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EX PARTE

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August 5, 2010

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
Room TW-A325
445 Twelfth Street, SW
Washington, DC 20554

Re: WC Docket No. 07-135 -- The Economics of Access Stimulation

Dear Ms. Dortch:

On March 1, 2010, Dr. Alan Pearce of Information Age Economics filed an *ex parte* presentation in this docket, entitled: *Fact Report, The Economic Impact of Free Conference Calling Services*. This "Report," co-authored with Dr. W. Brian Barrett, claimed to demonstrate that the practice of what is known as "traffic pumping" was not only economically rational but affirmatively profitable for the victimized interexchange carriers.

In response to this "Fact Report," Dr. Timothy J. Tardiff of the Advanced Economic Consulting Group analyzed the reasoning of Drs. Pearce and Barrett. His analysis resulted in a detailed critique of the "Fact Report," which critique is attached hereto.[1] Dr. Tardiff's conclusion is straightforward: "Pearce and Barrett's analysis is simply wrong" and is "based on a fundamentally flawed economic analysis."

Please associate Dr. Tardiff's analysis with the record in this docket.

This *ex parte* is being filed electronically pursuant to 47 C.F.R. §§ 1.49(f) and 1.1206(b). Please contact me at 202.429.3120 if you have any questions.

Sincerely,

/s/ Melissa E. Newman

Attachment

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[1] Timothy Tardiff, *The Economics of Access Stimulation: Evaluation of the "Fact Report" by Drs. Alan Pearce and W. Brian Barrett* (2010).

Copy via email to:
Donald Stockdale (Donald.stockdale@fcc.gov)
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The Economics of Access Stimulation: Evaluation of the "Fact Report" by Drs. Alan Pearce and W. Brian Barrett

Introduction

My name is Timothy J. Tardiff. My business address is 211 Congress Street, Boston, MA 02110. I am a Principal with Advanced Economic Consulting Group. I have specialized in telecommunications policy issues for over 25 years. I received a B.S. degree from the California Institute of Technology in mathematics (with honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in 1974. My research has included studies of the demand for telephone services, such as local measured service and toll; analysis of the market potential for new telecommunications products and services; assessment of the growing competition for telecommunications services; and evaluation of regulatory frameworks consistent with the growing competitive trends. I have published articles in the regulatory economics literature, which in recent years have focused on policies for the increasingly competitive telecommunications industry.

I have participated in numerous legal and regulatory proceedings on issues of telecommunications economics and regulation. Since the passage of the Telecommunications Act of 1996, I have participated in interconnection arbitrations, unbundled element proceedings, universal service investigations, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the Federal Communications Commission. My international research and consulting experience includes studies and expert reports on telecommunication competition and interconnection issues in Canada, Japan, New Zealand, Peru, Thailand, Australia, and Trinidad and Tobago. I attach a copy of my full resume as Exhibit 1.

The purpose of this report is to comment on a recent report on free conference calling services.[1] That report, which was filed with the Federal Communications Commission two weeks before

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[1] Alan Pearce and W. Brian Barrett, *Fact Report: The Economic Impact of Free Conference Calling Services*, Information Age Economics, March 2010 ("Pearce-Barrett) (available at http://fjallfoss.fcc.gov/ecfs/document/view?id=7020395218).

the Commission presented its National Broadband Plan[2] to Congress, presents a set of policy conclusions that are based on a fundamentally flawed economic analysis. The report concludes that what is commonly referred to as "traffic pumping" or "access stimulation" rather than being a classic example of an arbitrage scheme that economic analysis, as well as the Commission's recent observations, routinely deem to be uneconomic, actually "create[s] positive benefits for IXCs [interexchange carriers]."[3] As is discussed in this paper, Pearce's and Barrett's analysis is simply wrong as a matter of economics and socially harmful as a matter of public policy.

Access stimulation has been described in detail in numerous other studies and filings, and I do not repeat that analysis in full here. Access stimulation occurs when a rural local exchange carrier (LEC) or other LEC with high access rates (presumptively justified by low traffic volumes) partners with a "free calling service provider" or "FSP," to stimulate traffic volumes to levels well in excess of those that would justify those high rates at the outset. In particular, such FSPs (which I understand often collocate their equipment with the rural LECs' switches)[4] offer competitive services such as conference calling, adult chat lines, and the like, for free or at rates well below cost—the only requirement being that their customers use their own interexchange carriers (IXCs) when using such "free" services. The free nature of the FSP service incents customers to use FSP offerings, resulting in millions of minutes of additional traffic being routed to the rural LECs' switches. These LECs' high access rates—justified on the basis of low forecasted traffic volumes—produce revenues that greatly exceed the cost of carrying the stimulated traffic. In a nutshell, the access stimulation arrangements (and any additional activities made possible by such arrangements) are financed by the LEC and FSP partners sharing these massive windfall access revenues. Rather than being an outcome that benefits IXCs and their customers, access stimulation is nothing more than these LECs' exploitation of their monopoly power in the provision of terminating switched access,[5] which in turn is

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[2] Federal Communications Commission, *Connecting America, The National Broadband Plan*, Released March 16, 2010 ("National Broadband Plan") (available at http://download.broadband.gov/plan/national-broadband-plan.pdf).

[3] Pearce-Barrett at p. 1

[4] Second Order on Reconsideration, *Qwest Communications Corporation, Complainant v. Farmers and Merchants Telephone Company, Defendant*, 24 FCC Rcd 14810 (2009) at ¶ 13.

[5] Because a LEC serving a particular user provides the sole switched gateway by which an IXC can deliver traffic to that user, it is commonly recognized that a LEC holds monopoly power over the delivery of traffic to the customers it serves. This is known as the "terminating access monopoly." See, for example, Jonathan E. Nuechterlein and Philip J. Weiser, *Digital Crossroads: American Telecommunications Policy in the Internet Age*, Cambridge MA:

exacerbated by regulations that require rate averaging by long distance carriers and prohibit captive IXCs from blocking such traffic.

The Commission has recognized that access stimulation is an uneconomic arbitrage[6] arrangement under which certain carriers have exploited rural LEC tariffing rules by essentially paying their FSP "customers" to deliver massive volumes of traffic to their switches. The difference between the high access rates (which are intended to reflect the legitimate higher costs of small rural carriers with relatively modest traffic levels) and the additional costs of handling the stimulated traffic improperly subsidize the FSPs' operations, as well as other services provided by the partnering rural carrier. The Commission addressed the access stimulation phenomenon most recently in its Broadband Report:

> Most ICC [intercarrier compensation] rates are above incremental cost, which creates opportunities for access stimulation, in which carriers *artificially* inflate the amount of minutes subject to ICC payments. For example, companies have established "free" conference calling services, which provide free services to consumers while the carrier and conference call company share the ICC revenues paid by interexchange carriers. Because the arbitrage opportunity exists, investment is directed to free conference calling and similar schemes for adult entertainment that ultimately cost consumers money, rather than to other, more productive endeavors.[7]

Because access stimulation imposes uneconomic costs on the IXCs that are required to deliver traffic to LECs involved in access stimulation—costs which must be subsidized by other IXC customers— IXCs and the public alike are harmed by this practice. Indeed, the Commission has already taken a number of steps to correct the regulatory anomalies that led to these arbitrage schemes. Despite the widespread recognition that access stimulation is economically harmful, Drs. Pearce and Barrett nonetheless claim that, not only is access stimulation economically beneficial in general, but that it actually operates to increase the profits of the IXCs that have been charged high access rates. This conclusion is at odds with sound economic analysis.

The MIT Press, 2005, Chapters 2 and 9 (arguing that switched access presents a terminating monopoly problem and therefore requires regulation rather than the market to set prices).

[6] The Commission has defined regulatory arbitrage as "profit seeking behavior that can arise when a regulated firm is required to set different prices for products or services with a similar cost structure." Notice of Proposed Rulemaking, *Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, FCC 01-132 (rel. April 27, 2001), footnote 18. In the current instance, regulatory arbitrage occurs in the sense that without the high rural rates, conference call services would utilize efficient routing, rather than routing schemes that are specifically designed to send traffic to the high-rate rural carriers.

[7] National Broadband Plan. at p. 142, emphasis added.

Drs. Pearce and Barrett also claim that access stimulation arrangements are entirely consistent with Commission policies for rural areas. In fact, as the Commission's recent explanation quoted above demonstrates, Drs. Pearce and Barrett's claim is the result of an extremely selective and substantially incomplete interpretation of previous Commission actions. Further, Drs. Pearce and Barrett not only ignore the fundamental features of telecommunications policy, but their discussion also makes no mention of the various statements by partner companies in free conference call arrangements that confirm that the free conference call business model relies on uneconomic arbitrage opportunities, and thus is inconsistent with the Commission's long-standing policies designed to minimize such opportunities.

This report evaluates Drs. Pearce and Barrett's economic analysis, and concludes that it is deeply flawed. The remainder of the report contains five sections. First, I describe the basic characteristics of traffic stimulation arrangements, such as free conference calling. Second, I briefly explain how traffic stimulation arrangements uneconomically increase IXCs' costs and as a result distort competition, to the ultimate detriment of consumers in multiple markets. Third, I provide a brief summary of Drs. Pearce and Barrett's justification of the free conference calling arrangements. Next, I explain how their purported economic justification departs from sound economic principles. The final section concludes the report.

Characteristics of Traffic Stimulation Arrangements

A typical access stimulation arrangement involves an agreement between a rural LEC with high access charges (currently almost all access stimulation is carried out by competitive local exchange carriers (CLECs) who claim the right to charge the rate for the highest band for local switching in the National Exchange Carrier (NECA) tariffs under the so-called "rural exemption").[8] The FSP provides a type of mass calling service, such as adult chat lines or conference calling. The FSP equipment is generally located in the central office of the LEC. Generally this interconnection of the FSP equipment to the LEC switch is the only physical link between the FSP and the LEC (e.g., FSPs do not subscribe to their partners' local exchange

[8] 47 C.F.R. Section 61.26(e). Section 61.26(a)(6) specifies that a rural CLEC serves only end users that are located in rural areas, i.e., if a CLEC served any end users located outside of rural areas, it would not be eligible for the rural exemption.

services.)[9] The FSP offers its mass calling services to the public for free or at a price well below cost, subject only to the customers of these services paying what their IXCs charge for such calls. These free offerings attract large volumes of callers, many of whom subscribe to the flat rate long-distance calling plans of their IXCs. Because the NECA access rate that "rural exemption" CLECs are allowed to charge is the same as the rate incumbent LECs with the lowest volumes of traffic charge under the NECA tariff, revenues from access charges imposed on IXCs soar, as do associated rural LEC incremental revenues. The LEC then splits these profits with its FSP partner. The scheme works because the 1) IXCs are prohibited from blocking traffic to access stimulating exchanges; 2) IXCs are required to average their long distance rates and hence cannot pass along higher access charges in the form of higher long-distance prices to FSP customers; and 3) the LECs have monopoly power over terminating access.

Traffic Stimulation Arrangements Distort Competition and Harm Consumer Welfare

The fundamental feature of traffic stimulation arrangements, of which free conference calling is but one prominent example, is the generation and subsequent concentration and routing of traffic from large numbers of scattered locations through rural carriers with high tariffed rates for such traffic. Traffic stimulation arrangements result from exploitation of the combination of rural rates[10] that are significantly higher than the cost of serving high volumes of traffic and the market power that all local exchange carriers, large and small alike have over IXCs when traffic from their customers is routed through LECs' switches. Because (1) the costs of serving volumes of traffic that greatly exceed typical levels for rural carriers are considerably smaller than the revenues generated at rates based on typical traffic volumes and (2) IXCs are charged for this traffic in the form of uneconomically high access rates, traffic-stimulating rural carriers (and their partners) are in effect imposing a self-help "tax" that generates subsidy funds that distort competition among such partnerships, similarly situated local carriers, and providers of

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[9] I analyze the economic consequences that would arise if the LEC's access tariffs were deemed to apply to FSP traffic. Accordingly, if the tariffs upon which those LECs (and their FSP partners) base their access stimulation arrangements did not apply, the amounts billed to IXCs and the revenues realized by the access stimulation arrangement would not (or no longer) materialize. In fact, regulators have concluded that the traffic generated by arrangements between FSPs and specific LECs is not covered by those LECs' tariffs. Farmers and Merchants Second Reconsideration Order and Iowa Utilities Board, Final Order, *Qwest v. Superior Telephone Cooperative, et al.*, Docket No. FCU-07-2, September 21, 2009.

[10] Qwest has informed me that some of the CLECs charging high rural rates may not be eligible for rural exemption status.

competing services, e.g., conference calling, that do not (or cannot) exploit such an artificial advantage. In effect, the small rural LECs are the telecom equivalent of the troll on the toll bridge, extracting huge payments from those that must cross the bridge—the IXCs—and having the power to require that the IXCs cross and re-cross the bridge at the direction of the troll. In addition, the costs imposed on IXCs by the traffic stimulation "tax" raise their costs, which, given the vigor of competition for long-distance services, increases prices and otherwise distorts competition in those markets as well.

