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I joined the newly-created (and now eliminated) Competition Division at Federal Communications Commission about eighteen months before Congress passed the 1996 Act.[1] To give you an idea about the state of the market at the time, consider the following statistics: At the time, all but 6% of American households had a wireline telephone provided by a local telephone monopoly; today, less than half do.[2] Access charges were nearly $0.07 and a long distance call would run you about $0.14 per minute;[3] today, there is no longer an independent "long distance market." Wireless voice service was considered a luxury, with only about 20 million wireless subscriptions; today, there are over 355 million.[4] The first spectrum auction would take place in my first year at the Commission, permitting the entry of multiple new wireless providers and creating a consumer product of broad appeal not long afterwards; today, the FCC recently completed Auction 97.[5] Windows 3.1, the first commercially successful version of the now-ubiquitous Windows operating system, became available only two-years prior to the Act.[6] My FCC computer had a 20-megabit hard drive running a 486 processor. The Internet was in its infancy. About a year after I started, a few of us in the Competition Division would figure out how to hack our way to the World Wide Web from our work desktops using the Mosaic browser—a practice not formally encouraged by the Commission. AOL would not begin offering an unlimited fixed-price dialup service until 1996.[7] The FCC

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1. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.).

2. *See* FCC, TRENDS IN TELEPHONE SERVICE (July 1988), https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend298.pdf; *see also* Alina Selyukh, *The Daredevils Without Landlines—And Why Health Experts Are Tracking Them*, NPR (Dec. 3, 2015), http://www.npr.org /sections/alltechconsidered/2015/12/03/458225197/the-daredevils-without-landlines-and-why-health-experts-are-tracking-them.

3. *See* TRENDS IN TELEPHONE SERVICE, *supra* note 2, at 4 tbl. 1.2, 74 tbl. 13.5.

4. *See id*. at 8 tbl. 2.1; *see also Year-End U.S. Figures from CTIA's Annual Survey Report*, CTIA (June 2015), http://www.ctia.org/your-wireless-life/how-wireless-works/annual-wireless-industry-survey.

5. *See* Peter C. Cramton, *The FCC Spectrum Auctions: An Early Assessment*, 6 J. ECON. & MGMT. STRATEGY 431, 438 (1997); *see also Summary for Auction 97*, FCC (Oct. 1, 2015), http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=97.

6. *See A History of Windows*, MICROSOFT (Oct. 2015), http://windows.microsoft.com/en-us/windows/history#T1=era3.

7. *See AOL Pricing Draws Fire*, CNN MONEY (Nov. 1, 1996), http://money.cnn.com/1996/11/01/technology/aol.

would not begin reporting the number of high-speed Internet connections until 2000.[8]

There was plenty of traditional regulation going on at the time, but the promotion of competition was the focus of attention.[9] Americans had already experienced the benefits of competition in consumer premises equipment and in long distance services—they could choose from over 800 long distance providers in 1994 and prices were steadily falling.[10] But, local telephone and cable television services remained, for all practical purposes, monopolies. As for local telephone services, FCC statistics assigned a market share to competitive providers of 0.3% in 1994, and DirecTV was launched in that year.[11] Direct competition from cable overbuilding, the topic of my PhD dissertation, was exceedingly sparse. Increasing, if not outright creating, competition in these last vestiges of monopoly in communications was on everyone's mind.

As we searched for ways to affirmatively nudge these markets toward competition, the tendency at the time was to point to regulation as a barrier to competitive entry, and rightfully so. Regulation was then, and remains today (though perhaps less so), a barrier to entry into local markets. More significant to the deterrence of entry, however, was and is the fundamental economics of providing local wireline services; fixed costs are high relative to market size thereby limiting the number of financially-viable providers.[12] But we weren't greedy—we would be happy with only one additional facilities-based entrant and understood even this to be a long shot. Duopolistic competition was the objective, and we understood that even two-firm rivalry would outperform regulation in almost all cases. Congress felt the same and codified the sentiment: the 1992 Cable Act defined "effective competition" as the presence of one-half a competitor, a situation that led to the forbearance of rate regulation.[13] If duopoly could be achieved, it was a

8. *See* HIGH-SPEED SERVICES FOR INTERNET ACCESS: SUBSCRIBERSHIP AS OF JUNE 30, 2000 (2000), https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/ hspd1000.pdf.

9. While much attention is given to the Telecommunications Act of 1996, history shows that there were efforts well underway to produce competition in local exchange markets before the Act. MCI Communications' "building blocks" approach laid out an early version of a network unbundling scheme. *See, e.g.,* Alexander C. Larson & Steve G. Parsons, *"Building Block" Cost Methods for Pricing and Unbundling Telecommunications Services: Implications for the Law and Regulatory Policy,* 36 JURIMETRICS J. 59, 87-96 (1995). Resale and unbundling were being "litigated" before some of the public service commissions in the Ameritech territory, especially in Illinois. *See* David J. Teece, *Telecommunications in Transition: Unbundling, Reintegration, and Competition*, 1 MICH. TELECOMM. & TECH. L. REV. 47, 94 & n.111 (1995). These ideas would form the basis of the unbundling regime contained in the 1996 Act. Unbundling was not a federal idea.

