COMMONWEALTH OF KENTUCKY

KENTUCKY PUBLIC SERVICE COMMISSION

COUNTY OF Cook

STATE OF Illinois

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared Debra Aron, who being by me first duly sworn deposed and said that she is appearing as a witness on behalf of BellSouth Telecommunications, Inc. d/b/a AT&T Kentucky, AT&T Communications of the South Central States, LLC, BellSouth Long Distance, Inc. d/b/a AT&T Long Distance Service, and TCG Ohio (collectively "AT&T") before the Kentucky Public Service Commission in Docket Number 2010-00398, *In the Matter of: An Investigation Into the Intrastate Switched Access Rates of All Kentucky Incumbent and Competitive Local Exchange Carriers*, and if present before the Commission and duly sworn, her statements would be set forth in the annexed direct testimony consisting of 14 pages and 2 exhibits.

Debra Aron

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 20th DAY OF JUNE, 2011

Notary Public

OFFICIAL SEAL
LESLEY BATES
Notary Public - State of Illinois
My Commission Expires Jun 25, 2011

My Commission Expires: 6/25/11

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DIRECT TESTIMONY OF DR. DEBRA J. ARON

On Behalf of

BellSouth Telecommunications, LLC, d/b/a AT&T Kentucky,
AT&T Communications of the South Central States, LLC, BellSouth Long Distance, Inc.
d/b/a AT&T Long Distance Service, and TCG Ohio

BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION
Administrative Case No. 2010-00398

July 8, 2011

******* EDITED VERSION *******

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I. Introduction and Qualifications

Q: PLEASE STATE YOUR NAME AND POSITION.

A: My name is Debra J. Aron. I am Principal and Managing Director at Navigant Economics and Adjunct Associate Professor at Northwestern University. Navigant Economics is an economics and finance consulting firm that provides economic expertise for litigation, regulatory proceedings, policy debates, and business strategy. My business address is 1603 Orrington Avenue, Suite 1500, Evanston, IL, 60201.

Q: PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS.

A: I received a Ph.D. in economics from the University of Chicago in 1985, have taught economics at Northwestern University for most of the last 25 years, and have presented testimony on communications issues for over 14 years. I currently teach a graduate course in the economics and strategy of communications industries at Northwestern University. I was an Assistant Professor of Managerial Economics and Decision Sciences from 1985 to 1992, at the J. L. Kellogg Graduate School of Management, Northwestern University, and a Visiting Assistant Professor of Managerial Economics and Decision Sciences at the Kellogg School from 1993-1995. I was named a National Fellow of the Hoover Institution, a think tank at Stanford University, for the academic year 1992-1993, where I studied innovation and product proliferation in multiproduct firms. I have published articles on communications markets, multiproduct firms, innovation, incentives, and

pricing in several leading academic journals, including the *American Economic Review*, the *RAND Journal of Economics*, and the *Journal of Law, Economics, and Organization*.

Q: DR. ARON, HAVE YOU TESTIFIED IN REGULATORY PROCEEDINGS BEFORE REGARDING TELECOMMUNICATIONS ISSUES?

A: Yes. I have consulted on numerous occasions to the telecommunications industry on competition, costing, pricing, incentives, and regulation issues in the United States and internationally. I have testified before regulatory agencies and in judicial proceedings regarding the history, development, and trends in the telecommunications marketplace, pertaining both to wireline and wireless (terrestrial and non-terrestrial) technologies; economic and antitrust principles of competition in industries undergoing deregulation; measurement of competition in telecommunications markets; the proper interpretation of Long Run Incremental Cost and its role in pricing; the economic interpretation of pricing and costing standards in the Telecommunications Act of 1996 ("TA96" or "the Act"); limitations of liability in telecommunications; Universal Service; and the pricing for mutual compensation for call termination. Additionally, I have submitted affidavits to the Federal Communications Commission ("FCC") on a variety of topics including competition in telecommunications markets, economic principles of cost analyses, economic principles relevant to unbundling obligations, and empirical assessment of market power. I have consulted to carriers in Europe, Australia, Israel, and Latin America on interconnection and competition issues, and have consulted on issues pertaining to local, long-distance, broadband, wireless, and equipment markets. I have served as a testifying expert in various litigation matters involving wireless companies, satellite

telephony, and other communications technologies. In addition, I have consulted in other industries regarding potential anticompetitive effects of bundled pricing and monopoly leveraging, market definition, and entry conditions, among other antitrust issues, as well as matters related to demand estimation and employee compensation and contracts. I recently testified in New Jersey and in Arizona regarding access reform in proceedings similar to this one, and before the Telecommunications Committee of the Washington State Legislature on the consumer benefits of switched access reform. I also submitted written testimony in the proceeding before the Public Service Commission of Kentucky (the "Commission") that was initiated to review the intrastate switched access rates of the Windstream Companies in Kentucky,[1] and presented my research on the effects of intrastate access reform at the 38th Conference on Communication, Information, and Internet Policy (TPRC) at the George Mason University School of Law in October, 2010, to the Access Reform Working Group of North Carolina, and at the Humphrey School of Public Affairs at the University of Minnesota.

My professional qualifications are detailed in my curriculum vitae, attached as Exhibit DJA-1.

[1] Direct Testimony of Dr. Debra J. Aron (July 14, 2010), and Rebuttal Testimony of Dr. Debra J. Aron (August 13, 2010), *In the Matter of MCI Communications Services, Inc., Bell Atlantic Communications, Inc., NYNEX Long Distance Company, TTI National, Inc., Teleconnect Long Distance Services & Systems Company and Verizon Select Services, Inc., v. Windstream Kentucky West, Inc., Windstream Kentucky East, Inc. – Lexington and Windstream Kentucky, East – London*, Case No. 2007-00503.

II. Context, Purpose, and Organization of This Testimony

Q: WHAT IS YOUR UNDERSTANDING OF THE SCOPE OF THIS PROCEEDING?

A: According to the Order issued by the Commission on November 5, 2010,[2] this proceeding will cover the following major issues:

1. Should Kentucky transition to a cost-based system for access rates?
   a. If yes, then how should carriers be allowed to recover the revenue lost by the transition to a cost-based system (i.e., increasing local rates, establishment of a universal service or rate re-balancing fund, etc.)?
   b. How much time should carriers be given to transition to a new cost-based system and adapt to the new methods for revenue recovery?
   c. What are the competitive advantages or disadvantages of having one revenue recovery method versus another?
2. Would competition suffer greater harm by having higher access rates, higher local exchange rates, or having other higher intrastate rates?
3. Federal regulation currently requires CLECs to mirror the interstate access rates of ILECs, unless specific cost-justification is provided for having higher interstate rates. Should Kentucky implement this same policy for the intrastate rates for CLECs?
4. Should the Commission establish a goal of ultimately moving to a zero rate for access charges?[3]

Q: PLEASE EXPLAIN THE PURPOSE OF YOUR DIRECT TESTIMONY.

A: The purpose of my direct testimony is to respond to certain of the issues laid out by the Commission in its November 2010 Order on the basis of sound economic and policy principles, and to explain the economic analysis and evidence supporting my conclusions. Specifically, I will address questions 1, 1a, 1c, 2, and 3. Dr. Oyefusi, also filing testimony

[2] Order, *In the Matter of An Investigation into the Intrastate Switched Access Rates of all Kentucky Incumbent and Competitive Local Exchange Carriers*, November 5, 2010.

[3] The Commission also lists in its Order an additional issue numbered 4a. I have not included this issue, because it is identical to issue 2b.

on behalf of AT&T in this proceeding, will respond to questions 1b and 4, as well as commenting on the other questions.

Q: COULD YOU BRIEFLY SUMMARIZE YOUR RESPONSES TO THE QUESTIONS YOU ARE ADDRESSING?

A: Yes.

1. Should Kentucky transition to a cost-based system for access rates?

In this proceeding, Kentucky should transition to a *more* cost-based system by reducing intrastate access rates to interstate levels. This will benefit consumers, improve economic efficiency, and promote competition on the merits, among other benefits. Harmonizing interstate and intrastate rates will eliminate certain destructive arbitrage practices, and will establish a platform for future reductions that can be coordinated at the interstate and intrastate level if the FCC institutes further reforms, thereby unambiguously improving social welfare in this proceeding while avoiding any need to engage in cost analysis at the state level.

a. If yes, then how should carriers be allowed to recover the revenue lost by the transition to a cost-based system (i.e., increasing local rates, establishment of a universal service or rate re-balancing fund, etc.)?

ILECs should be allowed the opportunity to recover the revenue lost by being granted flexibility to increase local rates. If the necessary increase in local rates exceeds a level that is palatable to the Commission in the short run, rates should be permitted to increase to a benchmark level and the remainder should be recovered from a state Universal Service fund, to be decreased over time as the permitted local rate increases. Using a benchmark mechanism, the Commission can set the level of retail rate flexibility it deems acceptable and allocate recovery of forgone access revenues between Universal Service support and potential retail rate increases.

CLECs should be allowed to use their pricing flexibility to recover the revenue lost by increasing local rates.

c. What are the competitive advantages or disadvantages of having one revenue recovery method versus another?

Competition maximizes the benefits to consumers when carriers compete on their merits, undistorted by asymmetric subsidy obligations or subsidy entitlements. When wireline long distance companies (and, ultimately, their consumers) must fund a subsidy obligation while providers of long

distance communications using alternative technologies (and, ultimately, their consumers) do not, competition is impeded. Moreover, when wireline local exchange companies are permitted to extract subsidies from other companies, rather than having to recover their costs from their own customers, competition is impeded. Hence, from a competition standpoint, the most efficient revenue recovery method is to require each company to seek to recover its costs of providing local exchange service from its own customers via its retail prices; there are no competitive advantages to other recovery methods. From a policy standpoint, however, the Commission may choose to phase in ILECs' permitted retail rate increases over a period of time, with the remaining forgone revenues recovered from a state universal service fund, which would decrease over time.

2. *Would competition suffer greater harm by having higher access rates, higher local exchange rates, or having other higher intrastate rates?*

Competition suffers from excessive access rates. Competition benefits, rather than suffers, from allowing local exchange rates (and possibly other intrastate rates) to rise to a cost-recovering level, to the extent the market permits such increases. Hence, reducing access rates and permitting at least partial recovery of forgone revenues through higher local exchange rates both benefit competition. They also benefit consumers directly in a variety of significant, concrete ways, the most direct being a material reduction in wireline long distance.

3. *Federal regulation currently requires CLECs to mirror the interstate access rates of ILECs, unless specific cost-justification is provided for having higher interstate rates. Should Kentucky implement this same policy for the intrastate rates for CLECs?*

Kentucky should follow the FCC's lead and require CLECs to limit their intrastate access rates to the rate of the ILEC with which they compete. The FCC does *not* provide an exception if CLECs can cost-justify higher access rates, and neither should Kentucky. There is no economic justification for permitting CLECs to charge higher rates than the ILEC with which they compete even if their costs are higher than the relevant rate, and therefore there is no need for the cost-justification exception. CLECs should be required to limit their intrastate access rates to the intrastate rate of the ILEC with which they compete because doing so would impose on CLECs the requirement to compete on their merits by recovering more of their costs from their retail customers, and would limit their ability to exercise their access monopoly by charging excessive access rates.

Q: PLEASE DESCRIBE THE ORGANIZATION OF YOUR TESTIMONY.

A: My testimony is organized as follows: Section III provides an overview of the role of access reform in the modern telecommunications market place. Section IV explains the history of the telecommunications policies in the U.S. that led to the current distorted access price regime, and the reforms that have been adopted at the federal level to partially address these distortions. Section V describes the existing switched access regime in Kentucky and how the intrastate switched access rates paid by wireline long distance carriers to LECs in Kentucky greatly exceed the corresponding interstate switched access rates, and also greatly exceed the rates paid by CLECs for local call termination and the rates paid by wireless companies for call termination, even though all of those functions are materially the same as intrastate switched access services provided to wireline long distance companies. In Section VI, I describe the economic harms to consumers and competition that result from the existing asymmetries and inconsistencies of the current access regime, as well as the perverse incentives for regulatory arbitrage created by the distortions of the existing switched access regime. I explain that reducing intrastate access charges to parity with interstate access rates would benefit consumers and competition, and reduce incentives for carriers to pursue wasteful and opportunistic arbitrage opportunities.

Section VII explains why, in light of the forgoing analysis, the Commission should order incumbent local exchange carriers ("ILECs") to decrease intrastate access rates to interstate levels, and order competitive local exchange carriers ("CLECs") to cap their rates at the level of the ILEC with which the CLEC competes. I explain that this policy

will bring intrastate access charges in Kentucky closer to the ILECs' costs, thereby enhancing economic efficiency. I also explain the unique regulatory and market characteristics of switched access that endow all LECs, including CLECs, with market power over access to their own customers, necessitating the proposed regulatory intervention. In Section VIII, I explain that access rate reductions must be seen as part of a holistic and revenue-neutral approach that allows ILECs to recover the forgone access revenues from higher retail rates and, if necessary, from a Kentucky Universal Service Fund ("KUSF"). Providing ILECs the flexibility to increase retail rates as part of an access reform effort to reduce implicit subsidies and move retail prices closer to cost reduces competitive distortions and increases economic efficiency. Section IX summarizes the benefits to consumers and the economy from reforming intrastate access rates to interstate levels.

III. Overview of the Principles of Access Reform

Q: DR. ARON, COULD YOU PLEASE PROVIDE AN OVERVIEW OF THE PRINCIPLES OF ACCESS REFORM IN THE MODERN TELECOMMUNICATIONS ECONOMY AND YOUR CONCLUSIONS FROM THEM?

A: Yes. The current switched access system is an anachronistic regulatory mechanism by which wireline long distance customers subsidize the Public Switched Telephone Network (PSTN) via implicit subsidies built into certain interconnection prices known as "intrastate switched access rates," as I explain in the next section. This system is no longer viable. Customers are fleeing wireline long distance service for other technologies, so the access

subsidy burden falls on the shoulders of fewer and fewer remaining customers—namely, those who are less comfortable with new technologies and/or less able to adopt alternative technologies, and therefore who remain with wireline long distance service despite the access-inflated prices. In this environment, the legacy access system is increasingly dysfunctional, not only in its ever-declining ability to achieve its own purpose of providing universal service support for the PSTN, but as an ever-increasing source of consumer harm, competitive distortion, consumer inequities, and arbitrage opportunities. In addition, the current system is incompatible with the ongoing transition to the increasingly IP-oriented (internet-based) communications world.

Regulators must migrate from the arcane, backward-looking regulatory mechanism of embedded subsidies in excessive switched access rates to a forward-looking mechanism that will accommodate the transition from the wireline circuit-switched network of the past to the wireless and IP-based networks (or other technologies) of the present and future. Just as national public policy goals are transitioning from a focus on voice service to a focus on broadband adoption, the public policy mechanisms must support and facilitate those new goals. As a first step in migrating to a new, more technologically neutral and flexible regulatory system, the Commission should, in this proceeding, order all local exchange companies in Kentucky to decrease their intrastate switched access rates so as to harmonize the intrastate access rates in Kentucky with the federal rates. Currently, the intrastate access rates charged by wireline LECs other than AT&T for originating and terminating long distance telephone calls to their customers are far above

the rates that the same LECs charge to originate and terminate interstate calls, even though the functionality provided is the same. The LECs' intrastate switched access rates are even farther above the rates that the same LECs charge for the same functionality provided to CLECs to terminate local calls, and to mobile wireless service providers to terminate most intrastate wireless calls.

Specifically, ILECs should reduce their rates to the levels and structure of their corresponding interstate switched access rates. Each CLEC should reduce its intrastate access charge levels and structure to that of the ILEC with which it competes in a specific area. Doing so would bring intrastate access rates to more efficient levels both by bringing them closer to the incremental costs of providing switched access functionality, and by eliminating the arbitrary and significant gap between interstate and intrastate rates, which creates incentives for arbitrage activities. It would also bring intrastate switched access rates closer into line with the fees LECs charge to intermodal competitors for the same functionality, thereby reducing competitive distortions between providers of long distance services using different technologies. This is a reasonable, modest step because the interstate rates to which intrastate rates would conform were extensively vetted in the federal arena and have been in effect for over a decade. The Commission should then, going forward, continue to harmonize its policy with the federal policy if and when the FCC carries out additional reform of the switched access and universal service support systems.

Harmonizing intrastate rates with the interstate jurisdiction is not new in Kentucky. This Commission endorsed the policy of access mirroring well over a decade ago when it required AT&T Kentucky to mirror its intrastate rates to its interstate rates, to the benefit of consumers in Kentucky.[4] The time is past due for the reform that this Commission began 16 years ago to be applied equally to all LECs in Kentucky. Bringing the intrastate access rates into alignment with ILECs' interstate charges, and bringing them more into alignment with rates charged to intermodal competitors and to other wireline providers for the same functionality, benefits consumers and competition and would promote the public interest.

The benefits of access reform in Kentucky would include the following:

- Consumers would benefit directly by paying less for long distance service, and by using wireline long distance service more frequently in situations where they were otherwise discouraged from doing so by higher prices;
- Local service customers would pay retail prices that are closer to the costs of providing the service, which is consistent with the principle of cost causation, and facilitates more efficient consumer decisions between technologies;
- Competition between technologies would be more soundly based on their relative merits, rather than distorted by an access regime that imposes costs on wireline long distance providers but from which providers using alternative technologies are largely or entirely exempt;
- Innovation, customer service, and vigorous competition would be promoted by requiring local service providers to recover more of their costs of providing local exchanges service from their own local service end-users rather than obtaining forced subsidies from other companies;

[4] Order, *In the Matter of Application of Bell South Telecommunications, Inc., d/b/a South Central Bell Telephone to Modify Its Method of Regulation,* Case No. 94-121, July 20, 1995, (hereafter *1995 BellSouth Regulation Plan Order*).

- Arbitrage opportunities such as call-pumping schemes that exploit access payers would be reduced, saving resources that are currently wasted on enforcing traffic distinctions that have no economic or functional basis but have significant cost implications for access payers under the current system;
- The disproportionate and, certainly, unintended incidence of the subsidy burden the access system now imposes on a decreasing subset of consumers—including low-income consumers in AT&T Kentucky's footprint and disproportionately older or less technologically savvy consumers throughout the state—would be spread more equitably on all consumers through a KUSF and/or would be eliminated entirely as retail rates more closely reflected costs;
- Harmonizing the intrastate system with the interstate rates would move Kentucky in the direction of a more flexible, transparent, and equitable regulatory mechanism that is better able to facilitate the transition to a new technology paradigm and is more consistent with Congress's directive that universal service subsidies must be explicit, not implicit.

