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CARTERFONE: MY STORY

Nicholas Johnson[†]

Abstract

Thomas Carter invented the “Carterfone”—an acoustic coupling device that enabled the connection of a telephone handset to a radio transceiver.¹ AT&T, the dominant telephone company at the time, advised its customers that the Carterfone was a prohibited “interconnecting device” under FCC Tariff No. 132, which essentially made it unlawful for telephone subscribers to connect their own equipment to AT&T’s telephone network.² Carter brought suit against AT&T in federal court, alleging that AT&T’s warnings to its customers constituted a violation of the Sherman Anti-Trust Act.³ Carter’s suit ultimately culminated in the FCC’s landmark Carterfone decision.⁴ In *Carterfone*, we held that “application of [FCC Tariff No. 132] to bar the Carterfone in the future would be unreasonable and unduly discriminatory . . . and that the provisions prohibiting the use of customer-provided interconnecting devices should accordingly be stricken.”⁵ This result, originally set in motion by Thomas Carter’s unprecedented challenge to the telephone monopoly, paved the way for a period of profound technological innovation in the telephone equipment industry and to the Internet beyond.⁶

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1. *In re Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420 (1968).

2. Matthew Lasar, *Any lawful device: 40 years after the Carterfone decision*, ARS TECHNICA, June 26, 2008, <http://arstechnica.com/articles/culture/carterfone-40-years>.

3. *Id.*

4. *In re Use of Carterfone Device*, 13 F.C.C.2d at 420.

5. *Id.* at 423.

6. See Lasar, *supra* note 2.

TELEPHONE ORIGINS

Our story begins not forty years ago, when *Carterfone* was decided,⁷ but 132 years ago in 1876—a good year, a vintage year for telephony, and sufficiently so that I chose it as my postal box number in Iowa City. Alexander Graham Bell, better known for the telephone than for the cracker that bears his name,⁸ filed his patent on February 14th of that year—and received patent number 174,465 three weeks later on March 7th—for what he called the “talking machine.”⁹

It is a bit ironic for our purposes that the funding for Bell’s efforts came from someone motivated by a desire to bust the monopoly of the Western Union Telegraph Company, a lawyer who would later become Bell’s father-in-law, Gardiner Greene Hubbard.¹⁰ Actually, Bell misrepresented to Hubbard that he was working on an invention that would permit one wire to carry multiple telegraph messages simultaneously¹¹—something, however, he also accomplished.¹²

Although you might not guess it from my appearance, the truth is that I had not yet been born in 1876. I am, however, old enough to have lived through over half of the history of the telephone. When I first went to visit my uncle’s farm near Galva, Iowa, in the 1930s, it might as well have been the 1830s. There were horses for power. Wind pumped the water for the horses and we pumped the water for ourselves by hand. The toilet was outdoors. In addition to the horses there were dairy cows, hogs, chickens, and an occasional goat to care for. Corn was picked by hand. Cooking was done on a wood stove that also provided heat for the house. A garden was the source for most of our produce, some of which was either canned or stored below ground for winter. If you wanted to talk to someone in town you either walked or rode along a dirt road—virtually impassible when muddy.

7. *In re Use of Carterfone Device*, 13 F.C.C.2d at 420.

8. ANDREW F. SMITH, *THE ENCYCLOPEDIA OF JUNK FOOD AND FAST FOOD* 120 (2006).

9. N.R. DANIELIAN, A.T.&T. *THE STORY OF INDUSTRIAL CONQUEST* 7-8 (1939); *Improvement in Telegraphy*, U.S. Patent No. 174,465 (filed Feb. 14, 1876) (issued Mar. 7, 1876).

10. Mary Bellis, *The History of the Telephone—Alexander Graham Bell: Alexander Graham Bell and Elisha Gray raced to invent the telephone*, ABOUT.COM, <http://inventors.about.com/od/bstartinventors/a/telephone.htm> (last visited Feb. 26, 2009).

11. HORACE COON, *AMERICAN TEL & TEL: THE STORY OF A GREAT MONOPOLY* 20 (1939).

12. See EDWIN S. GROSVENOR & MORGAN WESSON, *ALEXANDER GRAHAM BELL: THE LIFE AND TIMES OF THE MAN WHO INVENTED THE TELEPHONE* 53, 56 (1997).

With the coming of electricity, all that changed. I no longer had to clean the kerosene lantern chimneys each morning. We had light bulbs, indoor toilets, heat in the winter, and we had two wonderful inventions that had to be cranked to start. One was the tractor. The other was—that's right—the telephone, in a wooden box on the wall.¹³ Of course, it was a rural party line.¹⁴ When we had a call, not only did our phone ring with our distinctive ring, but so did everyone else's up and down the road. Anyone who wanted to listen in could do so—kind of like the way the federal government does with our calls today.¹⁵

In Iowa City, Iowa, the town where I was born and raised (and to which I have returned from Washington, D.C.), telephony was a little better and came a little faster. But a long distance call was still a pretty big deal—and expensive.¹⁶ We couldn't call direct.¹⁷ We'd have to call the Iowa City operator and tell her whom we wanted to talk to, say my aunt and uncle in Galva. The Iowa City operator would call the Galva operator who would try to reach them.

There were, however, advantages to this system. If there was no answer at the farm, the operator might say she had just seen my aunt cross the street at the hardware store and would ask if we would like to call her on the phone over there.¹⁸

We only had three other families on our line in Iowa City. The phone company handed out four-digit phone numbers like house numbers, walking down the street and assigning them in numerical order. Over the years we've kept those last four digits, as the phone company first added a fifth number, then two more, and finally an area code.¹⁹ Ultimately, the phone company was able to require us to

13. LEWIS COE, *THE TELEPHONE AND ITS SEVERAL INVENTORS* 104-12 (1995).

14. *Id.* at 104 (describing that rural party lines often had eight or more subscribers connected to the same line and each subscriber could hear all the conversations on the line).

15. See, e.g., *Ex-Snoop Confirms Echelon Network*, CBS NEWS, Mar. 1, 2000, <http://www.cbsnews.com/stories/2000/02/24/60minutes/printable164651.shtml>.

16. Robert MacDougall, *Long Lines: AT&T, Long Distance Telephony, and Corporate Control*, 3 BUS. & ECON. HIST. ON-LINE 4, <http://www.thebhc.org/publications/BEHonline/2005/macdougall.pdf>.

17. See generally COE, *supra* note 13, at 104 (explaining that while coded rings were often used to alert a desired person on a party line, the call was not direct and others could always listen in).

18. Nicholas Johnson, *Ernestine in the 21st Century: Take Me Home Country Roads*, 2002 NAT'L RURAL TELECOMM. CONGRESS, Oct. 7, 2002, <http://www.uiowa.edu/~cyberlaw/writing/rtc21008.html>.

19. See LEONARD S. HYMAN ET. AL., *THE NEW TELECOMMUNICATIONS INDUSTRY: MEETING THE COMPETITION* 111 (1997) (discussing the invention of long-distance calling without the aid of operators after World War II); see also Verizon Area Code Basics,

place our own long distance calls—even the overseas calls—and charge us for doing it.

Although I might note that when I took my first trip from my office as Maritime Administrator to the FCC, this agency, with responsibility for the nation's communications, had not made that much progress. Its offices were located in the attic of the old post office building and up over a delicatessen on 12th Street.²⁰ You could not make a direct call from your office. Every call went through a switchboard.²¹

Then FCC Chair Rosel Hyde²² and I decided to change the FCC's image by moving into a building of our own, getting rid of the switchboard, and modernizing an agency seal that seemed to display a carrier pigeon along with a lot of overhead telephone wires.²³

In the biggest cities there were "exchanges."²⁴ When I first worked for Covington & Burling²⁵ in Washington, D.C., the firm's number was "REpublic 7-5000."

