Replacement of the Legacy High-Cost Universal Support Fund with a Connect America Fund

Key Economic and Legal Considerations

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Abstract: On April 21, 2010, the Federal Communications Commission (FCC) released a Notice of Inquiry (NOI) and a Notice of Proposed Rulemaking (NPRM) that seek the public's input on the FCC's effort to replace the legacy high-cost universal service fund (USF) with a broadband "Connect America" fund (CAF). In effect, the FCC seeks to implement cost-cutting measures for existing voice support (USF) and create a new fund (CAF) to support the provision of broadband communications in areas that would be unserved without such support or that depend on USF support for the maintenance of existing broadband service. An initial review of the NOI/NPRM raises a number of key economic and legal considerations. In the following, we identify some of the considerations, questions, and challenges raised by the FCC's USF reform attempt, which is likely to have far-reaching consequences not only for operators that currently rely on USF subsidies or broadband providers in high-cost regions but for the entire communications industry.

The purpose of this note is not to provide an all-inclusive list of, or responses to, the critical questions raised by the NOI/NPRM, but rather to illustrate the complexities of this proceeding and the impact the proposed reforms may have on industry performance. As the CAF is necessary for the success of the FCC's National Broadband Plan (NBP), the policy directions taken by the FCC in establishing it are critically important. USF reform is also essential to the performance and competitiveness of the U.S. communications industry and policy missteps could have serious economic and legal consequences.

Key words: universal service fund, national broadband plan, connect America fund, universal service economic and legal issues.

The Telecommunications Act of 1996 mandated specific universal service goals to: promote the availability of quality services at just, reasonable, and affordable rates for all consumers; increase nationwide access to advanced telecommunications services; advance the availability of such services to all consumers, including those in low-income, rural, insular, and high-cost areas at rates that are reasonably comparable to

those charged in urban areas; increase access to telecommunications and advanced services in schools, libraries, and rural health care facilities; and provide equitable and nondiscriminatory contributions from all providers of telecommunications services to the fund supporting universal service programs. [1] The FCC established four programs to fulfill these goals: high-cost program, low-income program, schools and libraries program, and the rural health care program. These programs are funded by the Universal Service Fund. Telecommunications providers must contribute to the fund through an assessment on their interstate and international revenues.

In May 2010, the FCC delivered to Congress a National Broadband Plan (NBP), which recommended that the FCC adopt cost-cutting measures for existing voice support and create a Connect America Fund (CAF) without increasing the overall size of the Universal Service Fund (USF) to support the provision of broadband communications in areas that would be unserved without such support or that depend on universal service support for the maintenance of existing broadband service. At issue is how the FCC should go about implementing the NBP and creating a CAF.

Following is a brief discussion of the events surrounding the establishment of the USF in the United States after the Telecommunications Act of 1996. When establishing the USF, the FCC had to address a number of key economic and legal considerations with regard to narrowband voice services such as:

1. How to determine the universal service support levels in areas where there was no private business case to provide services?

2. What policy incentives should be put in place to ensure the efficient and prompt deployment of services in areas that were currently not being served?

Now, the era of broadband is upon us. In order to implement its NBP and create a CAF, the FCC once again must address the same two questions as above only with regard to broadband services. In addition, it must also figure out:

3. How to reform the current USF program and direct any savings from this effort towards broadband deployment?

[1] Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56 (1996).

The remainder of the paper focuses on the key economic and legal issues that the FCC must address when establishing the CAF.

■ Background

The 1934 Communications Act created and empowered the FCC to regulate "interstate […] communications […] to make available, so far as possible, to all the people of the United States, a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges [...]." (Section 151 of the Communications Act of 1934, 47 U.S.C. § 151). However, the 1934 Act prescribed no mechanism for doing so. [2] What evolved over the years was a complex web of implicit subsidies from long distance to local telephone service, from business to residential, and from urban and suburban to rural areas.

