

EXHIBIT A

*In the Matter of Updating the Intercarrier Compensation Regime to
Eliminate Access Arbitrage, WC Docket No. 18-155*



BTC, Inc. d/b/a Western Iowa Networks, Goldfield Access Network, Great Lakes Communication Corp., Louisa Communications, Northern Valley Communications, LLC, and OmniTel Communications (collectively “CLECs”)

Introduction

- **The Competitive Local Exchange Carriers (“CLECs”)** are rural carriers that provide telephone, Internet, cellular, cable, and many other services to rural citizens and businesses. They also participate in access stimulation. They include:
 - BTC, Inc. d/b/a Western Iowa Networks (Iowa)
 - Goldfield Access Network (Iowa)
 - Great Lakes Communications Corp. (Iowa)
 - Northern Valley Communications, LLC (South Dakota)
 - Louisa Communications (Iowa)
 - OmniTel Communications (Iowa)

Introduction

- **The Free Conference Calling Beneficiaries** are the more than *5 million* individuals and organizations across the country that use conference calling & audio broadcasting services hosted by the CLECs. They include:
 - Nonprofit Organizations
 - Small Businesses
 - Religious Institutions
 - Political Campaigns
 - Government Agencies
 - Immigrant Populations

Introduction

- **November 2011 – Connect America Fund Order:**
 - FCC totally reforms ICC and access charge regime, establishing bill-and-keep as the “ultimate end state” and transitioning terminating access end office rates to zero. Originating access rates and terminating rates for tandem switching remain unchanged.
- **Post-Connect America Fund Order:**
 - Access-stimulating CLECs accept substantially reduced access charge rates, determining that doing so presents the best opportunity to continue to provide enhanced broadband services to rural end users and provide free conference calling services to millions of Americans.
- **October 2017 – Refreshing the ICC Record:**
 - FCC seeks to refresh the record on intercarrier compensation and inquires about further reductions in access charges. Commenters implore the FCC to avoid further reforms until it gathers the necessary data and evidence. The record remains open.
- **June 2018 – Access Stimulation NPRM:**
 - Without new, post-2011 data and evidence, FCC proposes sweeping reforms at the behest of IXC’s unsupported allegations that are contrary to FCC precedent and its goal of a bill-and-keep end state, as well as against free conference calling customers’ wishes and needs.

Introduction

- Since the *Access Stimulation NPRM* was released:
 - The **CLECs have provided the FCC with facts, data, and evidence** proving that further reforms to the access stimulation regime are not necessary and, if implemented, would harm consumers.
 - The CLECs have further **substantiated their findings with an economic analysis** conducted by Dr. Daniel E. Ingberman, proving that the current access stimulation market is efficient and benefits consumers.
 - **Over 750 citizens** have come forward **expressing their concerns** with the FCC's proposed access stimulation reforms.
 - The **CEA providers and IXCs have provided no facts, data, or evidence** to substantiate their allegations of consumer harm.
 - The **FCC has not acted upon the CLECs' request** that further data analysis be conducted, **nor has the FCC issued any data requests**.

EXPERT REPORT OF DR. DANIEL E. INGBERMAN

Ingberman Expert Report

- **Areas of Evaluation:**

1. Is access stimulation efficient as it is currently arranged?
2. Would the Commission's proposed regulations and/or the reallocation of access stimulation traffic, in general, make the arrangement more efficient?
3. Does access stimulation benefit or harm consumers?

Access Stimulation is Efficient

- Siting access stimulation in smaller (*i.e.*, rural CLEC) networks is efficient because:
 - When smaller network traffic volumes increase, the costs and rates associated with transporting the traffic over the smaller networks fall substantially.
 - When costs and rates fall, the smaller networks' gains in consumer surplus exceed the larger (*i.e.*, urban IXC) networks' gains by more than the amount needed to subsidize the increased traffic volumes.

New Regulations Will Not Improve Efficiency

- Imposing new rules that reallocate existing access stimulation traffic will not improve efficiency because:
 - Based on economies of scale, existing access stimulation market arrangements are already at market equilibrium.
 - Altering the market equilibrium that exists will only displace this equilibrium, creating minimal gain for larger networks and substantial losses for smaller networks.
 - The access stimulation arrangements that exist operate under DeGraba's bill-and-keep end state, which the FCC previously recognized as the operative efficient marketplace for access stimulation traffic.

Access Stimulation Benefits Consumers

- The current access stimulation regime benefits consumers because:
 - The additional traffic volume obtained by smaller networks engaging in access stimulation enables scale economies in those networks.
 - The smaller networks' enabling of scale economies translates into lower prices for the smaller networks, which mean lower prices for end users (*i.e.*, consumers).
 - The smaller networks' reduction in prices is more substantial than any reduction that could possibly occur in larger networks, which results in higher net savings for consumers.

CONSUMER PERSPECTIVES

Consumer Perspectives

- As of September 26, 2018, ***over 750 comments*** have been filed by citizens who benefit from free conference calling services.
- Specific service/organization sectors referenced include:
 - Healthcare Services & Illness Support Groups;
 - Non-Profit Organizations;
 - Pro Bono Legal Services;
 - Religious Organizations & Faith-Based Support Groups;
 - Twelve-Step Programs & Other Addiction Support Networks; and
 - Veteran Service Organizations & Veteran Support Groups.
- Most importantly, free conference calls benefit the poor and rural communities, who would likely go without the services these calls provide if they had to pay for them.

Healthcare Services & Illness Support Groups

- Sharon F. of Blue Springs, Missouri, find free conference calls to be extremely “valuable” given her precarious situation:

I am disabled. I use free conferencing calls as a way to supplement my therapy. My carrier, Verizon, charges me for unlimited calling. Calling into ... support groups should not cost me more than what I already pay. **These conference calls are valuable to me, as well as thousands of other Americans who can't drive or afford to seek services outside the home.**

Non-Profit Organizations

- Lee P. of Raleigh, North Carolina, reminds the FCC that it is not just individuals that rely on free conference calling services, but also those non-profit organizations that provide services to individuals

As a retiree who volunteers his services to non-profits and others I make extensive use of free conference calling. **Not having this service available will negatively affect my ability to support these non-profit organizations.** As a taxpayer, a voter, and a free conference calling client, I ask you to please reconsider acting on WC Docket No. 18-155.

- Christine K. of Winnebago, Illinois, makes a similar statement:

Sometimes this is the only way some groups can afford to communicate. Keep free-conference calls FREE!

Pro Bono Legal Services

- Alicia P. of San Francisco, California, states that, without free conference calling services, she would not be able to adequately represent her clients:

I am a court appointed attorney for indigent clients in San Francisco, CA juvenile dependency cases. **I use free conference calling to facilitate case collaboration on my cases representing abused and neglected children and their families....** [I]f the FCC does decide to remove these services, I and millions of other American citizens and American businesses will be immediately and negatively affected. We will no longer be able to use these services for free and will instead be forced to pay.

Religious Organizations & Faith-Based Support Groups:

- Curtis F. of Brookville, Ohio, notes that, without free conference calling services, “hundreds” of his church’s worshipers would have to forego attending religious services:

We as a church group have hundreds of worshipers who for various reasons listen to our preaching, singing, news information, prayer groups, and support groups through free conference calling services. **Some of our members would not be able to afford paying for extended long distance charges for this service....** I am praying that you will carefully consider my request.

Twelve-Step Programs & Other Addiction Support Networks

- Terry M. of Goldvein, Virginia, recognizes how important these calls are for his (and others') recovery from addiction:

I strongly urge you to allow the free conference calling lines to remain free. As a citizen not only myself, but many others I know have benefitted tremendously and in myriad ways from 12 step support meetings and various other support communities offered by this service. **They have offered me physical, mental, emotional and spiritual support on a daily basis for years, and [I] am certain they have done the same for others.** Their value is tremendous and doesn't just benefit each individual alone (and they have literally saved the lives of some!) but also benefit communities, families, employers, neighbors and the population as a whole. **Without the calls being free many will have no access at all to these vital resources and human connections.** Please allow them to continue.

Veteran Service Organizations & Veteran Support Groups

- Many Veterans rely on free conference calls to cope with service-related illnesses/injuries and/or to help Veteran communities. For example:
 - **The United States Military's Survivor Outreach Services at Joint Base Lewis McChord** in Washington state uses free conference calls to provide timely information to Gold Star families who have recently lost a family member in service.
 - **The San Diego Veterans Coalition** coordinates monthly conference calls among various Veteran organizations that participate in a Family Life Action Group, which seeks to strengthen the nation's commitment to engaging and supporting post-discharge military families.
 - **The New Hampshire Justice Involved Veterans Task Force** uses conference calls to conduct meetings and address the unique needs of Veterans, particularly focusing on those diagnosed with service-related illnesses and/or who have ongoing legal issues.
- Many Veterans also frequently use conference calls to interact with Twelve-Step programs and addiction support networks.

Poor & Rural Communities

- Scott K. of Great Neck, New York, points out that free conference calls are “invaluable” to those who can afford little:

Free conference calling has proven invaluable to the 12-step community – of which I am a member - and **without it, countless people who cannot afford paid conference calling will lose the help that they need which will result in needless suffering and death.** Please don't end free conference calling.

CASE STUDY:
HOW FREE CONFERENCE CALLS
BENEFIT AMISH & MENNONITE
COMMUNITIES

Case Study: How Free Conference Calls Benefit Amish & Mennonite Communities

- According to Gary Blosser, free conference calls provide these groups with the following benefits:
 - Agricultural Updates & Training Sessions;
 - Including discussions regarding bee keeping, dealer outreach, intensive grazing, sales, and soil fertility
 - Daily News & Events Updates.
 - Including community notices regarding accidents, deaths, weddings, and prayer requests
 - Healthcare & Family Support Services;
 - Including conference calls dedicated to the handicap and those who recently lost family members
 - Natural Disaster & Emergency Response Updates;
 - Live updates during and after the 2006 West Nickel Mines School shooting in Nickel Mines, PA
 - Disaster planning and disaster response updates during and after Hurricane Florence
 - Religious Services; and
 - Including local church service broadcasts, funerals, minister meetings, and prayer groups

Case Study: How Free Conference Calls Benefit Amish & Mennonite Communities

- From August 21, 2018, to September 24, 2018, **10,791 unique phone numbers** have dialed into the Amish & Mennonite Conference Line:
 - Healthcare & Family Support Services:
 - On 1 Thursday night conference call dedicated to the handicap, a maximum of **2,200 homes** listened in.
 - Natural Disaster & Emergency Response Updates:
 - The day of the 2006 West Nickel Mines School shooting, **over 700 homes** joined a conference line for regular updates and **over 1,000 homes** joined a call the following day for further updates.
 - Religious Services:
 - On a weekly basis, **over 140 Amish and Mennonite churches** broadcast their Sunday services over their local conference line for the sick and elderly in their community.

Case Study: How Free Conference Calls Benefit Amish & Mennonite Communities

- Without free access to conferencing lines, the Amish & Mennonite communities across America would:
 - **Lose access to agricultural & healthcare services**, making it extremely difficult for individuals to improve their lives and their communities;
 - **Lose access to neighboring communities**, making it extremely difficult to receive important news updates and stay in touch with family members;
 - **Lose access to religious services**, thus forcing hundreds of sick and elderly Amish & Mennonite people to forego an important part of their daily lives; and
 - **Lose access to their language and history**, damaging their heritage, traditions, and way of life.

FINAL THOUGHTS

Further Reform Is Not Necessary

- According to Dr. Ingberman's expert analysis, the current access stimulation regime:
 1. Does not harm consumers;
 2. Is efficient; and
 3. Will not become more efficient by imposing new regulations or reallocating existing access stimulation traffic.
- According to citizen comments, free conference calling services:
 1. Provide consumers access to programs that they desperately need, including healthcare, addiction, and religious services.
 2. Provide consumers – especially in poor and rural communities – with support networks that they would not be able to otherwise afford or have access to.

If Further Reform is Necessary, So Is Further Research, Data, and Evidence

- The IXC's have demanded reforms by misleading the FCC through their anecdotes, hypothesis, and hysteria, rather than current data and evidence:

Unsubstantiated Allegations	Available Evidence Shows
IXCs will pass on further savings to consumers.	IXCs have pocketed savings as long-distance plans continue to rise in price.
Consumers are harmed by access stimulation.	Consumers nationwide save approximately \$78 million per year using their long-distance plans to access free conferencing and similar services, and because of these services rural CLECs are able to assist underserved rural networks.
IXCs are harmed by paying access charges at rates established by the <i>Connect America Fund Order</i> .	IXCs profit substantially from delivering both wholesale and retain access stimulation traffic.
Access stimulation deters broadband deployment.	Thanks to access stimulation, rural CLECs have invested more than \$47 million in broadband deployment since 2011.

If Further Reform is Necessary, So Is Further Research, Data, and Evidence

- The IXCs have demanded reforms by misleading the FCC through their anecdotes, hypothesis, and hysteria, rather than current data and evidence:

Unsubstantiated Allegations	Available Evidence Shows
Access stimulation has become more widespread since 2011.	There has been a substantial decline in the volume of access stimulation traffic billed pursuant to tariff, thanks to CLECs voluntarily entering into IP-interconnection arrangements.
Access stimulation involves high switched access rates.	The CLECs' benchmarked rates are at or below the rates charged by the largest price cap ILEC, PacBell, an AT&T affiliate.
Access-stimulating LECs circumvent the FCC's rules by interposing intermediate providers.	There is no evidence showing the CLECs are violating the rules imposed by the <i>Connect America Fund Order</i> .
IXCs requested & were denied true direct connections.	IXCs have never requested true direct connections, but rather "virtual direct connections" through third-party carriers; IXCs now dismiss the direct connection proposal as something they desire.

