THE PRICE CAP LECs' "BROADBAND CONNECTIVITY PLAN"

Protecting Their Past, Hijacking the Nation's Future

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I. Introduction

More than four decades have elapsed since the Federal Communications Commission (FCC) embarked upon a mission to introduce competition into the US telecommunications market. In 1996, the US Congress enacted legislation that largely brought to an end the concept of franchised service areas and created a suite of mechanisms intended both to eliminate legal and most economic barriers to entry, as well as to affirmatively encourage and facilitate entry in virtually every telecom sector.

Throughout this 40+ year period and, as exemplified in their "America's Broadband Connectivity Plan" ("ABC Plan") under examination here, the incumbent carriers have persisted in efforts to maintain their legacy monopoly positions while simultaneously working to dismantle the regulatory mechanisms that had served to constrain their exercise of market power. In addition to numerous efforts aimed at frustrating competitive entry wherever and whenever possible, incumbent LECs have sought to carve out certain protections and, as in the case of rural and high-cost areas, subsidies to which the incumbent LECs would be given an exclusive or, at worst, a preemptive claim. The "ABC Plan" being proposed by the largest "price cap ILECs" falls squarely into this category. If implemented as proposed, the "ABC Plan" would lock in – for a decade or more – a monopoly broadband infrastructure for the supported high-cost areas that offers the barest minimum standard of *fixed location* broadband service (4 mbps download/768 kbps upload) that is even by current standards barely adequate to support existing applications and demands, and that will almost surely be woefully insufficient a decade from now. While the support mechanisms and subsidies envisioned by the ABC Plan purport to be both competitively- and technology-neutral, the process by which providers would qualify for them and the manner in which they would be awarded are heavily tilted toward wireline fixed location services furnished by the Plan's ILEC sponsors, and against mobile, wireless, and even competitive non-incumbent wireline providers.

While the Plan sponsors' desire to maintain their incumbency benefits and to protect embedded investments may be understandable, its effect is to defer for another decade or longer resolving the issue of extending into rural areas broadband that is comparable to what is already available throughout the rest of the country. Protecting and subsidizing incumbent wireline monopolies to the exclusion of entrants capable of bringing new services and innovative technologies to rural America will not achieve the goals of the National Broadband Plan or be in the public interest.

The shift from implicit to explicit support mechanisms

The use of telecommunications rate structures to flow subsidy support to meet specific "public interest" objectives has existed almost as long as there have been regulated telephone services. Under traditional rate-of-return regulation, regulators would authorize the utility to file tariffs intended to generate a specified level of revenue (the "revenue requirement") and would in many instances either prescribe or expect that prices for what were considered to be "discretionary" or "premium" services (things like long distance toll calls, optional calling features, business exchange service lines and directory advertising) would be set sufficiently in excess of their cost so that prices for other "essential" services – principally basic residential dial tone access – could be priced at "affordable" levels, thus encouraging universal connectivity to the public switched network. The aggregate revenues expected to be generated by "discretionary" and "premium" services, based upon their above-cost rates, would be subtracted from the "revenue requirement" established by the regulator, with only the "residual" to be recovered from the remaining "essential" services.

This arrangement was the economic equivalent of a taxation and subsidy structure that was feasible precisely because virtually all services – discretionary and essential – were being provided by the same ILEC entity on a monopoly basis. The arrival of competition for services that had been subject to the implicit "tax" – along with the adoption of price cap regimes in which contribution-generating competitive and discretionary services were often walled off from "basic" offerings through classification into separate price cap "baskets" – made this arrangement increasingly unworkable. As customers migrated to competing services that were not subject to the implicit "tax," ILEC revenues diminished, and so began their effort to replace these implicit payments with explicit contribution mechanisms to which all providers would be subject. Lest one develop too much sympathy for the ILECs' plight, it is noteworthy that a considerable amount of that customer migration went to nonregulated services and affiliates of the ILECs themselves. In other words, the types of services that had previously been classified as "discretionary" or "premium," with the expectation that they would subsidize affordable rates for "essential" services, were often segregated by the ILEC from its core business precisely so that it could isolate these more profitable services and claim – as to the remaining services – that "competition" was eroding the revenues required for their support. As the ILECs' "loss" of implicit "tax" revenue was replaced by increases in revenues for nonregulated services such as wireless and broadband, the ILECs ignored the "plus side" of the equation and continued to demand that they be made whole with respect to any erosion in revenues that had previously been providing implicit support.

This is not to say that the process of replacing implicit contribution and support mechanisms with explicit arrangements is not worth pursuing. Indeed, "implicit" support is by its very nature largely invisible: Support may be accomplished through rate structure devices as described above, by the use of broadly averaged rates across services or categories of customers exhibiting widely varying costs, or via other devices that operate to distort economic choices and to conceal the true "cost" of *de facto* subsidies that are present.

These and various other related issues are being addressed by the FCC in its *Universal Service and Intercarrier Compensation Transformation Notice of Proposed Rulemaking (USF-ICC Transformation NPRM)*.[1] On July 29, 2011, six price cap ILEC holding companies, including the nation's largest ILEC/wireless/broadband providers – AT&T and Verizon – along with CenturyLink, FairPoint, Frontier, and Windstream, submitted what they described as a comprehensive plan for reform of the universal service and intercarrier compensation systems, which they've designated as their "America's Broadband Connectivity Plan" for providing support for broadband infrastructure development in high cost area explicitly through broad-based contributions to several new funds to be established for this purpose rather than implicitly through switched access charges and other intercarrier payments. In general, shifts from implicit to explicit contribution and support programs are clearly a step in the right direction. However, the devil is in the details, and in this paper we explore those details specifically with respect to the "ABC Plan." Our overall conclusion is that the price cap ILECs' "ABC Plan" stakes out a privileged position for price cap incumbent LECs at the expense of smaller competitors (competitive eligible telecommunications carriers) and consumers, is backward-looking in its approach to infrastructure development, and sacrifices economic efficiency in favor of measures that are designed to protect the financial interests of its sponsors.

Support mechanisms involve two separate components

Whether implicit or explicit, there are two separate and distinct components to any type of funding mechanism:

(1) *Contributions that are generated either as implicit components of certain prices or as explicit payments.* These are the economic equivalent of excise taxes that, if not structured correctly and carefully, can operate to distort economic and technology choices, lead to mispricing of intermediate goods and services and end-products, and by favoring certain types of entities and/or technologies over others have the potential to diminish competition that might otherwise be viable.

(2) *Subsidies that are funded by these contributions.* These can create similar distortions to the extent that the basis for their award operates to favor certain technologies or entities over others and/or results in mispricing of intermediate and final products and services.

Implicit contribution mechanisms are far more likely to create distortions and produce economically inefficient outcomes, for several reasons:

(a) *Lack of transparency* – it is often difficult even to identify the actual amount of the implicit contribution or how it is determined and collected. For example, using broadly averaged

1. *Universal Service Reform – Mobility Fund, Notice of Proposed Rulemaking*, 25 FCC Rcd 14,716 (2010), rel. February 9, 2011.

costs calculated across low-cost and high-cost areas creates an implicit subsidy from the (overpriced) low-cost areas to the (underpriced) high-cost areas. However, it may be extremely difficult actually to quantify the dollar amounts of such implicit flows.

(b) *Disparate applicability* – the contribution mechanism may operate so as to advantage certain segments and disadvantage others, thereby distorting technology choices, disadvantaging some competitors vis-à-vis others, affecting the demand for end-products and, to the extent those serve as inputs to other economic sectors, adversely affecting the overall economy.

(c) *May distort consumer purchase decisions* – some implicit contribution arrangements are driven by arbitrary – and archaic – value judgments as to what types of services should be made to contribute and how much (e.g., long distance toll calls are more valuable to customers than local calls) even though those assessments may have long since been made obsolete by more recent changes in technology and lifestyle.

Economic choices made by consumers and producers are generally most efficient when the factors influencing them are subject to competitive market conditions. Unless specifically intended to influence consumer choices and other economic decisions,[2] an efficient taxation or, in the present context, contribution structure will be designed so as to minimally distort such free market choices. Similarly, the goal of any support arrangement should also be to rely, to the greatest extent possible, on competitive marketplace choices, stepping in only where "market failure" arises – i.e., where competitive market conditions cannot be expected to arise on their own. As we show, there are a number of aspects of the "ABC Plan" that directly violate these fundamental principles.

Competitive economies rely upon markets to set prices that accurately reflect the costs of production, thereby confronting consumers of final products and purchasers of intermediate products that are used as inputs to further production with efficient choices that maximize social welfare and allocative and productive efficiencies. Imposing artificial distortions on the pricing mechanisms requires great care and creates a considerable risk of undermining economic efficiency overall. Past efforts aimed at shifting from implicit to explicit subsidies produced considerable economic benefits and growth in GDP overall. For example, when most implicit contributions were eliminated from long distance toll and switched access charges and shifted to explicit end user charges (the Subscriber Line Charge or SLC) bringing both more closely in line with their respective costs, demand for the more price-elastic toll calls escalated with minimal negative impact upon the demand for basic local exchange service. Additionally, as basic local exchange service prices were increased so as to bring them closer to the cost of these services at the same time that competitive choices for network access became available, consumers were better able to make efficient decisions among providers and technologies.

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2. For example, cigarette and alcoholic beverage taxes are intended both to generate revenue as well as to suppress demand for the taxed products.

Congress and the FCC have determined that there is considerable public benefit to bringing broadband Internet access to rural high-cost areas. However, doing so should require the sacrifice of extending the same benefits of a competitive telecommunications market into the target regions. Telecommunications and information technologies are evolving at so rapid a pace that any policy that operates to lock in a single provider, a single service arrangement, or a single technology for an extended period of time will undermine the overarching goal of providing comparable services to all parts of the country; even if at the outset rural customers are provided with what are as of that date state-of-the-art services and technology, policies that lock out competitors for a decade or more will all but guarantee that these same areas will fall behind their urban counterparts within a relatively short period of time.

II. Key principles

Adoption of explicit contribution mechanisms does not by itself assure that the infirmities of implicit contribution schemes will necessarily be eliminated

In that regard, there are several key principles the adherence to which will materially help to achieve the overarching goal of extending broadband availability to all Americans in the most efficient manner possible:

(1) *Whether implicit or explicit, the mechanisms used to support universal broadband availability need to be competitively neutral*

Decisions as to the distribution of support for universal broadband should be driven by forward-looking considerations whose goal should be rooted in the core principle of economic regulation – i.e., to achieve a "competitive outcome" in the presence of market failure. Where the confluence of high cost and low demand (resulting from low population density) are incapable of encouraging entry by multiple firms – i.e., where market failure is present – the support mechanism should still attempt to employ market forces to the greatest extent possible, so that support flows to the most efficient and competitively responsive provider. Thus, in the presence of market failure, individual choice among competing providers may need to be replaced with a community-level choice among providers competing for support. While the community-level decision must, as a practical matter, occur at a particular point in time, the determination should nonetheless take into account the dynamic nature of market conditions and evolving technology. The decision to award support to a particular provider today should not operate to preclude future entry made possible by the evolution of technology and market conditions.

This can best be assured if the support decision is based upon *forward-looking* considerations of consumer demand, cost, technology, and competition. A proposal that would earmark support

for incumbent LECs – a core element of the "ABC Plan" – directly violates the principle of competitive neutrality by eliminating even a community-level competitive choice.

(2) *Whether implicit or explicit, the mechanisms used to support universal broadband availability need to be technology-neutral.*

Policies that favor certain technologies over others are, in effect, picking winners and losers by creating market distortions. Implicit subsidies generated through the various existing intercarrier compensation mechanisms suffer from this infirmity, both with respect to the *source* of subsidy funds and as to which providers and services *receive* the subsidies. Competing technologies – e.g., wireline vs. wireless, VoIP vs. TDM, packet-switched vs. circuit-switched – must be allowed to be tested in the marketplace. Just as no one technology should be expected to contribute a disproportionate level of implicit support (the objective of ICC reform), no technology should be favored in the receipt of subsidies (the purpose of high-cost universal service support, including, prospectively, the Connect America Fund ("CAF")).

Support should be denominated in terms of the functional attributes of the supported service, rather than based upon its technology. For example, uplink and downlink data rates, fixed vs. mobile, error rates, latency, quality of service (QoS), are all functional attributes that transcend technology, although not all technologies are capable of supporting the full range of attributes (e.g., wireline cannot provide a *mobile* capability). The determination as to which functional attributes are to be recipients of universal service support is a legitimate exercise of regulatory authority; however, caution must be exercised so as to reflect evolving consumer needs and preferences, rather than simply retaining legacy support targets for their own sake.

For example, in the past universal service was oriented primarily toward voice telephony; it is now being redirected toward broadband. Similarly, although in the past universal services has traditionally been focused on fixed-location services, the assumption that fixed connectivity is sufficient needs now to be reevaluated in light of growing demand for and use of mobile devices. Support goals have evolved over time even within traditional voice telephony. Early on, support was aimed at providing some form of connectivity, even if on a party line basis. In later years, support was directed at replacing party lines with private lines, analog switching/transmission with digital, improving infrastructure to support DSL, etc. This historical process of periodically redefining what constitutes supported service will necessarily be ongoing, and thus the specific attributes of broadband – like any service that is to be supported by a universal service funding mechanism – should be treated as evolutionary, not revolutionary.

Wireline solutions for broadband deployment are by their nature capable of providing *fixed location* services. But consumers are increasingly demanding *mobile* broadband access, which fixed location technologies are incapable of providing. The functional specification of the service(s) to be supported must necessarily be driven by the needs and demands of the users they are intended to serve – including the expanding reliance upon mobility. Americans living in rural and high-cost areas cannot participate fully in the vision set forth in the National

Broadband Plan[3] under a framework that would primarily earmark support to providers of fixed wireline broadband services.

(3) *Explicit subsidies should be aligned with present – and future – policy goals, and any mechanism designed as a dollar-for-dollar replacement for legacy implicit funding will misallocate support and impede the development of competition*

Individual carriers – rural or non-rural – should have no inherent entitlement to be "made whole" with respect to replacement of implicit funding sources. Carriers of all sizes and in all locations have been – or certainly should have been – aware of evolving technologies and changing demands taking place over an extended period of time – certainly as far back as the *1996 Act*. They have been – or should have been – well aware of the eroding revenue base of implicit contribution sources (e.g., wireline switched access charges) and should be held responsible for accommodating their own business models accordingly. Price cap ILECs that serve rural areas, and ROR-regulated rural ILECs, are all, first and foremost, *private profit-seeking enterprises* that must be made to stand or fall based upon their own business decisions. Moreover, funding for many of the "investments" that such companies now claim an entitlement to recover were provided through one or more existing support mechanisms, such that the carrier's owners and managers were never actually "at risk" with respect to such investments. The notion that certain carriers should be made whole with respect to any modifications in their support mechanisms must be rejected as contrary to a competitive telecom policy.

