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Phone-Company Video Services Get Backing From Key Senator

By EMILY ANN BROWN
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WASHINGTON -- In a boost to telephone companies, Senate Commerce Committee Chairman Ted Stevens (R., Alaska) said he will soon introduce legislation to make it easier for telecom carriers to provide video services over their networks.

"We gave cable special privileges when they entered the telephone system. I really don't understand cable saying that we can't treat telephone the same way," Sen. Stevens said at a Commerce Committee hearing yesterday. He said he plans to introduce a broad telecom-reform bill next month that would streamline the video-franchising process for phone companies that want to offer their customers television service.

At yesterday's hearing, **AT&T** Inc. and **Verizon Communications** Inc. pressed lawmakers to pass legislation letting phone companies bypass local government regulation as they roll out television services. Cable representatives fired back that changes to existing laws are unnecessary and may hurt cable operators' ability to offer consumers bundled television, Internet and telephone services.

Sen. Stevens said he might use a bill introduced this month by Sens. Conrad Burns (R., Mont.) and Daniel Inouye (D., Hawaii) as the framework for his bill. The Burns-Inouye legislation wouldn't lift local video-franchise authorities' oversight of video offerings but would set timetables for local authorities to act and would require the same regulations for all video providers. Sen. Inouye, the committee's ranking Democrat, said final legislation should promote competition.

Ivan Seidenberg, chief executive of New York-based Verizon, told lawmakers "the biggest limiting factor to how fast we can offer video over our fiber network" is cable operators' efforts to block the process. Federal law requiring approval from thousands of local franchise authorities is a huge hurdle, he said.

Cable companies said a regime that treats phone companies differently could mean the demise of local public-access channels -- a service cable companies currently negotiate with local franchising authorities. Thomas Rutledge, chief operating officer of **Cablevision Systems** Corp., of Bethpage, N.Y., told lawmakers changes in local franchising rules would undercut companies that have "made substantial investment based on Congress's existing framework."

"While the rhetoric about franchising is potent, the facts are different," Mr. Rutledge said. "The only thing slowing down Verizon is Verizon. And the only thing slowing down AT&T is AT&T,"

he said, referring to phone companies' reluctance to pursue offering video services under the current rules.

Edward Whitacre Jr., chairman and CEO of San Antonio-based AT&T, said his company wants to offer television services to about three million households by the end of the year but that would entail negotiating thousands of separate local franchises.

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Get What You Pay For

By Richard C. Notebaert

There's some sleight-of-hand going on in cyber circles that would make David Copperfield envious. A handful of the world's biggest corporations are waging a campaign to redefine "Net neutrality" and, unfortunately, it's the customer that's disappearing from the debate. In the end, customers—not special interest groups—should be able to decide the level of Internet experience available to them.

According to the FCC, Net neutrality means that providers of Internet services must allow unfettered consumer access to the Internet. No one should deny or impede access to lawful sites on the Web. Everyone supports that position.

But some very big corporations are trying to redefine Net neutrality away from a focus on access, and toward something far more nebulous and self-serving. Case in point—assume an online movie provider negotiates a commercial agreement with a company like Qwest to guarantee download speeds of, say, five megabits per second, for all its customers. That's a pretty good idea in a world where every company is trying to differentiate itself from its competitors.

"Not so fast," cry the naysayers. They claim that the idea of a premium level of service violates Net neutrality because that online movie company's competitors may not want to offer their customers the same benefits. Essentially, they argue that doing this would give some content providers an advantage over those that choose not to provide this service.

Well, yes it would. As an industry, we've always sold bigger pipes and faster service to those who wish to buy them. And yes, I suspect much of that enhanced capacity has been bought to give the purchaser an edge. That's how a competitive marketplace works.

Say you decide to buy sweaters for holiday gifts. You calculate the price, add the cost for standard delivery, and send in your order. But L.L. Bean says "Hey, in the spirit of the season, we're going to provide express delivery at no extra cost to the customer. We'll work with Fed Ex to cover the gap between standard and expedited service." Would we get government involved to stop it? Would it even occur to us to object? If Lands' End said, "Not fair," would we rally to its aid? And would the fact that other outdoor clothing providers might one day decide to enter the market justify turning a history and tradition of business practice on its head? Not a chance.

While that scenario illustrates the principles involved, we could just as easily cite actual services that companies like Qwest currently provide to help businesses better serve their customers and differentiate themselves from their competitors. Consider 800 numbers. Yes, the residential customer already pays for the ability to place calls. But that does not mean a business cannot pay for additional capabilities that will facilitate that customer's ability to reach the business in a faster, cheaper or easier way.