Thank You

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EXHIBIT B

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Updating the Intercarrier Compensation)	WC Docket No. 18-155
Regime to Eliminate Access)	
Arbitrage)	

EXPERT REPORT OF DANIEL E. INGBERMAN

August 24, 2018

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I. INTRODUCTION

I.A. Qualifications

1. I am Daniel E. Ingberman. I provide expert economic consulting services in conjunction with several economics and finance consulting and expert services firms.
2. I hold a Ph.D. in Economics, awarded in 1986 by the Tepper School of Business at Carnegie Mellon University, where I was also a Sloan Foundation Doctoral Dissertation Fellow and awarded the Alexander Henderson Award for Excellence in Economic Theory. In addition to my Ph.D., I also hold an M.S. Degree in Economics, awarded by Tepper in 1983, and an A.B. Degree from Duke University, awarded in 1981, where I majored in Economics and History and was inducted into Phi Beta Kappa.
3. I taught at the University of California, Berkeley, starting in 2001. From 2001 to 2005 I held the position of Visiting Associate Professor at the Haas School of Business, where I taught graduate business students in my MBA classes, “Economic Analysis for Business Decisions” and “Competitive Strategy and Corporate Strategy.” Also, starting in the 2002–2003 academic year and continuing through 2010, I taught “Law and Economics I (LS 145)” and “Law and Economics II (LS 147),” which are undergraduate courses in the Legal Studies Department, an undergraduate program in the Boalt School of Law. Since 2011, I have held the position of Adjunct Professor of Managerial Economics at the Olin School (Washington University in St. Louis), where I teach “Competitive Strategy and Industry Analysis” to executive MBA students. I also taught at Olin from 1993 to 1998 as a Visiting Associate Professor and later as an Associate Professor. Prior to my initial appointment at Olin in 1993, I taught from 1985 to 1993 at the Wharton School of the University of Pennsylvania (as the Anheuser-Busch Lecturer and, later, as the Anheuser-Busch Assistant Professor of Public Policy and Management), and from 1982 to 1985 at the Graduate School of Industrial Administration at Carnegie Mellon University (as a Lecturer).
4. Overall, I have taught undergraduate, MBA, professional MBA, executive MBA, MA, and Ph.D. students in Economics, Public Policy, Legal Studies, Management,

Decision Sciences, Regional Sciences, and other related fields. I have supervised Ph.D. research, teaching, and dissertations. I have won teaching awards (at both Wharton and Olin) and received a Dean's commendation for perfect median evaluation scores in my core EMBA course at Haas.

5. My teaching and research interests span a broad range of subject matters, including the economics of legal rules and institutions; econometrics and statistics; public economics; and industrial organization, business strategy, and competition policy. I have taught courses in competitive and corporate strategy; economic analysis of law; macroeconomics; managerial economics; microeconomics; research methods; political analysis and political economy; political, regulatory, legal and market environment of business and determinants of business strategy; public economics; public policy; social choice and social justice; economics of torts and products liability; economics of damages, including punitive damages; and litigation strategy and settlement incentives.
6. As detailed in my curriculum vitae, I have authored or co-authored more than 20 published peer-reviewed academic articles. My scholarly research is ongoing and covers a variety of areas. It has been presented in a variety of academic and non-academic settings, including conferences, faculty workshops, legislative hearings, and professional presentations. I have also served as an independent referee in reviewing articles for major journals.
7. I have substantial experience in economic consulting. Plaintiffs and defendants have retained me as an expert economist in litigation matters involving antitrust, contracts, intellectual property, and products liability issues, as well as other situations where it is necessary to assess the economic impact of policy or conduct. I have developed my own independent analyses and have reviewed and commented on the analyses offered by other experts. I have presented my opinions in the form of expert reports, declarations, and/or oral testimony. I have also served as an expert in the economic analysis of punitive damages.
8. In my academic and consulting activities, I have become familiar with the economics of a range of industries and products, including: automobiles and parts; biotechnology; computer components and software; construction materials,

including carpets, siding, and drywall; consumer products; credit cards; display technologies; food; internet commerce and distribution; medical devices and pharmaceuticals; music; oil; publishing; semiconductors; and, telecommunications markets, transmission, and equipment. For example, recently I advised the Department of Justice regarding the competitive effects of the proposed AT&T/T-Mobile merger and assisted Samsung in its dispute with Qualcomm regarding FRAND royalties on handsets.

9. A current copy of my curriculum vitae, including professional appointments, publications, and a list of my prior testifying and consulting experience, is included as **Attachment A**.
10. I am being compensated for my work in this matter at my normal 2018 rate of \$925 per billable hour.

I.B. Assignment

11. Counsel for certain Competitive Local Exchange Carriers (the “CLECs”) asked me to evaluate an assertion made by the Federal Communications Commission (“FCC” or “Commission”) in the Notice of Proposed Rulemaking in Docket Number 18-155, *In the Matter of Updating the Inter-carrier Compensation Regime to Eliminate Access Arbitrage*,¹ which claims that access stimulation “harms consumers.” The CLECs also asked that I form my own expert opinion as to the economic efficiency properties of access stimulation arrangements.

II. SUMMARY OF ANALYSIS

12. The first fundamental theorem of welfare economics indicates that, under broad conditions, markets yield (Pareto) efficient outcomes. That is, there is no reallocation of resources, production, or consumption which can make at least some people better off, and no one worse off. When those conditions are violated, however, markets need not reach equilibrium, and so efficiency cannot be guaranteed. For example, network effects and scale economies are outside the set

¹ *In the Matter of Updating the Inter-carrier Compensation Regime to Eliminate Access Arbitrage*, WC Docket No. 18-155 (June 5, 2018).

of guaranteeing conditions.²

13. In this report, I present two simple models of messaging markets to evaluate the competitive and efficiency implications of “access stimulation,” which I view as a method of “purchasing” additional volume by a smaller rural carrier. Specifically, an “access-stimulating” local carrier’s network is generally defined by two characteristics. First, it is smaller and located in rural areas and, therefore, may be costlier to use than larger (*i.e.*, more urban) networks. Second, compared to the rates paid by its other customers, the access-stimulating carrier offers discounted rates in the form of revenue sharing to entities that agree to site incremental traffic in their network (*i.e.*, free conference calling and broadcasting providers).
14. Some commenters, particularly interexchange carriers, have argued that access-stimulation by these small networks is inefficient, uneconomical, and lacking a legitimate business justification, because terminating calls at these small networks in rural areas is potentially more costly than terminating this traffic on a larger network, typically in a more urban area.³
15. The access charges paid by interexchange carriers, however, are only part of the efficiency equation. Consumer surplus matters as well.⁴ Generally, the efficiency of any arrangement in the marketplace depends on demand, technology,

² The proof that competitive equilibrium exists relies on the assumption that there are no increasing returns to scale in production. In that case, firms’ demand functions are guaranteed to be continuous, which is a mathematical requirement of the proof of the existence of a competitive equilibrium. The welfare theorem shows that competitive equilibria are efficient (*i.e.*, Pareto Optimal). *See, e.g.*, HAL R. VARIAN, MICROECONOMIC ANALYSIS 164, 184 (1978) (citing GERALD DEBREU, THEORY OF VALUE (1959)). When increasing returns are present, competitive equilibria can still exist whenever firm demand functions are continuous, even though the standard proofs used to guarantee existence need not apply directly.

³ *See, e.g.*, Comments of AT&T, at 1, WC Docket No. 18-155 (July 20, 2018) (asserting that rural CLECs engage in access stimulation “not for any legitimate engineering or business reasons, but solely to allow the collection and dispersal of inflated intercarrier compensation revenues”); Comments of Verizon Communications, Inc., at 1, WC Docket No. 18-155 (July 20, 2018) (referring to access stimulation as “[u]neconomical arbitrage schemes”); Reply Comments of AT&T, at 9, WC Docket No. 18-155 (Aug. 3, 2018) (asserting that access charges are a cost that a long-distance carrier may pass on to consumers, but providing no evidence that access stimulation-related charges, in particular, are material to the rates set by long-distance carriers).

⁴ Other factors may also be relevant to the efficiency equation, including, but not limited to: (1) the desire to ensure rural consumers have access to competitive alternatives; (2) the ability and willingness of carriers to provide consumers with additional services, including broadband; and (3) the savings consumers realize by using “free conferencing” services, rather than having to pay to use more expensive offerings.

- competition, and institutional arrangements. Network and scale economies imply spillover consequences, which may extend to upstream and downstream competition as well. Thus, a complex set of interactions will determine efficiency.
16. Section 0 analyzes a simple market for telecommunications designed to focus on the effects of returns to scale, while abstracting – for now – from many other elements of interest.
 17. In the example, there are two communities, large and small. Each locality has its own telecommunications network. Each uses the same technology with the same fixed and marginal costs of traffic. All consumers have the same demand curves. Inter-and intra-network traffic is equally costly.
 18. There are no access charges for switching or transport beyond the central office. Instead, a “central office bill and keep” pricing regime is in place. That is, each network bills its own local customers and keeps the entire proceeds.⁵ Prices to users of each network equal the average (economic) cost of all traffic originating in the locality.
 19. Even though it may be costlier to site the incremental demand in the smaller network, it can be most efficient to do so. Specifically, siting in the smaller network is more efficient when the incremental traffic causes small network costs and prices to fall sufficiently so that the pre-existing small network demanders’ gains in consumer surplus exceed the larger network’s gains by more than the amount

⁵ It is known that “Central Office Bill-And-Keep,” in which the calling party’s network is responsible for the cost of transporting the call to the called party’s network’s central office, leads to efficient incentives for carriers. See Patrick DeGraba, *Central Office Bill and Keep as a Unified Inter-carrier Compensation Regime*, 19 YALE J. REG. 37 (2002) (hereinafter “DeGraba 2002”). DeGraba notes that:

In the early stages of moving toward a competitive market – when incumbent local carriers still possess monopoly power over local network facilities – it will most likely be necessary to require the incumbents to provide transport facilities to interconnecting networks at regulated rates. Nevertheless, even if the incumbent network provides the facilities, the cost of transporting the call will remain on the calling party’s network, which will either lease the incumbent’s facilities or purchase transport services from the incumbent.

Id. at 41 n.13. In a related paper, DeGraba shows that it is most efficient when calling and called parties share the cost of the call, in proportion to the benefits they receive. See Patrick DeGraba, *Efficient Inter-carrier Compensation for Competing Networks When Customers Share the Value of a Call*, 12 J. ECON. & MGMT. STRATEGY 207 (2003). Thus, a system in which two networks exchange traffic at specified points on a bill-and-keep basis can generate more efficient network utilization than a regime in which the calling party bears all the costs.

- needed to subsidize the incremental traffic for the difference in the market prices between the small and large networks. I demonstrate that there are always technologies, demand functions, and constellations of pre-existing demand for which this is so.
20. That is, under these assumptions, when it is efficient to site the incremental traffic in the small network, market participants' unilateral incentives are expected to lead them to that outcome. And, whenever siting in the small network is a market equilibrium, then it is efficient.
 21. However, other specifications of the responsiveness of demand and costs to incremental volume can imply it is efficient to site the incremental traffic in the large network. If this is true, however, the small network will not outbid the large one, and, in equilibrium, markets will efficiently site the incremental traffic in the large network.
 22. Section IV provides the proof of the two major propositions underlying the efficiency analysis.
 23. Section V elaborates upon the model in the context of CLECs interacting with rate-of-return regulated entities, such as CEA providers, when IXCs connect to LECs through CEA providers. The same result holds: markets will site incremental traffic with a small network CLEC only when it is efficient.
 24. Section VI discusses the conclusions that I reach, including my conclusion that, when access stimulation is in market equilibrium, policymakers should respect this market outcome. That is, market arrangements concerning the siting of telecommunications traffic are likely to be efficient. Thus, efficiency is not likely to be improved by regulatory interventions that reallocate traffic that is currently sited in large or small networks through voluntary market arrangements.

III. RETURNS TO SCALE AND CONSUMER SURPLUS

25. Consider two communications networks, large (L) and small (S) whose customers generate and exchange intra-network and inter-network messages.⁶ Assume network L – which has more traffic – has lower costs, and that, generally, a network's unit and marginal costs fall as it acquires more traffic. Specifically, the fixed and variable costs of the communications technology are such that the (economic) unit cost M_L of originating and terminating messages (intra- and inter-network combined) generated in network L is strictly less than M_S , the unit cost in network S . Assume that the marginal costs of any type of messages t are also no larger in network L as compared to network S : $m_{St} \leq m_{Lt}$.
26. Assume competition ensures that prices to each networks' end user customers are equal to their economic unit costs M_L and M_S , which are functions of the total traffic on each network. Each network bills its own customers for its costs and keeps the proceeds. There are no access charges associated with any services provided beyond the central office.
27. Suppose now that incremental traffic totaling I messages is to be added to the system. It can be sited in either network or divided between the two. However, the large network will continue to have more traffic, irrespective of where the incremental traffic is sited.
28. Define a *market equilibrium* as the (non-cooperative Nash equilibrium) situation in which each player plays their best individually rational strategies and all potential gains from trade are exhausted.
29. The basic results can now be stated:

Proposition 1. For any networks S and L as above, there always exists consumer demands and communications technologies, such that siting all the incremental demand in the small network S is both efficient and a market equilibrium.