III. The not-so-simple, not-so-equitable and not-so-efficient results of the so-called "ABC Plan"

A. Overview of the "ABC Plan"

The ILEC sponsors of the "ABC Plan" describe it as "a framework that ... will ensure that four million rural homes and businesses in high-cost areas served by price cap carriers will have access to broadband, two million of which will enjoy the benefits of broadband for the first time" under a plan for "meaningful, comprehensive reform of both the universal service and intercarrier compensation systems," which they've named the "America's Broadband

3. While Goal No. 1 of the *National Broadband Plan* is to ensure the expansion of broadband service availability (i.e., through targeting unserved and underserved areas), Goal No. 2 provides that "[t]he United States should lead the world in mobile innovations, with the fastest and most extensive wireless networks of any nation." See, *Connecting America: The National Broadband Plan*, rel. March 16, 2010, at 9. There is no conceivable way that the US can meet this wireless broadband deployment goal with the level of funding proposed in the ABC Plan.

Connectivity Plan" (the "ABC Plan").[4] The ABC Plan stakes out a privileged position for price cap incumbent LECs, at the expense of smaller competitors (competitive eligible telecommunications carriers) and consumers. As presented, the Plan contains highly inconsistent levels of detail with respect to its various components, depending upon their relative importance to the price cap ILEC sponsors. Thus, intercarrier compensation and certain aspects of the proposed Connect America Fund ("CAF") for price cap ILECs are spelled out with relative precision, but others, such as the Advanced Mobility/Satellite Fund ("AMF"), receive only cursory discussion. In this overview of the ABC Plan, we summarize key provisions of its universal service and regulatory framework recommendations (the Plan also deals extensively with intercarrier compensation reform); subsequent sections discuss the Plan's methodological flaws and biases.

The ABC Plan proposes three distinct funds, totaling no more that $4.5-billion annually through 2017[5] (the same magnitude as exists for legacy high-cost voice telephony support):

(1) the Connect America Fund (CAF) for price cap incumbent LECs, funded at $2.2 billion;

(2) a separate fund for rate-of-return LECs; and

(3) the Advanced Mobility/Satellite Fund ("AMF").

By segregating CAF support for price cap LECs (and nominally for CETCs that operate within the same geographic footprint as the ILEC) from that of smaller, rural ILECs (rate-of-return ILECs, or "RLECs") – that they propose should continue to receive roughly half of the $4.5 billion USF/CAF pie – Verizon, AT&T and their allies strategically avoid placing their plan in any direct competition with the politically powerful RLECs.[6] With virtually all of the $4.5-billion earmarked either for CAF (limited to price cap ILEC territories only) or for RLECs, any remaining funds (capped at $300-million), are set aside for the Advanced Mobility/Satellite

4. July 29, 2011 letter from AT&T, Verizon, CenturyLink, Frontier, FairPoint and Windstream to Chairman Julius Genachowski *et al*, WC Docket No. 10-90 ("ABC Plan"), at 1.

5. The document summarizing the ABC Plan (Attachment 1, "Framework of the Proposal") does not directly specify an end date for the $4.5-billion cap, providing only that "[b]efore July 1, 2022, the Commission will complete a proceeding to evaluate whether to create a successor universal service fund." ABC Plan, Attachment 1, at 2. However, a year-end 2017 date is specified in the Joint Submission from the ABC Plan sponsors and various rural LECs and their industry associations. Joint Submission of Price Cap ILECs and Rate-of-Return ILECs, July 29, 2011 (hereinafter, USTA/Consensus Letter), at 2.

6. In order to highlight their alliance, the price cap ILECs joined with the rural, rate-of-return ILECs (RLECs) to submit a letter to the FCC that summarizes their areas of consensus. The joint proposal modifies the earlier-filed (May 2, 2011) Joint Rural Association Filing; the parties attest that the ABC Plan was also modified prior to its filing on July 29, 2011 to accord with this consensus position. Under this joint proposal, the funding for RLECs would start at $2-billion and increase by $50-million per year, reaching $2.3-billion in the sixth year. The CAF calculations for RLECs assume a 10 percent rate of return. USTA/Consensus Letter at 2-3.

Fund.[7] Nearly all of the detail in the ABC Plan pertains to the CAF for price cap incumbent LECs.

As the ABC Plan sponsors readily concede, many of the high-cost areas they presently serve do not currently receive support from legacy universal service programs.[8] Large ILEC "study areas" that form the basis for universal service fund support typically include both low-cost and high-cost areas. In the past (i.e., under traditional rate-of-return regulation, such broad averaging would have resulted in an *implicit* subsidy flowing from the former to the latter – i.e., prices in low-cost areas would have been set in excess of cost while prices in high-cost areas would have been set below cost. However, in the case of broadband services, *rates are not regulated* either with respect to low-cost or high-cost areas. Indeed, by virtue of the FCC's action to classify broadband Internet access as an "information service" subject to Title I of the Communications Act of 1934, as amended,[9] price cap ILECs that provide broadband services are under no obligation to flow any profits earned in low-cost areas to anyone other than their own shareholders. The explicit CAF support that the ABC Plan would flow to price cap ILECs is thus not a replacement for a legacy implicit subsidy, it is a net increase of somewhere in the range of $13-billion to $14-billion over the next decade in the price cap ILEC draw from the larger universal service support machinery.[10] Under the "replacement" CAF fund, the lion's share of the available support will flow to communities within the price cap ILECs' service territories – even though there is actually little or nothing that, from the perspective of the price cap ILECs, requires any "replacement," let alone a net increase.

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7. The USTA/Consensus Letter differs from the description in the ABC Plan, stating: "The framework proposes that, for the budget period, the Commission establish an annual funding target for its *mobility objectives* of $300 million." There is no mention of this fund being shared with "super-high-cost" satellite deployments. See, USTA/Consensus Plan at 2. Emphasis supplied.

8. ABC Plan, Attachment 1, at 2

9. *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005) [BWIA Order].

10. Using data in USAC's 4th Quarter 2011 Appendix HC01A – *High Cost Support Projected by State by Study Area* – we identified the total quarterly support for study areas served by the six ABC Plan sponsors, and from that developed an estimate of these companies' combined annual level of support at approximately $825-billion. This is an estimate. Some of the operating affiliates that we have identified may still be subject to rate-of-return regulation; we may also have omitted others whose names were not immediately identifiable as affiliates of any of the ABC Plan sponsors. In its August 24 comments, Sprint states that the ABC Plan ILECs received $893.5-million in 2010, citing its calculation based upon the 2010 Universal Service Monitoring Report, CC Docket No. 98-202, released Dec. 2010: "Federal high-cost by ILEC holding company was as follows: AT&T ($188.0m), CenturyLink and Qwest ($351.0m), FairPoint ($3.2m.), Frontier ($146.8 m), Verizon ($125.3m), and Windstream (&79.2m). These figures do not include the hundreds of millions of high-cost USF paid to the wireless and CLEC affiliates of these six ILECs. Verizon-ILECs' 2010 receipts are unaffected by the phase-out of Verizon-Wireless' high-cost receipts." Whether $825-million or $893-million, the current level of support being provided to these price cap ILECs is considerably less than the $2.2-billion that the sponsors of the ABC Plan have proposed as a "replacement" for the existing funding sources. ABC Plan, Attachment 1, at 2.

Under the ABC Plan, CAF funding would be available for the provision of broadband service that provides a minimum actual downstream and upstream bandwidths of 4 mbps and 768 kbps, respectively, and can be furnished using "any wireline or wireless technology." Importantly, the supported service need not include voice service, but only "access to" voice service. The CAF would be phased in beginning in July 2012, as legacy high-cost universal service was phased out. The transition from legacy support to CAF support would occur over a four-year period, ending July 1, 2016. The Plan provides that the selected broadband provider will receive a fixed level of support for ten years.

Initially, the ABC Plan states that CAF support "is only available in those high-cost areas in which there is no private sector business case to offer broadband,"[11] but it contains no actual mechanism to evaluate any such "business case," relying instead upon a *presumption* that if at the outset (January 2012) there is no non-ILEC provider of broadband in the "high cost" census blocks, then that must mean that there is no "business case" to be made for such entry. Thus, under the ABC Plan, CAF support would be determined – on a census block basis – wherever there was no "unsupported broadband competitor ... already offering broadband servce as of January 1, 2012."[12] In other words, what the Plan deems to be a "business case" is essentially the actual presence of a competing non-ILEC provider.[13] The ABC Plan freezes the determination of support as of a date certain (January 1, 2012); "the entry of an unsupported broadband competitor after January 1, 2012 does not affect the level of CAF support."[14]

Once a census block is determined not to have at least one unsupported competitor, the next step is to determine whether it qualifies as "high-cost." For this purpose, the ABC Plan sponsors commissioned the development of a cost model by the firm CostQuest Associates, Inc.[15] This model (hereinafter, the "ILEC Cost Model") calculates the forward-looking cost of providing broadband (and the estimated support levels) separately for each individual census block based upon the use of *wireline technology*.[16] Under the ABC Plan, a high-cost census block is one

11. ABC Plan, Attachment 1, at 3.

12. *Id.*

13. It is ironic that the large ILECs should adopt such a narrow vision of a "competitor," when, for many years, in a variety of contexts, they have maintained that CLECs had the "potential" to make economic investments at locations where those competitors could not actually manage to make a sound business case for deploying facilities.

14. ABC Plan, Attachment 1, at 3.

15. *Id.*, at 4.

16. *Id.*; Attachment 3, at 4.

where the average per-served-location monthly cost exceeds a threshold of $80.[17] While costs are modeled at the census block level, support is determined and disbursed by aggregating all of the eligible (high cost *and* unserved by an unsupported competitor) census blocks within a wire center, referred to as a "supported area" of the subject wire center.[18]

The wire center – a uniquely ILEC network architecture component – plays a critical role in how CAF funds are awarded. This is because the Plan proposes to grant the incumbent price cap LEC a preemptive opportunity to be the exclusive CAF recipient in any otherwise qualifying-for-CAF-support wire center where it has already deployed broadband to 35 percent of service locations.[19] By the sponsors' own estimate, this "right of first refusal" would apply in 82 percent of the eligible census blocks, accounting for 82.2 percent of the available CAF support for those areas.[20] Under the ABC Plan rules, any other ETC – even if it were to have equivalent initial coverage within a wire center or other technologically relevant geographic area – is simply frozen out of the process, even if it could deploy broadband more efficiently to the unserved locations.

Not only would a CETC lose the opportunity to vie for support, but the ILEC, having preempted a competitive bidding contest, is not actually obligated to deploy broadband to every location within the wire center's eligible census blocks. This complex exception is explained under "Obligations of the CAF Recipient."[21] Under this part of the proposal, the service obligation of the price cap ILEC (or other CAF recipient) is specified as a number of locations *per wire center* (essentially, a quota), based upon the number of locations in eligible (supported) census blocks, minus the number of locations in the wire center that the ILEC is not required to serve (i.e., those located in a census block where the average cost exceeds the so-called "Alternative Technology Threshold" ("ATT") discussed below). However, for purposes of meeting its deployment quota in a wire center, the ILEC can choose to serve several locations in a census block it is not required to serve (e.g., a lower-cost location that happens to fall within an ATT census block) and then not serve an equivalent number of locations in one of the nominally supported census blocks.

In the unlikely event that the price cap ILEC chooses not to exercise its right of first refusal, the service obligation becomes available to another qualified provider, at the model-determined support level. If multiple providers apply, support is determined through a competitive bidding

17. *Id.*, at 5.

18. *Id.* at 4.

19. *Id.*, at 6.

20. *Id.*, at 6, note 7.

21. *Id.*, at 7.

process, but the support level determined by the ILEC Cost Model serves as a ceiling on competitor support.[22] Whether or not a CETC succeeds at capturing any CAF funding under these challenging rules, its legacy universal service funding is phased out within four years of the Plan's initiation.

Once the price cap ILEC (or other ETC) has accepted CAF funding, the ABC Plan provides that it has five years to complete deployment. Simply put, the entire first half of the ten-year support period can elapse before the support recipient provides any actual service. There are no intermediate benchmarks for deployment and no role for state or federal regulators with respect to service quality standards or pricing.

If the per-location cost of broadband deployment – using the ILECs' wireline-oriented cost model – is projected to exceed a $256 per month Alternative Technology Threshold, the census block is excluded from the CAF mechanism and becomes the responsibility of the "Advanced Mobility/Satellite Fund" (AMF).[23] The presumption (as expressed by the Plan) is that very high cost areas will obtain broadband via satellite.[24] The Plan also designates the AMF as the fund that will support "the provision of mobile broadband in those high-cost areas that will not receive service as a result of planned commercial mobile broadband deployments."[25] Note that this standard is both more vague and, in some ways, more stringent than the standard for judging whether an area is eligible for CAF support, where the standard requires only no existing "unsupported broadband competitor." Thus, whereas an ETC can qualify for CAF support to serve a high-cost area if there is no existing competitor, for mobile support (in the unlikely event that funds even exist), the provider must also show that there is "no planned deployment." To maximize funding for the CAF and RLEC funds, while staying within the $4.5 billion "no-growth" ceiling, the ABC Plan proposes that the AMF be capped at $300 million. However, with $2.2-billion being earmarked for the CAF and up to $2.3-billion being set aside for ROR-regulated ILECs,[26] the effective "cap" on the AMF could drop to $0 by the sixth year of the Plan.

Finally, similar to virtually all AT&T and Verizon proposals to the FCC in recent years, one of the key ("inextricably-linked") components of the ABC Plan is the elimination of regulation[27]

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22. If no provider is willing to provide service for the baseline support amount, the Plan provides that the FCC may adjust the baseline amount or service commitment, but here again the ABC Plan is short on specifics..

23. ABC Plan, Attachment 1, at 4-5.

24. In one scenario discussed in the ABC Plan submission, the ATT threshold is set at $369. See ABC Plan, Att. 2, at 3.

25. *Id.*, at 8.

26. USTA letter, at 2.

27. ABC Plan, Attachment 1, at 1.

– a broad "hands-off" directive to both state and federal regulators. It works this way: First, the Plan calls for the FCC to preempt the states with respect to oversight of the CAF (by declaring both broadband and VoIP to be exclusively interstate services and preempting carrier of last resort (COLR) obligations); then, the FCC would agree to eliminate all "legacy regulations that act as a barrier to the transition to IP broadband" currently imposed on price cap incumbent LEC ETCs and CETCs" once they have transitioned from legacy high-cost USF to CAF.[28] Although the price cap LECs eagerly accept a subsidy in order to deploy broadband to customers in high-cost areas where, *by definition*, the subsidized provider will be the sole supplier of broadband service, the ABC Plan's sponsors nonetheless contend that no regulatory oversight is necessary or, indeed, in the public interest.

