An outdated statutory framework and legacy regulations in the United States have created a labyrinth that constrains the Federal Communications Commission from adequately responding to the impending disappearance of traditional voice telephony. This outdated telephone service is not even a shadow of its former self: the number of telephone lines in 2018 was the same as in 1950, despite the U.S. population more than doubling and the total number of voice-capable telecom connections exploding 700 percent over the same period. Yet this waning service remains under an intricate regulatory system involving federal and state authorities. There is but one way out of the labyrinth – comprehensive deregulation that immunizes against regulatory temptations – allowing the remaining service providers and their customers to manage the transition to a fully broadband world. Efforts to deregulate piecemeal are well intentioned and can help in certain contexts, but could also trip over legacy structures, resulting in worse outcomes for users and providers of traditional voice services.
I. Introduction

Recently the Federal Communications Commission (FCC) proposed to detariff some interstate services associated with traditional voice telephony.\(^1\) The FCC’s motivations and direction are appropriate: its proposal properly notes that competition is the norm in these markets, that many of the agency’s tariff regulations ceased being useful long ago, and that the regulations are harming customers.\(^2\)

The costs to consumers of retaining these regulations are quite high. One study found that local telephone customers in states that had not liberalized telephone prices by 2011 were paying $63 per year more for telephone service than their counterparts in liberalized states. Customers in states that had retained the tightest controls on prices paid an additional $30.\(^3\) Another study found that, contrary to conventional regulatory wisdom, allowing prices for local telephone service to align more closely to underlying economic costs – something deregulation would encourage – resulted in 6.3 million more telephone subscribers in 1990.\(^4\) It’s iron that the very controls that regulators have used to protect customers have harmed them.

But the FCC’s proposal won’t provide the deregulation or consumer-friendly outcomes that the agency seeks. The agency is in a historical regulatory labyrinth – an intricate regulatory scheme that illogically divides jurisdiction between the federal government and the states. As a result, outdated regulations in many states are blocking the FCC’s way to prudently eliminate its own outdated and unnecessary regulations, at least in the way the FCC proposes. And consumers are paying the price.

In this paper I explain this conclusion. In Section II, I describe the regulatory system, which Congress established about a hundred years ago for monopoly telephone markets, and that paradoxically became increasingly complex only as competition emerged and market power declined. It provided dual jurisdiction based on the interstate or intrastate nature of a communication: The FCC (or its predecessor, the Interstate Commerce Commission) would regulate services whose endpoints were across state or national boundaries. States would regulate

\(^2\) NPRM ¶¶ 2, 3.
communications whose endpoints were within a single state. To help ensure that the telephone companies had an opportunity to recover all of their prudently incurred costs for the services, the FCC established a system called separations that determines which costs are within federal jurisdiction and which are for states.

In Section III, I describe how the telecommunications industry landscape has changed since the adoption of this system. Traditional voice telephony provided over telephone lines was a monopoly when the system was developed. Now that traditional service is rapidly disappearing – it made up only 10 percent of the 415 million retail voice connections sold in 2018, and that was 36 percent less than its share just three years earlier. The number of telephone lines now is about the same as it was in 1950, despite the U.S. population more than doubling and the total number of voice-capable telecom connections exploding 700 percent over the same period.

Then in Section IV, I explain why – although it is counterproductive – the current regulatory system binds the FCC and prevents it from doing what it is attempting with its proposal. The cost allocation processes are arbitrary and politically derived, and completely inconsistent with the disciplines of a competitive market. Yet they continue to constrain federal and state regulatory pricing and policies in many instances, and in particular the FCC’s attempt to detariff and deregulate in this proceeding. If the FCC eliminates and prohibits the use of the charges it seeks to deregulate, then the regulated carriers will be unable to make up lost revenue in any state where a state Public Service Commission (PSC) or other governmental body retains pricing oversight. The only way out of this particular dilemma appears to be for Congress to deregulate the services because the current piecemeal approach can create costly regulatory processes and leaves opportunities for kleptocrats. Section V is the conclusion.

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5 Voice connections include mobile phones, traditional telephone lines, and voice over internet services (VoIP), such as WhatsApp. At the time the regulations were developed, voice connections only included telephone lines, mostly of copper.