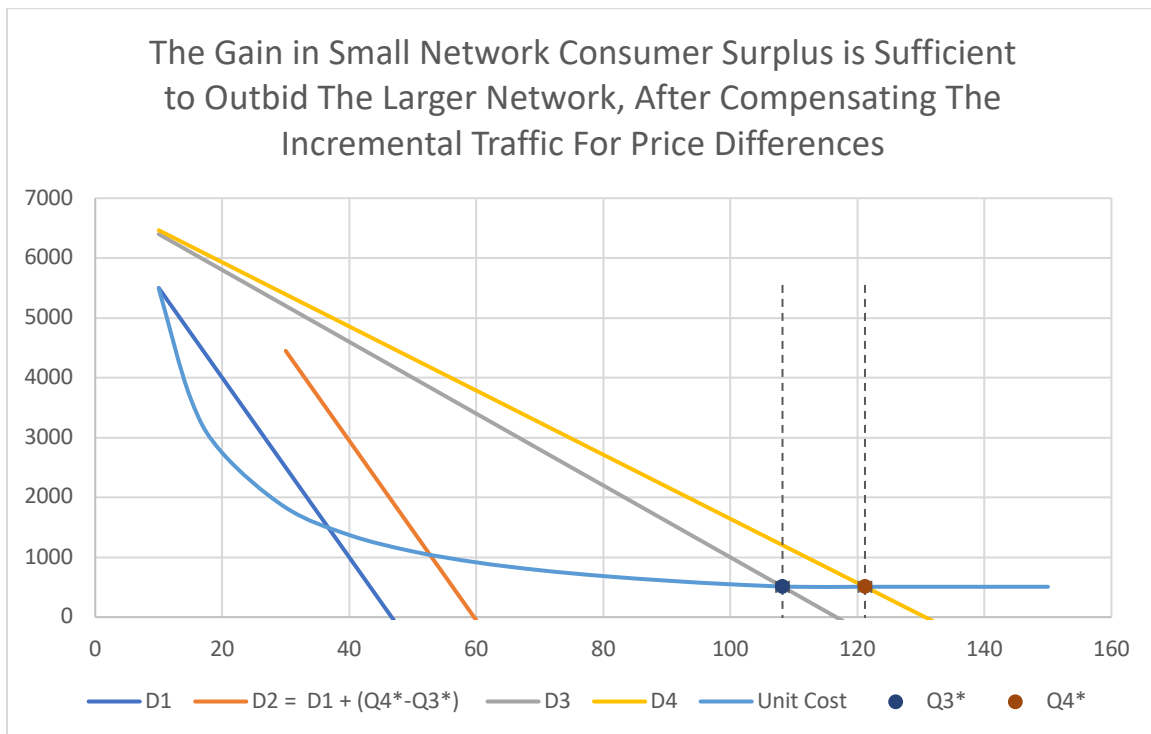
⁶ This example abstracts from the details of interconnection. For concreteness, one can assume that L and S connect directly or indirectly through a third party. See Section IV.

Proposition 2. If siting all the incremental demand in the small network S is not efficient, then it cannot be a market equilibrium.

30. The proofs of these propositions are found in Section IV.
31. Siting the incremental traffic in the small network can only be efficient when the gain in consumer surplus among the pre-existing small network demand from the incremental traffic, less the amount needed to compensate the incremental traffic for the difference in prices between the networks, exceeds the gain in surplus that the large network would obtain from siting the incremental traffic there instead. As long as this condition holds, gains to trade are realized by siting the incremental traffic in the small network: the small network can effectively outbid the large until those gains are exhausted. Thus, small network siting is a market equilibrium in this case.
32. For example, suppose that economies of scale are nearly exhausted in the large network, so siting the incremental traffic there has little or no effect on prices to pre-existing large network customers. Thus, the large network's gain in consumer surplus from the incremental traffic goes to zero. Suppose also that the incremental traffic allows the small network to gain substantial scale economies, so siting there would produce a correspondingly substantial increase in consumer surplus among the pre-existing small network demand. When the incremental traffic is large enough so that it would drive the unit cost in the small network close enough to that of the large network, the small network can efficiently compensate the incremental traffic for the difference in prices between the networks. In this case, the small network can profitably compensate the incremental traffic for the difference in prices between the networks, while still having enough surplus left over to leave its pre-existing customers better off.
33. Such an example is depicted in **Figure 1**. Before any traffic is added, demand is D_1 (dark blue) in the small network and D_3 (grey) in the large network. Unit costs (light blue) fall as traffic increases, up to a point. However, the large network is sufficiently large so that additional demand does not result in further scale

economies.

34. Total traffic in the large network is initially shown as Q_3^* (blue dot and vertical dotted line). If the additional demand is sited in the large network, the demand shifts out and the new demand (yellow) generates total traffic shown as Q_4^* (rust dot and vertical dotted line).
35. The incremental traffic is a total quantity equal to Q_4^* minus Q_3^* . To be induced to locate in the small network, this traffic must be offered at a price that is no larger than the large network price. If sited in the small network, the unit cost is found at the intersection of the cost curve and the orange demand curve, which is derived by adding Q_4^* minus Q_3^* at every price to D_1 (the original small network demand curve).



36. In this example, the incremental traffic reduces unit costs in the small network, which lowers prices there and generates consumer surplus for the pre-existing demand. By contrast, scale economies are already exhausted in the large network, so siting the incremental traffic there generates no consumer surplus for the pre-existing demand in that network. Parameter values have been chosen so that the increase in consumer surplus is larger than the amount needed to compensate the

incremental demand for the difference in prices between the large and small networks.⁷

37. In summary, Propositions 1 and 2 demonstrate that, under plausible conditions, siting incremental traffic in the small network – at a subsidized price – is efficient whenever it is a market outcome. This is true despite the assumption that siting in the large network is less expensive.

IV. PROOFS OF PROPOSITIONS

38. Each network's prices equal its economic unit costs. Therefore, producer surplus always equals zero. Total welfare is therefore the sum of consumer surplus in each of the networks, $C_S + C_L$.
39. For $J = S, L$, let $M_J(i)$ denote the unit costs in network J when i messages are added to that network. Also let $C_J(i)$ denote the consumer surplus among the pre-existing demand as a result of adding traffic i to network J .
40. Note also that if it does choose to site in the small network, the incremental demand pays the same unit price (due to the subsidy of $I * (M_L(I) - M_S(I))$ by locating in the small network) and has the same usage as if it were in the large network.
41. Define $\Delta M_J(i) = M_J(i) - M_J(0)$, and $\Delta C_J(i) = C_J(i) - C_J(0)$. Under the assumptions made, for any networks S and L , one can choose a technology such that

⁷ In the example, unit costs in each network are equal to 54,900 divided by Q (the traffic in that network) up to Q_3^* and are constant thereafter. The demand curve D_3 is specified by a willingness to pay equal to $-60Q + 7000$. If sited in the large network, the incremental demand is added to D_3 in the form of additional identical demanders (so the price intercept of the new demand, D_4 , is the same as D_3). D_4 is specified by a willingness to pay equal to approximately $-53.6Q + 7000$. Demand D_3 crosses the unit cost curve at Q_3^* (approximately 108.2) and D_4 crosses the unit cost at Q_4^* (approximately 121.2). In each case, the implied unit cost (network unit price) of traffic is equal to approximately 507.3. Since siting the incremental demand in the large network does not reduce unit costs there, it does not generate any additional consumer surplus for the pre-existing demand in that network.

D_1 is defined by a willingness to pay equal to $-150Q + 7000$. Without the incremental traffic, unit costs cross D_1 at quantity of about 39.7, where the unit cost equals about 1496.3. D_2 is derived by adding $Q_4^* - Q_3^*$ to D_1 , at every price. The intersection of D_2 and the unit cost curve defines the price that will prevail in the small network if the incremental traffic is located there. In this case that price is about 1041.6. The change in consumer surplus in the small network is 17,371.6 whereas the cost to compensate the incremental demand for the difference in prices between the networks equals about 6937.3. Thus, the incremental demand can be fully compensated for the price difference while leaving positive surplus gains in the small network. Indeed, the small network could offer a zero price to the incremental demand while still earning positive net surplus from siting it (equal to about 3846.2).

Additional details are available from the author upon request.

$$\Delta C_S(I) - [I * (M_L(I) - M_S(I))] > \Delta C_L(I). \quad (*)$$

42. For example, choose a technology that has

- i. $\Delta M_L(I) \rightarrow 0$, and
- ii. $M_L(I) - M_S(I) \rightarrow 0$.

43. Note that 43.i. implies $\Delta M_L(I) \rightarrow 0$, which in turn implies that $\Delta C_L(I) \rightarrow 0$.

Similarly, 43.ii. implies that $[I * (M_L(I) - M_S(I))] \rightarrow 0$. But due to returns to scale, $\Delta C_S(I) > 0$.

44. Therefore, under the assumptions made, condition (*) holds. This completes the proof of Proposition 1.

45. Regarding Proposition 2, note that a market equilibrium requires that all participants follow their individual self-interests. When siting the incremental quantity in network S is an equilibrium, it must be true that:

- i. The small network generates enough surplus from the incremental traffic to be able to compensate the incremental traffic for the price difference between the large and small networks and outbid the larger network for the incremental traffic.
- ii. This requires that the small network's net consumer surplus, *i.e.*, its consumer surplus less the amount needed to compensate the incremental traffic, is strictly positive:

$$\Delta C_S(I) - [I * (M_L(I) - M_S(I))] > 0.$$

- iii. It also requires that the small network's net surplus from the incremental traffic exceeds the surplus the large network would obtain from that traffic, considering the fact that the large network does not need to provide compensation, *i.e.*:

$$\Delta C_S(I) - [I * (M_L(I) - M_S(I))] > \Delta C_L(I).$$

46. Combining the conditions in 46.iii. and 46.ii. yields condition (*), which completes the proof of Proposition 2.

V. COMPLEMENTARY COEXISTENCE OF COMPETITIVE AND RATE-OF-RETURN REGULATED PROVIDERS

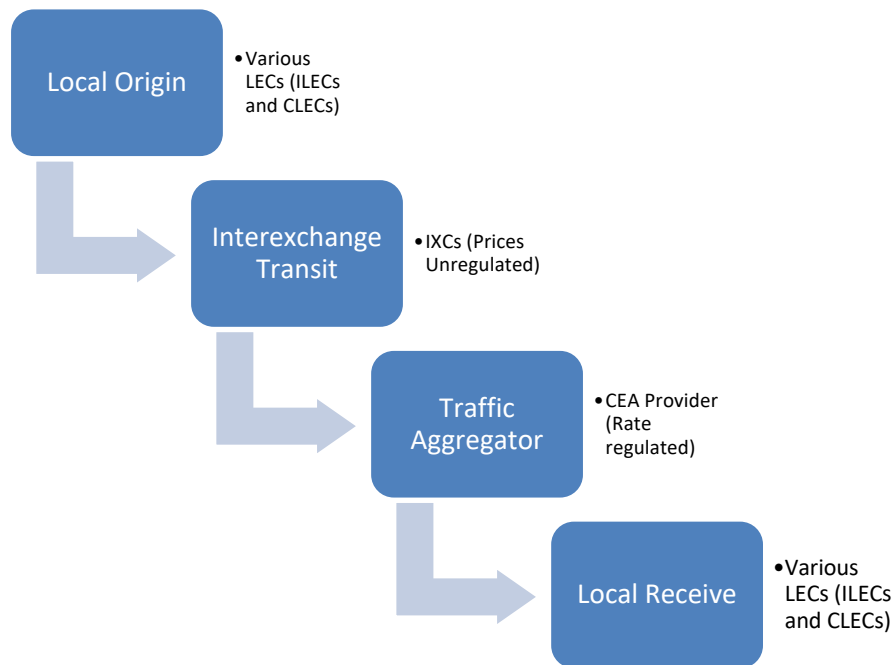


Figure 2

47. Elements of U.S. telecommunications law have enabled competitive service providers (“CLECs”) to coexist with incumbent providers (“ILECs”) and, in certain rural states, centralized equal access providers (“CEA providers”), which provide interconnections between local networks and long distance providers (“IXCs”).⁸

48. **Figure 2** illustrates the general roles of each entity in communications.⁹ Analytically, assume the following:

- a. To send and receive messages, end users engage the services of a LEC

⁸ See, e.g., 47 U.S.C. § 251 (requiring direct or indirect interconnection of incumbent and competitive carriers); see also *In re: AT&T Corp. v. Iowa Network Services, Inc. d/b/a Aureon Network Services*, 32 F.C.C. Rcd. 9677, ¶ 19 (Nov. 7, 2017) (“AT&T argues that CEA service ‘was approved for the limited purpose of facilitating the provision of equal access service to small, rural LECs carrying very low traffic volumes’ and that ‘access stimulation traffic has virtually nothing in common with legitimate CEA traffic.’ As an initial matter, AT&T overstates its claim concerning the ‘limited purpose’ of the CEA service. The order authorizing a CEA network in Iowa states—and subsequent authority reaffirms—that Aureon’s CEA network also would serve to ‘speed the availability of high quality varied competitive services to small towns and rural areas.’ Further, AT&T’s allegation that CEA networks were intended to carry low traffic volumes is of little weight since, as a Section 61.38 carrier, Aureon’s calculated rates should decrease to reflect the increase in the volume of traffic.”) (internal citations omitted).

⁹ **Figure 2** is analogous to Figure 1 in DeGraba 2002.

(ILEC or CLEC) to provide “local” service and an IXC to provide “long distance” service.¹⁰ These entities bill their customers directly. When LECs compete, customers choose the LEC that offers them the best combination of prices and services.

- b. ILECs operate under a “must serve” mandate known as “carrier of last resort” obligations, but they are eligible to receive explicit subsidies in order to maintain their profitability. All end users can engage the services of an ILEC.
- c. Compared to ILECs, CLECs have access to newer technology, which enables lower costs and/or the bundling of other valuable services or attributes (*e.g.*, quality). CLECs may share facilities (fixed costs) with nearby ILECs or may have their own facilities. If they share facilities, they pay their proportional share of the costs of those facilities.
- d. CLECs provide services in areas where they believe they can make a profit. However, some states have historically required a CLEC to be able to serve every customer in a telephone exchange, thus imposing requirements akin to “carrier of last resort” obligations on CLECs.¹¹
- e. IXCs are responsible for transit between sending and receiving LECs. Their rates are unregulated.
- f. In at least some cases, CEA providers perform transit services between IXCs and LECs. CEA providers do not directly bill customers, but instead finance their operations through access charges assessed to calling parties. CEA providers are subject to rate-of-return regulation, and, according to recent FCC orders, must also keep their prices at or below those of the competing ILEC in their state.¹²

¹⁰ In some cases, these services may be bundled by a single entity that provides both services.