In economic terms, because they allow some providers of competitive services (that is, the FSPs) to charge prices that do not cover the costs consumers impose when they use these services, and permits a monopoly service (that is, the monopoly terminating access provided by the LECs) to charge excessive prices to cover the costs of the competitive services, traffic stimulation arrangements undermine efficient competition and reduce economic welfare. In particular, the bedrock economic conditions for efficient prices are (1) the consumers of particular services (e.g., conference call services) should individually and/or in combination pay prices reflective of the actual costs incurred in providing such services; and (2) the firm (or partnership) producing the service should, in general, earn normal profits over the long run. In contrast, (1) the FSPs' end-user customers—individually and in combination—are paying prices well below the costs incurred by the networks that collectively provide the service; and (2) certain providers (the rural carriers and/or the partner FSPs) are reaping profits well above normal or competitive levels for more than a transitory period of time. Furthermore, this outcome is merely an artifact of regulatory arbitrage under which services such as free conference calls "*are subsidized by customers and shareholders of the long-distance carriers.*"[11] This subsidy, in turn, is anomalous—the result of the partner rural telecommunications carriers' exploiting their monopoly power over terminating access. Because the supracompetitive access prices and the subsidies to competitive services that are funded by them would not occur in competitive markets, regulatory intervention is required to address this market failure.

Drs. Pearce and Barrett's contrary conclusion that such traffic stimulation arrangements are economically beneficial is, in a nutshell, the result of their faulty characterization of competition

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[11] "Who Pays for 'Free" Net Calls?" *Business Week*, September 6, 2007 (emphasis added). Available at http://www.businessweek.com/technology/content/sep2007/tc2007095_791938.htm?sub=techmaven.

and market power for local exchange and long-distance services. In particular, they completely ignore the well-established and widely acknowledged market power that rural LECs and their traffic stimulating partners have exploited and instead incorrectly attribute market power to IXCs, which have long faced vigorous and growing competition. The remaining sections of this report respond to their analysis in greater detail.

Pearce-Barrett Framework

Drs. Pearce and Barrett's justification of free conference call arrangements rests on the following errant logic. First, they claim that IXCs not only have market power but have also freely offered calling plans with no additional charges for long-distance calling. Consequently, IXCs could easily avoid some of the worst consequences of access stimulation by offering different pricing plans to their customers. Second, they argue that, because IXC services, including services offered on flat rate pricing plans, are profitable on the whole (as opposed to the conceded lack of profitability of traffic delivered to FSPs), access stimulation *increases* (rather than decreases) IXC profits. Accordingly, they proclaim that there should be no concern that IXCs are forced to pay excessively high access charges when their end-user customers make free conference calls. Third, they postulate that the access rates charged by and paid to CLECs are proper because telecommunications services in general (as opposed to the particulars of the per minute of use costs of processing traffic for FSPs) are more costly in rural areas and hence the high rates that sustain access stimulation are actually reflective of the costs of providing service.

Each of these three lines of reasoning is fallacious. First, as this Commission concluded almost 15 years ago when approving legacy AT&T's request for non-dominant status, the IXCs do not possess market power over long-distance calling,[12] and their choices of product offerings are the result of competitive market forces and not the attempts to exploit end-users that Drs. Pearce and Barrett allege. These long distance pricing plans are popular and economically efficient responses to market forces. On the other hand, LECs do possess market power when providing terminating access service—a fact this

[12] Order, *In the Matter of Motion of AT&T to be Reclassified as a Non-Dominant Carrier*, FCC 95-427, October 23, 1995 at ¶ 163 ("AT&T Non-Dominance Order").

Commission has recognized on numerous occasions. Second, the claim that IXC profitability increases because of access stimulation is bizarre. Access stimulation *increases* IXCs' costs by artificially stimulating traffic and routing that traffic through carriers that charge high rates based on the assumption that traffic volumes will be low. IXC profits would increase only if prices could be raised above what is necessary to cover these increased costs (that is, cover the cost of the subsidy to the LECs and FSPs through a general price increase). But because the long distance market is competitive, economic forces would ultimately drive the price of long distance service upwards to reflect the increased costs of providing such services, and IXCs are generally prohibited from addressing access stimulation through tailored rate solutions by the FCC's rate averaging rule.[13] Drs. Pearson and Barrett miss this fundamental point. Third, while providing telecommunications is generally more costly in rural areas than in non-rural areas because of generally lower subscriber densities and traffic volumes, providing switched access in rural areas at the high volumes typical of free conference calling arrangements is not materially more costly than in non-rural areas. Drs. Pearce and Barrett are simply wrong in suggesting the contrary.

Economic Evaluation of Pearce-Barrett Framework

1. **Retail long-distance prices and product offerings are the result of competitive market forces**

Drs. Pearce and Barrett claim that IXCs possess market power and that this market power is relevant to an evaluation of economic merits of access stimulation. This position is wrong from both evidentiary and economic perspectives.

As the FCC recognized in 1995 when it deregulated most retail services of legacy AT&T,[14] markets for long-distance services are effectively competitive. From an economic perspective, this means that IXCs are at best earning normal returns on average. Further, in the ensuing 15 years since the FCC reached this conclusion, the provision of long-distance services has become even more fiercely competitive, as companies such as wireless providers, cable companies, and Voice over Internet Protocol

[13] 1996 Telecommunications Act, Section 254(g) and 47 C.F.R. Section 64.1801.
[14] AT&T Non-Dominance Order, *op. cit.*

(VoIP) providers offer ever more attractive products. Indeed, the FCC's Broadband Plan observed that interstate long-distance volumes carried by incumbent wired carriers declined from 567 billion minutes to 316 billion minutes percent between 2000 and 2008[15] and between 2008 and 2009, these volumes continued to erode to 277 billion minutes.[16] Thus between 2000 and 2009, wired interstate long-distance volumes decreased by 51 percent. In contrast, traffic volumes of intermodal competitors increased dramatically during the same period. For example, wireless minutes of use increased about eight-fold from 2000 to 2009.[17]

Consequently, rather than demonstrating "market power" to implement pricing plans that exploit consumers,[18] IXC offerings such as flat-rated long-distance plans are natural responses to the competition posed by other wired and wireless carriers. These competitive offerings have undoubtedly provided large benefits to consumers.[19] To suggest that the existence of such plans undermines attempts to rectify rural carriers' exploitation of their market power over terminating access services makes no economic sense. For example, if IXCs were able to replace their flat-rated long-distance plans with per-minute plans with usage charges sufficient to cover the costs (including rural access charges) of free conference calls (an unlikely proposition given the competitiveness of retail long-distance), free-conference calling operations would still be exploiting market power over terminating access. In the process, these free-conference calling operations would be generating artificial returns that result in misallocation of investment and other resources that serves only to distort competition among these providers and other firms that do not enjoy such artificial advantages.

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[15] National Broadband Plan at p. 142.

[16] MOU_Report_2005_2009.xls (available at http://www.fcc.gov/wcb/iatd/neca.html).

[17] "Background on CTIA's Semi-Annual Wireless Industry Survey," (available at http://files.ctia.org/pdf/CTIA_Survey_Year_End_2009_Graphics.pdf). Reported wireless minutes of use exceeded 2.275 trillion in 2009, up from approximately 0.3 trillion in 2000.

[18] Pearce-Barrett at p. 19

[19] For example, a Commission report observed that "carriers' average revenue per interstate toll minute has fallen by 60% since 1992, demonstrating that the advent of discount long distance plans has produced lower rates for both business and residential consumers." Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *Reference Book of Rates, Price Indices, and Household Expenditures for Telephone Service*, 2008, p. I - 5)

But even if some IXCs possessed market power in the long distance market, this fact would not support Drs. Pearce and Barrett's conclusion that access stimulation is economically sensible. If retail long-distance prices were too high because some IXCs possessed market power (which they do not), artificially increasing the cost of an essential input (carrier access services) by allowing LECs to exploit *their* undisputed market power would only compound the problem. That is, even if there were monopoly power in the provision of some IXCs' services, increasing access charges would only increase the amount by which prices exceeded the cost (including the inflated access charges) of providing these services—an outcome economists refer to as double marginalization. In other words, there would be monopoly power at two stages of production and this leads to overall reductions in economic welfare.

2. Drs. Pearce and Barrett's allegations regarding IXCs' overall profitability are incorrect and irrelevant in determining whether particular intercarrier compensation (access) rates are reasonable

Drs. Pearce and Barrett attempt to deflect concerns over uneconomic access rates by presenting data on the purported profitability of retail long-distance services.[20] They first report rates of return for the interstate exchange access services offered by the LECs affiliated with the IXCs that incur higher costs because of access stimulation. These rates of return obviously have nothing to do with IXCs or IXC profitability, and Drs. Pearce and Barrett offer no factual support for their premise.[21] Moreover, the overall profitability of long-distance services is irrelevant in evaluating whether the access rates of particular rural carriers are reasonable.

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[20] Pearce-Barrett at pp. 21-22.

[21] The only other reported "profitability" measure is a figure that purports to measure profit per minute – what is more accurately characterized as a net margin. (Pierce-Barrett at p. 21.) Their figures are meaningless as well because (1) they appear to ignore all costs except access charges paid to other carriers (e.g., IXCs are purportedly "profitable" because they incur no additional costs in providing services over their own facilities and pay no originating access charges to other LECs); and (2) they appear to assume that IXCs pay access charges of $0.015 to $0.02 per minute to the rural carrier partners of free conference calling companies. In contrast, rural carrier partners often have tariff rates that are more than 100% higher, on the order of $0.05 per minute (Pearce-Barrett at p. 8) and Qwest has informed me that such carriers have billed it at the full tariffed rate. In other words, when originating access charges, with an industry-wide average of about $0.0085 per minute in 2008 (Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, *Trends in Telephone Service*, August 2008, p. 1 - 4), are added to rural carrier access rates of $0.05 and higher, the incremental cost per minute for a carrier such as Qwest would approach $0.06 per minute or more, even before costs incurred on its own network are added in. Costs of this magnitude greatly reduce the "profit" estimates proffered by Drs. Pearce and Barrett, i.e., rather than generating revenues of $0.04 to $0.065 per minute in excess of cost, the actual values for

The key feature of the free conference call business model is generating traffic from the free conference call customers and then routing that traffic through rural carriers with high access rates. The access revenues charged to and paid by IXCs that result from such a business model not only increase the IXCs' costs of carrying a given volume of traffic, they also provide a cross subsidy to the business partners (rural carriers and FSPs) and/or their customers. Such cross subsidies from one type of service to another distort competition and ultimately harm the businesses and customers that do not benefit from the arrangement. Such subsidies increase IXCs' costs,[22] which in turn ultimately results in higher prices for long-distance services.

Drs. Pearce and Barrett totally ignore these distortions to competition for long-distance (and other) services,[23] and instead suggest that there should be no concern, because not only are the IXCs big enough to afford the cross-subsidy payments, but access stimulation also increases their profits. This claim is based on assertions (unsupported by meaningful data or analysis) that (1) the existence of free conference calling services was the cause of customers shifting from per-minute long distance plans to flat-rated plans; (2) the revenues from a customer with a flat-rated calling plan exceed the revenues from the same customer with a usage-sensitive plan; and (3) when customers choose flat-rated plans (and IXCs realize greater incremental revenue as a result), their free conference calling is not large enough to cost the IXCs much in the way of higher access charges.[24] Taken together, these conjectures are implausible at best. First, as discussed earlier, because of the long-standing and increasing competition for traditional voice services posed by wired and wireless providers, it is highly unlikely that free conference calling has much of anything to do with why carriers offer and why customers select flat-rated plans. Second, Drs. Pearce and Barrett provide no evidence to support the odd proposition that the customers of FSPs who purportedly have selected flat-rated plans *because of their calls to FSPs*

Qwest would be in a range of zero to $0.02 per minute (assuming the average revenue per minute range assumed by Drs. Pearce and Barrett is correct).

[22] Routing calls through high-volume exchanges necessarily increases the average cost per minute that IXCs face. Thus, if as Drs. Pearce and Barrett suggest, average costs are the relevant measure when assessing profitability (Pearce-Barrett at p. 13), such an increase in cost would tend to lead to price increases in competitive markets and thus reduce consumer welfare.

[23] Free conference calling arrangements directly distort competition for conferencing services because the cross subsidies from IXCs result in consumers of free conference calling not paying the full cost that they cause to be incurred in partaking of these services. To the extent that rural carriers are also using these cross subsidies to support other services (Pearce-Barrett at p. 5), they would enjoy an artificial competitive advantage for those services as well.