10. *See* TRENDS IN TELEPHONE SERVICE, *supra* note 2, at 38 tbl. 9.1, 74 tbl. 13.5.

11. *See id.* at 29 tbl. 8.1; *see also A Look Back at 1994*, SATELLITE BIS. NEWS (June 29, 1994), http://www.satbiznews.com/94look.html.

12. George S. Ford et al., *Competition After Unbundling: Entry, Industry Structure, and Convergence*, 59 FED. COMM. L. J. 331 (2007)

13. 47 U.S.C. § 543(*l*)(1)(B) (2012).

victory and the starting point for deregulating the communications landscape.

Promoting competition and deregulation, though the two need not be interdependent (regulation can be bad even under monopoly), were our goals and eventually the nation's goals with the passage of the Telecommunications Act of 1996.[14] I would not work on implementing the 1996 Act at the Commission; in August of that year, I took an economist position at MCI Communications. MCI was the leader in promoting competition in those days—a creative and intelligent group with great respect for the law, the economics, and the engineering of the communications industry. Later, as a result of the darkness we know as Bernie Ebbers,[15] I would take a job with Z-Tel Communications, a small Competitive Local Exchange Carrier (CLEC) based in Tampa, Florida. The company began as a software company, trying to make telephone service more useful, but learned that to offer its services it needed to own the customer, a need that could be met using the unbundled network element (UNE) Platform.

Both MCI and Z-Tel were active users of unbundled elements and vocal advocates for it. About the time a business plan using network elements appeared feasible, the unbundling regime began crumbling. Incessant litigation, the FCC's inability to set a legal "impairment" standard, and the adverse political winds were taking their toll. Regulation and litigation were against the CLECs, but my vision of the CLECs death came in the early 2000s, a few years before the FCC would effectively shelf the unbundling experiment. Bright House (the cable system in Tampa) began offering a fully-featured, unlimited voice service for much lower than the price offered (or could be offered) by CLECs for the same service. Seeing this development first hand, I knew the CLEC sector was doomed.[16] The unbundling regime—which rested on shifting political sands, heavy regulation by both state and federal regulators, and poor incentives—was no match for facilities-based entry by the cable industry. In my research on the industry prior to my employment at the FCC, I had read numerous articles published the 1980s and 1990s talking of cable systems offering phone service and telephone carriers offering video service. This cross-entry was a bit of running joke at the Commission. And then, it wasn't a joke anymore—it was reality. Since the costly unbundling regime offered nothing better than the cable industry could provide (as well as other Internet-based phone providers), the unbundling scheme became, in almost an instant, a very high-cost, low-benefit public policy.[17]

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14. *See* George S. Ford & Lawrence J. Spiwak, *Section 10 Forbearance: Asking The Right Questions To Get The Right Answers*, 23 COMMLAW CONSPECTUS 126, 133 (2014).

15. *See Bernie Ebbers*, TIME (June 9, 2009), http://content.time.com/time/specials/packages/article/0,28804,1903155_1903156_1903277,00.html.

16. *See* Louis Hau, *Bright House Rolls Out Internet Phone Service*, ST. PETERSBURG TIMES (Aug. 31, 2004), http://www.sptimes.com/2004/08/31/Business/Bright_House _rolls_ou.shtml.

17. *See* Ford & Spiwak, *supra* note 14, at 134-36.

During the implementation of the 1996 Act, I was engaged in a continual stream of fights over unbundling rates, statistical performance plans, and the entry of the local phone companies into the long distance industry. It was an exciting time for communications policy professionals. The lessons learned over this period are too numerous to list and perhaps too numerous to recall (though likely stored in the unconscious). There are a few lessons, however, that continually influence my thinking on the industry and its regulation.

First, an expert in local wireline service competition must be an expert in the economics of competition in concentrated markets. Almost all the policy conservation is about large numbers competition, which is entirely inappropriate and misleading given that the economic conditions of the industry limit the number of financially-viable competitors. In fact, when fixed costs are high, as they are, adding competitors can be detrimental to social welfare. What is often misunderstood about competition is that price cuts must be purchased by society, the price of which is the replication of fixed costs. At some point, the price effects just aren't worth the cost, and this happens with very few competitors in naturally concentrated markets.

