

Comments of the International Center for Law & Economics

*RE: Reducing Barriers to Network Improvements and
Service Changes, Docket No. 25-209; Accelerating Network
Modernization, Docket No. 25-208*

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Introduction

The International Center for Law & Economics (ICLE) commends the Federal Communications Commission for this notice of proposed rulemaking (NPRM),¹ which represents a critical opportunity to modernize a regulatory framework that lags behind market and technological realities. Dynamic competition has resulted in “creative destruction”: newer, superior technology has replaced older, inferior technology in the provision of voice services. The Commission’s current rules governing network changes and service discontinuances impose significant transaction costs and create a deadweight loss on the U.S. economy by artificially inflating the cost of migrating from inefficient, deteriorating copper networks to superior, next-generation IP-based infrastructure. Consumer welfare would be best served by eliminating impediments to this transition.

ICLE urges the Commission to adopt its most ambitious deregulatory proposals. Specifically, the Commission should use its Section 10 authority to forbear from the network-change notice requirements of Section 251(c)(5) and the service-discontinuance requirements of Section 214 where competitive alternatives exist. The modern communications marketplace, characterized by robust intermodal competition, provides a more dynamic and effective discipline than prescriptive, monopoly-era oversight. By aligning its rules with the economic reality of a competitive marketplace, the Commission can reduce unnecessary costs, unleash private capital for infrastructure deployment, and accelerate the delivery of advanced services to all Americans.

I. Dynamic Competition Has Led to Creative Destruction in Voice Services

The market for voice services has drastically changed since the adoption of the 1996 Telecommunications Act. This market, much like the broadband market,² is best understood through dynamic-competition analysis.

Unlike static-competition analysis—which assumes all firms compete in a defined market of the same commodities, using the same processes—dynamic-competition analysis recognizes that innovation often results in “creative destruction,”³ whereby a new product or service replaces an old one. For example, the automobile replaced the horse and carriage, and telephone replaced the telegraph. Under a dynamic-competition model, the focus is not just on current players in the marketplace for

¹ Notice of Proposed Rulemaking, In the Matter of Reducing Barriers to Network Improvements and Service Changes and Accelerating Network Modernization, FED. COM. COMM’N (WC Docket No. 25-209, 25-208, Jul. 25, 2025), available at <https://docs.fcc.gov/public/attachments/FCC-25-37A1.pdf>.

² See Geoffrey A. Manne, Kristian Stout, & Ben Sperry, *A Dynamic Analysis of Broadband Competition: What Concentration Numbers Fail to Capture*, INT’L CTR. L. ECON. (Jun. 2021), available at <https://laweconcenter.org/wp-content/uploads/2021/06/A-Dynamic-Analysis-of-Broadband-Competition.pdf>; Eric Fruits et al., *Dynamic Competition in Broadband Markets: A 2024 Update*, INT’L CTR. L. ECON. (Jun. 4, 2024), available at <https://laweconcenter.org/wp-content/uploads/2024/06/Broadband-Competition-2024-Update.pdf>.

³ See Richard Alm & W. Michael Cox, *Creative Destruction*, ECONLIB, <https://www.econlib.org/library/Enc/CreativeDestruction.html> (last accessed Aug. 19, 2025).

a known product or service, but how market process often give rise to brand new products or services that may replace older ones altogether. As economist David Teece has put it:

With dynamic competition, new entrants and incumbents alike engage in research and development (R&D) and the development of new products, processes, and new business models. Firms seek to create entirely new markets and product categories. Businesses are not just looking everywhere for rivals seen and unseen, but to the future to try to satisfy user/customer needs and unlock latent demand. New product introductions followed by price declines are common. Competition is usually either for the market or sometimes to create entirely new markets as much as it is within markets.⁴

Voice markets are a compelling example of how technological changes and disruption by rapid modal shifts have completely changed the game, and are leading to creative destruction. Where most households were once served by copper networks, mobile and VoIP have largely replaced those traditional switched-access lines. As the FCC's data shows:

- As of December 2023, there are “386.1 million mobile subscriptions in the United States, representing an increase in mobile voice subscriptions at a compound annual growth rate of 3.1% over the prior three years.”⁵ On the other hand, “there are approximately 20.6 million end-user switched-access lines, including approximately 8.5 million residential lines. In addition, there are approximately 64.2 million interconnected VoIP subscriptions, including approximately 24.1 million residential subscriptions. Of the 85 million fixed retail voice telephone service subscriptions, approximately 38% were residential connections and approximately 62% were business connections. The relative growth trends show that fixed switched-access continues to decline while interconnected VoIP services plateaued then had a slight decrease. The number of fixed retail switched-access lines declined over the past three years at a compound annual rate of 15.7%, while interconnected VoIP subscriptions decreased at a compound annual growth rate of 1.6%.”⁶
- This is a continuation of long-term trends that have seen mobile overtake almost completely the previously dominant traditional switched access, while interconnected VoIP has largely replaced copper lines as the technology of choice for fixed voice. At year-end 1999, there were 189.6 million switched-access lines and 79.7 million mobile subscribers in the United States.⁷ By year-end 2008, there were 141 million switched-access lines and 21.7 million VoIP subscriptions, compared to 261.2 million mobile subscriptions.⁸ Whereas “as of December 2023, residential

⁴ David J. Teece, *Understanding Dynamic Competition: New Perspectives on Potential Competition, “Monopoly,” and Market Power*, 86 ANTITRUST L. J. 735, 741 (2025).

⁵ 2024 *Communications Marketplace Report*, FED. COM. COMM’N (GN Docket No. 24-11, Dec. 31, 2024), at para. 158, available at <https://docs.fcc.gov/public/attachments/FCC-24-136A1.pdf>.

⁶ *Id.* at para. 158.

⁷ *Cf. Local Telephone Competition at the New Millennium*, FED. COM. COMM’N (Aug. 2020), at Table 4, 5, available at https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/lcom0800.pdf.

⁸ *Cf. Local Telephone Competition: Status as of December 31, 2010*, FED. COM. COMM’N (Oct. 2011), Fig. 1, Table 17, available at <https://docs.fcc.gov/public/attachments/DOC-310264A1.pdf>.

fixed voice connections were approximately 26% switched-access and approximately 74% interconnected VoIP, with residential switched-access connections comprising approximately only 10% of all fixed retail voice connections.”⁹

- Moreover, “[a]ccording to preliminary data from the Centers for Disease Control and Prevention (CDC), as of December 2023, approximately 76% of adults lived in a wireless-only household in late 2023, with adults in lower age groups more likely to live in wireless-only households. For children, the CDC found that an even greater number, approximately 87%, live in wireless-only households. In the 25 to 29 age group, approximately 87% of adults lived in wireless-only households, approximately 90% of those aged 30 to 34 lived in wireless-only households, approximately 87% of those aged 35 to 44 lived in wireless-only households, approximately 74% of those aged 45 to 64 lived in wireless-only households, and approximately 55% of those 65 and older lived in wireless-only households. About 0.5% of households had neither wireless nor fixed voice subscriptions, as of late 2023.”¹⁰
- These trends don’t even take into consideration the plethora of “apps running solely on data networks that are nearly indistinguishable to the consumer from the core communications functionality of the public switched telephone network, and nearly indistinguishable to providers from other network data traffic. Many of these apps combine the benefits of voice, video, and text communications into one data-based service.”¹¹
- In sum, “[a]lthough the public switched telephone network was once the only means to connect, there now exists a multitude of other voice service options for consumers in the United States.”¹²

These incredible changes in the voice marketplace over the past 30 years make sense if one views the market through the lens of dynamic competition. One of the features of dynamic competition is that:

With dynamic competition, new entrants and incumbents alike engage in new product and process development and other adjustments to change. Frequent new product introductions followed by rapid price declines are commonplace. Innovations stem from investment in R&D or from the improvement and combination of older technologies. Firms continuously introduce product innovations, and from time to time, dominant designs emerge. With innovation, the number of new entrants explodes, but once dominant designs emerge, implosions are likely, and markets become more concentrated. With dynamic competition, innovation and competition are tightly linked.¹³

In other words, both incumbents and new entrants invested in new ways to provide voice service, with mobile and VoIP largely overtaking the old copper networks. Competition came from outside

⁹ 2024 Communications Marketplace Report, *supra* note 5, at para. 156.