IV. <u>The Legacy Access Regime is No Longer Viable</u>

A. Switched Access Charges Were Originally Set to Provide "Implicit Subsidies" for Below-Cost Local Service Prices

Q: WHAT IS "SWITCHED ACCESS"?

A: Switched access is the service that a LEC provides to a long distance provider to transport the portion of the long distance call that begins or terminates on the LEC's facilities. Consider, for example, a customer who subscribes to the long distance service of AT&T Communications, and the local exchange service of Insight Communications, a CLEC in Kentucky. Suppose that the customer makes a long distance call to a friend who receives local exchange service from Windstream, an ILEC in Kentucky. AT&T Communications, the long distance provider in this example, does not have a direct connection to either customer but its network is interconnected with the local exchange facilities of both

Insight and Windstream. When that call is dialed, it will travel over Insight's communications path, or "loop," from the calling customer's home to Insight's switch. Insight's switch will determine that the customer uses AT&T Communications for long distance service, and it will route the call to Insight's transport facilities that connect with AT&T Communications' network. From that point, AT&T Communications will transport the call to a point of interconnection with Windstream near the called party, where it will hand off the call to Windstream for delivery to the called party. Insight's delivery and handoff of the call from the calling customer's premises to AT&T Communications' point of interconnection is called originating switched access service, and Windstream's receipt of the call and delivery to the called party is called terminating switched access service. On both sides, the access supplier (the LEC) provides the connection to an end-user.

Although the access services are identical regardless of the distance between the parties, the service is known as "intrastate switched access service" if the calling and called parties are in the same state and is known as "interstate switched access service" if the calling and called parties are located in different states. The distinction is jurisdictional, not functional.

Consider another scenario. Suppose the customer served by the CLEC Insight makes a *local* call to a neighbor who is served by Windstream. In that case, Insight must transport the call to Windstream's network for delivery to the called party. The terminating function that local exchange company Windstream provides to local exchange company

Insight is the same in all material respects as the terminating function that Windstream furnished to long distance provider AT&T Communications in the previous scenario. The termination service provided by Windstream in this scenario has the same economic characteristics as in the first scenario, but for historic reasons goes by a different name ("local interconnection").

Q: WHAT ARE SWITCHED ACCESS CHARGES?

A: "Switched access charges" (or, in shorthand, "access charges") is the regulatory term of art applied to the prices that wireline local telephone companies charge to wireline long distance providers to furnish switched access service. Access charges are a payment from one company to another (i.e., they are "intercarrier" charges) that derive from the fact that networks are interconnected and a call may have to traverse more than one carrier's network to be completed. In Kentucky, a LEC charges intrastate access fees for the origination or termination of long distance wireline circuit switched calls that originate *and* terminate in Kentucky.

When the terminating functionality is provided by one LEC to another LEC under a local area calling arrangement (i.e., "local interconnection"), the call-termination functionality provided is the same as the functionality provided to terminate a long distance call, but the service is priced under a different regulatory regime and is called "reciprocal compensation."

For purposes of this testimony, I will use the term "access/interconnection regime" to mean the entire set of regulator-approved charges that wireline LECs charge to other

carriers—wireline, wireless, incumbents, and CLECs—for the function of originating or terminating calls, whether local or long distance, intrastate or interstate.

Q: DO WIRELINE PROVIDERS, CLECS, INTERCONNECTED VOIP PROVIDERS, AND WIRELESS PROVIDERS USE SWITCHED ACCESS SERVICE, OR THE EQUIVALENT FUNCTIONALITY, PROVIDED BY WIRELINE LOCAL TELEPHONE COMPANIES?

A: Yes. Though the terminology "switched access service" is used to describe the origination and termination functions that wireline local exchange companies provide for wireline long distance calls, the local exchange companies also provide the same interconnection functionality to companies using all of these other technologies. The service may fall under different artificial regulatory categories and go by different names, but all of these companies use the comparable service, because any time one of their customers calls a customer of a wireline local telephone company using the customer's wireline telephone number, that wireline local telephone company must deliver the call to its customer (i.e., the called party). The current access/interconnection regime applies to all these different kinds of providers and calls under a mosaic of mismatched regulatory policies and rules. This results in a broad range of different prices being charged for the same functionalities, which in turn derives from a regulatory history that has not been reformed in step with the technological and competitive changes in the industry.

Q: CAN YOU PROVIDE AN EXAMPLE OF THE PATCHWORK REGULATORY APPLICATION OF ACCESS CHARGES THAT YOU ARE DESCRIBING?

A: Yes. Perhaps the simplest example is the mismatched regulatory treatment of interstate versus intrastate traffic. Consider a customer in Kentucky who purchases local exchange

service from Windstream and long-distance service from AT&T Communications. Windstream handles part of the call—specifically, the part that begins at the caller's location and ends at AT&T Communications' network.

The functionality provided by Windstream is the same, however, regardless of whether the called party is located in the next town, the next state, or another country. Windstream provides the dial tone, determines where the call should go, and brings it to the interconnection point with AT&T Communications' network. It is AT&T's responsibility to transport the call to the carrier serving the called party who might be a few or several thousands of miles away. Nevertheless, the price that Windstream would charge AT&T for the call origination service in this example would differ depending on whether the called party happens to be in Kentucky or in another state. In fact, the charge would be much *higher* if the called party were in Kentucky.

As an analogy, consider the job of a taxicab driver who picks up passengers at home and drives them to Lexington's Blue Grass Airport. The driver's job is the same whether the passenger is going to catch a flight to Covington, Chicago, or Houston, and one would expect the taxi fare to be the same. The current access charge system in the United States, however, is akin to the taxicab driver asking the passenger where she is flying to once she gets to the airport, and charging a much higher fare for the ride from home to the airport if she is flying to Covington than if she is flying to Houston or Chicago.

Similarly, on the terminating end of a telephone call, when an AT&T Communications long distance customer in New York places a call to a Windstream local customer in

Kentucky, AT&T Communications hands that call off to Windstream in Kentucky for final delivery to the customer. Windstream's functions in terminating the call are the same, regardless of whether the long distance call comes in from New York or a neighboring town in Kentucky—just as a taxi driver's functions in taking a passenger home from the airport are the same regardless of the city from which the passenger flew in. In fact, Windstream's functions are the same even for a local call from a next door neighbor whose local provider is not Windstream. Because of the idiosyncrasies of intercompany regulation and different jurisdictions associated with different kinds of calls and different carriers, however, the price that Windstream charges for that termination service is vastly different in Kentucky depending on where that call originated. Under the current anomalous rules, the price Windstream charges AT&T Communications to terminate a call is substantially higher if it comes from a neighboring town in Kentucky than if the call comes from New York.

Q: HOW WAS THE ACCESS CHARGE REGIME DEVELOPED?

A: Before the divestiture of the "Baby Bells" from AT&T in 1984, there was no such thing as "access charges." In the monopoly era of the late 1940s when long distance was still viewed as a luxury, the FCC and state regulators established a policy that imposed cross-subsidy obligations on long distance users to encourage universal subscription to the PSTN by holding local service prices below cost, a policy known as "universal service." These cross-subsidies were implemented through a "separations and settlements" accounting process under which some of the costs of providing customers with access to the local telephone network were attributed to the long distance network and built into the

(regulator-set) retail prices of long distance service.[5] While there is a disagreement as to their exact magnitude, there is a consensus that the separations and settlements process produced retail prices that contained significant embedded cross-subsidies from long-distance to local services.[6]

Upon the AT&T divestiture in the mid-1980s, the separations and settlements process was abolished and replaced with an access charge regime that continued the cross-subsidy policy.[7] In the access charge regime, long distance companies are required to pay a fee (the access charge) to the local exchange company or companies serving the calling and called customers of a long distance call for the functionality of handling the call at the originating and terminating ends.[8]

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5 Paul W. MacAvoy, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN LONG-DISTANCE TELEPHONE SERVICES, (Cambridge, Massachusetts: MIT Press, 1996), pp. 8-11; and Stephen Breyer, REGULATION AND ITS REFORM, (Cambridge, Massachusetts: Harvard University Press, 1982), pp. 296-298. The cost allocation formulas were known as "separations," and the revenue side of the cost allocation formulas were known as "settlements" when paid to an independent telephone company and "divisions of revenues" when paid to AT&T affiliates; Gerald W. Brock, TELECOMMUNICATION POLICY FOR THE INFORMATION AGE: FROM MONOPOLY TO COMPETITION, (Cambridge, Massachusetts: Harvard University Press, 1994), (hereafter *Brock 1994*), pp. 66-70.

6 Jerry Hausman, Timothy Tardiff, and Alexander Belinfante, "The Effects of the Breakup of AT&T on Telephone Penetration in the United States," *American Economic Review* 83, no. 2 (May 1993), p. 178; Larry Blank, David L. Kaserman, and John W. Mayo, "Dominant Firm Pricing with Competitive Entry and Regulation: The Case of IntraLATA Toll," *Journal of Regulatory Economics* 14 (1998), pp. 37, 39; David L. Kaserman, John W. Mayo, and Joseph E. Flynn, "Cross-Subsidization in Telecommunications: Beyond the Universal Service Fairy Tale," *Journal of Regulatory Economics* 2 (1990), pp. 232-235; Robert W. Crandall and Leonard Waverman, TALK IS CHEAP: THE PROMISE OF REGULATORY REFORM IN NORTH AMERICAN TELECOMMUNICATIONS, (Washington D.C.: The Brookings Institute, 1995), pp. 34-35; Alfred E. Kahn, "The Road to More Intelligent Telephone Pricing," *Yale Journal on Regulation* 1 (Spring 1984), pp. 140-144; and Peter Temin, "Cross Subsidies in the Telephone Network after Divestiture," *Journal of Regulatory Economics* 2 (1990), pp. 349-362.

7 *Brock 1994*, pp. 180, 185-186.

8 Order on Remand and Report and Order and Further Notice of Proposed Rulemaking, *In the Matter of High-Cost Universal Service Support and Federal-State Joint Board on Universal Service et al*., FCC 08-262, (rel. November 5, 2008), (hereafter *2008 NPRM*), Appendix A, ¶ 165.

In designing its new system of regulated interstate access charges, the FCC acknowledged that a system of cross-subsidies was incompatible with competition and, hence, it sought to implement procedures that reduced or eliminated them.[9] The FCC established access charges that significantly exceeded their incremental costs, but stated that it planned to reduce those access charges gradually over time.[10]

Some efforts were made in the 1980s and 1990s to reform access rates, but per-minute access rates remained—to use the FCC's characterization—"high."[11] At the time of divestiture in 1984, the interstate per-conversation-minute switched access rate was 17.26¢, and by 1996 it had declined substantially, but to the still very high rate of 6.16¢.[12] In fact, these relatively high switched access rates created an arbitrage opportunity by which new entrants built direct connections to business locations so that these business customers could bypass the switched access charges paid by the long distance companies who served them by connecting directly to their long distance providers and avoiding the LEC entirely when they made long distance calls.[13]

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9 The FCC concluded that "[a]rtificial pricing structures, while perhaps appropriate for use in achieving social objectives under the right conditions, cannot withstand the pressures of a competitive marketplace." See, Memorandum Opinion and Order, *In the Matter of MTS and WATS Market Structure*, FCC 83-356, (rel. August 22, 1983), ¶ 7.

10 *2008 NPRM*, Appendix A, ¶¶ 165-166.

11 *2008 NPRM*, Appendix A, ¶¶ 167-168.

12 "Trends in Telephone Service," Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, September 2010, (hereafter *2010 FCC Trends in Telephone Service*), Table 1.2.

13 *2008 NPRM*, Appendix A, ¶ 168; and Peter W. Huber, Michael K. Kellogg, and John Thorne, *The Geodesic Network II: 1993 Report on Competition in the Telephone Industry*, pp. 2.24-2.52.

B. The FCC, Recognizing That the Old System of Implicit Subsidies Can No Longer Be Sustained, Has Adopted Significant Reforms

Q: DID THE FCC ADOPT SIGNIFICANT REFORMS TO INTERSTATE SWITCHED ACCESS CHARGES FOLLOWING THE ENACTMENT OF THE TELECOMMUNICATIONS ACT OF 1996 ("TA96")?

A: Yes. The purpose of TA96 was to open local exchange markets to competition.[14] The inherent friction that already existed between a cross-subsidy policy and competition in long distance markets was magnified by the complete incompatibility between a cross-subsidy policy and competition in local exchange markets. TA96 therefore was the final straw in rendering the legacy system of implicit cross-subsidization of local service from long distance providers unworkable in the long term. Congress recognized, in fact, that the implicit subsidies built into the old system in which retail prices for basic local service were set below cost to encourage local subscribership while access rates were set well above cost in order to subsidize the below-cost retail prices for local service were not sustainable in a competitive marketplace. Congress, therefore, directed the FCC and the states to eliminate or replace implicit subsidies with explicit subsidies thereby moving all interstate access rates towards cost-based levels.

[14] Telecommunications Act of 1996, Preamble, (hereafter *TA96*); and, First Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, FCC 96-325, (rel. August 8, 1996), (hereafter *1996 Interconnection Order*), ¶ 3.

Q: DID CONGRESS SPECIFICALLY DIRECT THE FCC TO ELIMINATE IMPLICIT SUBSIDIES?

A: Yes, federal rules require universal service support mechanisms to be "specific, predictable, and sufficient."[15] Congress explained that, to the extent possible, "any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many support mechanisms are today."[16]

Q: DID THE FCC INSTITUTE SOME ACCESS REFORMS IN LIGHT OF THE MANDATES OF TA96 TO ELIMINATE OR REPLACE IMPLICIT SUBSIDIES WITH EXPLICIT SUBSIDIES?

A: Yes. The FCC implemented significant access reforms in May 1997, May 2000, and November 2001 with the releases of its *Access Charge Reform Order*,[17] *CALLS Order*,[18] and *MAG Order*,[19] respectively. The *Access Charge Reform Order* established rules that required the structure of access charges to more closely reflect cost-causation. The rules reduced the usage-sensitive (per-conversation-minute) interstate switched access rates by

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15 47 U.S.C. § 254(d)-(e).

16 S. Rep. No. 104-230 (1996), "Joint Explanatory Statement of the Committee of Conference," p. 131. See also Notice of Proposed Rulemaking, *In the Matter of Developing a Unified Intercarrier Compensation Regime*, FCC 01-132, (rel. April 27, 2001), (hereafter *2001 NPRM*), ¶ 32; Report and Order, *In the Matter of Federal-State Joint Board on Universal Service*, FCC 97-157, (rel. May 8, 1997), ¶ 9; and S. Rep. No. 103-367 (1994). Section 254 of *TA96* is the section of the law that pertains to Universal Service and its funding.

17 First Report and Order, *In the Matter of Access Charge Reform and Price Cap Performance Review for Local Exchange Carriers et al.*, FCC 97-158, (rel. May 16, 1997), (hereafter *1997 Access Reform Order*).

18 Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, *In the Matter of Access Charge Reform and Price Cap Performance Review for Local Exchange Carriers et al.*, FCC 00-193, (rel. May 31, 2000), (hereafter *FCC CALLS Order*).

19 Second Report and Order and Further Notice of Proposed Rulemaking in CC Docket No. 00-256, Fifteenth Report and Order in CC Docket No. 96-45, and Report and Order in CC Docket Nos. 98-77 and 98-166, *In the Matter of Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers and Federal-State Joint Board on Universal Service et al.*, FCC 01-304, (rel. November 8, 2001), (hereafter *MAG Order*).

removing fixed, non-traffic sensitive costs from these charges and requiring incumbent LECs to recover these costs through flat-rated charges to their end-user customers.[20] The FCC acknowledged that these reforms would not "remove all implicit support from all access charges immediately," however, and concluded that a process of gradually reducing interstate access charges to cost over time was warranted.[21] Over a three-year period, the average per-minute interstate switched access rate for non traffic-sensitive and traffic-sensitive rate elements (including both ends of the call) declined by over half, from 6.04¢ in January 1997 to about 2.85¢ in January 2000.[22]

The FCC and the industry nevertheless recognized that further reductions to switched access charges were warranted. The *CALLS Order* implemented further reductions to price cap ILECs' interstate switched access rates by adopting a proposal set forth by a consortium of local and long-distance providers.[23] The *CALLS Order* reduced ILECs' interstate switched access charges by reducing local switching and other traffic-sensitive rate elements. The FCC ordered large ILECs, other price cap LECs, and rural price cap ILECs to reduce their average traffic-sensitive rates to 0.55¢, 0.65¢, and 0.95¢ per minute, respectively, and established a new explicit universal support fund to help local exchange carriers offset the reduction in switched access charges received.[24]

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20 *1997 Access Reform Order*, ¶ 6.

21 *1997 Access Reform Order*, ¶ 9.

22 *2010 FCC Trends in Telephone Service*, Table 1.2.

23 See, *FCC CALLS Order*, ¶¶ 1-3. By "price cap ILECs," I mean ILECs that are subject to price cap regulation by the FCC.

24 *FCC CALLS Order*, ¶¶ 30, 32, 56, 162.

In the *MAG Order*, the FCC implemented similar reforms to the access prices that could be charged by ILECs subject to rate-of-return regulation. As with the *CALLS Order*, the *MAG Order*'s reforms were "designed to bring the American public benefits of competition and choice by rationalizing the access rate structure and driving per-minute rates towards lower, more cost-based levels.[25] The *MAG Order* provided for reductions in per-minute charges for rate-of-return ILECs and created a universal service support mechanism to replace implicit support with explicit support.[26] Interstate access rates achieved as a result of the *CALLS Order* and the *MAG Order* are substantially the interstate access rates in effect today.[27]

AT&T Kentucky, Windstream, and Cincinnati Bell are price cap LECs at the federal level and are therefore subject to the *CALLS Order*. AT&T Kentucky, as a large ILEC, was required by the *CALLS Order* to reduce its interstate rates to 0.55¢ per minute. Windstream East, as a large ILEC under the *CALLS Order*, was also required to reduce its interstate rates in Kentucky to 0.55¢ per minute. Windstream West and Cincinnati Bell, as non-rural price cap LECs, were required to reduce their interstate rates to 0.65¢.[28] Kentucky's rural LECs (i.e., the group of carriers that have filed jointly calling themselves

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25 *MAG Order*, ¶ 1.

