distance and local inter-connections, respectively, and as such would “unify” nothing at all. The ARIC proposal resolves the discrepancies between access charges and all other forms of inter-carrier compensation by *increasing* the rates for all non-access terminating minutes of use, based upon the RLEC’s embedded costs. The Home Tel/PBT plan uses connection-based inter-carrier charges in place of the current per-minute charges for both access and reciprocal compensation. However, this plan also focuses heavily upon revenue replacement, through higher monthly subscriber line charges (“SLCs”) as well as a new¹⁷ “high cost connection fund” (HCCF), which would be bulk-billed to carriers using a numbers-based assessment.

Rather than moving all inter-carrier compensation toward long-run incremental costs and making subsidies explicit, these plans seek to cement the use of embedded costs. Under the EPG and ARIC proposals, switched access charges are reduced, but only to the extent that the above-cost rates are spread across other minutes-of-use terminated on the RLECs’ networks. This approach may reduce opportunities for arbitrage, but it does not advance competition.

Rural carriers have no inherent right to maintaining their existing revenue levels under a revised – and unified – inter-carrier compensation regime. The RLECs do, of course, have the right to earn a reasonable rate of return on their investment (rate base) and thus may not be forced to sustain a revenue loss that would be confiscatory or constitute a taking of the RLECs’ property. If the effect of the reduction in or elimination of access charges is to reduce RLEC revenues while still providing earnings at or above a level sufficient to provide the RLEC with a reasonable rate of return, there is no taking, and there is no basis or requirement for “make whole” revenue replacement. On the other hand, as carriers subject to rate of return regulation, to the extent that a change in inter-carrier compensation would reduce an RLEC’s earnings below that “reasonable” level, existing regulatory mechanisms are available to the RLEC for seeking a general increase in its rates. RLEC “make whole” concerns, to the extent they may be incompatible with the overarching principles and goals of inter-carrier compensation reform,

17. The Home/PBT proposal would roll some existing high-cost universal service requirements (Local Switching Support and ICLS) *into* the HCCF and would *eliminate* Interstate Access Support for non-rural carriers from the existing universal service fund. See FNPRM at fn. 185.

should not be permitted to drive the reform process or to interfere with the establishment of an efficient and competitively neutral intercarrier compensation regime.

While rural carriers are nominally subject to rate-of-return regulation, in reality they are subject to minimal financial reporting and almost no actual regulatory oversight. The FCC makes no pretense to reviewing the information relevant to RoRR, and in most instances state regulators are not able to devote the necessary resources to conduct these review either. Some RLECs have become increasingly dependent upon universal service support as a form of corporate welfare.¹⁸ The combined effects of the lack of effective monitoring of RLEC earnings and their escalating levels of universal service funding has been to raise RLEC earnings to levels well in excess of “reasonable rate of return” levels. Such overearning carriers should have no automatic entitlement to preserve existing revenues and earnings.

There are complexities raised by the rural carriers’ interests that do not exist – or at least not to anywhere near the same extent – for price cap and other primarily non-rural ILECs. RLECs account for a relatively small fraction of the total intercarrier minutes at issue here, and are generally less likely to face competitors. Thus, it makes sense to bifurcate the implementation of a unified intercarrier compensation regime in order to permit the rationalization of rates for the vast majority of traffic to occur as soon as possible.

Bill-and-keep proposals

The primary non-rural ILEC proposal constructed around a bill-and-keep regime was that submitted by the Intercarrier Compensation Forum (ICF), comprised primarily of large ILECs and IXCs.¹⁹ At the core of the ICF proposal is a six-year transition for reducing all interstate and intrastate access charges, as well as charges for reciprocal compensation, CMRS compensation, independent company settlements, ISP-bound traffic, and other “non-access traffic” (e.g., foreign exchange/virtual FX traffic “provided on a non-access basis”) to zero.²⁰ The ICF proposal also pays considerable attention to the delineating each carrier’s financial responsibility

18. For an in-depth treatment of this issue, see Susan M. Gately and Scott C. Lunquist, *Lost in Translation: How Rate of Return Regulation Transformed the Universal Service Fund for Consumers into Corporate Welfare for the RLECs*, Economics and Technology, Inc., February 2004.

19. The ICF consists of SBC, AT&T, MCI, Sprint, Valor, Global Crossing, Level 3, and GCI (which serves Alaska).

20. FNPRM at para. 41, citing ICF Proposal (October 5, 2004) at 31-33, 42-47.

in an exchange of traffic. In most cases,²¹ to qualify to exchange traffic on a bill-and-keep basis, the originating carrier must deliver traffic to the “Edge” of the terminating carrier’s network or must bear the costs associated with transporting its calls to the terminating carrier’s “Edge” by arranging for transport from intermediate carriers. While at a purely conceptual level, the ICF proposal seems relatively straightforward, diagrams in Appendix D to the ICF proposal suggest that there would be significant complexity to its actual implementation.

Fundamentally, while the ICF proposal seeks to capitalize on the renewed interest in bill-and-keep and the superficial appeal of “compensation-free” traffic exchange, it fails to satisfy the criteria for a competitively neutral and economically efficient unified intercarrier compensation regime. The specific shortcomings of bill-and-keep are discussed in more detail in Chapter 4.

Unified cost-based rates proposals

The remaining proposals – including the plan submitted by the Cost Based Intercarrier Compensation Coalition (CBICC), as well as the NARUC and NASUCA principles – endorse a cost-based unified intercarrier compensation regime. It should be noted that the majority of the RLEC proposals also promote unified cost-based intercarrier compensation systems, rather than bill-and-keep. After all, a positive rate of compensation, even one that is very small, leaves less revenue to be recovered through a universal service (or other equivalent) mechanism than must be recovered when the intercarrier compensation is assumed to be zero.

CBICC’s proposal calls for a transition to a unified intercarrier compensation rate for *all* circuit-switched traffic. The default²² baseline rate would be the blended long-run incremental costs for tandem switching (inclusive of tandem switching, end office switching, and interoffice transport). For calls handled by two carriers, the originating carrier would compensate the terminating carrier for transport and termination. For calls involving three or more carriers, the call would be sent-paid, and the carrier with the retail relationship with the originating party would pay all other carriers involved in the call. If the calling party (or the called party, in the case of 800 service) had a retail relationship with the IXC, the IXC would pay for the use of exchange access facilities at both ends (and would collect revenue from the end user). Interstate access would drop to this rate immediately, while intrastate access rates would be reduced on a slower schedule, under the supervision of a federal-state joint board. Any Section 251(b)(5) traffic and ISP-bound traffic would be set immediately at the baseline rate, with no “growth

21. Modified “edge” requirements apply to incumbent RLECs (designated “Covered Rural Telephone Companies” (CRTCs)).

22. Carriers would be free, by mutual consent, to make alternative compensation arrangements.

caps” or market-based restrictions on any type of circuit-switched traffic. Transit carriers would be entitled to charge TELRIC-based rates for any functions they provide.

The National Association of State Utility Commissioners (NARUC) also endorses a competitively and technologically neutral system of intercarrier compensation, that “reflect[s] underlying economic cost,” that would apply to all exchanges of traffic over the PSTN, without exception, with the “requesting” carrier (the carrier handing off the call) being responsible for paying “an appropriate portion” of the “requested” carrier’s network costs. The NARUC proposal prohibits discrimination based upon the classification of the requesting carrier or its customer, the location of the requesting carrier’s customer, the geographic location of the end-user parties to the communication, and the architecture or protocols of the requested carrier’s network or equipment.

Similarly, the National Association of State Utility Consumer Advocates urges the FCC to recognize “that a carrier that originates, transits or terminates traffic on the network of another carrier imposes costs on that carrier. As a result, the cost of intercarrier compensation cannot be zero. Nevertheless, carriers remain free to enter into negotiated bill and keep arrangements.” Under the NASUCA principles, disparate rates for intercarrier compensation are eliminated over a five-year period and existing universal service mechanisms remain intact. ILECs are not assumed to have a revenue “shortfall” as a result of adopting a cost-based unified intercarrier compensation regime, but “[a]ny demonstrated need for additional intrastate funding created by reduction in ICC rates should be recovered through local rates or state universal service funds, as determined by the state.”

3

THE MERITS OF COST-BASED COMPENSATION IN A COMPETITIVE ENVIRONMENT

Cost-based charges and competition obviate concerns over traffic “balance”

A review of the various proposals and comments filed thus far in the *Unified Intercarrier Compensation* proceeding suggests a broad consensus that the objective of unifying the charges for essentially similar interconnection functionalities is desirable and necessary to promote economic choices among services provided by carriers, regardless of incumbency or technology. What is actually required to implement this goal, however, remains controversial.

The Commission is now attempting to determine whether the key objectives for an inter-carrier compensation regime are best satisfied by a competitively neutral system based upon the long-run incremental cost or by a scheme that presumptively sets intercarrier compensation rates at zero and leaves carriers to recover any actual costs they incur from their own users. In this chapter and the next, we compare and contrast the merits of a unified compensation scheme based upon the ILECs’ long-run incremental cost with a zero-based (i.e., bill-and-keep) compensation approach. We show, among other things, that:

- There is a positive, measurable cost associated with the termination of traffic, cost that the terminating carrier has a right to recover, that is properly measured based upon long-run incremental cost.
- Establishing pricing signals based upon long-run incremental costs is the most certain way to eliminate arbitrage and reduce opportunities for anticompetitive practices by carriers with significant market power.
- The system of CPNP and sent-paid calling has a logical basis, as demonstrated by the pricing practices in many other industries. Moreover, any arguable regulatory benefits of moving from this well-established regime to bill-and-keep are outweighed by the

additional regulatory and other transactional costs – including comprehensive retail rate restructuring – that would be required.

- Traffic balance cannot be assumed to exist, nor is encouragement of business models involving a balance of inbound and outbound traffic appropriate as an explicit goal of regulatory policy.

Long-run incremental costs – not short run costs – form the basis for economic decisions of competing carriers

As the Commission points out, it has previously determined that use of a long-run incremental cost standard (such as the TELRIC standard adopted in the *Local Competition Order*) satisfies both the *Telecommunications Act*'s pricing standard for unbundled network elements and the “additional cost” standard for reciprocal compensation required by Section 252(d)(2).²³ Although the Commission now questions whether “additional” cost can mean the “average” long-run incremental cost of providing a function, it has not come up with a common cost standard that reconciles these two statutory formulations better than the long-run forward-looking economic cost approach. Having survived extensive judicial scrutiny as a competitive costing standard consistent with the requirements of the *Act*,²⁴ it makes sense that long-run forward-looking economic cost remains the common denominator for a unified approach to intercarrier compensation.

The Staff has suggested that “it does not appear that minutes-of-use are a significant determinant of costs,”²⁵ and on that basis argues that call terminations should go uncompensated by the originating carrier. This remarkable, yet entirely unsubstantiated, “conclusion” is at odds with economic reality, and appears either to be confusing short-run and long-run costs, or to be based upon the notion that the very small magnitude of the cost of terminating calls, *when expressed on a per-minute-of-use basis*, somehow equates to *de minimis*. The Staff's misunderstanding of this point is demonstrated at footnote 77, where the Staff concludes that

... if discrete calls are a *de minimis* source of costs, then the occurrence of such calls should not transfer significant costs between networks. That is, even if it makes sense as a policy matter for carriers to recover costs from competing carriers with whom they exchange traffic, rather than their own customers, a compensation approach based upon

23. FNPRM at para. 71, citing *Local Competition Order*, 11 FCC Rcd at 15844-56.

24. *Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002).

