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Intercarrier compensation in the Internet world: Charging content providers and content delivery networks for access to end users

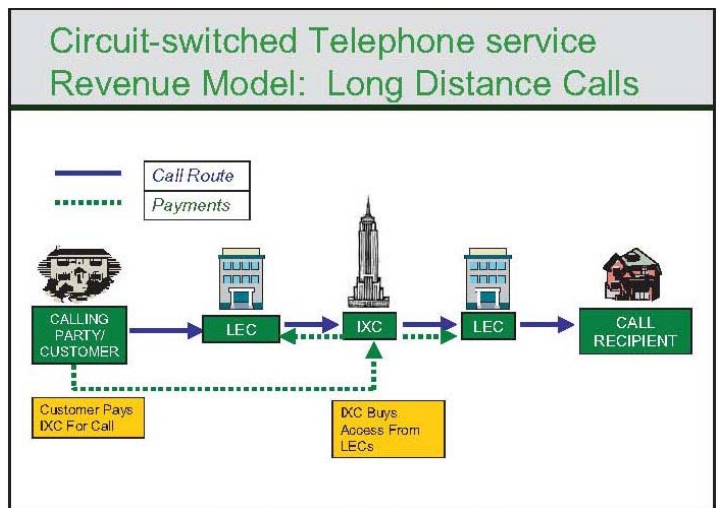
Ordinary local and long distance telephone calls often require the involvement of several different telecommunications carriers. This might occur, in the case of a local call, when the calling and called parties are served by different telephone companies. In the case of a long distance call, a third “interexchange” carrier (“IXC”) may also be involved, to transport the call between the two local carriers where they do not directly interconnect with each other. For traditional switched telephone calls, one party – usually the caller but in some cases, such as for 800-type “toll-free” services, the called party, pays for the entire call. Thus, with all of the revenue being realized by one carrier while the services of one or more other carriers may be required to complete the call, some process is needed to assure that all of the carriers involved in providing the end-to-end connection receive compensation for their respective work.

The term-of-art for such revenue-sharing arrangements is “inter-carrier compensation.” Prior to the mid-1990s’ arrival of competitive local exchange carriers (“CLECs”), situations where a local call involved the services of more than one incumbent local exchange carrier (“ILEC”) were confined mainly to “extended area service” local calls between customers served by different ILECs whose operating territories were non-overlapping. In such cases, aggregate traffic flows in each direction over such intercarrier routes were roughly equal, and were considered to be “in balance.” Where traffic was in balance, the connecting carriers generally operated under a “bill-and-keep” compensation arrangement – each carrier would keep all of the revenue it received for such intercarrier calls and agree to complete incoming calls handed-off to it by the other on a no-charge basis. Because CLEC and ILEC serving areas overlap and CLECs often specialize in serving certain types of customers, CLEC-ILEC traffic flows may not be balanced and, for that reason, one or both carriers may be reluctant to agree to a bill-and-keep compensation scheme.

Payment for long distance calls is typically made to the IXC, which in turn makes “access charge” payments to the calling and called parties’ respective local carriers for their work in originating and terminating the call. However, in addition to providing a device for revenue sharing, access charges – at least when first introduced in the mid-1980s – served the additional purpose of flowing revenues from long distance calling to subsidize basic residential access.

Prior to the 1984 break-up of (the old) AT&T, long distance rates had been set at multiples of cost, with the profits being used to defray the revenue shortfall associated with basic residential phone service,

which public policy dictated be priced below cost as a means for encouraging universal connectivity. Access charges, like the long distance revenues they replaced, were also set at multiples of cost, with the excess similarly used to maintain the below-cost pricing of residential local service.