B. The Plan's fundamentally disparate treatment of wireline and wireless.

The use of wireline-only costs results in skewed and potentially wasteful support decisions

The ABC Plan claims that "[t]he broadband service obligation is technology-neutral: providers can use any wireline or wireless technology that meets the specified bandwidth and service requirements.[29] Upon closer examination, however, this putative "technology-neutral" aspect of the proposal is undermined by several decidedly ILEC-oriented aspects of the Plan and the ILEC-commissioned cost model that underlies it. The sponsors of the ABC Plan have provided few details as to the specifications or instructions that were furnished to the developer of their cost model, and while there is some documentation regarding network architecture assumptions at a macro level, there are few if any details as to how costs are identified and assigned to individual census blocks within a given wire center serving area.[30]

The one key limitation that the ILEC sponsors have readily conceded is that their model considers only *wireline* technology as the strategy for providing broadband at the level of geographic intensity contemplated in the National Broadband Plan: "All model scenarios assessed the costs for telecommunications companies to deploy *wireline broadband service* that

28. *Id.*, at 13.

29. *Id.*, at 2-3.

30. This concern regarding the precision of census block-level results is apparently conceded by the model's developers: "Through the model design and development process certain strengths and limitations emerged with respect to the approach (and the underlying available information). ... Notably the precision of model outcomes will be impacted by the quality of available input data. In general, *these limitations will have a more significant impact on the precision of derived results for a small area (such as Census Block) than for larger areas, such as wire centers, counties, states, or the nation.*" *Id.*, Attachment 3, §2.3, at 7. Emphasis supplied.

is capable of delivering actual speeds of 4 Mbps download and 768 Kbps upload."[31] Implicit in these download/upload specifications is that the minimum service required is for *fixed location* broadband; while a mobile solution could obviously satisfy these specifications, no additional credit would be allowed for the incremental functionality that a mobile solution would provide. In adopting this constraint, the ILEC Cost Model thus makes no attempt to identify or assess the most efficient, least cost means of providing broadband service in unserved (typically low-density, rural) areas being specifically targeted by the National Broadband Plan – the very locations where *wireless* offers significant cost advantages over wireline. With the exception of the most extreme high-cost areas (again, as determined under the assumption of wireline deployment), the ILEC Cost Model simply *assumes* that a wireline solution is superior to wireless both with respect to cost and, apparently, in its ability to achieve the requisite 4 Mbps download/768 Kbps upload minimum service objective.

Only at the point where the per-location costs, using wireline technology, exceeds the "Alternative Technology Threshold" (set at $256 per month.),[32] does the ABC Plan concede that a non-wireline service option is required. But, here again, the ABC Plan proposes a technology-specific solution, whereby such locations – which the ILEC Cost Model estimates at totaling around 730,000 within price cap ILEC service territories[33] – are assumed to be "well within the capacity of broadband satellites"[34] and are assumed to be most efficiently served in that manner.[35] Having failed to consider the costs of wireless (both terrestrial and satellite) in their cost model, the Plan's sponsors offer no factual or analytical basis for the specific $256 Alternative Technology Threshold, for their assumption that broadband satellite is the appropriate technology for serving locations whose *wireline* cost-to-serve would exceed $256 per month, or for their implicit assumption that no even lower cost "alternative technology" would be viable where the modeled *wireline* cost falls below that $256 per month level.

In fact, wireless deployment has particular cost advantages in many low-density geographic areas. This possibility is not just theoretical; there are compelling reasons to expect precisely this condition:

(1) Per-location costs of serving customers in low-density areas via wireline distribution networks are high due to the confluence of large distances and the small number of locations

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31. *Id.*, Attachment 2, at 1, emphasis supplied.

32. *Id.*, Attachment 1, at 5. $256 in monthly recurring costs corresponds, roughly, to a per-location capital outlay in the range of $15,000 to $18,000 (assuming a 10-year depreciation life and a cost of money of around 10%)..

33. *Id.*

34. *Id.*, at 5-6.

35. *Id.*, at 4. The ILEC model "accounts for the impact of setting a target for the total support amount by relying on satellite broadband for extremely high-cost areas."

to be served. The costs of wireline distribution facilities – "last mile" subscriber lines and supporting structures (poles and conduits) are primarily driven by *distance* and by terrain and, to a much lesser extent, by total capacity of the distribution facility. Holding capacity constant, a six-mile distribution facility costs roughly twice what a three-mile facility would cost; holding distance constant, a distribution facility capable of serving 1000 locations costs little more than a distribution facility capable of serving 200 locations, the principal source of difference being the cost of the coaxial or fiber cable itself. As distance increases while density becomes more sparse, the costs of serving customers via wireline broadband escalates rapidly.

(2) Wireline drops also tend to be most costly in many rural areas where the distance from the street or road to the subscriber's residence may often be considerably longer than in urban and suburban areas – and may be more costly to maintain on an ongoing basis.

(3) In stark contrast, terrestrial wireless technology is often particularly well-suited to low-density rural areas. First, rural areas generally do not face the same level of spectrum constraints extant in areas of greater density. Second, in many low-density areas – particularly where the terrain is relatively flat – a single cell site can serve a considerably larger area than is typically possible in urbanized or even suburban areas. Thus, while the wireless cost per location served is still somewhat higher in rural areas than in urban/ suburban communities, the differential between the two extremes is likely far smaller than for wireline. Finally, with wireless there is no need to construct a drop cable from the road to the house, since the wireless service can be received directly at the customer's residence.

The wireline bias inherent in the ILEC Cost Model would produce technologically inefficient results even if it were merely proposed as the basis for identifying census blocks with (wireline) costs above the designated ($80 per month) threshold. But the ABC Plan also proposes that the model's results will establish the specific level of "baseline support," by individual census block, throughout the price cap ILEC service territories.[36] The overstatement of "forward looking" costs that would result from a cost model that expressly *excludes* consideration of a potentially lower-cost technology, coupled with the presumptive incumbent LEC "right of first refusal" bias, will bloat the aggregate level of support to be provided under the CAF mechanism and, since the aggregate level of CAF support will be a major determinant of the aggregate level of explicit contribution to be made to the Fund, will result in excessive prices for all services that are to be subject to such contribution requirements, which will in turn have broad negative impacts on the economy overall. The effect can be illustrated by several examples:

- Case 1: Wireline cost (per the ILEC Cost Model) to deploy to 300 locations in the qualifying unserved census blocks in a given wire center is $250 per month per location. Baseline

36. *Id.* "After the Commission has identified the supported area in a wire center, it will use the forward-looking cost model to calculate a baseline support amount for the supported area."

support is set at $170 per location ($250 – $80), or $51,000 per month in total. The per-location cost for a wireless solution would be only $150. If the baseline support were determined at the least-cost technology, the per-location CAF support would be only $70 ($150 – $80), or $21,000 per month overall. The CAF would essentially overpay by $30,000 per month for that wire center, which means that an additional $30,000 of contribution would need to be imposed upon other services. Moreover, if the baseline support were set at $21,000 instead of $51,000, the incumbent LEC would (presumably) not be in a position to exercise its right of first refusal, thus creating a bona fide competitive bidding process for However, under the ABC Plan, the competitive bidding would only arise if the ILEC did not qualify for a "right of first refusal."

- Case 2: Wireline cost (per the ILEC Cost Model) to deploy to 500 locations in the qualifying unserved census blocks in a given wire center is $125 per month per location. Baseline support is set at $45 per location ($125 – $80), or $22,500 per month in total. However, the per-location cost for a wireless solution would be only $75. If the baseline support were determined at the least-cost technology, the per-location CAF support would be $0, because the forward-looking cost falls below the $80 threshold. By considering a wireline-only service strategy, the CAF would essentially overpay by $22,500 per month for that wire center.

As these examples demonstrate, the ILEC Cost Model is likely to (1) include census blocks as "high-cost" in cases where full functionality – provided via wireless – could actually be offered at less than the support threshold (thus requiring no support at all) and (2) award a far higher level of support than would be necessary for the deployment of broadband were the cost model not confined to wireline technology. Each time this happens, the ILEC (particularly when it can invoke the right of first refusal) stands to pull more funds from the CAF than would be available with a technology-neutral model and mechanism.

Thus, by excluding potentially lower-cost wireless solutions from the baseline support calculation and by setting the "Alternative Technology Threshold" so high as to *include* within the basic funding mechanism areas whose costs could be up to just below the $256 level, the ILEC Cost Model is both overinclusive in identifying census blocks that would qualify for high-cost support and, for those locations that are to be covered, is overstating and exaggerating the actual level of high-cost support that would be required in each instance. The result is an overstatement of the aggregate amount of funding that putatively qualifying service providers – in most cases ILECs – could extract from the funding mechanism.

Assumptions linked to ILEC legacy network architecture cannot fairly be used to model non-ILEC broadband deployment, on either a wired or wireless basis.

The ILEC Cost Model is integrally linked to legacy wireline – and specifically, ILEC – network architecture, i.e., the *wire center*. It employs a so-called "scorched node" network design in which legacy *ILEC* wire center buildings and serving areas are maintained as they

presently exist.[37] Many, perhaps most, of these wire center locations and serving areas date back to the earliest days of the telephone industry, perhaps nearly a century or even longer. Anyone designing a broadband network *from scratch* – i.e., a so-called "greenfield" build – would adopt a "scorched earth" approach with no preexisting location, configuration, technology or network architecture constraints. Past limitations on transport distances, telephone switch and inter-switch trunk capacities, and other attributes of legacy voice telephony technology were materially responsible for dictating the design of local networks. Fiber optics, packet switching, wireless and other current technologies – together with the evolving demand for increased bandwidth, mobility, and applications that go way beyond point-to-point voice telephone calls – fundamentally change the way a network would be designed from the ground up today and in the future.

CLEC, cable, and CMRS networks are not oriented around the limited geography embraced by legacy ILEC wire centers. Were a forward-looking cost model based upon geographies as small as wire centers – or worse, the even smaller individual census blocks – as a basis for modeling CLEC or CMRS costs, they might well appear to exceed the costs associated with traditional ILEC networks because they would ignore the significant efficiencies associated with modern wireline and wireless network architectures that are oriented around far more expansive geographic service areas. Thus, even if the ILEC Cost Model did not deliberately exclude wireless solutions, if wireless were costed on a census block basis – something that would literally *never happen* in the real world – the per-location costs could well appear to be higher than those developed by the ILEC Cost Model for legacy ILEC wireline network architectures.

The fallacy of the census block as a basis for awarding support

Under the terms of the proposed ABC Plan, census blocks whose modeled per-location cost exceeds the $80 per-location benchmark (but below the "Alternative Technology Threshold") are eligible for CAF support, whereas census blocks within the same wire center whose modeled per-location cost falls below the benchmark are not. Under this scheme, the average per-location cost across an entire wire center could fall short of the $80 benchmark, even though it contains some number of eligible census blocks. But in that instance, the ILEC would be eligible for support with respect to those individual census blocks that exceed the $80 threshold.

While this approach has been promoted for its "granular" focus, the purported benefit of using these small, but essentially arbitrary and, from a network engineering standpoint, utterly meaningless, geographic units is not great enough to compensate for the fact that census blocks have no consequential relationship to broadband deployment costs and the resulting investment decisions. Fundamentally, networks are not designed around – and costs are not incurred at – the

37. *Id.*, Attachment 3, at 9, §3.2.a; at 24: "Scorched Node – A cost modeling approach wherein the central office, middle mile, and service locations are based upon current locations, but the construction of the network between the serving CO and customer is modeled using forward-looking algorithms."

census block level. While the precise manner in which the ILEC Cost Model assigns costs to individual census blocks within wire center serving areas is not apparent from the available documentation, if the model is actually calculating the stand-alone costs of serving individual census blocks, it will necessarily exaggerate these costs by ignoring scale and scope economies extent across larger geographic areas. And, if it is calculating costs across larger geographic areas than individual census blocks, there is no assurance that costs common to multiple blocks are being properly assigned and attributed to the individual census blocks that would be the unit for receipt of high-cost support.

Not only are the criteria used to define census blocks basically irrelevant to how networks are designed and cables routed, it is fair to say that the criteria can often be directly incompatible. For example, census blocks are typically bounded by streets, roads or other public ways,[38] such that customers on either side of any given street or road will normally not fall within the same census block. By contrast, both sides of a street will typically be served by the same wireline distribution facility. One can even imagine a situation where, under the ILEC Cost Model, the census block on the west side of the road falls below the $80 threshold for CAF support, while the modeled per-location cost for the block on the east side of the same road is above $80 and thus qualifies for CAF support, *even though customers on both sides of the road are served from the same common distribution cable*. And if, as a result of a competitive bidding process, the provider responsible for the "high cost" side of the road ends up not being the same as the one that serves the "low cost" side, the economic benefits of serving both sides of the road from the same distribution facility could be sacrificed. Moreover, were that to happen, the cost of serving the "low cost" side of the road is likely to escalate, perhaps even placing that census block above the $80 support theshold.

Because networks are not designed with respect to census block boundaries, there are few costs that are unique to a single census block. A distribution cable and associated support structures (e.g., poles) may pass through a succession of census blocks. The ILEC Cost Model undertakes to optimize costs across the entire wire center rather than with respect to any specific census blocks.[39] This type of area-wide optimization may involve sacrificing efficiency in some census blocks in order to achieve greater offsetting efficiencies elsewhere. More generally, modeling costs at a level as granular as individual census blocks can result in the misattribution of costs that are common to the entire wire center (or, for alternative technologies and network

38. "Census blocks, the smallest geographic area for which the Bureau of the Census collects and tabulates decennial census data, are formed by streets, roads, railroads, streams and other bodies of water, other visible physical and cultural features, and the legal boundaries shown on Census Bureau maps. Census data for these areas serve as a valuable source for small-area geographic studies." U.S. Department of Commerce, Bureau of the Census, *Geographic Areas Reference Manual*, November 1994, Chapter 11, "Census Blocks and Block Groups," at 11-1.