25. Staff Report, at 102-103.

average costs (rather than actual costs) would overcompensate the receiving carrier, thereby creating an arbitrage opportunity.²⁶

But at a long-run incremental cost of, for example, two-tenths of one cent per minute – based upon the “nationally uniform call termination charge” for large wire centers as proposed by NARUC and which NARUC describes as “reasonable approximations of the rates that meet the Section 252(d)(2) standard of ‘additional costs’ of such calls”²⁷ – the aggregate cost of terminating the roughly *four trillion* annual wireline and wireless minutes²⁸ would be in the range of *eight billion dollars*, hardly a *de minimis* sum by any measure.

In fact, even this \$4-billion amount for the aggregate annual cost of terminating calls on the PSTN appears to be an absurdly low estimate. Gross ILEC Telephone Plant in Service (TPIS) for the principal central office accounts (2212 Digital Electronic Switches), 2230 (Central Office Transmission equipment), and 2232 (Circuit Equipment) as of the end of year 2004 was approximately \$492-billion.²⁹ These *embedded* investment figures would need to be adjusted for depreciation and obviously are well-above forward-looking long run incremental cost. They also involve call origination as well as call termination (although *not* transport). But as a rough order-of-magnitude calculation, if we assume (a) a 50% depreciation reserve, (b) a 2-to-1 embedded-to-TELRIC investment cost ratio, and (c) assume (conservatively) that only 25% of the total central office plant can be specifically associated with call terminations,³⁰ we still get a order-of-magnitude capital investment cost of some \$31-billion, which would be roughly

26. Staff Report, at fn. 77.

27. *Ex parte* filing of NARUC, March 1, 2005, Appendix B, NARUC Committee on Intercarrier Compensation, “Goals for a New Intercarrier Compensation System,” at 5.

28. In 2001, it became voluntary for ILECs to report Dial Equipment Minutes (DEMs) to the FCC. The most recent figure (2001) for total DEMs, including local, intrastate toll and interstate toll, is 4.8-trillion. Terminating minutes represent at least half (and likely more than half) of total DEMs, indicating that for 2001 terminating DEMs were at least 2.4-trillion. See, FCC Industry Analysis Division, *Trends in Telephone Service*, released August 2003, Table 10.1. The Cellular Telecommunications & Internet Association (CTIA) reports that wireless minutes of use exceeded one trillion in 2004, a substantial majority of which likely were terminated to wireline carriers. See, CTIA website, CTIA’s Semi-Annual Wireless Industry Survey, <http://files.ctia.org/pdf/CTIAYearend2004Survey.pdf>, accessed May 19, 2005. Total annual terminating PSTN minutes are thus of the order of 4-trillion.

29. ARMIS Report 4302, Table B.1.B–Plant Accounts, end-of-year 2004. Account 2212, \$127-billion; Account 2230, 183-billion; Account 2232, 181.9-billion.

30. The Staff Report (at 102-103) suggests that “switching costs are primarily a function of the number of subscribers, rather than the number of calls or MOU ...” Staff is not correct. While the total cost of a switch is sensitive to the total number of subscriber line “ports” terminating thereon, the per-port cost is itself sensitive to the average usage per port and to the “concentration ratio” of ports to conversation paths. Switch costs are also highly sensitive to the number of *trunk ports*, which corresponds directly with aggregate peak period traffic volumes.

consistent with the *annual* cost of around \$8-billion based upon the NARUC \$0.002 per minute cost and the roughly four trillion annual terminating PSTN minutes.

Costs are truly *de minimis* only when capacity is fixed, which occurs only in the short run. Capacity costs consist of switches, trunks and associated multiplexing and termination equipment, and are certainly not *de minimis*. While all existing intercarrier compensation regimes involve *per-minute*, *per call*, or other *usage*-based charges, conversion to a *capacity-based* compensation scheme could address Staff's concerns about "average costs" while still providing cost-based compensation to those participating carriers that are not direct recipients of end-user revenues. Certainly basing intercarrier compensation payments on capacity rather than on minutes – which may well be efficient both in terms of minimizing transaction costs as well as more accurately reflecting cost causation – has far more economic validity than the various draconian "bill-and-keep" arrangements that are being circulated.

There are, of course, good reasons why long-run incremental costs are – and continue to be – the relevant costs for pricing terminating traffic. The additional costs of call termination are finite and significant; it is only in the *very short run* that such costs could be viewed as *de minimis*, a cost condition that has no relevancy in the context of a *permanent* intercarrier compensation regime. The *short-run* costs of an additional minute of use on existing switching equipment may well be very small or even zero, because switching and transport *capacity* cannot be continuously adjusted or augmented. And it is precisely for that reason why short-run costs are of little or no relevance or interest in the context of developing prices for services that are produced using large amounts of *fixed* plant.³¹ Over time, however, the cost of the capacity required to serve all of the demand presented to it must be recovered, and that is by its very nature a long-run cost. Basing intercarrier compensation rates on short-run incremental costs cannot adequately compensate the terminating carrier for its work in completing inbound calls or permit it to recover its capital investments.

Adherence to a long-run incremental cost standard does not, however, necessitate the use of granular per-minute or per-call usage-based charges. The primary alternative to a pricing regime based upon *usage* is one based upon *capacity*. In a *capacity-based* or *demand-based* pricing scheme, the pricing element is the peak or busy hour level of concurrent usage (demand) that is placed on the carrier's network. In telecommunications, demand-based pricing is commonly used for *dedicated* services, such as special access and private lines. Commercial and industrial

31. Short-run costs are relevant in setting prices aimed at satisfying one-time use or other short-run demand situations. For example, where plant might otherwise lay idle due to a lack of demand, such as in the middle of the night, any revenue in excess of zero would result in increased profits, provided of course that by setting the price for the use of such capacity at a low level does not induce purchasers to shift demand from other periods rather than to create new demand where none would have existed. A permanent pricing regime could reflect permanent or consistent short-run demand patterns, but in the end must provide sufficient revenue overall so as to fully recover *long-run* costs, or else the enterprise could not stay in business.

electricity rate plans typically include both a “demand” and a “consumption” component, with the former capturing the maximum concurrent capacity demand (e.g., expressed in kilowatts) and the latter reflecting the consumption of energy (typically expressed in terms of kilowatt-hours).

A capacity-based intercarrier compensation regime might require the originating carrier to compensate the terminating carrier based upon the number of concurrent hand-offs, expressed as, for example, DS-1 equivalents. Similar to capacity charges for electricity, however, it is important that the capacity purchases truly be sufficient to handle the delivery of traffic during the peak period. Thus, the requesting carrier would have to be responsible for purchasing sufficient capacity to handle peak traffic delivered for termination at a network-standard grade of service; otherwise, the requesting carrier might attempt to purchase an insufficient level of capacity – saving costs while also degrading the quality of calls terminated to other carriers (i.e., to CLECs) relative to that for calls handled end-to-end by the ILEC.

Basing reciprocal compensation payments upon capacity rather than measured usage may also involve lower transaction costs to the extent that the need for granular usage measurements is avoided. The fact that long-run incremental costs may be more sensitive to aggregate capacity demand than to the aggregate number of minutes actually used would support the adoption of a capacity-based reciprocal compensation regime, but *not* bill-and-keep.

The long-run incremental cost of terminating calls is not, in the aggregate, “de minimis”

At various points in the FNPRM and the accompanying Staff Report, there are questions or comments indicating tentative conclusions that switching costs are not traffic-sensitive and therefore should be offered via a capacity-based charge, rather than on a per-minute basis. At other points, however, the fact that the costs of call termination are very small is used as support for the proposition that they need not be charged for at all. The Commission has previously examined and rejected intercarrier arrangements based upon zero compensation, except where traffic balance could be assured, and warned of the economic distortions that would occur if such costs were ignored. In the *Local Competition Order*, the Commission found unequivocally that:

... carriers incur costs in terminating traffic that are not *de minimis*, and consequently, bill-and-keep arrangements that lack any provisions for compensation do not provide for recovery of costs. In addition, as long as the cost of terminating traffic is positive, bill-and-keep arrangements are not economically efficient because they distort carriers'

incentives, encouraging them to overuse competing carriers' termination facilities by seeking customers that primarily originate traffic.³²

While technological advances may have lowered the costs of call termination since 1996 when this finding was made, there is certainly no evidence to suggest that costs are no longer “positive” or have become *de minimis*.

The fact that per-minute costs are very small does suggest that it may make more sense to charge for usage on a less granular basis *if by doing so the costs of granular usage measurement could be avoided*. In fact, however, usage measurement and monitoring is typically a by-product of digital switch operation, creates little or no “additional” costs as long as no call-by-call detail is required, and is often required anyway for efficient traffic and network engineering, monitoring and management. In some cases, however, costs may actually be more sensitive to *capacity* than to aggregate minutes of use, and basing compensation for terminating traffic on capacity rather than on minutes could reduce transaction costs associated with usage measurement and accounting.

In any event, when expressed on a per-minute-of-use basis, costs may be very small, but they are certainly not zero. In order to handle large volumes of inbound traffic, a carrier will need high-capacity interconnection trunks and significant switching capacity. The acquisition of these assets is inherently a *long run* decision, and these resources are in no sense costless or “free.” Accordingly, the carrier that makes these investments and incurs these costs so as to be capable of terminating inbound calls originated by customers of other carriers is entitled to be compensated for its work. Put differently, if those same inbound calls were to be terminated by the originating carrier, that carrier would itself require additional trunking and switching capacity, costs that are avoided when the call termination function is performed by another carrier.

Concerns over arbitrage and potential "gaming" of the system can only be alleviated by recognizing the actual (non-zero) economic costs of interconnection

The Commission has previously suggested that "the existing intercarrier compensation mechanism for the delivery of this traffic, in which the originating carrier pays the carrier that serves the ISP, has created opportunities for regulatory arbitrage and distorted the economic incentives related to competitive entry into the local exchange and exchange access markets." The FCC has also suggested that "such market distortions relate not only to ISP-bound traffic,

32. *Id.*, at para. 1112.

but may result from any intercarrier compensation regime that allows a service provider to recover some of its costs from other carriers rather than from its end-users."

Whether costs are recovered through wholesale transactions or at the retail level, economic distortions will provide opportunities for responses that would otherwise be uneconomic. When the FCC first considered the structure of reciprocal compensation in its 1996 *Local Competition Order*, it noted arguments (on both sides) about the possible effects on CLEC incentives to seek out customers with disproportionate terminating (or originating) traffic. The Commission ultimately decided to adopt a system based upon positive cost-based compensation between carriers. Whatever distortions ultimately developed were not due to the mechanism of reciprocal intercarrier compensation, but rather arose because the ILEC-dictated reciprocal compensation rate was typically far in excess of the long-run incremental cost that many CLECs – and, in fact, the ILECs themselves – actually confronted in terminating other carriers' traffic. *The lesson to be learned from this experience is the critical importance of establishing a positive reciprocal compensation rate based upon the long-run incremental cost of terminating inbound traffic, thus making the originating carrier indifferent as to whether it, or another carrier, completes calls placed by the originating carrier's customers.*

As we discuss at considerable length in Chapter 4, such economic indifference is not achieved under a bill-and-keep paradigm. Here, the originating carrier incurs costs if it terminates calls to its own customers, but avoids those costs if the call can be handed-off to another carrier for completion. If an excessive reciprocal compensation rate had the effect of stimulating carriers to seek out customers with high inbound traffic requirements, than setting the reciprocal compensation rate at zero (i.e., bill-and-keep) would cause carriers to seek out customers with large outbound calling needs, since those outbound calls could then be handed off to another carrier for termination at no cost to the originating carrier. Bill-and-keep does not avoid economic distortions, it merely results in different economic distortions.