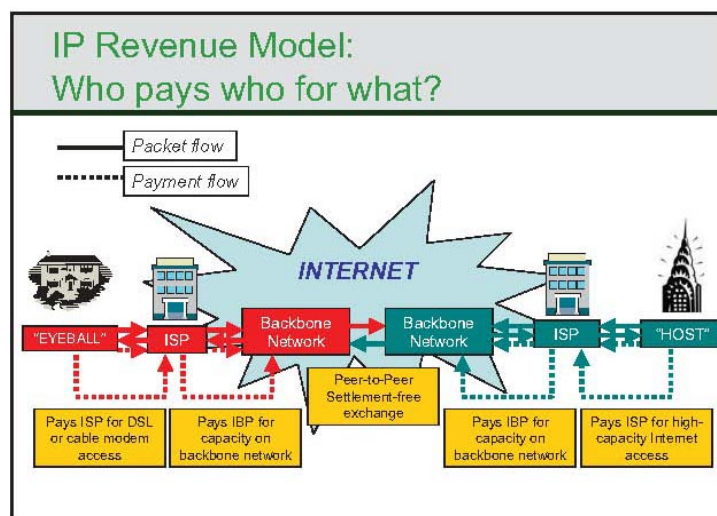


When most of the nation’s local and long distance phone services were provided by (the old) AT&T prior to the onset of competition, intercarrier compensation was largely a matter of intracorporate accounting transfers among the various operating units within AT&T. Exchange of local traffic between AT&T and non-AT&T operating telcos was accomplished mainly on a bill-and-keep basis. Regulatory involvement was for the most part limited to “settlements” among Bell and non-Bell carriers with respect to intercarrier long distance traffic, and even there much of this was accomplished via direct industry negotiations. However, from the late 1970s on, intercarrier compensation between incumbent and competitive carriers – first long distance, then local as well – has remained one of the most controversial areas of federal and state regulatory activity.

Internet traffic and revenue flows

The Internet grew up as a “network of networks” without any consequential regulatory involvement. Regional backbone carriers realized early on that interconnection and exchanges of traffic between and among their networks would increase the value of each and thus be mutually beneficial, and so without any regulatory prodding or prescription they negotiated bilateral “peering” arrangements governing their exchanges of inter-network traffic.

End user access charges were not an issue, since users bought and paid for their Internet access from a local Internet Service Provider (ISP), initially on a dial-up basis, and later via a broadband service purchased either from the local phone or cable tv company. Unlike switched telephone service, in the Internet world all network users – consumers and host websites – were each responsible for obtaining and paying for the telecom link between their premises and the point within the Internet “cloud” where internetwork traffic would be exchanged, and for selecting and paying for the particular upload and download speeds they needed.



Each individual Internet Backbone Provider (“IBP”) established its own “peering policies” setting forth the conditions under which it would exchange traffic with another network on a no-fee (i.e., bill-and-keep) basis. While peering policies were not all identical, they generally had certain key features in common:

- Traffic volumes at the peering point had to be roughly, but not exactly, in balance. In that regard, ratios of as much as 2:1 might still be considered as being sufficiently “in balance” to still qualify for a no-fee exchange.
- Traffic sent to the terminating network had to be destined for a point on that network; hand-offs made by the receiving network to a third network would be considered to be “transit traffic” and would not qualify for a no-fee exchange.
- The two participants in a peering arrangement both had to be large, so-called Tier I, backbone network providers. In general, the exchange of traffic between a backbone network and a local ISP’s distribution network would not qualify for no-fee traffic exchange. Instead, the local ISP would be required to purchase and pay for the long-haul transport from the backbone provider.

Voluntary peering arrangements emerged in the nascent Internet precisely because (1) such interconnections were beneficial to all of the participants, and (2) no one of the players extant at the time had market power sufficient to permit it to dictate terms to any of the others. In the dial-up Internet access era, where the ISP did not control the last-mile connection between its servers and its end user subscribers, the ISPs’ ability to leverage their relationships with those end users and to dictate terms to backbone network providers was all but nonexistent.

But all of that has changed. Cable and telco broadband ISPs own and control the last-mile link to their customers. Horizontal mergers

and acquisitions have greatly expanded the geographic reach of the few remaining mega-firms – mainly AT&T, Verizon and Comcast. These firms are in the position to deliver – or to deny – third party content and other service providers the ability to reach tens of millions of end user “eyeballs” over which the ISPs maintain exclusive control.

The large ISPs are also positioned to protect their respective backbone network market by refusing to offer no-fee peering to smaller networks – particularly those that do not themselves operate at the retail consumer “eyeball” level. In fact, the FCC had recognized this potential as long as five years ago when, in granting its approval for the SBT/AT&T and Verizon/MCI mergers, it required that the number of pre-merger peering arrangements between these entities and unaffiliated backbone networks be maintained, albeit only temporarily. Those conditions have long since expired, and the prospects for peering and a competitive Internet backbone seem tenuous at best.