Eventually cross-bar switches²⁶ gave way to electronic switching systems (ESS),²⁷ the black dial phones gave way to green touch-tone phones, and the named exchanges gave way to seven-digit phone numbers ("All Number Calling")²⁸—but not without considerable protest from those, especially in California, who felt that a computerized world in which only numbers would count was dehumanizing.²⁹

http://www.vzmultimedia.com/customersupport/areacodes/areacode_basics.html (last visited Feb. 4, 2009).

20. See Places to Tour: Old Post Office Building, <http://tourofddc.org/tours/OldPostOffice> (last visited Feb. 5, 2009).

21. See HYMAN, *supra* note 19, at 20, 111.

22. WALTER B. EMERY, BROADCASTING AND GOVERNMENT: RESPONSIBILITIES AND REGULATIONS 364, 376-77 (1961).

23. The FCC seal can be found on many FCC documents. See, e.g., FCC, INFORMATION TECHNOLOGY STRATEGIC PLAN (2002), available at <http://www.fcc.gov/omd/strategicplan/InfoTechnologyPlansandReports/itsp-07-23-02.pdf>.

24. See Telephone Exchanges: A Historical Site, <http://phone.net46.net> (last visited Feb. 4, 2009) (comparing the exchange system used in big and small cities).

25. Covington & Burling LLP, <http://www.cov.com> (last visited Feb. 4, 2009).

26. See HYMAN, *supra* note 19, at 50.

27. See SUSAN E. MCMASTER, THE TELECOMMUNICATIONS INDUSTRY 69, 112 (2002) (stating that the ESS system was an improvement upon the cross-bar switches of the 1930s).

28. See Jim Blount, *Dial Tone Came to Hamilton Phone Users in 1947*, JOURNAL-NEWS, Dec. 13, 2006, available at <http://www.lanepi.org/blount/jbcols/documents/13694DCA3D7F0E0D93814022E5C1C792FBE8014F.html>.

29. See Wikipedia.org, Telephone Exchange Names,

The job of switchboard operator was thought, in an earlier sexist era, to be women's work.³⁰ Had those beliefs persisted and no technological innovations intervened, switchboard operations would today require that every female in America work for the telephone company. Instead, the technological innovations in telephony since then have permitted the phone company to hand over to its customers the responsibility for switching operations,³¹ and then *charge* the customers for what they formerly *paid* the operators to do.

But all of this was slow in coming. By the 1940s, over sixty-five years after New Haven had America's first switchboard, only one-half of America's homes had a telephone.³² Compare that rate of adoption to what we've seen with regard to the new electronics technology since, say, 1980. My son, Gregory,³³ is what we call an "early adopter."³⁴ One of the advantages he provides me, given the rates of evolution in today's technology, is that he passes hand-me-downs to me that are still under warranty.

We have watched and listened as music has gone from phonograph records to cassette tapes to compact discs and then to individual electronic files on iPods. Audio-visual technology has evolved from eight and sixteen-millimeter film to video tape, from

http://en.wikipedia.org/wiki/Telephone_exchange_names ("In some cities, such as San Francisco, opposition was organized; the opposition group in San Francisco was called the *Anti Digit Dialing League*, of which S.I. Hayakawa was a notable member. The opposition forced AT&T to slow down the conversion, and names did not totally disappear in major cities until 1978 (New York City & Philadelphia), long after AT&T had hoped to complete the conversion.") (last visited Feb. 6, 2009); *see also* KIRKPATRICK SALE, SDS (1973) (discussing protests by University of California Berkeley Students for a Democracy Society (SDS) who "wore placards saying 'Do not bend, fold, spindle or mutilate'"—a common instruction regarding the computer-readable cards of the 1960s).

30. See Jim Blount, *Female Operators Key to Phone Service for Decades*, JOURNAL-NEWS, Dec. 6, 2006, available at

<http://www.lanepi.org/blount/jbcols/documents/13694DCA3D7F0E0D93814022E5C1C792FBE8014F.html>; Dogpile Images Search, History of the Telephone,

http://www.dogpile.com/dogpile_blog/ws/results/Images/History%20of%20the%20Telephone/3/0/0/Relevance/zoom=off/qi=37/qk=18/bepersistence=true/_iceUrlFlag=?_IceUrl=true (last visited Feb. 15, 2009) (showing photograph of female operators working at a telephone switchboard).

31. DANIELIAN, *supra* note 9, at 3.

32. See Paul S. Boyer, *Telephone*, ENCYCLOPEDIA.COM, <http://encyclopedia.com/doc/1O119-Telephone.html>.

33. ResourcesForLife.com, Resources for Better Living, <http://www.resourcesforlife.com> (last visited Apr. 7, 2009).

34. See Search Server Visualization Definitions, http://searchservervirtualization.techtarget.com/sDefinition/0,,sid94_gci1127868,00.html (last visited Feb. 15, 2009).

analog to digital, from broadcast to cable and satellite, from videotape to DVD, and from networks' studios to YouTube. Computers, once room-sized mainframes,³⁵ became desktops, laptops, and palm-sized devices. We have watched the growth in the percentages of homes and schools with computers,³⁶ and then dial-up connections,³⁷ and now broadband.³⁸ The early computer network of the Defense Department's Advanced Research Project Agency (ARPANET) evolved into the Internet,³⁹ and now the World Wide Web with its virtually instantaneous Google index of billions⁴⁰ of websites and blogs. I need not go on. The list is endless, and most of us have lived through it.

None of this evolution, this revolution, these changes, have taken anything like the time it took to get phones in half our homes—not to mention the decades it took us to get the overhead projector out of the bowling alley and into the classroom.⁴¹

35. See GEORGE P. OSLIN, *THE STORY OF TELECOMMUNICATIONS* 360 (1992) ("The Electrical Numerical Integrator and Computer (ENIAC) using 18,000 electronic vacuum tubes was built in 1946 by John William Mauchly. . . . That monster—the first electronic computer—weighed thirty tons and required 15,000 square feet of floor space.").

36. See generally JENNIFER CHEESEMAM DAY ET AL., U.S. CENSUS BUREAU, *COMPUTER AND INTERNET USE IN THE UNITED STATES: 2003* (2005), available at <http://www.census.gov/prod/2005pubs/p23-208.pdf> (assessing computer growth in schools); see also JOHN WELLS ET AL., NAT'L CTR. FOR EDUC. STATS., *INTERNET ACCESS IN U.S. PUBLIC SCHOOLS AND CLASSROOMS: 1994-2005* 14 (2006), available at <http://nces.ed.gov/pubspubs2007/2007020.pdf> (assessing computer growth in schools in Table 1-14).

37. NAT'L TELECOMM. AND INFO. ADMIN., *A NATION ONLINE: ENTERING THE BROADBAND AGE* 4 (2004), available at <http://www.ntia.doc.gov/reports/anol/NationOnlineBroadband04.pdf>.

38. See JOHN B. HERRIGAN, PEW INTERNET & AM. LIFE PROJECT, *HOME BROADBAND ADOPTION* (2008), available at http://www.pewinternet.org/pdfs/PIP_Broadband_2008.pdf.

39. ARPANET—The First Internet, http://www.livinginternet.com/ii_arpanet.htm (last visited Feb. 20, 2009).

40. See generally John Markoff, *How Many Pages in Google? Take a Guess*, N.Y. TIMES, Sept. 27, 2005, available at <http://www.nytimes.com/2005/09/27/technology/27search.html> (pointing out that Google stopped posting the number of pages on Google.com in 2005); see also Posting of Jesse Alpert & Nissan Hajaj to The Official Google Blog, *We Knew the Web was Big*. . . , <http://googleblog.blogspot.com/2008/07/we-knew-web-was-big.html> (July 25, 2008) (noting that the Google index hit 1 trillion page in 2008).