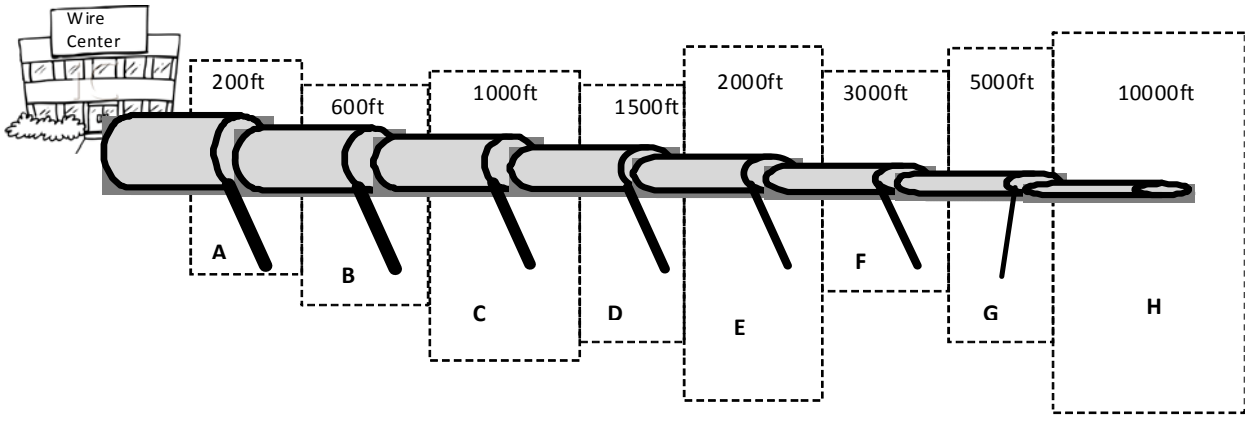
39. *See*, generally, CostQuest Associates, Inc., "CostProLoop Loop Economic Modeling, Model Documentation," at 12-14.

designs that are not even being considered in the ILEC Cost Model, the costs associated with the minimum efficient geographic unit) among census blocks – or worse, duplicated and assigned – to the high-cost blocks.

If eligibility for support and the actual level of support are to be reckoned at the individual census block level – the level at which the model's results provide the lowest level of precision[40] – then the manner by which costs that are common to multiple census blocks or to the entire wire center area are attributed or otherwise allocated to each individual census block requires a detailed and critical examination before the ILEC Cost Model can be used for its offered purposes. Unfortunately, nowhere in the documentation that has been provided by the sponsors of the ABC Plan is there any discussion of this critical step.[41]

Consider a simple example. Suppose a distribution cable line and its associated pole line emanates from the wire center head-end (e.g., the central office) and serves a string of contiguous census blocks of successively longer distance from the head-end:

BLOCK	A	B	C	D	E	F	G	H
Distance	200 ft.	600 ft.	1000 ft	1500 ft	200 ft	3000 ft	5000 ft	10000 ft.
Locations	100	100	80	60	40	20	10	10
Cum. locs.	420	320	220	140	80	40	20	10



40. See ABC Plan, Attachment 3, §2.3, at 7.

41. *Id.*, Attachment 2, "Summary of Model Results;" Attachment 3, "Model Description"

Here, the first 200 ft. of cable and supporting structures from the head-end are required to serve – and hence are a "common cost" of – all 420 locations; the next 400 feet are required to serve (and are a common cost of) the remaining 320 locations, and so on. The last 5,000 feet serve only 10 locations in census block H.

There are several different ways in which costs can be attributed to each of the seven census blocks in this illustration. One way is to spread the costs of the first 200 feet across the 420 locations that benefit, then spread the costs of the next 400 feet across the 320 locations that benefit, and so on, down to the last 5,000 feet, which would be spread over only 10 locations. The costs applicable to the locations in each block would be the aggregate of the per-location costs assigned to all of the blocks from the head-end to the block containing the subject location. Another approach might be to calculate a per-foot cost across the entire seven blocks, then multiply that by distance of each location to the head-end. A third approach would be to treat each block in isolation – i.e., calculate the costs of serving that block as if the other blocks didn't exist at all. A fourth method would be to assign only the incremental costs of the next block in the sequence to that block. Thus, block B would be assigned only the additional costs of getting to it from block A; block C would bear the additional costs of getting to it from block B, and so on. We don't know how the ILEC Cost Model assigns these – and other – common costs, or if it even does. For example, if costs associated with a given census block are calculated on a "stand-alone" basis – i.e., on the assumption that the existence of adjacent or proximate census blocks has no bearing on the costs to serve any specific block – then the ILEC Cost Model would calculate the cost of census block H by taking the total cost of a 10-pair 10,000 foot cable run and dividing it up among the 10 locations in that block, effectively ignoring the fact that the same cable traverses and serves locations in census blocks A-G as well.

Even if the ILEC Cost Model makes some attempt to allocate costs that are common to multiple census blocks, by limiting support to only those blocks whose modeled cost exceeds the benchmark, the ABC Plan could operate to use the high-cost blocks to cross-subsidize the low-cost blocks. For example, suppose that the modeled costs of blocks F, G and H cross the $80 threshold and become eligible for CAF support. Even if the costs common to multiple blocks are allocated across all blocks that benefit from them, had the 40 locations in blocks F, G and H not existed, then the per-location costs to serve the remaining A-E blocks would be greater, because the three highest-cost blocks would not share any of the costs that are common to all eight blocks.

And the foregoing example assumes that the location of the wire center relative to the individual census blocks being examined is efficient and optimal, which may well not be the case. Population of the area might over time have migrated further away from the location of the wire center building, such that absent the wire center location constraint inherent in a "scorched node" type of model, costs would be lower if the wire center building location could be shifted closer to the population center. Additionally, the model affords no consideration whatsoever to alternate network designs that take better advantage of different technologies, demand characteristics, and other factors that post-date the legacy placement of network nodes.

In sum, the ILEC Cost Model is likely to be overinclusive as to the aggregate number of census blocks qualifying for CAF support, and is also likely to overstate – perhaps by a considerable amount – the baseline support required by many, perhaps most, census blocks that the ILEC Cost Model assigns to the "qualifying for CAF support" category.

C. Providing the ILEC a right of first refusal drastically reduces the opportunity for non-ILEC wireline and wireless carriers to vie for high-cost CAF support, potentially foreclosing opportunities for significant efficiency gains

The ABC Plan proposes that those census blocks within a given wire center area whose modeled costs exceed the $80 threshold but fall below the $256 Alternative Technology Threshold would be grouped together into a single "supported area." "If the incumbent LEC that serves the wire center has already made high-speed Internet service available to more than 35 percent of the service locations in the wire center," the ILEC would be afforded a "right of first refusal" ("ROFR") with respect to the supported area within that wire center.[42] The Plan's sponsors "estimate that incumbent LECs would have the opportunity to accept or decline CAF support in 82.0 percent of the census blocks that are eligible for CAF support, representing 82.2 percent of the $2.2 billion in support targeted to areas served by price cap LECs."[43] The specific rationale they have advanced as justification for this preferential treatment is that '[b]y first offering support to an incumbent LEC that has already made substantial investments in the wire center, the CAF will accelerate the deployment of broadband and avoid inefficient duplication of facilities constructed with the help of legacy high-cost universal service programs."[44] The fact that by blocking rival providers' ability to compete for some 82% of all qualifying census blocks the Plan's sponsors are also protecting their embedded investment in broadband for ten years or more is nowhere mentioned.

To exercise its right of first refusal, the price cap ILEC must accept "the baseline support and the associated broadband service obligations in the census blocks that make up the supported area within that wire center."[45] Note that the 35% broadband availability threshold applies with respect to the *entire wire center*, not just to the "supported area" with respect to which the CAF monies would be flowing. Thus, if in a given wire center there are 5,000 service locations of which 1,000 are within the "supported area" qualifying for CAF support, and the ILEC has already deployed broadband capable of providing high-speed Internet access to 2,000 locations, *none of which are within the "supported area,"* it will still acquire right of first refusal status

42. ABC Plan, Attachment 1, at 6.

43. ABC Plan, Attachment 1, at 6, fn. 7.

44. *Id.*

45. *Id.*, at 6.

with respect to the "supported area" without having made any investment at all to provide broadband access to those customers.

The Commission's recent *Public Notice*[46] poses several questions that suggest a recognition that the ILECs' ROFR proposal is likely to unreasonably exclude efficient competitors from access to CAF funding.[47] It is important to bear in mind, as well, that the ROFR mechanism would have a long-lasting impact. Once the ROFR is exercised, the ILEC is assured CAF support for a minimum of ten years – longer if its broadband build-out is accomplished in phases – and because any would-be entrant would *not* be entitled to CAF support, the ILEC's subsidized competitive position would be protected from encroachment.

D. Competitive bidding for CAF support based on geographic units as small as census blocks, even as aggregated into "supported areas" within individual wire centers, affords significant competitive advantage to incumbent LECs

As noted, the sponsors of the ABC Plan anticipate that the incumbent LEC will qualify for a right of first refusal in some 82% of all support-eligible census blocks by virtue of having made "substantial existing broadband investment" in the given wire center serving area. For the remaining 18% of census blocks, the Plan offers two alternate mechanisms by which a qualified provider (which may include the incumbent) may obtain CAF support:

(1) "[A]ny qualified wireless or wireline provider that can meet the specified broadband service obligations may apply for the baseline support and the obligation to serve the associated census blocks;"

(2) "If multiple providers apply for support, the Commission will use competitive bidding to select the support recipient. Support is provided to the lowest bidder that will meet the specified buildout and service requirements. The baseline support amount functions as the reserve price, i.e., support cannot exceed that amount in the area."[48]

These same two criteria would apply to the supported portions of wire centers eligible for the ROFR but where the ILEC declines the model-determined support. At a superficial level, this arrangement would seem to offer competitive- and technology-neutral opportunities to any prospective broadband service provider willing to undertake the required broadband build-out. Upon closer examination, however, it becomes apparent that this "openness" is largely illusory,

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46. FCC Public Notice DA 11-1348, WC Docket No. 10-90 *et al*, *Further Inquiry into Certain Issues in the Universal Serviceintercarrier Compensation Transformation Proceeding*, Released: August 3, 2011

47. *Id.*, at 4.

48. ABC Plan, Attachment 1, at 6.

and that the "competitive bidding" arrangement is heavily tilted in favor of the incumbent and against wireless and other non-incumbent entrants. By limiting support to just the highest-cost census blocks and by requiring separate auctions for each "supported area," the effect would be to virtually preclude a wireless carrier from developing a business case to bid for CAF support.

This can again be traced back to the technology-biased composition of the ABC Plan's proposed cost model and support distribution mechanism. As mismatched as the census block is for estimating forward-looking wireline deployment costs, it is even more unrealistic for wireless networks. The efficient scope of a wireless network requires that it serve a geographic area that is considerably more expansive than an individual census block and also much larger than a "supported area"within a single wire center serving area or, for that matter, the entire wire center serving area. This property of wireless networks is hardly a novel revelation. Beginning as far back as the early 1980s, when the FCC was engaged in the process of licensing first generation 800 MHz CMRS providers, it established approximately 700 license areas each based upon either a Metropolitan Statistical Area (MSA) as defined by Bureau of Economic Analysis or a Rural Service Area (RSA) as defined by the FCC itself.[49] The sizing of RSAs was a matter of considerable debate. The FCC, in resolving this issue, concluded that:

> We agree that the economic viability of rural cellular service will be enhanced by protecting natural social and economic communities, but we conclude that the best mechanism for achieving this goal is the use of multi-county groupings drawn along the county boundaries proposed by United [TeleSpectrum, Inc.]. Single county units would be too small to support economically viable cellular systems and might split natural economic communities. Further, the increased number of markets should create administrative difficulties in processing the applications and might delay or thwart service altogether because applicants would be allowed to apply for smaller areas and effectively "cream-skim" the more lucrative cellular markets. The use of highway corridors as RSA boundaries also would not be in the public interest. Such a plan would often separate natural economic and social communities and would be difficult to administer. The use of multi-county groupings, on the other hand, will provide clearly defined RSA boundaries and system certainty while fostering development of a strong economically-viable rural cellular system."[50]

As such, a typical RSA covered many counties and an even larger number of ILEC wire center serving areas. When in 1993 the FCC began the process of establishing blocks of Personal

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49. *In the Matter of An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems; and Amendment of Parts 2 and 22 of the C ommission's Rules Relative to Cellular Communications Systems*, CC Docket No. 79-318, 89 F.C.C.2d 58, released March 3, 1982 (*"Cellular Reconsideration Order"*); *In the Matter of Amendment of the Commission's Rules for Rural Cellular Service,* CC Docket No. 85-388 RM 5167, released July 18, 1986 (*"Rural Cellular Order"*).

50. *Rural Cellular Order*, at para 11.

Communications Service ("PCS") spectrum for auction,[51] it defined service areas that were considerably larger than the MSAs and RSAs that had been established for the 800 MHz licenses. PCS license territories were established with respect to "Basic Trading Areas" ("BTAs") and "Major Trading Areas" ("MTAs") as these are defined in the Rand McNally Commercial Atlas.[52] There are 487 BTAs and 51 MTAs. In stark contrast, there are approximately 20,500 ILEC wire centers[53] and the ILEC Cost Model "includes unique detail for 8.2 million census blocks"[54] nationwide.

The ABC Plan proposes that CAF support for each "supported area" be awarded through its own reverse auction, with a "supported area" typically being a subset of a wire center serving area. However, even if CAF support were auctioned off across the entire wire center, wireless service providers would find it extremely difficult to participate simply because the geographic area is so small. Electromagnetic radiation is not confined within census block or wire center boundaries. A wireless solution typically requires a geographic area considerably larger than an individual wire center, a county, or even an aggregation of several adjacent counties. Unless a bidder can be assured the ability to achieve efficient scale and scope across multiple adjacent service areas, it will not be in a position to bid for any single wire center area or, as proposed, something even smaller than that.

Under long-standing FCC practices, wireless licenses are not issued with respect to geographic areas as small as census blocks, "supported areas" within wire center districts, entire wire centers, or even entire counties. And even if spectrum could be obtained at so granular a level, it is utterly impractical for a wireless network to be designed to provide coverage within areas as small as any of these. The fact that, under the ABC Plan, a "supported area" would consist of less than a single wire center means that, realistically, only a wireless carrier that already has spectrum and deployed network assets (cell sites and backhaul facilities) covering the subject "supported area" would even be eligible to participate in the bidding process. But, even with its eligibility in place, there is no assurance that a wireless provider could bid and commit to serving so limited an area, in isolation. If required to bid for CAF support separately for each supported area, the prospective wireless provider has no assurance that, in the end, it won't end up with a checkerboard of "supported areas" interspersed with localities where the ILEC had either exercised its ROFR or won the competitive auction as the low bidder. In this case, the wireless provider would be unable to achieve the scale and scope to construct an

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51. *In the Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, 8 FCC Rcd 7700, released October 22, 1993.

52. *Id.*, at para. 64.

53. This estimate was developed through an analysis of wire center data contained in the Local Exchange Routing Guide ("LERG").