The desire to keep local rates low and avoid rate shock was (and is) a key goal of policy makers who sought to keep rates low by using a variety of implicit subsidy mechanisms for basic residential services. This included charging higher (above-cost) rates for business services; allowing LECs to charge above-cost prices for intrastate toll calls, intrastate access charges, and vertical features, such as call forwarding and call waiting; allowing, and requiring, geographic rate averaging and value of service pricing to provide subsidies from high-density (urban) to low-density (rural) areas (HUBER, KELLOGG & THORNE, 1999, p. 552, note 45).

For example, as long distance costs declined relative to local service costs in the first half of the 1900s, public policy makers decided to take advantage of those cost reductions to "promote the social goal of universal service" by lowering local rates rather than fully flowing through long distance cost savings *via* lower long distance charges (KASERMAN &

[2] Indeed, according to a June 1984 Congressional Budget Office Study, "Although the goal of universal service does not specifically appear in the language of the … 1934 [Act], it is widely accepted. In its [1982] access charge decision, the FCC decided that universal service had existed for several years and the commission was responsible for ensuring that such service continued." U.S. Congressional Budget Office, "The Changing Telephone Industry: Access Charges, Universal Service and Local Rates," June 1984, p. 27.

MAYO, 1995). [3] In order to do this, a complex set of internal subsidies known as the "separations and settlements" process was created.

> "Under this system, a portion of local company costs was 'separated' out and assigned to long distance services to be recovered through per-minute charges in AT&T's long distance rates [….] AT&T would use the inflated revenues from long distance calling to 'settle' (subsidize) the local exchange companies." (KASERMAN & MAYO, 1995, p. 597) [4]

With the advent of competition for long distance services and the breakup of AT&T, internal revenue sharing (*via* separations and settlements) was no longer sustainable. Thus, the breakup of the former Bell System, growing competition, and the Telecommunications Act of 1996 (1996 Act) led to the replacement of the implicit subsidies with more explicit ones in the form of universal service funds, especially at the federal level. As the 1996 Act specifies:

> "[there] should be specific, predictable and sufficient Federal and state mechanisms to preserve and advance universal service." In defining the states' authority with regard to universal service, the Act states that "[e]very telecommunications carrier that provides intrastate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, to the preservation and enhancement of universal service in that state." (Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56, 1996).

Universal service has been defined as "the provision of some set of basic local services to all customers at an affordable price [… or] making local telephone service available to all consumers at a reasonable cost . […]" (HUBER, KELLOGG & THORNE, 1999, pp. 541-43). The economics literature generally recognizes that one purpose of a universal service policy is to correct for "network externalities." That is, all users benefit when another user is added to the network because each subscriber will be able to communicate with the added customer. The potential new user, however,

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[3] Moreover, according to KASERMAN & MAYO, "Before the 1930s, local companies recovered all of their costs of providing these services through the rates they charged. Similarly, long-distance rates were set to recover the costs of long-distance service […]. But […] the costs of long distance transmission fell sharply. In a competitive industry, the rate structure would have been driven to mimic the changing costs: Long distance rates would have fallen relative to local rates. Instead, within the closed (regulated monopoly) system it was believed that cost reductions in long distance service could best promote the social goal of universal service by shifting at least some of the savings to local telephone services."

[4] As the authors point out, the separations process relied on a fully allocated cost process, which economists have shown to produce inefficient prices.

compares the price he is required to pay only to his private benefits, ignoring the external benefits his subscription confers on other users. This is the theoretical basis for providing subsidies to consumers (such as low-income customers or those living in high-cost areas) who would not subscribe to telephone service at cost-based rates (See, for example, WILLIG, 1979; LAFFONT & TIROLE, 2000). Because the value of a network increases with the number of customers on the network, economic principles provide some support for keeping basic local service somewhat lower than the level that would be set in a competitive market.

However, which services should be covered by universal service policies and what is meant by an affordable or reasonable price are controversial subjects. Effectively, though, the current universal service program is limited to narrowband local voice service. It does not include, at present, broadband services. This exclusion is the underlying motivation for the FCC's current reform attempt.

In the present proceeding, the FCC seeks to expand the concept of universal service to include broadband services. This, in turn, raises some of the same questions the FCC faced after the 1996 Act (and earlier) when establishing the USF for narrowband local voice services. Specifically, 14 years later, the FCC is faced once again with the following policy decisions:

1. How should the FCC determine the universal service support levels in areas where there is no private business case to provide broadband services?