¹⁰ *Id.* at para. 158.

¹¹ *Id.* at para. 154.

¹² *Id.*

¹³ J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 604 (2009).

the traditional switched-access market, and then largely replaced it. The FCC should facilitate these market changes by removing barriers to this dynamic competition.

II. Maintaining Legacy Copper Networks Is Cost-Prohibitive

As markets have moved toward mobile and VoIP, maintaining legacy copper lines has become increasingly expensive. With fewer subscribers, the per-subscriber cost for copper lines has increased. Prices have also gone up for standalone voice service over copper lines, leading to even more switching by consumers. This negative feedback loop is unsustainable over the long term, which is why many providers are looking to retire their copper networks.

For instance, AT&T has reported that it spends more than \$1 billion annually just to maintain copper lines in California.¹⁴ Nationwide, these annual costs run to around \$6 billion for AT&T alone.¹⁵

The reasons for these high maintenance costs include:

- Legacy copper lines are expensive because regional wire centers must be operated to serve the few who still use them.
- Copper lines also take a long time to repair relative to fiber lines. Fiber-optic lines can be restored within four to five hours, while copper lines can take days. That's because copper wires are encased in paper (or sometimes lead), which takes time to dry.¹⁶
- Another maintenance challenge is finding qualified technicians to repair these copper wires. Only a handful of technicians are still trained in copper-wire maintenance, making it a skill in short supply.¹⁷
- Copper is sufficiently valuable that it is often stolen by thieves.¹⁸
- Copper is hard to replace because such lines “frequently use hardware and cables that are no longer in production or supported by manufacturers.”¹⁹

¹⁴ Isabelle Salgado, Maureen R. Jeffreys, & C. Frederick Beckner, *Application of Pacific Bell Telephone Company D/B/A AT&T California (U 1001 C) For Targeted Relief From Its Carrier of Last Resort Obligation and Certain Associated Tariff Obligations*, CPUC (Mar. 3, 2023), available at <https://docs.cpuc.ca.gov/publisheddocs/efile/g000/m502/k977/502977267.pdf>.

¹⁵ Acielle Gucela, *AT&T Copper Network Retirement*, IFAX, <https://www.ifaxapp.com/analog-to-digital-fax/att-copper-network-retirement> (last accessed Aug. 19, 2025).

¹⁶ *Id.*

¹⁷ *Id.*; see also Mike Robuck, *AT&T Makes Case Against Keeping Copper*, MOBILE WORLD LIVE (May 22, 2024), <https://www.mobileworldlive.com/att/att-makes-case-against-keeping-copper> (“Sambar noted some of the copper lines are 100 years old. Each copper line sheathed in paper is susceptible to moisture issues. Whereas it takes AT&T six to eight hours to fix a fibre-related issue, it can take several weeks to dry out the copper lines. In addition to paper, some of the copper lines are encased in lead.”).

¹⁸ Masha Abarinova, *Copper Theft Is a Colossal Problem for Telcos. Here's Why*, FIERCE NETWORK (Nov. 5, 2024), <https://www.fierce-network.com/broadband/copper-theft-colossal-problem-telcos-heres-why>.

¹⁹ *Id.*

In sum, the economic case for transitioning from copper to fiber-optic and other IP-based networks is overwhelming. Maintaining legacy copper networks imposes a significant deadweight loss on the economy. These networks are increasingly expensive to operate, consume substantial amounts of power, and are prone to weather-related damage and frequent outages. Moreover, copper's limited bandwidth capacity constrains innovation and prevents providers from offering the advanced services consumers demand.

Conversely, next-generation networks offer superior speed, lower latency, enhanced reliability, and massive scalability, which are foundational to economic growth, productivity gains, and consumer welfare in the digital age. The Commission's rules should actively encourage, not hinder, this value-creating technological migration.