54. ABC Plan, Attachment 1, at 4.

efficient network. Without some assurance that it will be able to obtain support over an area significantly larger than the subset of a single wire center that constitutes the "supported area" that is up for bid, wireless carrier participation in such auctions would be, for all practical purposes, entirely precluded. Thus, even in the limited number of wire centers that might be made available for competitive bidding, the ILECs, whose legacy or broadband networks are oriented around a single wire center building, are afforded a formidable competitive advantage vis-à-vis wireless providers and most other potential bidders.

E. ROFR-eligible ILECs may have the ability to "game the system" to increase the level of CAF support above the "baseline" level as established by their Cost Model

Since the baseline support amount as determined by the ILEC Cost Model established the upper limit of CAF support in any competitive bidding situation, at first glance it would seem that there would be no reason for an ILEC to go after support in a wire center where it has declined to exercise its right of first refusal. But it appears to be somewhat more complicated than that. Under the support structure envisioned by the ABC Plan, "[i]f no provider applies for the CAF baseline support amount available in a wire center, then the Commission may adjust the broadband obligations and/or the available support, subject to the overall constraint on high-cost universal service support."[55] Thus, if an incumbent LEC can reasonably predict that there will be no viable competitor able to commit to deploying service at or below the baseline support level (which may often be the case precisely because of the wireline ILEC biases of the Plan, as discussed above), it can effectively "game" the system by declining to exercise its right of first refusal and then seeking to claim CAF at a "adjusted" (higher) support level. There is, of course, no *a priori* means for assessing how frequently this might occur or its dollar impact upon the required level of CAF support, but the potential for this outcome must certainly be included within the range of "unintended consequences" and factored into the overall evaluation of the ABC Plan.

F. The ABC Plan is also heavily biased in favor of fixed over mobile broadband

We have reviewed several ways in which the ABC Plan makes it difficult – if not impossible – for mobile wireless providers to vie for CAF support, including the Plan's orientation around wire centers and the wireline infrastructure that serves them, and the ROFR that, when exercised, permits wireline incumbents to block any mobile wireless solution from obtaining access to CAF support for at least ten years. More generally, while the support that would be available from the CAF is not *per se* limited to fixed services, it would appear to have precisely that effect in practice. By its very nature, any wireline broadband solution is inherently *fixed* with respect to service locations. Wireless can be either fixed or mobile or, more likely, capable of supporting

55. *Id.*, at 6.

both demands. Yet the constraints under which the ILEC plan would extend broadband availability into currently unserved and underserved areas gives almost no effect to the growing demand for *mobile* broadband access.

While the industry and the Commission acknowledge an ever-expanding demand for mobile broadband capability, the ABC Plan treats it as, at best, an afterthought. Even the Plan's "Advanced Mobility/Satellite Fund," that is nominally earmarked to support mobile broadband solutions, is ill-suited to promoting the deployment of mobile broadband solutions in unserved and underserved areas. One key limitation is immediately evident: The ILEC proposal sets aside a *maximum* of $300-million to fund what may well be a much larger support need, consisting of both (1) fixed satellite service to census blocks with monthly per-location costs at or above the $256 "Alternative Technology Threshold" and (2) "high-cost areas that will not receive service as a result of planned commercial mobile broadband deployments."[56]

Next, the ABC Plan establishes ground rules and incorporates assumptions that further limit the availability of AMF funds as a means of expanding mobile broadband availability. The ABC Plan's sponsors start out by *assuming* that the "alternative" wireless and satellite technologies are not even feasible except where wireline broadband per-location monthly cost would exceed the $256 threshold. It then *assumes* that these extraordinarily high-cost census blocks (those that exceed the "Alternative Technology Threshold") will be served via satellite[57] – without consideration of other technologies. Even where the AMF seems to contemplate the possibility of a terrestrial mobile solution, support could only be made available in those instances where there is no "planned deployment" of any commercial mobile broadband service. Significantly, there is no elaboration or definition of exactly what constitutes a "planned deployment," whose "plan" is to be evaluated or, for that matter, how any such "plan" would be brought to the attention of the FCC or the administrators of the AMF. Moreover, the absence of any "planned deployment" would be determined as of a date certain – January 1, 2012 – and, unless no support is awarded from that particular census block, any "planned deployment" arising after that date would, it appears, be ineligible for AMF support.

The ABC Plan purports to segregate fixed and mobile services into separate support mechanisms – the CAF and the AMF, respectively[58] – and to earmark some level of funding

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56. *Id.*, at 8.

57. *Id.*, at 4. The ILEC Cost Model "accounts for the impact of setting a target for the total support amount *by relying on satellite broadband for extremely high-cost areas*." Emphasis supplied.

58. *Id.*, at 8. The $300 million is an absolute cap on the AMF. The ABC Plan specifically provides that other funds can eat into that amount (support designated for the AMF can be reduced by "the difference between the overall constraint on the size of the high-cost fund and the sum of support from the CAF for price cap LEC areas, support from the transitional access replacement mechanism for price cap LECs, any remaining legacy support provided to price cap incumbent LEC ETCs and CETCs, and any support provided to rate-of-return incumbent LECs.).

($300-million) for "mobile" broadband. But the qualifications for "mobile" support under the AMF are so limited that it will be incapable of supporting any widescale deployment of mobile broadband in rural America. That coupled with the inherent wireline bias of the proposed CAF process, operates to effectively exclude most mobile broadband from access to high cost support.

Compounding this segregation of fixed and mobile funding, the Plan provides that "[a] provider may not receive AMF support and CAF support for the same facility." In other words, if a wireless service provider is actually successful in competing for CAF support in a particular support area, it cannot also receive AMF support for *mobile* broadband in that same location. A wireless network that is designed only to provide fixed services is less complex and less costly to construct than one that is also capable of supporting mobile applications, because the former does not need to provide for hand-offs and "follow-me" switching arrangements. Yet the AMF could not even be used to support the *incremental* cost associated with a mobile-capable network over and above the costs minimally necessary for fixed service.

The distinction between "fixed" and "mobile" is itself artificial and arbitrary. Experience in the voice world has demonstrated that for (by the latest count) some 30% of US households, "fixed" has been replaced by "mobile."[59] Wireless broadband that is oriented toward mobile use can, as with voice services, serve as a substitute for fixed (wireline or wireless) broadband, and should not be relegated to a subordinate position with respect to broadband support. Indeed, the proliferation of "smart" mobile devices (by one recent projection smartphones will account for some 50% of all wireless devices in use in the US by the end of 2011[60]) underscores the burgeoning demand for mobile broadband. There is no basis for the value judgment, implicit in the ABC Plan, that "fixed" deserves priority over "mobile" for broadband access. In fact, the overall ABC Plan all but ignores the exploding demand for mobile broadband; its extreme focus upon fixed location services is anything but forward-looking.

Even if $300 million is a real number, it is woefully insufficient to move the needle in rural America to deliver real benefits, create jobs, provide for other economic development benefits, and provide significant and new health/safety benefits. Even without the limits placed on the AMF to apply to those situations where the CAF is not operative (very high cost and mobile broadband), capping the AMF at $300-million (or any other specific subset of aggregate CAF funding) is directly at odds with the overarching goal of providing broadband access to all parts of the US in the most efficient manner. If wireless mobile services can bring broadband to rural areas more efficiently than wireline LECs and/or if by virtue of their *mobile* functionality mobile broadband services can better serve the needs of rural customers, support for these services

59. Blumberg, Stephen J., and Luke, Julian V., *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July–December 2010*, Center for Disease Control, Division of Health Interview Statistics, National Center for Health Statistics, released June 8, 2011.

60. http://blog.nielsen.com/nielsenwire/consumer/smartphones-to-overtake-feature-phones-in-u-s-by-2011/

should not be constrained by some arbitrary cap on the available funding while potentially less efficient wireline LECs are allowed to cut to the front of the line.

The technology choice (wireline vs. wireless) is, however, only part of the matter at issue here. In terms of assuring that rural areas have access to services that are fully comparable to services available in urban areas, the more important concern is assuring the widespread availability of *mobile* services in these same high cost areas. In reality, and like their urban/suburban counterparts, rural customers need access both to fixed and to mobile broadband services. If a *mobile* functionality requirement were included in the minimum broadband specification along with the upload and download speeds, wireline carriers would be locked out. For the various reasons we have explored above, the ABC Plan is so heavily tilted in favor of wireline that wireless is all but locked out of CAF support. Yet if mobile broadband access is to be offered in rural high-cost areas, the solution might be to divide the CAF into two separate funds – one directed at supporting *fixed* services (but without the inherent wireline bias and exclusion from the baseline calculation of potentially lower-cost wireless solutions), and another to support *mobile* services. Where competitive bidding is to be used, providers that are capable of providing both fixed and mobile broadband should be afforded the opportunity to bid for both services in the same area and, if successful, to receive support from both funds. Although it might be argued that such an arrangement would unduly favor wireless over wireline providers, such a bias would still be less significant than the various incumbency benefits that are available only to ILECs.

The notion that a support arrangement that is established in 2012 would extend to 2022 or beyond *demands* that the objectives be established not based upon recent or even current service demands, but upon a realistic and informed assessment of the telecom needs of a decade or more into the future. Ten years ago (in 2001) there was no texting, no twitter, no Facebook, no point-to-point video calling via Skype and Facetime, no streaming video. A support mechanism that locked in telecom demands extant in 2001 to persist through 2011 or beyond would fail to provide for current needs. No one can say precisely what those needs and service levels will be in 2022 or beyond, except that they will undoubtedly be far different from what is viewed as sufficient by current (2011) standards. The failure of the ABC Plan to give any serious attention to *mobile* service demands is emblematic of its fundamentally *backward-looking* character. In developing a strategy to support the nation's broadband goals, the FCC needs to look to the future, not the past.

G. The structure of the ABC Plan is not competitively neutral

While the ABC Plan adopts many of the core terminology from the FCC's February 2011 NPRM, it carefully tailors the mechanisms to advance the interests of the price cap ILECs, at the expense of smaller competitors (competitive eligible telecommunications carriers) and consumers. Nowhere in the various documents submitted in support of the "ABC Plan" is there any suggestion that the Plan is "competitively neutral." And, in fact, it is anything but.

Although we have already identified some of the biases inherent in the proposal, it is useful to summarize them here, specifically in the context of competitive neutrality.

The Plan would lock in wireline technology and discourages competitive entry – for more than a decade

The FCC and Congress have invested years trying to promote innovation by making it possible for competitors to deploy disruptive technologies. The ABC Plan would stifle opportunities for competitive entry from now until 2022 and most likely some years beyond that date.[61] It essentially locks up support for one technology and one set of functionalities – ILEC wireline broadband – to the exclusion of all others, for a decade or more. Such an approach is a throw-back to the precise problem that the *1996 Act* sought to solve, namely, one carrier with all the support and all the customers in rural America.

Given all that has happened and continues to happen with the evolution of broadband, ten years of protection for a single provider is unreasonably long. The determination as to eligibility for CAF support is based upon a snapshot of competitive conditions extant as of the date the funding is initially approved. If competition could otherwise develop after that specific date but still well within that ten-year time frame, it could be foreclosed by virtue of the fact that no CAF subsidy would be available to the entrant and that the entrant would be forced to compete with a subsidized incumbent.

Moreover, even though the subsidy received by the ILEC is nominally associated only with eligible (high-cost, unserved) census blocks, to the extent that such funding functions to support the ILECs' common costs in both the "town" (non-eligible) and "high-cost" portions of the wire center, it provides a cost advantage that may foreclose future competitive entry *even in unsupported areas*.

The Plan favors incumbents over entrants

The "right of first refusal" takes some 82 percent of eligible census blocks out of competitive contention by making them automatically unavailable to non-incumbents (unless the ILEC elects to turn down support). Also, the fact that the cost model uses assumptions based upon the ILEC's wireline technology and network architecture will frequently disadvantage competitors that would, using current efficient network design "best practices," require that support be available over a considerably larger geographic unit than legacy ILEC wire center serving areas.

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61. Under the Plan, "Broadband providers that elect to receive support from the CAF will receive a fixed level of support for a term of ten years from the date on which support is awarded. To the extent that the Commission phases in a CAF recipient's support for an area by providing CAF support for some census blocks before it provides CAF support for other census blocks, each group of census blocks will have a separate ten-year term. A CAF recipient's support may not be reduced once awarded, provided that the recipient meets the obligations associated with CAF support."

ILECs obtain a huge advantage (not available to entrants) from having made a "substantial investment" in broadband, but this "investment" has itself been heavily subsidized and cross-subsidized

The installed base of broadband that creates the foundation for the incumbent LECs' claim to a "right of first refusal" (a 35 percent penetration in wire centers with (at least) some high cost census blocks) might well not exist but for prior subsidies to the incumbent LECs. Indeed, the Plan's sponsors readily concede that those existing broadband facilities were "constructed with the help of legacy high-cost universal service programs."[62] Moreover, the price cap incumbent LECs have also had the unique ability to subsidize these deployments with excess profits generated from deregulated services, such as special access, with respect to which the ILEC and its shareholders were never seriously "at risk."

When an ILEC receives high-cost support to be used for a network upgrade, it typically records the payment received as a current revenue and any resulting capital expenditures are carried as fixed assets on its books. The "embedded investment" is thus exaggerated, since a significant portion thereof was actually funded through a legacy high-cost support program.[63] Moreover, while these programs were nominally focused upon voice services (POTS), the FCC has expressly authorized spending on network upgrades that afforded additional service capabilities, such as the ability to offer DSL.[64] Thus, the basis for the right of first refusal – the putative existence of "substantial" embedded investment – can operate to benefit a price cap ILEC not due to any "significant investment" it had made, but instead due to its receipt of high cost funding.

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62. ABC Plan, Att. 1, at 6.

63. Suppose, for example, that the utility had received $8-million in high-cost support to help offset a $10-million infrastructure investment. In that case, the firm would have recorded the $8-million support payment as a current revenue, and the entire $10-million as a fixed long-term capital asset. A more accurate accounting treatment would have been to reduce the gross capital expenditure by the amount of high-cost or other support, with only the net "investment" actually being made by the utility recorded as a fixed asset on its books – i.e., to record none of the support as "revenue" and to record only the net outlay of $2-million as a long-term capital asset.

64. As early at 1998, noting that the *Telecommunications Act of 1996* promoted the deployment of advanced services, the FCC made clear that the forward-looking high-cost support mechanism for non-rural carriers provides support should be used for plant "that does not impede the provision of access to advanced services." *See Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket No. 97-160, Fifth Report and Order, 13 FCC Rcd 21323, 21351-52 paras. 68-70 (1998). In extending this policy to RLECs in 2001, the FCC agreed with carriers who commented that "the Commission's existing high-cost loop support mechanism for rural carriers 'inherently provides incentives for the infrastructure investments necessary for providing access to advanced services.'" *Federal-State Joint Board on Universal Service; Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers* ("MAG Order"), 16 FCC Rcd 11244.