26 *MAG Order*, ¶ 15.

27 Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, *In the Matter of Connect America Fund et al*., (rel. February 9, 2011), (hereafter *2011 NPRM*), ¶ 501.

28 *FCC CALLS Order*, ¶ 162; Cincinnati Bell's June 16, 2011 Annual Tariff Review Plan Filing, p. 6; Windstream's May 1, 2008 Annual Access Charge Support Filing, Description and Justification, p. 5; and Windstream's June 16, 2010 Annual Access Charge Support Filing, Transmittal No. 38, p. 10 and Exhibit 3A.

"the RLECs"[29] and the TDS companies) are rate-of-return LECs and subject to the *MAG Order*.

Q: DID THE FCC CONCLUDE THAT REDUCING INTERSTATE ACCESS RATES WOULD BENEFIT CONSUMERS?

A: Yes. The FCC concluded in the *CALLS Order* that the mandated restructuring and reduction of access charges would produce lower long distance prices to consumers, resulting in "significant consumer benefits."[30] The FCC drew similar conclusions in the *MAG Order*, as mentioned above.[31]

Q: HAS THE FCC ALSO SET LIMITS ON CLECS' INTERSTATE ACCESS RATES?

A: Yes. In 2001, the FCC concluded that CLECs have market power in the provision of switched access services and required that CLECs' interstate access rates in any geographic area be capped at the interstate access rates of the ILEC in that area.[32] Although the FCC identified those caps as an "interim measure" at the time, the FCC has not rescinded those caps and at least as recently as 2005, in its *Intercarrier Compensation*

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29 The Rural LECs in Kentucky are the TDS companies and the group of carriers that have filed jointly in this case and call themselves "the RLECs:" Ballard Rural Telephone Cooperative Corporation, Inc.; Brandenburg Telephone Company; Duo County Telephone Cooperative Corporation, Inc.; Foothills Rural Telephone Cooperative, Inc.; Gearhart Communications Co., Inc.; Highland Telephone Cooperative, Inc.; Logan Telephone Cooperative, Inc.; Mountain Rural Telephone Cooperative, Inc.; North Central Telephone Cooperative Corporation; Peoples Rural Telephone Cooperative, Inc.; South Central Rural Telephone Cooperative Corporation, Inc.; Thacker-Grigsby Telephone Company, Inc.; and West Kentucky Rural Telephone Cooperative Corporation, Inc. (collectively the "RLECs"). Throughout this testimony, I will refer to the TDS companies and the RLECs as "the Rural LECs."

30 *FCC CALLS Order*, ¶¶ 28, 35.

31 See also, *MAG Order*, ¶ 11.

32 Seventh Report and Order and Further Notice of Proposed Rulemaking, *In the Matter of Access Charge Reform and Reform of Access Charges Imposed by Competitive Local Exchange Carriers*, FCC 01-146, (rel. April 27, 2001), (hereafter *2001 CLEC Access Charge Reform Order*), ¶¶ 29, 31, 52.

Reform FNPRM, has reiterated its conclusion (correctly, as I will explain in Section VII) that terminating access is a monopoly for ILECs and CLECs.[33]

C. The FCC Has Recognized that Further Reform Is Needed to Facilitate Efficient Competition and Promote Efficient Deployment of Broadband Networks

Q: HAS THE FCC RECOGNIZED THAT THE CURRENT ACCESS CHARGE AND INTERCONNECTION REGIME REQUIRES FURTHER REFORMS IN LIGHT OF THE COMPETITIVE DEVELOPMENTS IN THE INDUSTRY?

A: Yes. The FCC stated in the *2001 NPRM* that the ad hoc nature of intercarrier compensation is an impediment to the development of competition,[34] and observed that "[i]nterconnection arrangements between carriers are currently governed by a complex system of intercarrier compensation regulations… [that] treat different types of carriers and different types of services disparately, even though there may be no significant differences in the costs among carriers or services."[35] The FCC has since received proposals and opened subsequent rulemakings,[36] but despite passing the ten-year mark, the FCC has yet to issue an order on comprehensive reform.

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33 See, for example, Further Notice of Proposed Rulemaking, *In the Matter of Developing a Unified Intercarrier Compensation Regime*, FCC 05-33, (rel. March 3, 2005), (hereafter *2005 Intercarrier Compensation Reform FNPRM*), ¶ 24. Regarding originating access, the FCC has not indicated any retreat from its 2001 conclusion that originating access is a monopoly service. (See, *2001 CLEC Access Charge Reform Order*, ¶ 29).

34 *2001 NPRM*, ¶¶ 1-2, 11-18.

35 *2001 NPRM*, ¶ 5.

36 *2005 Intercarrier Compensation Reform FNPRM*; *2008 NPRM*; and Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, *In the Matter of Connect America Fund et al*., (rel. February 9, 2011), *2011 NPRM*.

In its most recent proposal issued earlier this year, the FCC reiterated the urgency to reform the current access system, calling the current system "antiquated."[37] In the near term, the FCC has proposed a series of measures to address the wasteful arbitrage that stems from the current access system, as well as a plan to gradually reduce and perhaps ultimately eliminate all per-minute access charges in order to facilitate and accelerate the transition to all-IP networks.[38] The FCC has particularly expressed concern that the current system of access rates that are above incremental cost impedes the transition to all IP networks, by creating the incentive to maintain legacy networks in order to collect the access revenues.[39] Indeed, as the FCC emphasizes, the current access system in which payment for exchange of traffic is on a minute-of-use basis is fundamentally at odds with the way payment typically occurs on IP networks, which tends to be based (if there are payments at all) on the basis of bandwidth. This observation is motivating the FCC's interest in possibly eliminating all intercarrier access charges as a long term goal, and requiring carriers to recover all of their costs from their own customers.

The FCC specifically recognizes that the currently excessive interstate and intrastate access rates are causing numerous consumer harms and competitive distortions[40] and that special attention must be given to reducing intrastate rates because they are generally even higher than interstate rates.[41] The FCC expressed particular concern that the discrepancy

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37 *2011 NPRM*, ¶ 501.

38 *2011 NPRM*, ¶ 532.

39 *2011 NPRM*, ¶¶ 506, 502, 524, 495.

40 *2011 NPRM*, ¶¶ 506-507.

41 *2011 NPRM*, ¶ 552.

between interstate and intrastate rates promotes wasteful arbitrage.[42] Because it is imperative that intrastate rates be reduced, the FCC has proposed alternative methodologies for encouraging states to engage in access reform, with its first option being to encouraging states to do the work without waiting for the FCC to intervene, rewarding those that have acted to reform intrastate rates, and exercising penalties or overrides for states that have failed to do so.[43]

The FCC further recognizes that the current system of cross subsidy via intercarrier compensation is simply unworkable as a source of sustainable funding for subsidized LECs in the modern competitive telecommunications marketplace. As articulated by the FCC,

> Because the ICC system has not been reformed to reflect fundamental shifts in technology and competition in the last two decades, the current system results in considerable instability for carriers as revenues are declining at often unpredictable rates. Declining minutes for incumbent carriers have led to a concurrent decline in revenues, particularly for price cap carriers. By providing a more certain glide path for the transition to an all-IP future, intercarrier compensation reform will bring much needed predictability to the industry and investors, which will ultimately benefit consumers.[44]

Q: WHY IS A POLICY OF IMPLICIT CROSS-SUBSIDIES NO LONGER VIABLE IN TODAY'S MARKETPLACE?

A: The original purpose of legacy cross-subsidy policies was, as I explained earlier, to keep prices for residential local service artificially low, even if that meant keeping them below

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42 *2011 NPRM*, ¶ 552.

43 *2011 NPRM*, ¶¶ 544-549.

44 *2011 NPRM*, ¶ 41.

their true economic cost, to encourage universal subscription to telephone service. A key problem with that policy, however, is that it is counterproductive to the process of competition. In the long run, you can have efficient competition, or you can have implicit cross-subsidies built into regulated prices, but you cannot have both. Efficient competition is impeded and innovative investment is discouraged if retail prices are held below cost and cannot respond to market conditions (such as changes in production costs or demand).[45]

Moreover, not only are cross subsidies destructive to efficient competition, but competition ultimately undermines the cross subsidies. As excessive access rates keep wireline long distance prices higher than they would otherwise be, consumers are encouraged to switch to alternatives, such as wireless calls (which are not subject to the same level of termination costs, as I will explain shortly) and other options that bypass the PSTN entirely, such as computer-to-computer calling, social networking sites, or instant messaging. The decreased usage of wireline long distance service in turn causes access revenues to decrease, drying up the very source of subsidy that the access rates were originally designed to provide. This is precisely the dynamic at work today, which is causing the system of universal service support through implicit access subsidies to crumble.

[45] See Debra J. Aron and David E. Burnstein, "Regulatory Policy and the Reverse Cellophane Fallacy," *Journal of Competition Law & Economics* 6, no. 4, February 8, 2010.

Q: WHAT DO YOU MEAN THAT THE SYSTEM IS CRUMBLING?

A: The very premise of the system—a monopoly PSTN in which consumers have little or no choice for local communications services; long distance service clearly delineated by regulatory distinctions from local service, and long distance providers distinct from the local service carriers being subsidized; and a long distance marketplace that had emerging competition among wireline providers, but no meaningful competition from wireless, internet, or other technologies—is entirely obsolete. When instantaneous long distance communications was provided only by wireline long distance providers, burdening them and their customers with a subsidy obligation created certain inefficiencies, but did not distort competition among them and imposed the ultimate subsidy burden reasonably equitably among consumers in the sense that essentially all consumers relied on wireline long distance service and could not opt out by choice of provider. Today, consumers are increasingly using services provided over technologies that pay little or no access fees, especially wireless and internet-based services.

In fact, the way people communicate has changed dramatically over the last decade, and traditional wireline voice is just a small and shrinking component of the overall communications landscape, both for local and long distance communications. Wireless service is certainly widely available in Kentucky. As of June 2010, there were 3.7 million mobile wireless subscribers in Kentucky, compared to 1.0 million in 2000, representing a growth of 266 percent,[46] and most of the state has wireless coverage, with a significant

[46] "Local Telephone Competition: Status as of June 30, 2010," Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, March 2011, (hereafter *FCC Local*

portion of it being served by three or more wireless providers.[47] As of June 2010, 96 percent of the population in Kentucky over the age of 15 had a wireless phone.[48] In fact, customers are increasingly abandoning the PSTN and relying on wireless and internet-based services entirely. Nationwide, 29.7 percent of households have no wireline service and rely on wireless service as their local telephone service.[49]

Broadband service is also widely available in Kentucky. According to the FCC's most recent report, as of June 2010, 84 percent of homes in Kentucky where ILECs offer local telephone service have xDSL available, and 93 percent of homes where cable TV providers offer service have broadband cable service available.[50] This is consistent with national averages.[51] Moreover, while broadband adoption in Kentucky is below the

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Competition Report), Table 17, and accompanying tables in Excel format accessed at http://transition fcc.gov/wcb/iatd/comp html.

47 Fourteenth Report, *In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation of 1993 and Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, FCC 10-81, (rel. May 20, 2010), (hereafter *FCC 2010 14th CMRS* Report), Map D-13, p. 278.

48 The percentage of all residents in Kentucky with a wireless phone was 84 percent and is likely to be even higher today. *FCC Local Competition Report*, Table 17; and U.S. Census Bureau, "Population Estimates Program," http://factfinder.census.gov/home/saff/main html?_lang=en.

49 Stephen J. Blumberg and Julian V. Luke, "Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2010," Centers for Disease Control and Education (CDC), June 8, 2011.

50 "Internet Access Services: Status as of June 30, 2010," Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, March 2011, (hereafter *FCC Broadband Report*), Table 24.

51 Nationwide, 84 percent of homes where ILECs offer local telephone service have xDSL available, and 97 percent of homes where cable TV providers offer service have broadband cable service available. See *FCC Broadband Report*, Table 24.

national average,[52] it is geographically widespread throughout the state. The FCC reports that 924 out of 994 census tracts in Kentucky had at least 20 percent penetration.[53]

Moreover, as a result of the dramatic developments in wireless and internet technologies and infrastructures, the continuing advancements in handsets, the ability of a variety of new devices to provide voice and video communications, and a variety of associated innovations, consumers increasingly enjoy a rich and almost dizzying array of communications modalities, among which they choose depending on circumstances and objectives. As an example, the use of social media has soared. Facebook was launched in 2004,[54] and today it has over 500 million users, who spend over 700 billion minutes per month on Facebook.[55] Twitter was launched in 2006,[56] and just five years after its conception it not only provides a means for friends to keep track of each others' (and celebrities') whereabouts and commentary, it played a vital role in the recent political developments in the Middle East.[57] Smartphones today can take you to your destination via GPS,[58] or monitor your sleep cycle to wake you at the right time;[59] and horse-racing

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52 Broadband penetration is 55 percent in Kentucky as of June 2010, while the national average penetration rate is 64 percent. See *FCC Broadband Report*, Table 16.

53 *FCC Broadband Report*, Table 29.

54 "Judge Expresses Skepticism Over Facebook Lawsuit," *Wall Street Journal*, July 26, 2007, http://blogs.wsj.com/law/2007/07/26/judge-expresses-skepticism-over-facebook-lawsuit/.

55 Facebook statistics, at http://www.facebook.com/press/info.php?statistics.

56 Claire Cain Miller, "Why Twitter's C.E.O. Demoted Himself," *New York Times*, October 30, 2010, http://www nytimes.com/2010/10/31/technology/31ev.html?pagewanted=all.

57 "Where Might Social Media Aid a Revolt Next?" *CBS News*, February 14, 2011, http://www.cbsnews.com/stories/2011/02/12/earlyshow/saturday/main7343208.shtml.

58 Bonnie Cha, "Road warriors: Smartphones with built-in GPS," *CNet*, May 14, 2010, http://reviews.cnet.com/4321-6452_7-6564140.html.

59 "Sleep Cycle Alarm Clock," at http://www.148apps.com/reviews/sleep-cycle-alarm-clock/.

fans can use their phones to view Churchill Downs race entries and results and purchase tickets for the Kentucky Derby.[60] Families can communicate overseas by video conference using Skype on their computer or their cell phone, or via FaceTime on their iPhones or iPod Touches.[61] In fact, Facebook, which already has a real-time chat feature, has announced that it will offer video calling so that the user can click on a button on a friend's Facebook page and be instantly connected via Skype for voice and video communication.[62] On many major airlines, passengers can communicate with their co-workers or friends continuously in real time on their laptops while cruising at 37,000 feet using on-line chat services such as AOL, if their plane is equipped with Wi-Fi.

The effects of these powerful trends are severely impacting subscribership to the PSTN and use of wireline long distance service. From June 2000 to June 2010, wireline access lines served by ILECs declined 43 percent nationwide and 39 percent in Kentucky, while wireless lines have more than doubled in the same time period, today far exceeding the number of ILEC access lines in the state.[63] The impact has been even more devastating on

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60 Darren Rogers, "Churchill Downs Launches New Kentucky Derby Mobile App," Press Release, April 27, 2011, http://www kentuckyderby.com/news/2011/04/27/churchill-downs-launches-new-kentucky-derby-mobile-app.

61 An iPod Touch is an Apple device with the functionality of an iPod and much of the functionality of an iPhone, including access to the internet via Wi-Fi, but without the telephone connectivity. It does not have traditional telephone functionality in the sense of having access to the 2G or 3G wireless network, nor does it have a telephone number. However, the user can communicate by voice and video with friends, family, and co-workers with their iPod Touch over the internet using Skype; they can also make video "calls" to and from iPhone users over the internet via the Apple functionality called FaceTime.

62 Verne G. Kopytoff, "Facebook Offers Video Chat in Arrangement With Skype," *New York Times*, July 6, 2011.

63 *FCC Local Competition Report*, Tables 12, 13, and 17, and accompanying tables in Excel format downloaded at http://transition fcc.gov/wcb/iatd/comp.html.

wireline long distance service. Average residential wireline long distance minutes of use per month were surpassed by wireless minutes many years ago.[64]

As a result of these powerful trends, the service providing the subsidy to the PSTN—switched access minutes—is drying up. According to information compiled by the FCC, interstate switched access minutes handled by all long distance carriers over the ILECs' networks in the U.S. declined from a peak of 566.9 billion in 2000 to 315.7 billion in 2008—the most recent year with available information—a decline of 44 percent in just eight years. Also according to FCC data, between 2000 and 2007, intrastate interLATA minutes billed by reporting ILECs nationwide declined by about 39 percent, from 257.3 billion to 156.0 billion.[65] According to data provided in discovery, switched intrastate access minutes billed by the Rural LECs in Kentucky (the RLECs and TDS) declined on the aggregate by [redacted] in just the two years from 2008 to 2010 (the years in which data are available on all the Rural LECS), and the minutes billed by AT&T, Cincinnati Bell, and Windstream combined declined by [redacted] from 2006 to 2010.[66] Hence, the switched access system is not only conceptually at odds with the reality of the marketplace today, it is simply no longer a stable or reliable source of support for the PSTN.

The switched access system must evolve to adjust to these new market realities and to migrate, eventually, to a system that is compatible with networks of the future. At the

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64 *2010 FCC Trends in Telephone Service*, Tables 11.3 and 14.2.

65 *2010 FCC Trends in Telephone Service*, Tables 10.1 and 10.2.

66 RLECs', TDS's, AT&T's, and Cincinnati Bell's Responses to TWTC/Level3/PAETEC's First Set of Data Requests, No. 1; and Windstream's Responses to AT&T's First Set of Data Requests, No. 11.

same time, telecommunications carriers must adjust their business models away from reliance on revenues from other carriers and towards cost-recovery from their own customers. The desire to hold on to legacy revenue streams, while understandable, is not only futile but is counterproductive because carriers must migrate to new revenue streams such as broadband services and VoIP in order to be viable in the long run.