Comcast and Level 3: A case in point

The supply of Internet-delivered streaming video content has mushroomed in recent months, soaking up large swaths of Internet capacity while threatening traditional cable and ILEC TV content-based business models (see “De-linking Video Content from Video Delivery: Are Long-Standing Business Models Now at Risk?” *ETI Views and News*, November 2010). Netflix, in particular, has launched an ambitious effort at developing this market. In November, Netflix announced that it had entered into a contract with Level 3 under which the Tier I IBP would “serve as a primary content delivery network (CDN) provider for Netflix ... to support the company’s streaming functionality and to support storage for the entire Netflix library of content,” and that “[a]s a result of the deal, Level 3 ... will double its storage capacity and add 2.9 Terabits per second (Tbps) of globally available CDN capacity, which is in addition to the 1.65 Tbps that was deployed in the third quarter of 2010.” Under the arrangement, Level 3 will store copies of the Netflix film library at multiple sites around its network, and will deliver customer-bound traffic directly to the local broadband provider’s distribution network. As Level 3 describes it, this is not “peering” because there is no exchange of traffic between backbone networks; rather, this arrangement involves an interconnection between the local broadband distribution network and the source of the content.

Comcast, on the other hand, views its relationship with Level 3 entirely through the “peering” lens. Level 3 is sending Comcast considerably more traffic than Comcast is sending to Level 3, creating a massive traffic imbalance that is not permitted under Comcast’s no-fee peering policies. The problem with Comcast’s position, however, is that this is *not* a “peering” issue.

Peering arrangements were established among large Tier I IBPs *none of which had any significant retail end user customers*. ISPs did not “peer” with IBPs; rather, they purchased communications links into the Internet “cloud” from one or more IBPs. Comcast, like other ISPs, is paid by its end user customers for the Internet access that the ISP provides. That fee covers both the “last mile” link from the customer’s premises as well as the connection into the cloud, where the end user’s traffic is handed off to, or received from, other backbone networks. Customers are offered choices of bandwidth, so those with the greatest traffic demand will typically

order the higher-priced, high-bandwidth levels of service. Since the end user already pays for the bandwidth he needs, a charge imposed by the ISP upon a CDN or other entity that delivers inbound traffic to the ISP's customers amounts to charging twice for the same thing.

Comcast's is imposing what amount to "access charges" upon Level 3 and its content-provider customers for the ability to reach Comcast's end-user consumers. As the Commission appears to recognize (at para. 73 of its *Open Internet* inquiry), any actual, emerging, or potential competition for broadband Internet access services in the subscriber's market simply becomes irrelevant for purposes of disciplining the provider's behavior towards content, application, and service providers once the subscriber's choice of access provider has been made, and with respect to any given consumer, third-party content providers and the CDNs they utilize are forced to deal with the *end user consumer's* choice of ISP in order to communicate with that consumer. In fact, there is a direct and obvious parallel with a matter that the FCC had confronted nearly a decade ago, in its 2001 *CLEC Access Charge Order*. There, the Commission recognized that "IXCs are subject to the monopoly power that CLECs wield over access to their end user" and "given the unique nature of the market in which IXCs purchase CLEC access, ... we conclude that it is necessary to constrain the extent to which CLECs can exercise their monopoly power and recover an excessive share of their costs from their IXC access customers – and, through them, the long distance market generally." Similarly, the broadband Internet access provider takes on the role of gatekeeper with respect to the delivery of Internet traffic to its end user customers and, like those CLECs of the last decade, is in a position to exploit that relationship by imposing monopoly rents upon third-party content providers for access to its customers. It is unrealistic to rely upon arm's length negotiations between the last mile broadband access provider and those seeking to communicate with its customers, because the parties to any such negotiation bring decidedly unequal market power to the table.