Second, there is no real constituency for competition. Firms mostly hate it, and the government is interested only if competition produces the outcomes it deems desirable. It rarely does. Competitive firms don't like to sell things below their costs, but government officials love for them to do so. Subsidies, which infect the industry even today, are the enemies of competition but the friend of elected officials (and their appointees). Practices like usage-based pricing, promotional strategies, and two-sided pricing are competitive outcomes, yet often despised by regulators. [18] Regulators want what they want, not what the interaction of buyers and sellers produces. As economist Friedrich Hayek observed, "competition is important only because and insofar as its outcomes are unpredictable and on the whole different from those that anyone would have been able to consciously strive for; and that its salutary effects must manifest themselves by frustrating certain intentions and disappointing certain expectations."[19] Policymakers often pick desired outcomes and then, unthoughtfully, expect competition to produce them. It often doesn't work out as intended.

Third, the argument for competition is an argument against regulation. Both telephone and cable services were heavily regulated in the early 1990s. Regulation, done properly, is intended to mimic competition. If effective, then the presence of regulation should imply no need for competition. Yet, when competition appeared in the communications landscape, there was no question about its measurable and often significant effects. The desire for competition demonstrates a dissatisfaction with regulation, something often forgotten in today's policy debate—a lapse that had led, in part, to the present

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18. *See* George S. Ford et al., *A Policy and Economic Exploration of Wireless Carterfone Regulation*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 647, 650-51 (2009).

19. *See* Friedrich Hayek, *Competition as a Discovery Procedure*, 5 Q. J. AUSTRIAN ECON., Summer at 9, 10 (2002).

regulatory revival at the FCC. Neither regulation nor competition can consistently satisfy the ever-shifting whims of politicians and political advocates; dissatisfaction is the only constant.

Fourth, and related to the third, the 1996 Act provided an experiment that revealed just how hard regulating the communications business is. I learned this lesson working on the payphone proceeding, implementing Section 276[20] of the 1996 Act (a task most would view as dreadful, but I continue to consider the most interesting proceeding of my twenty-plus year career). In the years after the 1996 Act was passed, the Commission was engaged in a number of highly involved and simultaneous proceedings including unbundling and the reform of the access charge regime and its universal service programs. But, in the midst of all this complexity, there was a payphone proceeding in which the Commission was required to set a single price for a single service—a service whereby consumers could connect to a long distance provider to make phone calls from payphones to avoid the typically high rates charged by the payphone providers. This simple task served as a test for the Commission's regulatory prowess. It took the Agency three tries to write a legally-defensible order.[21] In my view, the final order was as defective as the two prior, but the court seemed exhausted with the issue and by the time the FCC was done, the payphone industry was a shadow of its former self (falling from over two million phones to about 400,000 today). The Agency's inability to routinely set a single price for a clearly defined service shows just how hard it is to regulate communications. A little humility, and a little empathy, are called for.

Fifth, now that competition exists in pretty much every sector of the communications industry, the FCC is primarily in the business of shifting around rents among industry participants. The Commission's net neutrality rules, for example, are plainly designed to shift rents away from infrastructure companies and toward edge providers. Given that few competitors is the rule, a "high concentration" story is always available to those wanting more regulation as an excuse for regulatory intervention to favor one industry segment over another or to "protect consumers." The number of competitors sufficient to end the call for regulation equals the number of guitars a guitar player needs—one more. If you put out a complaint box, you'll get complaints.

Sixth, language matters. Sitting on my desk at Z-Tel was a large stack of testimony by ILEC experts from years before touting the benefits of LRIC (long run incremental cost) pricing. It was unusable against their attacks on TELRIC (total element long-run incremental cost pricing) because the FCC had appended "TE" to "LRIC" and, consequently, created an entirely new animal. They were the same cost standards, but this simple change in the language led to enough confusion to largely render decades of research and testimony on LRIC useless in an adversarial proceeding. Through a smart

20. 47 U.S.C. § 276 (2012).
21. *See* Sprint Corp. v. FCC, 315 F.3d 369, 371-73 (D.C. Cir. 2003).

and effective media campaign, the ILECs defined TELRIC (in the public view) as "below cost pricing." Despite the Supreme Court affirming the cost standard in 2002, TELRIC would never shake this perception (it remains intact today).[22] Be careful of the language you use.[23]

Of course, the bigger question is what has the larger "policy collective" learned from the experience of the 1996 Act? As far as I can tell, not much. It is said that those who cannot remember the past are doomed to repeat it.[24] The early reflections are now audible.

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22. *See* Verizon Communications, Inc. v. FCC, 535 U.S. 467 (2002).

23. *See, e.g.*, Julian Hattem, *A New Name for Net Neutrality*, THE HILL (Sept. 11, 2014), http://thehill.com/policy/technology/217391-new-name-for-net-neutrality.

24. *See* George Santayana, LIFE OF REASON, VOL. I (1905).