¹¹ See, *e.g.*, Iowa Code § 476.29.5 (2015) (“Each local exchange utility has an obligation to serve all eligible customers within the utility's service territory, unless explicitly excepted from this requirement by the board.”) (repeal effective July 1, 2017).

¹² See *In re Iowa Network Access Division, Tariff F.C.C. No. 1*, WC Docket No. 18-60, 2018 WL 3641034, at *11 (July 31, 2018); see also 47 C.F.R. § 61.38 (describing rate-of-return regulation application to CEA providers); 47 C.F.R. § 61.26 (describing CLEC benchmark applicable to CEA providers).

- g. All entities use technologies that have positive fixed costs and non-zero marginal costs to provide access or convey traffic. Marginal costs do not increase with traffic.
49. Under these assumptions, can access stimulation by CLECs be efficient? Note first that CLECs do not engage in access stimulation unless they can profitably offer favorable rates compared to incumbent LECs.¹³
50. Suppose first that CLECs rely, in part, on the CEA provider's facilities (and cover their proportional share of cost, based on traffic), but do not divert customers away from the other members of the CEA provider. Instead, CLECs' access stimulation traffic is all incremental.
51. Then the CLECs' operations increase consumer surplus for all the customers of the CEA provider. When CLECs increase their traffic through CEA provider facilities, it allows the CEA provider and its members to obtain additional economies of scale, thereby also increasing consumer surplus as lower costs become reflected in lower prices.
52. Thus, under these assumptions, the analysis of Propositions 1 and 2 can be applied to show that markets will site incremental traffic with a small network CLEC only when it is efficient.
53. Now suppose that the CLEC does not add any incremental traffic to the CEA provider's network, but simply diverts traffic from other members of the CEA provider. If each LEC can serve all customers at a constant marginal cost, then the competition from the CLEC is again likely to improve allocative efficiency. This follows because the CLEC serves profitable customers but shares fixed costs with the ILECs compromising the CEA provider membership. The CLEC may also stimulate the CEA provider and its member ILECs to adopt less costly technologies.
54. In sum, access stimulation by CLECs that share facilities with CEA providers is likely to be efficient, particularly when that traffic is incremental (*i.e.*, when the

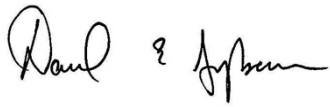
¹³ In 2011, the Commission adopted rules that require CLECs that engage in revenue sharing relationships to mirror the rates charged by the lowest cost price-cap LEC in the state. *See* 47 C.F.R. § 61.26(g). *See also* Shane Greenstein & Michael Mazzeo, *Differentiation Strategy and Market Deregulation: Local Telecommunications Entry in the Late 1990s* (Nat'l Bureau of Econ. Research, Working Paper No. 9761, 2003), <http://www.nber.org/papers/w9761> (describing how CLECs seek to provide differentiated services as part of a competitive strategy).

ILEC members do not serve high volume customers).

VI. CONCLUSIONS

55. In this report I have shown that, when the costs of operating local networks are subject to economies of scale, “access stimulation” arrangements that increase local volume in return for discounted pricing can be efficient, and, when they are efficient, they will be market equilibria. The scale economies obtained by the smaller network can generate enough consumer surplus to make it possible to outbid the larger network for the traffic, while subsidizing the incremental traffic. This is true even though it is cheaper to site incremental traffic in the larger network, which has already achieved more substantial scale economies.
56. Therefore, overall, these results imply that, under modest assumptions, existing market arrangements concerning the siting of telecommunications traffic are likely to be efficient. Thus, efficiency is not likely to be improved by regulatory interventions that reallocate existing traffic that voluntary market arrangements have currently sited in either large or small networks.
57. In the richer institutional environments, this implies that it is efficient to permit small networks – CLECs and, similarly, rate-of-return regulated CEA providers, which have built out capacity to serve this additional traffic – to keep whatever traffic is sited there. Access stimulation emerges as market equilibria. Otherwise, the efficiencies obtained by these arrangements would be lost.
58. The conclusion that one should respect market outcomes holds whenever regulation or competition causes prices to end user customers to fall and whenever additional scale leads to lower costs. In that case, additional volume in small networks that enable scale economies will also translate into lower prices in those networks and lower prices for end users.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Daniel E. Ingberman". The signature is written in a cursive style with a large initial "D" and a long, sweeping underline.

Daniel E. Ingberman

ATTACHMENT A

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DEGREES HELD

CARNEGIE-MELLON UNIVERSITY, Tepper School of Business, Pittsburgh, PA

Ph.D., Economics, 1986

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Honors: -*Alexander Henderson Award for Excellence in Economic Theory*
 -*Sloan Foundation Doctoral Dissertation Fellowship*
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 -*William Larimer Mellon Doctoral Fellowship*

DUKE UNIVERSITY, Durham, NC

A.B., Economics/History, 1981

Honors: -*Magna cum Laude*
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PROFESSIONAL EXPERIENCE

Academic Appointments

WASHINGTON UNIVERSITY, Olin School of Business

Adjunct Professor of Managerial Economics, 2011-

Associate Professor of Managerial Economics, 1995-1998

Visiting Associate Professor of Managerial Economics, 1993-1995

UNIVERSITY OF CALIFORNIA, BERKELEY

Walter A. Haas School of Business, Visiting Associate Professor, 2001 – 2005

Boalt School of Law, Lecturer, 2002 –

UNIVERSITY OF PENNSYLVANIA, Wharton School of Business

Anheuser-Busch Assistant Professor of Public Policy & Management, 1986-1993

Anheuser-Busch Lecturer in Public Policy & Management, 1985-1986

CARNEGIE-MELLON UNIVERSITY, Tepper School of Business

Instructor, 1982-1984

Consulting Affiliations

COMPASS LEXECON
Senior Consultant, 2008 – 2018

COMPETITION POLICY ASSOCIATES, INC. (COMPASS)
Senior Consultant, 2006 – 2008

LEXECON, INC.
Senior Consultant, 2006 – 2008

CHICAGO PARTNERS, Inc.
Affiliate, 2006 – 2009

LECG
Affiliate, 2007 – 2009
Principal, 1999 – 2007
Co-Director, Emeryville, California Office, 2000-2005
Member, LECG Board of Governors, 2001-2005
Senior Managing Economist, 1998-1999

PUBLICATIONS

- 1) "The Law and Economics of Concealing Safety Information," with Asrat Tesfayesus. *Journal of Law, Economics and Policy*, Spring 2017, vol. 13, number 2, pp. 181-208.
- 2) "Certainty Equivalence." *The Palgrave Encyclopedia of Strategic Management*, Edited by Mie Augier and David Teece, Palgrave MacMillan, October 2013.
https://link.springer.com/referenceworkentry/10.1057/978-1-349-94848-2_623-1.
- 3) "Civil Conspiracy Claims and the Economics of Collusion," with Christopher Loos and Jonathan Tomlin. *Mass Torts*, Volume 7, Number 3, Summer 2009, pp. 8-11.
- 4) "Siting Noxious Facilities: Are Markets Efficient?" in Hilary Sigman, editor, The Economics of Hazardous Waste and Contaminated Land, Edward Elgar, 2008. Reprinted from *Journal of Environmental Economics and Management* 29 (1995): S-20 – S-33.
- 5) "Fly-By-Night or Face-the-Music? Premature Dissolution and the Desirability of Extended Liability," with James Boyd. *American Law and Economics Review* 5 (2003): 189-232.
- 6) "The Vertical Extension of Environmental Liability Through Chains of Ownership, Contract, and Supply," with James Boyd. In *The Law and Economics of the Environment*, edited by Anthony Heyes, 44-70. Cheltenham, UK: Edward Elgar, 2001.
- 7) "An Analysis of Settlement and Merit Under Federal Securities Law: What Will be the Effect of the Reform of 1995?" with James Holloway and Ronald King. *Journal of Accounting and Public Policy* 18 (1999): 1-30.
- 8) "Do Punitive Damages Promote Deterrence?" with James Boyd. *International Review of Law and Economics* 19 (1999): 47-68.
- 9) "The Search for Deep Pockets: Is 'Extended Liability' Expensive Liability?" with James Boyd. *Journal of Law, Economics, and Organization* 13 (1997): 232-258.
- 10) "Should 'Relative Safety' be a Test of Product Liability?" with James Boyd. *Journal of Legal Studies* 26 (1997): 433-473.

- 11) "An Experimental Investigation of Multi-defendant Bargaining in Joint and Several and Proportional Liability Regimes." with Nicholas Dopuch and Ronald R. King. *Journal of Accounting and Economics* 23 (1997): 189-221.
- 12) "The 'Polluter Pays Principle': Should Liability Be 'Extended' When the Polluter Cannot Pay?" with James Boyd. *The Geneva Papers on Risk and Insurance – Issues and Practice*, no. 79 (1996): 182-203.
- 13) "Market vs. Government: The Political Economy of NIMBY." with Gerald R. Faulhaber. In *The Political Economy of Environmental Protection: Analysis and Evidence*, Edited by Roger D. Congleton, 169-188. Ann Arbor: The University of Michigan Press, 1996.
- 14) "Siting Noxious Facilities: Are Markets Efficient?" *Journal of Environmental Economics and Management* 29 (1995): S-20 – S-33. Reprinted in Hilary Sigman, editor, The Economics Of Hazardous Waste And Contaminated Land, Edward Elgar, 2008.
- 15) "Triggers and Priority: An Integrated Model of the Effects of Bankruptcy Law on Overinvestment and Underinvestment." *Washington University Law Quarterly* 72 (1994): 1341-1377.
- 16) "Non-Compensatory Damages and Potential Insolvency." with James Boyd. *Journal of Legal Studies* 23 (1994): 895-910.
- 17) "An Institutional Theory of Divided Government and Party Polarization." with John J. Villani. *American Journal of Political Science* 37 (1993): 429-471.
- 18) "Incumbent Reputations and Ideological Campaign Contributions in Spatial Competition." *Mathematical and Computer Modeling* 16 (1992): 147-169. (Reprinted in *Formal Theories of Politics II: Mathematical Modeling in Political Science*, edited by P.E. Johnson. Pergamon Press, 1992.)
- 19) "Presidential Commitment and the Veto." with Dennis A. Yao. *American Journal of Political Science* 35 (1991): 357-389.
- 20) "Circumventing Formal Structure through Commitment: Presidential Influence and Agenda Control." with Dennis A. Yao. *Public Choice* 70 (1991): 151-179.
- 21) "Reputational Dynamics in Spatial Competition." *Mathematical and Computer Modeling* 12 (1989): 479-496. (Reprinted in *Formal Theories of Politics*:

Mathematical Modeling in Political Science, edited by P.E. Johnson. Pergamon Press, 1989.)

- 22) "The Political Economy of Fiscal Policy." with Robert P. Inman. In *Surveys in Public Sector Economics*, edited by Paul G. Hare, 105-160. Basil-Blackwell, 1988.
- 23) "Reputation, Commitment, and the Dynamics of Effective Legislative Leadership." *Public Choice* 55 (1987): 121-126.
- 24) "Privatization: Your Rents or Mine?" *Journal of Policy Analysis and Management* 6 (1987): 607-611.
- 25) "Candidate Reputations and the 'Incumbency Effect.'" with M. Daniel Bernhardt. *Journal of Public Economics* 27 (1985): 47-67.
- 26) "Running Against the Status Quo: Institutions for Direct Democracy Referenda and Allocations Over Time." *Public Choice* 46 (1985): 19-43.

SCHOLARLY AND ACADEMIC ACTIVITIES: Summary

- More than 75 invited presentations at major universities and conferences.
- Broad teaching experience, including undergraduate, MBA, executive MBA, Ph.D. and thesis supervision.
- Teaching awards/commendations at Haas, Olin and Wharton.
- Chair of committees (including responsibility for curriculum development).
- Organized conferences and faculty seminar series.
- Received more than ten faculty grants and fellowships.

SCHOLARLY PRESENTATIONS

American Law and Economics Association Meetings; American Political Science Association Meetings; California Institute of Technology; Carnegie-Mellon University; Carnegie Conference in Political Economy; Charles River Associates; Columbia University; Conference on Privatization of the Public Sector (University of Pennsylvania); Conference on Political Behavior and Institutions (Stanford); European Association of Law and Economics; George Mason University; Georgetown University; Hoover Institution; Information in Politics (Texas); LECG; Lehigh University; Northwestern University; Olin Conference on Law, Economics and Politics of the Environment; Olin School Annual Conference on Financial Economics and Accounting; Princeton University; Public Choice Society; Resources for the Future; Social Science History Association Meetings; Southern Economics Association Meetings; Southern Political Science Association Meetings; Stanford University; Texas A&M University; UCLA; UCSD; United States Department of Justice; University of Delaware; University of

Minnesota; University of Rochester; University of Pennsylvania; University of Southern California; Villanova University; Washington University in St. Louis; Washington University Conference on Bankruptcy; Western Economic Association Meetings.

EDITORIAL ACTIVITIES

Referee Reports for: American Economic Review, American Journal of Political Science, American Political Science Review, Econometrica, Economics and Politics, Formal Theories of Political Science, Games and Economic Behavior, International Review of Law and Economics, Journal of Development Economics, Journal of Law and Economics, Journal of Law Economics and Organization, Journal of Policy Analysis and Management, Journal of Public Economics, Public Choice, Quarterly Journal of Economics, Review of Economic Studies.

ACADEMIC ACTIVITIES

A. Teaching Awards

Dean's Commendation, Haas School, 2004.

Reid Award for Undergraduate Teaching at Olin, 1995.