V. The Current Access/Interconnection Charge Regime Is Highly Asymmetric

A. The Access Rates Wireline Long Distance Providers Pay for Intrastate Long Distance Calls Are Much Higher Than the Access Rates They Pay for Interstate Long Distance Calls, and Are Much Higher Than Local Call Termination Rates, Even Though Those Rates Are All for the Same Functionality

Q: DID THE FCC'S ACCESS CHARGE REDUCTIONS THAT YOU HAVE DISCUSSED APPLY TO ALL LONG DISTANCE TELEPHONE CALLS?

A: No. The FCC implemented reductions to interstate switched access rates, which apply to interstate long distance calls, not intrastate long distance calls, which have historically been under state jurisdiction. In 1995, this Commission ordered AT&T Kentucky, the major ILEC, to reduce its intrastate access rates to its interstate rates,[67] but other ILECs in Kentucky face no such requirement. As a result, LECs other than AT&T Kentucky assess much *higher* rates in Kentucky for intrastate long distance calls than for origination and termination of interstate calls even though (as I discussed above) the LECs' origination and termination functions are the same for interstate and intrastate calls.

[67] *1995 BellSouth Regulation Plan Order*, p. 54.

Q: WHAT ARE THE ACCESS RATES CHARGED TODAY BY INCUMBENT LECS IN KENTUCKY TO WIRELINE LONG DISTANCE PROVIDERS?

A: The access rates charged by incumbent LECs in Kentucky today are shown in Figures 1 and 2, below. Figure 1 shows the rates for the non-rural incumbent LECs in Kentucky, and Figure 2 shows the rates for the rural LECs.[68]

[68] AT&T asked the LECs to provide their interstate and intrastate access revenues and minutes of use in discovery, from which average interstate and intrastate access rates could be calculated. Separately, the CLECs asked the ILECs to provide their average monthly interstate and intrastate rates. In addition, the Commission had previously asked the ILECs to provide a calculation of their "access shift," i.e., their estimate of the amount of revenues they would forgo as a result of reducing their intrastate access rates to their interstate levels. None of the Rural LECs other than the TDS companies responded to AT&T's request for access revenues and minutes, but they all, other than TDS, did provide their estimated average billed access rates in response to the CLECs. One can also calculate average billed rates as implied by the revenue and minutes in the access shift calculations provided by all of the Rural LECs in response to the Commission's request, with the exception of TDS, which did not provide enough detail in its response to the Commission's request for an estimate of its access rates. In several instances, the rates supplied in discovery by the Rural LECs in response to the CLECs varied substantially from the rates implied by the access shift calculation they provided. Each Rural LEC also files data annually with the FCC from which its interstate access rates can be estimated; AT&T has provided to me its analysis of these estimated rates for all Rural LECs except the TDS companies based on their FCC 2010 annual filings. I compared those rates with the Rural LECs' rates as filed in this proceeding and found that in many cases, the interstate rates the Rural LECs filed in discovery also varied substantially from the interstate rates based on their FCC-filed data. Hence, for the TDS companies, Figure 2 shows the rates calculated based on their response to AT&T's discovery request. For the companies that did not respond to AT&T's request (i.e., the Rural LECs other than the TDS companies), Figure 2 shows the rates implied by the numbers the Rural LECs filed in response to the Commission's request for their estimates of their access shift, because these appear to generally be the most accurate and internally consistent, looking across all the evidence. However, in Exhibit DJA-2, I have compiled for the Commission's convenience the annual averages for 2010 of the rates filed by the carriers in response to the CLECs' discovery; the rates implied by their access shift calculations filed in response to the Commission's request; and the rates implied by their FCC annual filings. I have also compiled in Exhibit DJA-2 the average rates for termination of local traffic (intraMTA and non-wireless reciprocal compensation), computed based on the data provided by Rural LECs in discovery.

Figure 1

ILEC Average Charges for Call Origination/Termination Services in Kentucky

Notes:

1. I computed Windstream's intrastate rates as total 2010 access revenues divided by 2010 local switching minutes. Windstream did not provide 2010 interstate access revenues or minutes. I computed Windstream's interstate rates as total 2008 access revenues divided by 2008 local switching minutes based on data provided in discovery by Windstream in Case No. 2007-00503.

2. I excluded transit traffic revenues from Windstream's intrastate rates.

3. I computed Cincinnati Bell's intrastate and interstate access rates as total 2010 access revenues divided by 2010 local switching minutes. I computed termination of local traffic rates as 2010 reciprocal compensation revenues divided by 2010 reciprocal compensation minutes.

Sources: Windstream's Responses to AT&T's First Set of Data Requests, No. 11; Windstream's Responses to AT&T's First Set of Data Requests in Case No. 2007-00503, No.9; Cincinnati Bell's Responses to AT&T's First Set of Data Requests, Nos. 7 and 11.

Figure 2

Rural LEC Average Charges for Call Origination/Termination Services in Kentucky

Note: Rates and details of calculations are provided in Exhibit DJA-2.

Sources RLECs' Amount of Access Revenue Shift if Intrastate Switched Access Rates Mirror Interstate Switched Access Rates, Case No. 2010-00398, April 15, 2011; and TDS Companies' Responses to AT&T's First Set of Data Requests, Nos. 7 and 11.

Access rates are not a single number but instead consist of many rate elements that combine to provide the access service. Some of these rate elements are priced on a flat rate (e.g., per month) basis, some on a per-minute-per mile basis, and some on a per minute basis. Depending on which elements are requested by the long distance provider seeking access, the configuration of the interconnection arrangement, and the number of minutes processed, the average per minute rate paid by one long distance provider can

differ from the average paid by another, even to the same LEC. A common way to compare the access rates of one LEC to another's or of one LEC across jurisdictions is to compute the average per minute rate paid to a given LEC by all long distance providers, taking into account all the access rate elements purchased. Figure 1 shows the average call origination and termination rates assessed by non-rural ILECs in Kentucky, calculated as the average per minute intrastate rate paid to ILECs based on actual 2010 access revenues and access minutes of use provided by the LECs in discovery. The figure also shows the carriers' average interstate access charges.[69]

These figures demonstrate the significant disparities in the regulated rates charged by the ILECs for originating and terminating telephone traffic. For example, Windstream East's average intrastate access charge of [redacted] per minute is more than [redacted] times its average interstate access charge of [redacted] per minute, and Windstream West's intrastate access charge of [redacted] per minute is over [redacted] times its average interstate access charge of [redacted] per minute. The intrastate access rates charged on average by Rural LECs in Kentucky typically range between about [redacted] to about [redacted] per minute (with one apparently charging [redacted]), and are typically many multiples of their interstate rates.

In addition, LECs assess switched access charges not only for call termination but also for call origination. Hence, a call going from a Windstream West customer in Kentucky to a Windstream East customer in Kentucky (or vice versa), for example, would cost the long

[69] In the case of Windstream East and Windstream West, the figure shows average interstate access based on 2008 revenues and minutes, because Windstream declined to provide interstate revenues and minutes for 2010.

distance provider combined access fees of [redacted] for each minute of the customer's call**.** In stark contrast, if Windstream were required to mirror its interstate access rates, the long distance company would pay [redacted] for the same call.

Q: YOU EXPLAINED EARLIER THAT THE FUNCTIONALITY PROVIDED BY A LEC TO TERMINATE A LONG DISTANCE CALL RECEIVED FROM A LONG DISTANCE PROVIDER IS THE SAME AS THE FUNCTIONALITY PROVIDED BY THE LEC TO TERMINATE A LOCAL CALL RECEIVED FROM ANOTHER LEC. HOW DO THE CHARGES FOR TERMINATING A LONG DISTANCE CALL COMPARE TO THE CHARGES FOR TERMINATING A LOCAL CALL?

A: Although the services provided by the ILEC to terminate another carrier's traffic to the ILEC's customer are functionally the same whether the ILEC is terminating a local call or a toll call, there is a tremendous disparity between the regulated rates for terminating toll calls and local calls, as Figures 1 and 2 demonstrate.

Q: WHAT ARE THE ACCESS PRICES CHARGED BY CLECS IN KENTUCKY?

A: Figure 3 below provides the average per minute intrastate and interstate access rates charged by the CLECs that provided relevant data in response to Staff's discovery requests. As with Figures 1 and 2, Figure 3 illustrates the disparities between interstate and intrastate rates charged by CLECs. Once again, intrastate rates are multiples of the interstate rates.

Figure 3

CLEC Average Charges for Call Origination/Termination Services in Kentucky

Notes:
1. I computed Frankfort Plant Board's intrastate and interstate access rates as total 2010 access revenues divided by 2010 access minutes. Frankfort Plant Board did not provide data for local traffic termination revenues and minutes. According to Frankfort Plant Board, its switch cannot identify wireless traffic and therefore Frankfort Plant Board does not charge for such traffic.
2. I computed tw telecom's intrastate and interstate access rates as total 2010 access revenues divided by 2010 access minutes. I computed tw telecom's local traffic termination rates as 2010 reciprocal compensation revenue divided by 2010 reciprocal compensation minutes.

Sources: Frankfort Plant Board's and tw telecom's Responses to AT&T's First Set of Discovery Requests, Nos. 6 and 9.

B. The Current System of Intercarrier Compensation Is Highly Asymmetric Across Technologies

Q: ARE ACCESS CHARGES APPLIED SYMMETRICALLY ACROSS TECHNOLOGIES?

A: No, not at all. The application of interconnection rates differs significantly across technologies, including wireless, VoIP, and other communications platforms.

Q: HOW ARE ACCESS CHARGES APPLIED DIFFERENTLY TO WIRELESS CALLS?

A: Wireless providers are not charged intrastate access rates for intrastate wireless calls except in very limited circumstances. Under FCC rules established in 1996, if a call originates on a wireless phone and goes to a LEC's customer without crossing the boundary of a Major Trading Area ("MTA"), it is considered a "local" call for purposes of interconnection fees (even if the call crosses a state boundary, a LATA boundary, and/or a LEC local calling area boundary)[70] and the LEC charges interconnection rates that are governed by the reciprocal compensation rules established in the Act.[71] These rules require that reciprocal compensation rates be based on the incremental cost of providing interconnection.[72] By contrast, access rates were designed, as I have explained, to include

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70 *2008 NPRM*, ¶ 19.

71 *1996 Interconnection Order*, ¶ 1036.

72 *TA96*, §252(d)(2). In 2001, the FCC adopted a reciprocal compensation regime that imposed a gradually declining cap on intercarrier compensation for ISP-bound traffic, beginning at $.0015 per minute-of-use and declining to $.0007 per minute-of-use and imposed a "mirroring rule" giving ILECs the benefit of the rate cap only if they offer to exchange all traffic subject to reciprocal compensation at the same rates. For carriers that do not opt into the exemption they nevertheless must establish reciprocal compensation rates that are approved by the state commission subject to the cost-based standard established in federal law. See, Order on Remand and Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Intercarrier Compensation for ISP-Bound Traffic*, FCC 01-131, (rel April 27, 2001), ¶ 8.

a subsidy to local exchange service providers. As a result, reciprocal compensation rates are generally (by design) substantially lower than access rates, especially intrastate access rates. And in some cases, wireless carriers have negotiated agreements that allow them to avoid switched access rates even on inter-MTA calls.[73]

Q: CAN YOU PLEASE DESCRIBE THE DIFFERENCES BETWEEN MTAS AND WIRELINE LOCAL CALLING AREAS IN KENTUCKY?

A: Yes. Almost all of the geographic area of Kentucky, including four of Kentucky's five largest urban areas, is within the same MTA, which also extends into parts of Indiana and Illinois. Four other MTAs intersect (relatively small parts of) Kentucky, and those MTAs cover multiple states, one covering part of Tennessee and extending through most of Mississippi, and another covering much of West Virginia and parts of Virginia, Indiana, and a significant portion of Ohio. In contrast, the Commonwealth of Kentucky is broken up into hundreds of individual wireline local calling areas. Only wireline calls that originate and terminate within the same one of those relatively small local calling areas qualify for reciprocal compensation rates, while in-state calls that go from one local calling area to another are subject to intrastate access rates. A wireless call, in contrast, can originate from anywhere within the MTA, travel hundreds of miles, and terminate to anywhere else within the MTA (even if it crosses multiple state borders) and qualify for

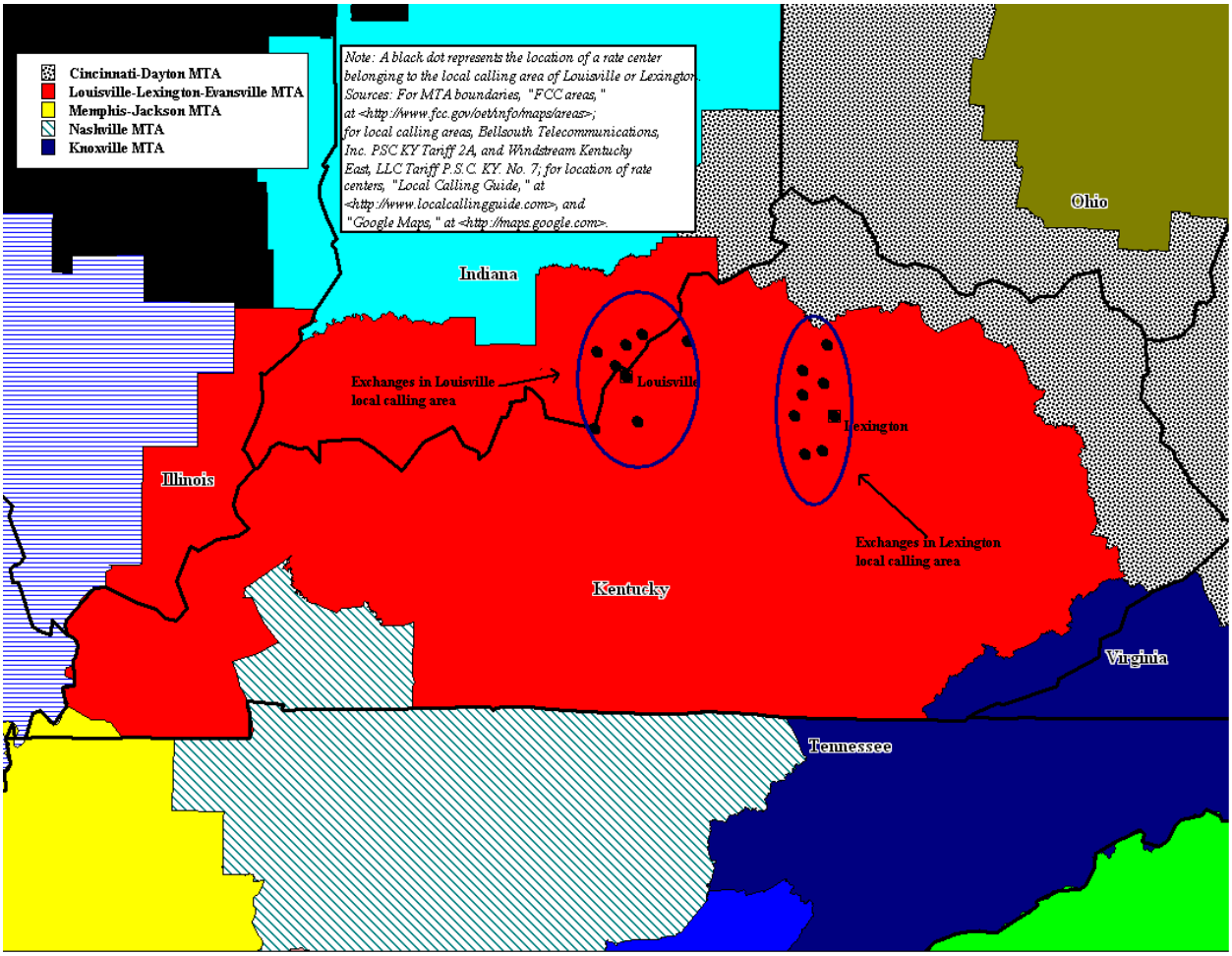
[73] See, e.g., Commercial Mobile Radio Services Interconnection Agreement between Windstream Kentucky East, LLC – Lexington & Windstream Kentucky East, LLC – London and Crossroads Wireless Holding, LLC d/b/a Crossroads Wireless, executed June 3, 2008, Attachment 4; Commercial Mobile Radio Services Interconnection Agreement between Windstream Kentucky East, LLC and West Virginia PCS Alliance, d/b/a NTELOS, executed June 9, 2009, Attachment 4; and Commercial Mobile Radio Services Interconnection Agreement between Windstream Kentucky East, LLC and Powertel Memphis Inc. & T-Mobile Central LLC, executed May 19, 2009, Attachment 4.

reciprocal compensation rates for terminating the call to a wireline customer. Hence, wireless carriers enjoy a significant and artificial competitive advantage over wireline carriers in the provision of long distance service because they can avoid intrastate switched access rates on intrastate calls over the vast majority of Kentucky's territory.

These facts are illustrated in the map in Figure 4. Figure 4 shows the rate centers that comprise the local calling areas of the Lexington and Louisville areas and shows the Lexington-Louisville-Evansville MTA, which is the MTA in which these two local calling areas reside. As the map shows, a wireline call originating in Lexington is subject to access charges unless it terminates within the same small local calling area (i.e., must go to a customer in one of those Lexington rate centers circled on the map). In contrast, a wireless call originating in Lexington could go to anywhere in the entire area indicated as the Lexington-Louisville-Evansville MTA, which includes Louisville and a large portion of the geographic area of Kentucky, and still qualify to pay reciprocal compensation rates rather than the much higher intrastate switched access rates for the same functionality. Hence, for example, the long distance company carrying a wireline call from Lexington to Louisville would pay intrastate access charges to the LEC terminating the call (and the LEC originating the call); but if the call were placed on the customer's wireless phone, the wireless carrier would pay only reciprocal compensation rates to the same LEC to terminate the call to the same called party (and would pay no originating access charge at all).

Figure 4

MTAs Are Far Larger Than Local Calling Areas in Kentucky



Q: WHAT RATES DO WIRELINE LECS IN KENTUCKY CHARGE TO WIRELESS COMPANIES TO TERMINATE INTRAMTA CALLS?

A: According to the LECs' responses to discovery, the rates charged to terminate intraMTA wireless calls vary, but in all cases the termination rates for intraMTA wireless calls are far below the rates charged to wireline LECs for intrastate access, as shown in Figures 1, 2, and 3 above.