Payments should compensate each participating carrier for the work each performs in completing calls handed-off to it

In most cases, when more than one carrier is involved in completing an end-to-end call over the public switched network, only one of the several carriers has a direct relationship with the customer who “pays” for the call. As such, only one of the participating carriers actually receives revenue for the service. Under most existing intercarrier compensation arrangements (local reciprocal compensation, access charges), the carrier that receives payment from the customer must distribute a portion of such revenues among the other participants. These alternate payment arrangements are diagramed schematically on Figures 1 through 6 below.

The Merits of Cost-based Compensation

There is no technical basis for differentiating carriers that specialize in serving customers with unique traffic properties from those whose customer mix exhibits more typical or "average" properties. Fundamentally, the cost characteristics of local traffic do not depend upon the content of the call or the purpose or use motivating the call (e.g., to connect to and transmit data to/from an ISP vs. a voice call to a friend or to a nearby retail or service establishment).

The factors affecting the cost of processing a call through an ILEC's local network, or of processing a call from an ILEC's customer to the point of interconnection with a CLEC or other interconnecting carrier, depend solely upon the PSTN resources that are utilized by the call – primarily switching and transport – which are affected, to varying degrees, by the call's duration, the number of switching operations involved in processing the call, the distance over which the call travels, and the extent to which the use of these resources affects the carriers' peak-demand capacity at the time that the call is in progress. In this regard, calls to ISP modem lines that are connected to the PSTN within the calling party's local calling area are technically indistinguishable from "ordinary" end-user to end-user (voice) local calls, whether completed entirely on the

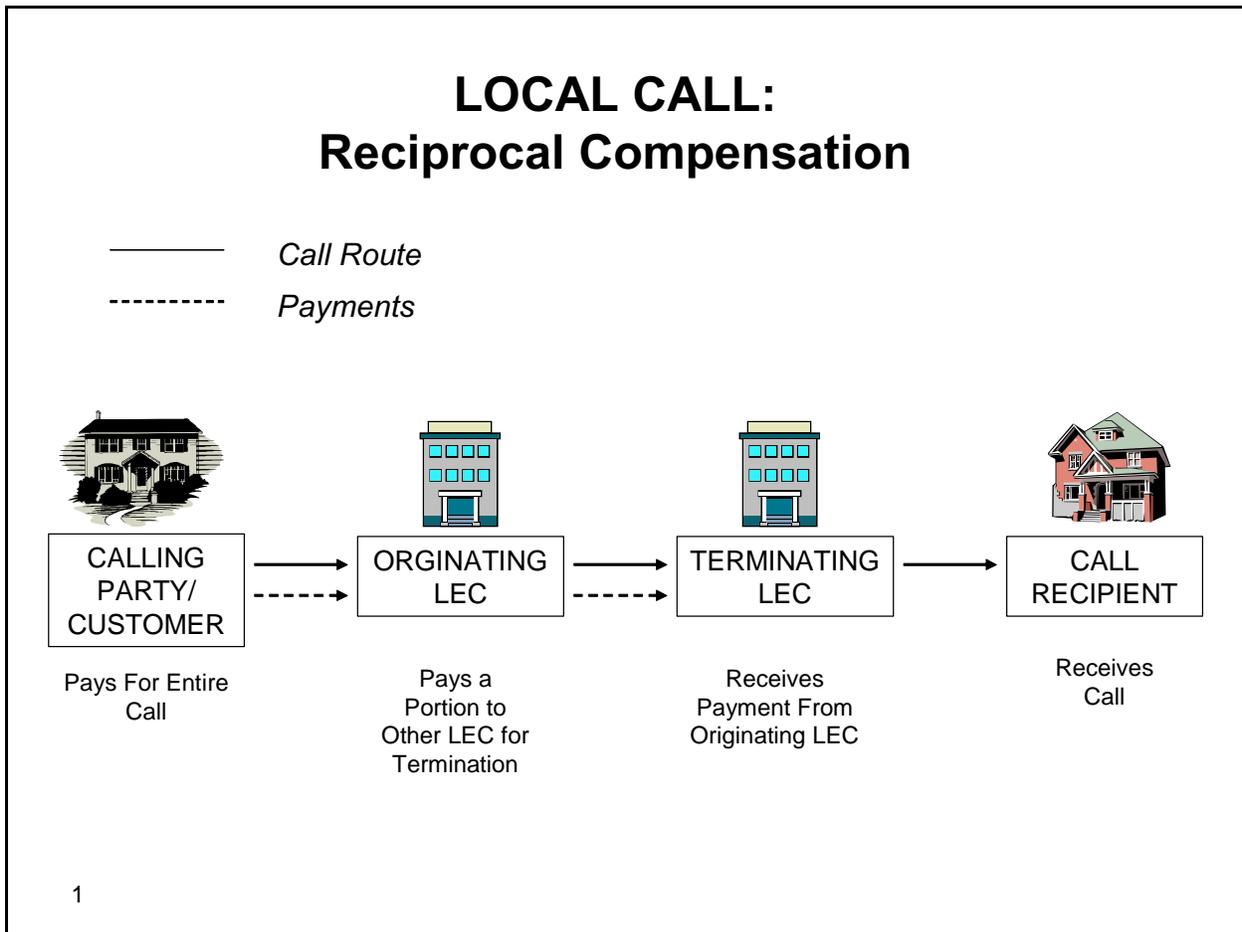


Figure 1.

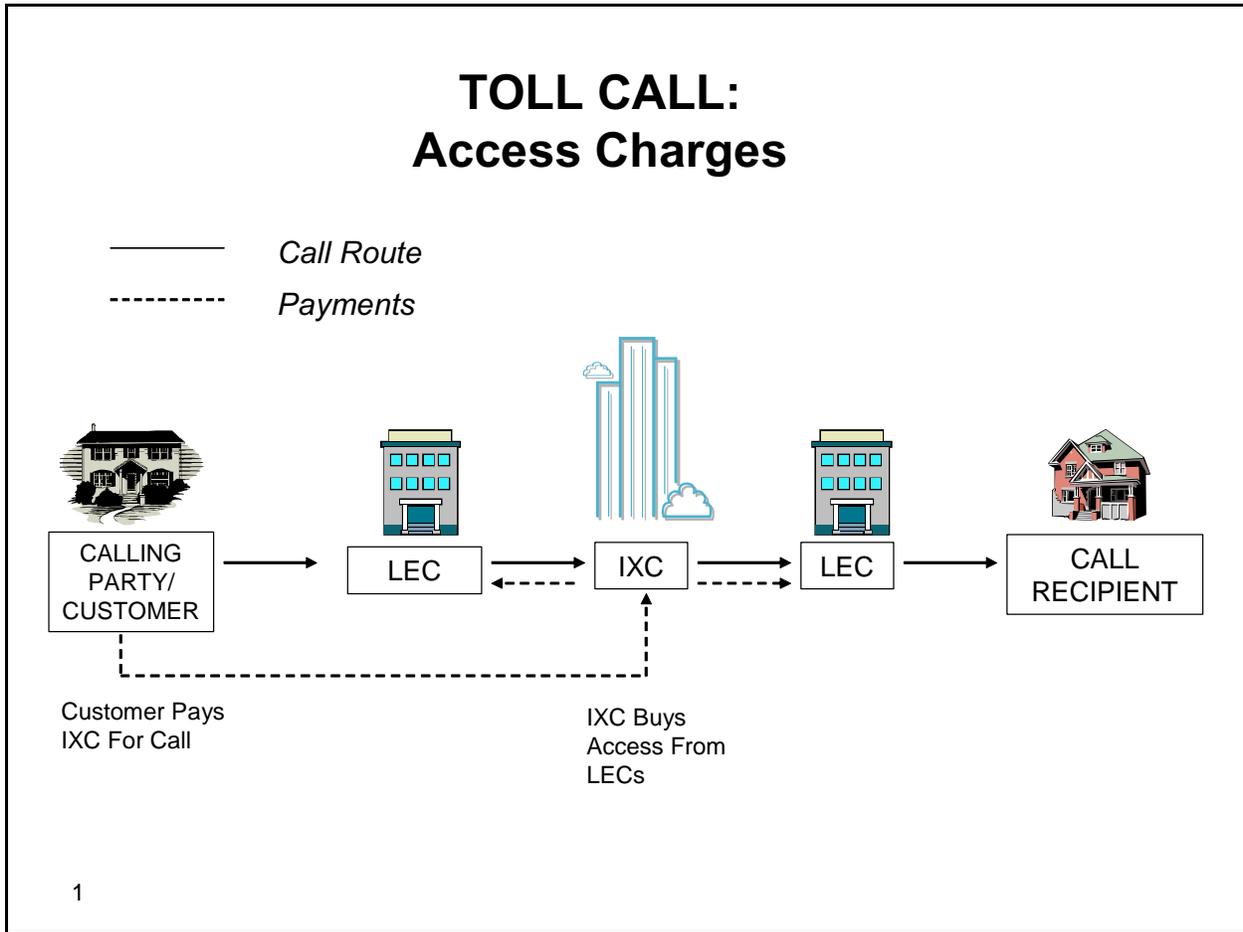


Figure 2.

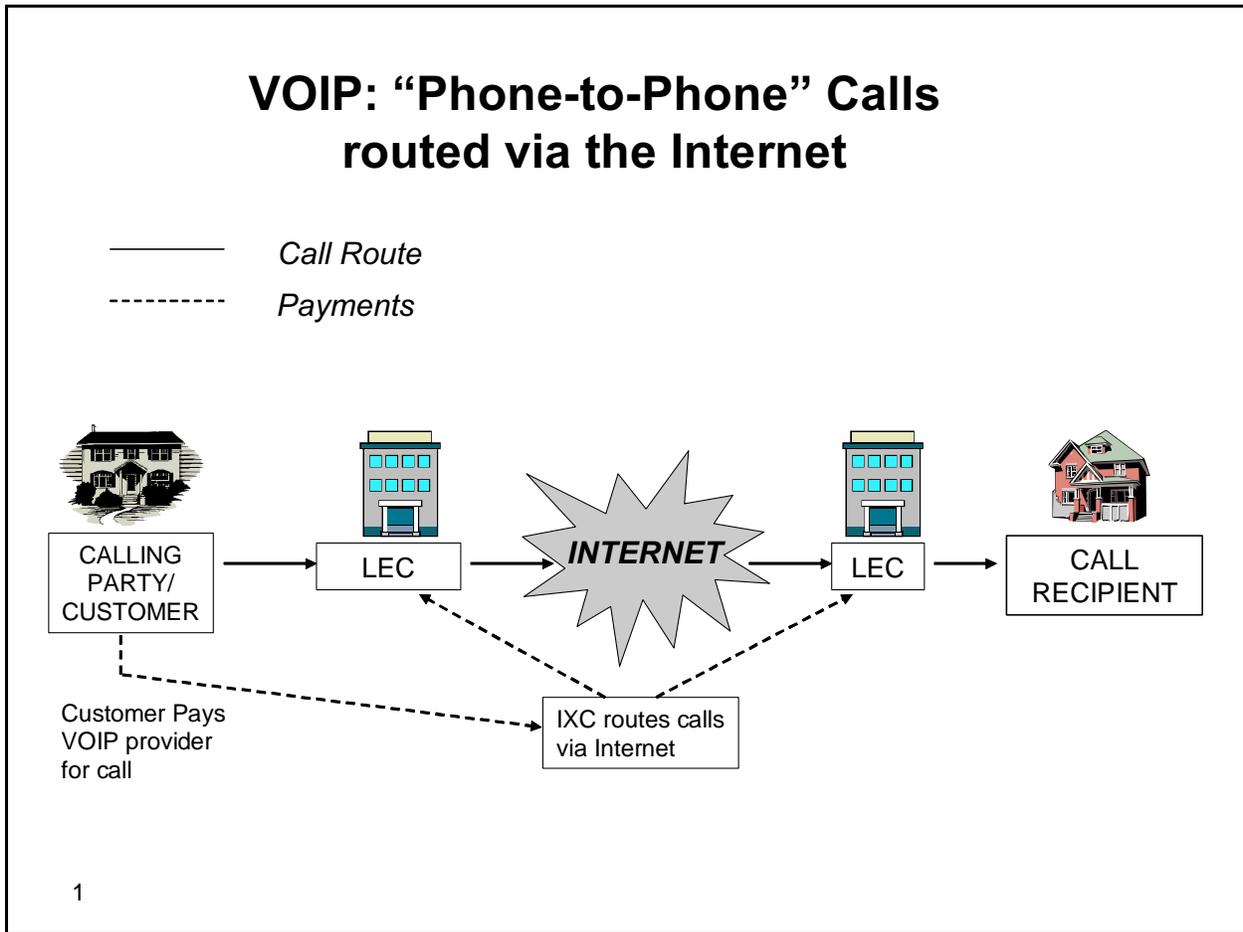


Figure 3.

