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Toll-Free Assignment Modernization and the Triumph of Coase

by

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I. Introduction

In December 1959, future Nobel laureate Ronald Coase took the floor at the Federal Communications Commission. "I appear before you," he began, "with a strong conviction and a bold proposal. My conviction is that the principles under which the American economic system generally operates are fundamentally sound. My proposal is that [this agency] adopt those principles."[1]

Coase challenged the agency's long-held assumption that a command-and-control system was the optimal regulatory model for the communications marketplace. He argued that the pricing system is a superior method to allocate the scarce resources under the agency's control. If the agency properly defined property rights, a market-based regime would guide these resources to their highest and best use – just as it does with other scarce goods throughout the American economy. And market solutions would minimize the risks of inefficiency and political influence inherent in a system that distributes resources by administrative fiat. From this critique of the FCC, Coase would eventually develop the theorem that bears his name, earning himself a reputation among academics as one of the twentieth century's most influential economists. But the FCC was not as impressed: Commissioner Philip Cross immediately asked Coase in seriousness, "Are you spoofing us? Is this all a big joke?"[2]

Yet it was Coase who had the last laugh. Slowly, with occasional nudges from Capitol Hill, the Commission began relaxing its Soviet-style control of telecom inputs and instead adopted market-oriented solutions. Perhaps most obviously, in 1997 the agency abandoned hearings and lotteries in favor of auctions as the primary mechanism to allocate spectrum licenses. More recently, the agency embraced reverse auctions as the optimal tool to distribute limited universal service buildout funds.

This September, the agency is poised to take another small but momentous step in Ronald Coase's direction. Among the nine seemingly mundane items on this month's Open Meeting agenda is a proposal to modernize the system to assign toll-free numbers. The agency has proposed adopting a sealed-bid Vickrey auction for popular, contested numbers. It also envisions lifting the prohibition on selling toll-free numbers, which would allow trading of valuable numbers on secondary markets. This innovative proposal will enhance efficiency by quickly assigning popular numbers to those who value them most, while reducing the burden on the agency of administering the current command-and-control system. It will also raise revenue that can defray the costs of administering the number assignment process, thus shifting some of those costs to the toll-free number subscribers who benefit most from the service.

II. Scarcity in the Toll-Free Number Regime

Administration of the toll-free number regime is surprisingly complex. Since the breakup of the Bell system and the advent of number portability in 1993, the Commission has relied on approximately 350 Responsible Organizations (or "RespOrgs") to distribute toll-free numbers to the public.[3] RespOrgs act like registrars in the domain name system. Each has access to a master database of available toll-free numbers, which since 1998 have been made available on a first-come, first-served basis to RespOrgs.[4] A customer seeking a toll-free number enlists the services of a RespOrg, which secures the number for the customer and administers the appropriate records on the customer's behalf. RespOrgs provide these services pursuant to a common tariff and follow specific Commission guidelines.

This system creates incentives for strategic behavior, particularly with regard to desirable numbers like vanity numbers (such as "1-800-LAWYERS") or numbers that are easy to remember (such as 1-800-333-3333). To gain an advantage on competitors, RespOrgs may engage in "warehousing" or "hoarding" of desirable numbers. "Warehousing" is the practice of claiming a number from the database without a customer request, in the hope of eventually luring a customer interested in a particular number.[5] Similarly, "hoarding" occurs when a RespOrg claims more toll-free numbers than it intends to use, either to have ready stock available or to deny certain numbers to competitors.[6] Both strategies are unsurprising when the government makes a key, but scarce, input available for free. But they are problematic, as they tie up limited resources unproductively and lead to quicker exhaustion of the limited supply of numbers per toll-free area code.