Q: DO VOIP PROVIDERS PAY ACCESS CHARGES?

A: This is a disputed area of intercarrier compensation, which the FCC has not resolved.[74] A number of carriers have petitioned the FCC seeking clarification or ruling on this issue, indicating that VoIP providers seek to avoid access charges by appealing to current regulatory ambiguity.[75] To the extent that VoIP providers are currently able to avoid access charges, they also enjoy a competitive advantage over wireline long distance providers, who must pay inflated intrastate access rates. The FCC acknowledges that the ability of VoIP providers can provide them a competitive advantage, and specifically references one VoIP provider that "touts that it can provide service at low prices because it collects access charges but does not pay them."[76]

Q: DO ACCESS CHARGES APPLY TO OTHER BROADBAND FORMS OF COMMUNICATION, SUCH AS COMPUTER-TO-COMPUTER CALLING?

A: No. Communication methods that avoid the PSTN entirely, such as computer-to-computer voice calling (an example is Skype-to-Skype), instant messaging, social networking such as Facebook, and email, are not subject to the access charge regime at all.[77]

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74 *2011 NPRM*, ¶ 608.

75 See, e.g., Petition for Forbearance, *In the Matter of Feature Group IP Petition for Forbearance Pursuant to 47 U.S.C. Section 160(c) from Enforcement of 47 U.S.C. Section 251(g), Rule 51.701(a)(1), and Rule 69.5(b)*, FCC Docket No. WC 07-256, (October 23, 2007); and Petition for Forbearance, *In the Matter of Petition of the Embarq Local Operating Companies for Limited Forbearance Under 47 U.S.C. Section 160(c) from Enforcement of Rule 69.5(a), 47 U.S.C. Section 251(b) and Commission Orders on the ESP Exemption*, FCC Docket No. WC 08-8, (January 11, 2008).

76 *2011 NPRM*, ¶ 507.

77 See, Memorandum Opinion and Order, *In the Matter of Petition for Declaratory Ruling that pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service*, FCC 04-27, (rel. February 19, 2004), ¶¶ 15-22 (finding that peer-to-peer applications that connect users over the Internet and

VI. Excessive Access Rates Harm Consumers, Harm Competition, and Distort Investment

Q: WHY SHOULD THE COMMISSION BE CONCERNED ABOUT EXCESSIVE INTRASTATE ACCESS RATES IN KENTUCKY?

A: Excessive intrastate access rates directly and indirectly harm consumers and businesses in Kentucky. Moreover, the current access system of cross subsidies is not a viable or sustainable source of subsidies for local exchange companies, is not compatible with competition, and cannot transition to the future communications paradigm of wireless and IP, all IP, or other technology networks.

A. Excessive Access Rates Harm Consumers by Inflating Retail Prices of Long Distance Services

Q: HOW DO EXCESSIVE ACCESS PRICES DIRECTLY HARM CONSUMERS?

A: The most direct harm to consumers is that excessive access prices charged to long distance providers cause the prices consumers pay for retail long distance services to be higher than they would otherwise be, so consumers pay more for the wireline long distance services they use.

When an access provider charges excessive prices for access services, those excessive prices generate revenue to the access provider but represent a cost to the company paying the access: the wireline long distance provider. The long distance provider, in turn, must

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make no use of the public switched telephone network are not subject to common-carrier-type regulations). See, also, Jonathan E. Nuechterlein and Philip J. Weiser, *Digital Crossroads: American Telecommunications Policy in the Internet Age*, (Cambridge, Massachusetts: MIT Press, 2007), pp. 198-199, and 303 ("Because IP-to-IP calls never leave the Internet and never touch the public switched network, any compensation arrangements between the firms involved—i.e., ISPs, Internet backbone providers, and the VoIP provider itself—are unregulated.").

price its retail service higher to recover that cost. Excessive access prices therefore distort the pricing decisions of long distance providers. This harms consumers and reduces consumer welfare by forcing the prices for (some) long distance services to be far in excess of the actual social cost of producing the services. For example, if it costs the local exchange company B, say, 0.1¢ per minute to provide access, but B charges the long distance company A, say, 1¢ per minute, the latter will have to price long distance to its customers to recover the additional 1¢ rather than the genuine social cost of 0.1¢. That increased cost to the long distance provider will result in higher retail long distance prices. Conversely, lower access prices will lead to lower retail long distance prices.

Q: ARE SWITCHED ACCESS CHARGES A SIGNIFICANT COMPONENT OF LONG DISTANCE PRICES?

A: Yes, they are. In fact, intrastate access fees are the single most important component of the overall cost of providing in-state long-distance service. In Kentucky, AT&T Communications' average intrastate access expenses per minute were over [redacted] percent of AT&T Communications' intrastate long distance revenues per minute as of 2008.

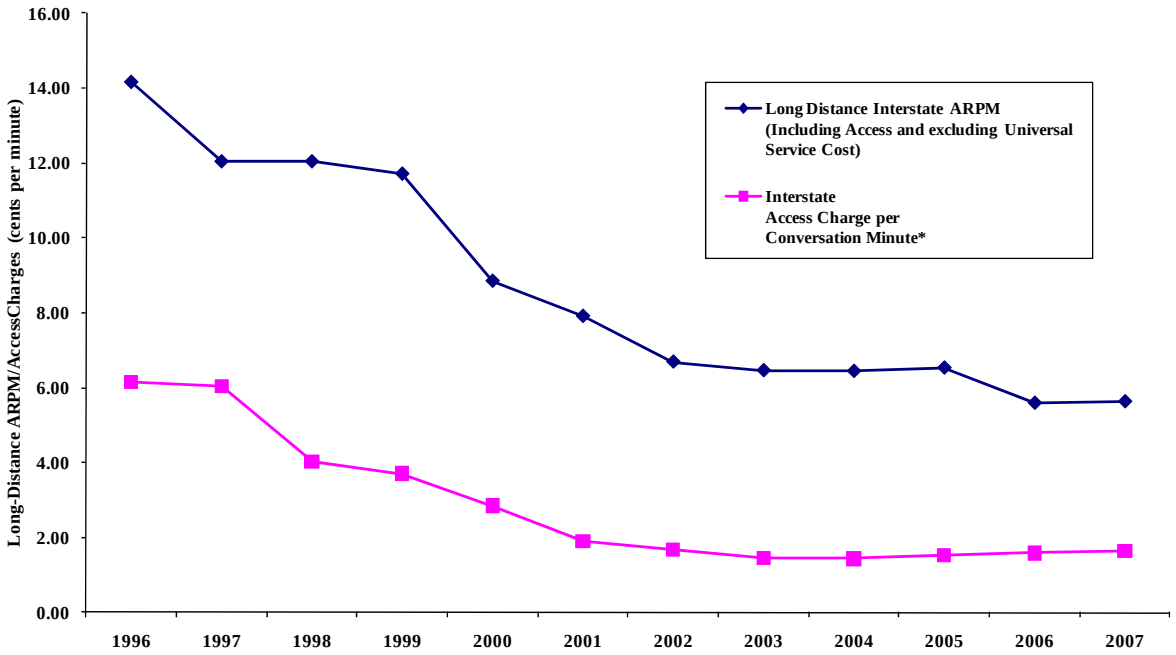
Q: IS THERE IN FACT A DIRECT RELATIONSHIP BETWEEN ACCESS RATES AND RETAIL LONG DISTANCE PRICES?

A: Yes. First, based on FCC data, average interstate switched access fees nationwide fell by just under five cents per minute between 1996 and 2007, due to FCC intervention. During that same time, interstate long distance prices, which are unregulated, fell by nearly double that amount—9 cents per minute—due to profit maximization and competitive forces. As access rates come down, retail long distance prices come down.

Indeed, this positive correlation between access rates and retail long distance prices is apparent from a simple visual inspection of FCC data on interstate access charges and interstate long distance rates over time since 1996. Figure 5 shows the national average of per-minute interstate access charges and the average retail price (measured by average revenue per minute) of interstate long distance calls. As you can see, the downward trend in interstate access charges has been accompanied by a comparable trend in interstate long distance prices. Long distance prices have fallen as access rates have fallen.

Figure 5

Interstate Access Charges and Interstate Long Distance Average Revenue per Minute



* Access charges are the average rates (weighted by minutes of use) for all local exchange carriers that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool The average access charges reported by the FCC do not include revenue per minute from subscriber line charges or primary interexchange carrier charges (PICCs) The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end

Source: FCC 2010 Trends, Tables 1.2 and 13.4.

Q: DR. ARON, HAVE YOU BEEN ABLE TO TEST AND QUANTIFY THE RELATIONSHIP BETWEEN INTRASTATE ACCESS RATES AND INTRASTATE LONG DISTANCE PRICES?

A: Yes. In order to investigate the relationship between intrastate access rates and intrastate long distance prices, I requested and received data for the various AT&T entities regarding intrastate access rates and intrastate long distance prices for the years 2004 through 2008 (most recently available at the time of my request), for all 50 US states.[78] The data are plotted in Figure 6. Each point represents a state in a particular year.

[78] Specifically, I requested and received AT&T's intrastate access expense minutes, intrastate expense revenues (that is, the amount of money paid by AT&T for intrastate access), intrastate retail toll revenues, and intrastate retail toll minutes. From these data I calculated AT&T's average intrastate long distance per minute price charged in each state for each year and AT&T's average intrastate access charge paid for each state for each year of my data. I assumed (and I found using the statistical techniques discussed below) that the average retail price charged by AT&T in year t is related to the average intrastate access rate charged to AT&T in year t-1, which reflects the fact that in general and in this circumstance, prices do not adjust instantaneously to changes in input prices. Hence, each point in Figure 6 is AT&T's average per minute price for intrastate long distance service in state j in year t on the vertical axis and the intrastate access rate in state j in year t-1 on the horizontal axis.

Figure 6

AT&T's Intrastate Toll Price versus Access Cost in 50 States, 2005-2008

It is apparent simply from visual inspection of Figure 6 that there is a strong positive relationship on average between the intrastate access rate paid by AT&T and the average per minute intrastate long distance price charged by AT&T. In states/years where the access rate paid is lower (the variable on the horizontal axis), the price charged the following year (the variable on the vertical axis) tends to be lower.

Q: DO THE DATA TELL YOU ANYTHING ABOUT THE MAGNITUDE OF THE DECREASE IN RATES IN KENTUCKY LONG DISTANCE PRICES THAT ONE COULD EXPECT WHEN ACCESS CHARGES ARE REDUCED?

A: Yes. First, I used standard statistical techniques to quantify the relationship between the intrastate access rates and the intrastate long distance prices in the 50 states. That estimated relationship is depicted in Figure 6 as the red line through the data. The fact that the data exhibit a positive and statistically significant relationship is not surprising given that the relationship is apparent visually from Figure 6, and it is what one would predict on the basis of economic principles.

Q: WHY WOULD A COMPANY VOLUNTARILY DECREASE ITS PRICES JUST BECAUSE THE ACCESS CHARGES IT PAYS WENT DOWN?

A: Companies do not decrease prices out of altruism but out of the desire and fiduciary obligation to maximize their profits to the extent they can, given demand, cost, and market conditions. When the incremental cost of producing something goes down, a company *increases* its profits by *lowering* its prices, all else equal. The reason is that a price reduction stimulates demand, and selling a bit more becomes profitable (when it previously was not) when incremental costs are lower. This is an elementary economic and mathematical principle that is true even for a company that faces no competition whatsoever.

Of course, long distance service is highly competitive within and across technologies, so competitive pressures reinforce the incentive to lower prices when incremental costs fall. A company experiencing a decline in incremental cost enjoys an opportunity to compete more effectively and still cover costs by lowering its prices. This induces other

competitors to lower their prices as well. A company decreases its price in response to a competitor out of an imperative to maintain its market position at previous levels or even to survive in competition with a lower-priced rival. Hence, incentives for profit maximization and competitive pressures both work in the same direction to induce companies to decrease prices when their incremental costs fall, and they reinforce one another.

B. Excessive Access Rates Also Harm Consumers by Causing Them to Use Less Long Distance Service Than They Would Choose at More Efficient Prices, and by Raising the Costs of Businesses Operating In Kentucky

Q: DO EXCESSIVE ACCESS PRICES HARM CONSUMERS IN OTHER WAYS AS WELL?

A: Yes, excessive access prices harm consumers in several clearly identifiable ways. I have explained that higher access charges result in higher retail prices for long distance services. Those higher prices not only cause consumers to pay more for service—the direct effect I just discussed—but also cause consumers to use less of the service. The discouraging effect of higher prices is normally a good thing—an efficient effect of the price system—but only when prices reasonably reflect the underlying costs of producing a product or service. But if the price of a service far exceeds its real underlying cost—as is the case here, because wireline long distance service is burdened by artificial subsidies—consumers will restrict their usage more than is justified by the societal cost of producing the product, and consumers thereby forgo consumption and enjoyment that they would otherwise experience at more cost-based prices. This forgone consumption as a result of

distorted prices is known as "allocative inefficiency," and the loss of economic well-being that results is what economists refer to as a social "deadweight loss" to the economy.

Q: IN WHAT OTHER WAYS DO EXCESSIVE INTRASTATE ACCESS CHARGES HARM CONSUMERS?

A: Residential consumers are not the only customers who pay long distance rates—business customers in Kentucky pay them also. When long distance prices are higher and business customers must pay the higher rates, their cost of doing business is higher in turn. This additional cost borne by businesses must either be passed through in the form of higher prices paid by the customers of those businesses, or in the form of contractions of the business.[79] Both of these effects harm not only the Kentucky businesses themselves but also their customers, who ultimately must face higher prices for a variety of goods and services.

C. Excessive and Disparate Access Rates Harm Competition

Q: DO THE EXCESSIVE AND DISPARATE INTRASTATE ACCESS RATES IMPOSED UNDER THE CURRENT ACCESS REGIME HARM COMPETITION?

A: Yes. The current access regime significantly distorts competition across technologies, artificially advantaging some, disadvantaging others, and thereby damaging the ability of the market to put society's resources to best use to respond to consumers' preferences. For example, the tremendous disparities in access rates paid by wireline carriers versus

[79] A survey of small businesses conducted by TeleNomic Research found that small businesses spend a considerable amount, on average $543 per month, for telecommunications services. The survey also determined that the cost burden of telecommunications services was higher for very small businesses. For example, firms with 0 to 4 employees were estimated to spend $82.81 per employee for local and long distance telephone service, while firms with 5 to 9 employees were estimated to spend $50.18 per employee and firms with 10 to 499 were estimated to spend $20.99 per employee. See, Stephen B. Pociask, "A Survey of Small Businesses' Telecommunications Use and Spending," TeleNomic Research, LLC, (March 2004).

wireless carriers create a pronounced, and artificial, competitive advantage for wireless long distance services. As I explained earlier, for intrastate calls that are within an MTA, wireless companies pay for terminating access at rates that are governed by reciprocal compensation (cost-based) rules rather than (subsidy-based) access rules, even if the call crosses a local calling area or LATA boundary. Hence, the same call on the wireline network would trigger intrastate originating and terminating access rates, which are generally much higher on average than the intraMTA rates paid by wireless companies to the same LECs.

Q: WHAT EFFECT DO THE VAST DIFFERENCES BETWEEN LOCAL CALLING AREAS AND MTAS HAVE ON COMPETITION BETWEEN WIRELESS AND WIRELINE LONG DISTANCE SERVICES?

A: It creates a very significant cost disadvantage for wireline service relative to competition on the basis of the different technologies' actual relative resource costs. To see the economic effect of these differences between MTAs and local calling areas, consider a call from a customer of Windstream West in Shepherdsville to a customer of TDS Salem in Salem, and suppose the customer's long distance company is AT&T Communications. Because Shepherdsville and Salem are in different local calling areas in Kentucky, AT&T Communications would pay approximately [redacted] per minute ([redacted] to Windstream West, and [redacted] to TDS Salem) in originating and terminating intrastate switched access for the call. If, instead, the customer in Shepherdsville placed the call to the same telephone number from her wireless phone, the wireless carrier would pay nothing in originating access (but would incur the costs of call origination), since wireless companies generally self-provide originating transport, and would pay TDS Salem [redacted] to terminate

the call, because Shepherdsville and Salem are in the same MTA. So the wireline long distance provider would pay access fees that are more than [redacted] times the access fees the wireless carrier would pay. The wireless company, therefore, could offer a substantially lower price to its customers for the same call from Shepherdsville to Salem than it could if it had to pay the same intrastate access rates that AT&T Communications or any other wireline long distance company must pay. These vast differences in rates charged by the local exchange company for the same access functionality substantially disfavor the wireline long distance provider and confer a competitive advantage on its wireless competitor in providing long distance services for no reason related to their relative efficiencies or value of service provided. Those distortions, and the resulting productive inefficiency, would be reduced (though not eliminated) by adopting a mirroring policy for intrastate access rates.[80]

Q: HOW DO THESE COST DIFFERENCES AFFECT CONSUMERS ON A DAY-TO-DAY BASIS?

A: These cost differences affect consumers' decision-making behavior with regard to the different forms of communications available to them. Nowadays, people think nothing of making long-distance calls on their wireless phone. It is no surprise that wireless carriers, who incur a per-minute cost for all calls that is a small fraction of the per-minute cost that wireline carriers incur for non-local calls have been pioneers in innovative, all-distance calling plans offering buckets of "anytime, anywhere" minutes. Moreover, as I have

[80] As I explain later, the reform proposed by AT&T in this proceeding is an important step in the right direction and will benefit consumers and businesses in Kentucky. However, it does not reduce intrastate access rates all the way to efficient levels and therefore should be viewed as a step in an ongoing effort.

discussed, consumers have options for instantaneous long-distance communications that avoid the PSTN entirely, such as email, instant messaging, social networking, Twitter, FaceTime, and Skype-to-Skype calling, and whose providers bear no message-based interconnection charges to provide those services. The absence of access charges allows these providers to offer "free" alternatives for long distance communications to consumers that have access to the Internet—that is, these providers receive no money from customers for the communications service. Consumers respond to this array of options by weighing both the relative prices of their options and the characteristics of the available services (e.g., convenience, call quality, voice versus text, video versus audio-only, and so forth) to decide on a case-by-case basis which option they will choose. The artificially high price of wireline long distance service, driven by artificially high access rates, discourages use of the wireline long distance service in favor of other technologies relative to what that use would be if wireline long distance prices were not distorted by inflated access charges.[81]

[81] See, for example, Michael R. Ward and Glenn A. Woroch, "Usage Substitution between Mobile Telephone and Fixed line in the U.S.," Working Paper, May 2004, pp. 5, 11, 12, and 17 (Table 4). The authors construct a data set by aggregating household observations into a sample of observations at the LATA level, across ten quarters (3-month periods) from July 1999 to December 2001. The authors estimate the price effects on different types of wireline and wireless toll usage in the U.S. The authors produce six different estimates of the effect of wireline prices on wireless toll usage that range from -0.03 to 0.21. Because of data issues that limited the sample size employed for certain estimates, the authors indicate they have "most confidence" (p. 12) in two of the six estimates, which range from 0.11 to 0.21. These results indicate that there is a positive relationship between wireline prices and wireless demand.