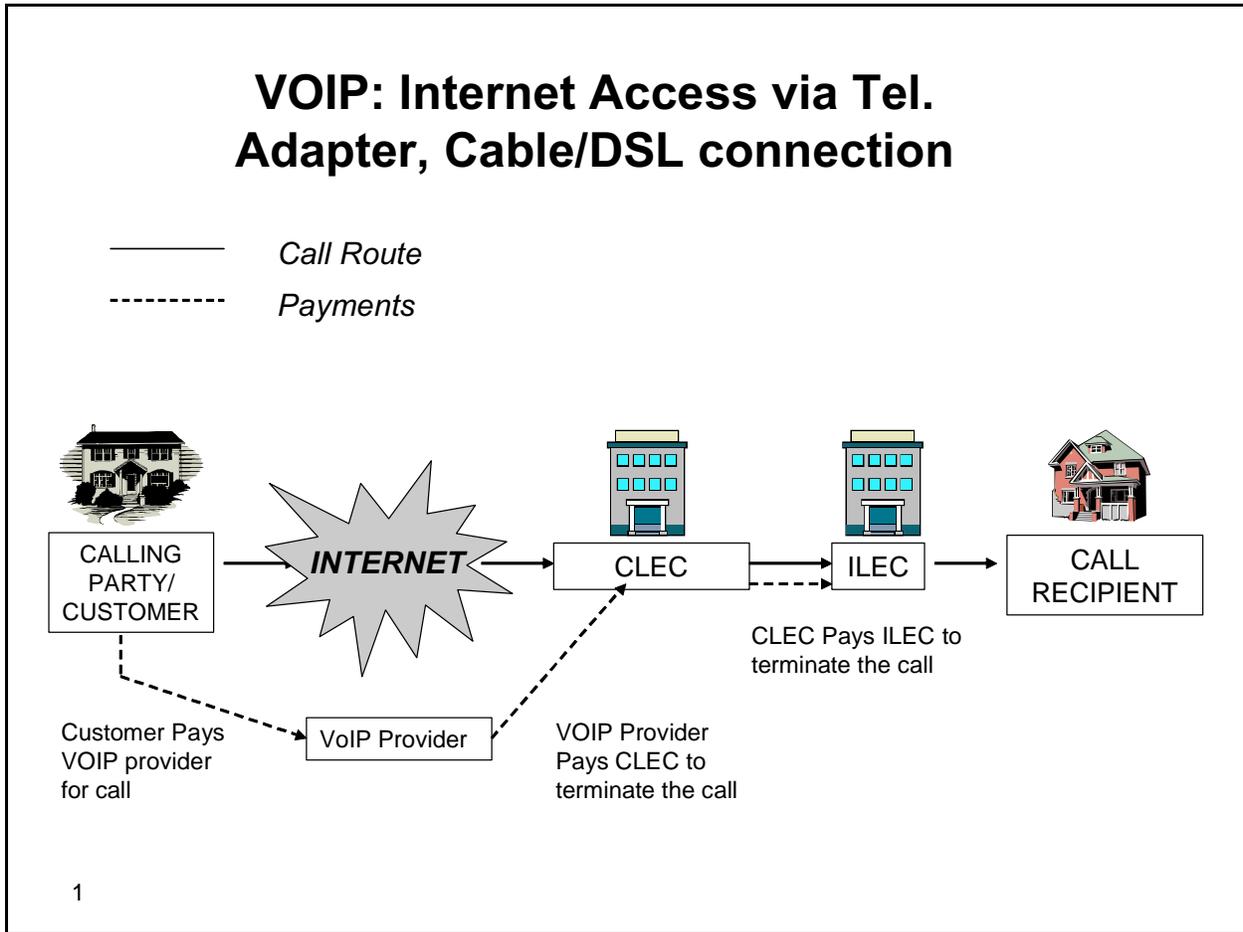


Figure 4.

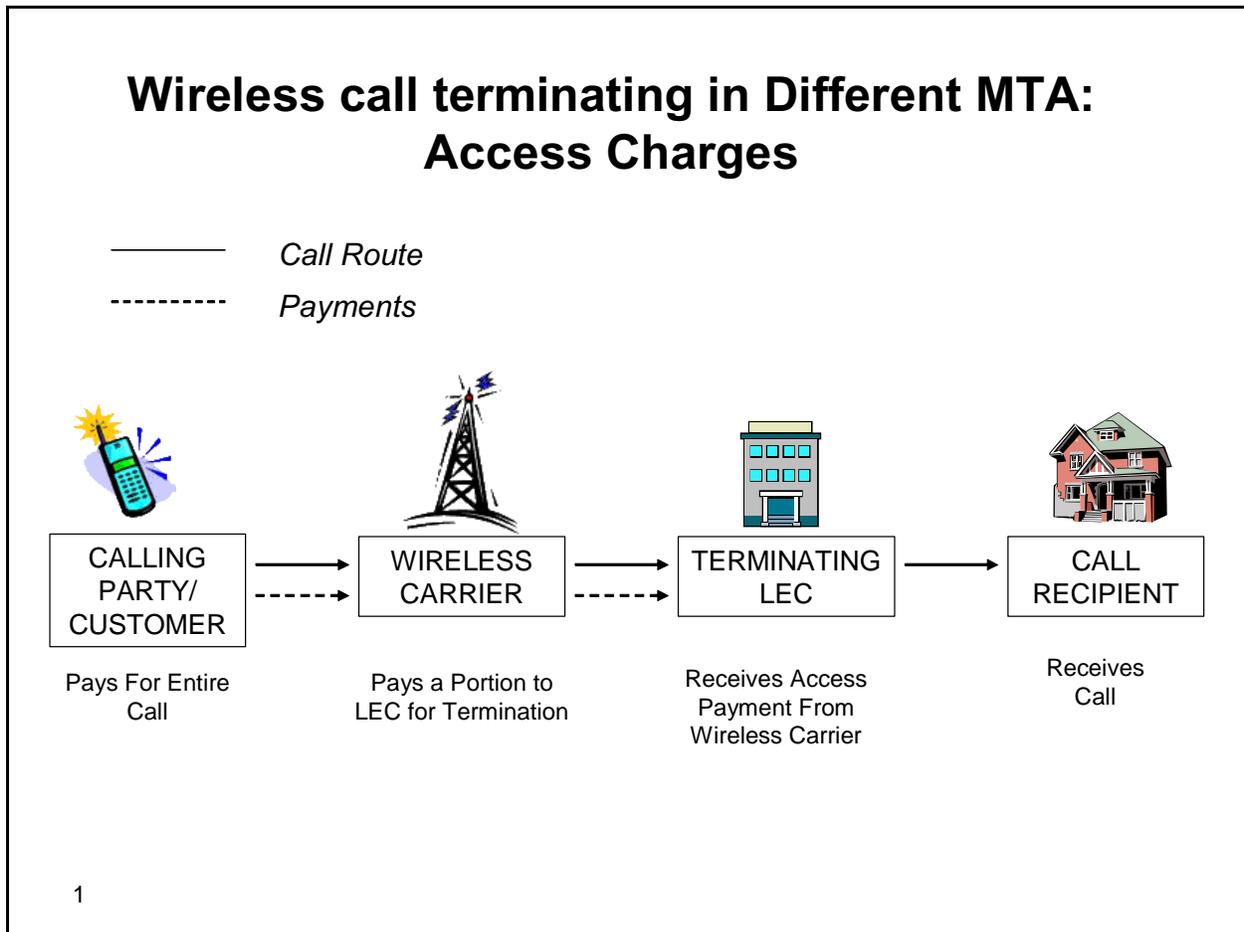


Figure 5.

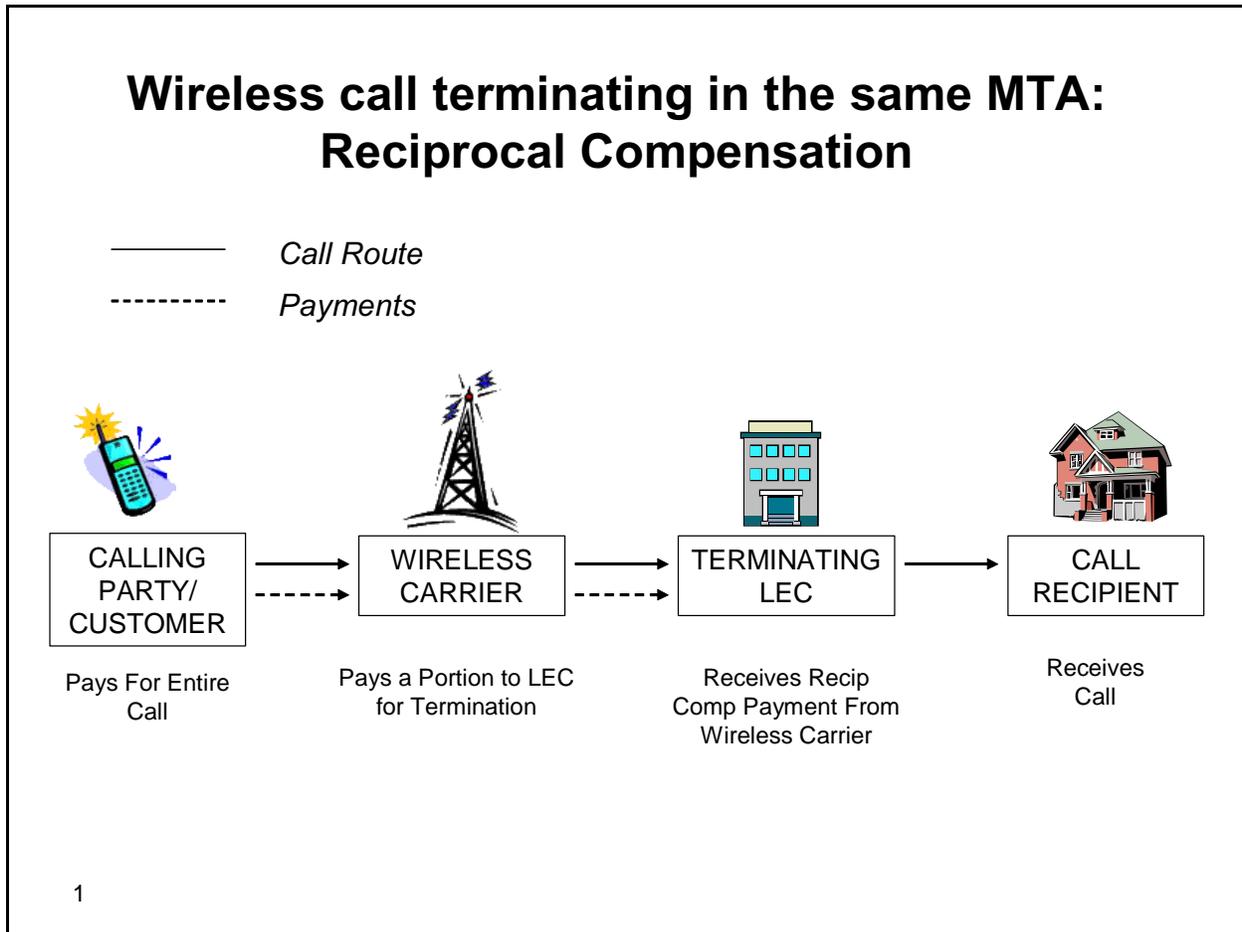


Figure 6.

