How Can the FCC Improve Provision of Telecommunications Services for the Deaf and Hearing Impaired?

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Other Views:

• Coleman Bazelon & Brent Lutes, *IP CTS Costs and Reimbursement Rates*, The Brattle Group (July 14, 2020), *available at* https://ecfsapi.fcc.gov/file/1071646346737/Hamilton%20ex%20parte%20July%2016%202020.pdf.

• Martin Cave, *Encouraging Infrastructure Competition via the Ladder of Investment*, 30 Telecomm. Pol'y 223 (April 2006), https://www.sciencedirect.com/science/article/abs/pii/S0308596106000164.

• *In the Matter of Structure and Practices of the Video Relay Service Program*, Report and Order, FCC, July 6, 2017, https://docs.fcc.gov/public/attachments/FCC-17-86A1.pdf.

July 2020 marked the 30th anniversary of the Americans with Disabilities Act (ADA) and an opportunity to review its policy goals. Section IV of the ADA requires telecommunications providers to offer "functionally equivalent" services for consumers with hearing or speech disabilities. This provision was codified by adding Section 225 to the 1934 Communications Act.[1] It requires the FCC to ensure that the "interstate and intrastate" telecommunications relay service (TRS) market is available to the hearing impaired "to the extent possible and in the most efficient manner,"[2] and it directs the FCC to develop and enforce regulations that provide funding for the cost of the ADA-mandated communications services.[3]

Internet Protocol Captioned Telephone Service (IP CTS) is a captioning service for individuals such as seniors and veterans who have hearing loss that interferes with their ability to do something many of us take for granted: use the telephone. Under the ADA, this accommodation must support "functionally-equivalent" telephone service for individuals who are deaf or suffer hearing loss that impairs their ability to use the telephone. It is funded by a surcharge on telephone companies, many of whom pass it on to consumers on telephone and mobile bills. The Federal Communications Commission (FCC) administers the program, reimbursing approved providers for providing the service. IP CTS is now the most widely used of the FCC's relay services, having grown from 2.4 million minutes in 2009 to 511.6 million minutes in 2019 and comprising the lion's share of expenditures from the $1.6 billion TRS Fund.[4] At present, hard-of-hearing consumers choose among seven certified IP CTS service providers, most of which have been in the industry for at least a decade, delivering related products and services for the TRS market. The services offered use a combination of automated speech recognition (ASR), human communications assistants (CAs), and devices with screens for captioning (e.g., smartphones, tablets, caption phones).

The growing popularity of IP CTS and an earlier reimbursement methodology have ballooned the demands on the TRS Fund, increasing costs to mobile and telephone subscribers

1 47 U.S.C. § 225.

2 47 U.S.C. § 225(b)(1).

3 47 U.S.C. § 225(d)(3)(B).

4 *See Reforming IP Captioned Telephone Service Rates and Service Standards*, FCC, Draft IP CTS Order for Vote, Sept. 9, 2020, at Table 1, *available at* https://www.fcc.gov/document/reforming-ip-captioned-telephone-service-rates-and-service-standards (reporting level of 2019 IP CTS minutes) [hereinafter 2020 Draft Order]; Misuse of Internet Protocol (IP) Captioned Telephone Service; Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, CG Docket Nos. 13-24 and 03-123, Report and Order, Declaratory Ruling, Further Notice of Proposed Rulemaking, and Notice of Inquiry, 33 FCC Rcd 5800, 5809, Table 1 (2018) (2018 Order, 2018 Declaratory Ruling, 2018 Further Notice, or 2018 Notice of Inquiry) (showing IP CTS minutes in 2009).

already chafing from other government fees tacked onto their bills. The FCC began to reduce the reimbursement rate for this program in 2018, which it says saved consumers $350 million.[5] The Commission will vote on September 30 to make further reductions, bringing the reimbursement rate to $1.30 per minute in 2021, a move projected to save another $200 million.[6] But the FCC has declined to implement reimbursement by reverse auction, a reform that would modernize the program with a proven market-based framework and transition it from outmoded regulatory ratemaking. Moreover, an ineffective framework remains in place for the other major FCC-supported relay service, video relay services (VRS) for the deaf. This ineffective framework perpetuates inefficient, high cost provision, and it is slated for further consideration in 2021.

Congress and the FCC should consider how ever-improving technology and market-based reimbursement can improve provision of deaf services, incentivizing high-quality service while reducing costs and meeting the communications needs of a growing number of consumers with hearing loss. This paper reviews the IP CTS program, assesses different models of reimbursement, and demonstrates that a reverse auction is the prudent way to incentivize the provision of IP CTS more efficiently and cost effectively.