II. The Legacy System

A. Pre-1984

Telecommunications regulation began at the municipal level in the United States and then moved to the state level in the early 1900s, when the industry was consolidating into local monopolies after a brief period of competition.\(^9\) Congress launched federal regulation in 1910 with the Interstate Commerce Commission, and then transferred authority to the newly-created FCC in 1934.\(^10\) To avoid interfering with state regulation, Congress limited the FCC’s authority to interstate and international telecommunications, creating a system with dual jurisdiction.

The methods for regulating prices developed through an experimental process, with many failures along the way.\(^11\) These failures and the associated court cases led to a framework for setting prices, known as rate of return regulation, in which regulators permit prices that enable companies to operate successfully, maintain financial integrity, attract capital, and compensate investors.\(^12\)

The use of rate of return regulation meant that each jurisdiction had to establish a revenue requirement, i.e., an amount of money the operator must receive if it is to cover its operating costs, interest on debt, taxes, and cost of equity.\(^13\) But with dual jurisdiction over a single company’s operations, there needed to be a way for each company’s costs to be divided among the jurisdictions. By statute the FCC had responsibility for this cost separation, but failed to fulfill this obligation until the late 1960s, about the time that cracks began to form in the Bell System monopoly.\(^14\)

The FCC adopted a two-step process, which became a four step process as more competition emerged after 1984, as I describe in the next section. The first step is accounting. The FCC’s accounting rules, called the Uniform System of Accounts, are memorialized in Part 32 of the Code

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14 Gabel, Richard. (1967) Development of Separations Principles in the Telephone Industry, East Lansing, Michigan: Michigan State University Institute of Public Utilities. Prior to the FCC taking control of separations, AT&T developed and maintained the process, working with the FCC and the PSCs to ensure agreement. The PSCs eventually became disenchanted with this approach and acted to develop their own separations manual. This prompted the FCC to take control.
of Federal Regulations (CFR).\textsuperscript{15} In effect Part 32 directs companies on how to record their revenues, assets, liabilities, and expenses in a way that is consistent across service providers and over time. Where state regulation of prices exists, state PSCs tend to mirror the FCC’s accounting rules.

The second step in the process is separations, which is the dividing of the costs and revenues between the federal and state jurisdictions. Part 36 of the CFR provides the rules for separations.\textsuperscript{16} An underlying philosophy in separations is that service begins and ends at customer locations. So an interstate call would begin at the calling customer’s location and end at the called customer’s location. As a result, the costs separated are the costs of all of the assets and operations involved in completing that call, including telephone lines, the local telephone office that connected calls, cables and other facilities that connected telephone offices. So the costs of telephone lines connecting customer locations to the network, which generally were the major category of costs for a telephone company, were covered by prices for interstate long distance calls, intrastate long distance calls, local telephone service, and other services.\textsuperscript{17}

Figure 1 illustrates the two steps. The system was designed so that everything in the accounts was represented as either an interstate cost or an intrastate cost. This satisfies a key principle and legal requirement of rate regulation, namely that a service provider have an opportunity to recover all of the costs that it reasonably incurs to provide the service.

Although separations is the FCC’s responsibility, the agency is required by statute to work with state PSCs through a Joint Board in determining how separations is to be done.\textsuperscript{18} The Joint Board is comprised of three FCC commissioners and four state commissioners. The FCC is required to refer separations issues to this Joint Board for a recommended decision, but the final decision rests with the FCC. In practice, the FCC nearly always adopts the Joint Board recommendation. So separations represents political compromises among the state commissioners and with the FCC commissioners. On the state side, the commissioners on the Joint Board generally represent a state perspective that costs allocated to the states remain small, which


\textsuperscript{16} 47 C.F.R. § 36.

\textsuperscript{17} This end-to-end approach for dividing costs proved to be problematic and effectively unsustainable as greater competition emerged beginning in the 1980s. Nevertheless it persists and is a key element of the problem the FCC now faces.

\textsuperscript{18} 47 U.S.C. 410.
historically helped states keep their telephone prices low. The federal perspective is the reverse, i.e., the costs identified as interstate should be small, so that interstate prices are low.