D. Excessive Access Rates Create Wasteful and Distortionary Arbitrage Behavior

Q: ARE THERE OTHER DISTORTIONARY EFFECTS OF EXCESSIVE ACCESS CHARGES?

A: Yes. Excessive access charges create artificial arbitrage opportunities by which access providers can exploit the differences between costs and regulated prices and exploit the access payers in the process. When access charges substantially exceed cost, there is money to be made by receiving those fees. For example, suppose it costs 1¢ per minute to provide access but the access charges were 10¢ per minute (I chose these round numbers purely for ease of illustration, but access charges are often several multiples of cost). Then it would be very lucrative for an access provider to identify or even create a business that receives a large number of phone calls (a chat line is one example) and then set itself up as the local exchange carrier (and thus the point of access) for that business. The chat line would generate a margin for the access provider of 9¢ per minute for every minute received, in my example. The access provider might give the chat line an extremely low price for local service, or even pay the chat line a fee or share of the access margin to make the chat line its customer. In turn, the chat line might pay end users a portion of that margin to encourage them to call the chat line to drum up more access fees. It is no surprise that these arbitrage-based businesses are sometimes referred to as "call-pumping" schemes, an apt term because they act as a siphon from access payers subject to, and unable to avoid, the excessive access charges.

Q: ARE YOU AWARE OF ANY OTHER ARBITRAGE SCHEMES THAT ARISE FROM THE CURRENT ACCESS/INTERCONNECTION REGIME OF HIGHLY DISPARATE RATES?

A: Yes. The significant disparity between the rates for interstate access and intrastate access rates for the same functionality creates an incentive for terminating LECs to misclassify traffic so that they can bill the higher intrastate rather than interstate rates; and by the same token, it creates an incentive for access payers to misclassify traffic so that it is billed at the lower interstate rates. Similarly, the disparate access rates and reciprocal compensation rates create an incentive for access payers to misclassify traffic so that it appears to be local traffic rather than long distance traffic. The incentive for access payers to misclassify traffic is known as the "phantom traffic" problem. Analysts have estimated the amount of revenues lost to access providers nationally due to phantom traffic to range from $600 million to $2 billion annually.[82] The incentive to avoid excessive access rates by misclassifying traffic so that it is charged a lower price for the same terminating functionality is another artifact of the differential in prices that does not reflect a differential in the functionality provided.

All of the resources devoted to establishing mechanisms for identifying whether wireline traffic is interstate or intrastate, ensuring that traffic is not intentionally or accidentally

[82] According to information provided by TDS, between 25 percent and 34 percent of its operating companies' terminating traffic in Kentucky does not contain information in the call records necessary to determine its jurisdiction. See, TDS's Response to AT&T's First Set of Data Requests, Request No. 13. See, also, Letter from Karen Brinkman of Latham and Watkins, LLC on behalf of a group of LECs to the FCC re: WC Docket 01-92, Inter-Carrier Compensation – Notice of *Ex Parte* Presentation, July 1, 2005, attaching a May 2005 presentation by Balhoff & Rowe, LLC (which found a $600 million loss to rural carriers); Letter from Joseph A. Douglas of NECA to the FCC re: Intercarrier Compensation Reform, Docket Number 01-92, *Notice of Ex Parte Presentation*, May 2, 2007, attaching a May 1, 2007 NECA presentation that cites estimates by Raymond James (which estimates a $2 billion loss to the industry overall).

misclassified, establishing traffic identification rules, and engaging in disputes over traffic identification, "phantom traffic," and "call pumping," are a deadweight loss to the economy that would be decreased or avoided if interstate and intrastate access rates were the same.[83]

Q: HAS THE FCC OFFERED ANY INDICATION THAT ARBITRAGE DUE TO EXCESSIVE ACCESS RATES IS A SERIOUS PROBLEM?

A: Yes. The FCC repeatedly expressed concern about the wasteful and damaging effects of access-induced arbitrage schemes. For example, the FCC stated:

> [P]ressure continues to mount to address increasing regulatory arbitrage, particularly from phantom traffic where carriers seek to avoid paying intercarrier charges, and access stimulation where carriers seek to inflate intercarrier revenues. The record indicates that the impact of these arbitrage opportunities is significant and may cost the industry hundreds of millions of dollars each year. For example, Verizon estimates that it will be billed between $66 and $88 million by access stimulators for approximately two billion wireline and wireless long distance minutes in 2010. One of the many benefits of intercarrier compensation reform would be to allow the industry to devote resources currently committed to arbitrage-related disputes and litigation to capital investment and other more productive uses.[84]

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> [I]ntercarrier rates above incremental cost are an incentive to increase revenues through arrangements such as "access stimulation," in which carriers seek to inflate the amount of traffic they receive subject to intercarrier compensation payments. For example, a LEC with high switched access rates will agree to share its access revenues with a

[83] In its 1995 Order in which it required AT&T to mirror its intrastate access rates to its interstate rates, the Commission cited to the fact that there was no evidence that the cost of providing interstate and intrastate access are substantially different as one reason that the rates should be the same. See, *1995 BellSouth Regulation Plan Order*, p. 50.

[84] *2011 NPRM*, ¶ 507 (footnotes omitted).

company that expects to receive large numbers of incoming calls, such as a company providing an adult chat line. Because these incentives exists, investment is directed to arbitrage activities, such as "free" conference calling services, the cost of which are ultimately spread among all customers whether they use any of these offerings or not. As USTelecom noted, "[s]ignificant levels of regulatory arbitrage are an indictment of a poorly constructed or enforced regulatory regime and an unproductive use of financial and intellectual capital. It results in a great deal of resources of both communications providers and state regulators and courts being devoted to brokering and litigating disputes stemming from this archaic system."[85]

E. The Current System of Excessive and Asymmetric Interconnection Rates Forces Consumers in Some Parts of Kentucky to Subsidize Consumers in Other Parts of the Commonwealth through Excessive Long Distance Charges

Q: DOES THE CURRENT SYSTEM OF EXCESSIVE AND ASYMMETRIC INTERCONNECTION CHARGES HARM ALL CONSUMERS EQUALLY?

A: No. Some consumers—namely, those who live in areas where the LEC is permitted to charge excessive access rates in order to subsidize below-cost local rates—benefit at the expense of wireline long distance consumers statewide, who must pay the subsidies. In the days when all consumers subscribed to wireline long distance service, that burden was spread over consumers of all ages, locations, and incomes. Today, for residential users, wireline long distance is increasingly a secondary service, used disproportionately by older consumers and those with less access to or ability to take advantage of other technologies that avoid access charges, such as social networking and Skype. Those consumers are harmed disproportionately because they bear nearly the entire access burden of support for rural LECs, while consumers who avoid wireline long distance,

[85] *2011 NPRM*, ¶ 606.

including high-income consumers who choose to rely on wireless or other technologies, are largely able to avoid paying into the access system.

VII. The Commission Should Order ILECs and CLECs in Kentucky to Decrease Intrastate Access Rates to Interstate Levels Immediately in Order to Migrate Toward a More Sustainable Telecommunications System, Increase Consumer Welfare, Enhance Competition, Discourage Socially Wasteful Arbitrage Opportunities, and Reduce Inequities

A. Ordering ILECs to Decrease Intrastate Access Rates to Interstate Levels Will Enhance Economic Efficiency by Bringing Access Rates Closer to Cost

Q: WHAT DO YOU RECOMMEND THE COMMISSION DO TO GIVE KENTUCKY CONSUMERS RELIEF FORM THE PROBLEMS THAT HIGH ACCESS CHARGES CREATE?

A: In light of the myriad disparities in the current access regime that I have discussed, and the fact that intrastate access rates in Kentucky are the holdover of the legacy system that has been substantially revised and reformed for all other interconnection charges, decreasing intrastate access rates to interstate levels would benefit consumers and promote competition on the merits. As an economic matter, prices for switched access service should not be higher than the incremental cost of providing access service.[86] Decreasing ILECs' intrastate switched access rates to interstate levels would bring them closer to the ILECs' incremental cost of providing access service as well as lessen the disparities across

[86] See, for example, Mark Armstrong, "The Theory of Access Pricing and Interconnection," in *Handbook of Telecommunications Economics*, ed. M.E. Cave et al., Vol.1, (Amsterdam: Elsevier Science B. V., 2002), pp. 356-379, and sources cited therein. In addition, some economists argue that the efficient interconnection price is zero (i.e., "bill and keep"). See, e.g., Patrick DeGraba, "Bill and Keep at the Central Office as the Efficient Interconnection Regime," Federal Communications Commission, OPP Working Paper No. 33, (December 2000), ¶ 2, n. 3 and citations in Appendix C to the *Intercarrier Compensation Reform FNPRM*.

technologies, jurisdictions, and types of calls.[87] The ILECs' interstate rates were established in the FCC's *CALLS* and *MAG* proceedings that I discussed earlier. These were extensive, multi-year, multi-party proceeding in which comments were provided by ILECs, CLECs, state commissions, congressmen, consumer advocate groups, industry trade groups, attorneys general, and others that culminated in the FCC's adoption of the rates that are in effect today. The FCC found, in full recognition of the regulatory history and public policy role that carrier switched access rates have historically played, the rates it adopted to be beneficial to consumers, pro-competitive, and economically efficient.[88]

B. CLEC Rates Should Be Capped at ILECs' Level in the Intrastate Jurisdiction as They Are in the Interstate Jurisdiction Because CLECs Have Market Power With Respect to Access to Their Customers

Q: SHOULD CLEC RATES BE CAPPED AT THE LEVEL OF THE ILEC WITH WHICH THEY COMPETE?

A: Yes. CLECs, as well as ILECs, possess market power in the provision of switched access service as evidenced by their excessive intrastate rates shown in Figures 1 through 3. The harms to consumers from higher long distance prices, the harms to competition from

[87] As I discussed in Section VII, it is clear that interstate switched access rates were set well above the ILECs' costs. Intrastate rates remain much higher than the corresponding interstate rates and higher still than (purportedly) cost-based rates for reciprocal compensation, even though all of these rates are charged for the same function. Hence, reducing intrastate switched access rates would bring them closer to the ILECs' costs. This conclusion is consistent with the FCC's investigation and analysis to establish rates for terminating ISP-bound traffic and reciprocal compensation, including wireless traffic; the FCC's analysis in the course of interstate access reform; the participation of ILECs in Kentucky, including several of the Rural LECs, in advocating the interstate rates that are essentially the ones in effect today; and admissions of most Kentucky LECs in discovery in this proceeding. Dr. Oyefusi describes in detail the abundant evidence supporting the conclusion that interstate rates in effect today are well above ILECs' incremental costs of providing access service. See, Direct Testimony of Dr. Ola A. Oyefusi, *In the Matter of: An Investigation into the Intrastate Switched Access Rates of All Kentucky Incumbent and Competitive Local Exchange Carriers,* Administrative Case No. 2010-00398, July 8, 2011, (hereafter *Oyefusi Direct Testimony*).

[88] *FCC CALLS Order*, ¶ 29; *MAG Order*, ¶¶ 1, 11.

imposing access burdens disproportionately on wireline long distance companies, and the wasteful arbitrage activities these excessive rates encourage, apply to CLECs just as they do to ILECs. Moreover, CLECs do not bear regulatory obligations to serve all customers or to limit their retail prices.[89] Hence, CLECs are simply the recipients of a monopoly markup imposed on wireline long distance providers (and their customers) via the CLECs' excessive intrastate access rates, which are protected by the imprimatur of the regulator, and sustained by their market power over switched access to their customers. Reducing this markup would impose a greater requirement for each CLEC to earn its revenues from its own customers by competing effectively in the marketplace, rather than by extracting revenues from customers of other companies. This is why the FCC has imposed caps on CLECs' interstate access rates since 2001,[90] and why it would be efficient and beneficial to consumers and competition to restrict CLECs' intrastate access rates to the same levels in this proceeding.

Q: YOU SAID THAT CLECS POSSESS MONOPOLY POWER WITH RESPECT TO SWITCHED ACCESS PRICES. WHY AREN'T CLECS' ACCESS RATES DISCIPLINED BY COMPETITION?

The fact that CLECs face extensive competition in the retail market for *local exchange service* does not render the market for wholesale *switched access* service competitive.

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89 The Commission has exempted CLECs (and wireline long distance companies) from most tariffing requirements and administrative regulations. CLECs must remain responsive to customer billing complaints. See, Order, *Exemptions for Interexchange Carriers, Long-Distance Resellers, Operator Service Providers and Customer-Owned, Coin-Operated Telephones and Exemptions for Providers of Local Exchange Service other than Incumbent Local exchange Carriers,* Administrative Cases No. 359 and No. 370, August 8, 2000. In addition, per Kentucky statute, non-basic services are fully deregulated for all providers. See, KY REV STAT 278.544.

90 *2001 CLEC Access Charge Reform Order*, ¶¶ 39, 51-52.

This is because (i) long distance providers cannot choose which local carrier will originate or terminate their end users' calls; (ii) customers have no incentive to avoid LECs who charge high access rates—on the contrary, customers may be attracted to such carriers because those carriers can charge lower local rates and foist their costs onto long distance carriers and their customers; and (iii) regulatory restrictions on long distance price de-averaging, as well as logistical restrictions on doing so, prevent long distance providers from charging a customer more for a particular call based on the access charges that will apply to that specific call. As a result, long distance providers cannot send a price signal to the end users to discourage them from choosing (or calling people who choose) LECs with high access charges.

The FCC found in 2001 that these three factors enable CLECs to impose excessive access charges[91] and accordingly issued an order capping CLECs' interstate access rates. The FCC noted that it did not want to

> permit CLECs to continue to tariff the access rates they charge IXCs at the level they see fit, without any guidelines to ensure their reasonableness. [The FCC found] persuasive the IXC arguments that it is highly unusual for a competitor to enter a market at a price dramatically above the price charged by the incumbent, absent a differentiated service offering.[92]

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[91] The FCC found that CLEC market power "is attributable to" three specific factors: the fact that access charges are paid by the long distance provider rather than the person who decides who the access provider will be (the calling and called parties); the long distance provider has "little practical means of affecting the caller's choice of access provider;" and regulatory restrictions on retail rate deaveraging by long distance companies. *2001 CLEC Access Charge Reform Order*, ¶ 31.

[92] *2001 CLEC Access Charge Reform Order*, ¶ 37.

It decided, therefore, that "the reasonable rate for CLEC access service is the rate that the ILECs are charging for similar service in the market."[93]

Because the same conditions are present at the intrastate level, CLEC intrastate access rates should be capped as well.

Q: BUT AREN'T CLECS ENTITLED TO HIGHER PRICES FOR SWITCHED ACCESS SERVICE IF THEY HAVE COSTS THAT ARE HIGHER THAN INCUMBENTS' COSTS?

A: No. Regulated access rates should reflect, to the extent possible, rates that would be forthcoming in a competitive market. Competitive markets do not permit entrants to charge higher prices than those of incumbents simply because (or if) the entrants happen to have higher costs. Such prices would not be viable in a competitive market because, for a comparable product, consumers who have a choice would not choose to purchase from a higher-priced provider when they could choose a lower priced one instead. As a general matter, in any industry, entrants who must charge a higher (quality adjusted) price than that of the incumbent in order to cover costs would not survive in a competitive market because customers would not pay the higher price. To compete effectively against an incumbent, competitors with costs that are comparable to the incumbent's must offer at least as good a product; and those with only a comparable product must have comparable or lower costs. Investors in competitors who are working their way through the learning curve or building up scale economies must be willing and able to finance their early years of potential competitive losses while pricing at or below the incumbents' prices.

[93] *2001 CLEC Access Charge Reform Order*, ¶ 61.

Alternatively, competitors with higher costs would have to justify higher *retail* prices with a better retail product or service, in order to attract customers. The FCC recognized as much when it decided to place caps on CLECs' interstate access rates, and is also why the FCC does not permit CLECs the right to charge higher interstate access rates than those of the incumbent even if it could demonstrate that its costs were higher. CLECs are not offered the opportunity to attempt a cost demonstration because the FCC has determined that higher cost would not justify higher access rates.[94]

Q: DOES YOUR ANALYSIS IMPLY THAT IN AN UNREGULATED COMPETITIVE MARKET CLECS WOULD NOT BE ABLE TO SURVIVE IF THEIR COSTS OF PROVIDING SWITCHED ACCESS ARE CURRENTLY HIGHER THAN THE COSTS OF THE ILECS?