41. See generally THOMAS A. BEGGS, *INFLUENCES AND BARRIERS TO THE ADOPTION OF INSTRUCTIONAL TECHNOLOGY* (2000) (discussing the number of years it took to adopt projectors in the classroom), <http://frank.mtsu.edu/~itconf/proceed00/beggs/beggs.htm>; Britton Manasco, *Special Ed*, REASON, July, 1996, available at <http://www.reason.com/news/show/29962.html>.

TOM CARTER AND THE AT&T MONOPOLY

A good deal of this variety and rate of electronic change we owe to a very stubborn Texas cowboy who was willing to sell off his cattle ranches⁴² to help pay the lawyers to take on AT&T during a dozen years of litigation.⁴³ His name was Thomas F. Carter.⁴⁴ His device was the Carterfone. His case, his ultimate victory, is what we commemorate in this article.

To continue with our effort to relive a bit of those days, and put the *Carterfone* case⁴⁵ in a little context, recall that there was then but the one telephone company, *The Telephone Company*, AT&T.⁴⁶ Lily Tomlin simplified all the complexities of that monopoly in her Saturday Night Live sketch with Ernestine, the telephone operator that concluded: "We don't care. We don't have to. We're the telephone company."⁴⁷

In fairness to the phone company, many of its employees did care. AT&T was called "Ma Bell" for a reason by customers and employees alike.⁴⁸ The folks who put up and maintained the poles and lines had pride in the quality of their work, and the can-do dedication that kept them working through nights of summer storms and winter blizzards to restore service.⁴⁹ The company's stock ranked right up there with U.S. Government bonds for security, and provided significant assistance in old age to the employees and other investors who held on to it over the years.

Have you ever had the experience of hanging on the phone for hours trying to resolve a computer problem? The software manufacturer insists it is a hardware problem. The computer

42. Nicholas Johnson, *Bigger Isn't Always Better*, IOWA CITY PRESS-CITIZEN, July 4, 1983, available at <http://www.uiowa.edu/~cyberlaw/cpsr/bigger01.txt>; *Carterfone Changes Our World*, COMM. NEWS, Sept. 1984, available at <https://www.entrepreneur.com/tradejournals/article/print/569360.html>.

43. See Johnson, *supra* note 42.

44. MCMASTER, *supra* note 27, at 95-96.

45. *In re Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420 (1968), *reconsideration denied*, 14 F.C.C.2d 571 (1968). See also *Carter v. AT&T*, 250 F. Supp. 188 (N.D. Texas 1966), *aff'd*, 365 F.2d 486, 488 (5th Cir. 1966) ("invok[ing] the doctrine of primary jurisdiction to refer a question of tariff validity to the regulatory agency . . .").

46. See MCMASTER, *supra* note 27, at 92-93.

47. *Saturday Night Live: The Telephone Company* (NBC television broadcast Sept. 18, 1976) (transcript available at <http://snltranscripts.jt.org/76/76aphonecompany.phtml> (last visited Feb. 15, 2009)).

48. OSLIN, *supra* note 35, at 419.

49. See LEON W. GERMAIN, *Damaged Telephone Cables Send Their Own Alarms*, 25 BELL TELEPHONE MAG. 163, 167 (1946).

manufacturer insists it is a software problem. You are left in the middle, a phone in each hand, on hold. Talk about “we don’t care”!

There are advantages to a single company’s control of a basic industry—like Japan’s public broadcasting system, NHK, taking responsibility for the operation of everything from its stations’ transmitters to its viewers’ TV sets.⁵⁰

AT&T also offered one-stop shopping. If anything went wrong, you knew it was AT&T’s fault—and so did the company. They took responsibility and they fixed it. After all, they had manufactured the handset, wired your house, run the lines out to the street, to the switching station, and installed and operated the “long lines” networking the country.⁵¹ AT&T’s customer representatives were deprived of the argument that your problem was the fault of some other company.

Because AT&T had no meaningful competition, it also had no risks or challenges from innovative competitors. It did not need to worry about the thin line dividing “the leading edge” from “the bleeding edge” when considering new technologies. Like the range of colors Henry Ford offered his car buyers,⁵² AT&T’s phones also only came in a colorful black.⁵³ As I recall, the company had an eighty-year depreciation schedule on its telephone poles. Of course, this elimination of opportunity costs also eliminated opportunity benefits. What was saved for consumers in increased costs was denied to customers in increased efficiencies.⁵⁴

FOREIGN ATTACHMENTS

AT&T’s corporate philosophy regarding innovation was, not surprisingly, embodied in its tariffs: “No equipment, apparatus, circuit or device not furnished by the telephone company shall be attached to

50. See NHK Corporate Information, <http://www.nhk.or.jp/pr/english/profile/pforile.html> (last visited Feb. 26, 2009).

51. See AT&T, A Brief History, <http://www.corp.att.com/history/history1.html> (last visited Jan. 29, 2009).

52. MCMMASTER, *supra* note 27, at 58.

53. *Id.* Many years ago when the phone company was, finally, offering phones in a range of shapes and colors, my wife was called by a phone company salesperson who explained her choices. Deciding to have some fun with the salesperson, my wife asked: “You mean I could have phones that would be color coordinated with the rooms of my house?” “Oh, yes,” she was assured. “That’s wonderful,” my wife continued, “so tell me, do you have black?”

54. See Thomas Piraino, *Identifying Monopolists’ Illegal Conduct Under the Sherman Act*, 75 N.Y.U. L. REV. 809, 881 (2000).

or connected with the facilities furnished by the telephone company, whether physically, by induction or otherwise.”⁵⁵

Although as a small boy—and as a not so much older commissioner—I would have, and did, take issue with that tariff, I would today, forty years later, acknowledge that there is a superficial case to be made for it. Just as we try to discourage young children from poking silverware into electrical outlets, there would be a point to keeping them from taking, or inserting, electricity or electromagnetic signals into or out of telephone wall plugs. After all, when a young friend and I decided to wire our neighborhood for telegraph communication, or when we used a phono-oscillator kit⁵⁶ to broadcast on a local radio station’s frequency, it was only fortuitous that it simply never occurred to us to use the telephone network.⁵⁷

The problem, as we now recognize, is that AT&T took what could be reasonable precautions to extremes with its jingoistic characterization of any and all non-Bell objects as “foreign attachments.”⁵⁸ A tariff that prohibited a “device” from being “attached” to any of the “facilities furnished by the telephone company” could be interpreted to forbid the use of a plastic book cover on a heavily used phone book—and was so interpreted in North Carolina before being overturned by that state’s supreme court.⁵⁹ It could be read to forbid the attachment of a rubber shoulder rest on the handset, designed to reduce neck strain for those whose jobs required use of both hands for other tasks during hours of phone use.

This was the regulatory environment that our Texas cowboy decided to take on at about the same time I was also in Texas—though as an undergraduate and law student rather than a cattle rancher. In fact, I do not believe I ever even met Tom Carter before or after I wrote the *Carterfone* opinion.

55. See *In re Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420, app. A (1968) (reproducing F.C.C. Tariff No. 263 (1968), which is substantially similar to and supersedes F.C.C. Tariff No. 132 (1957)).

56. One can broadcast on an AM frequency to nearby radio receivers with a phono-oscillator kit. See generally TechLib, *Personal Radio Stations: Tunable Phono Oscillator*, <http://www.techlib.com/electronics/amxmit.htm#Phono> (last visited Feb. 26, 2009) (explaining how to transmit a radio signal on an AM frequency using a tunable phono oscillator).