[24] Pearce-Barrett at p. 20.

choose the more expensive option, i.e., a flat-rate plan with a higher bill than what they would pay if they continued their usage sensitive plans. Similarly, if customers on average use free conference calling as infrequently as Drs. Pearce and Barrett report, it is very unlikely that the existence of free conference calling could have had much effect on whether a customer selected a flat-rated plan in the first place.

Therefore, it is very unlikely that IXCs profit from traffic stimulation arrangements, and Drs. Pearce and Barrett offer no evidence to support this proposition. To the contrary, such arrangements increase their costs of providing long distance services, which lead to higher prices for their customers, including those who make no calls to FSPs. This cross subsidy results from the fundamental feature of traffic stimulation business plans: FSPs and their rural carrier partners divert the calls from millions of customers[25] to the switches of rural carriers, generating revenues considerably in excess of the cost of serving the diverted traffic—revenues which then subsidize the operations of the conference calling companies and their LEC partners. Claiming that such arrangements are economically rational because IXCs may be sufficiently profitable to absorb the extra costs necessary to cover the access stimulation subsidization is simply wrong. Basically, relying on the overall profitability of the purchasers of services such as carrier access in assessing the reasonableness of particular rates would be similar to concluding that it would be permissible to steal from profitable companies with "deep pockets." The perversity is evident in the fact that, according to this strained logic, the more efficient the company, the higher their profits and the greater opportunity to extract payments from them. As economic theory and the literature explain, such extractions increase costs and harm consumers by diverting resources that could be used more efficiently elsewhere.[26] In fact, Drs. Pearce and Barrett would have us believe, contrary to accepted economic doctrine, that there really is such a thing as "a free lunch."

3. Revenues generated by tariffed rural carrier access rates greatly exceed the cost of traffic stimulated by free conference calling

[25] FreeConferenceCall.com reports over one million registrants and over 10 million monthly connections. http://www.freeconferencecall.com/aboutus.asp, accessed on March 29, 2010.

[26] See, for example, Gordon Tullock, "The Welfare Costs of Tariffs, Monopolies, and Theft," Western Economic Journal, Vol. 5, No. 3, 1967, pp. 224-232.

A key component of access stimulation arrangements is the fact that rural LECs access rates are based on the assumption that they have high per-unit costs because of the low volumes of traffic that they process. However, the per unit costs of serving the much greater volumes of traffic that are diverted to rural carriers' switches are considerably lower than the access rates—providing cross subsidies for the free service offerings of the rural carriers and their partners. Thus, while the per-unit costs of rural carriers (ILECs and CLECs) that serve relatively few lines, which in turn generate typical amounts of monthly minutes of use, are higher than their non-rural counterparts, the average cost of terminating traffic (both switching and transport)[27] is dramatically reduced when the average use per line has been greatly increased by traffic stimulation arrangements. In other words, the entire basis for setting the rural CLECs access charge high—low traffic volumes—is undermined by the free-calling services that attempt to exploit these high access rates. For example, a rural average schedule ILEC that is in the NECA pool and is therefore subject to the NECA tariff, with switched access volumes comparable to rural CLECs with traffic stimulation arrangements, could receive settlements at a rate on the order of only 10 percent of the rates (in the $0.05 per minute range) that those rural carriers that have partnered with free conference calling ventures have charged.

Drs. Pearce and Barrett contend that the rates for rural LECs engaged in access stimulation are reasonable because the costs of rural carriers are higher than those of urban carriers, but in doing so they ignore the fundamental fact that the rural carriers' switching costs do not increase proportionately with the dramatic increases in volumes generated by traffic stimulation arrangements. In other words, while half of Drs Pearce and Barrett's proposition is correct—that rural LEC switching costs per minute in a normal situation (i.e., absent free-conference calling services designed to divert traffic into high-rate exchanges) are generally higher than those of urban customers because of the lower traffic volumes that they process, the statement is totally false in an access stimulation situation because the cost analysis assumes low traffic volumes. A rural LEC with rates set on the assumption of low traffic volumes obtains supranormal profits

[27] Qwest has informed me that many, if not all, FSPs collocate their equipment in the central offices of the LECs that they have joined in access stimulation, thus eliminating the high loop costs that are customary in rural areas.

when huge volumes of artificially stimulated traffic are sent to that LEC's switch. This was precisely the finding in the Farmers and Merchants Decision.[28]

It is important to remain cognizant of the fact that market forces alone cannot discipline LEC terminating access rates because LECs possess market power in the provision of terminating access—IXCs have no choice but to deliver calls to LEC end-user customers via their designated LEC. Indeed, the presence of monopoly power over access services was the fundamental reason for regulating access rates. As the Commission explained in the CLEC access charge order:[29]

> Sprint and AT&T persuasively characterize both the terminating and the originating access markets as consisting of a series of bottleneck monopolies over access to each individual end user. Thus, once an end user decides to take service from a particular LEC, that LEC controls an essential component of the system that provides interexchange calls, and it becomes the bottleneck for IXCs wishing to complete calls to, or carry calls from, that end user.

That LECs have market power in the provision of switched access services has withstood the test of time, as evidenced by the fact that the FCC and various state commissions have repeatedly found the need to intervene and cap the tariffed switched access rates of CLECs.[30] Thus, Drs. Pearce and Barrett have attributed market power to the wrong parties: the rural carriers, despite their small size have market power in the provision of terminating access services to Qwest and AT&T. In contrast, as explained above, there is little or no market power in the provision of retail long-distance services.

There is indisputable evidence that traffic stimulation arrangements generate incremental revenues far in excess of the costs of accommodating such traffic, which are then used to offset (or more than offset) the losses that the competitive service providers would otherwise incur

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[28] Memorandum Opinion and Order, *Qwest Communications Corporation, Complainant v. Farmers and Merchants Telephone Company, Defendant*, 22 FCC Rcd 17973 (2007), subsequent history omitted ("Farmers and Merchants Decision").

[29] Seventh Report and Order and Further Notice of Proposed Rulemaking, *Access Charge Reform, Reform of Access Charges Imposed by Competitive Local Exchange Carriers*, CC Docket No. 96-262, FCC 01-146 (rel. April 27, 2001) at ¶ 30 ("CLEC Access Charge Order"). Shortly thereafter, the Commission succinctly observed: "[W]ith respect to their own end users, CLECs have just as much market power as ILECs." Memorandum Opinion and Order, *AT&T Corp., Complainant v. Business Telecom, Inc., Defendant,* , EB-01-MD-001, *Sprint Communications Company, L.P., Complainant v. Business Telecom, Inc., Defendant,* , EB-01-MD-002,FCC 01-185 (rel. May 30, 2001) at ¶ 21 ("BTI Decision").

[30] See, for example, Order, *Petition of Northern Telephone & Data Corp. for Waiver of Section 61.26(b)(1) of the Commission's Rules*, WC Docket No. 09-216, DA 09-216 (rel. January 13, 2010) at ¶ 3.

when "selling" their services to free conference companies at below-cost (or even zero) prices.[31] First, free conference call providers have duly acknowledged that their operations depend on payments from rural carriers which, in turn, are generated by above-cost access charges.[32]

Second, in the Farmers and Merchants Decision, a critical declaration by Peter Copeland demonstrated that the access rates Qwest's long-distance operation has been billed greatly exceed cost when rural carriers are partners in traffic stimulation arrangements, such as free conference calling. In particular, his analyses conclusively demonstrated that the additional costs incurred to accommodate traffic that has increased by orders of magnitude are clearly much smaller than the carrier access revenues that they have realized, thereby generating excessive profits, which in turn provide subsidies to their competitive service provider partners.[33] This is because the costs of switching do not increase proportionately with traffic, while the switched access charges at issue in assessing access stimulation *do* increase proportionately. Indeed, based largely on Mr. Copeland's analysis, the FCC determined that Farmers and Merchants' access rates generated an unreasonably high rate of return and hence were not just and reasonable.[34]

Mr. Copeland's analysis arrives at the same conclusion with regard to CLEC access charges. In an informal complaint, Mr. Copeland analyzed the rate of OmniTel—a "rural exemption" CLEC that benchmarks its rates to the NECA band eight rate, yet has traffic levels far in excess of those that would allow a rural ILEC to collect settlements at the NECA band eight rate.[35]
Mr. Copeland's conclusions were the same as was the case for an ILEC—because a substantial proportion of switching costs are essentially fixed with respect to traffic volumes, when traffic is

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[31] Even if the FSPs actually paid the tariffed rate for the LEC services that they use, the payments made by the partnering LECs to the FSPs in an access stimulation arrangement would exceed charges for those services, and in the process subsidize "free" calling services.

[32] Pearce-Barrett at pp. 7-8.

[33] See Declaration of Peter B. Copeland, Exhibit C to Complaint in *Qwest Communications Corporation v. Farmers and Merchants Mutual Telephone Company*, File No. EB-07-MD-001, filed May 2, 2007. This declaration is attached as Exhibit 2 to this report.

[34] Farmers and Merchants Decision at ¶ 24.

[35] Declaration of Peter B. Copeland, Exhibit B to the informal complaint in *Qwest Communications Company v. OmniTel Communications*, Inc., File No. EB-09-MDIC-0023, filed June 11, 2009. This declaration is attached as Exhibit 3 to this report. Mr. Copeland documents that a NECA average schedule pool participant with OmniTel's traffic level, instead of being allowed to receive settlements at the NECA Band 8 level, would have its settlement rate reduced by more than 90%. At this level of traffic the proper rate for local switching should have been between $0.0047 to $0.0054 per minute of use for local switching and transport. *Ibid.* at ¶ 13.

artificially directed to the switches of rural carriers with high rates based (based on low traffic projections), net returns (revenue minus cost) will skyrocket as increased revenues vastly exceed increased costs. This is the entire foundation of access stimulation--it is predicated on the fact that revenues dramatically outstrip costs in the area of switching, which enables the access stimulating LECs to essentially pay their customers for using their services. In summary, Drs. Pearce and Barrett's claim that the high access rates charged by rural carriers in traffic stimulation arrangements are justified by their higher costs is fundamentally incorrect. It is a regulatory "bait and switch." To wit, establish a high rate predicated on low traffic volumes and then divert large amounts of traffic to those high-rate exchanges to exploit the erroneous assumption of low traffic volumes on which those high rates were initially set.

Third, at least some access stimulating LECs have essentially acknowledged that this fundamental predicate of Drs. Pearce and Barrett's analysis is incorrect. That is, they have at least implicitly agreed that the additional costs necessary to accommodate the large growth in traffic that traffic stimulation arrangements generate are substantially smaller than the revenues that would be generated by the default access rate under the rural exemption.[36] For example, the modification to the rural exemption rule proposed by the Rural Independent Competitive Alliance (RICA) and AT&T calls for an access rate benchmarked to a large competing ILEC when traffic volumes exceed 1,500 monthly minutes per working line.[37] In other words, this rule would compensate rural carriers at a rate far lower than the current default rate if traffic stimulation arrangements were in effect. Indeed, even OmniTel—a rural CLEC singled out by

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[36] Similarly, Drs. Pearce and Barrett's observation that some IXCs have apparently negotiated commercial access rates below tariff levels with certain rural carriers undermines their claim that rural carriers' tariff rates are necessary for recovering their higher costs. (Pearce-Barrett at p. 14.) Their further assertion that such agreements demonstrate that natural market forces are sufficient to discipline access prices is incorrect. To the extent that such agreements include some, but not all IXCs, it would make no economic sense if such negotiated rates allowed those CLECs selectively to exploit their terminating monopoly power. The outcome of negotiating lower rates with some IXCs, but continuing to charge the remaining IXCs exorbitant tariffed rates would almost certainly constitute input price discrimination. Such discrimination would distort competition among IXCs for long-distance customers. In particular, those IXCs that were offered more favorable rates could offer their customers prices lower than their disfavored rivals could offer, not because they are necessarily more efficient, but because of the more favorable terms for an essential input. Such selective discounts would violate the time-honored principle of competitive parity in the pricing of essential inputs, the primary purpose of which is to ensure that downstream competition is efficient –the low cost provider is not precluded from being the low price provider.

[37] *Ex parte* letter from Brian Benison, AT&T Services, Inc. and Steve Kraskin, Rural Independent Competitive Alliance to Marlene H. Dortch, Federal Communications Commission, CC Docket No. 01-92 and WC Docket No. 07-135, November 25, 2008.