Figure 1. Federal System for Regulating Costs prior to the AT&T Divestiture

In contrast with the state perspective, the federal viewpoint has sound economic reasoning behind it. Telephone line costs are caused by numbers of subscribers, not minutes of calling. So the allocation of line costs to interstate calling distorts prices and competition\textsuperscript{19} In one example, the price of long distance was more than 11 times its cost\textsuperscript{20} A 1996 study put the annual economic drain at $30 billion\textsuperscript{21}, which would be $49 billion in 2020 dollars\textsuperscript{22}


\textsuperscript{20} Kahn and Shew (1987) citing a study by New England Telephone Company.


B. Since 1984

The rise of competition in long distance and the breakup of AT&T meant that the FCC had to change how it allowed for the recovery of interstate costs. More specifically, the FCC needed to develop prices that long distance companies would pay on a per-minute-of-use basis for using local telephone networks for completing calls. These prices are called access charges and the FCC’s rules for determining them are in Part 69 of the CFR.23

Competition and the development of access charges made the problem of allocating local line costs to interstate serious and urgent. The allocation caused access charges to be unaligned with their underlying costs, suppressing usage and distorting the growing competition in long distance. Large customers and the long distance companies responded in part by bypassing the local telephone companies. In addition to the annual economic drain of $30 billion (in 1995 dollars),24 protecting the allocation encouraged state utility regulators to oppose competition in local telephone service,25 which increased regulatory costs and also caused customers in some states to pay nearly $100 per year more for their telephone service.26

The FCC began the process of resolving this dilemma by implementing a Subscriber Line Charge (SLC) – a fixed monthly “access” charge for telephone service customers that recovered a portion of the telephone line costs allocated to the federal jurisdiction. And to distinguish it from state-set prices for telephone service, the SLC was included as a separate line item charge on customers’ bills.27 The SLC improved the efficiency of long distance prices and competition by recovering fixed costs with a fixed charge. Over time the FCC increased the SLC to allow per-minute access charges to drop even closer to their direct costs.28

Shortly after adopting its access charge regime, the FCC faced another dilemma caused by rising competition. The local telephone companies’ technologies had evolved to the point where it

23 47 C.F.R. § 69.
26 Eisenach and Caves (2012).
made economic sense for them to integrate unregulated information services into their telecommunications networks. The FCC determined that these costs should not be included with those for providing regulated services and so adopted a procedure for allocating them into their own category. This allocation step now occurs before separations, and the associated rules are contained in Part 64 of the CFR.

Figure 2 illustrates the four steps. To ensure that companies have an opportunity to recover their costs, the revenue from interstate prices (step 4), plus intrastate costs (step 3), plus unregulated costs (step 2), sum to the accounting costs (step 1), except that interstate and state prices include a reasonable profit (based on the estimated cost of capital) that is necessary to ensure continued investment, but that is not reflected in the Uniform System of Accounts.

Figure 2. Federal System for Regulating Costs after the AT&T Divestiture

Source: Author

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30 47 C.F.R. § 64.
The SLCs represented a patch that the FCC adopted to keep the regulatory system from unraveling despite its inconsistency with competitive markets and cost-causation. But as markets changed, the system kept moving closer to unraveling and the FCC responded with additional patches. One such patch is the *Access Recovery Charge*—a fixed monthly charge on telephone subscribers to allow for the recovery of revenue lost when the FCC directed telephone companies to begin transitioning to a zero access charge.\(^{31}\) This charge has sunset for some carriers, but not all.\(^{32}\)

Another patch is the *Presubscribed Interexchange Carrier Charge*.\(^{33}\) This is a monthly flat-rate charge on lines that are presubscribed to a long distance provider. Like the SLC, this charge is also intended to allow recovery of the costs of telephone lines.\(^{34}\) It has been largely phased out, but not completely.