ILEC's network or involving a hand-off by the ILEC to a CLEC for termination. The resolution of the metaphysical issue of whether a dial-up call placed to an ISP “terminates” at the ISP or somewhere out in the Internet “cloud” has no effect whatsoever on the quantity of *PSTN* resources that are required to bring the call *to the ISP*. As long as the intercarrier compensation mechanism is driven by the *cost* of terminating calls on the public switched network, what happens to the “call” after it leaves the public switched network is entirely irrelevant and immaterial.

Under the treatment established in the *ISP Remand Order*, ISP traffic is treated as jurisdictionally interstate and not subject to reciprocal compensation. On a transitional basis, CLECs handling ISP-bound traffic are limited both as to the rate they may be paid and the number of minutes for which they are entitled to receive compensation. There is a rebuttable presumption that whenever a LEC's traffic exceeds a 3:1 ratio of terminating-to-originating

traffic, that traffic is ISP-bound.³³ The FCC explicitly identified these changes as intended to begin a transition to "bill-and-keep." The effect of this arrangement is to overlay a bill-and-keep paradigm onto the CPNP arrangement, such that CLEC that specialize in high-volume inbound services must look to their customers, rather than to the originating carrier, for compensation. This arrangement is clearly not consistent with the goal of a unified intercarrier compensation system, since it operates to create an artificial and arbitrary distinction between two-way (i.e., "balanced") and one-way (i.e., out-of-balance) traffic.

When a CLEC terminates inbound traffic handed-off to it by an ILEC, the CLEC incurs costs and the ILEC avoids costs. Requiring that the ILEC compensate the CLEC for terminating the ILEC's traffic represents an attempt to align each carrier's costs and revenues. Allowing the ILEC to hand-off traffic to the CLEC without any obligation to share the sent-paid revenues *received by the ILEC from the ILEC's customer* or otherwise to compensate the CLEC creates a substantial and unjustified windfall for the ILEC – especially given the fact that at the retail level most calls are provided on a sent-paid basis. ILECs charge their customers for the originating usage (either on a flat-rate "unlimited" basis or on a per-call or per-minute basis), and are, under bill-and-keep, then permitted to retain all of that revenue, even if other carriers participate in handling the end-to-end call.

Impending changes in the competitive landscape demand especially close attention to insulating competitive markets from potential anticompetitive dealings between mega-ILECs and their long distance, CMRS, and VoIP affiliates

The proposed mergers of AT&T with SBC and MCI with Verizon heighten the need to preserve accurate economic signals for wholesale transactions between carriers and competitors, as well as carriers and their affiliates. Time and again it has been shown that large integrated telecommunications providers have powerful incentives to discriminate against competitors. Attempts to monitor and impose sanctions on these practices through the regulatory process have often been unsuccessful.

Requiring that ILECs buy or sell "access" (whether local or long distance) services at a rate equal to their long-run incremental cost would make them indifferent as to whether they perform these functions themselves or purchase them from a competitor. It will also protect competitors against an ILEC price squeeze, because the ILEC will implicitly need to recover its own access *costs*, which should in principle be roughly comparable to a forward-looking cost-based access charge.

33. *ISP Remand Order*, at paras. 8, 79.

Large, geographically diverse, horizontally and vertically integrated carriers like the post-merger SBC/AT&T and Verizon/MCI will carry virtually all local and a majority of long distance traffic entirely within the confines of their own networks, thus avoiding most access charge and other intercarrier compensation payments to other, nonaffiliated providers. By contrast, with the two largest CLECs/IXCs – AT&T and MCI – entirely out of the picture as independent entities, very close to 100% of the remaining CLECs' and IXCs' traffic will involve other carriers (mostly ILECs), and thus will involve intercarrier payments. Maintaining intercarrier payments at anything other than forward-looking cost-based rates would place the non-integrated CLECs and IXCs in an untenable position vis-a-vis their large integrated rivals, and would almost inevitably lead to their ultimate demise.

Because of the risk for harm to competition, it is also critical that the implementation of a unified *and cost-based* intercarrier compensation regime occur *concurrently* with the effective dates of these two mega-mergers. If allowed, both mergers will be consummated as of a specific date; there will be no “transition” under which AT&T and MCI will continue to operate as if they were still independent. Proposals that would create “transitions” from the existing intercarrier compensation environment to one based upon efficient forward-looking costs would confer an enormous short-run advantage to the two mega-RBOCs even if a correct, efficient cost-based solution is ultimately put in place. Even worse, if the mergers are permitted to take place before a unified intercarrier compensation regime is established, there may be few CLECs remaining by the time that the “unified” paradigm is put in place. Unless the Commission is prepared to explicitly link the final outcome of the FNPRM with the implementation of the two pending mergers, it is essential that some interim cost-based compensation arrangement be put in place as a condition for approval of the mergers themselves.

Competition requires permitting innovation, including specialization in handling asymmetrical traffic flows

Although recent discussions promoting bill-and-keep deemphasize the concept of promoting (or enforcing) traffic balance as a justification for this approach, this goal remains a strong implied assumption. It thus bears reviewing again why traffic balance is neither “morally superior” nor economically more desirable than a distribution of calls based upon efficient economic signals.

Call origination and call termination are separable activities each one of which confronts its own set of market conditions. There can be no dispute that a significant demand exists for one-directional calling, either inward or outward. Specialization aimed at serving such customers should be both *expected* and even encouraged within the framework of a competitive telecom-

munications policy.³⁴ As new alternatives to ILEC-provided wireline services (e.g., CMRS, VoIP) continue to expand, there is reason to expect – and to embrace – new forms of specialization and tailoring of services to meet the calling patterns or unique needs of particular customers.

There is nothing in the 1996 federal *Telecommunications Act* or in any other competitive telecom policy framework that requires that CLECs become mere clones of the incumbents, that the nature and mix of the services they provide precisely mirror those being offered by the ILECs, albeit on a smaller scale. In a competitive local telecom market, carriers can compete for call termination business without having to necessarily compete for the corresponding call origination business.

If a non-traditional telecommunications provider is able to furnish the call termination service more efficiently than the ILEC, the goals of competition are served when customers requiring this service are induced to switch from the ILEC to this alternative provider. No legitimate public policy objective is served by forcing the innovative provider who has specialized in serving customers with high-volume inward calling requirements to *artificially* alter its business model by seeking out and serving customers with offsetting *outward* calling needs – just so as to achieve a “balance” of traffic.

Under a system of explicit reciprocal compensation payments (and as long as the ILEC’s rates are based upon the ILEC’s forward-looking economic costs), there is no logical connection between the traffic flow and associated compensation due in one direction, and the traffic flow and compensation that might occur in the reverse direction. Compensation must in each case be paid for the work performed by the terminating carrier and the volume of traffic that may or may not flow in the reverse direction is – or should be – irrelevant.

34. This attribute of the market for telecommunications services is entirely analogous to the case of firms that specialize in handling large volumes of paper mail, some of which specialize in *outgoing* mail (direct mail advertising, billing, and order fulfillment, for example) whereas others specialize in *receiving* and dealing with large volumes of *incoming* mail (payment processing, for example). No one would seriously suggest that a “direct mail house” that generates a large volume of outgoing mail should be forced to accept correspondingly large volumes of incoming mail as a condition for its existence, nor would anyone seriously suggest that a firm that receives large volumes of incoming mail, for which it is not required to pay any postage charge (since that will have been paid by the sender) should be forced either to generate correspondingly large volumes of outgoing mail or, alternatively, to pay a fee of some sort to receive the mail addressed to it. Incumbent LECs receive tens of millions of pieces of mail each month containing checks in payment of the ILECs’ bills, mail from which the ILEC derives enormous benefit. Yet we are aware of no proposals that would require that ILECs pay the US Postal Service a fee to receive that highly beneficial mail.

Reciprocal compensation payments for terminating traffic are properly viewed as “competitive losses” – rather than as “costs” – to the originating LEC

Once one lets go of the idea that traffic balance is a “normal” or appropriate requirement for the exchange of traffic, it is easier to address the economics of traffic exchange head-on. Just as it cannot be assumed that a call originating on a carrier’s network will terminate on the same network, no standard assumption can be made about the proportion of originating and terminating calls. Put differently, the ILECs do not have a vested property right in traffic balance that overrides competitive choice.

Changing from a monopoly environment to a competitive market fundamentally alters any expectation of traffic balance that may have existed in an all-ILEC world. Under competitive conditions, there is no merit in the position (of some ILECs) that interconnection to CLECs for the termination of traffic originated by ILEC end users represents a *revenue loss* that should be compensated for by regulatory restrictions that artificially suppress the actual traffic imbalance. Instead, it must be acknowledged that the CLEC (or other carrier) have the opportunity to compete for handling either end of the call. By not achieving traffic “balance,” the ILEC is simply experiencing the effects of a competitive loss for the handling of terminating traffic. Of course, the same could be said of *any* competitive loss (i.e., if a firm in any industry doesn't lose business to a competitor, its revenues would obviously be higher).

There is no way to go back in time and determine how the market would have evolved if the ILECs had not intentionally inflated the rates for terminating local traffic. CLECs were price takers, and they adapted to the market as it was presented. Nonetheless, there is no reason to assume that CLECs (or other competitive carriers) might not have found a way to specialize in largely unidirectional traffic, even if the interconnection rates had been entirely cost-based.

In the context of the *Unified Inter-carrier Compensation* rulemaking, the Commission has the opportunity to move forward with a policy that eliminates discrimination based upon the type of service provider and type of traffic. With this “fresh start,” it becomes all the more important that costs (and not preconceived notions about network architecture or traffic flows) govern economic outcomes.

4

THE FALLACY OF BILL-AND-KEEP

“Benefits” analysis and the revival of bill-and-keep

As discussed earlier, during the complex proceedings implementing the 1996 Telecom Act, neither the Commission nor the ILECs had much good to say about the bill-and-keep approach to intercarrier compensation, and bill-and-keep was not even considered for other forms of interconnection. The revival of interest in bill-and-keep was first evidenced at the Commission with the publication of two papers by staff of the FCC's Office of Plans and Policies (“OPP”),³⁵ which the Commission relied upon heavily in the initial NPRM. Although they differed as to the default interconnection arrangements that should apply,³⁶ each of the OPP papers concluded that some form of bill-and-keep would be the optimal solution for intercarrier compensation and, moreover, an optimal approach to the pricing of services provided at retail to end users. As

35. DeGraba, Patrick, *Bill-and-Keep at the Central Office as the Efficient Interconnection Regime*, OPP Working Paper No. 33 (December 2000) (“DeGraba”); Atkinson, Jay M. and Christopher C. Barnekov, *A Competitively Neutral Approach to Network Interconnection*, OPP Working Paper No. 34 (December 2000) (“Atkinson/Barnekov”).