Drs. Pearce and Barrett—has proposed a substantially lower rate when traffic per line exceeds a certain threshold.[38]

That free conference call operations have been subsidized by long distance companies and their customers has been widely recognized.[39] For example, one of the rural LECs' partners—freeconferencecalls.com—provided a link to a 2007 *Business Week* article that explains the critical importance of these high margins:[40]

> FreeConference.com provides calls by taking advantage of *regulatory quirks*—namely, the stiff termination fees long-distance carriers must pay to certain rural phone companies that handle calls into their territory. FreeConference puts its equipment in rural Iowa. Then, when calls come in over AT&T, Verizon Communications or Qwest Communications circuits, these carriers must pay the local phone companies, who share the money with FreeConference. *In effect, the free conferences are subsidized by customers and shareholders of the long-distance carriers.*

Indeed, Drs. Pearce and Barrett in effect admit that the funds provided by high access charges have cross-subsidized the operations of one rural carrier, OmniTel:[41]

> Omnitel did not have much of a future before working with a free conferencing operation. Today Omnitel is able to offer its rural customers a wide variety of services, including high-speed Internet, toll-free numbers, a variety of long-distance plans, teleconferencing, cable TV, wireless, and more.

Clearly, to the extent that OmniTel is offering services that they otherwise could not without the free conference call partnership, that partnership is generating revenues far in excess of the incremental cost of the operation, because access revenues from conference calls greatly exceed the cost of terminating calls to conference call providers. Such subsidies distort competition among OmniTel and competing carriers (e.g., ILECs in its service territory). In other words, the revenues from a non-competitive service (carrier access) appear to be providing a subsidy to unrelated competitive services, which from an economic perspective would be inconsistent with

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[38] Letter from Thomas Cohen and Edward A. Yorkgitis, Jr., Kelley Drye & Warren LLP, Counsel for Great Lakes Communications and Omnitel Communications to Marlene H. Dortch, Secretary, Federal Communications Commission, Notice of Ex Parte Presentation - WC Docket No. 07-135; CC Docket No. 01-92, October 10, 2008.

[39] If access charges were merely recovering costs, as Drs. Pearce and Barrett suggest (Pierce-Barrett at pp. 24-25), there would be no outside source to fund free services.

[40] "Who Pays for 'Free" Net Calls?" *Business Week*, September 6, 2007 (emphasis added). Available at http://www.businessweek.com/technology/content/sep2007/tc2007095_791938.htm?sub=techmaven.

[41] Pearce-Barrett at p. 5.

the prohibition of such cross-subsidies by Section 254(k) of the 1996 Telecommunications Act: "A telecommunications carrier may not use services that are not competitive to subsidize services that are subject to competition."[42]

Finally, it is noteworthy that even though broadband development has become an increasingly important component of national telecommunications policy, this Commission reaffirmed its long-standing policy to limit arbitrage opportunities in its National Broadband Plan. That is, the importance of broadband development notwithstanding, the Commission has not changed decades-old policies of greatly reducing, if not eliminating subsidizing other services through carriers access rates—a direction with which access stimulation arrangements are clearly inconsistent. And while broadband investment encouraged by properly designed policies and programs can result in new services and associated economic and employment benefits, there is no guarantee that the "self help" approach advocated by access stimulation proponents will confer such benefits on net. As the Commission observed, rather than benefiting the overall economy with new services and better jobs, as Drs. Pearce and Barrett assert, arbitrage arrangements result in "investment [that] is directed to free conference calling and similar schemes for adult entertainment that ultimately cost consumers money, rather than to other, more productive endeavors."[43]

Conclusion

Drs. Pearce and Barrett argue that (1) IXCs with market power in the provision of long-distance services have created their own access stimulation problem by offering flat-rated long-distance plans, (2) even so, access stimulation has increased, rather than decreased the IXCs' profitability, and (3) the high access rates charged by rural carriers engaged in access stimulation arrangements are properly cost-based. Accordingly, they conclude that arrangements such as free conference calling are economic and the Commission should abandon its long-standing

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[42] Declaration of Timothy J. Tardiff on the economics of whether traffic stimulation arrangements violate the prohibition in Section 254(k) of the 1996 Telecommunications Act against noncompetitive services subsidizing competitive services, *ex parte* filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 6, 2009. Indeed, the order in which the Commission lowered Business Telecom's (a CLEC) access rates on the basis that they were unreasonably high explicitly noted that the CLEC "is subject to section 254(k)'s prohibition against cross-subsidization." BTI Decision at ¶ 61.

[43] National Broadband Plan at p. 142.

policies to limit such arbitrage opportunities. As I explained in detail above, each of these premises is incorrect. The root of the access stimulation problem is the enduring market power of local exchange carriers (large and small alike) in the provision of terminating switched access services to individual customers.[44] This opportunity for the abuse of market power is exacerbated by the fact that IXCs are prohibited from blocking traffic to access stimulating LECs when their activity is discovered, and from de-averaging their retail rates to reflect the additional costs imposed by high access costs in an access stimulation situation. In other words, the troll must be paid! Thus, the diversion of large amounts of traffic to rural carriers with access rates considerably higher than the cost incurred to handle that traffic adversely affects competition and resource allocation, ultimately harming consumers. Drs. Pearce's and Barrett's conclusion that sound economics might support the access stimulation phenomenon is wrong on all counts. Access stimulation is a poster child for regulatory arbitrage arrangements, which exploit rural carriers' market power over terminating access to earn supra-competitive profits at the expense of IXCs and the customers of the IXCs.

In short, Drs. Pearce and Barrett have targeted the wrong suspect. It is not the heavy users of IXCs' flat-rated plans (or the carriers offering them in response to competitive conditions) that are at fault, but it is the artificial concentration of volumes into high cost rural areas that has created the distortions that the Commission noted in its commentary on free conference calling in the National Broadband Plan. Indeed, even if IXCs could profitably implement the restrictions on high volume callers that Drs. Pearce and Barrett suggest,[45] such a solution would only compound the distortions to competition that traffic stimulation arbitrage arrangements entail. Not only would investments and other resources be artificially diverted towards firms that continued to take advantage of the funds generated by rates that greatly exceed the cost of accommodating the stimulated traffic, but the restriction on consumer choice in long-distance

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[44] As the Commission has consistently explained, market power over access services arises from the fact that IXCs have no choice in the selection of the carrier that originates or terminates traffic to local "customers" (the FSPs in the case of access stimulation) and are required to carry whatever traffic is generated. Such market power is reinforced by statutory rate averaging requirements.

[45] "AT&T and other IXCs could similarly modify their unlimited long-distance plans to charge a premium to those long-distance customers that, in the IXCs opinion, consume excessive quantities of long-distance services." Pearce-Barrett at p. 18. Such a restriction does not get to the root of the problem—free conference calls directed to rural carriers with high access rates.

markets (in the form of usage restrictions that would otherwise not be necessary) would distort competition in those markets as well.

EXHIBIT 1

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Professional Summary

Dr. Timothy J. Tardiff has more than 30 years of academic and consulting experience. He has participated in numerous legal and regulatory proceedings regarding telecommunications, economics, anti-trust, and regulation issues. His research consulting, and expert witness experience in telecommunications has addressed pricing and costing issues involving increasingly competitive services, such as wireless and traditional wireline services. This experience has also included extensive examination and economic evaluation of all facets of the costing methodologies used to establish prices in rate-regulated industries. His work has included the telecommunications, transportation, energy, and public utility industries, and he has published extensively in economics, telecommunications, and transportation journals. Dr. Tardiff holds a Ph.D. in Social Science from the University of California, Irvine and a B.S. in mathematics from the California Institute of Technology.

Dr. Tardiff is an economic consultant with clients in the telecommunications and regulated utilities industries. From 2006 to 2009, he was a Managing Director at Huron Consulting Group. Prior to joining Huron, Dr. Tardiff served as a vice president in the telecommunication practice at NERA Economic Consulting. During his career, he has served as the director of Marketing Research and senior member of the transportation practice at Charles River Associates, Inc. and assistant professor in the Department of Civil Engineering and Division of Environmental Studies at the University of California, Davis.

Dr. Tardiff's research has addressed the demand, cost, and competitive aspects of converging technologies, including wireless and broadband. He has evaluated pricing policies for increasingly competitive telecommunications markets, including appropriate mechanisms for pricing access services to competitors and studied actual and potential competition for services provided by incumbent telephone operating companies. Most recently, he has analyzed the effects of convergence and growing intermodal competition on whether incumbent firms should be considered dominant in the provision of certain services and the regulatory and antitrust implication of such determinations.

Since the passage of the United States Telecommunications Act, Dr. Tardiff has participated in interconnection arbitrations, unbundled element proceedings, universal service investigation, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the United States Federal Communications Commission. His international research and consulting experience includes studies and expert reports on telecommunication competition issues in Canada, Japan, New Zealand, Peru, Australia, and Trinidad and Tobago, where he was an economic expert in an interconnection arbitration between two wireless carriers.

Dr. Tardiff has also participated in class action litigation in regulated (or partially regulated) industries. This experience includes analysis of the communality of proposed class members in an antitrust claim that a regional telephone operator failed to implement the provision of the 1996 Telecommunications Act as well as evaluation of the damage claims of plaintiffs in securities actions involving providers of telecommunications network services.

Dr. Tardiff has recently provided expert reports and testimonies on the reasonableness from an economic perspective of increases in the rates international carriers at Los Angeles International Airport pay for use of terminal space.

Education

- Ph.D., Social Sciences, University of California, Irvine, CA
- B.S., Mathematics, California Institute of Technology, Pasadena, CA

Testimony experience

- Statement of Timothy Tardiff on the regulation of retail local telephone services, prepared for filing with the Commonwealth Public Utilities Commission, Commonwealth of the Northern Marina Islands on behalf of the Micronesian Telecommunications Corporation, CPUC Docket No.09-3, July 30, 2010.
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, February 24, 2010.
- Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, January 19, 2010
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the economics of forbearance from regulating certain wholesale services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 09-135, October 21, 2009. (Includes Dennis L. Weisman and Timothy J. Tardiff, "Principles of Competition and Regulation for the Design of Telecommunications Policy").
- Deposition Testimony, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 27, 2009.
- Expert Rebuttal Report, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 4, 2009 (with Matthew G. Medlin).
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- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the competiveness of Commercial Mobile Radio Services, prepared for filing with the Federal Communications Commission, WT Docket No. 09-66, July 13, 2009.
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- Counterstatement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, April 28, 2008.
- Statement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, March 17, 2008.
- Reply Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 16, 2008.
- Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, December 17, 2007.
- Reply Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, September 25, 2007.
- Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, August 24, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-28118, April 30, 2007.
- Joint Expert Supplemental Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, April 6, 2007.
- Joint Expert Reply Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, March 5, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, February 23, 2007.

- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price discrimination allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-48, December 1, 2006.
- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price squeeze allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-42, August 8, 2006.
- "Response to Digicel's Economic Analysis of Interconnection Costs and Rates," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 12, 2006.
- "Report on Interconnection Costs in Trinidad and Tobago," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 4, 2006.
- "Benchmarking Mobile Termination Rates: Evaluation of the .econ Report," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), February 10, 2006.
- Rebuttal Testimony of Timothy J. Tardiff on the use price floors for retail services, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, April 1, 2005.
- Rebuttal Testimony of Timothy J. Tardiff in support of the proposal of Pacific Bell Telephone Company (SBC California) to rebalance NIC Revenues, Rulemaking 03-08-018, March 21, 2005.
- Statement of William Taylor and Timothy Tardiff on alternative intercarrier compensation payment mechanisms for Voice over Internet Protocol long-distance calls, "Analysis of QSI Study," prepared for filing with the Federal Communications Commission on behalf of the United States Telecom Association, Docket No. 03-266, March 4, 2005.
- Panel Rebuttal Testimony of Timothy J. Tardiff, Francis J. Murphy, and Christian M. Dippon on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, November 9, 2004.
- Reply Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 19, 2004.
- Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 4, 2004.

- Declaration of William E. Taylor, Timothy J. Tardiff, and Harold Ware on the sunset of BOC separate affiliate and related requirements, ex parte communication prepared for filing with the Federal Communications Commission on behalf of BellSouth, SBC, and Verizon, WC Docket No. 02-112 and CC Docket No. 00-175, August 10, 2004.
- Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, August 6, 2004.
- Supplemental Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, June 18, 2004.
- Rebuttal Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, May 12, 2004.
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- Reply Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, February 13, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Oklahoma State Corporation Commission on behalf of SBC Oklahoma, Cause No. 200300646, February 11, 2004.
- Rebuttal Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 30, 2004.
- Reply Declaration of Howard Shelanski and Timothy Tardiff on the review of rules for pricing unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 03-173, January 30, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 16, 2004.
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- Statement of Timothy J. Tardiff on the Commission's Telecommunications Service Obligation (TSO) Model, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, May 20, 2003.
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- Affidavit of Timothy J. Tardiff on the use of the FCC's Synthesis Model to calculate unbundled network switching and transport prices, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, December 20, 2002.
- Declaration of Timothy J. Tardiff in support of the Petition of Verizon for Forbearance From The Prohibition Of Sharing Operating, Installation, and Maintenance Functions Under Section 53.203(a)(2) Of The Commission's Rules, CC Docket No. 96-149, September 24, 2002.
- Affidavit of Timothy J. Tardiff on unbundled network element pricing, prepared for filing with the Federal Communications Commission on behalf of ACS, WC Docket No. 02-201, July 24, 2002.