2. What policy incentives should the FCC put in place to ensure the efficient and prompt deployment of broadband services in areas that are currently unserved?

3. How should the FCC reform the current USF program and direct any savings from this effort towards broadband deployment?

These highly complex questions require careful economic and legal consideration. Policy measures based on flawed economic analyses are at best superfluous and at worst counterproductive because an improperly structured CAF could jeopardize the objectives of the NBP and have serious economic consequences for the U.S. telecommunications industry. Similarly, as evidenced by the FCC's implementation of the 1996 Act and more recently with its attempt to ensure neutrality in terms of access to the

Internet, any reform or expansion of universal service is likely to spark many challenges that could delay, or potentially annul, the FCC's NBP efforts.

In the following, we discuss some of the key economic and legal aspects that the FCC faces in designing a regulatory framework responsive to the three questions above. We examine the first question next.

How should the FCC determine the universal service support levels in areas where there is no private business case to provide broadband services?

The NOI/NPRM are the FCC's first in a series of proceedings designed to encourage investment in, and the deployment of, broadband infrastructure to areas in which it is lacking. Public comment is sought to assist the FCC in developing "the detailed analytic foundation necessary for the Commission to distribute funds in an efficient, targeted manner that avoids waste and minimizes burdens on American consumers." (NOI/NPRM ¶ 2). Accordingly, the FCC first asks whether service support levels (i.e., the CAF) should be determined based on the use of "a model as a competitively neutral and efficient tool for helping us to quantify the minimum amount of universal service support necessary to support networks that provide broadband and voice services, such that the contribution burden that ultimately falls on American consumers is limited." (NOI/NPRM ¶ 13).

Cost models have been widely used not only in the U.S., but also worldwide, in resolving similar regulatory questions. In the U.S., regulators have used cost models to set interconnection rates for fixed-line carriers and for determining the size of the current USF. Internationally, regulators have used cost models to set fixed and mobile interconnection rates and to determine wholesale network access rates and national roaming rates. We are not aware of any country that has used cost models for broadband services offered by significantly different technologies. In fact, cost models have been limited to either wireline or wireless telecommunications services. In wireline, the cost structures of copper and fiber networks are calculated. In wireless, the cost structures of GSM, CDMA, iDen, WCDMA, and CDMA2000 networks have been modeled. We are also not aware of any attempt by regulators to derive technology neutral policies in a converging environment using a cost modeling approach. This would require the blending of significantly different technologies and cost structures, such as wireline and wireless.

Nevertheless, there are two basic types of cost models—top down and bottom up. A top-down model is essentially a financial/accounting model that starts with actual investments and costs and attempts to make adjustments to reflect a forward-looking approach. A bottom-up model is an engineering model that designs a forward-looking network without reference to existing network facilities. The bottom-up modeling methodology derives the costs of an efficient operator using least-cost equipment and technology. The main advantages of the bottom-up approach are that it transparently captures the linkages between service volumes and costs and avoids the inclusion of inefficiently incurred and legacy costs. If modeled at a sufficiently disaggregated level and correctly specified, a bottom-up model can provide an accurate representation of the way output levels drive individual costs. In contrast, the linkages between costs and volumes in a top-down model are more complex and less transparent. In addition, because a top-down model is based on actual costs, it includes inefficiencies and legacy costs. On the other hand, the complexity of the relationships between volumes and costs in a top-down model removes the danger of oversimplification that can occur in bottom-up models, particularly in the case of operating expenses. A further potential advantage of top-down models is that they can be integrated with accounting separations systems and provide repeatable results to a specified timetable. There are advantages and disadvantages for both types of models, and international best practices have often combined the two model types to form a hybrid model.