A third patch is the *Line Port Charge*. Also like the SLC, it is a monthly charge for telephone subscribers that is designed to recover costs that are allocated to the federal jurisdiction even though they are driven by the number of local telephone lines, not customer usage.\(^{35}\)

The last patch is the *Special Access Surcharge*—a $25 per month charge on large-business telephone lines that customers could use to allow their long distance companies to bypass access charges.\(^{36}\) According to the FCC, the amount of money represented by this charge is *de minimis*.\(^{37}\)

As a sign of the growing arbitrariness of separations, the states and the FCC agreed that, beginning in 2001, a number of factors used to separate state and interstate costs would be frozen, meaning that they would no longer change as telecommunications usage changed.\(^{38}\) This “separations freeze” has been extended several times by the FCC, and the frozen factors are to remain frozen through 2024. In contrast to the freezing of these regulatory formulas, the economic reality for companies providing telecommunications services is that their costs and networks are

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\(^{32}\) 47 CFR § 51.915(t)(5); *USF/ICC Transformation Order*, 26 FCC Rcd at 17996, para. 920.

\(^{33}\) See 47 CFR § 69.153.

\(^{34}\) See *Access Charge Reform Order*, 12 FCC Rcd at 16019, paras. 91-92.

\(^{35}\) *Access Charge Reform Order*, 12 FCC Rcd at 16034-16034, paras. 123, 125.

\(^{36}\) *First Reconsideration of 1983 Access Charge Order*, 97 F.C.C.2d at 720-21, 743, paras. 88, 151; see also 47 CFR §§ 69.5(c), 69.115.


\(^{38}\) 47 CFR § 36.3.
dynamic. That the regulators overseeing separations have effectively abandoned trying to keep up with this reality is a strong indication of the need for deregulation.

III. The Decline of Telephone Service

Traditional, or Plain Old Telephone Service ("POTS"), is disappearing: the number of telephone lines was the same in 2018 as it was in 1950, despite the U.S. population more than doubling and the total number of voice-capable telecom connections exploding 700 percent over the same period. Furthermore, voice telephony made up only 10 percent of the 415 million retail voice connections sold in 2018, 36 percent less than its share just three years earlier.\(^39\)

The FCC correctly observed the decline of this service in its NPRM:

Our annual Voice Telephone Services Reports show, for example, that from December 2008 to December 2018, the share of total voice subscribers served by incumbent local exchange carriers decreased from 27.9% to only 7.4%. During this same period, the share of total voice subscriptions for interconnected VoIP service providers unaffiliated with an incumbent local exchange carrier more than doubled, from 4.9% to 11.7%. Moreover, in the same period, mobile voice subscriptions increased from 61.7% to 75.9%, and as of the end of 2018, 57.1% of households purchased only wireless voice service. Our data also demonstrate that competitive voice service offerings are available nationwide. More than 99.9% of populated census blocks have one or more facilities-based providers of mobile voice services unaffiliated with an incumbent local exchange carrier deployed in the block. Further, 80.6% of populated census blocks have one or more unaffiliated facilities-based providers of fixed broadband at speeds of 10/1 Mbps or greater deployed in the block. Those fixed broadband technologies include xDSL, fiber, terrestrial fixed wireless, and cable modem, and allow providers to offer voice services and allow customers to use over-the-top VoIP service providers.\(^40\) [footnotes omitted]

Figure 3 illustrates the decline. The number of voice telephone lines hit its peak in about the year 2000, when there were about 192 million lines provided by traditional telephone companies and their rivals. The decline was fast. By 2005, the number had declined nearly 10 percent to 175 million. By 2010, the number declined nearly 40%. And by 2018, the number had declined 77%.

\(^40\) NPRM, para. 40.
to just 43.5 million. At this trend, traditional telephony offered by incumbent companies will be effectively gone before 2025.

**Figure 3. Decline in Numbers of Local Telephone Lines, 2000 to 2018**


IV. The De-regulatory Dilemma

The regulatory framework described in Section II is designed to regulate prices for these services that are rapidly disappearing. Prices may be regulated in such a framework if the industry is monopolistic, affected with the public interest, and operates with certificates or licenses that
defines service providers’ obligations and provides protections from competition. But without the presence of all of these conditions, such regulation is harmful to the service providers and to customers because it distorts competition and the dynamics of technology change.