- Reply Declaration of Alfred E. Kahn and Timothy J. Tardiff in the triennial review of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, CC Docket Nos. 01-338, 96-98, and 98-147, July 17, 2002.
- Statement of Alfred E. Kahn and Timothy J. Tardiff on funding the telecommunications service (universal service) obligation, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, June 10, 2002.
- Supplemental Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, April 22, 2002.
- Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, March 18, 2002.
- Surrebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.
- Surrebuttal Testimony of Timothy J. Tardiff and Joseph A. Gansert on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.
- Rebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Declaration of Alfred E. Kahn and Timothy J. Tardiff submitted to the U.S. Federal Communications Commission on behalf of Verizon regarding broadband regulation, December 18, 2001.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, November 16, 2001.

- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled switch cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 30, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled loop cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 19, 2001.
- Surrebuttal Testimony of Howard Shelanski and Timothy J. Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, September 21, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Verizon-Maryland, Case No. 8879, September 5, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a and Modified Synthesis Models for unbundled loop and switch costs, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 4, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, August 27, 2001.
- Affidavit of Timothy J. Tardiff on the use of proxy costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, July 27, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the costs of unbundled network elements, prepared for filing with the Massachusetts Department of Telecommunications and Energy on behalf of Verizon-Massachusetts, Docket No. D.T.E. 01-20, July 18, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the costs of unbundled network elements, prepared for filing with the New Jersey Board of Public Utilities on behalf of Verizon-New Jersey, Docket No. TO00060356, October 12, 2000.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 10, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Nevada Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Nevada Bell Long Distance for Provision of In-Region InterLATA Services in Nevada (with Alfred E. Kahn), July 24, 2000.

- Responsive Testimony on the HAI Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 98-C-1357 (filed as part of panel testimony), June 26, 2000.
- Affidavit of Timothy J. Tardiff on avoided cost discounts for wholesale services, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, April 17, 2000.
- Third Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, March 24, 2000.
- Second Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 25, 2000.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Delaware Public Service Commission on behalf of Bell Atlantic-Delaware, Docket No. 99-251, February 24, 2000.
- Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 11, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), January 10, 2000.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. R-00994697 and R-00994697C0001, December 21, 1999.
- "Relaxed Regulation of High Capacity Services in Phoenix and Seattle: The Time is Now," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petitions of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix and Seattle MSAs (with Alfred E. Kahn), July 21, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. P-00991648 and P-00991649, June 15, 1999.
- "High Capacity Competition in Seattle: Reply to Comments of Intervening Parties," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), March 10, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1999.

- Surrebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, February 4, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Rhode Island Public Utilities Commission on behalf of Bell Atlantic-Rhode Island, Docket No. 2681, January 15, 1999.
- Reply Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 11, 1999.
- "Economic Evaluation of High Capacity Competition in Seattle," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), December 22, 1998.
- Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 18, 1998.
- "Measuring and Recovering the Costs of Long-Term Number Portability: Implications of Price Cap Regulation," Prepared for Southwestern Bell for presentation to the Federal Communications Commission, December 10, 1998.
- Direct Testimony of Alfred E. Kahn and Timothy J. Tardiff, filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, November 20, 1998.
- "High Capacity Competition in Phoenix: Reply to Comments of Intervening Parties," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), October 28, 1998.
- "Measuring and Recovering the Costs of Long-Term Number Portability," Prepared for Southwestern Bell for presentation to the Federal Communications Commission, October 28, 1998 (with Alfred E. Kahn).
- Declaration of Timothy J. Tardiff on the economic impacts of separate subsidiary requirements for the offer of advanced services by incumbent local exchange carriers, prepared for filing with the Federal Communications Commission on behalf of Bell Atlantic, in the matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability, October 15, 1998.

- "An Analysis of the HAI Model Release 5.0a," Rebuttal Testimony filed with the Florida Public Service Commission, Docket No. 980696-TP, on behalf of GTE Florida, September 2, 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- "Economic Evaluation of High Capacity Competition in Phoenix," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), August 14, 1998.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the New Hampshire Public Utilities Commission on behalf of Bell Atlantic-New Hampshire, Docket No. DE-97-1171, June 22, 1998.
- Rebuttal Affidavit before the Arkansas Public Service Commission in the matter of the Application of Southwestern Bell Telephone Company Seeking Verification that It Has Fully Complied with and Satisfied the Requirements of Section 271 (c) of the Telecommunications Act of 1996 (with Alfred E. Kahn), June 11, 1998.
- Rebuttal Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas' Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), May 27, 1998.
- Rebuttal Affidavit Before the Public Utilities Commission of the State of California in support of Pacific Bell's Draft Application for Authority to Provide InterLATA Services in California (with Alfred E. Kahn), May 20, 1998.
- "An Analysis of the Hatfield Model Release 4.0," prepared for filing with the California Public Utilities Commission on behalf of GTE California, May 1, 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Reply Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 27, 1998.
- Rebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, Case No. PUD 970000560, April 21, 1998.
- Reply Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), April 17, 1998.

- Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 8, 1998.
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc., Pacific Bell, and Pacific Bell Communications for Provision of In-Region InterLATA Services in California (with Alfred E. Kahn), March 31, 1998.
- "Economic Principles Governing Measurement of Nonrecurring/OSS Costs: An Analysis of the AT&T/MCI Recommendations," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 4, 1998 (with Gregory M. Duncan).
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133d, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the South Carolina Public Service Commission, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), March 2, 1998.
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the Kentucky Public Service Commission, on behalf of GTE South, February 26, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Arkansas (with Alfred E. Kahn), February 24, 1998.
- Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas' Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), February 17, 1998.
- "Analysis of the Hatfield Model Release 5.0," Rebuttal Testimony filed with the Alabama Public Utilities Commission, on behalf of GTE South, February 13, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).

- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications. Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a/ Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Oklahoma (with Alfred E. Kahn), February 13, 1998.
- "Analysis of the Hatfield Model Release 5.0," Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133b, on behalf of GTE South, January 30, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on switching costs, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, December 22, 1997.
- "Reply to AT&T Recommendations for Regulatory Treatment of OSS Costs," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, December 15, 1997 (with Gregory M. Duncan).
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Vermont Public Service Board on behalf of Bell Atlantic-Vermont, Case No. 57-13, November 21, 1997.
- Reply Affidavit of Timothy J. Tardiff on the Hatfield Model, filed with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 94-C-0095 and Case 28425, November 17, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 21, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model to universal service funding requirements, prepared for filing with the New Jersey Board of Public Utilities on behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, October 20, 1997.
- "Analysis of the Hatfield Model Release 4.0," filed with the Pennsylvania Public Utility Commission on behalf of GTE North, October 20, 1997 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 10, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 30, 1997.

- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State Corporation Commission of Virginia on behalf of Bell Atlantic-Virginia, Case No. PUC970005, June 10, 1997.
- Reply Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Federal Communications Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, May 26, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the District of Columbia Public Service Commission on behalf of Bell Atlantic-DC, Formal Case No. 962, May 2, 1997.
- Declaration of Timothy J. Tardiff on OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 16, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Bell Atlantic-Maryland, Case No. 8731-II, April 4, 1997.
- "Economic Evaluation of the Hatfield Model, Release 3.1," filed with the Washington Utilities and Transportation Commission on behalf of GTE, March 28, 1997 (with Gregory M. Duncan and Rafi Mohammed).
- "Economic Evaluation of the Hatfield Model, Version 2.2, Release 2," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 18, 1997 (with Gregory M. Duncan).
- Statement of Alfred E. Kahn and Timothy J. Tardiff, "Funding and Distributing the Universal Service Subsidy," Prepared for US West for presentation to the Federal Communications Commission, March 13, 1997.
- Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 6, 1997.
- Surrebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Dockets A-310203F0002, A-310213F0002, A-310236F0002, A-310258F0002, February 21, 1997.
- Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, February 21, 1997.
- "Reply to Kravtin/Selwyn Analysis of the Gap Between Embedded and Forward-Looking Costs," affidavit filed with the Federal Communications Commission, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, on behalf of GTE, February 14, 1997.

- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Arkansas Public Service Commission on behalf of Southwestern Bell Telephone Company, Docket 96-395-U, January 9, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Kansas Corporation Commission on behalf of Southwestern Bell Telephone Company, Docket 97-AT&T-290-Arb, January 6, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Massachusetts Department of Public Utilities on behalf of New England Telephone and Telegraph Company, Docket 96-80/81, October 30, 1996.
- Statement of Alfred E. Kahn and Timothy J. Tardiff, "Joint Marketing, Personnel Separation and Efficient Competition Under the Telecommunications Act of 1996," Prepared for US West for presentation to the Federal Communications Commission, October 11, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Oklahoma Public Service Commission on behalf of Southwestern Bell Telephone Company, September 30, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Missouri Public Service Commission on behalf of Southwestern Bell Telephone Company, Case No. TO-97-040 & TO 97-40-67, September 30, 1996.
- "Economic Evaluation of Version 2.2 of the Hatfield Model," prepared for filing in interconnection arbitrations in Pennsylvania, California, Florida, Indiana, North Carolina, Oklahoma, Iowa, Texas, Virginia, Minnesota, Hawaii, Nebraska, Kentucky, Washington, and Missouri on behalf of GTE, September 1996 (with Gregory M. Duncan).
- Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Texas Public Utility Commission on behalf of Southwestern Bell Telephone Company, Docket Nos. 16189, 16196, 16226, 16285, 16290, September 6, 1996.
- "Economic Analysis of MFS's Numerical Illustration," prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as amended and Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC's Local Exchange Area, on behalf of US West, August 30, 1996.
- Affidavit of Timothy J. Tardiff on proxy rates for unbundled local switching, prepared for filing with the Federal Communications Commission on behalf of GTE Corporation, petition for a stay of the First Report and Order in the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, August 28, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of New York Telephone, July 15, 1996.

- Reply Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 10, 1996.
- "Economic Evaluation of Version 2.2 of the Hatfield Model," attached to Reply Testimony of Timothy J. Tardiff, prepared for filing with the California Public Utilities Commission on behalf of GTE California, July 10, 1996. Also presented to the Federal Communications Commission as attachment to letter from Whitney Hatch of GTE to William F. Caton, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, July 11, 1996.
- Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, June 14, 1996.
- Declaration of Alfred E. Kahn and Timothy J. Tardiff, prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, on behalf of Bell Atlantic, May 30, 1996.
- Declaration of Timothy J. Tardiff on Round I and Round II OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1996.
- "Economic Evaluation of Pacific Bell's Round I and Round II Cost Studies: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 17, 1996.
- "Incremental Cost Principles for Local and Wireless Network Interconnection," prepared for filing with the Federal Communications Commission on behalf of Pacific Telesis, March 4, 1996 (with Richard D. Emmerson).
- "Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review: Reply Comments," Prepared for filing with the Federal Communications Commission on behalf of the United States Telephone Association, March 1, 1996 (with William E. Taylor and Charles J, Zarkadas).
- Declaration of Timothy J. Tardiff on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions (update), prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.
- "Universal Service Funding and Cost Modeling," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.
- "Changes in Interstate Price Regulation: Reply Comments," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, January 10, 1996.
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- "Changes in Interstate Price Regulation: An Economic Evaluation of the Pacific Bell and Nevada Bell Proposal," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, December 11, 1995 (with Alfred E. Kahn).
- "Evaluation of the Benchmark Cost Model," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 1, 1995.
- Affidavit of William E. Taylor and Timothy J. Tardiff on interconnection regulation, prepared for filing with the Mexican Secretariat of Communications and Transport on behalf of Southwestern Bell International Holdings Corporation, October 18, 1995.
- Participant, California Public Utilities Commission, Full Panel Hearing on Universal Telephone Service, September 29, 1995.
- "Incentive Regulation and Competition: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 18, 1995 (with Richard L. Schmalensee and William E. Taylor).
- "Incentive Regulation and Competition: Issues for the 1995 Incentive Regulation Review," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 8, 1995 (with Richard L. Schmalensee and William E. Taylor).
- "Preserving Universality of Subscription to Telephone Service in an Increasingly Competitive Industry," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995 (with Alfred E. Kahn).
- Declaration of Timothy J. Tardiff and Lester D. Taylor on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995.
- "Economic Evaluation of Proposed Long-Run Incremental Cost (LRIC) Methodology," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 13, 1995 (with Richard D. Emmerson).
- "California Public Utilities Commission Proposed Rules for Local Competition: An Economic Evaluation," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1995.
- "Benefits and Costs of Vertical Integration of Basic and Enhanced Telecommunications Services," prepared for filing with the Federal Communications Commission, Computer III Further Remand Proceedings, CC Docket No. 95-20, on behalf of Bell Atlantic, Bell South, NYNEX, Pacific Bell, Southwestern Bell, and U S West, April 6, 1995 (with Jerry A. Hausman).
- "Evaluation of the MCI's Universal Service Funding Proposal," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995.
- "Franchise Services and Universal Service," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995 (with Richard D. Emmerson).
- Illinois Commerce Commission on behalf of GTE North: surrebuttal testimony on the benefits of intraMSA presubscription, September 30, 1994.