FCC Chairman Kevin Martin and the commission have already made positive moves *away* from over-regulation of broadband service. They have deliberately moved *toward* open and fully competitive markets to the benefit of customers and the prosperity of the Internet.

It's essential that all decision makers continue to support true Net neutrality, as interpreted by the FCC. This will enable companies to compete, thrive and meet the needs of their customers. And it will put an end to the distortion of this admirable objective into a self-serving concept that was never intended.

Mr. Notebaert is the chairman and CEO of Qwest Communications.

NETWORK EFFECTS AND ESSENTIAL FACILITIES

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A. Why Networks Generate So Many Competitive Issues and Conflicts

- Increasing importance in an increasingly interconnected global economy—for interchanging physical traffic, communications, transactions, and information

- Source of potentially increased competition in underlying user markets ("UMs") because networks can match more "buys" and "sells" or allow more competitors to compete effectively in geographically remote markets

- Source of monopoly power in network interchange markets ("NIMs") because of "network effects", barriers to new network entry, interchange restraints, etc.

- Traffic Interchange is a practical necessity in many network contexts and yet establishing the precise terms of interchange is often a highly contentious process

- Strong incentives for vertically integrated enterprises to use a dominant position in a NIM to restrain competition in a UM.

- Competitive imbalances among different types of network users creating market imperfections and/or perceptions of unfairness

- Joint venture networks generate an extra set of antitrust disputes (under EC Article 81, Sherman Act Sec. 1, UK Competition Act Part 1, etc.) that do not apply to a single-owner network. (See Part I below.)

B. Different Types of Networks

- Wholesale interchange networks—networks that serve enterprises serving ultimate users (e.g., Visa, London Stock Exchange, Railtrack). [*These generate the largest proportion of antitrust problems and may sometimes be required to offer access to competitors of existing users.]*

- End-User Networks—networks that offer interchange services to end-users (e.g., AOL, Vodafone, or local cable systems, and telephone operators). [*Where natural monopoly characteristics exist, these networks may sometimes be required to offer interconnection or access to competitors serving ultimate users.]*

- Captive Networks—networks that create brands and perform interchange functions to enable their affiliates to compete in the end-user markets (e.g., American Express)

C. Sources of Market Power in "Network Interchange" Markets

- "Network Effects"—when the network becomes more valuable to each user as the number of other users increases

- Natural Monopoly Characteristics—when unit costs continue to decline over the whole range of projected demand What if true for mult users?

- Barriers to alternative network entry on an effective scale—especially when effective interchange arrangements are required for effective entry ?

- Strong Product Differentiation—when one network is not an effective substitute for any other performing a similar interchange function (see *MasterCard UK Members Forum Ltd Multilateral Interchange Fees,* No. CA98/05/05 (OFT) ("*MasterCard MIFs*") at paras 227-246)

D. Vertical Integration as Key Factor in Generating Antitrust Issues for Wholesale Interchange Networks

- The costs and operational effects in the NIM tend to get passed on to competitors in the UM. See DG Competition *Green Paper on Application of Article 82 to Exclusionary Abuses* (Dec. 2005) *("Green Paper")*

- Vertically integrated competitors' incentives. See *Green Paper* para. 231. Where an enterprise (or several enterprises) control a network with market power in the NIM and compete in the UM, it (or they) will generally seek to increase the costs or operational difficulties for its unintegrated UM market competitors.

- The potential issues include rates, technical interconnection standards, eligibility rules, etc

- The *independent network operator* often can have different incentives. It will seek to maximize its NIM revenues; and, to the extent that it faces NIM competition, it will seek traffic from UM competitors by establishing competitive fees and rules.

E. Different Types of Network Antitrust Issues

- Switching fees and other usage fees paid to the network operator

- Exclusivity, bypass and routing rules—rules designed to encourage or compel use of the network.

- Technical standards for interconnection, reliability, security, etc., because different users may have different demands and systems.

- Interchange fees established by the network to balance market imperfections—i.e., fees that one market participant must pay others for originating or terminating traffic or transactions

- Network membership eligibility rules can generate antitrust boycott claims in joint venture contexts

- Interconnection rates, technical conditions and other terms with other networks

- Access for UM participants to other UM users via the network.