Competition is distorted because prices are not allowed to respond to changes in supply and demand, and because regulators will be pressed to use the regulation to favor certain competitors. Alfred Kahn studied cases in electricity and telecommunications where competition was allowed to emerge, but regulators hung onto regulatory control of the traditional service providers’ prices. He found instances where regulations were used to protect incumbents, but also instances where the controls were used to shelter new entrants. Both uses were costly to customers, who ultimately paid for most of the inefficiency.

The price controls distort technology change for similar reasons: Prices for the dying services are kept at or below their costs, which encourages customers to stay with the old technology rather than migrate to services with greater capabilities.

Telephone service ceased being deserving of rate regulation at least by the year 2000, if not sooner. Numerous states have responded appropriately to this new reality: Many have deregulated and others more have loosened their regulation. A 2016 study by the National Regulatory Research Institute holds that at least 41 states had “significantly reduced or eliminated oversight of wireline telecommunications.” Its description is incomplete, though, as even in those 41 states there often remain price controls on particular services or geographic areas.

Customers benefit from this decline in state regulation as one would expect. In one study the authors concluded:

> Overall, we find that the elimination of BLETs [basic local exchange telephone service] price controls either results in lower prices or has no statistically significant effect. Simply put, jurisdictions subject to traditional rate-of-return regulation have higher prices, holding other factors constant, than jurisdictions with flexible and/or liberalized regimes for basic local service. More specifically, our regression analysis shows that, after controlling for other factors, rates in liberalized jurisdictions are significantly lower (by about $5.25 per month, or one-third of the average) than rates in price cap jurisdictions. Further, rates are highest (by about

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41 Phillips, Charles F. Jr (1993), ‘The Regulation of Public Utilities’, Arlington, VA: Public Utilities Reports, Inc. An industry is affected with the public interest if its performance significantly impacts the social and economic functioning of the jurisdiction, resulting in legal obligations above and beyond those of other enterprises.


$2.46, or one-sixth of the average) in jurisdictions subject to traditional rate-of-return regulation. Accordingly, we conclude that the confluence of competition and liberalization has resulted in lower consumer prices for basic local telephony than would have been the case in the absence of liberalization.\textsuperscript{44}

The FCC’s recent attempt to detariff and deregulate is held back by the regulatory system, which the FCC probably lacks authority to dismantle. Through no fault of the current FCC, splits in jurisdictional authority remain, some states still impose outdated price controls, and cost separations policies remain in effect. The situation cries out for comprehensive nationwide reform and deregulation. But absent Congressional action, the regulatory undergrowth remains, making it difficult, in certain contexts such as this one, to do piecemeal deregulation.

The immediate case demonstrates this difficulty. The FCC proposes to “eliminate ex ante pricing regulation of all Telephone Access Charges.”\textsuperscript{45} Telephone Access Charges include the SLC, the Access Recovery Charge, the Presubscribed Interexchange Carrier Charge, the Line Port Charge, and the Special Access Surcharge described in Section II.\textsuperscript{46} In addition the FCC proposes to detariff all such charges and prohibit service providers “from billing customers for Telephone Access Charges through separate line items on their bills.”\textsuperscript{47} This falls short of deregulation or even the simple removal of ex ante price controls. The FCC is not proposing deregulation; rather it is proposing to regulate Telephone Access Charges at zero prices. Forcing prices to zero and removing them from customer bills may look like deregulation, but it is not. It is more like confiscation.

Figure 4 uses the structure of Figure 2 to illustrate this confiscation. Figure 4 shows step 3 (separations) and step 4 (interstate prices) as they currently exist in the pricing system. The right-hand side of Figure 4 shows what interstate prices would look like under the FCC’s proposal. The charges for Telephone Access Charges would disappear.\textsuperscript{48} This represents a loss – in many cases a confiscation – of interstate revenue.