- Illinois Commerce Commission on behalf of GTE North: rebuttal testimony on the benefits of intraMSA presubscription, September 16, 1994.
- "Economic Evaluation of OIR/OII on Open Access and Network Architecture Development: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 31, 1994 (with Richard D. Emmerson).
- "Declaration of Timothy J. Tardiff on Pacific Bell's Productivity Under Price Caps," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 28, 1994.
- "Regulation of Mobile and Wireless Telecommunications: Economic Issues," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 25, 1994
- "Economic Evaluation of OIR/OII on Open Access and Network Architecture Development," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1994 (with Richard D. Emmerson).
- "Access to Intelligent Networks: Economic Issues," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, December 1, 1993.
- "The Effect of SFAS 106 on Economy-Wide Wage Rates," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 1, 1993
- "Economic Evaluation of the NRF Review: Reply Comments," prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 7, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Performance Under Alternative Forms of Regulation in the U.S. Telecommunications Industry," prepared for filing with the Canadian Radio-television and Telecommunications Commission on behalf of AGT Limited, April 13, 1993. Timothy J. Tardiff and William E. Taylor, Study Directors.
- "Pacific Bell's Performance Under the New Regulatory Framework: An Economic Evaluation of the First Three Years," prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, April 8, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Pricing Interconnection and the Local Exchange Carrier's Competitive Interstate Services," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 19, 1993.
- "The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation: Reply Comments," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, July 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Costs and Benefits of IntraLATA Presubscription," prepared for filing with the State of New York Public Service Commission on behalf of New York Telephone, May 1, 1992. Timothy J. Tardiff and William E. Taylor, Study Directors.

- "The New Regulatory Framework 1990-1992: An Economic Review," prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 1, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, April 15, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
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- Report on the TSTT Cost Model, With Agustin J. Ros, Nigel Attenborough, and Trung Lu (Confidential), Prepared for Telecommunications Services of Trinidad and Tobago Limited, September 14, 2005.
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- Tardiff, T.J. Panelist, "Telecommunications: Assessing the Lessons from the 1996 Telecom Act," Silicon Flatirons Conference, Deregulation Revisited: A Tribute to Fred Kahn, University of Colorado, Boulder, September 5, 2008.
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- Tardiff, T.J. and L.J. Perl, "Price Regulation and Productivity," presented to the Public Staff of the North Carolina Utilities Commission, Raleigh, North Carolina, September 6, 1995.
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- Tardiff, T.J., "Definition of Alternatives and Representation of Dynamic Behavior in Spatial Choice Models." Transportation Research Record 723: 25-30, 1979.
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- Tardiff, T.J., "A Note on Goodness of Fit Statistics for Probit and Logit Models." Transportation 5: 377-388, 1976.
- Tardiff, T.J., "The Effects of Socioeconomic Status on Transportation Attitudes and Behavior." Ph.D. Dissertation, School of Social Science, University of California, Irvine, 1974.

Professional associations

- Member, American Economic Association
- Associate Member, American Bar Association

Fellowships, grants and awards

- First Place, Dissertation Contest of the Transportation Science Section of the Operations Research Society of America.
- National Science Foundation (NSF) Research Initiation Grant (Engineering Division), 1976-1978.
- NSF Grant for Improving Doctoral Dissertation Research in the Social Sciences, 1973-1974.
- NSF Predoctoral Fellowship, 1972-1974.
- Public Health Service Traineeship, 1971-1972.

EXHIBIT 2

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Qwest Communications Corporation,	)	File No. EB-07-MD-_____
	)	
Complainant	)	
	)	
v.	)	
	)	
Farmers and Merchants Mutual Telephone Company,	)	
	)	
Defendant	)	
	)	

DECLARATION OF PETER B. COPELAND

1. My name is Peter B. Copeland. My business address is 1801 California St. 47th floor, Denver, Colorado 80202. My current position is Director, Cost and Economic Analysis, in the Public Policy organization of Qwest Communications Corp. ("Qwest"). In this position, I supervise the development of all forward-looking regulatory cost studies for Qwest. In addition to my experience in developing wholesale and retail cost studies, I have also had responsibility for the development of models of the local exchange network, universal service advocacy, and materials relating to jurisdictional separations and rate development. This declaration is prepared in support of the above-captioned formal complaint by Qwest against Farmers and Merchants Mutual Telephone Company ("Farmers"). I make the statements in this declaration based

upon my personal knowledge and my review of Qwest records maintained in the ordinary course of business and prepared in anticipation of this litigation.

2. The purpose of this Declaration is to address the costs that Farmers has – or has not – likely incurred as its traffic volumes have increased dramatically. *See generally* Declaration of Lisa Hensley Eckert ("Hensley Eckert Decl."). Specifically, I explain below why, when Farmers's traffic volumes increased without any concomitant increase in the number of access lines it served, it is almost certain that its costs rose at a much slower rate than did its traffic figures.

3. First, I describe generally why an increase in traffic would not, on its own, cause a proportional increase in costs. Then, I show how the Federal Communications Commission ("Commission" or "FCC") has already recognized this principle, in approving average-schedule settlement formulae for use by the National Exchange Carrier Association. These formulae recognize that when traffic volumes grow to the extent Farmers's volumes have grown, in isolation of related access line count growth, volume growth is likely to outpace growth in costs by a ratio of almost 7 to 1.

4. In short, this Declaration shows that when Farmers billed Qwest and other IXCs for terminating access under its existing tariff for increasing volumes of what it classified as terminating access, *see* Hensley Eckert Decl. at ¶ 14, those bills almost surely reflected figures exceeding its related costs many times over – and therefore well above Farmers's authorized rate of return.[1]

[1] I assume for purposes of Count I of Qwest's complaint that the traffic at issue here "terminates" in Farmers's exchange. References in this declaration to "termination" do not reflect the view that this term properly characterizes all traffic delivered by Qwest, directly or indirectly, to Farmers.

I. MOU Growth Alone Does Not Lead to Proportional Growth in a Carrier's Terminating Access Costs.

5. Although the Farmers's charges at issue in Qwest's Complaint are referred to generally as being "traffic sensitive," and are applied on a per-minute of use ("MOU") basis, the cost that these charges are designed to recoup do *not* rise in proportion to MOU growth. Those costs relate to two specific aspects of Farmers's network: its end office switch, and the trunks from that end office switch to the tandem switch.[2] I address these in turn.

a. Farmers's End-Office Switching Costs Have Not Risen in Proportion to its Increased Traffic Volumes.

6. The traffic-sensitive costs incurred by use of an end-office switch can be broken down into two categories: (1) costs relating to the "line side" of the switch (*i.e.*, those costs associated with delivery of traffic from end-office trunk ports connected to the tandem switch to the called party, when such traffic is delivered to the called party over switched common lines) and (2) costs relating to "trunk side" of the switch (*i.e.*, those costs associated with receipt of traffic sent to the end-office switch from a tandem switch). For reasons described below, these costs almost surely have not risen in proportion to Farmers's increased traffic figures.

7. ***Line-Side End-Office Switching Costs.*** An end-office switch is equipped with line-side switch ports used to connect individual access lines to the switch. In simple terms, each access line is associated with a single line-side switch port. Line-side costs therefore will rise when a carrier is required to install new line-side switch ports. An increase in the number of MOUs transiting the switch will not, however, result in any increase in line-side costs if that increase is not tied to any significant increase in access

[2] The tandem switch itself is not owned by Farmers, and thus is not included in this analysis.

line usage. This is so because the line-side switch ports that switch manufacturers sell to LECs are engineered with sufficient capacity to support any reasonable increase in usage that may be delivered to those access lines during the life of the switch. Here, Farmers's line counts have not increased: Based on filings made with the Universal Service Administrative Company ("USAC"), Farmers used 833 access lines in the fourth quarter of 2004, 862 lines in the fourth quarter of 2005, and 805 access lines in the fourth quarter of 2006. Farmers has projected, moreover, that it will have only 785 access lines in the second quarter of 2007. Thus, it appears that the tremendous expansion in Farmers traffic described in the Hensley Eckert Declaration was not attended by a similar increase in access line counts.[3] Thus, line-side end-office switching costs are not affected by the huge increase in MOUs that are being received by Farmers's switch and handed off to the FSPs.

8. ***Trunk-Side End-Office Switching Costs.*** An end-office switch is also equipped with trunk-side switch ports generally used to connect the end-office switch to other switches (typically tandem switches). As with line-side switch ports, trunk-side switch ports are sold with all the related traffic capacity components necessary to support any level of usage associated with a given trunk. Thus, the increased trunk-side costs associated with increased traffic arise solely as a result of any increase in the number of necessary trunk-side switch ports.

9. The data presented below demonstrate that the cost that the typical Bell Operating Company ("BOC") incurs to add trunk-side ports is about $0.00072 per

[3] The absence of significant access-line growth in the presence of such significant demand growth indicates that the traffic at issue here was directed not over access lines at all, but rather over DS1 or ISDN PRI trunks, or other similar facilities, purchased separately from Farmers. Traffic delivered using such facilities would never touch the line side of the switch, but instead would be connected to the switch through trunk-side ports.

minute. The methodology I used to make this calculation was as follows. First, based on BOC cost figures, I assumed a per-trunk port investment, fully loaded with installation costs, sales tax, power and interest during construction, of $197 per trunk. I multiplied this figure by a 0.0329 cost factor[4] to derive a monthly cost per trunk of $6.48. I then divided that cost by 9000 MOUs – a common trunk-usage assumption – to derive a per-MOU cost of $0.00072. These calculations are set forth below.

Estimated Cost per MOU for Trunk	
Loaded Investment per DS0 Trunk for BOC	$ 197
Monthly TELRIC+Common Cost Factor to convert investment to monthly cost	0.0329
Monthly Cost per DS0 Trunk	$6.48
MOUs per Month per Trunk based on common industry trunk usage standard	9,000
Cost per MOU for BOC Trunk	$0.00072
	vs.
Farmers's Tariff Rate for Local Switching	$0.02532

Thus, for a BOC, additional trunk capacity would cost at most approximately $0.00072 per additional minute. In contrast, however, Farmers's tariff included a charge of $0.025320 per MOU for the provision of end-office ("local") switching functions. *See* Hensley Eckert Decl. at Ex. 9. Thus, Farmers's end-office switching charges recover more than *35 times* the typical BOC's additional cost. While it is reasonable to assume

[4] Cost factors of this sort are designed to convert investment into monthly capital expenses (including allowances for depreciation, cost of money, and income taxes), maintenance expense, and other support and common costs permitted by the FCC's TELRIC rules. The factor used here formed, in part, the basis for the Qwest UNE rates that the Commission found to be TELRIC-compliant in approving the company's section 271 application to provide long-distance service in Iowa. Specifically, the factor was used in deriving Qwest's Colorado TELRIC rates, which were then used as the basis for "benchmarking" Iowa rates. This figure is actually higher than Qwest's data suggest is appropriate, but the presumption works in Farmers's favor here, because it reduces the disparity between the cost derived in the chart and the rate set forth in Farmers's tariff. Put differently, use of a more realistic cost factor here would show that Farmers's rate is even more drastically above its likely trunk-side switch port cost than is indicated in the chart.

that a small LEC such as Farmers may pay more per trunk than the typical BOC, there is no basis for assuming a 35-fold disparity in costs. Thus, Farmers' tariffed rate would greatly over-recover its trunk-side switching costs.

10. Based on the above, as Farmers's MOU volumes increased, it experienced no line-side cost increases, and only experienced trunk-side increases associated with the need for new trunk-side switch ports from the tandem switch to the end-office switch. These costs, as described above, were far below Farmers's tariffed interstate end-office switching rates.

b. Farmers's Tandem Transport Costs Have Not Risen in Proportion to its Increased Traffic Volumes.