Wharton Undergraduate Teaching Award, 1990-1991.

Nominated for Anvil Award, Wharton MBA Teaching Award, 1990.

Nominated for Lindback Award, University of Pennsylvania Teaching Award, 1988.

B. Courses Taught

1) Undergraduate courses

"Law & Economics I (Private Law)" (LS 145: 2002, 2004, 2005, 2006).

"Law & Economics II (Public Law)" (LS 147: 2008, 2010).

"Business Strategy in the Legal Environment" (MECO 390: 1995-1996).

"Business and Public Policy" (MGT 382: 1994-1996).

"Business in the Political Environment" (PPM 203: 1990-1991).

"Economic Policy Analysis" (ECON 30: 1987-1989).

"The Political Economy of Government" (PPM 201: 1986-1989, 1991).

"Political Analysis" (PPM 05: 1992).

“Principles of Economics” (ECON 001: 1985-1986).

2) Graduate courses

“Competitive Strategy and Industry Analysis” (Olin-Fudan Executive MBA program; 2011-2014).

“Economic Analysis for Business Decisions 2” (Macroeconomics; EWMBA201B: 2005).

“Economic Analysis for Business Decisions 1” (Microeconomics and Competitive Strategy; EWMBA201A: 2001, 2002, 2003).

“Independent Study in Competitive and Corporate Strategy” (E293: 2002).

“Independent Study in Econometrics and Empirical Methods” (E293: 2003).

“Competitive and Corporate Strategy” (E210: 2001).

“Business in a Changing Environment” (MGT 5040: 1994-1995).

“Business-Government Relations” (MGT 741/PPM 780: 1992, 1993).

“Governmental and Legal Environment of Business” (LST 621: 1992).

“Managerial Economics” (MGEC 601: 1989-1990; EMBA 790: 1993-1994; MECO 5402 [macro], 5403 [micro]: 1996-1997).

“PhD Research Methods Seminar” (PPM 900: 1987-1990).

“Political Analysis” (PPM 781, 981: 1992).

“The Political Economy of Government” (PPM 770: 1991-1993).

“Social Choice and Social Justice” (PPM 911: 1986-1987, 1990, 1992).

C. Academic Committees

Chairman, BSBA Committee (undergraduate curriculum committee), Olin School, 1995-1996.

Member, MBA and PMBA committees (full- and part-time MBA curriculum committees), Olin School, 1995-1996.

Chairman, Subcommittee on Revising Business Curriculum, Undergraduate Curriculum Committee, The Wharton School, Fall 1988 - Spring 1990.

Member, Undergraduate Executive Committee, The Wharton School, Fall 1989-1993.

Member, Undergraduate Curriculum Committee, The Wharton School, Fall 1986-1990, 1991-1992.

Dean's Representative, CAS Committee on Individualized Study, University of Pennsylvania, Fall 1987 - Spring 1989.

Dean's Representative, Committee on Undergraduate Admissions and Financial Aid, University of Pennsylvania, Fall 1987 - Spring 1989.

D. Dissertation Committees

“Liability and Insolvency: An Equilibrium Analysis.” (James Boyd; Howard Kunreuther, chair; 1992).

“Workers' Compensation vs. First Party Insurance for Occupational Disability.” (Dong-Han Chang; Patricia Danzon, chair; 1991).

“Liability Laws and Environmental Policy: The Logic of Joint and Several Liability.” (M.V. Rajeev Gowda; Howard Kunreuther, chair; 1991). “Essays on Maximum Demand in Electricity.” (Seong-Uh Lee; Paul Kleindorfer, chair; 1990).

“Essays on the Political Economy of Resource Allocation Through Democratic Processes.” (Miftah Ahmad; Robert Inman, chair; 1990).

“Three Essays on the Role of Institutional Arrangements in International Economic Organizations' Policy Making.” (Bernard Gauthier; Daniel Ingberman, chair; 1989).

“Competitive Processes of Collective Decision Making Under Simple Majority Rule.” (Joon-Han Kim; James Laing, chair; 1987).

E. Conferences and Seminars Organized

Seminar organizer, Public Policy and Management Brown-Bag Seminar Series, University of Pennsylvania, 1991-1992.

Seminar organizer, Political Economy Workshop (joint Economics/Public Policy and Management), University of Pennsylvania, 1990.

Co-convener, PARSS Faculty Seminar: “Environmental Risk and Public Policy,” The Wharton School, 1988-1993.

Founding member (with R. Hartwell, R. Inman, H. Root), PARSS (Mellon) Faculty Seminar: “Historical Data and Theories of Rational

Choice,” University of Pennsylvania, 1985-1989.

Conference organizer, “Environmental Risk and Real Estate Development,” The Wharton School, December 1988.

Conference organizer (with S. Wachter), “Public Policy and Affordable Housing,” The Wharton School, February 1990.

F. Grants, Honors, & Awards

University Research Foundation Grant University of Pennsylvania, 1987, 1991.

Junior Faculty Summer Research Fellowship The Wharton School, 1986, 1987, 1988, 1989.

PARSS Faculty Research Fellowship University of Pennsylvania, 1986.

MOIS Courseware Development Grant University of Pennsylvania, 1986, 1987.

Alexander Henderson Award for Excellence in Economic Theory Carnegie-Mellon University, 1985.

Alfred P. Sloan Doctoral Dissertation Fellowship in Economics. The Sloan Foundation, 1984-1985.

H. B. Earhardt Doctoral Fellowship Carnegie-Mellon University, 1982-1983.

William Larimer Mellon Ph.D. Fellowship Carnegie-Mellon University, 1981-1984.

Phi Beta Kappa 1981.

Expert Disclosures, 2000-present

Ashton Woods Holdings, L.L.C. et al. vs. USG Corporation, et al. (Alleged price-fixing damages.) United States District Court for the Eastern District Of Pennsylvania, Case No. 2:15-cv-01712-MMB (E.D. Pa.), MDL 2437 No. 13-MD-2437. Retained by plaintiffs Ashton Woods Holdings, L.L.C. et al. Expert Reports, December 22, 2017 and January 26, 2018. Deposition, April 19, 2018.

Conlin vs. Magnum, Inc., et al. (Alleged successor liability for defective product.) Superior Court of the State of California, San Joaquin County, Case No. 39-2013-00292938-CU-PL-STK. Retained by defendant Magnum Research, Delaware. Deposition, July 8, 2016.

THX Ltd. v. Apple Inc. (Alleged patent infringement damages.) United States District Court for the Northern District of California, Case No. 3:13-cv-01161-IISG. Retained by plaintiff THX.

Move, Inc., et al., vs. Zillow, Inc., et al. (Alleged trade secret misappropriation, defamation, and abuse of process damages.) Superior Court of the State of Washington, King County, Case No. No. 14—07669-0 SEA. Retained by defendant and counter-claimant Zillow. Expert Report, February 1, 2016. Deposition, March 17, 2016.

Merced Irrigation District, Pacific Gas & Electric Company, and Federal Insurance Company, as subrogee of ACWA Joint Powers Insurance Authority vs. Hart High-Voltage Apparatus Repair and Testing Co., Inc. (Alleged negligence damages.) Superior Court of the State of California, County of Merced, Case No. CVM013599, CV003013. Retained by defendant Hart.

Grail Semiconductor, Inc. v. Mitsubishi Electric and Electronics USA, Inc., et al. (Economic analysis of the semiconductor industry.) Superior Court of the State of California, County of Santa Clara, Case No. 1-07-CV-098590. Retained by plaintiff Grail Semiconductor.

Prolifiq Software, Inc. v. Veeva Systems, Inc. (Alleged patent infringement damages.) United States District Court for the Northern District Of California, Case No. 3:13-CV-03644-SI. Retained by defendant Veeva Systems.

Samsung v. Qualcomm (Alleged anticompetitive use of FRAND patents, and FRAND patent infringement damages.) National Development and Reform Commission (NDRC), People's Republic of China. Retained by plaintiff Samsung. Expert Report, July 1, 2014 (co-authored with Sang Seung Yi).

CA, Inc., d/b/a CA Technologies, v. New Relic, Inc. (Alleged patent infringement damages.) United States District Court, Eastern District Of New York, Case No. 2:12-cv-05468-JS-WDW. Retained by defendant New Relic. Expert Report, February 14, 2014. Deposition, March 13, 2014.

Lifescan, Inc. and Johnson and Johnson, v. Shasta Technologies, LLC, Decision Diagnostics Corp., Pharmatech Solutions, Inc., and Conductive Technologies Inc. (Alleged violations of the Lanham Act with monopolization counterclaims.) United States District Court for the Northern District Of California, Case No. V-12-360-KAW. Retained by defendants.

Michele LeComte Chambers et. al. v. Gold Medal Bakery, Inc., Bakery Products Corp., et al. (Alleged trademark infringement royalties.) Superior Court Commonwealth of Massachusetts, Case No. 2009-00716. Retained by plaintiffs. Expert Report, February 29, 2012. Rebuttal Report, April 29, 2013. Expert Declaration, March 14, 2014.

Nicolosi Distributing, Inc., v. BMW of North America, LLC. (Alleged tying and unfair competition.) United States District Court for the Northern District of California, Case No. CV-10-3256. Retained by plaintiff Nicolosi Distributing. Expert Report, April 1, 2011.

American Traffic Solutions, Inc. v. Redflex Traffic Systems, et. al. (Damages due to alleged violations of the Lanham Act.) United States District Court for the District of Arizona, Case No. 2: 08-CV-02051-PHX-FJM. Retained by plaintiff American Traffic Solutions. Expert Report, July 15, 2009. Rebuttal Report, October 7, 2009. Deposition, January 7, 2010.

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Mergers in entertainment industries. Retained by merging parties.

Mergers in semiconductor manufacturing. Retained by merging parties.

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- al.** United States District Court Northern District of California, San Jose Division. CASE No. CV-00-6506 MRP (AJWx). Retained by plaintiff and counterdefendant Nellcor.
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- Omax Corporation v. Flow International Corporation.** United States District Court, Western District of Washington at Seattle. Case No. C 04-2334. Retained by defendant and counterclaimant Flow.
- Various semiconductor matters related to SEP and FRAND.** For: a major semiconductor manufacturer; and, major SEP holders.
- Alleged trademark infringement in professional sports.** For team trademark holder.
- Xerox v. Hewlett-Packard.** United States District Court, Western District of New York. Retained by patent defendant Hewlett-Packard.
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Competitive Strategy

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EXHIBIT C

German Language:

Cradle of

Our Heritage



STRUGGLES WITH LANGUAGE CHANGE
AMONG MENNONITES

September 20, 2018

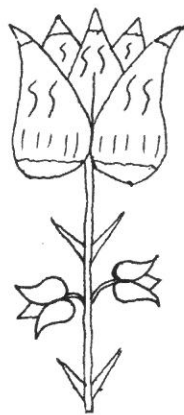
Presented to my Friends
Ernest and Gary Blosser
from Amos B. Hoover

German Language:

Cradle of

Our Heritage

A study of the importance of the Pennsylvania German language and the struggles in maintaining it in a modern English environment. Special attention is given to its effect on people; on Anabaptists in general, and Old Order Mennonites in particular.



As witnessed and interpreted by

Amos B. Hoover

1946 through 2018

PREFACE

A language is like a garden. If it is cultivated daily and looked after, it will thrive. But if it is allowed to maintain itself, it will soon be overgrown with weeds that choke out the plants you put there. It also requires a strong effort to keep a language alive. It needs to be used. You need to think in it, plan in it, dream in it, and pray in it. It is not enough to speak it in an effort to preserve it. It needs to be lively, and not considered some antique which you treasure and have on a shelf in a museum. Children need to live with it daily. If this is not done, it will shrivel and die.

The legislation of 1834 was the beginning of the end for the German language in America. It was called "An Act to establish a General System of Education by Common Schools." In itself this was a good law, but the big problem with this law was its requirement that English be the language used in the schools. Before this the large German population in Pennsylvania had established their own schools. They were sponsored by the churches and communities which they served. Even though the buildings were built and maintained by the churches, they did not teach religion nor did they provide catechetical instruction. That task was part of the home and church life. They did however use the book of Psalms as a reader, and the primers had a general Christian flavor. But the language was nearly always German. The population needed and wanted this instruction, because most churches had German preaching and singing. The new common school law was adopted township by township with twelve Lancaster County townships signing on the first year. Brecknock Township adopted the new system after a long and bitter legal battle in 1851. But West Cocalico was the very last to take it up in 1868. These last two townships, not surprisingly, were heavily German.

The most severe language problems in the Mennonite Church developed by the 1880s, after two generations had instruction in the English language in some areas of Lancaster County. The more conservative families held on to German in the home and made an effort to continue to teach and read it. But many families that spoke Pennsylvania Dutch at home no longer could read or understand the Sunday morning Schrift Deitsch. This produced a low tolerance for German Sermons, and spawned a movement to take up English in the Sunday morning meeting.

Once the movement gained momentum there was no stopping it. As a result a sizable body of historic literature was discarded to become curious books and papers in the attic or worse trash. To be sure much of the literature was translated into English, but almost no traditional hymns were brought along. And by taking up the King James Version of the scriptures they no longer read their texts in the Froschauer or Luther Bible. Some large English language Bibles continued to include the Apocrypha, but the smaller hand Bibles did not. So here they lost a portion of their traditional scriptures.

Abandoning the traditional language was to be expected, because now most members thought, were educated in, and read English. These changes brought about painful divisions in the Mennonite Church, which were based on a number of cultural differences rather than doctrine.

Perhaps this could be labeled progress, but at what cost?

Allen G. Keyser – January 21, 2018

Effects of Losing the German Language

SCRIPTURE VERSIONS AND APOCRYPHA

Most people are happy with the English transition, but there are some disadvantages to being only English. For example, losing the German language reduced our broad variety of Bible translations. Since our Conference recommends mostly the King James Version for English, this impoverished the wider perception and Bible comprehension as we abandoned both the Froschauer and the Martin Luther translation. Both of these had been part of our heritage.