57. Tapping into the telephone system could have disrupted neighbors’ service and possibly damaged the wires. See generally howstuffworks, *How to Clear Phone Line Noise*, <http://communication.howstuffworks.com/clear-phone-line-noise.htm/printable> (last visited Feb. 26, 2009) (explaining the effects of electrical interference on telephone networks).

58. See *In re Use of Carterfone Device*, 13 F.C.C.2d at 423-24.

59. WILLIAM VON ALVEN, COMM. CERTIFICATION LAB., *BILL’S 200-YEAR CONDENSED HISTORY OF TELECOMMUNICATIONS* (1998), <http://www.cclab.com/billhist.htm>.

CARTER'S CHALLENGE

Whether you characterize it as Tom Carter's inventive genius or just pragmatic problem solving, there is something about hardscrabble farming in Iowa,⁶⁰ ranching in Texas, and the popular saying from the 1930s—"Use it up, wear it out, make it do, or do without"⁶¹—that left those folks little alternative but to innovate, rather than purchase, the solutions to their challenges.

Tom Carter's challenge involved the question of how to place and receive phone calls while riding his horse or otherwise getting about on his cattle ranch when the phone was back in the ranch house. He started working on that challenge in 1949,⁶² but found the answers much easier with transistors than with vacuum tubes when he returned to the abandoned project in 1958 and promptly produced the first Carterfones.⁶³ They were essentially acoustic coupling devices that enabled the connection of a telephone handset to a radio transceiver, not that different from those early, 300 baud acoustic cup computer modem devices⁶⁴ used in the late 1970s and early 1980s.⁶⁵

Ultimately some 3,500 Carterfones were sold.⁶⁶ As he put it, "We just showed up at oil company shows and started selling. . . . I just didn't believe anyone I wasn't harming had the right to tell me I couldn't be in business."⁶⁷ As it turned out, he was correct in believing that AT&T did not have the *right* to tell Carter he "couldn't be in business,"⁶⁸ but he was wrong if he did not recognize that

60. See Elizabeth Gilbert, *The Home Place*, N.Y. TIMES, July 1, 2007 (describing a hardscrabble upbringing on an Iowa farm during the Great Depression while reviewing MILDRED ARMSTRONG KALISH, *LITTLE HEATHERS: HARD TIMES AND HIGH SPIRITS ON AN IOWA FARM DURING THE GREAT DEPRESSION* (2007)).

61. See Larry Grard, *Lessons from the Depression: Use it Up, Wear it Out, Make it Do or Do Without*, MORNING SENTINEL, Sept. 7, 2008, available at <http://morningsentinel.maintoday.com/news/local/5347980.html>.

62. *Carterfone Changes Our World*, COMM. NEWS, Sept. 1984, at 84, available at http://findarticles.com/p/articles/mi_m0CMN/is_n9_v21/ai_569360.

63. *Id.*

64. CHRISTOPHER H. STERLING, *SHAPING AMERICAN TELECOMMUNICATIONS: A HISTORY OF TECHNOLOGY, POLICY, AND ECONOMICS* 125 (2005).

65. E.g., Simon Fraser University Computing History Photo Gallery, 300-Baud Acoustic Modem, <http://www.ots.sfu.ca/ots/node/518> (last visited Feb. 5 2009) (describing modems from the 1970s).

66. See STERLING, *supra* note 64, at 125. See also *In re Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420, 421 (1968).

67. *Carterfone Changes Our World*, *supra* note 62, at 84.

68. See *id.*; *In re Use of Carterfone Device*, 13 F.C.C.2d at 423 (holding that the defendant telephone company's application of the tariff was "unreasonable, discriminatory, and unlawful in the past" and "application of the tariff to bar the Carterfone in the future would be

AT&T did have the motive and means to *fight* his being in business.⁶⁹ By the time of our 1968 decision in *Carterfone*, 100 of his former employees had left the business.⁷⁰ Carter, now alone, had to sell his remaining ranch and home.⁷¹ As he said, he “got a lot of moral support but not a dime of financial help.”⁷² Ultimately he and his wife, Helen, moved to a town with the wonderfully Texan name of Gun Barrel City.⁷³ In 1984 he said, “[I]t’s been a great relief moving down here. We were beat, tired out. I think it has added 10 years to my life.”⁷⁴ Seven years later, he died.⁷⁵

HUSH-A-PHONE

The most precedent-setting decision paving the way for *Carterfone* was the *Hush-a-Phone*⁷⁶ case. Today’s cell phone users have to be reminded to not use them in theaters, lecture, and symphony halls. When not otherwise restrained, however, on the street, in restaurants, or elevators, cell phone users are seemingly quite willing to allow the world to listen in on their side of the phone conversation. Perhaps that’s because they realize they are really talking into a radio—rather than a more secure landline phone—and they have knowingly given up any guarantee of privacy. A more likely explanation is that when talking on what they think of as a phone, they are transported in their mind to wherever the person they are talking to may be, a place from which they are unaware of their actual surroundings. This would also explain the number of cell

unreasonable and unduly discriminatory” such that the “provisions prohibiting the use of customer-provided interconnecting devices” must be struck).

69. The means used by defendant telephone companies, including AT&T, to prevent Carter from being in business included advising “their subscribers that the *Carterfone*, when used in conjunction with the subscriber’s telephone, is a prohibited interconnecting device, the use of which would subject the user to the penalties provided in the tariff.” See *In re Use of Carterfone Device*, 13 F.C.C.2d at 421.

70. See *Carterfone Changes Our World*, *supra* note 62, at 85 (noting that Carter watched his business “dwindle from 100 employees to a single employee” because although he had a lot of moral support when it came to his case, he did not receive “a dime of financial help”).

71. See *id.*

72. *Id.*

73. *Id.*

74. *Id.*

75. Obituaries, *Thomas Carter, 67, Who Beat A.T. & T. In Lawsuit, Is Dead*, N.Y. TIMES, Feb. 26, 1991, available at

<http://query.nytimes.com/gst/fullpage.html?res=9D0CE6D91F31F935A15751C0A967958260>.

76. See *In re Use of the Carterfone Device in Message Toll Telephone Services*, 13 F.C.C.2d 420, 423-24 (1968) (citing *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 269 (D.C. Cir. 1956), *remanded sub nom. to In re Hush-A-Phone*, 22 F.C.C. 112 (1957)).

phone-related automobile accidents. Whatever the reason, it is a decided change from the cherished notions of privacy that formerly accompanied telephone communication from pay phone booths, homes, and offices.⁷⁷

It was that notion of privacy, from the Hush-a-Phone's first entry into the market in 1920 forward,⁷⁸ which made it attractive to telephone users. Rather than having to cup one's hand over the mouthpiece and speak softly (thereby making it impossible to write at the same time), the Hush-a-Phone provided a physical enclosure that attached to the mouthpiece—more efficiently accomplishing the same purpose while leaving one hand free to write.

The phone company and FCC argued that the device would impair intelligibility by intensifying frequencies below 500 cycles in ways that could, at some point, create distortion or a blasting effect in the mouthpiece transmitter.⁷⁹ On appeal the District of Columbia Court of Appeals noted both a jurisdictional question, "whether the Commission possesses enough control over the subscriber's use of his telephone . . . to prevent him from conversing in comparatively low and distorted tones," and concern that it was "neither just nor reasonable" to argue that a telephone subscriber "may produce the result in question by cupping his hand . . . but may not do so by using a device."⁸⁰

But *Hush-a-Phone*, while certainly consistent with the ultimate holding in *Carterfone* and relied upon in the decision,⁸¹ scarcely made *Carterfone*'s resolution a slam dunk. The Hush-a-Phone was, after all, a physical device incapable of causing much more harm to AT&T's network than the rubber telephone handset shoulder rest, the plastic

77. See *Katz v. United States*, 389 U.S. 347, 351-52 (1967) ("[T]he Fourth Amendment protects people, not places. . . . [W]hat [a pay phone user] seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected. . . . [A] person in a telephone booth may rely upon the protection of the Fourth Amendment . . . [and] is surely entitled to assume that the words he utters into the mouthpiece will not be broadcast to the world.").