The service providers’ loss of ability to charge for all of their interstate services leaves them in a potential dilemma. In situations where the state legislature or PSC has completely deregulated

\textsuperscript{44} Eisenach and Caves (2012).
\textsuperscript{45} NPRM, para. 36.
\textsuperscript{46} NPRM, para. 5.
\textsuperscript{47} NPRM, paras 36-37.
\textsuperscript{48} Figure 4 isn’t drawn to scale to illustrate exact or even relative amounts. The sizes of the boxes were chosen to ease readability.
prices, the company may be able to keep services financially viable by raising other prices – unless barred by other long term contracts or customer agreements, which may account for substantial revenues – for what would otherwise be thought of as intrastate services. This would be straightforward since the detariffed interstate prices are largely charges that align with prices local telephone companies charge for local telephone service. This increase in local service prices would not result in an overall price increase because the rates would simply shift from being surcharges to prices for local service. Competitive pressures would prevent overall price increases.\textsuperscript{49} Of course this is exactly how prices for services such as VoIP function because they are not regulated by states.

Figure 4. Effect of FCC’s Proposed Detariffing

![Figure 4](image)

Source: Author. Rectangle sizes were chosen to provide readability and are not meant to imply relative magnitudes of costs or prices.

But if the state still controls intrastate service prices or decides to reimpose such controls in whole or in part, the service providers will no longer be able cover all of their costs. States would continue to look to the separations process to define intrastate costs and limit company revenues to these amounts, represented by “intrastate costs” in Figure 4. The interstate prices would not

\textsuperscript{49} Eisenach and Caves (2012).
cover interstate costs, so the companies would operate these services at a loss, which is not in the interests of companies or customers.

Such state controls appears to be the situation for a number of states. For example, CenturyLink remains subject to state price controls in Minnesota, New Jersey, and Ohio. CenturyLink would also have to forego universal service support in Kansas if it detariffed state prices. About 10 companies in California remain under state price controls and would suffer financially from the FCC’s proposal. Other states where continued price controls are incompatible with the FCC’s proposal include Vermont, South Carolina, North Carolina, Maine, New York, and Alabama, among others. And even where states may ultimately permit an increase, companies would still operate at a loss for the time period it takes to receive that permission, which could be substantial.

The FCC is in a situation where its own deregulatory proposal actually tightens regulatory constraints. The separations procedures prohibit companies from making up lost interstate revenue by raising prices for state services. Even in states where there is no regulatory control on prices, controls might be reimposed if carriers try to raise state prices, and the controls would likely align with intrastate costs as defined by separations. If the FCC were to eliminate separations, then states could make up their own separations rules as they sought to do before the FCC took control of the processes in the late 1960s.

If all the states were to deregulate with no chance to reregulate, then the companies could manage financially by shifting their revenue needs to the services traditionally thought of as being intrastate. But so long as the statutory shared federal/state rate regulation structure continues to apply to these services, full deregulation of access charges is the only path forward. If the FCC were to simply deregulate and not prohibit companies from charging prices they need for financial

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51 See, e.g., In the Matter of the Board’s Investigation Regarding the Reclassification of Incumbent Local Exchange Carrier Services as Competitive – Phase II, NJ BPU Docket No. TX11090570, Order Adopting Stipulation and Agreement Between CenturyLink and Rate Counsel, January 15, 2013, at 5-6 (setting rate caps for CenturyLink R1 and single line B1 rates in New Jersey).

52 OAC 4901:1-6-14 (imposing a $2 annual cap on increases to basic local exchange service rates in Ohio).


success, then the companies could put in place financially reasonable transitions towards the eventual elimination of traditional voice telephony.

V. Conclusion

The FCC’s mind and heart are in the right place in seeking to deregulate voice telephone services. Unfortunately, the FCC’s current proposal imposes tighter regulatory controls than the status quo, forcing prices to zero with no opportunity to make up for lost revenue in states that maintain their own price controls. This does not seem to be the FCC’s intended outcome.

Comprehensive national deregulation appears to be the only way to protect regulatory deregulation efforts for these particular services. As Kahn observed, leaving kleptocrats with an opportunity to advantage themselves or their allies almost ensures that at least one will frustrate piecemeal deregulation. Absent such a comprehensive reform, the FCC’s only path forward will be actual deregulation of tariffs and prices.

The FCC is correct that there is a need for regulation to step aside. At current trends, voice telephone service will all but disappear in less than five years. It would seem sad that a system representing full price controls would remain in place even as the service disappears, perhaps even accelerating the service’s demise.

\[57\] Kahn (1998).