Preacher Hershey Sensenig often shared that all members should study the Bible in both languages, in order to keep a better balance so one would not as easily be led off track. For example, in King James English, I John 3:9 reads, "Whosoever is born of God doth not commit sin..." implying that he cannot sin. In the German Froschauer, it says, "Er mag nit sünden," implying he is not as apt to sin willfully. This broader view of ambiguous scriptures, in the words of various ministers, "will help keep you from going off track."

Our literary losses are not only experienced by the Old Orders but are continent wide among Mennonites. In addition to the Scriptures mentioned above there are many devotional books lodged deeply in our heritage which were lost in our 300 year language journey in the Americas. The loss of the Apocrypha came about through language change. The apocryphal book most prized by Mennonites was Sirach which was at times appended to the New Testament like the Psalms. Sirach has many statements of wisdom written during the Jewish captivity in Babylon. While growing up with my Grandfather Burkholder I learned numerous statements from that book and yet I don't recall him studying that scripture. I concluded that he heard many early ministers quote them in their sermons. It is also known that the German ABC primer his family studied to get the basics of that language was compiled by Bishop Benjamin Eby. Surprisingly, over half the Scriptural quotes in that primer are from Sirach and Tobias.

In earlier centuries our ministers depended heavily on the book of Tobias for our wedding ceremony but today the ministers use only the blessing invoked by Tobias.¹⁰

DEVOTIONAL BOOKS

Mennonite commentaries and devotional books have never been translated. Thus they have been lost through language change. For example, the large Jacob Denner book is relatively unknown to English speakers. An extremely popular work, partly historical fiction *Wandering Soul* has been translated to English, but was mostly lost in the shuffle.

PRAYERBOOKS

Ernsthafte Christenpflicht is a prayer book used by Anabaptists over three centuries. This book is still used extensively among our Amish cousins. The Mennonites drifted into substituting both the German and English versions of *Haberman and Stark's Prayer Books*. In recent years the Anabaptist prayer book also appeared in English. But after so many years of non-use, there is a definite disconnect which makes it difficult to feel an attachment to those old prayers. Many devotional and doctrinal letters and books were never translated. Some such as the *Martyrs Mirror* and *Golden Apples* were translated, but it will take renewed effort to become reattached once a generation or two has lost the original.

HYMNODY

The biggest loss in language change is likely in hymnody. We lost much of our musical heritage written by our martyred ancestors. It is much easier to adopt new hymns from another group of believers than it is to pass on our hymn heritage in a translated form. For example, the *Ausbund* has been with us for 450 years and only recently have those hymns appeared in English translation. Those hymns which we have not sung for generations will not return naturally to our memory. Therefore the theology in the songs we sing is not from our own heritage but from other Protestant groups.

On several occasions I have been with people nearing their end whose mental facilities were no longer accurate, making communication almost impossible. Nor could we connect with them through modern songs but when we sang the old German hymns of their youth they seemingly "awoke" and helped sing. It is needless to mention that translations simply don't work that way.

SHAPING A LANGUAGE

Each speaker, in addition to his words, communicates something about himself and his group. Each locality in any language has peculiarities that are unique to its own area. So a speaker who uses the language of his fathers expresses a great deal of history with it, and if that person adds words and drops other words and expressions from his vocabulary, his speech becomes part of himself. The English or German we learn from a textbook in school is more standardized as a cookie cutter, while the inherited language passed on by word of mouth is more likely to tell the history of a family or a people. Thus Old-Orders as a whole, object to having their high school age children taught by outside teachers. Continuing vocational education within the group allows a greater likelihood that the child will understand and appreciate their own heritage. Undoubtedly the Old Orders have succeeded better in passing on their heritage, languages, and faith

¹⁰ The source for the marriage blessing is Tobias 6:15 in Martin Luther's translation. The blessing is absent in the King James translation. Our Amish neighbors still depend heavily on the entire book of Tobias for their wedding sermon.

It is interesting that Pennsylvania German has held out longer in Ontario at North Easthope than here in Pennsylvania. There are Reformed Mennonites there over 70 years of age, still speaking PA German. The Reformed Mennonites accepted no English hymns from other English Protestants. All of these English hymns are original Mennonite hymns with only a few translated from the German *Unpartheyisches Gesangbuch*.

June 23, 2013 Alan Keyser again reported that the first leaders of the Reformed Mennonites were all bilingual and since they were always strong on education they experienced very few problems with accepting English. In 1837, they published their own German hymnal. By 1847 they put out their first English hymnal. Most of these hymns were newly written. This hymnal was enlarged in 1873, 1895, and again in 1910. Their 1985 hymnal title *Collection of Hymns* is mostly a reprint of their 1910 hymnal. Keyser has been able to identify most of the writers by researching several lists left by the publishing committee.

During that research project, he learned that only four of the English hymns have been translated from German hymns. These were translated by two Reformed Mennonite writers, Samuel Cassel (1831–1925) and Letitia L. Frantz (1858–1931), the latter who was also a medical doctor.

Perhaps the most loved and typically Mennonite hymn in our German hymn book is *Aus Der Tiefe Rufe ich* that was translated in their hymnal (#226): "From the depths I call to Thee." Originally based on Psalms 130, this translation was made by the medical doctor Leticia Frantz and first published in 1873. Keyser added that her wonderful hymn was used at Longeneckers Meeting House only last week. Here is her translation: (Note that she dropped two verses and slightly rearranged the other verse, but she did a very good job.)

The Coming Sinner's Plea

1. From the depth I call to Thee,
Heavenly Father, hear Thou me;
To this piteous cry of mine,
Graciously Thine ear incline.
2. From the depth I call to Thee,
Sins are closing over me;
Judgement threatens from Thy hand —
Guilty I before Thee stand.
3. From the depth I call to Thee,
Lord, hast Thou forsaken me?
Oh, I long and wait and sigh
All the night till morn is nigh.
4. From the depth I call to Thee,
Is there no one hearing me?
Hear, I pray Thee, Savior dear,
Surely Thou wilt help me here.
5. From the depth I call to Thee —
Jesus, Thou my Savior be;

Wilt Thou pardon all my sin,
Make me clean and pure within.

6. From henceforth my cry shall be,
Jesus has delivered me.
Rise, my soul, and joyful bring
Praise and service to thy King.

July 10, 2011: Leonard Nolt (1961–) #1471 in 2010 Weaverland Conference Directory Leonard is the son of J.C. Nolt, son of John M. Nolt, son of the original J.C. Nolt or John Carpenter Nolt who died in 1930.

Leonard Nolt talked about his uncle Bachelor Harvey Nolt quoting Leonard's great-grandfather. (JC was Harvey's grandfather and a sister to my grandmother Anna Nolt Hoover.) JC was the oldest vorsinger and would announce the songs. One day at Groffdale they thought they would sing an English hymn which happened on occasion. The English hymnbooks were there. Then the Stübli door opened and the ministers began to come out. Out of courtesy, the song leaders at times waited and let the ministers announce it again and line the first verse. But instead of Joseph Wenger inquiring what the hymn was that they planned to sing, he announced a German hymn before he sat down and opened a book. So they sang a German hymn. But JC.. always said, 'If I would have the opportunity to do it over, I would have led the previously announced song, as the people were all ready for the English hymn.

I would add that I think this story is true as grandfather Benj also said it. J.C. Nolt was such a strong promoter of English, because his wife, Anna Musselman was English. —ABH

July 16, 2011: meditation by ABH

On our first date, I discovered that Nora B. Martin, my girl friend, does not read German, so we spent the evening studying the ABCs in German. We always spoke Pa German to each other during courtship and marriage, but when our first child Janet was born we thought her a very special child and we wanted her to excel in school so we spoke English when we addressed the children, but PA Dutch to each other. When Janet was beginning school we noticed that she still had not mastered Pennsylvania Dutch. Our children found it easier to talk Dutch to the animals than to their parents. On January 1, 1963, Nora recorded in her diary, "Janet said she almost says some Dutch words sometimes. She is trying so hard not to learn Pa. Dutch and I'm trying hard to teach it."

Our family switched to Pa. Dutch mostly by the advice of Mrs. Gustav Heiniman and also the influence of Isaac Clarence Kulp whom I learned to know in March of 1962. I personally was pretty much on a see-saw between English, High German, and Pa. German. Kulp argued that our Pa. Dutch is not a low class mixture as many believe, but is a much older language than modern German and very beautiful and deeply intertwined with our history. It was, however, Mrs. Heineman, our retired German teacher, very skilled in modern German, who pointedly said, "You are making a

tragic mistake by not teaching your native tongue to your children. Both I and my daughter were teachers and the Pa. Dutch and Spanish children who learn English as a second language consistently learn better English and have better marks throughout than those who learn English as a first language. Plus the fact that the latter group struggles to learn a second language and they pay thousands of dollars to do what they could have had for free." This talk convinced us to make the switch in earnest and I think all parties are now thankful. This change was in the making, but we did not have the full cooperation of the children until about the middle of the year, when I agreed to buy a new lawn swing at Paul B. Zimmerman once everyone participates. From then on, the switch became easy.

July 24, 2011: Meditation about a new Hymnbook by ABH

Some Wenger Mennonites noticed that their much loved German hymns were slowly but surely slipping away, as even some of their ministers have a struggle to read and fully comprehend the German language. In the words of Earl B. Martin, when he assessed their plight: "Es macht nix aus wie deutsch es ebber mehnt es er ist. Er is doch noch Englisch, weil alles schunst es er lest is Englisch." [It doesn't matter how German someone thinks he is, or how strongly he supports Pa. German, he is still English because everything else he reads is English; that is, everything besides the Testament and hymnbook.]

About five years ago, a group of Mennonites from various background began to discuss the value of those old German hymns every Monday night on a conference call instigated by Gary Blosser of Illinois. In the course of time, Earl B. Martin learned that two skilled linguists of Illinois from the Amish Mennonites were involved in a word for word interlinear translation in an effort to keep on teaching in German in their fellowship. First they put out their 1632 Confession of Faith in a dual interlinear edition. Then their own hymnal Sammlung von Schöne Lieder and the LiederSammlung in both the Baer and the Güngerich versions. These linguists were Earl Shrock and Laurence Kropf, who also participated in the above mentioned talks.

In course of time, Earl B. Martin mentioned that he would be willing to have such a book made out of the Unpartheyisches Gesangbuch if he had an advisory board to help him stay on track. This committee, in addition to Earl, was then comprised of: John B. Shirk of MO, Paul H. Rissler of PA, Mervin N. Martin of PA, Sam O. (Pequea)

of PA, and Phares Z. Horst of KY, and Earl Shrock and Laurence Kropf were commissioned to proceed with translation.

Carlisle Printing of Walnut Creek, Ohio undertook the printing job and after several more years of work, this book came out. They were delivered to Earl B. Martin's home on June 14, 2011. They were first sold below cost. They published 7000 copies at a cost of over \$110,000 or about \$15.30 per copy, but Earl sold them for \$10.50 per copy.

The books are well received, as many people like to sing from them. Even the German is larger and much clearer

Ein Unpartheyisches
A RELIABLE
Gesang-Buch
SONGBOOK

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CONTAINING
Geistreiche Lieder und Psalmen,
SPIRITUAL RICH SONGS AND PSALMS

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THIRD EDITION BICENTENNIAL

Verlag von den Alt-Ordnung Mennonisten Komitee
PUBLISHED BY THE OLD ORDER MENNONISTE COMMITTEE

Januare 2011

Interlinear Unpartheyisches Gesangbuch

This is the title page of the new interlinear hymnal published for Old Order use. It was published in 2011, two centuries after its initial 1804 appearance.

because of having been retypeset. Then the fact that a dictionary need not be located for difficult words is quite an advantage. If these books will totally replace the old format is a question, but probably not. Today, July 24th, they were first used in public worship by the Wenger Mennonites in the Rushville congregation in New York, when 160 new books were added. This was the first day of worship since their church house expansion. A copy is also on the singer's table in the Stauffer church in Snyder County. Earl B. reported that over half of the initial 7000 books have already been distributed. A few have been put into other Old Order Churches. Its acceptance is not as immediate as expected, because there is repeated counsel against the book from those who fear that this book may introduce English singing.

I personally was not on the committee, but contributed some encouragement. I was asked to obtain permission for this project from the Amish book committee, who hold the 1995 copyright, which I succeeded in doing. Then also Earl asked me to write the introduction, to include some history of the book.

and is more Old Order Mennonite than the language of the dominant culture.

March 18, 2012 : *The following letter was written by our church brother in Virginia, Edwin S. Martin in response to an early draft of this book. He believes in speaking a scholarly European type of High German and does not share many of my projected theses (as to the value of Pennsylvania Dutch in relation to our heritage).*

Correctly used the term "Dutch" refers to the language or people of Holland, thus my personal preference is that it never be used for our beloved German dialect. Earnest Gehman, (whom I personally knew as a boy) said this error began when William Penn's British officials misinterpreted "Deutsch" as "Dutch". My instinct is to correct this mistake, not continue it.

Despite my enormous love for the German language and culture I find no logical or factual reason to claim spiritual significance for the German language. Yes, if one knows German the Lord's Prayer has grandeur and majesty not found in English, yet as much as I love German hymns, How Great Thou Art has strength and beauty surpassing the original O Grosser Gott.

I wish to respectfully contest the idea that speaking English poorly with a German accent is a virtue. I have long admired our brethren in Ontario who speak a very correct and proper English, while also speaking better German than many of their U.S. brothers. Sie rieche die Blume, schmecke ess sach, they still roll their R's and mix in fewer English words than those in Pennsylvania, Ohio, and Indiana.