Supported vs. unsupported areas within wire center create opportunities and incentives for price cap ILEC to misallocate costs and revenues

Under the ABC Plan, eligible (supported) and non-supported areas of a single wire center are viewed as being completely independent of each other. As the Plan states, "[i]n a rural wire center, for example, the CAF might provide support for the sparsely populated outlying area while providing no support for the more densely populated 'town' area. A CAF recipient's obligations apply only in the supported area." The problem with this selective funding scheme is that the price cap LEC may be generating significant excess profits in the "town" areas while sustaining "losses" elsewhere. Leaving aside the obviously critical question of cost allocation as between the "supported area" and the "town," this approach operates to insulate the "supported areas" from the benefits of the larger ILECs' scale and scope. This is not to say that the "town" areas should subsidize the "supported areas" before the latter are allowed to draw CAF or other funds, but it does create the opportunity for a geographically diverse price cap LEC to shift costs away from "towns" and over to "supported areas." If the ILEC were subject to ROR regulation, such shifts would be captured in the aggregate revenue requirement. But under price caps, there is no true-up between revenues and costs, allowing the price cap LEC to generate and retain excess profits in low-cost areas while drawing USF funds to support high-cost areas. This opportunity contributed to the large-scale divestitures of rural exchanges by RBOCs over to small RLECs that would qualify for USF support, effectively allowing the RBOC to capitalize the support revenue stream that would (after a waiting period) become available to the purchaser of these exchanges.

H. The Transitional Access Replacement Mechanism represents a "make whole" revenue guarantee that protects price cap ILECs from loss while permitting them to continue to earn excess profits under their existing price cap regime

The price cap ILECs, especially AT&T and Verizon, have up to now received a relatively small share of explicit high-cost universal service funding,[65] but they have been beneficiaries of large amounts of implicit subsidy through access compensation. Thus, while they are content to see legacy explicit support phased out as it is replaced by CAF support, the large ILECs take a very different tack with respect to the implicit subsidies they have derived through above-cost access charges. The large ILECs thus propose a "Transitional Access Replacement Mechanism" ("TARM"), through which they would be enabled to recover "intercarrier revenue reductions from universal service support." At its core, the TARM represents a "make whole" revenue guarantee that protects price cap ILECs from loss while permitting them to continue to earn excess profits under their existing price cap regime.

65. Some of the larger price cap ILECs have found indirect methods for obtaining high-cost funding by divesting themselves of individual exchanges that would qualify for high-cost support once removed from the large ILEC's "study area." By selling off these exchanges, the large ILECs were able to capitalize and recover, in the sales price, the stream of USF high-cost support revenue that would become available to the divestee entity going forward.

Under the Plan, a price cap ILEC's receipt of access "replacement" funding is conditioned on the ILEC implementing annual SLC increases.[66] After imposing these increases, subject to a $30 rate cap for local residential rates (inclusive of federal and state SLCs, state USF, and mandatory EAS), the ILEC would then be entitled to recover 90 percent of any "revenue reduction" that exceeded its increased revenue from the imputed SLC increase. That "recovery" would come from universal service support.[67]

The theory behind this revenue "replacement" for price cap LECs is fundamentally flawed. For years, these carriers have insisted that their costs and revenues must be de-linked and be off-limits to regulatory review. Indeed, in 2007, several price cap ILECs asked the FCC to forbear from requiring them to file detailed financial and results of operations reports in the Commission's ARMIS system; the FCC granted the ILECs' petitions,[68] and no such information has been provided to the FCC after 2007. Now, when there is even a theoretical possibility that one portion of their revenue stream may diminish (even as other revenues and support opportunities expand), the price cap ILECs suddenly seek regulatory intervention.

In proposing the TARM, the price cap ILECs ask the FCC to take their claim of economic harm at face value. There is no requirement that price cap LECs demonstrate any aggregate revenue or earnings deficiency. The "Transitional Access Replacement Mechanism" is intended simply to replace, dollar-for-dollar, the specific access revenues not received as a consequence of ICC reform, regardless of the total company earnings picture – i.e., even if the price cap ILEC would be earning excess profit (relative to the last-authorized 11.25% ROR*). without the access revenue replacements*. Moreover, the revenues to be "replaced" are confined solely to *regulated* aspects of these companies' ILEC operations. At the same time as their access charge receipts and other regulated service revenues were on the decline, their *nonregulated* revenues were growing to new heights. A major source of the decline in access charge revenue, for example, was the growth in the demand for and use of wireless services – the vast majority of which occurred in the wireless affiliates of the very same price cap LECs. As such, these companies have already succeeded in "replacing" lost access revenue, and to now adopt a formal transitional replacement mechanism amounts to nothing short of a duplicative, "heads-they-win, tails-customers-lose" policy.

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66. The increases under this SLC progression are slightly lower than the permitted SLC increases if the ILEC does not elect to receive TARM support).

67. ABC Plan, Attachment 1, at 12.

68. *Petition of Qwest Corporation for Forbearance from Enforcement of the Commission's ARMIS and 492A Reporting Requirements Pursuant to 47 U.S.C. § 160(c)*, WC Docket No. 07-204, *Petition of Verizon for Forbearance Under 47 U.S.C. § 160(c) From Enforcement of Certain of the Commission's Recordkeeping and Reporting Requirements*, WC Docket No. 07-273, Memorandum Opinion and Order, 23 FCC Rcd 18483, released December 12, 2008 (*"ARMIS Financial Reporting Forbearance Order"*).

Moreover, the idea that the FCC would be in a position to "prescribe" an ILEC "replacement revenue" structure seems at odds with the overarching notion – one that is being continuously advanced by the price cap ILECs themselves – that the local telecommunications market has become effectively competitive. SLCs exist only for ILECs, and any "replacement revenues" being contemplated by the ABC Plan are similarly available only to ILECs. To the extent that raising residential rates via SLCs causes the ILECs' rates to increase more than those of other wireline and wireless competitors that are not required to charge the SLC, this mechanism may actually speed the migration of ILEC POTS customers over to other, non-SLC-charging carriers. In that sense, the proposed "revenue replacement" may do more than merely make the ILECs whole with respect to policy initiatives that are intended to eliminate implicit subsidies, it may also work to insulate them from competitive losses arising from the implementation of the new replacement revenues themselves. Under the ABC Plan,"[t]he impact of the reduction in access rates is calculated relative to the rates in effect on January 1, 2012, *and is recalculated each year to reflect changes in traffic volumes.*"[69] Hence, any additional lost revenue associated with customers migrating out of their ILEC service could itself, in turn, be subject to "replacement."

Any funding pulled from the CAF simply to prevent ILECs from dealing with the financial consequences of the transition to a broadband environment – an environment in which they stand to gain innumerable advantages – is funding misspent. This is particularly true because the TARM mechanism uniquely benefits the large ILECs, whereas their competitors are provided no equivalent safety net in connection with the USF/ICC transition.

IV. Conclusion

Adoption of the price cap ILECs' "ABC Plan" would be a serious step in the wrong direction. It would from the very outset deny rural consumer access to a broad range of mobile broadband services. It would lock in for a decade or longer a fixed-location broadband service standard that is barely adequate to support applications already on the market, and that will almost surely fail to keep up with new demands over the lock-in period. It will result in an excessive level of support by limiting its cost modeling to *legacy wireline technology and network architecture*, thus failing to base the support level upon the least-cost forward-looking technology. And, by preempting wireless (and other) providers' ability to compete for support in nearly five-sixths of all supported locations, the ABC Plan will place an excessive economic burden upon all services and geographic areas that are being required to contribute such support. In the end, the price cap ILECs' ABC Plan does not resolve the universal service/intercarrier compensation reform question; rather, it largely kicks it down the road for another decade – and still provides no assurance that even then we will achieve the needed outcome.

69. ABC Plan, Attachment 1, at 12.

The price cap ILECs' proposal is critically dependent upon a support calculation model of which little is known and that has numerous and serious flaws. If it is to be pursued, the Commission will need to:

(1) Require that the maximum support available to any area be capped at a level consistent with the least-cost forward looking technology.

(2) Establish "supported area" geographies that offer efficient service opportunities based upon current and forward-looking network architectures and technologies.

(3) Include broad availability of mobile as well as fixed-location broadband services in the objective minimum service standard, rather than (as the ABC Plan would do) limiting support for mobile services to areas with extraordinarily high cost.

(4) Eliminate all "right of first refusal" or other preemptive claims on support, making every "supported area" open and available to competitive bidding.

(5) Adopt a minimum service standard that has the flexibility to evolve with changing demands for broadband capabilities, and include a potential support recipient's ability to make ongoing adjustments in its service mix over the support period a condition for eligibility.

(6) Eliminate "make whole" and "replacement" revenue arrangements that reward incumbent carrier inefficiencies by shifting cost burdens to areas and services facing the fewest competitive alternatives, that frustrate competitive entry, and that distort competitive choices where available.

Deploying broadband in rural and high-cost areas is a costly undertaking by any standard and, to the extent that those costs are to be borne by the rest of the economy, it is critical that this be accomplished in the most efficient manner. The ABC Plan expressly excludes a potentially lower-cost solution forecloses participation by potentially lower cost providers. In so doing, it would create an unnecessarily large funding requirement. Excessive spending in this pursuit creates a drag on the economy generally, and needs to be avoided. The ABC Plan is simply not ready for serious consideration, and any attempt by its sponsors to rush it through the Commission's decision process should not be condoned.

APPENDIX

AUTHOR QUALIFICATIONS

Statement of Qualifications

LEE L. SELWYN

Dr. Lee L. Selwyn has been actively involved in the telecommunications field for more than forty years, and is an internationally recognized authority on telecommunications regulation, economics and public policy. Dr. Selwyn founded the firm of Economics and Technology, Inc. in 1972, and has served as its President since that date. He received his Ph.D. degree from the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology. He also holds a Master of Science degree in Industrial Management from MIT and a Bachelor of Arts degree with honors in Economics from Queens College of the City University of New York.

Dr. Selwyn has testified as an expert on rate design, service cost analysis, form of regulation, and other telecommunications policy issues in telecommunications regulatory proceedings before some forty state commissions, the Federal Communications Commission and the Canadian Radio-television and Telecommunications Commission, among others. He has appeared as a witness on behalf of commercial organizations, non-profit institutions, as well as local, state and federal government authorities responsible for telecommunications regulation and consumer advocacy.

He has served or is now serving as a consultant to numerous state utilities commissions including those in Arizona, Minnesota, Kansas, Kentucky, the District of Columbia, Connecticut, California, Delaware, Maine, Massachusetts, New Hampshire, Vermont, New Mexico, Wisconsin and Washington State, the Office of Telecommunications Policy (Executive Office of the President), the National Telecommunications and Information Administration, the Federal Communications Commission, the Canadian Radio-television and Telecommunications Commission, the United Kingdom Office of Telecommunications, and the Secretaria de Comunicaciones y Transportes of the Republic of Mexico. He has also served as an advisor on telecommunications regulatory matters to the International Communications Association and the Ad Hoc Telecommunications Users Committee, as well as to a number of major corporate telecommunications users, information services providers, competitive local exchange carriers, interexchange carriers, wireless services providers, and specialized access services carriers.

Dr. Selwyn has presented testimony as an invited witness before the U.S. House of Representatives Subcommittee on Telecommunications, Consumer Protection and Finance and before the U.S. Senate Judiciary Committee, on subjects dealing with restructuring and deregulation of portions of the telecommunications industry.

In 1970, he was awarded a Post-Doctoral Research Grant in Public Utility Economics under a program sponsored by the American Telephone and Telegraph Company, to conduct research on the economic effects of telephone rate structures upon the computer time sharing industry. This work was conducted at Harvard University's Program on Technology and Society, where he was appointed as a Research Associate. Dr. Selwyn was also a member of the faculty at the College of Business Administration at Boston University from 1968 until 1973, where he taught courses in economics, finance and management information systems.

Dr. Selwyn has been an invited speaker at numerous seminars and conferences on telecommunications regulation and policy, including meetings and workshops sponsored by the National Telecommunications and Information Administration, the National Association of Regulatory Utility Commissioners, the U.S. General Services Administration, the Institute of Public Utilities at Michigan State University, the National Regulatory Research Institute, the Harvard University Program on Information Resources Policy, the Columbia University Institute for Tele-Information, the Massachusetts Institute of Technology Alfred P. Sloan School of Management, the National Association of State Utility Consumer Advocates (NASUCA), the National Conference of Regulatory Attorneys, as well as at numerous conferences and workshops sponsored by individual regulatory agencies. Dr. Selwyn is an elected Town Meeting Member for the Town of Brookline, Massachusetts, and serves on the Town's Advisory and Finance Committee and its Subcommittee on Planning and Regulation.

Publications

"Taxes, Corporate Financial Policy and Return to Investors," (with Donald E. Farrar) *National Tax Journal*, Vol. XX, No.4, December 1967.

"Considerations for Computer Utility Pricing Policies" (with Daniel S. Diamond), presented at the 23rd Association for Computing Machinery National Conference, 1968.

"Real Time Computer Communications and the Public Interest " (with Michael M. Gold), presented at the 1968 American Federation of Information Processing Societies, Fall Joint Computer Conference, San Francisco, CA, December 9-11, 1968.

"Computer Resource Accounting in a Time Sharing Environment," presented at the 1970 American Federation of Information Processing Societies, Spring Joint Computer Conference, Atlantic City, NJ, May 5-7, 1970.

Planning Community Information Utilities, H. Sackman and B. W. Boehm, Eds., Chapter 6, "Industrial and Vocational Services," Montvale, NJ, AFIPS Press, 1972, at 137-172.

"Competition and Structure in the Computer Services Industry," *Proceedings, Second Annual Symposium on Economic Considerations in Managing the Computer Installation*, New York: Association for Computing Machinery, 1972.

"Computer Resource Accounting and Pricing," *Proceedings, Second Annual Symposium on Economic Considerations in Managing the Computer Installation*, New York: Association for Computing Machinery, 1972.

"Pricing Telephone Terminal Equipment Under Competition," *Public Utilities Fortnightly*, December 8, 1977.

"Deregulation, Competition, and Regulatory Responsibility in the Telecommunications Industry," *Presented at the 1979 Rate Symposium on Problems of Regulated Industries - Sponsored by: The American University, Foster Associates, Inc., Missouri Public Service Commission, University of Missouri--Columbia*, Kansas City, MO, February 11 - 14, 1979.