36. In brief, the DeGraba paper focuses upon the existing interconnection regimes applying to local voice traffic, ISP-bound traffic, and toll calling, and finds all of them to be problematic. Mr. DeGraba proposes as an alternative a device he refers to as “Central Office Bill and Keep” (“COBAK”). Under COBAK, each LEC would terminate calls on a bill-and-keep basis, except that the calling party's network would be responsible for the cost of transporting the call to the called party's central office. DeGraba paper, at para. 24. COBAK is suggested as a default regime, to be applied by regulators whenever carriers cannot agree upon other interconnection arrangements. The Atkinson/Barnekov paper attempts to develop a simplified model of network interconnection, and thereby deduce the most efficient practice for interconnection pricing. The authors describe a scheme they call “Bill Access to Subscribers, (Incremental) Interconnection Costs Split” (BASICS). Under BASICS, which the authors put forth as representing an “optimal” compensation arrangement, call termination would also be performed on a bill-and-keep basis, but with two exceptions: Interconnecting carriers would split equally the costs specific to interconnection *per se* (e.g., the costs of the interconnection trunks between the two LECs’ switches), and a LEC connecting with a dominant carrier (an ILEC) would pay the costs of transporting traffic from its subscribers into the ILEC’s local calling area. Atkinson/Barnekov paper, at paras. 39-40, 69-73. They propose that the rule concerning transport cost recovery should be a default that is applied only when carriers cannot agree on another means to allocate those costs.

detailed in our earlier paper, *Efficient Intercarrier Compensation Mechanisms for the Emerging Competitive Environment*, the analysis in each of the OPP working papers fails to provide a compelling, economically sound rationale for bill-and-keep and is rooted in assumptions and concepts that are both unsupported and likely invalid.³⁷

While the *FNPRM* does not specifically advocate bill-and-keep, it does tilt in the direction of this approach with respect to its tentative conclusions regarding benefits of calls to both the calling and called parties, the relationship between this “mutual benefit” and the attribution of cost causation, and the implications for the long-standing industry practice of recovering costs on a “calling party’s network pays” (“CNCP”) basis.³⁸ On the other hand, the Staff Report “analyzing” earlier comments makes no effort to downplay its direct support for bill-and-keep, as it actively attempts to rebut all arguments that point to serious flaws in this approach.³⁹ The Staff Report concludes that bill-and-keep meets the Commission’s criteria for a unified intercarrier compensation scheme in terms of its competitive neutrality, encouragement for the deployment of efficient technologies, and minimization of regulatory oversight.

The principal weaknesses in the OPP papers continue to be reflected in the more recent bill-and-keep proposals submitted to the Commission as well as in analysis contained in the Staff Report. At their core, these proposals and the supporting analysis fail to provide any substantial evidence for the Staff’s threshold assumption that “benefits” of calls are shared equally by the calling and called parties. The acceptance of this proposition lies at the core of the proposal to uproot longstanding industry pricing practices – calling party’s network pays at the wholesale level and sent-paid calling at retail level – without regard to the large-scale disruptions that this would entail. Moreover, they fail to show that the distribution of benefits, even if it could be evaluated with precision (which it clearly cannot), is the key to deciding how costs should be recovered

Conjecture regarding the “equal” distribution of benefits is entirely results-oriented

The novel theory of “equally shared benefits” lies at the core of recent efforts to revive interest in bill-and-keep. The purpose of this new approach is clear. Unable to show that a carrier’s costs of interconnection should be disregarded or that balance of traffic can be assumed,

37. *Efficient Intercarrier Compensation Mechanisms*, *supra*, at 38-53.

38. Bill-and-keep is also expressly endorsed in the Separate Statement of former Chairman Michael Powell.

39. The Staff Report “focuses on the question of whether a regime with a compensation rate of zero is preferable to one with a positive compensation rate. The report does not address the interconnection and transport issues that must be considered as part of either type of regime.” Staff Report at fn. 3.

those supporting bill-and-keep are attempting to “fix” the equation by *assuming* that it is simply irrelevant whether costs are incurred at the originating or terminating end of the call – since the “benefit” of the entire call is equally distributed. By *assuming* that the called and calling parties benefit equally from the call (and would be equally willing to share the costs), the bill-and-keep proponents arrive at the desired result – a result that assigns the costs of origination to the calling party and the costs of termination to the recipient.

Proponents of this view do not offer any support for the essentially metaphysical proposition that the calling and called parties benefit equally. Rather, they attempt to “back into” this conclusion by noting the existence of various mechanisms that permit consumers to avoid (block, screen or simply not answer)⁴⁰ incoming calls based upon network-supplied information. Advocates of bill-and-keep contend that by actively choosing not to receive some incoming calls, subscribers demonstrate that those calls are less desirable than calls they choose not to avoid – thus, calls not avoided must be “beneficial.” Of course, this still does not indicate whether the call is so beneficial as to make the called party willing to incur a direct charge to receive the call – whereas, today, the calling party does knowingly take on that responsibility (except when otherwise indicated).⁴¹

To criticisms of these assumptions, Staff responds that “[r]egulators cannot realistically institute a regime that perfectly reflects the division of benefits for each and every call.”⁴² This “nobody’s perfect” excuse could be used in any of a number of regulatory contexts to show that if complete, call-by-call precision is not possible (say, with respect to costing), any plausible assumption can be used. Staff also cites comments (from Cable & Wireless) to the effect that the assumption of “equal benefits” is no less supported by evidence than the assumption “that all benefits flow to the calling party and none to the called party.” Such conjecture, however, is hardly a sound basis for overturning decades of wholesale and retail pricing relationships based upon CPNP and sent-paid calling.

To begin with, it is not at all clear that the CPNP and sent-paid rate structures are based upon a judgment that *all* of a call’s benefits flow to the originator. In fact, even under today’s pricing, it is not true that a telephone call is “cost-free” to the recipient. The called party incurs costs associated with receiving calls, by maintaining an access line and choosing to permit that access line to be occupied (to the exclusion of other incoming calls) for the duration of the

40. FNPRM at para. 25; see also, Staff Report at 100-101; ICF Ex Parte Brief (October 5, 2004) at 24.

41. Examples of this would be collect or 800 calls, where the caller knows that the charges are being billed to the called party.

42. Staff Report, at 101.

particular call,⁴³ or by maintaining a quantity of access lines sufficient to accommodate the anticipated volume of inbound calling.

Moreover, the ancillary services that are cited as enabling call recipients to screen or block incoming calls are not a “free good” to the called party. While Caller ID is bundled into most VoIP,⁴⁴ wireless, and many high-end wireline “bundled” packages, most subscribers would have to pay a discrete charge for this service. To make effective use of Caller ID, the called party also needs to have Caller ID-capable customer premises equipment available at *each* telephone set associated with the subscriber line. In many homes, where there are multiple handsets in different rooms, some may have this capability and others not. The costs of a broad-scale upgrade of consumer handsets certainly has not been accounted for in the new “analysis” of the called party’s benefits. Even with call screening, the called party does not entirely avoid dealing with the call. If the inbound call goes to an answering machine or voice mailbox, it will have been “answered” whether or not the called party “benefitted” from the call.

Nonetheless, it is entirely reasonable – and consistent with the practices in other industries that deal in multi-party, networked transactions – that the call initiator (and that person’s provider) bear the incremental costs of completing the call. Consider the following characteristics of a typical telephone call:

- The calling party affirmatively selects the person to be called and the time at which the call will be placed;
- The calling party knows who is being called, the nature/subject/purpose of the call, and how much the call will cost;
- The called party does not choose the time for the call, prior to picking up the handset does not know who is calling (unless Caller ID is available), does not know the nature/subject/purpose of the call and, depending upon how terminating use is to be charged (e.g., possibly at a different rate for local vs. long distance, intrastate vs. interstate calls), does not know how much answering the call will cost;

43. Call waiting permits a second call to interrupt temporarily, but not a third simultaneous call.

44. VoIP service providers still need to compete on price and features to attract customers unfamiliar with the technology and to overcome disadvantages (real or perceived) with respect to service quality, E911 access, etc. Also, for the moment, VoIP have cost advantages that may not continue (e.g., not paying for use of the PSTN, not contributing to universal service funding mechanisms), a which point they too may need to charge for services such as Caller ID that very inexpensive to provide, but which customers have traditionally been willing to purchase at a considerable mark-up over cost.

The Fallacy of Bill-and-Keep

- Not every originating call attempt is answered by the called party; where a busy or no-answer condition arises, the called party receives zero benefit (the calling party, on the other hand, receives information as to the fact that the called party is either not home or on the phone, and hence does receive some positive benefit from the call attempt);
- Customers can currently elect to voluntarily pay for incoming calls (800-type services) where the call recipient expects to derive sufficient value from the call as to justify the payment *and* where there is some likelihood that if required to be placed on a sent-paid basis, a significant percentage of the calls would not be made. Thus, even if *on average* benefits were to be divided equally across all calls, those for which the called party has elected to pay (i.e., where the called party derives disproportionate benefit) would have the effect of leaving in the universe of sent-paid calls those that disproportionately benefit the calling party;
- Where a customer does agree to pay for the 800-type call, the 800-service customer will, prior to answering a given call, nevertheless have a reasonable idea as to who is calling, the nature/subject/purpose of the call, and how much answering the call will cost.

Taken together, these factors show why it is not the least bit arbitrary or accidental that long-standing industry practice has looked to the calling party for payment.

Ultimately, it is simply not possible to know whether a called party benefits from a particular call or to quantify that “benefit.” One person who receives an unwelcome call may stay on the line out of politeness or timidity, while another may screen out the call or slam down the phone within seconds of answering it. A call that a person might consider “beneficial” at 4:00 p.m. might be considered far less beneficial during the dinner hour or in the middle of the night.

Additionally, even if the analysis of benefits could be pinned down with enough precision to be a controlling factor in determining intercarrier compensation relationships – which it cannot – it is not required that pricing match benefits with absolute precision in order to be economically efficient. There is no “efficiency” requirement in economic theory for spreading payment responsibility in the same proportion as relative benefits. It is theoretically correct that efficient pricing requires that externalities be internalized through pricing. However, the relative importance of such a policy depends critically upon whether the failure to do so materially affects consumption and whether the cost of implementation (transaction costs) would exceed the incremental efficiency gain in consumption. As is discussed further in relation to the retail pricing impacts of bill-and-keep, proponents of this approach have failed to demonstrate that CPNP increases the overall efficiency of pricing.

In the last analysis, it seems clear that the focus on “benefit” is being advanced as a convenient justification for changing longstanding conventions about primary responsibility for paying for calls. By embracing the premise of mutual and relatively equal benefit from a call – a premise that remains unproven and unprovable – it becomes less of a leap of faith to assume that both parties would be willing to share the call’s cost. This assumption can then be extrapolated to conclude that there is nothing inappropriate in expecting a carrier who receives a disproportionate amount of terminating traffic to carry that traffic without receiving additional cost-based compensation, because the party it serves (the called party) is receiving “benefit” for which the terminating carrier could assess a charge. By defining the transaction in this manner, the “equal benefits” theory simply defines away costs as a significant issue in intercarrier compensation.