In the past, the Commission has tried to curtail these practices through regulation. Commission rules prohibit both warehousing and hoarding by RespOrgs.[7] The Commission has also prohibits number brokering, the selling of a toll-free number by a private entity for a fee.[8] Instead, when a

customer cancels service, the toll-free number must be returned to the database for reassignment. When a new toll-free area code is first opened, the Commission has imposed strict daily limits on the quantity of telephone numbers each RespOrg may register, to increase the likelihood that popular numbers will be equitably distributed.[9]

But regulation is an imperfect solution. The rules require costly monitoring and enforcement efforts, such as validating that each RespOrg request is on behalf of an actual subscriber, and bringing cases against suspected number brokers. Some commentators have called the effectiveness of these measures into question. For example, one law review article notes the persistent rumor that, despite the brokering ban, MCI supposedly paid a large sum to a broker to secure 1-800-COLLECT for its collect-calling business.[10] Indeed, the Commission notes that "it takes little effort to find toll free numbers advertised for sale. An Internet search for 'toll free numbers for sale' produces numerous options to presumably buy and sell toll free numbers, as do online auction sites for 'toll free number.'"[11]

Moreover, these regulations do not address rent-seeking behavior by RespOrgs or the risk of inefficient number assignment. For example, many RespOrgs monitor the database continuously in the hope of noticing the moment a popular number becomes available. Moreover, certain RespOrgs have invested in enhanced access to the database, at least in part to quickly reserve desirable numbers.[12] Both investments are inefficient, as RespOrgs dedicate resources to gaming the assignment system rather than pursuing productive activity. More generally, the system relies upon either a first-in-time rule or (in the case of new area codes) a quasi-lottery system in the hope a particular number will go to the subscriber that values it most. But getting to the database a fraction of a second faster than competitors, or winning a random drawing, may not be the best proxy for valuing the number. In other words, it is possible – even likely – that the current distribution mechanism assigns numbers to subscribers other than those that value those numbers most. This is, by definition, an inefficient allocation of a scarce resource, which cannot be remedied by aftermarket transactions because of the Commission's prohibition on resale.

III. Implementing Coase's Solution

A. Auctioning Popular Numbers

At the September Open Meeting, the Commission will vote upon an innovative solution to this dilemma.[13] This Notice of Proposed Rulemaking (NPRM) was sparked by the need to create a new toll-free area code, 833. In anticipation of the introduction of this new area code, the Commission asked RespOrgs to submit a pre-request for up to 2000 individual preferred numbers. From these submissions, the Commission determined there were approximately 17,000 numbers requested by multiple RespOrgs – including at least 10 that 65 or more RespOrgs requested.[14]

The Commission proposes using an auction rather than a lottery or a first-come, first-served system to assign those numbers requested by multiple RespOrgs. Specifically, the NPRM recommends allocating each number via a single-round, sealed-bid Vickrey Action. For each contested number, the auctioneer would solicit a single, confidential bid from each interested RespOrg. The highest bidder wins the number, and pays the amount of the second-highest bid.

Numbers that did not solicit interest from multiple RespOrgs would be assigned via the traditional first-come, first-served mechanism.

There are multiple advantages to using this system to allocate popular toll-free numbers. First and foremost, an auction helps assure that each number goes to the subscriber that values it most. As Coase explained, the price mechanism helps the Commission discover the value that each interested party places upon a scarce resource, in this instance, a particular toll-free number. By assigning the number to the RespOrg (and therefore, presumably, the subscriber) willing to pay the most for it, the Commission can maximize the likelihood that the number will go to its highest and best use. Prices are the way we allocate most scarce resources in American society, and there's no reason why toll-free numbers are any different than any other resource in that regard, except that they happen to be owned by the government.

Relatedly, the auction design deters strategic bidding. Because the winner pays the second-highest bid, the winner's surplus (the difference between what it was willing to pay and what it actually paid for the asset) does not depend upon the winner's bid, but that of the next-highest bidder. This generally encourages each interested RespOrg to place a bid that reflects its actual valuation of the number, rather than its attempt to predict a value slightly higher than its competitor's bid.[15]

Third, the auction discourages strategic behavior by RespOrgs. Because each RespOrg must "put its money where its mouth is," it has less incentive to warehouse or hoard numbers for which it has no buyer. Warehousing and hoarding are attractive strategies largely because the Commission offered the numbers for free, which means the strategies offer potential gain for little or no cost. By placing a price tag on each number, the Commission makes these strategies more costly (because warehoused or hoarded numbers tie up valuable capital) and therefore less likely.

Fourth, the auction conserves the Commission's limited resources. The single-round auction is much cheaper than a traditional multi-round auction, meaning the upfront administrative costs of the auction are minimal. And because prices deter strategic behavior, the Commission will need fewer resources dedicated to ongoing enforcement mechanisms such as monitoring to prevent warehousing and hoarding. In an era of declining administrative budgets, it makes sense for the agency to rely on market forces when possible to help combat strategic behavior.