78. *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 267 (D.C. Cir. 1956).

79. *In re Hush-A-Phone Corp.*, 20 F.C.C. 391, 419 (1955) ("[T]he unrestricted use of foreign attachments . . . may result in impairment to the quality and efficiency of telephone service, damage to telephone plant and facilities, or injury to telephone company personnel . . .").

80. *Hush-A-Phone Corp.*, 238 F.2d at 269.

81. *In re Use of the Carterfone Device in Message Toll Telephone Service*, 13 F.C.C.2d 420, 423-24 (1968) (stating that "[t]he principle of Hush-A-Phone is directly applicable here . . .").

cover on a phone book, or the plastic covers for the phone itself (notwithstanding their availability in a variety of shocking colors⁸²).

THE CARTERPHONE

In contrast to the Hush-a-Phone, the Carterfone was an electrical, acoustic coupling device.⁸³ It did not take power *from* the telephone network's electric source.⁸⁴ It ran on its own independent source of electric power.⁸⁵ But it did inject sounds that would ultimately become electromagnetic signals *into* the telephone network⁸⁶—something none of the former “foreign attachments” had done.

The device was designed to enable Tom Carter and his customers to take and place phone calls from an oil field, or while riding fences on a cattle ranch, by means of a portable radio transceiver.⁸⁷ The Carterfone could receive the signals from that radio transceiver and transmit them over the telephone network, and take the incoming signals from the telephone network and broadcast them out to the remote transceiver.⁸⁸ An internal switching system, going from the person on the phone to the one using the transceiver, made possible a wireless, two-way “telephone” conversation.⁸⁹

The *Hush-a-Phone* court had found the FCC tariffs—as to the Hush-a-Phone device—an “unwarranted interference with the telephone subscriber’s right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental.”⁹⁰ This was useful language for the *Carterfone* decision.⁹¹ But the fact that the Hush-a-Phone, or a plastic phone book cover, was not “publicly detrimental” did not necessarily mean that the Carterfone was not “publicly detrimental,” nor did it constitute a holding to that effect.⁹²

82. JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET: AND HOW TO STOP IT* 81 (2008).

83. *In re Use of Carterfone Device*, 13 F.C.C.2d at 424 n.3.

84. *See Carter v. AT&T*, 250 F. Supp. 188, 189 (N.D. Tex. 1966).

85. *See id.*

86. *See In re Use of Carterfone Device*, 13 F.C.C.2d at 424 n.3.

87. *See ZITTRAIN, supra* note 82, at 22.

88. *Carter*, 250 F. Supp. at 189.

89. *See id.*

90. *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 269 (D.C. Cir. 1956).

91. *In re Use of Carterfone Device*, 13 F.C.C.2d at 423.

92. *See id.* at 423-24.

AT&T IN WASHINGTON

At my hearing before the Senate Commerce Committee, I had been asked to provide the Committee the assurance that I would serve out my full seven-year term.⁹³ I did so, actually staying five months longer until a successor was found and confirmed.⁹⁴ Of the roughly 400 opinions I wrote during that time, most were dissenting or concurring opinions.⁹⁵ The effort to point out the commission's failings finally culminated in a *Yale Law Journal* article in which I attempted to make the case that I had not just been focusing on the very worst of the FCC's decisions. In fact, I argued that virtually *everything* the FCC did was wrong for one reason or another.⁹⁶

Needless to say, this kind of youthful exuberance made me, if anything, even less popular with some of my fellow commissioners than with the industries we had been appointed to regulate.⁹⁷ It is beyond me why I was permitted to write the majority opinion in *Carterfone*, certainly a major case, which opened up the telephone equipment business⁹⁸ (along with my separate opinion in an early *MCI*⁹⁹ decision that helped lay the groundwork for the breakup of AT&T).¹⁰⁰

Maybe they figured I was the only one naïve enough to take on one of, if not the, most politically and economically powerful corporations in America.¹⁰¹ Maybe they knew the political and

93. *Sundry Nominations: Hearings Before the S. Comm. on Commerce*, 89th Cong. 79, 82 (1967).

94. E.g., Leonard Zeidenberg, *Seven Years and Five Months: A Look Back at the Tenure of Nick Johnson*, BROADCASTING, Dec. 10, 1973, at 20.

95. The opinions are collected, indexed chronologically, available in full text, and linked at Nicholas Johnson's Federal Communications Commission Opinions, <http://www.uiowa.edu/~cyberlaw/FCCOps> (last visited Feb. 24, 2009).

96. Nicholas Johnson & John Jay Dystel, *A Day in the Life: The Federal Communications Commission*, 82 YALE L.J. 1575, 1575 (1973).

97. Zeidenberg, *supra* note 94, at 20, 26.

98. Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85, 107 (2003).

99. *In re Microwave Commc'ns, Inc.*, 18 F.C.C.2d 953 (1969). For a history of the *MCI* case, see Robert C. Ward, *The Chaos of Convergence: A Study of the Process of Decay, Change, and Transformation Within the Telephone Policy Subsystem of the United States* 251-54 (Oct. 27, 1997), (unpublished Ph.D. dissertation, Virginia Polytechnic Institute and State University) (on file with University Libraries at Virginia Tech.), available at <http://scholar.lib.vt.edu/theses/available/etd-0698-91234/unrestricted/ch8.pdf>.

100. See Ward, *supra* note 99, at 256 ("For the first time in the history of telecommunications in the United States, a nationwide competitor to AT&T's long lines division had emerged. The nationwide telephone service monopoly was beginning to shatter.").

101. *Id.* at 248.

professional price that would be exacted for my doing so,¹⁰² and figured it would be a fitting punishment for this obstreperous youngster who refused to abide by the standard Washington advice: "If you want to get along, go along."¹⁰³ As a union representative for the Communication Workers of America (CWA) put it in another context, "[AT&T] was a military, Catholic Church organization."¹⁰⁴ It was top-down, had lots of money, and more political influence.¹⁰⁵

AT&T's Washington representatives were among the best-charming, smooth, and pleasant. The one assigned to me was from the south somewhere with a drawl to match, tall, gentlemanly, with a warm smile and easy laugh. He and the others quickly learned my rules. I was happy to visit with corporate representatives in my office (unless it was a matter I felt should be heard by all the commissioners in a single meeting; or, of course, if talking would have risked the appearance or reality of an *ex parte* violation).¹⁰⁶ But I would not go to lunch with them, play golf, or otherwise blur our professional relationship with a personal one. They had little option but to abide my bizarre Washington behavior and not press the matter.

I did make one exception by requesting a Des Moines, Iowa, phone book—for reasons I cannot now recall or imagine. Since AT&T was quite generous in its distribution of free phone books to ordinary customers, the request did not seem to be a request of such economic value or ethical implications as to threaten my independence—until it arrived. Apparently, by the time the routine request reached the Des Moines office of what was then Northwestern Bell,¹⁰⁷ it had become a matter of great importance and high priority; sufficiently so that a Northwestern Bell employee of some rank had been given the

102. Nicholas Johnson, Note from Nicholas Johnson (Oct. 24, 2004), <http://www.nicholasjohnson.org/about/lzbd7312.html> (commenting on Zeidenberg, *supra* note 94).