I find it ironic that the Groffdale Conference people cling to the German church services as important while seemingly giving little importance to correct pronunciation and usage. About 15 years ago I attended a Groffdale service in the Shippensburg area. I was shocked at the German scripture reading. The pronunciation was so incorrect that, had a German been there, I doubt they would have understood what was read. The opening and the sermon were delivered in Pennsylvania German, but a shocking number of English words were mixed in and worse yet, English phonetics seem to be gradually replacing German ones. I believe anything worth doing is worth doing well.

Though I was born in Virginia, the reason I learned PA German dialect is that my grossdawdy moved here from Wayne County, Ohio in 1944. My dad married a Virginia woman who was strictly English speaking. I was the firstborn. From little up I spoke German to Dad and English to Mom. Dad was particular so he insisted on proper German phonetics and pronunciation, proper grammar, structure and usage. No English words mixed in unless no German word existed. Two lessons I remember well: I learned quickly that although people and animals both die, in Deutsch da Hund geht tot, weil mensche starve. In English one may use the verb cut for hair, cloth, or firewood; not so in Deutsch. Mann schärft Haar, schneidt duch und papier, und mir segt feier Holz.

At this time there were still a few families in Virginia who spoke a version of PA German, basically they pronounced German words using English phonetics; for example, words such as wirt, wiel, and wäsche were pronounced with the English W, not the German.

Occasionally I picked up these sounds or inflections. Dad was quick to correct me and admonish me that if I was going to speak German I should use correct German sounds and say it properly. Perhaps now you can better understand my disappointment with the Groffdale people.

Vielen Dank das du hast mich getraut und erlaubnis geben für mich diese Buch lesen. Hoffentlich findest du etwas von wirt in mein schreibes und ich hoff das nichts in mein kratzes gibt ärgerniss!

[Many thanks for trusting me and giving me permission to read this book. Hopefully you can find something of value in my writing and I hope nothing in my scrawl causes offense.]

Dein Freund In Jesus,
Edwin S. Martin

May 29 2013: *Gary Blosser is an Amish Mennonite man from Tampico, Illinois, who is skilled with telephones. He has enabled his clients of many Mennonite churches to have free broadcasting by telephone. His most famous line is called the Amish and Mennonite Conference Line. He started this line in 2006 and it is used by many Old Order Amish and Old Order Mennonites across North America. It seems to be a vehicle of communication among Old Orders by telephone; ten years ago this would have been thought impossible.*

Discussions have to do with worship services, Old Order farming and agriculture, recreation, and a thousand other subjects. It enables one to hear accents, identifying numerous communities of Swiss and Palatine dialect never possible with the printed page. It binds the communities together much as the Sugarcreek Budget had done for 120 years, but it carried the dialect to new levels not possible in the Budget when writing in English. It helps to rejuvenate and build vocabulary, and hence may extend the life of the Dutch language.

This Amish and Mennonite line started in a small way in March 2006. Gary Blosser has by now (2018) issued over 10,000 talk passwords, giving those with the password the right to speak on the line, provided these people meet his criteria of Christian ethics. The average number of calls coming into the line in a 24 hour period is 10,000. All callers may listen in although not all callers have the password which enables them to speak. On busy days or times of predicted storms or disasters calls sometimes exceed 14,500 per day. To date, the largest number using it at one time was 2300.

There was such wide Old Order acceptance of this line talk. In 2010, Gary inaugurated the talk password system where only approved telephones could call in thus preventing nuisance calls. Today in 2018, Gary has approved over 10,000 talk passcodes.

My dear historian friend, Leroy Beachy from Ohio, related a number of observations, saying, "When dialing in one can immediately tell if the speaker is of Amish or Mennonite background because the Mennonites cannot differentiate their V's and W's, while all the Amish have that ability.

Leroy also made a classical statement, "Es wer immer sort von Mauer zwische die Amishe und

Menniste, un selle Lein hut alles eweck genumme und sie kenne all zammer schwetze." [There has always somewhat been a barrier between the Amish and Mennonites and this took it all away. They can all visit with each other.]

July 29, 2012 Notes from a conversation I had with Alvin S. Martin on Sunday August 8, 2012 at Cocalico:

Alvin S. Martin attended Fairview Mennonite church in Kentucky. There were about a dozen people there who were cousins to Alvin, even though they have 35er background. They preached some Pa. Dutch and deliberately interspersed it with English. He said his cousin Sam Hoover had 25% English in his sermon, while his cousin Bishop Wayne Martin (1959–2018) had the main part, with only about 50% Dutch. My brother-in-law Ivan W. Hoover, the deacon, had all of his part in German.

Aug 11, 2012: a visit to the Philadelphia church of Apostolic Christians of America. We visited with Perry Klopfenstein of Gridley, Ill; Minister Ben Weigard of Philadelphia, Pa; Elder Tom Lemon (born in 1936) of Denver, Co; and Jerry Bauman, (born in 1953) of Rittman Ohio. Below is a very interesting observation which most of our groups have also experienced to some degree.

Perry said that in 1906 and 1907 there was a clothing/moustache division in the church and in 1932 another division when ten percent of the people left the group. Some of them are located 20 miles north of them because they favored German. He remembered when that was a struggle and it ended in that the church services and especially their Sunday Schools became a German school and not really church worship.

October 2012: A Botschaft article of Harry Troyer, Prattsburgh, New York

In the Botschaft of October 15, 2012 a writer observes that there is less and less demand for German books at a time when Old Orders are growing at a tremendous rate:

"It is now ten years since the Menno Simons book was reprinted in German after having been out of print for several years. It seems the Amish and Old Order Mennonites are slowly losing the German language. At the same time the population is doubling every twenty years, the demand for the old books of our forefathers in the German language is at an all time low. If it ever runs out of print again, it might not be reprinted."

Dec. 29, 2012: David G. Burkholder born in 1944, is now one of the longest ordained in the ministry, within the Eastern Pennsylvania and Related Areas church. He was ordained minister in 1968 and bishop in 1990. He is my cousin, who grew up in Hinkletown, with a Pennsylvania Dutch heritage. He has labored among the Plaat or Low German Mennonites in British Columbia, Canada for many years and he is now also working among them in South America. David said this about the language in Bolivia:

One should speak both Spanish and German to get along there. I learned to talk Blatt Dutch quite well

in B. C., but here there are English words mixed in, whereas in Bolivia there are Spanish words mixed in and it becomes more critical, so in difficult cases I use an interpreter.

Cousin David and Lorraine Burkholder from B. C. stopped in today, December 29, 2012, as he does routinely. He told me he traveled to Bolivia and Argentina. The northern part is mostly Indian and the southern part of Argentina is mostly European. Argentina is the most European country in South America and segregated from the natives.

Stanley Wine and David are the Eastern Mennonite bishops for South America. They and their mission board do a lot of their correspondence by conference calls. They first started mission work in Argentina and that group of several families went to Bolivia to start among the Old Colony Mennonite people. There are lots of other groups proselyting among the Old Colonies, such as Jehovah's Witness, Evangelical groups, and modern Mennonites, and they all, according to David, succeed in making them more worldly, while the Eastern Mennonites have some conservative values. The outreach in Bolivia was started later, but that has the potential of really growing. We had a presence there since 2010 but only since June of 2012 do we have ordained people there. The preacher is from Vanderhoof, British Columbia. They have many family connections between B.C. and Bolivia. Bolivia is primitive, with no electricity, and no all weather roads.

January 23, 2013

Nora was at a neighborhood quilting at David and Leah Lapp. There were several OO Mennonite and OO Amish people at their quilting. Nora talked about gegwänd while the Amish simply say gwänd [to be accustomed to]. Then Mrs. David Lapp went on to say, "Die Kinner heit zu dags dun viel englische Worte nei un es sin viel deutsche Worte von die Eldre es vergesse gehn." [The children of today put many English words into (their PA Deutch speech) and many German words of their parents are lost.]

June 3, 2013 Keith (Butch) Reigart was born August 19, 1951. He studied many languages and was a professional interpreter in German, Romanian, and Russian. Since 2006 he, with the encouragement of Professor C. Richard Beam, took renewed interest in his native York County version of Pa. Dutch, including the nuances and variations found in the different Pa. Dutch settlements. Butch was accompanied by Beam to Paul Z. Burkholder's home in August of 2006, making his first contacts with the Lancaster variety of Pa. Dutch. In November 2006, an old York County Brethren and Dutch speaking friend of his, Henry M. Miller acquainted Butch with the Sam and Barbara Zook family of Gordonville, thus expanding his knowledge of Lancaster Amish. Simultaneously, he attended the Pa. German services of Conestoga, a Groffdale Conference Church. In Fall of 2008, Butch began filling in as dialect instructor for the LMHS, at the request

BIOGRAPHIC SKETCHES

Biographical Sketches of people who supplied notable quotes in this study

Beam, C. Richard (Feb 15, 1925 – Jan 26, 2018) was immersed in Pa Dutch all his life. He got training locally, but also studied German in Vienna and in Marburg. He was considered the dean of all Pennsylvania Dutch speakers.

His zenith achievement on the subject was his 12 volume comprehensive Pa Dutch dictionary. Old Order Amish and Mennonites remember him most for his "Deutsch Eck" in the *Budget* and *Ephrata Shopping News*, where he frequently featured Old Order writers such as DB Stauffer, Levi Zimmerman, Isaac R. Horst, Nancy Martin, and others.

Bach, Jeff (Jan. 19, 1958 –) was born to Glenn and Eleanor (Anderson) Bach in Ohio. He earned various degrees at McPherson College in Kansas, Bethany Seminary in Illinois, and Duke University in North Carolina. He is a Brethren minister and has written a ground breaking book on *Ephrata Seventh Day Brethren*. Since 2007 Jeff is director of the Young Center. He, along with Don Kraybill and Steve Nolt, does a tremendous job in directing that Center of Anabaptist and Pietist Studies. Jeff is great on language skills and deciphers nearly unreadable German script.

Beiler, Abner F. (December 28, 1917 – September 7, 2002) He was an Old Order Amish book binder, a trade which he passed on to his son, Christ Beiler. In 1969 he helped found the Amish Diary. In 1976, the idea of forming an official Amish library began and they called their organization Pequea Bruderschaft Library. It began slowly in Abner's home, but has now grown to an impressive collection with wide Amish acceptance. Their quarterly library meetings have developed into a major information engine of Amish research. Abner also pioneered research in their ancestral Amish homes in Berks County and he published a map book on that subject.

Beiler, Benjamin K. (Aug. 11, 1948 –) son of Lloyd Beiler is a member of the Summitview Amish church and he is their historian. He is very deeply settled with books and now (2017) enjoys employment with Grace Press in their manufacture. He once produced a periodical called *Der Deutscher Brief* to promote the German language.

Beiler, Joseph F. (May 12, 1923 – Nov. 25, 2004) was born to Christian S. and Rebecca (Petersheim) Beiler. He was the pioneer and leading historian of the Lancaster County Amish. He wrote many cutting edge articles in *The Diary* which he helped found, along with Abner Beiler and Amos Fisher. He was also an

Amish minister. His father, Christian, published *Eine Vermahnung* in 1928, which had been written around 1860 by Bishop David Beiler. This was a very important booklet, as David Beiler is considered the father of the local Old Order Amish. One would long for more Joe Beilers.

Bender, Harold Stauffer (July 19, 1897 – Sept. 21, 1962) was a mentor to most Mennonite Historians in restating his Anabaptist Vision. He wrote books and countless articles. Harold founded the Historical Committee in Goshen and the *Mennonite Quarterly Review*. In 1928 he gave us his *American Mennonite Bibliography* and his work climaxed in the 1950s with the publication of the *Mennonite Encyclopedia*. Although some of his writings have been challenged by modern scholars, his writings are still the strongest force in Mennonite scholarship and historical life and thought. His wife, Elizabeth (Horsch) Bender, was a master translator in German, Dutch, French, Spanish, and Latin, and was a wonderful support to her husband's work and a personal acquaintance of this writer.

Blosser, Ernest (Sept. 6, 1939 –) is a native of Illinois and a leading historian of the Tampico Amish Mennonites. The Old Order Amish and Church Amish had begun to develop into two camps nationwide during the 1860's. The latter group grew so progressive by 1905 that the Amish Mennonites (John Kauffman) people began to separate from the Church Amish. These Amish Mennonites are referred to as the Tampico people or the John Kauffman group, or as the Sleeping Preacher churches. Ernest, without a doubt, is the top historian of his group, although for the sake of humility he would never claim such a title. Ernest and his late wife Ruth (Hostetler) Blosser (1939 – Jan 15, 2013) had a large family, one of whom is well-known Gary Blosser. Gary designed the Amish and Mennonite Conference Line which enables Pa Dutch people to communicate in their own language over all of North America. This conference line may well extend the longevity of Pennsylvania German, since most speakers have lost all traces of writing the language and communicate only by the spoken word.