As very large, vertically integrated ILECs come once again to dominate telecommunications markets, ensuring competitive neutrality becomes, if anything, more critical to the survival of independent competitors

A key objective for the development of a unified intercarrier compensation regime is to preserve competitive neutrality. In this regard, the Staff Report quotes the initial NPRM, which points out that “parties will revise or rearrange transactions to exploit a more advantageous regulatory treatment, even though such actions, absent the regulation, would be viewed as costly or inefficient.”⁴⁵ Staff acknowledges that bill-and-keep is similar to other unified approaches to compensation with regard to eliminating traditional regulatory and jurisdictional classifications, but claims that it is preferable to a unified CPNP regime because it does not “afford carriers the opportunity to shift costs to competitors.”⁴⁶ But that is exactly what would happen if carriers are required to terminate inbound calls without charge to the calling party or to the calling party’s network. The “regulatory arbitrage” about which the Staff seems so concerned would persist, except in the opposite direction. Carriers would seek out customers with high *outbound* calling requirements, offering them prices that reflect the fact that somebody else will end up paying to terminate those outbound calls to their ultimate recipients. An intercarrier compensation regime that accurately links compensation to forward-looking economic cost is the only real means to eliminate such arbitrage.

The potential for arbitrage is elevated as the largest ILECs – the RBOCs – consolidate while the smaller CLECs withdraw from the market. The growth of “all distance” bundles blurs the traditional distinction between “local” and “long distance” calling, and as the RBOCs’ home regions expand (both geographically and concentration within their respective footprints), a

45. Staff Report at 103, quoting NPRM at para. 12.

46. Staff Report at 104.

sizable – and growing – percentage of calls will be completed entirely within the RBOC's network. As a result, the vast majority of local calls, as well as a sizable majority of long distance calls, will not involve *any* intercarrier payments. Under the existing sent-paid basis for retail pricing, the RBOC will continue to be fully compensated for both the originating and terminating ends of these calls – and for all associated interoffice and interexchange transport, such that the RBOC would have no specific need to “charge” its customers for inbound usage. On the other hand, where one or more other carriers are involved in the call, they would receive no payment from the originating RBOC, and would be forced to look to their own customers for cost recovery.

Smaller carriers are thus placed at a considerable competitive disadvantage relative to larger carriers. Very few, *if any*, of the calls handled by a small CLEC or IXC would be originated, transported and terminated entirely on that carrier's own facilities. Thus, without a source of sent-paid revenue (for traffic originated on other carriers' networks), the smaller carrier would be forced to impose retail-level charges that RBOCs could avoid. If the larger incumbent carriers are able to provide inbound calling services without the need for such additional charges, the market may not support pricing based upon inbound usage.

To some extent, the disadvantages confronting smaller carriers could be alleviated (but certainly not eliminated) if retail pricing were to mirror bill-and-keep as well. However, the Commission would have no practical means for assuring that retail pricing would come to reflect a bill-and-keep intercarrier compensation paradigm. Indeed, recent experience confirms that where bill-and-keep has been implemented – as it had for much of the ISP-bound dial-up usage handled by many CLECs⁴⁷ – the ILECs have made no adjustments or accommodations in their traditional retail pricing to give effect to the fact that they are no longer being required to make intercarrier compensation payments to terminate ISP-bound calls. For example, the Massachusetts Department of Telecommunications and Energy has ruled that no reciprocal compensation payments for ISP-bound traffic are required, and none have been paid by Verizon since 1999.⁴⁸ Yet Verizon continues to treat such ISP-bound calls as sent-paid local calls, either imposing one cent per-call and 1.6 cents per-minute local usage charges on calls originated from

47. Under the interim rules established in the *ISP Remand Order*, where a state PUC and/or an Interconnection Agreement calls for bill-and-keep treatment for all ISP-bound traffic, all of a CLEC's inbound traffic in excess of a ratio of 3-to-1 relative to its outbound traffic is presumed to be ISP-bound, in which event the CLEC is only eligible to receive intercarrier compensation for inbound usage that falls under the 3-to-1 ratio. *ISP Remand Order*, at para. 79. Until the FCC's recent decision removing the growth cap and new market restrictions, a significant percentage of the ISP-bound traffic being handled by CLECs that specialize in this market segment are above that 3-to-1 ratio and hence may not be eligible for *any* call termination payments.

48. Massachusetts Department of Telecommunications and Energy, D.T.E. 97-116-C, at 28-29, n.31 (May 19, 1999) (requiring reciprocal compensation for traffic that does not exceed a 2:1 (terminating to originating) ratio as a proxy to distinguish ISP-bound traffic from voice traffic; carriers may rebut that presumption).

measured rate access lines, or requiring that to avoid such charges residential customers take flat-rate local service (which is not even offered to most business customers in Massachusetts).

Bill-and-keep proponents vastly underestimate the disruptive effects on retail rate structures that would result from abandoning CPNP in favor of bill-and-keep

If it is to be adopted as *the* standard for intercarrier compensation, bill-and-keep will need to be implemented comprehensively and concurrently for local and long distance, interstate and intrastate, and for single and multiple carrier call situations. And if that occurs, the traditional send-paid method of retail end user pricing will need to be replaced by a retail pricing regime in which each end user customer is required to pay for calls originated and for calls received up to some established demarcation point, where the responsibility shifts to the other party on the call. Unfortunately, while the recent efforts to justify bill-and-keep focus intensely upon the issue of distribution of the benefits of a call between the calling party and the recipient,⁴⁹ these analyses fail to pay equivalent attention to the implications of bill-and-keep for retail pricing.⁵⁰ No analysis of a given intercarrier compensation plan is complete without also understanding the ramifications for end user pricing, as the two are inextricably linked.

The first linkage is that end users' consumption decisions drive the level of demand for facilities on the interconnected networks. Consider two interconnected networks, Network A serving a subscriber who originates a call, and Network B serving another subscriber whom he wishes to reach. In that case, demand for facilities on Network B, as well as the interconnection facilities between them, is created entirely by the first subscriber's decision to place a call to the customer of Network B. Thus there is no independent demand for interconnection facilities, rather their use is a function of end user demand characteristics.

The second linkage is that in any sustainable system, ultimately all of the costs of the complete service, including its interconnection component, must be recovered via revenues generated from end users. It can be expected that requiring bill-and-keep would lead carriers to charge their retail customers for all inbound as well as outbound calling (absent explicit regulatory requirements limiting carriers' pricing discretion).⁵¹ Thus, the traditional system of

49. DeGraba at para. 49-55; ICF *Ex Parte* Brief at 24-25; Staff Report, at 99; *see also* FNPRM at paras. 25, 27.

50. Indeed, DeGraba emphasized that his COBAK proposal “does *not* specify how retail rates should be set,” and he suggests that COBAK could be compatible with a variety of retail pricing arrangements. *Id.*, at para. 31-32.

51. The imposition of regulatory pricing constraints can obviously alter carriers' pricing practices. For example, federal law and FCC policy prohibit IXC's from deaveraging prices in order to pass through the actual
(continued...)

“sent-paid” end user pricing – for both local and long distance calling – would need to be replaced by a “half-call” system, in which calling parties would pay only for call origination (the first half of the call), and called parties would pay to *receive* calls directed to them (the second half of the call).

The incompatibility of the prevailing retail pricing regime of sent-paid local calling with intercarrier bill-and-keep would necessitate changes in retail pricing both in calls exchanged between interconnected LECs and in calls handled entirely by a single LEC. Sent-paid pricing bills the originating caller for delivery of the call (as well as origination). As to calls involving two LECs, assuming that the terminating LEC now charges its customer for the call, these costs would have to be removed from the originating LECs’ rates in order to avoid double recovery. Any delay in reforming LECs’ local exchange tariffs to separate out cost recovery for the inward versus the outward halves of a call would cause the ILECs to receive a windfall of revenues, as they would continue to receive revenues from their originating callers to cover the costs of calls that are handed off to another LEC for termination. In fact, as many of the proposals for bill-and-keep incorporate a multi-year transition (to minimize revenue impacts), these rate adjustments would have to occur multiple times (each time involving regulatory oversight in multiple state jurisdictions).

However, structural changes in retail rates would also have to be applied to local calls handled end-to-end by the same LEC. This is because attempting to maintain sent-paid charges for local calls handled end-to-end by the same LEC, while implementing a “half-call” tariff for the calls handed off to another LEC for termination, would be confusing to end users. Operating with such a dual rate structure would be administratively complex and expensive to implement.

The transition to charging end users for their incoming calls would clearly be more disruptive to some providers than to others. CLECs that serve ISPs would be forced either to look to their ISP clients for payment for terminating traffic or otherwise to exit that market segment, whereas ILECs – on account of their more balanced traffic flows – would have the flexibility to continue to be compensated by their end user “POTS” customers through traditional sent-paid pricing. Obviously, ILECs do not need to charge ISPs for inbound calls and CLECs do, the ILECs will soon recapture these customers.

51. (...continued)

access charges incurred on a particular call; instead, the IXC must apply uniform end user rates that reflect the average access charges the IXC incurs. Without this constraint, and assuming a competitive market, IXCs would pass through access cost differences in a deaveraged manner. Similarly, if the FCC were to adopt bill-and-keep but then limit carriers from revising their retail pricing (assuming that the costs would be a “wash” due to traffic balance), it would stifle competitive and innovation.

The Fallacy of Bill-and-Keep

Alternatively, where the CLEC looks to its ISP client for payment, the ISP will in turn be forced to flow through such payments to its own subscribers in the form of higher monthly charges or perhaps even usage-sensitive charges for Internet access. But those same users will have paid their ILEC, under the sent-paid pricing regime applicable to POTS services, for the *entire* end-to-end call. So, in addition to creating a disparity as between ILECs and CLECs with respect to call termination services being furnished to ISPs, implementation of bill-and-keep would result in a double charge to many end users (forcing them to pay their originating ILEC for the full end-to-end call, and to pay their ISP once again for the portion of the call from the ILEC/CLEC hand-off point to the ISP).

Even if the FCC wanted to take proactive steps to avoid these kinds of disruptive consequences, it likely lacks the authority to do so. While the *Act* has blurred some of the traditional jurisdictional boundaries between the FCC and state regulators (relative to pricing guidelines for unbundled network elements, for example), *local* retail structures, rate levels, and local calling areas in all cases fall squarely within the purview of the state PUCs.

Realistically, any attempt to comprehensively align retail local exchange tariffs to a bill-and-keep intercarrier compensation mechanism would create a massive regulatory burden for state public utility commissions (PUCs) that have jurisdiction over those tariffs. Each state PUC would be compelled to craft, for every LEC operating in its state, separate retail rate structures for the recovery of the originating and terminating portions of local exchange calls. This would necessarily include, among other things, the introduction of new *end user charges* to replace payments that at present apply only between interconnecting carriers.

These extensive and iterative retail rate impacts certainly appear to have been overlooked by those who conclude that a transition to bill-and-keep will, over time, require less regulatory involvement. Rate restructuring of this sort would present particular challenges under the price regulation regimes that exist today in most states. These regimes typically contemplate relatively minor regulatory involvement on an annual basis. Basic residential exchange access rates are typically “frozen” or subject to an annual price adjustment mechanism that assumes little or no change in rate structure. In many states, business exchange access and all intraLATA toll rates are de-tariffed or deregulated, such that there is no existing mechanism to assure that such pricing would be adjusted to reflect a bill-and-keep regime. To enforce compliance, those states would first need to *reregulate* business exchange service and intraLATA toll. In some cases, the deregulation of these services was mandated by statute, in which event legislation would also be required to permit the state commission to consider and adopted the required structural revisions in retail ILEC prices. The notion that bill-and-keep would lead to less, not more, regulation is clearly more fantasy than “on the ground” reality.