103. NEIL MACNEIL, *FORGE OF DEMOCRACY: THE HOUSE OF REPRESENTATIVES* 129 (1963) (quoting Speaker Samuel Rayburn).

104. *Hell's Bells: A Radio History of the Telephone* (Internet Multicasting Service 1993), available at <http://town.hall.org/Archives/radio/IMS/HellsBells> (transcript available at Script for "Hell's Bells: A Radio History of the Telephone," [artofhacking.com](http://www.artofhacking.com), http://www.artofhacking.com/tucops/phreak/GENERAL/live/ao_hellbell.htm (last visited Feb. 4, 2009)).

105. Ward, *supra* note 99, at 248.

106. MODEL RULES OF PROF'L CONDUCT R. 3.5 (2008) (explaining rules established to preserve impartiality and decorum of the tribunal).

107. ARTHUR W. PAGE, *THE BELL TELEPHONE SYSTEM* 3-5 (3rd ed. 1941) (explaining that the American Telephone and Telegraph Company was the parent company of the Bell System, and Northwestern Bell was an operating division of the Bell System).

assignment to fly to Washington and hand deliver my new phone book.

Phone company rates were set by the FCC and state regulatory commissions on a cost-plus, return-on-investment basis.¹⁰⁸ Regulatory agencies permitted AT&T to charge customers monthly bills high enough to cover both its operating costs and a percentage return on its investment, its cost of capital for the telephone poles, switching stations, cable, and customers' phones.¹⁰⁹ FCC hearings determined the percentage return on investment.¹¹⁰ Very little attention was given to the company's assertions regarding its embedded investment or its operating costs. Thus, the more it invested in the ground, the more it could take from its customers. For example, Robert C. Ward, Jr., reports that the perfectly adequate microwave relay towers that MCI could build for \$1,100 cost AT&T \$100,000.¹¹¹ It reminded me of the one outside of Iowa City in the 1950s, a solid concrete tower that appeared to be designed to withstand a nuclear attack.

SEEKING A TELEPHONE CONVERSATION

I wanted to have someone with whom I could discuss telephone public policy and philosophy. What was the role of the telephone network in the lives of Americans? How well were we doing in optimizing its contribution? Did our regulations and decisions contribute or detract from that contribution?

My gracious visitors from the Washington office of AT&T did not have much to offer on that subject. I tried talking to AT&T's marketing people but that effort was unsuccessful. Finally, assuming that if AT&T kept an institutional cerebral cortex anywhere it would be at Bell Labs,¹¹² I arranged for a visit. Once there, my cluster of future hosts wanted to know what I was looking for. "Well," I said, "let's start with this. Do you have an anthropologist working here?" "Oh, yes," I was assured, and we headed off down a long hallway and

108. J. WARREN STEHMAN, *THE FINANCIAL HISTORY OF THE AMERICAN TELEPHONE AND TELEGRAPH COMPANY* 248 (August M Kelly Publishers 1967) (1925); see also BRIDGER M. MITCHELL & INGO VOGELSANG, *TELECOMMUNICATIONS PRICING: THEORY AND PRACTICE* 118, 150-51 (1991).

109. *S. Pac. Commc'ns Co. v. AT&T*, 556 F. Supp. 825, 885-86 (D.D.C. 1982).

110. *Id.* at 885-86.

111. Ward, *supra* note 99, at 251-52 n.28.

112. Bell Labs, a subsidiary of AT&T, is the "longtime research and development arm of [AT&T]." BRITANNICA, *BELL LABORATORIES*, <http://www.britannica.com/EBchecked/topic/59675/Bell-Laboratories> (last visited Feb. 27, 2009).

entered a small office where I was introduced to Bell Labs's anthropologist. "What do you do?" I asked. "Oh," she replied, "I measure the distance between the mouth and the ear to better design telephone handsets." Alas, it turned out she was a physical rather than a cultural anthropologist.¹¹³

Before finally abandoning all hope that I could enjoy a good conversation with someone working for AT&T, I paid a visit to AT&T's chairman, John De Butts.¹¹⁴ Charles R. Geisst says that John DeButts, named AT&T chair in 1972,¹¹⁵ was

[a] lifelong AT&T employee . . . charged with breathing new life into the company . . . [but] it became clear that his style would not be materially different from that of his predecessors. AT&T would retain its monopolist attitude toward the outside world. It would quietly continue to do what it did best—dominate the market. If MCI or anyone else presented itself as an obstacle, it would incur AT&T's wrath. DeButts was the most aggressive chief executive AT&T had since Theodore Vail.¹¹⁶

It turned out that Geisst was right. AT&T's chairman was not about to budge. I told him he reminded me of the story of the conversation between two librarians. One asked the other how things were at her library. "They're just terrific," the other responded. "I have all my books in and on the shelves except for two, and they're due back next Tuesday."

AT&T was known for its charts and graphs,¹¹⁷ so I suggested to him a new chart he should keep on his wall and examine every day. "What's that?" he asked, more out of courtesy to one-seventh of his regulatory body than curiosity. "Figure out a way to measure all the information bits moving throughout this country," I said. "Then set as

113. Physical anthropology deals with biology and how humans have evolved while cultural anthropology studies past humans and societies. BRITANNICA, CULTURAL ANTHROPOLOGY, <http://www.britannica.com/EBchecked/topic/146165/cultural-anthropology> (last visited Feb. 27, 2009).

114. John B. McArthur, *Disconnection: How Ma Bell Was Cut Off from Her Young, and What to Think About It*, 67 TEX. L. REV. 1173, 1178 (1989) (reviewing PETER TEMIN & LOUIS GALAMBOS, *THE FALL OF THE BELL SYSTEM* (1987)).

115. *Id.*

116. CHARLES R. GEISST, *MONOPOLIES IN AMERICA* 267 (2000).

117. AT&T researchers have pioneered many graph technologies, including working with call graphs, which illustrate the different calls made between all of the different telephone numbers over a certain period of time. The information is used to study calling patterns and links between different groups of numbers. Brian Hayes, *Graph Theory in Practice Part 1*, 88 AM. SCIENTIST MAGAZINE 1, 9 (2000), available at <http://www.americanscientist.org/issues/pub/graph-theory-in-practice-part-i/4>.

your corporate goal increasing that number by an order of magnitude every year. Let others manufacture equipment and offer phone service. Given your position in the market, what will come your way is bound to be more than what you're getting now." He was unmoved.

During the occasional world travel I was doing at that stage of my life, I would see who I could find in other countries that might have some thoughts about the social significance of the telephone. The only place I ever found any satisfaction and suggestions was in a second floor office in downtown Tokyo with the Japanese telecommunications workers union.¹¹⁸ They had thought about such things, had ideas about telephone public policy, and were then promoting some legislation in the Japanese Diet.¹¹⁹

Needless to say, I had lots of suggestions for AT&T during our FCC hearings. I recall asking a Bell spokesperson about peak load and distance pricing.¹²⁰ Why not really drive down off-peak prices, rather than leave the company's multi-billion-dollar network investment virtually idle during all hours except for 10:00 a.m. to 3:00 p.m.?¹²¹ And what is the rationale for considering distance in an age when all satellite calls go 44,000 miles, I asked. Regardless of the distance between ground stations, all those calls are going 22,000

118. The Japanese Telecommunications Workers Union, known in Japan as the Tsushin Sangyo Rodokumiai, is the Japanese labor union that represents telecommunications workers employed by Nippon Telephone and Telegraph (known as NTT), which is Japan's dominant telecommunications operator. JTWU members have traditionally had an active role in the management of NTT, and have been important in shaping Japanese Telecommunications legislation. See Keisuke Nakamura & Shin'ō Hiraki, *Japan, in TELECOMMUNICATIONS: RESTRUCTURING WORK AND EMPLOYMENT RELATIONS WORLDWIDE* 228, 228, 239 (Harry C. Katz ed., 1997).