I. Background

Most people experience some loss of hearing as they age. The Hearing Loss Association of America suggests some 48 million Americans have hearing challenges.[7] Some 4 million Americans need hearing aids, though only about 20 percent use them.[8] Notably, hearing loss tends to appear in older adults, affecting about 1 in 3 people aged 65-74, and almost half of all adults 75 and older.[9] Further, America's veterans suffer disproportionately from hearing loss at younger ages. In addition to other traumas, many return from service with ears damaged from explosions and gunfire.

To support implementation of the ADA's mandates, the FCC created what is known today as the TRS Fund,[10] which subsidizes captioning, speech translation with American Sign Language, speech-to-text conversion, and re-vocalization of speech. Captioned telephone service is used by people with hearing loss who generally have some residual hearing, but need help to ensure they are capturing the full meaning of a conversation.[11] IP CTS is enabled by a smartphone, tablet, or tabletop telephone with a built-in screen which displays for the individual with hearing loss real-time captions of the other party's speech. The service runs over a mobile wireless broadband connection or a traditional telephone line. IP CTS refers to those services incorporating internet protocol over broadband connections to deliver the captions to the phone, and increasingly to establish the voice connection too.

To further its statutory mandate, the FCC has sought comment on long-term solutions to satisfy the requirement for high-quality, functionally-equivalent services that meet the needs of a growing number of consumers who experience hearing loss. Some commenters have submitted proposals for tiered reimbursement rates that would compensate service providers that handle fewer minutes at higher average rates than ones that handle more minutes, using a series of volume-based compensation tiers. Tiering proponents might argue that, being smaller, they have smaller customer bases across which to cover their costs, so the tier helps improve their operating margin. These proposed solutions are incompatible with a technologically dynamic and efficient IP CTS marketplace, and the FCC should reject them. Instead, the FCC should implement a reverse auction to improve the efficient use of TRS funds.

II. Tiered Reimbursement Rates Don't Make Sense in a Technologically Dynamic Marketplace

Imposing tiered rates for reimbursements is out of place in a dynamic market undergoing technological change. Tiered rates are typically used to control demand. For example, to limit the consumption of water, prices are tiered to increase the cost of consuming more. In electricity, tiered time-of-day pricing is used to steer demand to less expensive off-peak periods with reduced loads. Tiers in the VRS market, however, are not used to curtail or shift demand. The end user price is already zero. IP CTS tier proponents would use tiers for an entirely different purpose—to sustain high cost provision. If the FCC's goal is to ensure service for eligible users more efficiently, providers should be incentivized to provide high-quality service at the lowest possible cost.

As the FCC considers reforms to IP CTS, four companies have submitted proposals for tiered reimbursements for service providers. These proposals do not argue that tiering is needed to promote market entry; indeed, the FCC itself controls market entry with certification. In fact, even tiering proponents recognize its inefficiency.[12] It appears that they promote tiering primarily to "avoid short-term over payment to low-cost providers."[13] The implicit corollary is that providers promoting tiering are high

5 2020 Draft Order, *supra* note 4.

6 *Id.*

7 *Hearing Loss - Facts and Statistics*, Hearing Loss Association of America (2018), *available at* https://www.hearingloss.org/wp-content/uploads/HLAA_HearingLoss_Facts_Statistics.pdf?pdf=FactStats.

8 *Id.*

9 *Hearing Loss: A Common Problem for Older Adults*, National Institute on Aging, NIH, https://www.nia.nih.gov/health/hearing-loss-common-problem-older-adults.

10 *Telecommunications Relay Services (TRS)*, FCC, Feb. 27, 2013, https://www.fcc.gov/trs. The money for the TRS Fund comes from a tax on mobile carriers, which choose to recover it in different ways. When surcharged, TRS fees go under a variety of names that the carriers choose and are not standard. Sometimes these fees are combined with other fees in a Carrier Recovery Charge. Some carriers (e.g., T-Mobile) don't break out taxes and fees.

11 *Captioned Telephone Service (CTS)*, FCC, July 16, 2020, https://www.fcc.gov/cts.

12 Coleman Bazelon & Brent Lutes, *IP CTS Costs and Reimbursement Rates*, The Brattle Group, at 3 (July 14, 2020), *available at* https://ecfsapi.fcc.gov/file/10716463467 37/Hamilton%20ex%20parte%20July%2016%202020.pdf (attachment to letter from Wilkinson Barker Knauer, LLP, counsel for Hamilton Relay, Inc., to Marlene H. Dortch, Secretary at the FCC).