"Sifting Out the Economic Costs of Terminal Equipment Services," *Telephone Engineer and Management*, October 15, 1979.

"Usage-Sensitive Pricing" (with G. F. Borton), (a three part series), *Telephony*, January 7, 28, February 11, 1980.

"Perspectives on Usage-Sensitive Pricing," *Public Utilities Fortnightly*, May 7, 1981.

"Diversification, Deregulation, and Increased Uncertainty in the Public Utility Industries" *Comments Presented at the Thirteenth Annual Conference of the Institute of Public Utilities*, Williamsburg, VA, December 14-16, 1981.

"Local Telephone Pricing: Is There a Better Way? The Costs of LMS Exceed its Benefits: a Report on Recent U.S. Experience," *Proceedings of a conference held at Montreal, Quebec - Sponsored by Canadian Radio-Television and Telecommunications Commission and The Centre for the Study of Regulated Industries, McGill University*, May 2-4, 1984.

"Long-Run Regulation of AT&T: A Key Element of A Competitive Telecommunications Policy," *Telematics*, August 1984.

"Is Equal Access an Adequate Justification for Removing Restrictions on BOC Diversification?" *Presented at the Institute of Public Utilities Eighteenth Annual Conference*, Williamsburg, VA, December 8-10, 1986.

"Contestable Markets: Theory vs. Fact," *Presented at the Conference on Current Issues in Telephone Regulations: Dominance and Cost Allocation in Interexchange Markets - Center for Legal and Regulatory Studies Department of Management Science and Information Systems - Graduate School of Business, University of Texas at Austin*, October 5, 1987.

"Market Power and Competition Under an Equal Access Environment," *Presented at the Sixteenth Annual Conference, "Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation," Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December 3-5, 1987.

"The Sources and Exercise of Market Power in the Market for Interexchange Telecommunications Services," *Presented at the Nineteenth Annual Conference, "Alternatives to Traditional Regulation: Options for Reform," Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December, 1987.

"Assessing Market Power and Competition in The Telecommunications Industry: Toward an Empirical Foundation for Regulatory Reform," *Federal Communications Law Journal*, Vol. 40 Num. 2, April 1988.

"A Perspective on Price Caps as a Substitute for Traditional Revenue Requirements Regulation," *Presented at the Twentieth Annual Conference, "New Regulatory Concepts, Issues and Controversies," Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December, 1988.

"The Sustainability of Competition in Light of New Technologies" (with D. N. Townsend and P. D. Kravtin), *Presented at the Twentieth Annual Conference, Institute of Public Utilities, Michigan State University*, Williamsburg, VA, December, 1988.

"Adapting Telecom Regulation to Industry Change: Promoting Development Without Compromising Ratepayer Protection" (with S. C. Lundquist), *IEEE Communications Magazine*, January, 1989.

"The Role of Cost Based Pricing of Telecommunications Services in the Age of Technology and Competition," *National Regulatory Research Institute Conference*, Seattle, July 20, 1990.

"A Public Good/Private Good Framework for Identifying POTS Objectives for the Public Switched Network" (with Patricia D. Kravtin and Paul S. Keller), Columbus, Ohio: *National Regulatory Research Institute*, September 1991.

"Telecommunications Regulation and Infrastructure Development: Alternative Models for the Public/Private Partnership," *Economic Symposium of the International Telecommunications Union Europe Telecom '92 Conference, Budapest, Hungary,* October 15, 1992.

"Efficient Infrastructure Development and the Local Telephone Company's Role in Competitive Industry Environment" *Twenty-Fourth Annual Conference, Institute of Public Utilities, Graduate School of Business, Michigan State University, "Shifting Boundaries between Regulation and Competition in Telecommunications and Energy,*" Williamsburg, VA, December 1992.

"Measurement of Telecommunications Productivity: Methods, Applications and Limitations" (with Françoise M. Clottes), *Presented at Organisation for Economic Cooperation and Development, Working Party on Telecommunication and Information Services Policies, `93 Conference "Defining Performance Indicators for Competitive Telecommunications Markets," Paris, France,* February 8-9, 1993.

"Telecommunications Investment and Economic Development: Achieving efficiency and balance among competing public policy and stakeholder interests," *Presented at the 105th Annual Convention and Regulatory Symposium, National Association of Regulatory Utility Commissioners, New York,* November 18, 1993.

"The Potential for Competition in the Market for Local Telephone Services" (with David N. Townsend and Paul S. Keller), *Presented at the Organization for Economic Cooperation and Development Workshop on Telecommunication Infrastructure Competition*, December 6-7, 1993.

"Market Failure in Open Telecommunications Networks: Defining the new natural monopoly," *Utilities Policy*, Vol. 4, No. 1, January 1994. (Also published in *Networks, Infrastructure, and the New Task for Regulation*, by Werner Sichel and Donald L. Alexander, eds., University of Michigan Press, 1996.)

"Efficient Public Investment in Telecommunications Infrastructure," *Land Economics*, Vol 71, No.3, August 1995.

Adapting Taxation Policies to a Changing Telecommunications Industry, Public Utilities Seminar, International Association of Assessing Officers, Louisville, KY, March 22, 1996.

"When the Competition Died – and What We Can Learn From the Autopsy, " 37th Annual Regulatory Policy Conference, Institute of Public Utilities, Michigan State University, Richmond, Virginia, December 5, 2005.

"The Competitive (In)significance of Intermodal Competition, " *The Party Line* (Newsletter of the Communications Industry Committee, American Bar Association Section of Antitrust Law), Spring 2006.

"The Comcast Decision and the Case for Reclassification and Re-regulation of Broadband Internet Access as a Title II Telecommunications Service, " (with Helen E. Golding), *Icarus* (Communications & Digital Technology Industries Committee, American Bar Association Section of Antitrust Law), Fall 2010.

"Revisiting the Regulatory Status of Broadband Internet Access: A Policy Framework for Net Neutrality and an Open Competitive Internet," (with Helen E. Golding), *Federal Communications Law Journal*, Vol. 63 Num. 1, December 2010.

Papers and Reports

The Enduring Local Bottleneck: Monopoly Power and the Local Exchange Carriers, (with Susan M. Gately, et al) a report prepared by Economics and Technology, Inc. and Hatfield Associates, Inc. for AT&T Corp., MCI and CompTel, February 1994.

Commercially Feasible Resale of Local Telecommunications Services: An Essential Step in the Transition to Effective Local Competition, (Susan M. Gately, *et al.*) a report prepared for AT&T Corp., July 1995.

Funding Universal Service: Maximizing Penetration and Efficiency in a Competitive Local Service Environment (with Susan M. Baldwin, under the direction of Donald Shepheard), A Time Warner Communications Policy White Paper, September 1995.

Stranded Investment and the New Regulatory Bargain (with Susan M. Baldwin, under the direction of Donald Shepheard), A Time Warner Communications Policy White Paper, September 1995.

Establishing Effective Local Exchange Competition: A Recommended Approach Based Upon an Analysis of the United States Experience, paper prepared for the Canadian Cable Television Association and filed as evidence in Telecom Public Notice CRTC 95-96, Local Interconnection and Network Component, January 26, 1996.

The Cost of Universal Service, A Critical Assessment of the Benchmark Cost Model, (with Susan M. Baldwin), report prepared for the National Cable Television Association and submitted with Comments in FCC Docket No. CC-96-45, April 1996.

Economic Considerations in the Evaluation of Alternative Digital Television Proposals, paper prepared for the Computer Industry Coalition on Advanced Television Service, filed with comments in FCC MM Docket No. 87-268, *In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, July 11, 1996.

Assessing Incumbent LEC Claims to Special Revenue Recovery Mechanisms: Revenue opportunities, market assessments, and further empirical analysis of the "*Gap*" *between embedded and forward-looking costs*, (with Patricia D. Kravtin), filed in *Access Charge Reform*, CC Docket No. 96-262 on behalf of the Ad Hoc Telecommunications Users Committee, January 29, 1997.

The Use of Forward-Looking Economic Cost Proxy Models (with Susan M. Baldwin), report prepared for the National Cable Television Association, February 1997.

The Effect of Internet Use on the Nation's Telephone Network (with Joseph W. Laszlo), report prepared for the Internet Access Coalition, July 22, 1997.

Regulatory Treatment of ILEC Operations Support Systems Costs, report prepared for AT&T Corp., September 1997.

The "Connecticut Experience" with Telecommunications Competition: A Case Study in Getting it Wrong (with Helen E. Golding and Susan M. Gately), study prepared for AT&T Corp., February 1998.

Broken Promises: A Review of Bell Atlantic-Pennsylvania's Performance Under Chapter 30 (with Sonia N. Jorge and Patricia D. Kravtin), report prepared for AT&T Corp., June 1998.

Building A Broadband America: The Competitive Keys to the Future of the Internet (with Patricia D. Kravtin and Scott A. Coleman), report prepared for the Competitive Broadband Coalition, May 1999.

Bringing Broadband to Rural America: Investment and Innovation In the Wake of the Telecom Act (with Scott C. Lundquist and Scott A. Coleman), report prepared for the Competitive Broadband Coalition, September 1999.

Bringing Local Telephone Competition to Massachusetts (with Helen E. Golding), prepared for The Massachusetts Coalition for Competitive Phone Service, January 2000.

Where Have All The Numbers Gone? Long-term Area Code Relief Policies and the Need for Short-term Reform, report prepared for the Ad Hoc Telecommunications Users Committee, International Communications Association, March 1998, second edition, June 2000.

Subsidizing the Bell Monopolies: How Government Welfare Programs are Undermining Telecommunications Competition, study prepared for AT&T Corp., April 2002.

Competition in Access Markets: Reality or Illusion, A Proposal for Regulating Uncertain Markets (with Susan M. Gately and Helen E. Golding), prepared for the Ad Hoc Telecommunications Users Committee, August 2004.

Avoiding the Missteps made South of the Border: Learning from the US Experience in Competitive Telecom Policy (with Helen E. Golding), prepared for MTS Allstream, Inc., August 16, 2006.

Preventing Abuse of Dominance in Canadian Telecom Markets (with Helen E. Golding), prepared for MTS Allstream, Inc., December 2006.

Building a Broadband America: Myths and Realties (with Susan M. Gately, Helen E. Golding and Colin B. Weir), prepared for COMPTEL, May 2007.

Special Access Overpricing and the US Economy: How Unchecked RBOC Market Power is Costing US Jobs and Impairing US Competitiveness (with Susan M. Gately, Helen E. Golding and Colin B. Weir), prepared for the Ad Hoc Telecommuni-cations Users Committee, August 2007.

The Non-Duplicability of Wholesale Ethernet Services: Promoting Competition in the Face of the Incumbents' Dominance over Last-Mile Facilities, prepared for MTS Allstream, Inc., March 2009.

The Role of Regulation in a Competitive Environment: How Smart Regulati0on of Essential Whole Facilities Stimulates Investment and Promotes Competition, (with Susan M. Gately, Helen E. Golding, Colin B. Weir), prepared for MTS Allstream, Inc., March 2009.

Choosing Broadband Competition over Unconstrained Incumbent Market Power: A Response to Bell and Telus (with Susan M. Gately, Helen E. Golding, Colin B. Weir), prepared for MTS Allstream, Inc., April 2009.

Longstanding Regulatory Tools Confirm BOC Market Power: A Defense of ARMIS (with Susan M. Gately, Helen E. Golding and Colin B. Weir), prepared for the Ad Hoc Telecommunications Users Committee, January 2010.

Revisiting US Broadband Policy: How Reregulation of Wholesale Services Will Encourage Investment and Stimulate Competition and Innovation in Enterprise Broadband Markets (with Helen E. Golding, Susan M. Gately and Colin B. Weir), prepared for MTS Allstream Inc., February 2010.

Regulation, Investment and Jobs: How Regulation of Wholesale Markets Can Stimulate Private Sector Broadband Investment and Create Jobs, (with Susan M. Gately, Helen E. Golding and Colin B. Weir), prepared for Cbeyond, Inc., Covad Communications Company, Integra Telecom, Inc., PAETEC Holding Corp, and tw telecom inc., February 2010.

Statement of Qualifications

HELEN E. GOLDING

Helen E. Golding has worked for thirty-five years in the field of utility regulation and public policy. For most of the past seventeen years (1994 to 2011), Ms. Golding was Vice President at Economics and Technology, Inc. (ETI), where she had a wide-ranging practice that involved traditional regulatory issues (such as rate setting, rate design, universal service, affiliate transactions, and quality of service), mergers and acquisitions, antitrust, and a host of issues arising from deregulation and the evolution of new technologies and the Internet. She is currently an independent consultant to ETI and other clients. In addition to work in state and federal regulatory proceedings in the US, Ms. Golding has also provided consulting services to AT&T Canada and MTS Allstream in proceedings before the Canadian Radio-television and Telecommunications Commission. Ms. Golding has served as an expert witness for the Pennsylvania Attorney General (representing the Department of Revenue), and for the City of Newton, Massachusetts.

Some of Ms. Golding's most recent work at ETI involved Canada's comprehensive evaluation of its regulatory frameworks for wholesale and retail telecommunications services, the FCC's evolving policies concerning broadband, Internet-related services, and service providers, including policies on Voice over Internet Protocol services, and matters involving state taxation of telecommunications and information services. During the past several years, she has also focused on economic and public policy issues related to the FCC's Triennial Review Proceeding and TRO Remand, special access competition, and market-based mechanisms for spectrum allocation.

Following the passage of the landmark *Telecommunications Act of 1996*, Ms. Golding directed work at ETI to evaluate the progress of various Bell operating companies (BOCs) toward meeting the standards of Section 271 of the *Act*. She also directed work analyzing the propriety of Ameritech's application for authorization by the Illinois and Michigan public utilities commissions to provide local exchange service through the same separate subsidiary that Ameritech proposed to employ to provide interLATA long distance services. Along with Dr. Lee L. Selwyn, Ms. Golding submitted a comprehensive statement as evidence in the Canadian Radio and Telecommunications Commission's investigation into forbearance from regulation of toll services provided by the Stentor companies, Canada's equivalent of the pre-divestiture Bell System.

Ms. Golding has done extensive work in the area of telecommunications industry mergers, and is the co-author of two affidavits to the FCC addressing the public interest concerns raised by the SBC-Ameritech and GTE-Bell Atlantic mergers, submitted on behalf of a coalition of state consumer advocates. Ms. Golding was also a key participant in ETI's participation in several state proceedings reviewing major ILEC mergers, on behalf of consumer advocates in Maine, Ohio, California and Hawaii.