119. In the 1950s and 1960s, the Japanese Diet retained control over NTT's business operations, and through their relationship with each other, NTT had an active role in shaping Japanese telecommunications legislation. NTT thus became the single public monopoly of domestic communications, much like AT&T was in the U.S. When challenges to NTT's monopoly were proposed in the 1970s, the union was a major hurdle. It was not until the 1980s, when JTWU leaders realized the benefits they could glean from privatization and competition, that the system successfully changed. See Dennis S. Tachiki & Paulo Bastos Tigre, *IT Policy in Japan: The Evolution in Post-War Telecommunications Regimes* (Dec. 8, 2000) (paper prepared for the Brazil-Japan meeting organized by the Brazilian Foreign Ministry's Research Institute of International Relations).

120. For an explanation of the economics of peak load and distance pricing, see generally ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* chs. 2-3 (MIT 1988) (1970).

121. See generally, James M. Griffin & Thomas H. Mayor, *The Welfare Gain from Efficient Pricing of Local Telephone Services*, 30 J.L. & ECON. 465 (1987) (discussing considerations in telephone pricing).

miles up to the communications satellite, and 22,000 miles back down again.¹²²

IOWA-ILLINOIS GAS & ELECTRIC COMPANY'S CONTRIBUTION TO *CARTERPHONE*

I mention this by way of background and explanation for my approach to the *Carterfone* decision.¹²³ One of my many jobs as a teenager was that of a watchman and cleaning person at the local gas and electric company's downtown office in Iowa City. There was a meeting room in the basement for use by the public, offices for the Iowa-Illinois Gas and Electric executives, a showroom for electric appliances, and a counter where those customers who wished to save the cost of a three-cent stamp could walk in and pay their monthly bills. What I remembered from that experience, in addition to the TV set in the window, beyond which local residents would gather at night to watch this new fangled device, was that the utility did not feel a necessity to manufacture, own, and sell to its customers everything that plugged into the electric grid. If an electric company could figure out a way to do that, with all the risks of electricity causing shocks, fires, and possibly blowing out a company transformer, I did not see why the phone company could not do the same with an acoustic coupler. There was a little more to my analysis, I suppose, but that was the heart of it.

Well, that is my story.

THE REST OF THE STORY¹²⁴

The rest of the story of *Carterphone*, and the stories yet to come involve the *Carterfone*'s contribution to the coming of the acoustic cup modem,¹²⁵ the Internet, and the opinion's implications for the

122. Communications satellites are generally located approximately 22,000 miles above the earth, necessitating that information travel that distance to the satellite and back. Morenet, Satellite Data Service: An Introduction to Satellite-Based Data Services, <http://www.more.net/technical/research/satellite> (last visited Feb. 27, 2009).

123. The author was known for his zealous advocacy for reform within the telecommunications industry, which he articulated firmly in his frequent dissenting opinions during his tenure with the FCC. See Kenneth L. Kolson, *Broadcasting in the Public Interest: The Legacy of Federal Communications Commissioner Nicholas Johnson*, 30 ADMIN. L. REV. 133, 135-36 (1978).

124. This line, and the journalism and history which regularly followed it, was associated with one of America's most popular radio personalities: Paul Harvey. See Paul Harvey, <http://www.abcrn.com/harvey> (last visited Feb. 24, 2009).

125. See *The New New Telephone Industry*, BUS. WK., Feb. 13, 1978, at 68-74 (discussing the technology in the telephone industry in the 1970s, after *Carterfone* was decided).

fight over network neutrality and Skype.¹²⁶ I am leaving those stories to others, but not before at least making some general observations.

The Internet has been, in my opinion, the greatest contribution to mankind's education, information, and problem solving ability in the history of our species. Greater than the Library of Alexandria, Egypt, in the third century B.C.¹²⁷ Greater than the impact of Thomas Jefferson's vision of a self-governing democracy's dependence upon a foundation of public education, public libraries, reduced postal rates for printed matter, and the impact of free speech they make possible.¹²⁸

During the past month of global economic collapse,¹²⁹ while the capitalists' embrace of socialism causes Marx to smile in his grave, finger pointing has become Americans' most popular physical exercise: "It's the fault of greedy investment bankers," "It's the failure of government regulation," "It's the fault of homeowners, and their failure to live within their means," "It's the Republicans," "It's the Democrats," and the ever-popular, "It's the media."

Meanwhile, the Internet is none of the above: it is neither government nor private.¹³⁰ It is the fastest growing anything ever, with the possible exception of kudzu,¹³¹ and no one is in charge.¹³² Of course, there has been government involvement, including the early ARPANET.¹³³ Of course, there have been billions of private dollars invested¹³⁴ in what Senator Ted Stevens calls the Internet's "tubes,"¹³⁵

126. Skype Commc'ns S.A.R.L., Petition to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, No. RM-11361, 28-32 (Feb. 20, 2007).

127. ENCYCLOPEDIA AMERICANA, ALEXANDRIAN LIBRARY 543-44 (International Ed., Grolier, Inc. 1998) (1829) ("[T]he most celebrated library in antiquity").

128. See Nicholas Johnson, *Jefferson on the Internet*, 47 FED. COMM. L.J. 281 (1994); see also, CHARLES FLINN ARROWOOD, THOMAS JEFFERSON AND EDUCATION IN A REPUBLIC 49-50 (1930); ROBERT D. HESLEP, THOMAS JEFFERSON & EDUCATION 98 (1969).

129. E.S. Browning, *After the Collapse, Guarded Hope for '09*, WALL ST. J., Jan. 2, 2009, <http://online.wsj.com/article/SB123084159289047143.html#CX>.

130. ACLU v. Reno, 929 F. Supp. 824, 831 (E.D. Pa. 1996).

131. ENCYCLOPEDIA AMERICANA, KUDZU VINE 594 (International Ed., Grolier, Inc. 1998) (1829) ("A fast growing, perennial climbing vine that may reach sixty feet in length in one growing season.").

132. See ACLU v. Reno, 929 F. Supp. at 831. But see Derek Gatopoulos, *U.S. Control of Internet Remains Touchy*, MSNBC.COM, Oct. 26, 2006, <http://www.msnbc.msn.com/id/15430428> (discussing U.S. "control" over the Internet through ICANN).

133. See Bruce Sterling, *Short History of the Internet*, THE MAG. OF FANTASY AND SCI. FICTION, February 1993, available at <http://w3.aces.uiuc.edu/AIM/scale/nethistory.html> (explaining the involvement of the Pentagon in the early ARPANET).

134. Thomas Reuters, *Venture Capital Investment Holds in US \$7 Billion Range in 3Q 2008 Despite Turmoil in the Financial Markets According to the MoneyTree Report*, EUREKA

but the Internet was actually designed from its inception as a flat rather than a hierarchical organization;¹³⁶ one that would have no “home office,” no “headquarters,” and “nobody in charge.” This is a bit ironic in a way, given that it was designed by the military,¹³⁷ usually considered one of the more rigid top-down institutions.¹³⁸ That is, it is ironic until you consider the role of communications, command and control for the military, and its need for a communications system that can, like the watch in the old Timex commercial, “take a licking and keep on ticking”¹³⁹—that is, a “licking” up to and including a nuclear or other serious attack.¹⁴⁰ Such a communications network would, as the Internet can, run itself and route messages around outages.¹⁴¹

Larry Lessig has warned, “Activists concerned with defending liberty, privacy or access must watch the code coming from the Valley—call it West Coast Code—as much as the code coming from Congress—call it East Coast Code.”¹⁴² He is right.¹⁴³ But it is also that “west coast code,” the software standards and protocols, that *are* in many ways the Internet.¹⁴⁴ It is a communications network deliberately designed with no one purpose in mind—not phone calls, not email, not newspapers’ interactive communication with readers,

PRIVATE EQUITY (2008), http://www.eurekaprivatteequity.com/All_News.asp?id=7754 (noting that the third quarter of 2008 was the ninth consecutive quarter in which Internet-specific companies received over \$1 billion.).