11. Farmers's tandem transport costs are also very unlikely to have risen in proportion to its traffic volumes. This is true because the economics of trunk connections between tandem switches and end-office switches demonstrate increasing efficiencies with increasing usage. As traffic levels increase, carriers generally transition from using DS1-capacity facilities (which carry the equivalent of 24 voice-grade communication paths, also known as DS0 circuits), to DS3-capacity facilities (which in turn carry the equivalent of 28 DS1s, or 672 DS0s), to OCn facilities (which carry many times the capacity of a DS3 link). This progression up the capacity hierarchy entails efficiency gains and thus reduces per-MOU costs. In fact, once the carrier shifts to fiber-optic facilities (generally at the DS1 or DS3 level), increased traffic flows will hardly increase costs *at all*. This is because a fiber-optic cable's capacity is not inherently limited, but rather is governed by the electronics equipment used to "light" the fiber. Thus, depending on the electronics installed, the same fiber facility once configured to operate

at DS1 capacity can later be used to transmit at DS3 or OCn capacity with very few additional costs.[5]

12. Thus, Farmers's tandem transport costs did not rise at a pace comparable to the pace at which its traffic figures grew during the period relevant to Qwest's Complaint. Instead, as traffic figures increased, per-MOU costs declined, slowing the growth in costs as time went on.

13. In summary, there is no reason to believe that Farmers's costs increased in proportion to the growth in its traffic figures. The new traffic likely imposed no new line-side end-office switching costs, and only limited trunk-side switching costs that remained far below the local switching charges contemplated by Farmers's access tariff. While its increased traffic likely did increase its tandem transport costs, MOU growth would also have entailed increased scale efficiencies, ensuring that costs did not grow proportionally.

c. Increased Usage Per Trunk Further Increases Economies of Scale For Both End-Office Switching and Tandem Transport Unit Costs.

14. In addition to the economies of scale discussed above for end office switching and tandem transport, there are yet further efficiencies that occur with increased volume. In June of 2005, the total interstate traffic to and from Farmers could be carried on approximately 40 DS0 circuits. By the end of 2006, the DS0 circuits

[5] *See, e.g.*, *Unbundled Access to Network Elements, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 20 FCC Rcd 2533, 2616 ¶ 150 (2005) (subsequent history omitted) ("The most significant portion of the costs incurred in building a fiber loop results from deploying the physical fiber infrastructure into underground conduit to a particular location, rather than from lighting the fiber-optic cable. The record reflects that for these reasons, LECs do not typically construct fiber loop facilities at lower capacity levels, such as DS1 or DS3, but rather install high-capacity fiber-optic cables and then use electronics to light the fiber at specific capacity levels, often 'channelizing' these higher-capacity offerings into multiple lower-capacity streams.").

required number in the thousands. The average usage per circuit for 40 circuits is about 40 minutes per hour in the peak hour. This average per circuit increases to 54 peak hour minutes with the amount of interstate minutes Farmers was experiencing in December of 2006. This reflects a 35% increase in efficiency. This increased efficiency is a mathematical phenomenon explained by the "Poisson Traffic Model." This model is traditionally used in engineering telecommunications facilities to estimate the amount of traffic that can be offered over a given number of circuits in order not to exceed blocking of 1% (P.01) of the attempted calls during a one-hour period – usually the "peak" or "busy" hour. The Poisson Traffic Model reflects the fact that with calls being connected and disconnected throughout the peak hour, there cannot be a full 60 minutes of usage on the average trunk. However, the amount of usage per circuit increases as the total offered traffic increases. In short, even apart from the efficiencies discussed above, the per-MOU costs associated with end office trunk ports and transport to the tandem switch will decline as volumes increase on account of more efficient use of each trunk circuit.

II. NECA's FCC-Approved Average Schedule Settlement Formulae Recognize that MOU Growth Alone Does Not Lead to Proportional Growth in a Carrier's Terminating Access Costs.

15. The scale-economy principles discussed above have been recognized by the Commission in its approval of the formulae used to calculate settlements for average-schedule companies in the National Exchange Carrier Association ("NECA") access-charge pool. As described more fully in Qwest's Complaint, these formulae are used to calculate the recovery due to average-schedule companies for their provision of access services. They are proposed annually by NECA, put out for comment, and ultimately

approved (with or without modification) by the Commission.[6] Thus, settlements produced using the NECA settlement formulae represent Commission-endorsed estimates of a small carrier's costs plus the authorized rate of return. Indeed, in the context of the small-carrier rule at issue in this Complaint, 47 U.S.C. § 61.39, the Commission permits some LECs to continue to rely on the settlement it would have received had it remained in the NECA pool as a proxy for its costs long after its exit from the pool. 47 C.F.R. § 61.39(b)(2).

16. Consistent with the analysis in Part I of this Declaration, the current NECA settlement formulae predict that Farmers's traffic volume increases have *not* produced a proportional increase in Farmers's costs. Indeed, those formulae predict that Farmers's costs have not even grown by 15 percent of the amount its volumes have grown. Put differently, while Farmers's monthly MOU figures – and therefore its access bills – increased by 238 times between June 2005 and December 2006, its costs, as predicted by the FCC-approved NECA settlement formula, have only increased by approximately 35 times.

17. The two most critical inputs to the NECA settlement formulae are the number of interstate access minutes transiting the network and the number of access lines used by the average-schedule carrier.

18. As described above, Farmers's line-count figures have not increased during the time period relevant to Qwest's complaint, and have in fact decreased modestly. For purposes of the present analysis, I am assuming that Farmers's line counts have remained constant during this period.

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[6] *See* 47 C.F.R. § 69.606; *National Exchange Carrier Association, Inc. 2006 Modification of Average Schedules*, 21 FCC Rcd 6220 (WCB 2006).

19. In contrast, Farmers's traffic volumes have increased dramatically. As described more fully in the Declaration of Lisa Hensley Eckert, Qwest delivered (directly or indirectly) between 32,000 and 45,500 MOUs per month to Farmers for its retail and wholesale long-distance customers during the first half of calendar year 2005. In June of that year, Qwest delivered 42,413 MOUs to Farmers. Beginning the next month, traffic delivered by Qwest to Farmers began to rise rapidly – to 66,354 in July 2005, to 732,977 MOUs in August 2005, to 2,221,767 MOUs in August 2006, and to 10,099,944 MOUs, over *238* times the June 2005 figure, in December 2006. Hensley Eckert Decl. at ¶¶ 8-9; *id.* Ex. 1.

20. There is no reason to believe that trends affecting Qwest's Farmers-bound traffic would not apply with equal force to other IXCs' Farmers-bound traffic. Thus, the growth rate attributable to Qwest's Farmers-related traffic can be applied to Farmers's *total* traffic figures to show how those total traffic figures likely ballooned. According to Table 8.4 of Universal Service Monitoring Report in CC Docket No. 98-202, released Dec. 2006, 33,122,646 MOUs of interstate access traffic were originated or terminated on Farmers's network in 2005. According to the figures presented in Exhibit 1 of the Declaration of Lisa Hensley Eckert, 8,559,234 of those MOUs involved Qwest's network. Thus, Farmers's total interstate access MOUs are roughly four times those to or from Qwest's network (*i.e.*, 33,122,646 / 8,559,234).

21. Using this ratio, we can estimate that in June 2005 – the last month before Farmers left the NECA pool and before its volumes began to rise – about 169,652 MOUs (42,413 Qwest-related MOUs, times four) terminated on Farmers's network. In contrast, we can estimate that about 2,931,908 MOUs (732,977 Qwest-related MOUs, times four)

terminated on Farmers's network in August of 2005. Similarly, we can estimate that about 40,399,776 MOUs (10,099,944 Qwest-related MOUs, times four) terminated on Farmers's network in December of 2006.

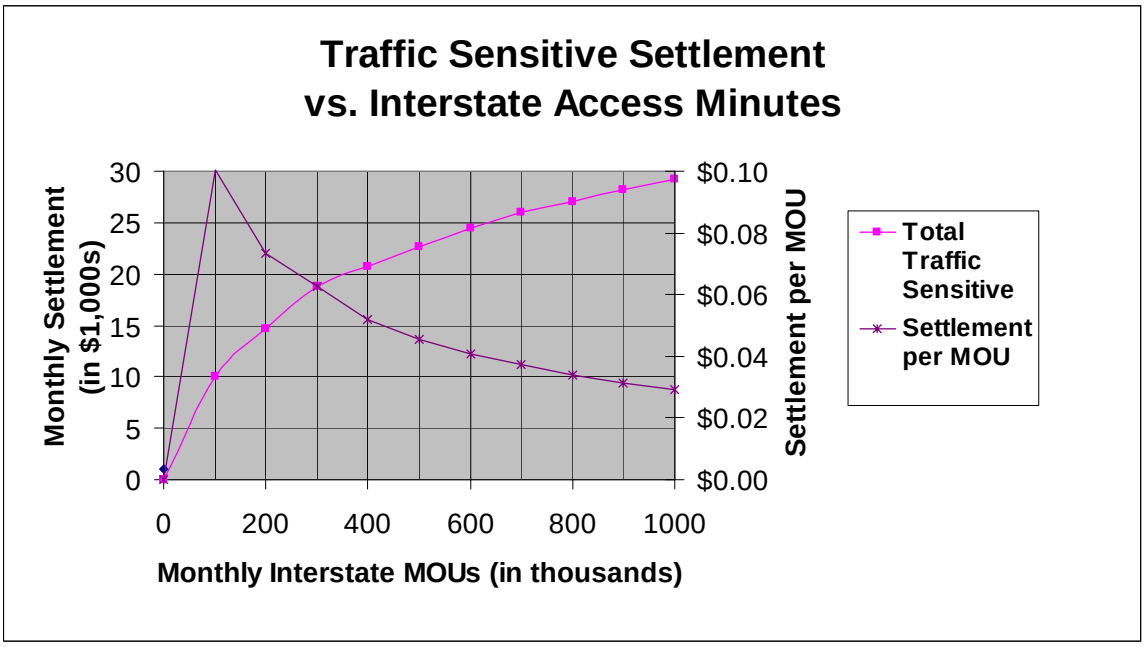
22. Application of these figures to the NECA settlement formulae are reflected in Table 1 below. This table reflects monthly NECA settlements given the traffic volumes derived above for specific months, holding access line counts constant. As Farmers's traffic volumes (and bills) increased, its costs increased at a much slower pace. In August 2005, its terminating access volume had grown by 1628% from its June 2005 volume, but its traffic-sensitive settlement would have grown by only 280% from its June 2005 settlement. In December 2006, its terminating access volume had grown by 23,713% of its June 2005 volume, but its traffic-sensitive settlement would have grown to $462,757, a 3,377% increase from June 2005. Thus, assuming Farmers applied its tariffed per-MOU interstate access rates throughout the period at issue, there would have been a huge disparity between the growth in its receipts between June 2005 and December 2006 and the (far smaller) growth its in costs during that period.

TABLE 1

	June 2005	Aug. 2005	Dec. 2006
Interstate Terminating Minutes per Month	169,652	2,931,908	40,399,776
% Growth in Terminating Interstate MOUs from June 2005 MOUs	N/A	1628%	23713%
Total Traffic-Sensitive Settlement per Month	$13,311	$50,532	$462,757
Percent Growth in Traffic-Sensitive Settlement from June 2005	N/A	280%	3377%
Total Traffic-Sensitive Settlement per Minute	$0.078	$0.017	$0.011

23. Based on the average schedule formulae for traffic sensitive settlements for the time period at issue in this Complaint, the effect of increasing minutes of use given a fixed number of lines is to decrease the settlement per MOU. In other words, as traffic volume increases, the total settlement *per minute* decreases. This can be seen in the bottom row of Table 1. This, too, is shown graphically below in Chart 1. This chart compares total monthly MOUs against a carrier's total traffic-sensitive monthly settlement and its "settlement per minute" under the currently applicable settlement formulae.

CHART 1 – Settlements Based on 2006-2007 Formulae



Notably, as indicated in this graph, at volumes above 100,000 MOUs per month, per-MOU costs (as represented by settlements) decline with each additional MOU. Thus, to the extent tariffed rates are based (as in Farmers's case) on usage figures that fall below actual usage, they are likely to over-recover the carrier's costs.

24. The NECA settlement formulae, approved by the Commission, reflect the principles discussed above: When a carrier such as Farmers experiences a substantial increase in access traffic volumes, but that increase is not accompanied by a similar rise in access line counts, its costs rise at a much slower pace than its receipts.

25. This concludes this Declaration.

I, Peter Copeland, declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Peter Copeland

Peter Copeland

Date: May 1, 2007

EXHIBIT 3

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Qwest Communications Corporation,	)	File No. EB-08-MD-_____
	)	
Complainant	)	
	)	
v.	)	
	)	
OmniTel,	)	
	)	
Defendant	)	
	)	
	)	

DECLARATION OF PETER B. COPELAND

1. My name is Peter B. Copeland. My business address is 1801 California St. 47th floor, Denver, Colorado 80202. My current position is Director, Cost and Economic Analysis, in the Public Policy organization of Qwest Communications International ("Qwest"). In this position, I supervise the development of all forward-looking regulatory cost studies for Qwest. In addition to my experience in developing wholesale and retail cost studies, I also have responsibility for the development of cost models of the local exchange network and universal service policy development and advocacy. Previously, I had responsibilities relating to jurisdictional separations and rate development. This declaration is prepared in support of the above-captioned formal complaint by Qwest against OmniTel. I make the statements in this declaration based

upon my personal knowledge and my review of Qwest records maintained in the ordinary course of business and prepared in anticipation of this litigation.