III. The FCC Should Make Retiring Copper Networks Easier

In addition to the substantial costs carriers face from maintaining legacy copper networks, they also face transaction costs in the form of various notification requirements, as well as the requirement that they receive FCC approval before discontinuing the service. The time, expense, and uncertainty associated with such notifications and applications all further increase carriers' costs and divert resources away from competing in a dynamic marketplace by better serving consumers and deploying next-generation infrastructure.

While the NPRM has been characterized as a "copper retirement" initiative, it reflects a much broader objective: to facilitate the efficient allocation of capital toward next-generation infrastructure. The proposals in this NPRM offer a historic opportunity to remove regulatory impediments that have artificially inflated the costs and slowed the pace of the nation's transition to an all-IP network.

From a law & economics perspective, the Commission's rules governing network changes and service discontinuances should be evaluated based on their ability to reduce the transaction costs associated with this transition, thereby unlocking private investment and maximizing consumer welfare. The current regulatory regime, which was designed for the AT&T monopoly of a century ago, actively impedes this transition by creating artificial barriers to exiting costly legacy services and facilities.

A. Section 251(c)(5) Network-Change Disclosure Forbearance

The network-change disclosure regime imposed by Section 251(c)(5) of the Communications Act establishes specific obligations for incumbent local-exchange carriers (ILECs) to provide reasonable public notice of changes to their network that might affect competing telecommunications carriers, or the interoperability of networks. Section 251(c)(5) requires ILECs to provide "reasonable public notice of changes in the information necessary for the transmission and routing of services using

that local exchange carrier's facilities or networks, as well as of any other changes that would affect the interoperability of those facilities and networks."²⁰

Section 251(c)(5)'s network-change disclosure regime is a relic of an era when competitive LECs (CLECs) were wholly dependent on the ILEC's physical network to reach customers. In today's competitive market, where facilities-based cable and wireless providers are the primary source of competition, these requirements have become a pure transaction cost, with no corresponding public benefit. The Commission should exercise its authority under Section 10 of the Act and forbear entirely from these anachronistic rules.

The NPRM proposes to codify the Wireline Competition Bureau's recent waiver of the filing requirements associated with network-change disclosures.²¹ The Bureau's action was based on dispositive evidence: over a two-year period, the Commission processed more than 400 such filings and received no comments in opposition.²² This record demonstrates that the filing requirement itself provides zero public-interest value. It is purely an administrative burden that forces carriers to expend resources on a procedural step that doesn't inform consumers and influences no outcome.

Codifying the waiver is a logical and necessary step to eliminate this deadweight cost from the regulations permanently. The NPRM proposes the next logical step: to forbear from all public-notice requirements imposed by section 251(c)(5), thereby eliminating all network-change disclosure filing and associated requirements.²³

Section 10 of the Communications Act requires the Commission to forbear from enforcing regulations on telecom carriers or services in certain geographic markets if it determines that all three of the following criteria are met:²⁴

1. **Fair pricing assurance:** Enforcement isn't needed to ensure carriers maintain "just and reasonable rates" and practices without discrimination;
2. **Consumer protection:** Enforcement isn't necessary to protect consumers; and
3. **Public interest:** Waiving the regulation serves the public interest.

In other words, Section 10 gives the FCC discretionary power to reduce carriers' regulatory burdens when market conditions indicate that formal oversight may be unnecessary.

²⁰ 47 U.S.C. § 251(c)(5).

²¹ NPRM, *supra* note 1, at paras. 10-11.

²² *Id.* at para. 11.

²³ *Id.* at para. 14.

²⁴ 47 U.S.C. § 160(a).

Using forbearance to eliminate all network-change disclosure filing and associated requirements imposed by section 251(c)(5) makes sense in this dynamic marketplace and satisfies Section 10's three-prong test.