135. Ken Belson, *Senator’s Slip of the Tongue Keeps on Truckin’ Over the Web*, N.Y. TIMES, July 17, 2006, available at <http://www.nytimes.com/2006/07/17/business/media/17stevens.html>.

136. See Sterling, *supra* note 133 (explaining that “nodes in the [Internet] would be equal in status to all other nodes”).

137. See *id.*

138. See *U.S. Military Chain of Command*, FOXNEWS.COM, Feb. 24, 2003, <http://www.foxnews.com/story/0,2933,74696,00.html> (illustrating the top-down chain of command structure of the U.S. military).

139. Timex Watch Videos, <http://watches.ryanrooney.com/timex-videos.html> (last visited Feb. 6, 2009).

140. See Sterling, *supra* note 133 (explaining the initial post Cold War concept of the Internet as a network that could withstand nuclear attack by automatically rerouting packets around destroyed nodes).

141. *Id.*

142. Lawrence Lessig, *The Code Is the Law*, THE INDUSTRY STANDARD, Apr. 9, 1999, <http://www.lessig.org/content/standard/0,1902,4165,00.html>.

143. See Viktor Mayer-Schönberger, *Demystifying Lessig*, 2008 WIS. L. REV. 713, 717-20 (2008) (supporting the premise that the combination of East Coast Code (“laws”) and West Coast Code (“software”) has transformed the Internet).

144. See Barry M. Leiner et al., *The Past and Future History of the Internet*, COMM. ACM, Feb. 1997, at 107-08.

not multi-player video games, offshore gambling, electronic bookstores, or auction houses.¹⁴⁵

Indeed, like the World Wide Web that was designed and placed upon it,¹⁴⁶ the Internet was not even designed for the profit of its designers¹⁴⁷—however much profit it may have made since for its users. Like Firefox,¹⁴⁸ Linux,¹⁴⁹ Wikipedia,¹⁵⁰ and SETI,¹⁵¹ the Internet has been a joint project, taking input from many and providing benefits for orders of magnitude more.¹⁵² It is that design, that vision, and that West Coast Code that has enabled the Internet to grow from what it was to what it is today and to what it can continue to be tomorrow if we will but recognize the incredibly creative idea it embodies and willingly do whatever is necessary to preserve it.

East Coast Code and the courts that are its interpreters have not always looked kindly on the individualism and innovations of the wild west—or even free speech for that matter.¹⁵³ As I have written elsewhere, “The Supreme Court makes clear that with the First Amendment right to speak goes an owner’s First Amendment right to silence all others.”¹⁵⁴ “For constitutional or other reasons, the Court says this is the result for newspapers, radio and television, cable

145. See *id.* at 108.

146. See Gwenn M. Kalow, *From the Internet to Court: Exercising Jurisdiction Over World Wide Web Communications*, 65 FORDHAM L. REV. 2241, 2245 (1997).

147. Leiner, *supra* note 144, at 103, 108.

148. Firefox Web Browser, <http://www.mozilla.com/en-US/firefox> (last visited Feb. 28, 2009) (describing Firefox as a free and open source web browser developed by the Mozilla Foundation).

149. The Linux Homepage at Linux Online, <http://www.linux.org> (last visited Feb. 28, 2009) (“[A] free Unix-type operating system originally created by Linus Torvalds with the assistance of developers around the world”).

150. Wikipedia, About, <http://en.wikipedia.org/wiki/Wikipedia:About> (last visited Feb. 28, 2009) (describing Wikipedia as a multilingual, web-based, free-content encyclopedia project, which can be edited by anyone and is written collaboratively by volunteers all around the world).

151. SETI Institute, Our Mission, <http://www.seti.org/about-us> (last visited Feb. 28, 2009) (“The mission of the SETI Institute is to explore, understand and explain the origin, nature and prevalence of life in the universe. . . . The SETI Institute is a private, nonprofit organization dedicated to scientific research, education and public outreach.”).

152. See James B. Speta, *A Common Carrier Approach to Internet Interconnection*, 54 FED. COMM. L.J. 225, 243-46, 250 (2002); see also Kalow, *supra* note 146, at 2242.

153. See Lessig, *supra* note 142.

154. Nicholas Johnson, *Forty Years of Wandering in the Wasteland*, 55 FED. COMM. L.J. 521, 529 (2003), available at <http://www.nicholasjohnson.org/writing/masmedia/55FCL521.html>.

television, public utilities' billing envelopes, and even St. Patrick's Day parades."¹⁵⁵

That is why I have argued over the years, with admittedly very little success, that we should insist on a separation of content and conduit.¹⁵⁶ Those who sit astride the quasi-monopoly conduits of information and opinion in this country, those who suck profit out of both ends of the wire (or wireless connection), should be content with the riches that position provides—riches beyond their wildest dreams of avarice.¹⁵⁷

They should not be able to dictate what equipment can connect to their networks, with a de facto reenactment of the old AT&T Tariff No. 132¹⁵⁸ held up to frustrate Tom Carter. They should not be able to close off the entrances, and lock the exits—like the owners of the Triangle Shirtwaist Factory in 1911¹⁵⁹—to exclude those who wish to contribute to, or draw upon, the Internet's content and capabilities. It is presumptuous of me, I know, but I think Thomas Jefferson would have concluded similarly on these issues. I am even more confident it would be Thomas Carter's position.

"HERE LIES A STUBBORN TEXAN"

When Tom Carter died, in 1991, his wife was asked what should go on his tombstone. She replied, simply, "Here lies a stubborn Texan."¹⁶⁰ My regret is that this fellow Texan could not still be alive

155. *Id.* at 529 n.24. *E.g.*, *Miami Herald Publ'g Co. v. Tornillo*, 418 U.S. 241 (1974) (dealing with newspapers); *CBS v. Democratic Nat'l Comm.*, 412 U.S. 94 (1973) (dealing with radio and television); *FCC v. Midwest Video Corp.*, 440 U.S. 689 (1979) (dealing with cable television); *PG&E v. Public Utils. Comm'n of Cal.*, 475 U.S. 1 (1986) (dealing with public utilities' billing envelopes); *Hurley v. Irish-Am. Gay, Lesbian & Bisexual Group of Boston*, 515 U.S. 557 (1995) (dealing with St. Patrick's Day parades).

156. *See, e.g.*, Johnson, *supra* note 154, at 529-30.

157. The author has often criticized media owners and network owners as reaping too many profits in a system that should be publicly controlled. *See, e.g.*, Johnson, *supra* note 154 at 527-28.

158. Lasar, *supra* note 2.

159. LAURA HAPKE, *SWEATSHOP: THE HISTORY OF AN AMERICAN IDEA* 154-55 (Rutgers University Press 2004) (explaining that immigrant sweatshop victims of the famous March 11, 1911 New York fire could not escape because the exit doors were locked).

160. Mike Sandman, *Telephone History Pages*, <http://www.sandman.com/telhist.html> (last visited Feb. 28, 2009).

today to witness the telecommunications revolution that followed his invention and stubborn persistence, especially during the last 17 years since his death.