If the FCC decides to use a model to size the CAF, it should address several key issues. For instance:

- *Where to provide broadband subsidies?* The NBP seeks to provide funding only "in geographic areas where there is no private sector business case to provide broadband and high-quality voice-grade service." (NOI/NPRM ¶ 10). Unlike a market-based mechanism, the FCC will have to identify areas that will receive funding. For this, it can use density zones (as it did for legacy USF purposes), a regional approach (e.g., counties, as proposed by the FCC for future CAF subsidies) (NOI/NPRM ¶¶ 41-43), or some other geographic identifier. Furthermore, the FCC will require a detailed model that identifies supply gaps throughout the U.S. We understand that the National Broadband Plan Model uses geocoded data to identify such gaps. The process of geocoding housing units is also a methodology used by the Hybrid Cost Proxy Model (HCPM), which is used to size the legacy USF. The authors of this note were directly involved in analyzing this past FCC effort and identified multiple shortfalls (some of which the FCC subsequently corrected). Although we have not reviewed the

FCC's National Broadband Plan Model or its "gap analysis," doing so is essential to ensure that funding is targeted to areas that actually lack a private business case and not areas where proper data were not available or where supply has been misidentified. Furthermore, a determination will need to be made as to whether areas with no demand should be served. From an economic viewpoint, such policy would be inefficient.

- *How to monitor the performance of subsidized carriers?* The NBP specifies that "obtaining broadband support from the CAF should be company- and technology-agnostic so long as the service provided meets the specifications set by the FCC…." (NOI/NPRM ¶ 10). Implementing this objective would require defining and monitoring a set of specifications that meet the FCC's requirements. At this point, only an initial minimum download speed of 4 Mbps and upload speed of 1 Mbps have been specified. The FCC has not stated how it plans to monitor these specifications to ensure that they are continually met. No other requirements, such as quality of service, have been set.

- *Which technology will be modeled?* A technology neutral CAF raises further challenges. Broadband providers (potential CAF subsidy recipients) include wireline (fiber or copper), wireless (currently 3G and soon LTE), WiMAX (IEEE 802.16), Wi-Fi (IEEE 802.11), satellite, cable, fixed wireless, and possibly other providers. Based on our experience, the cost structures for these providers differ significantly. Hence, should the FCC opt for a cost modeling approach, it will need to determine whether to provide a symmetric funding regime (where all provider regardless of technology will receive the same subsidy) or an asymmetric regime. Adoption of a symmetric regime would be consistent with the NBP's recommendation that the CAF be technology neutral. However, if the FCC sets the CAF based on the highest-cost provider, the CAF will overcompensate providers with less costly (but possibly limited) technologies. On the other hand, setting the CAF based on the least-cost solution might limit subsidies to only some technologies. For example, if, for argument's sake, the least-cost technology turns out to be WiMAX, it would mean that only WiMAX providers would benefit from the CAF. All other technologies effectively would be precluded from entering the market because there would be no incentive to do so. If, however, the FCC opts for an asymmetric regime, it will need to determine which providers will obtain the subsidy because all technologies would have an equal chance of receiving funding.

- *Should a bottom-up, a top-down, or a hybrid model be used?* As explained above, should the FCC opt for a model, it will need to decide whether to use a bottom-up model, a top-down model, or a hybrid model. In

the legacy USF model (HCPM), the FCC used a bottom-up model. Operators that had their own top-down models (i.e., starting with embedded costs and adjusting to reflect a forward-looking approach) attempted repeatedly to illustrate that the costs obtained by the bottom-up model were inaccurate. Counter to current international best practices, the FCC did not consolidate or calibrate the bottom-up model with the results from the top-down models.

- *How will capital costs be modeled—scorched node or scorched earth?* A bottom-up methodology can use either a scorched node or a scorched earth approach. [5] The use of a scorched node approach means that the existing node locations (switches, base stations, etc.) are kept, but the choice of equipment at and between each node is optimized (i.e., the most efficient quantity of radio and switching equipment is installed at each node and the most efficient quantity of transmission equipment is used to connect the various nodes). In contrast, a scorched earth assumption assumes that one starts fresh with the nodes placed at optimal locations and the volume of equipment at and between them determined in the most efficient manner.

- *Should embedded costs be part of the subsidy calculation?* The FCC seeks comment on whether embedded costs should be part of the subsidy calculation. As stated above, international best practices typically take embedded costs, or at least a top-down approach, into account when consolidating or calibrating the bottom-up model.