Ms. Golding has directed or had substantial involvement in multiple projects involving the original specification or subsequent revision of alternative regulation plans, including work for consumer advocates in Colorado, Connecticut, Indiana, Maine, and Massachusetts. Ms. Golding participated in local competition dockets in New York, New Jersey, Massachusetts, and Hawaii, and in various state proceedings focusing on universal service. She also contributed heavily to numerous submissions to the Federal-State Joint Board and FCC in CC Docket 96-45, the Universal Service proceeding, and various phases of the FCC's LEC Price Cap Review proceedings.

As Assistant General Counsel of the Massachusetts Department of Public Utilities from November 1988 to September 1992, Ms. Golding managed a staff of hearing officers who conducted adjudicatory and rulemaking proceedings for all regulated utilities. Her position required case management and policy coordination with the Department's numerous technical divisions (organized by industry sector: telecommunications, electric, gas, water, and transportation). Ms. Golding also served as the DPU's chief legal advisor on matters that spanned the Department's broad utility jurisdiction. In addition to overseeing numerous rate cases for all utilities, these proceedings included the tariffing of new services, design of conservation and load management programs, incentive and competitive rates, licensing, financing, siting and utility management practices.

Immediately prior to joining ETI, Ms. Golding was in the Regulatory Practice Group at Rubin and Rudman, a mid-sized Boston law firm, where she specialized in communications, energy, and municipal law, for clients that included communications and cable companies, municipal electric companies, independent power producers, and public authorities.

Prior to becoming Assistant General Counsel at the DPU, Ms. Golding was Regulatory Counsel and Manager of Telecommunications Public Policy for Honeywell, Inc., providing legal and strategic planning advice concerning rate and regulatory developments affecting the company as a large user of telecommunications service and as a computer manufacturer. In that position, she also provided counsel on tariff and regulatory matters to the company's alarm and customer premises equipment businesses.

Ms. Golding also worked at the Federal Communications Commission, as a General Attorney in the Common Carrier Bureau, Tariff Division, where she was responsible for tariff review and rulemaking proceedings for domestic and international telecommunications services. After interning with the Department of Public Utilities during her final year of law school, Ms. Golding joined the Department’s new Telecommunications Division as a Telecommunications Specialist. Among her responsibilities were matters pertaining to the Department’s regulation of radio common carriers and coordination with the CATV Commission on rates, terms, and conditions for pole attachments.

Ms. Golding is a graduate of Boston University School of Law (J.D., 1977 and Bryn Mawr College (A.B. *cum laude*, 1974).

Publications of Helen E. Golding

The BCM [Benchmark Cost Model] Debate, A Further Discussion, (with Dr. Lee L. Selwyn and Susan M. Baldwin). Prepared for the National Cable Television Association, submitted in FCC CC Docket No. 96-45, May 1996.

The Phone Wars and How to Win Them, (with Susan M. Baldwin). *Planning*, July 1996 (Volume 62, Number 7).

Interpreting the Telecommunications Act of 1996 Mandate for the Deployment of Advanced Telecommunications Services in a Fiscally Responsible and Fully Informed Manner (with Susan M. Baldwin), *Proceedings of the Tenth NARUC Biennial Regulatory Information Conference*, Volume 3, September 11-13, 1996

U.S. Regulatory Safeguards: Implications for Canada, Evidence submitted in Canadian Radio and Telecommunications Commission docket CRTC 96-26: Forbearance from Regulation of Toll Services Provided by Dominant Carriers, November 22, 1996.

Report on the Southern New England Telephone Company (SNET), (with Patricia D. Kravtin, et al.), prepared for Cablevision Systems Corporation, July 1997.

The "Connecticut Experience" with Telecommunications Competition: A Case in Getting it Wrong, (with Lee L. Selwyn and Susan M. Gately), February 1998.

Affidavit of Susan M. Baldwin and Helen Golding, submitted on behalf of Consumer Groups in FCC Docket CC 98-141, SBC-Ameritech Merger Proceeding, October 15, 1998.

Affidavit of Susan M. Baldwin and Helen Golding, submitted on behalf of Consumer Groups in FCC Docket CC 98-184, Bell Atlantic-GTE Merger Proceeding, December 18, 1998.

Bringing Local Telephone Competition to Massachusetts, (with Lee L. Selwyn) prepared for the Massachusetts Coalition for Competition Telephone Service, January 2000.

Market-based Solutions for Realigning Spectrum Use in the 800 MHz Band, (with Lee L. Selwyn), June 2003.

Competition in Access Markets: Reality or Illusion, (with Lee L. Selwyn and Susan M. Gately) prepared for the Ad Hoc Telecommunications Committee, August 2004.

Confronting Telecom Industry Consolidation: A Regulatory Agenda for Dealing with the Implosion of Competition (with Lee L. Selwyn and Hillary A. Thompson), prepared for the National Association of State Utility Consumer Advocates, April 2005.

Intercarrier Compensation in a Diverse Competitive Environment, (with Lee L. Selwyn) prepared for Pac-West Telecomm, Inc. and US LEC Corp., May 2005.

Avoiding the Missteps Made South of the Border: Learning from the US Experience in Competitive Telecommunications Policy (with Lee L. Selwyn), prepared for MTS Allstream Inc., August 2006.

Special Access Overpricing and the US Economy: How Unchecked RBOC Market Power is Costing US Jobs and Impairing US Competitiveness, with Lee L. Selwyn, Susan M. Gately, and Colin B. Weir, prepared for the AdHoc Telecommunications Users Committee, August 2007.

"The Comcast Decision and the Case for Reclassification and Re-regulation of Broadband Internet Access as a Title II Telecommunications Service, " (with Lee L. Selwyn), *Icarus* (Communications & Digital Technology Industries Committee, American Bar Association Section of Antitrust Law), Fall 2010.

A New Era in ILEC Transfers: Safeguarding Wireline Telecom Service, National Regulatory Research Institute, December 2010.

"Revisiting the Regulatory Status of Broadband Internet Access: A Policy Framework for Net Neutrality and an Open Competitive Internet," (with Lee L. Selwyn), *Federal Communications Law Journal*, Vol. 63 Num. 1, December 2010.

Statement of Qualifications

COLIN B. WEIR

Colin B. Weir is Vice President at Economics and Technology, Inc. Mr. Weir conducts economic, statistical, and regulatory research and analysis, with a primary focus on the telecommunications industry. Mr. Weir's work involves econometric and statistical analysis, multiple linear regression, statistical sampling, micro- and macroeconomic modeling and other economic analysis. Such analysis often involves analysis of databases, call detail records, and other voluminous business records. Mr. Weir is familiar with common statistical and econometric software packages such as STATA and SHAZAM. Mr. Weir assists with analysis of economic, statistical and other evidence; and preparation for depositions, trial and oral examinations. Mr. Weir has provided expert testimony before federal and state courts, the FCC, and state commissions, and has contributed research and analysis to numerous ETI publications and testimony at the state, federal, and international levels.

Mr. Weir's telecom experience includes work on a variety of issues, including: economic harm and damage calculation; Early Termination Fees (ETFs); wireless handset locking practices; determination of Federal Excise Tax burden; ISP-bound traffic studies; Area Code splits and numbering policy; Federal Universal Service; pricing and regulation of Unbundled Network Elements; analysis of special access rates-of-return and pricing trends, and development of a macroeconomic analysis quantifying the economic impact upon the US economy and job markets of overpricing special access services; wireless pricing; and wireline telecommunications tariff and contract pricing.

Mr. Weir has conducted research and analysis in numerous regulatory and litigation matters on behalf of carrier, government and individual clients, including AT&T, MTS Allstream (Canada), Broadview Networks, Cavalier Communications, Nuvox Inc., O1 Communications, Pac-West Telecomm, Inc., tw telecom inc., XO Communications, Western Wireless, The US Department of Justice, Office of the Attorney General of Illinois, Thomas*et al* (class action litigation, Superior Court, County of Alameda), Ayyad *et al* (class action litigation, Superior Court, County of Alameda), and White *et al* (class action litigation, Superior Court, County of Alameda).

Mr. Weir has researched pricing and discount rates in enterprise voice and data services contracts, maintained an extensive database of such rates, and has contributed to network priceouts and rate benchmark analyses. Additionally, Mr. Weir is responsible for the maintenance of ETI's comprehensive databases of interstate and international interexchange carrier and local telephone company tariffs. He has substantial experience with industry data resources.

Mr. Weir holds an MBA with honors from Northeastern University. He also holds a Bachelor of Arts degree *cum laude* in Business Economics from The College of Wooster.

Publications and Testimony of Colin B. Weir

Mr. Weir has co-authored the following:

Regulation, Investment and Jobs: How Regulation of Wholesale Markets Can Stimulate Private Sector Broadband Investment and Create Jobs (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of Cbeyond, Inc., Covad Communications Company, Integra Telecom, Inc., PAETEC Holding Corp, and tw telecom inc., February 2010.

Revisiting Us Broadband Policy: How Re-regulation of Wholesale Services Will Encourage Investment and Stimulate Competition and Innovation in Enterprise Broadband Markets , (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of MTS Allstream, February 2010.

Longstanding Regulatory Tools Confirm BOC Market Power: A Defense of ARMIS (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of the AdHoc Telecommunications Users Committee, January 2010.

Choosing Broadband Competition over Unconstrained Incumbent Market Power: A Response to Bell and TELUS (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of MTS Allstream, April 2009.

The Role of Regulation in a Competitive Telecom Environment: How Smart Regulation of Essential Wholesale Facilities Stimulates Investment and Promotes Competition (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of MTS Allstream, March 2009.

Special Access Overpricing and the US Economy: How Unchecked RBOC Market Power is Costing US Jobs and Impairing US Competitiveness (with Lee L. Selwyn, Susan M. Gately, and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of the AdHoc Telecommunications Users Committee, August 2007.

The AWS Spectrum Auction: A One-Time Opportunity to Introduce Real Competition for Wireless Services in Canada (with Lee L. Selwyn and Helen E. Golding) Economics and Technology, Inc., prepared on behalf of MTS Allstream, June 2007.

Comparison of Wireless Service Price Levels in the US and Canada (with Lee L. Selwyn) Economics and Technology, Inc., prepared on behalf of MTS Allstream, May 2007.

Hold the Phone! Debunking the Myth of Intermodal Alternatives for Business Telecom Users In New York (with Susan M. Gately and Lee L. Selwyn) Economics and Technology, Inc., prepared for the UNE-L CLEC Coalition, August 2005.

Mr. Weir has submitted the following testimony:

United States District Court, Southern District of New York, *Bursor & Fisher P.A., v. Federal Communications Commission***,** Case No. 1:11-cv-05457-LAK, on behalf of Bursor & Fisher P.A., Declaration filed August 17, 2011.

United States District Court, District of New Jersey, *In Re: Sprint Premium Data Plan Marketing and Sales Practices Litigation,* Master Case No. 10-6334 (SDW) MDL No. 2228**,** on behalf of Thornton, Davis, & Fein, P.A., Declaration filed August 11, 2011.

United States District Court, Northern District of California, *Patrick Hendricks, on behalf of himself and all others similarly situated, Plaintiffs, v. AT&T Mobility LLC, Defendant*, Case No. C11-00409, Class Action Complaint, on behalf of Bursor & Fisher, P.A., Declaration filed August 7, 2011.

Federal Communications Commission, *In the Matter of Applications of AT&T Inc. & Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations*, WT Docket No. 11-65, on behalf of Butch Watson, Declaration filed June 20, 2011.

California Public Utilities Commission, *Pacific Bell Telephone Company d/b/a AT&T California (U1001C) Complainant, vs. O1 Communication, Inc. (U 6065 C), Defendant*, Case No. C.08-03-001, on behalf of the O1 Communications, Inc., Reply Testimony filed November 6, 2009; Oral testimony and cross examination on November 16, 2009.

Superior Court of California, County of Alameda, *James Thomas, on behalf of themselves, the general public, and all those similarly situated, Plaintiffs, v. Global Vision Products, Inc., Anthony Imbriolo, Derrike Cope, David L. Gordon, Powertel Technologies, Inc., Craig Dix, Henry Edelson and Robert Debenedictis, Defendants,* Case No. RG03-091195, on behalf of the Law Offices Of Scott A. Bursor, Oral testimony and cross examination on November 9, 2009.

United States District Court, District of New Jersey, *Judy Larson, Barry Hall, Joe Milliron, Tessie Robb, and Willie Davis, individually and on behalf of all others similarly situated, v. AT&T Mobility LLC f/k/a Cingular Wireless LLC and Sprint Nextel Corporation and Sprint Spectrum L.P. d/b/a Sprint Nextel and Nextel Finance Company, Civ. Act. No. 07-5325 (JLL)*, on behalf of PinilisHalpern, LLP and Law Offices of Scott A. Bursor, Declaration filed *under seal* October 19, 2009.

California Public Utilities Commission, *Pacific Bell Telephone Company d/b/a AT&T California (U1001C) Complainant, vs. Pac-West Telecomm, Inc. (U 5266 C), Defendant*, Case No. C.08-09-017, on behalf of the Pac-West Telecomm, Inc., Rebuttal Testimony filed May 1, 2009.

Illinois Commerce Commission, Illinois Bell Telephone Company Annual Rate Filing for Non-Competitive Services Under an Alternative Form of Regulation, Ill. C. C. Docket No. 08-0249, on behalf of the People of the State of Illinois, Declaration filed May 2, 2008.

Federal Communications Commission, Qwest Petition for Forbearance Under 47 U.S.C. §160(c) From Title II and *Computer Inquiry Rules* with Respect to Broadband Services, Petition of AT&T Inc, For Forbearance Under 47 U.S.C. §160(c) From Title II and *Computer Inquiry Rules* with Respect to Broadband Services, Petition of BellSouth Corporation For Forbearance Under 47 U.S.C. §160(c) From Title II and *Computer Inquiry Rules* with Respect to Broadband Services, Petition of the Embarq Local Operating Companies for Forbearance Under 47 U.S.C. §160(c) From Application of *Computer Inquiry* and certain Title II Common Carriage Requirements; WC Docket Nos. 06-125 and 06-147, on behalf of the AdHoc Telecommunications Users Committee, Declaration filed October 9, 2007.

Superior Court of California, County of Alameda, *James Thomas, on behalf of themselves, the general public, and all those similarly situated, Plaintiffs, v. Global Vision Products, Inc., Anthony Imbriolo, Derrike Cope, David L. Gordon, Powertel Technologies, Inc., Craig Dix, Henry Edelson and Robert Debenedictis, Defendants,* Case No. RG03-091195, on behalf of the Law Offices Of Scott A. Bursor, Declaration filed January 5, 2007; Deposition on November 13, 2007; Oral testimony and cross-examination on December 19, 2007; Oral testimony on January 9, 2008.

Mr. Weir has contributed research and analysis to numerous additional ETI publications and testimony at the state, federal, and international levels.