2. The purpose of this Declaration is to demonstrate that OmniTel's use of the National Exchange Carrier Association ("NECA") high band rate, given its level of switched access demand per line results in profit margins well above what could be sustained in a competitive market or what would be sustainable under standard "rate reasonableness" analysis conducted by the FCC (in any of its forms). I have already analyzed the relationship between switching and transport costs and traffic in the context of rate of return regulation and carrier costs in an affidavit originally filed in a complaint proceeding but subsequently entered by the Commission into this docket.[1] A copy of that declaration is attached hereto. In this Declaration I compare (1) the revenues collected by OmniTel, whose rates are benchmarked to the NECA band 8 against (2) the settlement to which OmniTel would be entitled under the NECA average schedules. Because the cost per minute for switching and transport decline dramatically below the NECA switched access rates, access stimulation by OmniTel results in the use of rates that are not just and reasonable. Specifically, I explain below why the revenues received by OmniTel based on the NECA rates are unreasonable when compared to a similarly situated NECA pool company serving a rural area with the same number of lines and usage.

3. First, I note that the Federal Communications Commission (the Commission) created a rule (61.26), known as the rural exemption, to tie rural CLEC access rates to the NECA rates charged by rural ILECs. The Commission developed this

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[1] *See In the Matter of Establishing Just and Reasonable Rates for Local Exchange Carriers*, Notice of Proposed Rulemaking, 22 FCC Rcd 17989, 17996 ¶ 16, n.44 (2007). *And see In the Matter of Qwest Communications Corporation v. Farmers and Merchants Mutual Telephone Company,* Memorandum Opinion and Order, 22 FCC Rcd 17973 (2007) ("*Qwest v. Farmers*"), *on recon.*, 23 FCC Rcd 1615 (2008).

rule to create parity between rural CLECs competing with NECA carriers and those competing with non-rural ILECs.[2].

4. Second, I show how the Commission's parity principle is violated by OmniTel's use of the NECA rate. The Commission approves average-schedule settlement formulae for use by NECA. These formulae recognize that when traffic volumes are at the level of OmniTel's volumes the NECA settlement per MOU is approximately 1/10 the level of the rate OmniTel charges Qwest.

5. In short, this Declaration shows that when OmniTel billed Qwest and other IXCs for terminating access under the rural exemption rule at the NECA tariff rate for its highest switched access rate band, those bills reflect figures that exceed the settlement that any similarly situated average schedule NECA member can receive based on the approved NECA average schedule formulae. Therefore, the rates charged by OmniTel are unjust and unreasonable because they result in revenues 10 to 12 times larger than an average schedule rural ILEC serving comparable interstate traffic.

I. NECA's FCC-Approved Average Schedule Settlement Formulae Calculate the Settlements for Small Rural NECA Carries. Therefore, the Average Schedule Settlement Formulae Results Represent a Sound Methodology to Determine a Rural CLEC's Parity with a Similarly-Situated NECA Carrier.

6. The Commission approves the formulae used to calculate settlements for average-schedule companies in the NECA access-charge pool. These formulae are used to calculate the recovery due to average-schedule companies for their provision of interstate access services. The average schedule formulae are based upon statistical

[2] Seventh Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 96-262, released : April 27, 2001, FCC 01-146, ¶66.

analyses of data for cost and average schedule companies within the NECA pool. The formulae are proposed annually by NECA, put out for comment, and ultimately approved (with or without modification) by the Commission.[3] Thus, settlements produced using the NECA settlement formulae represent Commission-endorsed estimates of a small carrier's costs plus the authorized rate of return.

7. The average schedule formulae for traffic sensitive settlements include the following elements: end office local switching charges; transport termination charges; transport facility charges; and SS7 signaling charges.

8. In the Commission's Memorandum Opinion and Order in Qwest's complaint against Farmers and Merchants Mutual Telephone Company, the Commission agreed with Qwest that it is appropriate to use the results of applying the NECA average schedule formula for the purpose of determining whether a rate of return regulated ILEC overearned.[4]

II. NECA Settlement Formulae Inputs

9. There are five inputs to the NECA settlement formulae: the number of access lines; the number of interstate access minutes; the number of interstate circuit miles; the number of interstate circuits (which determine the number of circuit terminations) and the number of exchanges. The most critical inputs to the NECA settlement formulae are the number of interstate access minutes terminating in the network of the rural LEC, the number of access lines to which the traffic terminates, the number of switched circuits carrying the traffic, and the number of interstate circuit miles of transport. The final input, the number of exchanges, is not a well defined input, nor is

[3] *See* 47 C.F.R. § 69.606; *National Exchange Carrier Association, Inc. 2008 Modification of Average Schedules*, 23 FCC Rcd 8479 (2008).

the settlement amount highly sensitive to this input. The fewer the exchanges, the lower the settlement. OmniTel's web site[5] indicates that free calling exists between all the communities it serves, which would indicate its service territory represents a single exchange. However, Farmers of Riceville, OmniTel's affiliate that had housed the traffic pumping operation prior to July 2007, has four exchanges according to NECA. For the purposes of this analysis, I used four exchanges as the input in order to produce a conservative result.

10. In order to determine the access line count for OmniTel I examined the data available from USAC reports for CETC lines. I examined both the USAC HC-19, which reports CETC lines by incumbent study area for ICLS and the USAC HC-20, which reports CETC lines by incumbent study area for IAS. OmniTel has no lines eligible to receive ICLS in ILEC rate of return areas. However, Omnitel serves 1,575 lines as of third quarter 2008 in the incumbent territory of Iowa Telecom. This is a reduction of 110 lines (6.5 percent) from third quarter of 2007.

11. The next input I examine is interstate access minutes. The derivation of the OmniTel interstate access minutes is not as straightforward a process as determining the OmniTel access lines, since OmniTel does not have any mandatory reporting of usage as a CLEC. The methodology to determine OmniTel's interstate access minutes in based on the examination of the bill that OmniTel rendered to Qwest in October 2008. The monthly interstate billed usage for Qwest for October 2008 was over two million minutes. Qwest's usage represents just a fraction of the total interstate access minutes passing between IXCs and OmniTel. In this case, the best available proxy to estimate

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[4] *Qwest v. Farmers*, 23 FCC Rcd at 17983 ¶ 25.
[5] http://www.omnitel.biz/localtelephone.shtml

Qwest's portion of total interstate traffic is to examine Qwest's 2007 interstate traffic to and from Farmer's of Riceville compared to the total interstate access minutes Farmers of Riceville reported to NECA[6] for the same time period. This NECA report shows that Farmers of Riceville had nearly 273 million interstate minutes in 2007. Qwest's percentage of that traffic was six percent. It is reasonable to assume that Qwest also carries six percent of the traffic to OmniTel, since OmniTel assumed the Farmers of Riceville traffic pumping operations and no significant changes were made to its network operations. However, I also calculated OmniTel's total traffic as if Qwest doubled its percentage of total interstate access minutes from the percentage carried to Farmers of Riceville. Therefore, based on OmniTel's October 2008 bill to Qwest, I created two interstate traffic levels to estimate a reasonable range of settlement for an OmniTel-like average schedule company.

12. Once the interstate access minutes are estimated, the calculation of the number of interstate transport circuits and the interstate circuit miles is straightforward. The number of interstate transport circuits are calculated by dividing the number of interstate access minutes per month by an average usage per circuit per month of 9000[7] minutes of use. Since OmniTel bills Qwest for interstate transport for two different transport segments (one from the INS access tandem to the Host switch and one from the Host switch to OmniTel's a Remote switch), the number of transport circuits are doubled. Lastly, the interstate transport circuit miles are calculated. Each interstate transport circuit from the INS access tandem switch to the OmniTel Host switch is multiplied by the 112 mile distance between the DesMoines, IA location of the INS access tandem and

[6] http://www.fcc.gov/wcb/iatd/neca.html - "MOU_Report_2003_2007" Tab 7
[7] This is an industry rule of thumb that has been used at least since the ENFIA tariffs pre-divestiture.

the Rudd, IA location of the Host switch. Additionally, the interstate transport circuit miles from the Host switch in Rudd, IA to its five sub-tending remote switches is determined by multiplying the Host-Remote interstate transport circuits by the maximum distance of 18 miles to the Remote switches. Again, using this maximum distance provides a calculation of a higher settlement and therefore represents a conservative assumption to compare the OmniTel's billing rate versus the NECA settlement per minute.

III. Application of NECA Formulae

13. Application of these figures to the NECA settlement formulae demonstrates that OmniTel's access costs, as represented by the NECA settlement that a comparable rural ILEC in the pool would receive, is a small fraction of OmniTel's charges. In fact, the output of the NECA settlement formulae is startling in comparison to the per-minute charges that OmniTel assesses Qwest for the same level and pattern of interstate traffic. In October 2008 OmniTel billed Qwest $114,297 for 2,057,010 minutes of interstate usage or $0.056 per minute. Assuming Qwest's traffic represents 6 percent of OmniTel's total interstate minutes, an average schedule company with that level of usage would receive a settlement per minute of $0.0047 or approximately 1/12th the amount that OmniTel bills Qwest per minute. Even if you assume that Qwest carries double that proportion of traffic (12 percent of the interstate traffic to OmniTel), an average schedule company with that level of usage would receive a settlement per minute of $0.0054 or approximately 1/10th the amount that OmniTel bills Qwest per minute.[8]

[8] OmniTel's May 2009 bill was for 1,187,297 minutes. Based on inputting these reduced minutes into the formulae, the settlement per minute is $.0052 and $.0065 assuming QCC represents 6% and 12% of OmniTel's total traffic, respectively. Even at these reduced usage levels, the settlement per minute is between 1/11th and 1/8th the rate of the NECA band 8 rate of $.056 that OmniTel charges.

14. The NECA band 8 rates are designed for NECA's smallest members with the least amount of lines and interstate switched access traffic. Using the lines, circuits, and circuit miles of OmniTel and the average schedule formulae, I can calculate the amount of monthly usage that produces an average schedule company settlement that is equivalent to the NECA band 8 composite rate of $0.056 that OmniTel has been billing Qwest. The total usage equates to 490,000 minutes per month. Every month that OmniTel exceeded 490,000 interstate access minutes of usage was a month when OmniTel's use of NECA band 8 rates caused its revenues to exceed the average company settlement that a similarly situated NECA average schedule company would receive. Assuming Qwest's portion of the total traffic is 6 percent, every month that OmniTel has exceeded 29,400 minutes of use is a month that it has billed Qwest an unreasonable rate. OmniTel has billed Qwest over 29,400 minutes every month since July 2007.

15. If Farmers of Riceville had not transferred its access stimulation operations to OmniTel in July 2007 and instead chose to remain outside of the NECA pool, it would have been required to file new tariff rates to reflect its increased traffic caused by the access stimulation. Part 69 - specifically 69.39(b)(2)(ii) - requires: "For subsequent filings, an amount calculated to reflect the Traffic Sensitive average schedule pool settlement the carrier would have received if the carrier had continued to participate, based upon the most recent average schedule formulas approved by the Commission." Based on the average schedule formulae approved for the year beginning July 1, 2007 and Farmers of Riceville's 2006 minutes and lines, this filing would have resulted in a tariff rate that is 88 percent less than the NECA band 8 composite rate for local switching and local transport that OmniTel is charging currently. Had it filed its own tariff outside

the NECA pool in 2007, Farmers of Riceville's composite rate for local switching and local transport would have been $0.0067.[9]

16. Thus, the NECA settlement formulae, approved by the Commission, reflect principles and statistical methods that provide rural average schedule companies adequate cost recovery, including an interstate return on rate base of 11.25 percent. When a rural CLEC, such as OmniTel, charges rates that generate revenues far beyond the settlement that a rural average schedule ILEC can receive for comparable traffic, the profit levels become extraordinary. Of course, rural CLECs rarely have investment greater than a fraction of that of a rural ILEC because the average schedule formulae are based on embedded costs. However, even if OmniTel did have the same level of investment as the rural ILEC, the profit levels earned by access stimulation would be astronomical.

17. These profit levels are more than sufficient to subsidize competitive "free" conferencing, chat line and other similar services.

18. This concludes this Declaration.

[9] Similarly, if Farmers of Riceville had not transferred the traffic associated with its free calling services to OmniTel when it reentered the NECA pool in July of 2007, assuming its traffic remained at the level it experienced in 2006, its settlement from the pool would also have resulted in a per minute settlement of $.0067.

I, Peter Copeland, declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Peter Copeland

Peter Copeland

Date: June 9, 2009