Finally, and relatedly, the auction raises revenue. The Commission proposes to use the auction proceeds to help defray the costs of administering the toll-free numbering plan.[16] Perhaps the amount raised may not be significant. But given that these administrative costs are a necessary expense to maintain toll-free numbering, it makes sense to use the auction to shift at least some of those costs to the subscribers who benefit most from the service.

B. Prior Auction Experience

Although auctioning toll-free numbers is a new initiative at the Commission, it is not without precedent. The NPRM notes that the Australian Communications and Media Authority auctioned 1.8 million unreleased toll-free numbers between 2005 and 2015.[17] According to the agency's

report, the most desirable numbers in the pool were sold in highly competitive auctions, raising $17.6 million in the first year alone for the first 10,339 numbers.[18] Unsurprisingly, the most valuable numbers were numbers that spelled out memorable words. The highest bid, topping $1 million, was for 138 294, which translated to the phoneword "13 TAXI".[19] But after the first few years, auction activity dropped off, and many numbers left in the pool were uncontested and ultimately sold for the auction reserve price.[20] The Commission surmises from the Australian experience that the auction was best deployed as a sorting mechanism for contested numbers. In contrast to the Australian design, the Commission proposes giving uncontested numbers away on a first-come, first-served basis rather than charging a single bidder a reserve price, so as to deploy as many numbers into the marketplace as quickly as possible.

And, of course, this is not the Commission's first experience with auctions. The agency faced many of these similar issues when wrestling with how to allocate another scarce communications input that it manages, namely the spectrum. Indeed, Coase leveled his 1959 broadside specifically at the agency's practice of allocating spectrum licenses to broadcasters via comparative hearings rather than auctions or some other pricing mechanism. Beginning in 1982, the Commission allocated some non-broadcast spectrum licenses via lottery – a system similar to the current system for initially allocating popular toll-free numbers to RespOrgs when a new area code is opened.

But the distorted incentives made the lottery system unworkable. The Commission's inability, or unwillingness, to regulate license transfer, and the low upfront cost to participate in the lottery, caused the FCC to be deluged with applications every time a lottery was announced. Many participants had no desire to use the spectrum themselves, but instead sought a chance to secure a government asset for free that could then be resold for a significant sum. Congress ultimately stripped the Commission of lottery authority in 1997, forcing the agency instead to allocate such licenses via auction. Notably, because of the secondary market, it was likely that these spectrum licenses ultimately went to the user that valued it most. But using an auction meant that the value went to the U.S. Treasury rather than the lucky lottery winner. Since 1997, the Commission has successfully used auctions to free wide swaths of spectrum for next-generation communications purposes – most recently with the pending broadcast incentive auction – while recovering billions of dollars for taxpayers.

C. Lifting Prohibitions on the Secondary Market

Perhaps equally importantly, the proposed NPRM recommends lifting the existing ban on trading toll-free numbers on the secondary market.[21] As noted above, currently a subscriber that wishes to cancel toll-free service must surrender the number back to the database for reassignment on a first-come, first-served basis. This system perpetuates the inefficiencies of the current command-and-control regime, such as destructive competition among RespOrgs for better database access, and the likelihood that the number would be reassigned to an entity other than the one that values it most.

The Commission could, of course, correct these problems by auctioning numbers anew once they become eligible for reassignment. This solution is preferable to the current system for the

reasons listed above. But if the goal is to use price to guide numbers to those who most value them, it is suboptimal to insert the government into the transaction as a middleman.

The Commission notes significant potential benefits to allowing customers to sell toll-free numbers at market prices. The right to resell allows the number to be considered an asset of the subscriber. So if, for instance, a business is sold to a new buyer, the buyer could elect to purchase the business's existing toll-free number in addition to the other inputs of the operation.[22] Similarly, if a business that owns a popular toll-free number falls into bankruptcy, the court could permit sale of the number to help compensate creditors. More generally, allowing resale provides incentives for existing toll-free number holders to transfer the asset to someone who values it more. Company A may value its existing toll-free number at $20,000. Company B, with a different business model, may be willing to pay $40,000 for that number, because of the greater effect the number would have on Company B's operations. It is better for society if the number shifts to Company B. But if, as now, Company A has no incentive to agree to the transfer, it will keep the toll-free number itself, which is a suboptimal allocation of public resources. The right of resale makes it easier for toll-free numbers to flow to their highest and best use.