- *How will "forward-looking" capital costs be modeled?* Along with deciding on the appropriate network topology, it is necessary to define the forward-looking technology to be used at and between each network node. The Modern Equivalent Asset (MEA) approach is generally employed. [6] This requires establishing a time horizon for how far into the future one should look. Generally speaking, practical considerations and the difficulties inherent in predicting future technological developments necessarily limit the time horizon that can be employed. International best practices typically take a three-year forward-looking approach when defining modern equivalent assets for cost modeling purposes. This means that the forward-looking technology modeled can be reasonably deployed across the network within three years.

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[5] In contrast, the top-down approach implicitly assumes a scorched node.

[6] The MEA is the lowest cost asset that serves the same function as the asset being valued. It incorporates the latest available technology and is the asset that a new entrant might be expected to employ.

- *What increment should be selected for setting subsidies?* The choice of increment (i.e., total service costs or incremental costs) has a direct impact on the allocation of common fixed costs.

- *How will model input values be obtained?* As was evidenced in the proceeding that resulted in the adoption of the HCPM, as well as other USF cost modeling proceedings at the state level, obtaining accurate input values for cost models can be incredibly challenging. First, operators typically do not keep their data in a format that can easily be used for cost modeling purposes. Second, cost data are highly confidential to operators. Thus, operators are frequently reluctant to provide their price points.

- *How long does the FCC plan to spend on building a model?* As evidenced by the lengthy debate that took place during the development of the HCPM, deriving forward-looking inputs and building a model platform is challenging and requires significant time and resources. In light of the NBP's objective to deploy broadband networks as rapidly as possible, a cost model might jeopardize this objective.

- *Should the HCPM be updated, should the National Broadband Plan Model be used as a starting point, or should a new model be built?* The FCC seeks comment on whether it should attempt to update the HCPM, use the National Broadband Plan Model as a starting point for a new model, or develop a new model entirely. As the authors of this note have experienced first hand, the accuracy and usefulness of the HCPM is severely limited. Furthermore, because it has been over 12 years since the HCPM was developed, a new model employing today's modeling techniques and data sources should be used instead. The FCC recognizes these shortcomings and has stated its preference for developing a new model to estimate CAF support levels (NOI/NPRM ¶¶ 31–32); however, as stated above, a new model will require significant time and resources. Should the FCC opt to use the National Broadband Plan Model as a starting point, it must also determine whether this model can be used, in part with the HCPM or as a stand-alone model, to derive the necessary broadband costs. This, in turn, will require a careful review of the National Broadband Plan Model and an assessment of its compatibility with the HCPM or its flexibility to function as a stand-alone cost model.

- *Should market-based mechanisms be used instead of a cost model?* The FCC also seeks comment on whether, in lieu of a cost model, it should use a market-based mechanism, such as a reverse auction. In a reverse auction, qualified broadband providers bid for the obligation to serve a certain unserved area and indicate a predetermined CAF subsidy. Unlike a forward auction, in a reverse auction, prices typically decline over time. The

winning party is the broadband provider that is willing to serve the areas with the lowest CAF subsidy. A reverse auction is a fundamentally superior approach to a cost model because it is market based. It allows bidders to conduct their own due diligence and determine the minimum CAF subsidy at which they are willing to serve a gap region. A market-based approach is also more dynamic in that it allows operators to make decisions on a market-by-market basis. In addition, some of the modeling burden is shifted to the bidder who must perform a detailed minimum willingness to accept analysis. [7] Conversely, however, reverse auctions are complex to implement, and, based on our experience, a detailed review of the auction is of crucial importance to all potential bidders. Specifically:

- *What auction format should be selected?* The overall auction design must be carefully reviewed to ensure that a proper auction format is selected. There are a variety of auction formats that may be used, including, but not limited to, sealed bid, multiple-round, and combinatorial auctions. We note that combinatorial auctions may be particularly interesting for the present purpose as they allow the combination of auction licenses. Given the significant economies of scale in the communications industry, allowing bidders to combine licenses into lots that make the most economic sense to the bidder may be preferable.
- *How are auction lots determined?* The FCC will need to determine the appropriate auction lots. These could be individual "gap" regions, a group of such regions, or all regions combined into one lot.
- *What are the auction rules and the terms and conditions of the service license?* The auction rules must be available for review well in advance of the auction. The auction rules must also include the terms and conditions of the service license. Specifically, the rules must identify the specific conditions that the FCC requires from subsidized broadband operators, including upload speeds, download speeds, quality of service, rollout obligations, service lead-time, and so on.
- *Who is allowed to participate in the auction?* A prequalification process must be put into place. This requires the FCC to determine which bidders will be eligible to participate in the auction. Among the

[7] A bidder's minimum willingness to accept is the lowest CAF subsidy for which a bidder will serve a gap region. The minimum willingness to accept analysis must be conducted with the regulatory obligations of the service license in mind. Typically bidders rely on a net present value type of analysis in which the private business case is reexamined. Generally, the minimum willingness to accept is the difference between the business case without a subsidy and the required (positive) business case. In essence, the subsidy bridges the gap between the negative business case and the required positive business case.

requirements, the FCC might consider financial strength, network size, experience, and regulatory compliance.

- *How are prequalified bidders trained?* Prequalified bidders should be provided an opportunity to test the auction process in a "mock auction" a few weeks prior to the auction.
- *How will the reserve price be determined?* The FCC will need to set a reserve price for the reverse auction. The reserve price is the highest subsidy amount the FCC is willing to pay for a certain service license. In the NOI/NPRM, the FCC seeks comment on whether a cost model should be used to determine the auction reserve price (NOI/NPRM ¶ 21). In light of the discussion above, using a cost model to set the reserve price may be problematic. Most fundamentally, it, again, raises the question of which technology will be modeled. Furthermore, given the many underlying engineering and economic assumptions in cost models, along with the difficulties of obtaining input values, the accuracy of a cost model for reserve price purposes is questionable. We note that the reserve price is critical to the auction because, by definition, the areas that are subject to the service licenses might not attract sufficient bidders. Hence, the auction might end at or near the reserve price.

Next, we look at the second question that the FCC must address.

What policy incentives should the FCC use to ensure the efficient and prompt deployment of broadband services in areas that are currently unserved?

Likely, in recognition of the fact that a CAF model and an auction will require several months (and possibly years) to implement, the FCC is considering implementing a fast-track program for broadband operators that upgrade their networks in unserved areas. Based on a proposal filed by a group of economists (See NOI/NPRM Appendix B), the FCC is considering whether a procurement auction would fulfill this fast-track mandate (See NOI/NPRM ¶¶ 43–48). Although we do not disagree with the arguments made in that paper, it is not clear how the economists' proposal would be easier and thus quicker to implement than a reverse auction. In fact, combinatorial auctions, as suggested by that paper, tend to be more complex to implement than a sealed bid auction or even a multiple-round auction. However, we do agree that auctions are quicker to implement than cost models.

Finally, we discuss the third question raised in this paper.

How should the FCC reform the current USF program and direct any savings from this effort towards broadband deployment?

Finally, in the NPRM, the FCC seeks to undertake a "comprehensive reform of the current high-cost mechanism." (NOI/NPRM ¶ 49). As the FCC and many operators have repeatedly stated, the current high-cost mechanism is severely outdated. We concur. However, reforming the subsidies that local exchange carriers obtain must be balanced. The FCC must carefully examine whether the rationale for providing subsidies still applies in today's telecommunications market. Specifically:

- Subsidies under the USF program have been implemented so that subsidized operators (typically local exchange carriers) can offer their services at "affordable" prices. In parallel to the current proceeding, the subsidies have also been implemented to ensure that the operators serve areas where there may be no private business case for doing so. Hence, by removing or capping the subsidies under the legacy fund, the FCC must determine whether these underlying motivations still apply. If they do and U.S. citizens are still in need of subsidized local exchange rates and rely on carriers of last resort in obtaining basic local exchange service, then the FCC should consider alternative recovery mechanisms. If they no longer apply, the FCC might need to consider terminating the program and allow local exchange carriers to price their services according to market forces and reserve the right not to serve areas where a private business case does not support it.