13 *Id.*

cost and need tiering to remain profitable without eliminating their inefficiencies. If the goal is to minimize overpayment to low cost providers, price caps and reverse auctions are the preferred policy instruments.[14] In any event, the FCC's draft IP CTS Order declined to adopt tiering for IP CTS that four firms requested. The Commission observed that there is little correlation between the number of minutes compensated and per minute cost in the TRS market, showing that the tiered structure offers no incentive to improve efficiency.[15]

III. A Cautionary Tale: Tiering in Video Relay Services

Tiering has been implemented for the provision of VRS, which allows those who are deaf to communicate via sign language with a video camera equipped device, broadband connection, and qualified interpreter who relays the message between the VRS caller and receiver.[16] An analysis of successive FCC VRS Orders from 2010, 2013, and 2017 shows that tiering has become a 13-year project of regulatory arbitrage which shows no sign of ending. The FCC will have the opportunity to reconsider VRS compensation tiers in 2021.

The FCC initiated volume-based VRS compensation tiers in 2007, characterized by setting different rates for each tranche of minutes handled by a provider within a given month. When tiers were first introduced, the differences in rates among the three tiers were relatively small, as were the number of minutes within the higher rate tiers. The lowest volume tier had a rate that was only seven percent lower than the rate for the highest volume tier, and the highest volume tier included only the first 50,000 IP CTS minutes handled by a provider in that month.[17] With a relatively small gap between the highest and lowest rates, the subsidy for inefficiency was relatively small. However, beginning in 2010, the FCC widened that gap. In 2010, the FCC adopted new tier rates that cut the rate for the lowest rate tier substantially, with lesser reductions on the rates for the two higher rate tiers. The subsidy for inefficiency expanded to nearly 20 percent.[18]

The FCC further expanded support for inefficiency in 2013, when it established a new four-year VRS rate schedule. In its first year, the 2013 order maintained a nearly 20 percent differential between the highest rate tier and the lowest rate tier, which dropped to 16 percent by 2017. However, the FCC also vastly increased the inefficiency subsidy by increasing the number of minutes under the highest rate tier ten-fold, from 50,000 to 500,000 per month, and by doubling the size of the second tier.[19]

In 2013, the FCC also recognized the frailty of administrative ratemaking, noting it "is inherently a contentious, complicated and imprecise process."[20] The FCC acknowledged that tiering had not accomplished the goal of moving high cost Tier I- or Tier II-only providers toward becoming low cost Tier III providers: "the FCC's existing rate-setting process inefficiently supports providers that have failed to achieve economies of scale."[21] The Commission thus issued a Further Notice of Proposed Rulemaking to move to setting rates through competitive bidding.[22] But when its four-year plan came to an end in 2017, the FCC had not progressed in implementing competitive bidding. The FCC had an opportunity to end the regulatory arbitrage, but instead it abandoned competitive bidding in favor of further administrative ratemaking, and it renewed its practice of subsidizing inefficient competition.

The FCC admitted that "the Commission's expectation that smaller VRS providers would be able to make substantial improvements in efficiency within the past four-year period was not fulfilled."[23] Nonetheless, the FCC actually increased the rate on the highest rate tier applicable to "non-emergent" providers by nearly 2 percent, while cutting the rate for the lowest rate tier. As a result, the differential among the tiers grew to over 33 percent. And over the course of the four-year plan, that differential grew to over 45 percent.[24]

The FCC will need to revisit its VRS rates with the end of the current rate schedule in June 2021. The FCC has not yet initiated its next review. It remains to be seen whether, after 13 years, the FCC can finally wean itself from its subsidies for inefficiency.

IV. Lessons from the Ladder of Investment

Tiering is an example of regulators attempting to artificially stimulate competition. It parallels Martin Cave's Ladder of Investment (LOI) regulatory theory, which suggests that as entrants gain market share, they climb the ladder and invest in their own network.[25] The LOI approach was tried in many European countries but largely discontinued after the 2008

14 *See, e.g.*, David E.M. Sappington & Dennis L. Weisman, *Price cap regulation: what have we learned from 25 years of experience in the telecommunications industry?*, 38 J. Reg. Econ. 227 (2010), *available at* https://link.springer.com/article/10.1007/s11149-010-9133-0.

15 2020 Draft Order, *supra* note 4.

16 *FCC Video Relay Services*, FCC, accessed September 9, 2020, https://www.fcc.gov/consumers/guides/video-relay-services.