Finally, one must not overlook the potential for vertical market foreclosure in the ISP/CDN/content provider relationship. Cable and telco broadband service providers, in addition to offering high-speed Internet access, are the dominant incumbents with respect to video services that compete directly with Internet-delivered video content. In some cases these firms also have a major involvement in the content market itself (e.g., TimeWarner, Comcast). It has been argued that, despite these interrelationships, the nation's antitrust laws are more than sufficient to address the potential for vertical foreclosure and other anticompetitive conduct. But such *ex post* antitrust remedies are simply not suited to the fast-paced Internet world; *ex ante* regulation, at least with respect to last mile access, is critical to preserving an open and competitive Internet.

Will the ILECs delay the FCC's latest effort to collect data on special access competition in one of the longest-running FCC dockets?

The major ILECs have long contended that their Special Access services face extensive competition from CLECs, and that if the FCC would only collect data on just how many buildings were "lit" by CLEC-owned facilities, the ILECs' claim would be borne out. So on October 28, the FCC went ahead and issued a Public Notice seeking

voluntary data submissions from CLECs detailing the facilities they own that are capable of providing services that compete with ILEC Special Access. Faced with the prospect that such CLEC hard data might actually refute the ILECs' claims, the ILECs now appear to be setting the stage to argue that the CLEC data being sought by the FCC will not provide an adequate basis for a decision in the long-running Special Access proceeding, and on December 1 the ILECs, through their trade organization US Telecom, made an *ex parte* submission purportedly to ask that the FCC *expand* and *clarify* the outstanding data request.

The ILECs now claim that "the data the FCC receives [in response to the data request] will quickly become outdated and will miss significant competitive activity" and that the Commission should collect data about CLEC operational plans two years out (through the end of 2013). After having spent a decade claiming (but without any evidence) that competition was robust and thereby attempting to direct the FCC's gaze away from the hundreds of filings and thousands of pages of evidence documenting ILEC market power and the abuse thereof as it relates to special access services, it seems that the ILECs fear that a complete view of existing CLEC facilities will confirm that in many places that competition is all but nonexistent. Since delaying the decision has proven to be enormously profitable for the ILECs over the last decade, it is no surprise that the groundwork for further delay of a decision has now been laid.

Successful delaying tactics for almost a decade

Back in 2002, it was the enterprise customer members of the Ad Hoc Telecommunications Users Committee, not competitors, that first directed the FCC's attention to evidence demonstrating that the level of competition in the special access market was insufficient to discipline ILEC pricing in those areas that had recently been granted pricing flexibility. Shortly thereafter, (the old, pre-merger-with-SBC) AT&T filed a Petition for Rulemaking with the FCC asking it to reform the regulation of ILEC Special Access. Customers and competitors filed reams of evidence supporting the AT&T Petition and documenting the lack of competition. The ILECs' response was simply to claim that competition from CLECs was intense. SBC's comments referencing "the hundreds of competitors that provide special access services in markets across the country" and claiming that CLEC's were generating "as much as 40%" of total special access revenues were typical both as to their overstatement and their lack of quantitative support. By 2004, pre-merger AT&T had filed a Mandamus Petition with the courts asking them to force the FCC to act. Facing intervention by the court, the FCC promised that it was about to take action and in January 2005 it issued a new Special Access NPRM, CC Docket 05-25. Five years on, that case is still pending and is, in fact, the proceeding in which the new FCC data request and US Telecom's *ex parte* earlier this month were submitted.

What the FCC didn't tell the court back in 2004 was that its action would not include a decision on any of the issues that were the subject of the Mandamus, only a repeat of the same questions that had originally been included in the old AT&T Rulemaking. In the summer of 2005, parties on both sides of the issue submitted comments and data. The ILEC claims at the time were the same as before: Just look – competitors are on every corner. In 2007, more than two years after the initial submissions in 05-25 and with no

evidence that the 2005 record had even been reviewed, the FCC issued a Public Notice indicating that the record compiled in 2005 may have become stale, and asking parties to “refresh the record.” Again, parties complied and submitted voluminous data to the Commission.

Fast-forward two more years to November 2009 (almost five years after the original NPRM) and the FCC once again turned its attention to Special Access, this time seeking comment on the “Analytic Framework” it should use to evaluate and decide the issues in the docket. In the meantime, the vast majority of the reporting tools and cost accounting requirements that had applied to the largest ILECs had been eliminated in other proceedings, leaving the FCC with little or no current cost or operational data related to special access – not even how much revenue was being generated by the ILECs from these services.