- USF reform should be carefully phased in and should be done in parallel with the appropriate changes to the regulatory framework under which subsidized carriers operate. For instance, with the reduction, or elimination, of interstate access support, the FCC should also ease related regulatory constraints imposed on the subsidized carriers.

- A shift from rate-of-return regulation to incentive regulation, as suggested by the FCC (NOI/NPRM ¶ 55), is generally supported by the economic literature. However, any such move must be undertaken with great care to avoid a price shock and jeopardize the existence of carriers that are still under rate-of-return regulation.

- Any revision to, or elimination of, the interstate access fund (IAS) and ETC (eligible telecommunications carrier) high-cost support, as proposed by the FCC (NOI/NPRM ¶¶ 57–58, 60-61), should be undertaken with the same level of care.

The FCC is moving forward with its NBP. An NPRM was issued July 15, 2010, on reforms to the universal service health care support mechanism that are consistent with the recommendations set forth in the NBP to expand the reach and use of broadband connectivity for and by public and nonprofit health care providers. [8]

Action by the FCC on September 23, 2010, by Report and Order (FCC 10-175), makes it easier for schools and libraries to get the highest speeds for the lowest prices by increasing their options for broadband providers and streamlining the application process. The Order is another advance in the Commission's ongoing transformation of the Universal Service Fund, of which the E-rate program (formerly the schools and libraries program) is part, to deploy broadband throughout America.

Further action by the Commission on October 14, 2010, by Notice of Proposed Rulemaking (FCC 10-182) is to create the broadband mobility fund proposed in its NBP that would provide the FCC with its first opportunity to use a reverse auction for awarding USFs to carriers. The reverse auction process would award funds to the carrier that requests the smallest amount of funding. The NPRM differs from the NBP. The NBP addressed only supporting 3G services, whereas the NPRM opens the door for a carrier to obtain funding for a 4G network. The cost of the proposed program is between $100 million and $300 million, which would come from the USF.

■ Conclusion

The replacement of the legacy high-cost universal support fund has far-reaching consequences for the U.S. telecommunications industry. Most fundamentally, it introduces a new era where the social objective of universal narrowband access is phased out and replaced with universal broadband access. This shift in policy, however, requires that old social welfare objectives and their associated policies, at a minimum, be revised or abandoned altogether. Focusing only on new objectives, such as introducing a CAF or broadband services, can have serious competitive consequences. For instance, by phasing out the USF, the FCC must also phase out the policies that originally gave rise to the creation of the USF. Particularly,

[8] In the Matter of Rural Healthcare Support Mechanism, WC Docket No. 02-60, Notice of Proposed Rulemaking, FCC 10-125, rel. Jul. 15, 2010.

programs such as universal service and carrier-of-last-resort obligations must be phased out along with the USF. Similarly, retail price regulation must be reviewed and adapted to the new competitive environment. Ignoring these consequential policy effects would seriously damage the industry because it would require wireline operators to continue to support high-cost areas but deprive them of a compensatory measure.

As illustrated above, there is a multitude of practical challenges that the FCC must overcome in procuring the CAF. Most important among those is the competitively neutral identification and compensation of broadband subsidies. Who will receive subsidies in what amount has direct competitive consequences. An unjustified or excessive subsidy will provide a competitive windfall for the recipient, whereas under compensation will competitively disadvantage the operator. Finally, the CAF is a critical piece in the FCC's NBP as the effectiveness of the plan will be seriously jeopardized without the proper incentive system.

References

HUBER P.W., Michael K. KELLOGG & John THORNE (1999): *Federal Telecommunications Law*, Second Edition, Gaithersburg, NY: Aspen Law and Business.

KASERMAN David L. & John W. MAYO (1995): *Government and Business: The Economics of Antitrust and Regulation*, The Dryden Press, Harcourt Brace College Publishers.

LAFFONT Jean-Jacques & Jean TIROLE (2000): *Competition in Telecommunications*, MIT Press.

WILLIG Robert D. (1970): "The Theory of Network Access Pricing", in *Issues in Public Utility Regulation*, H. TREBING (Ed.), Michigan State University Press, East Lansing.