A: No, not necessarily. My opinion is that regulators should not *protect* CLECs with higher costs from the discipline of the marketplace by permitting them to subsidize their higher costs by passing them on to customers using wireline long distance services through intrastate access charges. It is not uncommon for new entrants into markets to have higher costs than those of the incumbents as the entrants improve their efficiency and gain economies of scale. Entrants across the economy nevertheless can and do survive against established incumbents without regulatory protection. Some ways that entrants survive are by providing higher quality service, providing a superior array of services, or incurring losses during the startup phase that are recovered later in the company's lifecycle. Of course, CLECs as a group can no longer be considered "new entrants," insofar as they

[94] *2001 CLEC Access Charge Reform Order*, ¶¶ 37-39, 45; and Eighth Report and Order and Fifth Order on Reconsideration, *In the Matter of Access Charge Reform and Reform of Access Charges Imposed by Competitive Local Exchange Carriers et al.*, FCC 04-110, (rel. May 18, 2004), (hereafter *2004 CLEC Access Charge Reform Order*), ¶¶ 57-58.

have been permitted to offer service for well over a decade and many in Kentucky are large, multistate, publically traded, diversified companies.[95]

What is true, however, is that if CLECs' access prices were disciplined by the market, they would not be able to charge switched access fees that are higher than those of the incumbent in the relevant geographic territory. If a CLEC's costs of call origination/termination are higher than those of the ILEC, the CLEC is relatively inefficient in that dimension and prices of that service should send proper signals that the CLEC must either become more efficient in the call origination/termination function, be more efficient in some other dimension of service, provide a superior service, or exit the market.[96] If the CLEC's costs of call origination/termination are lower than those of the

95 For example, PAETEC, tw telecom, Level 3 and SouthEast Telephone are all publically traded companies. PAETEC offers service to over 54,000 business customers in 86 of the top 100 metropolitan statistical areas in the United States. See, PAETEC Holding Corp., Form 10-Q, for the quarterly period ended March 31, 2011, p. 14. Its predecessor company, US LEC, has offered service in Kentucky at least since 1999. See, US LEC Corp., Form 10-K, for the fiscal year ended December 31, 1999, p. 1. tw telecom inc. describes itself as "a leading national provider of managed network services, specializing in data, Internet Protocol ("IP"), voice and network access services to enterprise organizations," and offers service in 75 metropolitan areas throughout the United States. Its network spans 27,000 route miles. See tw telecom inc., Form 10-Q for the quarterly period ended March 31, 2011, p. 22. tw telecom has offered service in the Cincinnati MSA (which includes part of Northern Kentucky) for over 15 years. See, Time Warner Telecom Inc., Form 10-K, for the fiscal year ended December 31, 2011, p. 9. Level 3 offers service to business customers through an international network connecting 23 countries in approximately 125 metropolitan markets in the U.S. and Europe. See Level 3 Communications, Inc., Form 10-K, for the fiscal year ended December 31, 2010, p. 4. Level 3 has operated in Kentucky since at least 2003. See, Broadwing Communications, LLC, Kentucky P.S.C. Tariff No. 2, (Broadwing is one of Level 3's predecessor companies). SouthEast Telephone is a subsidiary of LightYear Network Solutions, a Louisville-based telecommunications company that has been in operation since 1993. LightYear provides telecommunications services throughout the United States and Puerto Rico, and provides service to approximately 60,000 customer locations. See LightYear Network Solutions, Inc., Form 10-Q for the quarterly period ended March 31, 2011, p. 6, and LightYear Investment Relations, at https://www.lightyear net/ir/index.ly.

96 The FCC articulated this logic in 2001 and 2004 in its CLEC Access Charge Reform orders, and has reiterated this same point numerous times, most recently in 2010. See, *2001 CLEC Access Charge Reform Order*, ¶¶ 39, 59; *2004 CLEC Access Charge Reform Order*, ¶¶ 57-58; and Order, *In the Matter of Petition of Northern Telephone & Data Corp. for Waiver of Section 61.26(b)(1) of the Commission's Rules*, DA 10-72, (rel. January 13, 2010), ¶¶ 4-5, 7 and FCC orders cited therein.

incumbent, it will benefit from the economic rents associated with the margin it can earn on call termination and origination.

Q: IS AT&T'S PROPOSAL TO REDUCE INTRASTATE ACCESS RATES TO THE ILECS' INTERSTATE LEVELS SUFFICIENT TO FULLY REFORM THE DISTORTIONS ATTENDANT TO THE CURRENT ACCESS RATE SYSTEM?

A: No, but this proposal is best seen as a step in the right direction that can be completed immediately. As I have shown above, interstate access rates themselves are far above the cost of providing call termination and origination services, and continue to be the subject of reform efforts. AT&T's proposal in this proceeding therefore does not fully drive access rates to cost or to parity across technologies. But the AT&T Plan will increase consumer welfare and promote competition, which are material benefits to the public that should not be sacrificed in the pursuit of a perfect solution that would take much more time to implement.

Q: SHOULD THE COMMISSION WAIT TO SEE IF THE FCC ACTS ON ACCESS REFORM?

A: No. The recent FCC Notice of Proposed Rulemaking is another in a line of public notices and notices of proposed rulemaking in the last ten years in which the FCC has sought input on intercarrier compensation reform and expressed a recognition that reform is necessary. For example,

- Notice of Proposed Rulemaking in CC Docket No. 01-92, released April 27, 2001 (seeking comment on the feasibility of a bill-and-keep approach for a unified intercarrier compensation regime and seeking alternative comment on modifications to existing intercarrier compensation regimes)

- Public Notice in CC Docket No. 01-92, released October 18, 2002 (seeking comment on two petitions that request rulings regarding the intercarrier compensation regime applicable to certain types of wireless traffic)
- Further Notice of Proposed Rulemaking in CC Docket No. 01-92, released March 3, 2005 (continuing the ongoing re-examination of intercarrier compensation and seeking comments on specific proposals developed by a number of industry groups)
- Public Notice in CC Docket No. 01-92, released July 25, 2006 (seeking comment on the "Missoula Plan," filed by the National Association of Regulatory Utility Commissioners' Task Force on Intercarrier Compensation)
- Public Notice in CC Docket No. 01-92, released November 8, 2006 (seeking comment on a proposed interim process to address "phantom traffic")
- Public Notice in CC Docket No. 01-92, released February 16, 2007 (seeking comment on amendments to the Missoula Plan that incorporate a proposal addressing issues faced by "early adopter" states)
- Further Notice of Proposed Rulemaking in CC Docket No. 01-92, et al., released November 5, 2008 (seeking comment on certain intercarrier compensation and universal service issues, including three specific proposals) and Public Notice issued on November 12, 2008 establishing the comment dates for the three proposals contained in the NPRM
- Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking in CC Docket No. 01-92, et al., released February 9, 2011 (seeking comment on USF and ICC reform)

In light of the long history of starts and stops by the FCC with no definitive action in the last ten years, despite continued recognition of the need for reform and requests for comments on various proposals, there is no basis for concluding that the FCC is going to act in any predictable time frame, and certainly there is no reason for the Commission to delay necessary and long-overdue reform in Kentucky that merely catches up to decisions the FCC made over a decade ago.

In fact, the FCC has taken note in its recent NPRM of the reform efforts by some states and particularly recognized that reform undertaken by state commissions—as opposed to a uniform reform effort governed directly by the FCC—can respond to unique circumstances and characteristics of their state.[97] As I have discussed, the FCC seeks to encourage state commissions to reform intrastate access by rewarding those that take action without penalizing those state that have already begun reform; and perhaps declining revenue recovery to those that have not begun reform by a certain date.[98]

I would suggest that the Commission should give consumers in Kentucky the benefits of intrastate access reform now, as consumers have in other states that have reduced intrastate access rates, rather than waiting for the possibility that the FCC might someday institute a full, nationwide plan of access reform; one that in fact may disadvantage states that wait. While a nationwide, comprehensive plan is desirable, the straightforward plan proposed by AT&T—which simply reconciles intrastate rates with the interstate rates that were established in the federal jurisdiction nearly a decade ago and, by all signals, will be reduced much further in future federal access reform plans—can give consumers substantial relief now, reduce distortions, cause long distance prices to fall in Kentucky, reduce arbitrage, increase efficiency, and enhance competition regardless of what the FCC ultimately does or does not do.

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97 *2011 NPRM*, ¶¶ 543, 550.

98 *2011 NPRM*, ¶¶ 544, 549.

VIII. Access Rate Reduction Should Be Part of a Holistic, Revenue Neutral Reform of the Access Regime

Q: WHY IS IT SOUND PUBLIC POLICY TO PROVIDE AN OPPORTUNITY FOR ILECS TO RECEIVE REVENUES TO COMPENSATE FOR THE ACCESS REVENUES THAT WOULD BE FORGONE AS A RESULT OF ACCESS REFORM?

A: As I have discussed, access rates were established 25 years ago as part of a cross-subsidy scheme that was intended to permit ILECs to recover costs of residential basic local exchange service (such as the cost of the local loop) through inflated access charges imposed on wireline long distance providers, rather than through retail prices charged to end-user customers. This was a regulatory quid pro quo in which regulated companies held retail prices below compensatory levels in exchange for subsidy-producing access charges. With the development of competition in local and long distance markets, particularly intermodal competition, this policy is no longer viable and it is imperative that the Commission promote consumer welfare and facilitate competition on the merits by bringing intrastate access prices down to reduce to the maximum extent possible the implicit subsidies, as I have explained.

Bringing access prices down, however, without permitting a corresponding adjustment upwards to the other price-capped services or seeking other means for ILECs to compensate for lost access revenues, would inappropriately ignore the regulatory history that led to the current concerns with access prices.

Q: YOU TESTIFIED THAT THE COMMISSION COULD PROVIDE FOR COMPENSATING REVENUES TO OFFSET REVENUES FORGONE AS A RESULT OF COMMISSION-ORDERED ACCESS REFORM BY EITHER

PERMITTING INCREASES IN REGULATED RETAIL RATES FOR BASIC LOCAL SERVICE, AND/OR BY PROVIDING INCREASED ACCESS TO UNIVERSAL SERVICE FUNDS. IS ONE METHOD PREFERABLE TO THE OTHER?

A: From a purely economic perspective, it is generally superior to permit retail prices to adjust to levels that at least recover costs.

Consumers make efficient decisions about what goods and services to consume if the prices they face reflect the costs that society incurs to supply them with those goods and services. Prices that reflect costs therefore encourage a socially efficient allocation of society's resources to competing uses. Prices that fall short of costs cause consumers to over-use those services, which is inefficient because society's resources that could be used for something that would provide more value to consumers are diverted to a less-valued use, to the detriment of consumers overall, and consumers' choices between subscribing to wireline local exchange service and adopting broadband alternatives are distorted.

Q: YOU HAVE EXPLAINED WHY, FROM A PURELY ECONOMIC PERSPECTIVE, IT IS GENERALLY SUPERIOR TO ALLOW RETAIL PRICES TO ADJUST TOWARD COST-BASED LEVELS THAN TO PERPETUATE SUBSIDIZED PRICES. ARE THERE REASONS THAT REGULATORS MIGHT NEVERTHELESS REASONABLY CHOOSE TO PERMIT RECOVERY OF SOME OF THE FORGONE ACCESS REVENUES THROUGH UNIVERSAL SERVICE SUPPORT INSTEAD?

A: Yes, there can be in certain circumstances. Regulators can face conflicting social policy goals. One goal is certainly to maximize overall consumer (social) welfare. Another goal, however, may be to reduce rate shock that consumers might experience if retail prices were allowed to increased immediately to fully recover forgone access revenues.

To balance these objectives, AT&T proposes that (1) the Commission adopt a benchmark mechanism for ILECs by which the access reduction is partly compensated by the opportunity (but not obligation) to take limited, phased-in retail rate increases, with (2) any forgone revenues not covered by the imputed revenues associated with the permitted rate increases funded by universal service support.[99] Dr. Oyefusi explains AT&T's benchmark mechanism and the details of AT&T's plan.

Q: BY ORDERING A REDUCTION IN INTRASTATE ACCESS CHARGES, WOULD THE COMMISSION BE ABDICATING ANY REGULATORY RESPONSIBILITY TO THE LOCAL EXCHANGE CARRIERS?

A: No. On the contrary, the current system of support is crumbling as long distance minutes fall, LEC lines decline, and the subsidy source erodes, as I have already described. It is imperative both to provide a sustainable policy for wireline local exchange companies that currently rely on access rates that support below-cost local exchange prices to transition to a more viable business model that reflects the changing communications marketplace, and for the ability of wireline long distance providers to compete on a more level playing field with other technologies, to reduce the currently-excessive intrastate access rates in Kentucky. It would be most efficient to allow local exchange carriers the opportunity to increase local exchange prices to recover the forgone access revenues, but if the social policy objective of maintaining local exchange rates below cost is still considered necessary, an explicit means to fund these prices, such as a universal service fund, must be implemented.

[99] *Oyefusi Direct Testimony*.

IX. Concluding Comments

Q: CAN YOU PLEASE SUMMARIZE THE BENEFITS TO CONSUMERS AND THE ECONOMY FROM REFORMING INTRASTATE ACCESS RATES TO MIRROR INTERSTATE RATES?

A: Yes. Reforming the access regime by reducing intrastate access rates in Kentucky as part of a holistic regulatory approach that provides for offsetting revenues via retail rate relief and/or universal service support can be expected to benefit consumers in the following ways:

- Prices for wireline intrastate long distance services would be expected to fall, which would directly benefit consumers and in turn would stimulate more usage of the wireline long distance network and enhance opportunities for consumers to use the technology that best suits their needs at the time;
- Distortions in the competitive process between wireline, broadband, and wireless technologies would be reduced so that consumers could make decisions that reward providers more closely for their relative efficiencies, service characteristics, and value in the eyes of customers, rather than on the basis of artificially high wireline long distance services prices that distort consumer behavior;
- Increased retail prices for local service would encourage broadband adoption, advancing the policy goal of increased broadband adoption;
- Arbitrary, implicit forms of subsidization from fewer and fewer customers, who are disproportionately those with less access to or facility with new technologies would be reduced; and
- Wasteful arbitrage activities would be less attractive and would therefore likely be reduced.

Q: DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A: Yes, it does.

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Faculty Research Fellow, National Bureau of Economic Research, 1987-1990.

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RESEARCH INTERESTS

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PUBLICATIONS AND WORKING PAPERS

"The Effects of Legacy Pricing Regulation on Adoption of Broadband Service in the United States," with Allan T. Ingraham, March 28, 2011, Available at SSRN: http://ssrn.com/abstract=1825446.

"An Empirical Analysis of Regulator Mandates on the Pass Through of Switched Access Fees for In-State Long-Distance Telecommunications in the U.S.," with David E. Burnstein, Ana Danies, and Gerry Keith, October 14, 2010. Available at SSRN: http://ssrn.com/abstract=1674082.

"Regulatory Policy and the Reverse Cellophane Fallacy," with David E. Burnstein, *Journal of Competition Law and Economics* 2010; doi: 10.1093/joclec/nhp033.

"Investment in Next Generation Networks and Wholesale Telecommunications Regulation," with Robert W. Crandall, November 3, 2008, Available at SSRN: http://ssrn.com/abstract=1294910.

"Pricing Principles and Pricing Methodologies for Essential Facilities," May 2008.

Contributing author, *ABA Section of Antitrust Law, Telecom Antitrust Handbook, (2005)*, (Chicago: American Bar Association), 2005.

"The Proper Treatment of Spare Network Capacity in Regulatory Cost Models," with Ana Danies, May 2005.

"State Commissions Systematically Have Set UNE Prices Below Their Actual Costs," with Frank Pampush and E. Gerry Keith, 2004.

"Broadband Adoption in the United States: An Empirical Analysis," with David E. Burnstein, in *Down to the Wire: Studies in the Diffusion and Regulation of Telecommunications Technologies,* Allan Shampine, ed., (Nova Science Publishers, Hauppauge, NY, 2003).

"Developments in the Theory of Vertical Foreclosure as Applied to Regulated Telecommunications Markets" (March, 2002), Prepared for Presentation at The American Bar Association Section of Antitrust Law, 50th Annual Spring Meeting.

"Modifications at HHIs for Vertical Supply Relationships" with Wenqing Li and James Langenfeld, White Paper submitted to European Commission, February 2000.

"Economic Theories of Tying and Foreclosure Applied—And Not Applied—in *Microsoft,*" with Steven S. Wildman, *Antitrust*, vol. 14, no. 1, 1999, pp.48-52.

"Effecting a Price Squeeze Through Bundled Pricing," with Steven S. Wildman, in *Competition, Regulation, and Convergence: Current Trends in Telecommunications Policy Research*, Gillett and Vogelsang, eds. (New Jersey: Lawrence Erlbaum Associates, Inc.) 1999, pp. 1-17.

"Worldwide Wait? How the Telecom Act's Unbundling Requirements Slow the Development of the Network Infrastructure," with Ken Dunmore and Frank Pampush, *Industrial and Corporate Change,*" vol.7, no. 4, 1998, pp. 615-621.

"The Pricing of Customer Access in Telecommunications," with Steven S. Wildman, *Industrial and Corporate Change*, vol. 5, no. 4, 1996, pp. 1029-1047.

"Bonus and Penalty Schemes as Equilibrium Incentive Devices, With Application to Manufacturing Systems," with Pau Olivella, *Journal of Law, Economics, and Organization*, 10, Spring 1994, pp. 1-34.

"Diversification as a Strategic Preemptive Weapon," *Journal of Economics and Management Strategy*, 2, Spring 1993, pp. 41-70.

"Using the Capital Market as a Monitor: Corporate Spin-offs in an Agency Framework," *RAND Journal of Economics*, 22, Winter 1991, pp. 505-518.

"Firm Organization and the Economic Approach to Personnel Management, *American Economic Review*, vol. 80, no. 2, May 1990, pp. 23-27.

"The Introduction of New Products," with Edward P. Lazear, *American Economic Review*, vol. 80, no. 2, May 1990, pp. 421-426.

"Ability, Moral Hazard, Firm Size, and Diversification," *RAND Journal of Economics*, 19, Spring 1988, pp. 72-87.

"Worker Reputation and Productivity Incentives," *Journal of Labor Economics*, vol. 5, no. 4, October 1987, part 2, pp. S87-S106.

"The Role of Managerial Ability and Moral Hazard in the Determination of Firm Size, Growth and Diversification," Ph.D. Dissertation, University of Chicago, August 1985.

REPRESENTATIVE PRESENTATIONS

"Social Welfare Implications of Liability Rules in Major Environmental Damages Cases," with Francis X. Pampush, American Bar Association Sections of Litigation and Criminal Justice Joint Annual Conference, April 15, 2011, Miami, Florida.

"Consumer Benefits of Intrastate Access Rate Reform in Minnesota," Center for Science, Technology and Public Policy, Humphrey School of Public Affairs, University of Minnesota, January, 2011.