It would also be very difficult for regulators to determine whether the resulting tariffs would be revenue-neutral or a disguised rate increase for end users, particularly if flat-rated services were replaced by measured usage rates. Also, some ILECs would no doubt seize upon a

regulatory mandate to alter their tariffs in such a fundamental way as the basis for an upward “exogenous adjustment” to price caps imposed upon their local service rates. At the very least, because of the enormous and largely unexamined consequences that intercarrier bill-and-keep would have for retail local service pricing, the FCC would need to actively involve state regulators (e.g., via the Federal-State Joint Board) in its evaluation. Even if ultimately successful (which is far from assured), this process would take many years to complete.

The theoretical simplicity of “costless” traffic exchange breaks down in the context of the more complex challenges of interconnection and its pricing

Proposals for bill-and-keep place a great deal of emphasis upon developing a theoretical (i.e., allocation of “benefits”) rationale for splitting the costs of a call evenly between the networks serving the calling and the called parties, but often struggle with how to apply this construct to allocating call transport costs.

If there is some theoretical basis for a 50/50 split of the cost of a call based upon the *presumption* that “benefits” inure equally to both the caller and the recipient, then there is no basis for requiring that the originating customer (or carrier) pay for the entire cost of transport, nor is there any basis for allocating transport costs differently for calls that involve only two local carriers vs. calls that involve two local carriers and an interexchange carrier. The rationale for this inconsistency appears to be simply pragmatic: it is difficult to split the cost of transport between originating and terminating parties or to resolve perverse incentives faced by the originating carrier with respect to its location and the location of the meet-point.⁵²

Just as the distinction between local and long distance calling is become blurred, so too is the distinction between “local” and “interexchange” carriers. Once the separate affiliate requirements of Section 272(a) and (b) have sunset in all RBOC jurisdictions,⁵³ the RBOCs will be free to fully integrate their local and long distance networks and services, essentially eliminating the existing demarcation between “access” and interexchange transport. The large

52. For example, DeGraba observes (para. 68) that “... where two networks are interconnected at multiple points, the originating network has an incentive to drop the call off as soon as possible on the terminating network, and thus shift as much of the transport costs as possible onto the latter network.”

53. Pursuant to Section 272(f)(1), 47 U.S.C. 272(f)(1), the separate affiliate requirements in Section 272 expire three years after a Bell operating company obtains authority (under Section 271) to provide interLATA services, unless the FCC extends this period by rule or order. The FCC permitted the Section 272 separate affiliate and related requirements sunset for Verizon for the state of New York to sunset, “by operation of law,” on December 23, 2003. See Public Notice, Section 272 Sunsets for Verizon in New York State by Operation of Law on December 23, 2002 Pursuant to Section 272(f)(1), WC Docket No. 02-112, 17 FCC Rcd 26,864 (2002), and has not intervened to prevent any subsequent sunsets from occurring. The last Section 271 authorization (for Qwest-Arizona) occurred on December 3, 2003, meaning that the sunset date (absent FCC intervention) would be December 3, 2006.

integrated RBOC/IXC entities (SBC/AT&T and Verizon/MCI, and perhaps others), through the imposition of transport charges on other, nonintegrated (local and long distance) carriers, will retain many of the same capabilities to engage in discrimination and price squeeze conduct that they presently possess. Enforcement of federal and state imputation requirements on the integrated RBOCs will become even more difficult than it is today, because the integrated networks will not themselves utilize the same network elements and access services than nonintegrated carriers will still be required to obtain. Adoption of a system of intercarrier payments based upon accurately determined forward-looking economic costs is the only means by which the potential for discriminatory conduct can be minimized. Adoption of a bill-and-keep regime for call termination does not even address, let alone resolve, this problem, it only shifts it to the interexchange transport segment.

Among the more recent proposals, the ICF proposal exemplifies the complexity of attempting to rationalize carrier “responsibility” for transport costs in the context of bill-and-keep. While the parties to the ICF plan portray it otherwise, the ICF proposal with regard to transport responsibility is extremely complex, and would work to force smaller carriers, with less extensive networks, either to pay potentially large transport fees to the ILECs or otherwise to embark upon potentially inefficient investment programs to replicate existing ILEC network resources.

A zero-compensation regime has no unique advantages in promoting efficient deployment of technology

The Staff Report also defends bill-and-keep against criticisms that the approach is not technologically neutral and thus impedes the deployment of efficient technologies.⁵⁴ Staff’s criticism focuses upon the fact that the calling party’s carrier has no control over how the call is terminated, but rather that this choice is made by the called party. The Staff argues that “because the end user customer receives no market signals to avoid these costs, the unreasonable termination charges may persist.”⁵⁵ Staff concludes from this that “bill-and-keep encourages the development of competition by rewarding carriers based on their ability to serve customers efficiently rather than their ability to shift costs to other carriers.”⁵⁶

Presumably, the opportunities for terminating carriers to charge uniquely higher rates for interconnection will be eliminated by the adoption of a uniform interconnection rate, based on the long-run incremental costs of call termination for wireline ILECs. To the extent that a

54. Staff Report at 105-106

55. *Id.* at 105.

56. *Id.*

terminating carrier's costs exceed that level, they will have the incentive (and opportunity) to recover the difference from their retail customer. Even today, CMRS carriers – who arguably have higher termination costs – charge their own customers for the airtime associated with incoming calls.

Staff also comments that, because of statutory requirements for rate averaging, an IXC cannot pass on to its customer the call-specific costs for origination and termination of long distance calls.⁵⁷ With respect to Staff's suggestion that this bears on the deployment of efficient technologies, we note that the wide range of access and reciprocal compensation rates that exists today reflects cost differences resulting from a wide range of sources, of which technology is only one. More to the point, the Commission has long recognized the economic conflict between cost-based pricing and the requirements for rate averaging. However, the policies underlying this requirement cannot be undone by tampering with cost-based pricing of interconnection.

Implicit in many of the bill-and-keep proposals is deference to existing architectures and practices of ILECs

A recurring weakness of proposals that rely upon bill-and-keep is their disproportionate deference to the ILEC networks, traffic patterns, and tariff structures as they presently exist, to the disadvantage of new entrants. Not surprisingly, with the exception of the one from Western Wireless, all of the bill-and-keep-based intercarrier compensation proposals come from coalitions dominated by ILECs (or companies about to be acquired by ILECs).

Both the *Telecommunications Act*⁵⁸ and FCC rules⁵⁹ affirmatively permit CLECs to (a) specify the location of their points of interconnection with ILECs, and (b) interconnect with the ILEC at any technically feasible point within the ILEC's' network. Nowhere is there any requirement that an CLEC maintain more than a single point of interconnection in any one LATA

57. *Id.* at 105 and fn. 53.

58. Section 251(c)(2) of the *Act* obligates ILECs to interconnect with CLECs at any technically feasible point on the ILEC's network "(A) for the transmission and routing of telephone exchange service and exchange access; (B) at any technically feasible point within the carrier's network; (C) that is at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection; and (D) on rates, terms, and conditions that are just, reasonable, and nondiscriminatory ..."; there is no requirement for CLECs to connect at more than one point.

59. Rule 51.305(a)(2) states that a CLEC need establish only one (1) point of interconnection ("POI") with an ILEC at any technically feasible point *anywhere* in each LATA. This principle was most recently restated in the *Intercarrier Compensation NPRM*, at para. 72.

Much of the ILECs' existing (as well as proposed) intercarrier compensation scheme is rooted in legacy (retail) pricing practices and legacy network architectures, formulated in an era in which transport costs were a substantial component of the end-to-end cost of a call. For example, the concept of "local calling area" is an artifact of those historic high transport costs *and* so-called "value of service pricing," in which calls over longer distances were deemed to be "more valuable" to the caller and hence capable of carrying a higher retail price than local calls. ILEC requirements that CLECs establish a POI within each ILEC local calling area are more a means for replacing those legacy retail toll revenues lost to competition than for actually recovering distance-sensitive transport costs. Similarly, existing ILEC networks were designed at a time when the relatively high transport costs favored the use of relatively more switching and less transport; if designed under current cost conditions, the switching vs. transport substitution would tilt toward less switching and more transport. Requirements for interconnection at tandem switches, which often entail multiple POIs within a single LATA, reflect network architectures that would not be replicated under current cost conditions, and thus impose inefficient and costly requirements upon entrants.

One key aspect of ILEC response to CLEC competition has been to offer expanded "optional" calling areas, embracing an entire LATA and, after gaining in-region long distance entry, embracing the entire US. Significantly, such ILEC marketing initiatives were taking place at the same time that these same ILECs were aggressively applying legacy local calling area restrictions upon rival carriers. Although CLECs were permitted to establish their own local calling areas, they have in most states been required to pay intrastate switched access charges, rather than terminating reciprocal compensation rates, where the "local" CLEC call extended beyond the corresponding ILEC local calling area.

These existing difficulties would be exacerbated if the ILEC local calling area definitions are used to establish responsibility for transport costs in the case of ILEC/CLEC interconnections. The significant decrease in the cost of telephone usage, coupled with the elimination of distance as a cost driver, makes the "local calling area" and the resulting local/toll distinctions largely obsolete. The persistence of small local calling area in today's and tomorrow's telecommunications market is thus an *anachronism*, a holdover from the distant past that is neither required nor appropriate in the modern telecommunications market environment.

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CONCLUSION

There is broad agreement that competition is impaired and innovation is suppressed by the existing practice of charging different amounts for handling traffic based upon the identity of the carrier, the nature of the call, and the regulatory jurisdiction within which the call is placed. Regulatory solutions that operate to favor certain business models over others, or that confer advantages upon large integrated incumbents while imposing costs disproportionately upon smaller rivals, are an anathema to the overarching goal of an efficient and innovative competitive telecommunications market.

Much of the present debate as to the correct and efficient form of intercarrier compensation seem rooted in unsupported notions of “balance” both with respect to traffic flows and relative benefits to the calling and called parties. There is no intrinsic basis for conferring regulatory favor upon business models involving “balanced” inbound and outbound traffic, nor is there any basis to apply pejorative characterizations of carriers with “out-of-balance” traffic as somehow “gaming the system” or engaging in “arbitrage.” If intercarrier payments are accurately set based upon forward-looking long-run economic cost, the competitive market will do a far better job than any regulatory theory for sorting out the efficient from the inefficient, and for establishing whether or not there are efficiencies in specialization with respect to certain types of traffic.

Similarly, there is no basis for a regulatory determination that the benefits of individual telephone calls are evenly distributed between calling and called parties, or indeed, even if that were actually the case, that both retail pricing and intercarrier payments should be driven by that condition. Here again, the marketplace is fully capable of resolving this “allocation of benefits” question; customers that ascribe high benefit to receiving inbound calls can elect to subscribe for inbound reverse-charge services, such as 800-type services. Moreover, even if there were any merit to adjusting the retail pricing regime to reflect this essentially metaphysical distribution of benefits question, that process would be highly complex and time-consuming, and almost certainly falls well beyond the FCC’s existing jurisdiction.

Conclusion

Going forward, it is largely irrelevant how and to what extent economic distortions in existing reciprocal compensation rates (set by ILECs) induced competitors to adopt business strategies specializing in “unbalanced” traffic. It is most critical that the Commission focus upon ensuring that unified intercarrier compensation rates are set at economically efficient levels. Bill-and-keep, because it is based upon the artificial assumptions of “cost-free” termination of traffic and equality of benefits, does not result in cost-based rates and will inevitably produce the very types of uneconomic competitive responses that the Commission desires to avoid.

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