Faced with vastly different pictures of the special access market being painted by the opposing sides, the FCC has now offered specifics as to the data it believes it needs to evaluate market conditions for special access services. The voluntary data request would collect data designed to evaluate the levels of actual and potential competition. Assuming compliance by competitive providers with the FCC’s requests, the responses should once and for all nail down whether or not customers at the vast majority of commercial locations around the country have any alternatives to ILEC special access. And if prior efforts at compiling this type of information (including a 2006 report by the Government Accountability Office) are any indication, it should be evident that the longstanding ILEC monopoly over service at the vast majority of commercial buildings is as entrenched as ever.

Delay translated into massive ILEC profits

For nearly a decade, the ILECs have successfully fended off any finding (either for or against them) by the FCC as to the level of competition in special access. In its latest *ex parte* submission, US Telecom seems to confirm that this tactic of delay will most certainly continue. In addition to a few valid requests for “clarification,” US Telecom has asked for a number of changes and expansions in the data to be collected. Here’s one example:

The FCC had requested data from carriers as of year-end 2009. In response, US Telecom states: “We also emphasized that by requesting data that will be more than a year old at the time of its filing, it will not be possible for responses to the current data request to reflect the very dynamic changes currently happening in this marketplace.” Considering that for more than a decade now the ILECs have been portraying the special access market as intensely competitive, why would the use of 2010 rather than 2009 data make any difference? Are they now saying there was no competition as of the end of 2009 but by the end of 2010 all that will have changed? Could it be that the ILEC’s are afraid that the data collection effort will reveal that just one year ago CLEC-owned facilities connected to embarrassingly few commercial locations around the country? Are they saying they had market power at the end of 2009 - but not now? Are they really trying to convince the FCC that in this capital-constrained, down economy the CLECs have suddenly been able to finance and connect to so many more locations in this single year than they have in the previous decade that the competitive picture has drastically changed? It is hard to reconcile the ILECs’ newest claim that data for year end 2009 will be too old to adequately

demonstrate the level of competition with their decade-old claims of robust special access competition from “hundreds” of CLECs generating “as much as 40%” of special access revenues. Moreover, since the FCC has made clear that it will be releasing a second, compulsory data request sometime in the middle of 2011 – wouldn’t it make sense to ask for the more recent data at that time, instead of delaying the current process?

Using data from the last year (2007) for which the ILEC data necessary to evaluate the profitability of special access was provided to the FCC, we determined that special access prices were roughly double what they would have been under prior FCC regulated pricing rules, and were generating in the range of \$7- to \$8-billion per year in excess profit, translating into close to \$10-billion in annual overcharges once tax effects are taken into account (see our January 2010 report, *Longstanding Regulatory Tools Confirm RBOC Market Power: A Defense of ARMIS* (available at <http://www.econtech.com/library/ETILongstandingregulatorytools.pdf>) Prices have increased since that time (as certain price reductions required as conditions for approval of the SBC/AT&T and Verizon/MCI mergers have expired), and financial results as presented in ILEC 10-K filings and other reports to investors confirm substantial growth for high capacity special access services. That, together with steady prices and cost savings from productivity gains and work force reductions that have occurred over that same time frame, leaves little doubt that the level of annual overcharges is greater today than in 2007 – perhaps as much as \$1-billion per month.

We estimate that cumulatively over the past ten years the nonregulation of ILEC special access services has generated some \$50-billion in overcharges for these critical inputs to businesses, institutions and governments across all sectors of the US economy. Additional delay in completing this docket will mean more bloated profits on what is, in many places, a monopoly service; those trying to compete against the ILECs’ long distance and wireless affiliates will continue to be hamstrung by inflated prices for critical inputs; and American businesses will keep having to spend too much on special access instead of using those funds to create jobs (something the ILECs are not doing), foster overall economic growth, and make the US more competitive internationally. Delay, for whatever reason, inures to the ILECs’ benefit and keeps the drag on the US economy from such overcharges firmly in place.

As long as the FCC permits them to do so, the ILECs will no doubt pursue these same delaying tactics and raise spurious objections to any data that demonstrates their continued market power, tactics that have produced billions in excess profits. The FCC must not allow this to continue, as further delay will serve only to extend the substantial economic harms that have already occurred.

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