17 *In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Report and Order and Declaratory Ruling, FCC, November 19, 2007, https://docs.fcc.gov/public/attachments/FCC-07-186A1.pdf. The FCC adopted three tiers, with the highest rate tier for the first 50,000 monthly minutes compensated at $6.77, and the lowest rate tier, for all minutes above 500,000 per month, at $6.30.

18 *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, FCC, June 28, 2010, https://docs.fcc.gov/public/attachments/FCC-10-115A1.doc. The volume boundaries on the tiers stayed the same, but the two higher rate tiers were $6.24 and $6.23 respectively, while the lowest rate tier dropped to $5.07.

19 *In the Matter of Structure and Practices of the Video Relay Service Program Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Order, FCC, June 7, 2013, at ¶¶ 213-215 https://docs.fcc.gov/public/attachments/FCC-13-82A1.pdf.

20 *Id.* at ¶ 217.

21 *Id.* at ¶ 5.

22 *Id.* at ¶ 223 et seq.

23 *In the Matter of Structure and Practices of the Video Relay Service Program*, Report and Order, FCC, July 6, 2017, at 16 [hereinafter 2017 VRS Order].

24 2017 VRS Order, *supra* note 23. As of July 1, 2019, the Tier I rate was $4.82, and the Tier III rate, $2.63.

25 Martin Cave, *Encouraging Infrastructure Competition via the Ladder of Investment*, 30 Telecomm. Pol'y 223 (April 2006).

financial crisis as it did not support meaningful investment in telecommunications infrastructure by entrant firms.[26] Tiering is similar to the LOI, theoretically giving smaller firms a leg up in the market by giving them higher reimbursement rates. A tiering proponent might argue that short-run benefit of artificial stimulation of competition is more important than setting the right structure for the program in the future.

But recent history disproves the need to create synthetic competition. This year, the FCC has certified two new captioned service providers that are using a new technological approach: fully automated captions that do not use a human captioner.[27] These providers decided to enter without the benefit of tiers and have not sought them. As more than a decade has shown in the VRS market, tiering proponents have not climbed the ladder, so to speak. They do not meaningfully expand volume, and tiers can discourage them from doing so by cutting their margins.

Moreover, the recent entry of new IP CTS providers exposes another danger of tiering: it can shield incumbents from the disruptive impacts of technological change. Tiering proponents have attempted to justify tiering based on caption quality, but in fact tiers have nothing to do with caption quality from a statutory perspective. The tiers are based on volume of minutes. In any case, captions are a differentiated product, and caption quality is one way that people with hearing loss choose among the seven IP CTS providers.

V. Implementing a Reverse Auction Is the Best Way to Improve Efficiency

The FCC declares in the IP CTS Order draft, "We recognize that a properly structured reverse auction could be an effective mechanism to ensure that compensation reflects market forces."[28] However, it claims that it wants to see how technological improvements and increased reliance on ASR impact the costs related to provision of this captioning service. The proposed order will likely give the FCC two years of data, offering sufficient information and time to inform an auction.

In any event, the FCC has proven success with a variety of auction models performed hundreds of times with thousands of telecom providers in different markets. Auctions resolve the biggest problem with administrative rate setting: regulators frequently get the price wrong. Auctions use the market to "true up" the real prices firms are willing to pay. It brings suppliers' private information about their own costs and projections of industry development into play. Moreover, auctions by their nature enable valuable competition. Through auctions, the FCC has issued hundreds of thousands of licenses to firms, non-profits, and individuals, showing that the model enables flexible participation by many players at different levels. By contrast, tiering cements a rigid structure of rate setting for years.

In recent years, the FCC has had significant success realizing social goals through reverse auctions.[29] In contrast to a forward auction in which a single seller offers an item for sale for which the buyers compete with increasing bids, a reverse auction is one in which a single buyer makes potential sellers aware of the good or service it wants and asks them to submit bids. In the case of IP CTS, the buyer (the FCC) is looking for sellers to provide a service (IP CTS) to the most eligible users at the lowest possible price; it also wants to ensure that the services delivered are of high quality and functionally equivalent to services enjoyed by the general population.

Ronald Coase laid the theoretical foundations for market-based regimes for telecommunications regulation and challenged the prevailing regulatory wisdom of administrative allocation of resources. His 1959 article *The Federal Communications Commission*[30] exposed the fallacy of central planning and argued for market-based prices. Coase's proposals were mocked by the policymakers of his day, but the Nobel Prize winning economist has been fully vindicated. The FCC's first auction took place 1994,[31] and there have been more than 100 since. Today, auctions are practiced around the world and are considered the gold standard for regulators to allocate resources.