1. **Pricing:** The rule was premised on an ILEC having monopoly power over the local loop, which could theoretically be leveraged to harm dependent CLECs through unannounced network changes. That premise is now obsolete. The precipitous decline in ILEC market share to just 25% of the fixed-voice market demonstrates the profound erosion of this legacy market power.²⁵ In the modern market, inter-carrier relationships are governed by commercial interconnection agreements and the discipline of competition, not by prescriptive FCC notice rules. A facilities-based cable or wireless provider is not dependent on ILEC copper-network changes for its operations.
2. **Consumer protection:** The notice required by Section 251(c)(5) is directed to interconnecting carriers, *not end-user consumers*. Direct consumer protection from service discontinuance is governed by Section 214, not Section 251. Indirectly, consumer welfare is best protected by the availability of competitive alternatives. In the unlikely event that an ILEC's network change were to disrupt a competitor's service, that competitor's customers can and do switch to other providers—a far more potent and immediate form of discipline than a regulatory notice filing.
3. **Public interest:** The public interest is served by promoting competitive market conditions and encouraging investment in advanced networks. Forbearance achieves both. It frees ILEC resources from regulatory compliance, allowing that capital to be redeployed for network modernization. It also promotes regulatory parity by relieving ILECs of a burdensome requirement that their primary competitors—cable, wireless, and satellite operators—do not bear. This regulatory neutrality levels the competitive playing field and allows market forces, rather than regulatory asymmetries, to determine outcomes.

The Commission's concern about potential 911 service disruption can and should be addressed through targeted, technology-neutral requirements on any carrier that interconnects with 911 call paths, rather than by preserving a broad, inefficient, and obsolete rule that applies to all network changes. The Section 251(c)(5) notice requirement is a form of regulatory inertia, protecting a business model of copper-loop leasing that has largely been replaced through the creative destruction of the market process. Forbearance is the economically rational path forward.

B. Section 214 Discontinuance Forbearance

The NPRM reports that the Section 214 discontinuance process was enacted in 1943 to protect communities from the loss of essential communications services in a monopoly environment, particularly during wartime.²⁶ In today's dynamically competitive marketplace, which is characterized by a proliferation of technologically superior alternatives, this process functions as a primary impediment to network modernization. By making it costly and time-consuming for carriers to exit

²⁵ NPRM, *supra* note 1, at para. 8.

²⁶ *Id.* at para. 106.

obsolete and inefficient copper-based services, the Section 214 regime slows the flow of capital toward the deployment of next-generation networks.²⁷ The Commission's goal should be to eliminate these requirements wherever the market itself provides a sufficient backstop for consumers.

The NPRM's invitation to forbear from Section 214 discontinuance requirements in specific, competitively supplied circumstances is the most economically sound approach. Applying the Section 10 forbearance test demonstrates that forbearance is appropriate where consumers have access to alternative services.

1. **Pricing:** When a competitive replacement service is available—whether from a facilities-based VoIP provider, a mobile-wireless carrier, or a low-earth-orbit satellite operator—market forces, not a regulatory process, are the best guarantor of just and reasonable rates and practices. A carrier cannot discontinue a legacy service and offer an unreasonable or inadequate replacement without ceding customers to its rivals.
2. **Consumer protection:** The ultimate consumer protection in a dynamic market is the availability of choice. Forbearance is warranted where the record demonstrates that consumers have access to alternative providers. The fact that nearly 95% of Americans have at least three mobile-wireless choices,²⁸ as well as the rapid growth of competitive VoIP,²⁹ is dispositive evidence of a dynamic and competitive market. As the Commission contemplates, a simple consumer-notice requirement—a potential condition of forbearance—is a far more targeted and efficient protection mechanism than a full, costly, and time-consuming Section 214 review.
3. **Public interest:** Forbearance directly serves the public interest by promoting competitive conditions. It eliminates the deadweight costs of maintaining deteriorating legacy networks and the transaction costs inherent in the discontinuance process. This frees up scarce capital for investment in next-generation networks, accelerating the realization of massive consumer welfare gains—including higher productivity, greater innovation, and new services—that IP-based communications make possible.