Bomberger, Homer (Nov. 11, 1909 – Jan. 26, 1995) was the son of Cyrus M. and Lydia L. (Douple) Bomberger. Homer was ordained minister in Lancaster Conference on Feb. 28, 1940 at Erbs Mennonite and on Nov. 18, 1943 he became bishop. He was one of the five bishops who helped develop the conservative Messianic Mennonite Mission (the three M's) which by 1968 broke relations with the Lancaster Conference to form the Eastern Pennsylvania and Related Areas Church. By 1971 Bomberger felt the Eastern church

EXHIBIT D

Exhibit D

Data/Document Requests from IXCs

1. Produce all documents relating to access-stimulating CLEC invoices submitted to you, including all documents relating to your analysis, investigation, verification, payment, or dispute of such invoices, including, without limitation, documents sufficient to show which traffic was paid for in cases of partial payments of invoices. Include your definition of “access-stimulating” used to identify CLEC invoices.
2. Produce all documents that evidence, refer, or relate to any rate or price that the IXC has quoted and/or charged to any wholesale long distance customer in connection with delivering traffic to any access-stimulating CLEC from January 2012 to present.
3. Produce all documents that evidence, refer, or relate to any deposition, trial testimony, or written regulatory testimony that any employee or representative has given in any proceeding related to a claim by you that you did not owe access charges because a LEC was engaged in “access stimulation,” “mileage pumping” or “traffic pumping”, including any exhibits referenced in the testimony.
4. Produce documents sufficient to show the monthly volumes of the traffic delivered to an access-stimulating CLEC for each month from January 2011 to present. As in Question 1, provide your definition of “access-stimulating CLEC” used to identify this data. Provide the data in a manner that distinguishes between traffic originating from one of your affiliates and traffic carried by you on behalf of unaffiliated companies (*i.e.*, wholesale traffic).
5. Produce documents sufficient to show the revenue you earned from the monthly volumes of the traffic at issue that you carried as retail traffic; to the extent any such retail customers subscribed to an unlimited plan while making the calls at issue, produce documents sufficient to determine the average revenue per minute you have earned on a monthly basis from January 1, 2012 to present.
6. Produce documents sufficient to show the revenue you earned from the monthly volumes of the traffic at issue that you carried as wholesale traffic. Provide data sufficient to identify revenues paid by a wholesale customer, including the identity of the wholesale customer.
7. Produce documents sufficient to demonstrate the average monthly volume of domestic long-distance calls (in Minutes of Use) that subscribers to any unlimited long-distance plan have made from January 2012 to present.
8. Produce documents sufficient to demonstrate the total revenue you have received from any unlimited long-distance plan subscribers on a monthly basis, and the total number of subscribers of such unlimited long-distance plan for each such month, from January 2012 to present.

9. Produce any contracts or agreements between you and any CEA provider that has been in effect at any time since January 2012. Specifically with regard to AT&T, this request includes, but is not limited to, to the contract referred to in an email from Bob Hayes to Chris Burckhardt on November 12, 2014, which AT&T described as a September 14, 2014, Service Agreement with SDN for the purchase of Switched Access Transport – Terminating Service whereby AT&T purports to have obtained “High Volume Switching and Transport Service” (“HVSTS”) to transport switched access traffic from AT&T’s Point of Presence through SDN’s network for handoff to Northern Valley in Groton, S.D.
10. Produce all invoices from a CEA provider for the provision of transport services for traffic to/from an access-stimulating CLEC.
11. Identify each type of “access-stimulation” termination fee you assert you are or been charged by CLECs in 2009, 2010, 2011 and 2016, 2017. Provide data sufficient to show the average value of each category of termination fee you assert you are or have been charged in 2010 and 2016, 2017 and 2018.
12. Produce a list of all CLECs that you are currently withholding payment from based on allegations of access stimulation, including the unpaid balance. In addition, provide the date when you first began withholding payment based on allegations of access stimulation and the identity of the CLEC from whom you withheld payment.
13. Produce documents reflecting all long-distance plans offered between 2011 and 2018 and the cost consumers were charged for those plans. To the extent the offering is a bundled offering, include documents disclosing how much of the bundled price was attributed to long-distance service.
14. Produce any documents or evidence showing that, between 2011 and 2018, access stimulation was a factor in in how you set long distance rates. In addition, provide any public filings with, but not limited to, the U.S. Securities & Exchange Commission where you identify access-stimulation as adversely impacting your business or creating business risk.
15. Provide data on your investment in broadband deployment, by year, from 2010-2018. Provide separately all funding received from agencies of the U.S. government to subsidize or otherwise underwrite the cost of broadband deployment.
16. Provide documents sufficient to show planned investment in broadband, both 4G and 5G, from 2018-2020.
17. Provide data as to the number of minutes of service you handled each year from 2010-2018 by (a) fixed wireline origination, (b) wireless origination, (c) VoIP origination, (d) fixed wireline termination, (e) wireless termination, and (f) VoIP termination.

Data/Document Requests from CEA Providers

1. Produce documents sufficient to show the revenue you earned from IXCs for switching and/or transporting traffic to access-stimulating CLECs for the period January 1, 2012 to present.
2. Produce documents sufficient to show the monthly volumes of the traffic destined for access-stimulating CLECs that you switched with your tandem switch for the period January 1, 2012 to present. To the extent that some of the traffic was billed pursuant to contract and other of it was billed pursuant to tariff, provide the data in a manner that distinguishes the volumes by carrier and identifies whether the traffic was billed pursuant to contract or tariff.
3. Produce all documents exchanged between you and any member of affiliate regarding your position on whether CLECs should accept traffic from long-distance carriers through a direct IP interconnection.
4. Produce all Operating Agreements or other governing documents that relate to the duty of members and/or affiliates with regard to the routing of traffic that have been effective at any time after January 2012.
5. Produce any contracts or agreements between you and an IXC that were executed or amended in or after January 2012 that relate to the delivery of traffic to any access-stimulating CLEC on a contractual basis.
6. Produce all invoices from sent to any IXC as a result of a contract or agreement identified in response to the previous request from September 2012 forward.
7. Produce documents sufficient to identify the points of interconnection established between you and any members or affiliates, including documents showing who chose such points of interconnection and/or how they were chosen.
8. Produce documents sufficient to show how you calculated your access rates for federal tariff filings made in or after 2012, including, but not limited to, materials sufficient to understand whether traffic volumes destined for access-stimulating CLECs were included in those calculations.
9. Produce all documents that evidence, refer, or relate to any deposition, trial testimony, or written regulatory testimony that any employee or representative has given in any proceeding related to “access stimulation,” “mileage pumping” or “traffic pumping” or a CLECs’ failure to route all traffic through your tandem switch, including any exhibits referenced in the testimony.
10. Produce documents in your custody, possession or control that reflect either ownership or control of any transmission capacity that would be utilized on a call traveling from your tandem switch to an access-stimulating CLEC.

11. Produce copies of all documents that evidence, refer or relate to any changes that any access-stimulating CLEC made in the manner in which interexchange traffic was carried, routed or switched after January 2012.

EXHIBIT E

INACCURATE STATEMENTS MADE IN IXCs'
OPENING COMMENTS

Inaccurate Statements Made in AT&T's July 20, 2018 Comments:

- **“[I]n the years since the *Transformation Order*, access stimulating LECS, particularly those in rural areas, have found new ways around the intercarrier compensation and access stimulation rules. One way they do so is by partnering with intermediate access providers.” Page 1 (failing to cite to any data, evidence, or examples to support its assertion).**

CLEC Comment: This statement is inaccurate because the CLECs are not aware of any access-stimulating CLECs finding “new ways around the intercarrier compensation and access stimulation rules” since those rules were implemented in 2011. AT&T has not identified any specific instance in which a CLEC is billing rates that are not consistent with the *Connect America Fund Order*.

Further, the statement is inaccurate in so far as it states the access-stimulating CLECs began “partnering with intermediate access providers” in order to evade the *Connect America Fund Order*. As the CLECs have discussed, they have consistently provided a TDM interconnection for traffic through the regulated path associated with their respective CEA provider. In addition, each CLEC has one or more alternative IP connections that carriers can use on a negotiated, unregulated path. Thus, rather than seeking to “evade” the Commission’s rules, the CLECs have in many instances been able to negotiate commercially-reasonable terms with IXCs. AT&T, on the other hand, has consistently resorted to self-help withholding and made unreasonable demands on CLECs.

- **“By artificially inflating the cost of service, these [access stimulation] schemes ultimately hit the pocketbooks of ordinary consumers.” Pages 1-2 (citing to the Commission’s 2011 *Connect America Fund Order*, but failing to provide any revised, post-2011 data or evidence to support its assertion).**

CLEC Comment: This statement is inaccurate because access-stimulating CLECs are not “artificially inflating the cost of service.” To the extent the terminating CLECs bill any charges at this point, they bill only for the mileage of transport that they provide to the IXCs.

Moreover, the statement is inaccurate because it suggests that “ordinary consumers” – a term which itself implies that consumers using free conferencing services are

extraordinary – have their pocketbooks “negatively” affected. First, the suggestion that consumers who use free conferencing services do not pay their fair share when they purchase their long-distance plans is entirely unsubstantiated. On the contrary, the limited available evidence in the record suggests that free conferencing consumers as a whole pay enough in long-distance charges to more than cover the cost of access charges and that, as a result, other consumers are not impacted. Moreover, the suggestion that consumers’ pocketbooks are “negatively” affected can only be true if the elimination of access stimulation would result in a discount to consumers’ long-distance bills. But, as the access-stimulating CLECs have previously mentioned, despite years of declining access charges, long-distance rates have continued to increase. Thus, it is inaccurate for AT&T to represent that access stimulation is harming ordinary consumers.

- **“Despite the Commission’s efforts, the carriers engaged in access arbitrage have found ways to get around the rules ... resulting in billions in terminating minutes of use and causing IXC’s and consumers to incur many millions in expenses caused by access arbitrage.” Page 7 (failing to cite to any data, evidence, or examples to support its assertion).**

CLEC Comment: This statement is inaccurate for the same reasons provided above.

- **“[T]he [access stimulation] problem has only worsened since 2011 ... [as] LECs and intermediate providers receive greater compensation from IXCs the further the LEC or intermediate access provider carries the traffic.” Page 8 (failing to cite to any data, evidence, or examples to support its assertion).**

CLEC Comment: This statement is inaccurate because the access charges billed by CLECs have decreased dramatically since 2011 (all the way to zero in many instances). Further, the rates charged by CEA providers have also decreased, and are decreasing more significantly as a result of recent orders. Thus, it is impossible to understand the basis for AT&T’s conclusion that these carriers receive greater compensation today than they did in 2011.

This statement is also inaccurate because, with regard to many carriers, AT&T has engaged in self-help withholding. Thus, it is highly unlikely that most carriers are receiving “greater compensation” from AT&T.

- **“AT&T estimates the industry and consumers continue to be burdened by wasteful schemes totaling 8.2 billion minutes-of-use annually, with a resulting cost of almost \$80 million annually notwithstanding that more than six years have passed since *Transformation Order* reforms and the transition to bill-and-keep on terminating**

access is nearly complete.” Page 10 (failing to cite to any data or evidence to support its assertion).

CLEC Comment: At a minimum, this statement appears to be inaccurate because AT&T seems to include in its “cost” figure amounts that AT&T is refusing to pay carriers for the services that AT&T receives. Moreover, AT&T’s statement is inaccurate for the reasons stated above; *i.e.*, that AT&T’s lacks the necessary evidence to support its assertion that consumers are “burdened” by being able to use their long-distance plans to access free conferencing services.

Inaccurate Statements Made in CenturyLink’s July 20, 2018 Comments:

- “[S]till other[] [arbitrage practices] continue and certain arbitrage practices have emerged and/or been exacerbated by the *Transformation Order* reforms. The practices at issue inflict significant economic harm upon the industry.” Page 5 (citing to the Commission’s Access Stimulation NPRM, but failing to provide any data, evidence, or examples to support its assertion).

CLEC Comment: This statement is inaccurate for the same reasons provided above.

- “IXCs continue to be harmed by excessive transport mileage and high usage-based rates associated with access-stimulating LECs and their intermediary tandem providers.” Page 5 (citing to the Commission’s Access Stimulation NPRM, but failing to provide any data, evidence, or examples to support its assertion).

CLEC Comment: This statement is inaccurate for the same reasons provided above.

Inaccurate Statements Made in Verizon’s July 20, 2018 Comments:

- “[D]espite the Commission’s efforts, arbitrage schemes still persist and ‘harm consumers, undermine broadband deployment, and distort competition.’” Page 2 (citing to the Commission’s Access Stimulation NPRM, but failing to provide any data, evidence, or examples to support its assertion).

CLEC Comment: In addition to the reasons provided above, this statement is inaccurate because access stimulation has actually enhanced broadband deployment in rural communities and because there is no evidence that access stimulation has affected any of the IXCs’ ability to invest in broadband.

- “[A]ccess-stimulating LECs have ‘circumvent[ed] the Commission’s rules’ adopted in 2011 to curtail their arbitrage activities ‘by interposing intermediate providers of

switched access service not subject to the Commission’s existing access stimulation rules in the call route,’ artificially inflating the access charges they assess on interexchange carriers by exploiting the transport rates not included in the initial transition.” Page 2 (citing to the Commission’s Access Stimulation NPRM, but failing to provide any data, evidence, or examples to support its assertion).

CLEC Comment: This statement is inaccurate for the same reasons provided above. As the CLECs have repeatedly noted, there is no basis for the assertion that access-stimulating CLECs have increased the mileage charges that they assess in the period since 2011.

- **“Under the Commission’s rules, CLECs typically benchmark their rates to the prevailing ILEC rate. But to maximize the margin above incremental cost, some CLECs seek to benchmark to a high-priced incumbent LEC or inflate the transport mileage that they use to calculate billed charges.” Page 3 (failing to cite to any data, evidence, or examples to support its assertion).**

CLEC Comment: This statement is inaccurate for the same reasons provided above. The CLECs are not aware of the group of “some CLECs” that Verizon refers to in its comments, as it fails to substantiate its claim with any examples.

- **“[T]he terminating LEC restricts interexchange carriers from using more efficient transport options by refusing direct connections or offering to provide them only under unreasonable rates and terms.” Page 3 (failing to cite to any data, evidence, or examples to support its assertion).**

CLEC Comment: This statement is inaccurate because several carriers have voluntarily agreed to utilize more efficient IP transport options to deliver their traffic. The statement is also inaccurate because several carriers, like AT&T and Inteliquent, who claim to have sought “direct connections” from the access-stimulating CLECs, did not actually have the facilities to institute such direct connections and, instead, sought to use CLEC transport facilities on a below-tariff basis. Moreover, this statement is inaccurate because it wrongly places blame on “terminating LECs” and fails to acknowledge existing Commission policies and operating agreements that require subtending carriers to exchange TDM traffic at the CEA provider’s tandem switch.