"An Empirical Analysis of Regulator Mandates on the Pass Through of Switched Access Fees for In-State Long-Distance Telecommunications in the U.S.," with David E. Burnstein, Ana Danies, and Gerry Keith, The 38th Research Conference on Communication, Information and Internet Policy (Telecommunications Policy Research Conference), October 3, 2010, George Mason University Law School, Arlington, Virginia.

"Pricing Principles and Pricing Methodologies for Essential Facilities," The 36th Research Conference on Communication, Information and Internet Policy (TPRC), September 27, 2008.

"Regulatory Policy and the Reverse Cellophane Fallacy," with David E. Burnstein, 17th Biennial International Telecommunications Society Conference, Montréal, Québec, Canada, June 24-27, 2008.

"The Use of Economic Analysis in 'Industry Expert' Testimony," CLE course, XPRT Forum, March 7, 2008.

Presentations to the New Jersey Board of Public Utilities and to the New Jersey Legislature's Telecommunications Utilities Committee regarding the economic principles for a forward-looking regulatory agenda in light of the facts of competition nationwide and in New Jersey, and the costs of regulation, October – November 2006.

"The Interaction of Regulation with Economics and Financial Analysis in Litigation, Policy, and Strategy Consulting," CLE course, XPRT Forum, October 7, 2006.

"Comments on 'Economic Analysis in FCC Merger Proceedings,'" Conference on Economic Analysis and FCC Decisionmaking, presented by the Federal Communications Bar Association (FCBA) and Stanford Institute for Economic Policy Research (SIEPR), Washington D.C., March 15, 2006.

"Economic Principles for Consumer Protection Rules," Pr*i* Telecom / Tech Briefing, Santa Clara, California, October 11, 2005.

"The Proper Treatment of Spare Network Capacity in Regulatory Cost Models," Presentation at the Advanced Workshop in Regulation and Competition, Center for Research in Regulated Industries, Skytop, Pennsylvania, May 2005.

"Telecommunications Regulation: What's Obsolete? What Will Become Obsolete?" Presentation at the State and City Telecom Reform Conference, Heartland Institute, Chicago, Illinois, December 2004.

"Trends in Telecommunications Demand & Supply," Presentation at the 46th Annual NARUC Regulatory Studies Program, Michigan State University, August 2004.

"The Economic Costs of Proposed Wireless Regulations in California," Presentation to Commissioners Brown and Kennedy, California Public Utilities Commission, San Francisco, California, April 2004.

"The Economics of UNE Pricing: Presentation to Staff," Ex parte presentation to the staff of the FCC, in FCC WC Docket No. 03-173: Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, March 2004.

"The High Cost of Proposed New Wireless Regulations," Presentation to the Pacific Research Institute conference "Regulating Wireless in California: Bill of Rights... or Wrongs?," San Francisco, April 2003.

"The TELRIC Showdown," Panelist, NARUC Staff Subcommittee on Telecommunications, 2002 Annual Convention, Chicago, Illinois, November 2002.

"Economic Principles for Efficient Pricing of Municipal Rights-of-Way," National Association of Telecommunications Officers and Advisors (NATOA), Chicago, Illinois, September 2002.

"Trends in Voice and Broadband Competition in Telecommunications Markets: Markets, Strategies, and Regulation," 82nd Annual Convention of the Indiana Telecommunications Association, Lexington, Kentucky, June 2002.

"Broadband Deployment in the United States," Emerging Opportunities in Broadband Symposium, Northwestern University, Evanston, Illinois, December 2001.

"Local Competition in Illinois," Illinois Telecommunications Symposium, Northwestern University, Evanston, Illinois, December 2000.

"Licensing and Access to Innovations in Telecommunications and Information Services," Telecommunications Policy Research Conference, Alexandria, Virginia, September 2000.

"Effecting a Price Squeeze Through Bundled Pricing," Federal Communications Commission, Washington, D.C., May 1999.

"Competitive and Strategic Use of Optional Calling Plans and Volume Pricing Plans," The Institute for International Research Conference for Competitive Pricing of Telecommunications Services, Chicago, Illinois, July 1998.

"Effecting a Price Squeeze Through Bundled Pricing," Consortium for Research in Telecommunications Policy Conference, University of Michigan, Ann Arbor, Michigan, June 1998.

"The Pricing of Customer Access in Telecommunications," Conference on Public Policy and Corporate Strategy for the Information Economy, Evanston, Illinois, May 1996.

"Diversification as a Strategic Preemptive Weapon," University of Iowa, Iowa City, Iowa, February 1994.

"Diversification as a Strategic Preemptive Weapon, "University of Buffalo, Buffalo, New York, February 1994.

"Diversification as a Strategic Preemptive Weapon," University of Southern California, Los Angeles, California, December 1993.

"Strategic Pricing," Winter Meetings of the Econometric Society, Discussant, Anaheim, California, December 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Michigan State University, Lansing, Michigan, November 1993.

"Diversification as a Strategic Preemptive Weapon," Rutgers University, New Brunswick, New Jersey, November 1993.

"Diversification as a Strategic Preemptive Weapon," University of California at Santa Cruz, Santa Cruz, California, November 1993.

"Diversification as a Strategic Preemptive Weapon," Graduate School of Business, Stanford University, Stanford, California, November 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Purdue University, West Lafayette, Indiana, September 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Summer Meetings of the Econometric Society, Boston University, Boston, Massachusetts, June 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," University of California, Department of Economics, Berkeley, California, May 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Stanford University, Graduate School of Business, Stanford, California, May 1993.

"Diversification as a Strategic Preemptive Weapon," Stanford University, Graduate School of Business, Stanford, California, April 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Hoover Institution, Stanford, California, April 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," University of California, Graduate School of Business, Berkeley, California, February 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Stanford University, Department of Economics, Stanford, California, February 1993.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," Hoover Institution, Stanford, California, January 1993.

"Pricing Strategies," Session Discussant, 1992 North American Winter Meeting of The Econometric Society, Anaheim, California, January 1992.

"Diversification as a Strategic Preemptive Weapon," University of Toronto, Toronto, Canada, November 1991.

"Diversification as a Strategic Preemptive Weapon," Queen's University, Kingston, Ontario, Canada, November 1991.

"Bonuses and Penalties as Equilibrium Incentive Devices, with Application to Manufacturing Systems," University of Chicago, Chicago, Illinois, June 1991.

"The Timing of Entry into New Markets," Summer Meetings of the Econometric Society, University of Pennsylvania, Philadelphia, Pennsylvania, June 1991.

"Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets," University of Chicago, Chicago, Illinois, April 1991.

"Bonuses and Penalties as Equilibrium Incentive Devices, with Application to Manufacturing Systems," Winter Meetings of the Econometric Society, Washington, D.C., December 1990.

"Corporate Spin-offs in an Agency Framework," University of Washington, Seattle, Washington, October 1990.

"The Timing of Entry Into New Markets," University of British Columbia, Vancouver, British Columbia, October 1990.

"Corporate Spin-offs in an Agency Framework," Texas A&M University, College Station, Texas, April 1990.

"Firm Organization and the Economic Approach to Personnel Management," Winter Meetings of the American Economic Association, New York, New York, December 1989.

"Corporate Spin-offs in an Agency Framework," Western Finance Association Meetings, Seattle, Washington, June 1989.

"Corporate Spin-offs in an Agency Framework," University of Rochester, Rochester, New York, May 1989.

"Corporate Spin-offs in an Agency Framework," North American Summer Meetings of the Econometric Society, Minneapolis, Minnesota, June 1988.

"Competition, Relativism, and Market Choice," North American Summer Meetings of the Econometric Society, Berkeley, California, June 1987.

"Competition, Relativism, and Market Choice," University of Chicago, Chicago, Illinois, April 1987.

"Rate Reform and Competition in Electric Power," Discussant, Conference on Competitive Issues in Electric Power, Northwestern University, Evanston, Illinois, March 1987.

"Worker Reputation and Productivity Incentives," New Economics of Personnel Conference, Arizona State University, Tempe, Arizona, April 1986.

"Ability, Moral Hazard, and Firm Diversification," Various Universities, 1985, 1994, including Yale University, University of Rochester, Stanford University, University of Minnesota, California Institute of Technology, Duke University, Northwestern University, Brown University, Harvard University, University of California - Los Angeles, University of Pennsylvania.

ACADEMIC JOURNAL REFEREEING

Dr. Aron has served as a referee for *The Rand Journal of Economics, the Journal of Political Economy, the Journal of Finance, the American Economic Review, the Quarterly Journal of Economics, the Journal of Industrial Economics, the Journal of Economics and Business, the Journal of Economic Theory, the Journal of Labor Economics, the Review of Industrial Organization, the European Economic Review, the Journal of Economics and Management Strategy, the International Review of Economics and Business, the Quarterly Review of Economics and Business, Management Science, the Journal of Public Economics, the Journal of Institutional and Theoretical Economics,* and the National Science Foundation.

SELECTED TESTIMONY AND OTHER ENGAGEMENTS (2006-present)

Consulting expert regarding costs relevant to early termination fees in consumer term contracts, April 2011.

Testimony before the Utilities Committee of the Kansas Legislature regarding the status of competition in telecommunications markets in Kansas, February 2011.

Testimony before the Telecommunications Committee of the Legislature of the state of Washington regarding the consumer benefits of switched access reform, February, 2011.

Consulting expert in consumer class action matter involving the markets for mobile wireless handsets, 2010.

Presentation to the Access Reform Working Group of North Carolina (industry collaborative group consisting of industry members, Public Staff, and the Attorney General, assigned by the NC Utilities Commission to seek consensus on access reform) regarding the consumer benefits of reducing intra-industry subsidies via reform of inter-network prices, September 2010.

Expert testimony before the Arizona Corporation Commission, the New Jersey Board of Public Utilities, and the Kentucky Public Service Commission regarding the regulatory history of the US switched access regime and the effects on consumers and competition of reducing intra-industry subsidies via reform of interconnection prices, 2009-2010.

Deposition testimony on damages in litigation before the United States District Court, Western District of Texas, Austin Division, regarding intercarrier "access fees" for exchange of Internet Protocol telecommunications traffic, October 2009.

Expert testimony on damages before the Circuit Court for the Third Judicial Circuit, Madison County, Illinois in class action matter pertaining to allegations that a statutory refund required of defendant company was improperly distributed, October 2009.

Expert testimony before the New Jersey Board of Public Utilities regarding intrastate switched access charges and retail rate rebalancing, September 2009.

Advice and presentation to executives of a large Israeli telecommunications company regarding the Israeli regulatory regime, unbundling obligations, pricing, costing, and competitive reform, February 2009.

Deposition testimony in a matter before the Delaware Circuit Court regarding a contractual dispute, on the issue of irreparable harm pertaining to alleged violation of exclusive territory provisions, November 2008.

Written expert evidence before the Canadian Radio-television and Telecommunications Commission in the matter of an application to expand the obligations of regulated companies for the provision of certain broadband services; regarding the effects of the requested unbundling obligations on competition, investment, and social welfare in Canada, July 2008.

Deposition and jury trial testimony on causation and damages in a matter before the Superior Court of the State of California, County of Los Angeles on the telecommunications business environment and viability of particular telecommunications business models in the late 1990s/early 2000s in a matter regarding an alleged breach of contract in the mobile satellite services industry, April/July 2008.

Written expert declarations before the California Public Utilities Commission in the matter of a rulemaking regarding the anticipated effects on investment and social welfare of

proposed modifications to regulations governing the use and retirement of facilities of regulated companies, January 2008.

Analysis of US and global subsea telecommunications fiber capacity investments and swap arrangements during the late 1990s and early 2000s, in a litigation matter alleging failure of defendant to disclose material information to plaintiffs (case settled before expert disclosure), 2008.

Written testimony before the Public Utility Commission of Texas regarding the regulatory philosophy of universal service policy, and competitive implications of proposed universal service cross-subsidy and distribution mechanisms, November 2007.

Expert evidence before the Canadian Radio-television and Telecommunications Commission regarding the economically appropriate methodology for pricing wholesale telecommunications services and essential facilities, October 2007.

Expert testimony before the Indiana Utility Regulatory Commission regarding the competitive effects on a new entrant in the video services marketplace of disclosure of highly detailed deployment data, August 2007.

Deposition testimony in a matter before the Oklahoma Court of Tax Review regarding the market factors affecting valuation of certain corporate assets during the relevant tax year of the dispute, June 2007.

Written evidence before the Canadian Radio-television and Telecommunications Commission regarding the proper economic principles that should govern determination of regulatory costs, and the effects of regulatory cost determination on economic efficiency and competition, May 2007.

Expert testimony before the New Jersey Board of Public Utilities regarding its review of telecommunications regulations and proposal to establish new regulations on incumbent and competitive wireline carriers, March 2007.

Damages analysis as consulting expert in an international arbitration matter regarding disputed availability of and access to subsea and terrestrial telecommunications fiber capacity from mid 1990s through mid 2000s, with focus in Asia and Europe, 2007.

Expert testimony before the Michigan Public Service Commission regarding the competitive effects of certain regulatory obligations and volume pricing rules, November 2006.

Damages analysis in price fixing matter in the cement industry (matter settled before deposition), 2006.

Preliminary Expert Report of Debra J. Aron, “The U.S. Long-haul Fiber Optic Network Industry: 1996-2001,” in a matter in the Superior Court of the state of California involving disputed investment in long haul capacity in the U.S., June, 2006.

Expert testimony before the Kentucky Public Service Commission, Tennessee Regulatory Authority, and Mississippi Public Service Commission regarding the competitive effects of the proposed AT&T acquisition of BellSouth, June 2006.

Deposition testimony in a matter before the Oklahoma Court of Tax Review regarding the status of competition affecting defendant company and the likely economic effect of such competition on the forward looking value of company assets, March 2006.

Expert testimony before the California Public Utilities Commission regarding the competitive landscape in California and the desirability of establishing a Uniform Regulatory Framework for the telecommunications industry in the state of California, February 2006.

Deposition testimony and trial testimony in the Court of Chancery in the state of Delaware In and For New Castle County and in Circuit Court of Cook County, Illinois County Department, Chancery Division, regarding the possibility of "irreparable harm" to Sprint Nextel's wireless affiliates in connection with Sprint's acquisition of Nextel Corporation, November 2005 – July 2006.

PROFESSIONAL ORGANIZATIONS

Member, American Economic Association

Member, Econometric Society

Associate Member, American Bar Association

Past Member, Telecommunications Policy Research Conference Program Committee

EXHIBIT DJA-2 - REDACTED

Rural LEC Average Charges for Call Origination/Termination Services in Kentucky[1]

Full name	Intrastate (Average over Termination and Origination)			Interstate (Average over Termination and Origination)				Termination of Local Traffic:	
	(A) Source 1: Responses to AT&T's DRs[2]	(B) Source 2: Responses to CLEC DRs[3, 11]	(C) Source 3: Access Revenue Shift Filing[4]	(D) Source 1: Responses to AT&T's DRs[2]	(E) Source 2: Responses to CLEC DRs[3, 11]	(F) Source 3: Access Revenue Shift Filing[5]	(G) Source 4: Annual 2010 FCC filings[6]	(H) Termination of intraMTA Traffic[7, 9, 10]	(I) Termination of Non-wireless Local Traffic[8]
TDS Leslie County Telephone Company									
TDS Lewisport Telephone Company									
TDS Salem Telephone Company									
Ballard Rural Telephone Cooperative									
Brandenburg Telephone Company									
Duo County Telephone Cooperative									
Foothills Rural Telephone									
Gearhart Communications Company									
Highland Telephone Cooperative									
Logan Telephone Cooperative, Inc									
Mountain Rural Telephone Cooperative									
North Central Telephone Cooperative									
Peoples Rural Telephone Cooperative									
South Central Rural Telephone Cooperative Corporation									
Thacker-Grigsby Telephone Company									
West Kentucky Rural Telephone Cooperative Corporation									
Total Rural LECs									

Notes:

1 "N A " means that the necessary data to provide the relevant computation is not available

2 I computed the rates in columns (A) and (D) as total 2010 access revenues divided by 2010 access minutes, based on data provided in response to AT&T's First Set of Data Requests, No 11

3 I computed the rates in columns (B) and (E) as the unweighted 2010 average of monthly averages per minute as computed by the RLECs and provided in response to TWTC, Level 3, and PAETEC's First Set of Data Requests, No 2, except for Ballard Rural's intrastate access rates, and Gearhart's intrastate and interstate access In these three cases, the rates shown are the annual average access rates for 2010, as computed by the RLECs and provided in discovery

4 I computed the rates in column (C) as total intrastate access revenues divided by intrastate local switching minutes, as provided by the RLECs in their access revenue shift computation filed with the Commission

5 I computed the rates in column (F) as total interstate access revenues divided by intrastate local switching minutes, as provided by the RLECs in their access revenue shift computation filed with the Commission

6 The rates shown in column (G) are AT&T's estimated from its analysis of the Rural LECs' FCC 2010 annual filings

7 I computed the rates in column (H) for all carriers in this table except Logan and Mountain Rural as 2010 dollars billed for terminating intraMTA traffic divided by intraMTA minutes

8 I computed the rates in column (I) as 2010 reciprocal compensation revenues divided by 2010 reciprocal compensation minutes

9 Logan provided its total revenues and minutes billed for reciprocal compensation, which presumably include wireless and non-wireless termination I computed Logan's rate for local termination reported in column (H) by dividing Logan's 2010 reciprocal compensation revenues by Logan's 2010 reciprocal compensation minutes

10 Mountain Rural provided its total revenues and minutes billed for termination of wireless calls, which presumably include intraMTA and interMTA wireless termination I computed Mountain Rural's rate for termination of intraMTA reported in column (H) using these totals, and therefore it may include interMTA traffic

11 It appears that Gearheart and Highland reversed interstate and intrastate rates in their Responses to TWTC, Level 3, and PAETEC's First Set of Data Requests, No 2, because in their Access Revenue Shift filing they showed that their access revenue that would be forgone as a result of mirroring would be positive

Sources: RLECs' Responses to TWTC, Level 3, and PAETEC's First Set of Data Requests, No. 2; RLEC's Responses to AT&T's First Set of Data Requests, No. 7; and TDS Companies' Responses to AT&T First Set of Data Requests, No. 7 and No. 11; RLECs' Amount of Access Revenue Shift if Intrastate Switched Access Rates Mirror Interstate Switched Access Rates, Case No. 2010-00398, April 15, 2011