The potential for resale could also boost initial auction prices. If the business fails, the holder of the toll-free number knows that he or she might cut losses by selling the number as one of the firm's assets. This makes the number more valuable, and therefore at the margin, could increase the price the business is willing to pay for the number at the outset. In this way, the government can capture a greater share of the value of the toll-free database.

Conclusion

In his landmark work *The Structure of Scientific Revolutions*, Thomas Kuhn uses Nicolaus Copernicus to explain how new ideas change scientific thinking. From ancient times, he explains, astronomers believed Ptolemy's view that the sun orbited in a perfect circle around the Earth. But as instruments got better and the sun did not behave as predicted, scientists began tinkering with the model to match their observations. Perhaps the sun doesn't move in a circle, but an ellipse. No, wait. Perhaps it is moving in little circles while completing its elliptical orbit, like a corkscrew. Eventually, science relied upon so many "epicycles upon epicycles" to make the data fit the theory that Copernicus found it easier just to upend the model. The reason the data doesn't match the theory was because the sun does not orbit the earth, but the other way around.

One can level the same critique at the FCC's command-and-control model. Strict daily limits on allocation, coupled with a monitoring regime to deter warehousing and hoarding, plus an expensive and somewhat ineffective prohibition on brokering, are all regulatory epicycles upon epicycles. They are not necessary regulatory tweaks, but rather evidence that the dominant paradigm is broken. Like Copernicus, Ronald Coase offered an alternative market-based model that better fit society's goals, one that has gained traction over time and improved both the agency and the industry that it oversees.

The Toll-Free Assignment Modernization proposal may seem mundane, especially after such a high-profile flurry of FCC activity over the last several months. But the fact that it seems

mundane is strong evidence of how far the agency has come since Coase first critiqued it back in 1959.

While more work remains to be done, market-oriented reforms have helped make the communications marketplace more efficient and more innovative. These reforms ultimately benefit the American public. This month's proposed NPRM to auction toll-free numbers is another, momentous reform in the right direction.

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[1] Ronald Coase, Testimony before the FCC, December 1959. Reprinted in 4 STUDY OF RADIO & T.V. BROADCASTING (No. 12,782) (1959). Coase was speaking specifically about the allocation of broadcast licenses, but his argument is equally applicable to other resources that the Commission assigns via a command-and-control system.

[2] Ronald 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, 579 (1998), quoted in Stuart Minor Benjamin & James B. Speta, TELECOMMUNICATIONS LAW AND POLICY 62 (4th Ed. 2015)

[3] 47 C.F.R. § 52.101(b).

[4] Id. § 52.111; see Toll-Free Service Access Codes, Fourth Report and Order and Mem. Opinion and Order, 13 FCC Rcd. 9058, 9066 ¶ 16.

[5] 47 C.F.R. § 52.105(a).

[6] Id. § 52.107.

[7] Id. §§ 52.105(a), 52.107.

[8] Id. § 52.107.

[9] Toll Free Service Access Codes, 25 FCC Rcd. 13687, 13688-90 ¶ 3-6 (2010); Toll Free Access Codes, 28 FCC Rcd. 16139, 16140-31 ¶ 3 (2013); id. at 16142 ¶ 6-7.

[10] See, e.g., Diana Lock, *Toll-Free Vanity Telephone Numbers: Structuring a Trademark Registration and Dispute Resolution Regime*, 87 CAL. L. REV. 371, 387 (1999).

[11] See Toll Free Assignment Modernization, Draft Notice of Proposed Rulemaking, ¶ 32, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0907/DOC-346588A1.pdf (hereafter "Proposed NPRM").

[12] Id. ¶ 10.

[13] Id.

[14] Id. ¶ 4.

[15] Id. ¶ 16.

[16] Id. ¶ 26.

[17] Id. ¶ 11.

[18] See Austl. Commc'ns & Media Auth., Telecommunications Performance Report 2004-05 at 11, 201-202, available at https://www.accc.gov.au/system/files/37%20-%20ACMA%20Telco%20Performance%20Report%202004-05.pdf.

[19] Id. at 202.

[20] Proposed NPRM ¶ 11.

[21] Id. ¶ 31.

[22] Id.