The FCC now applies the auction model to other public policy programs, notably broadband subsidies for rural areas. Tens of billions of dollars of FCC subsidies have been refocused to areas with little to no network buildout and redeployed under a reverse auction model in which operators bid for the right to connect an area at the lowest cost.[32] The expected cost to connect more than 700,000 homes and businesses in 45 states had been $5 billion, but because the reverse auction model was used, the actual cost was $1.5 billion.[33] A similar model will be used for the $20.4 billion Rural Digital Opportunity Fund earmarked for 6 million underserved homes. An additional $9 billion is earmarked for the 5G Fund for Rural America, including $1 billion for precision agriculture. These auctions include innovative mechanisms to weight varying levels of service quality, so that the market can balance cost and quality.

In 2019, the IP CTS provider CaptionCall presented a reverse auction model to the FCC designed by Stanford University

26 Anders Henten & Morten Falch, *The future of telecom regulation: The case of Denmark* (2014), http://econstor.eu/bitstream/10419/101404/1/795227221.pdf (paper presented at ITS, Bruxelles, Belgium).

27 Among the CA-based providers, a CA repeats what is spoken by the person on the phone with the subscriber and ASR technology transcribes the CA's voice into captions. The CA makes corrections adds punctuation to the captions, which are then displayed on the captioning telephone. The two newly certified entities rely solely on ASR-generated captions.

28 2020 Draft Order, *supra* note 4.

29 *Reverse Auction*, FCC, accessed September 9, 2020, https://www.fcc.gov/tags/reverse-auction.

30 Ronald H. Coase, *The Federal Communications Commission*, 2 J.L. & Econ. 1 (1959), *available at* www.jstor.org/stable/724927 (accessed July 9, 2020).

31 Ronald H. Coase, *Comment on Thomas W. Hazlett: Assigning Property Rights to Radio Spectrum Users: Why Did FCC License Auctions Take 67 Years?*, 41 J.L. & Econ. 577 (1998), *available at* www.jstor.org/stable/10.1086/467403 (accessed July 16, 2020).

32 *Connect America Auction to Expand Broadband to 713,176 Rural Locations*, FCC, August 28, 2018, https://www.fcc.gov/document/connect-america-auction-expand-broadband-713176-rural-locations.

33 Ajit Pai, *Statement before the Subcommittee on Financial Services and General Government*, Committee on Appropriations, U.S. Senate, May 7, 2019, https://docs.fcc.gov/public/attachments/DOC-357354A1.pdf.

professor Andrezj Skrzypacz.[34] It is designed to incentivize low bids while preserving post-auction competitive choice by rewarding winning bidders with new customers to be reimbursed at the same rate. The auction starts with a reserve price (or the starting reimbursement rate), and bidders compete to drive down the price. The auction is designed to deliver multiple winners; those providers within the range of the winning bid also become winners. The proposal protects existing customers by allowing all providers to serve them at the winning rate. It also encourages new entrants by treating entrants like winners. The auction can be held at different intervals (annually, bi-annually) to allow the providers to rebid.

Professor Skrzypacz's proposal shows that, as with rural broadband, a reverse auction can be deployed to allow the market, rather than bureaucrats, to determine appropriate IP CTS compensation rates. This solution has proven to work well in other contexts, and it is superior to the status quo of rent-seeking regulation through the tiered reimbursement of IP CTS rates.

VI. Conclusion

On the 30th anniversary of the ADA, it is fitting to consider the valuable societal goals of ensuring that deaf and hard-of-hearing Americans can participate fully with telecommunications services, and to investigate whether the FCC is fulfilling its statutory mandate to ensure the rapid, efficient delivery of these services. This paper reviewed the FCC's IP CTS program and competing proposals to deliver services to the deaf and hearing impaired. It described how tiered reimbursement rates in the VRS market are antithetical to the goals of the ADA, rewarding high cost providers with counterproductive incentives not to improve the volume and efficiency of their service. The FCC is taking an interim step by reducing the reimbursement rate for IP CTS, but to ensure sustainability of IP CTS, it should adopt a reverse auction. This framework should be adopted for the VRS market as well. The FCC's objective should be to maximize the volume and efficiency of services for the deaf and people with hearing loss—and the ADA demands it.

34 Andrzej Skrzypacz, *Reverse Auction Proposal for Setting IP CTS Rates*, September 17, 2018, at Appendix A, https://ecfsapi.fcc.gov/file/10919156138279/CaptionCall_-_September_Rates_Ex_Parte%20(PUBLIC)_Redacted.pdf.