Even if the Commission declines to forbear, it should, at a minimum, adopt its proposal to replace the complex and burdensome adequate-replacement and alternative-options tests with a single,

²⁷ See, e.g., *Comments of AT&T and Opposition to Petitions for Reconsideration, In the Matter of Safeguarding and Securing the Open Internet, Restoring Internet Freedom, Bridging the Digital Divide for Low-Income Consumers, and Lifeline and Link Up Reform and Modernization* (WC Docket 23-320, Dec. 14, 2023), 17-108, 17-287, 11-42, at 28, available at <https://www.fcc.gov/ecfs/document/12140407728115/1> (“For example, in many areas, AT&T originally offered DSL internet access services over legacy copper networks, which still cost billions of dollars annually to maintain. Subjecting those services to Section 214 discontinuance obligations could indefinitely force AT&T to continue allocating capital to these outdated networks rather than investing in modern fiber networks. Further, the Commission’s current Section 214 rules were developed for legacy telephone service, not internet service—and certainly not for outdated DSL-based internet access services.”).

²⁸ 2024 Communications Marketplace Report, *supra* note 5, at para. 56 (“[T]hree service providers have networks that they report cover a substantial majority of the country—each reports covering at least 95% of the U.S. population”).

²⁹ NPRM, *supra* note 1, at para. 8.

streamlined certification rule.³⁰ The existing tests have failed to achieve their purpose of facilitating technology transitions. As the NPRM notes, the first discontinuance application using the adequate replacement test without relying on a third-party cable provider was filed in July 2024—a full eight years after the Commission adopted the test.³¹ This is a clear signal that the test is unworkable and imposes excessive information and compliance costs that deter its use.

A simplified rule that allows a carrier to certify the availability of a competitive alternative—such as facilities-based VoIP, mobile-wireless service, or a service funded by a high-cost support mechanism—would correctly shift the regulatory focus. Instead of micromanaging the technical features of a replacement service, it rightly focuses on the macro-level condition of market competition, recognizing innovation in a dynamic marketplace. This approach aligns with ICLE’s comments in the “Delete, Delete, Delete” proceeding, urging the Commission to simplify the procedural requirements and cost-benefit framework of § 63.71:

Line discontinuance. Under “Delete, Delete, Delete,” the FCC initiative should streamline 47 C.F.R. § 63.71 by simplifying the procedural requirements for carriers seeking to discontinue legacy copper lines. For example, the FCC might reduce the mandatory customer-notification period for nondominant carriers (currently 15 days) or eliminate redundant filing steps for automated approvals, particularly in markets with competitive alternatives. Additionally, the FCC could revise § 63.71’s cost-benefit framework by aligning timelines for dominant carriers (60 days) with current market realities like widespread fiber or the availability of wireless, in order to accelerate infrastructure transitions. Merging overlapping provisions in § 63.71 and § 63.90 into a unified process for technology transitions could further reduce administrative burdens, while maintaining consumer safeguards through alternative-service requirements.³²

The FCC’s “technology transitions discontinuance” framework has been built on the flawed premise of “replacement,” rather than “upgrade.”³³ The rules implicitly treat legacy TDM service as the gold standard to be replicated, leading to backward-looking static tests for “substantially similar” quality.³⁴

A dynamic approach would recognize that the market is transitioning to a superior technological paradigm. IP-based services are not mere replacements; they are fundamentally different products that offer immense value that TDM cannot, including mobility, data integration, and scalability. The proper regulatory question is not “Is the new service an adequate technological replacement for the old one?” but rather “Is the market for the new, superior service sufficiently competitive to ensure

³⁰ *Id.* at paras. 26-27.

³¹ NPRM, *supra* note 1, at para. 27.

³² *Comments of the International Center for Law & Economics, RE: Delete, Delete, Delete*, INT’L CTR. L. ECON. (GN Docket No. 25-13352, Apr. 11, 2025), at 18, available at <https://laweconcenter.org/wp-content/uploads/2025/04/2025-Delete-Delete-Delete-Comments-r3.pdf>.

³³ NPRM, *supra* note 1, at para. 23 n. 64.

³⁴ *Id.* at para. 23 n. 66.

consumers benefit from the upgrade?” The NPRM’s proposals to forbear or simplify the rules correctly move the Commission toward asking this more economically relevant question.

Conclusion

This NPRM is an incredibly important undertaking. The Commission should move forward with new rules that recognize the current marketplace realities, including the incredible creative destruction taking place in the provision of voice services. The FCC should use its forbearance authority to adapt the regulatory framework governing this space to the 21st century.