F. The Basic Elements in the "Essential Facilities" Doctrine

- Concept. It is a more *tailored application*—often in a network context—of the rules relating to refusals to deal by a monopolist (which are generally more stringent under EC Article 82, and its Member State progeny, than under the U.S. Sherman Act.). It generally requires the controller of a "facility" that is deemed "essential" to share it with its UM competitors on "reasonable and non-discriminatory" terms.

- Essentiality. The doctrine should only apply when a vertically-integrated UM competitor (or a joint venture of such firms) controls the NIM (or other monopoly facility) to which all UM competitors need access. There must at least be a solid showing that other UM competitors cannot duplicate the NIM (or other facility) with a reasonable investment or effort. *Green Paper* paras 40, 228-230.[1]

- Feasibility. There must at least be a showing that: (a) providing access is technologically and economically feasible; and (b) no valid business reason for denying access has been established. *Green Paper* paras 40, 234.

G. The "Essential Facilities" Doctrine Raises Some Especially Difficult Policy Issues

- A fundamental long-run, short-run conflict runs through this area. The *long run* antitrust goal is to promote consumer welfare by maximizing a firm's incentives to innovate, invest and compete hard. In the *shorter run*, a successful monopolist may be able to use some small but vital piece of a much bigger puzzle to prevent or foreclose competition in a broader market where competition would otherwise be quite feasible and consumer stakes are high.

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[1] The *Green Paper* states: "A facility is an indispensable input only when duplication of the existing facility is impossible or extremely difficult, either because it is physically or legally impossible to duplicate, or because a second facility is not economically viable in the sense that it would not generate enough revenue to cover its costs." Para 229

- The "essential facilities" doctrine is driven by *today's* frustration with the second situation, especially when intensified by arrogance or blatant discrimination by the monopolist.

- Types of "facilities". The relevant "facility" to which access is compelled may be *purely physical* (as with a harbour or a terminal), or a *data base* (as with telephone listings), or a *network* (which is a combination of facilities and rules). See *U.S. v Terminal RR Assn.*, 224 U.S. 383 (1912) (JV rail terminal), *Sea Containers/Stena Sealink*, Case IV/34.689, OJ 1994 L15/8, [1995], 4 CMLR 84 (port facility)("*Stena Sealink*"),. *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v. E.C. Commission*, [1995] ECR I-743) (broadcaster's program scheduling information) (*"Magill"*); *United States v. Realty Multi-List, Inc.*, 629 F.2d 1351, 1370 (5th Cir. 1980). (JV information network), *Associated Press v. United States,* 326 U.S. 1 (1945) (JV news gathering organization); *MCI Communications Corp. v. AT&T*, 708 F.2d 1081 (7th Cir. 1983) (local monopoly telephone network)

- Competitive risks. An overly interventionist compulsory access rule can deter *today's* investment and innovative efforts by a want-to-be monopolist trying to create something that, if successful, could become tomorrow's "essential facility." See *Green Paper* paras 213, 235 It could also encourage free-riding by others who wanted to avoid the risk and cost of trying to create an alternative "facility" that, if successful, would assure competition in tomorrow's markets.[2]

H. Possible Factors to Weigh in Making an "Essential Facilities" Determination

- Source. Was the alleged "essential facility" created by government via franchise, public funds, or ratepayers money? See *Green Paper* para 40

- Investment. Did the "facility" represent a substantial investment that was risky when undertaken? See *Green Paper* para. 235

[2] This set of issues was very succinctly recognized in the *Green Paper:* "The main purpose of forcing companies to supply is to improve the competitive situation in the downstream market. However, investment incentives may be influenced, both negatively and positively. The knowledge that they may have a duty to supply against their will might lead companies not to invest in the first place or to invest less. Other companies may be tempted to free ride on the investment made by the dominant company instead of investing themselves." Para 213

- Non-investment. Was it more or less a by-product of other activities (e.g., TV program scheduling info in *Magill*)

- Size. Is the "facility" small in relation to the size of UM where competition could efficiently exist? Or is the opposite true?

- Independent operator test. Key questions: "what would an independent operator of the 'essential facility' do vis-à-vis the UM participants? How would it seek to maximize revenues? Would it be likely to encourage expanded use by UM participants?" See *Stena Sealink*. (This may help resolve the question of whether a vertically integrated NIM monopolist's refusal to deal with its UM competitors is "unreasonable".)

- Net balancing. The consumer benefits—both short run and long run—are likely to be the greatest in the case where (a) the critical "essential facilities" bottleneck is small and does not represent a substantial or risky investment by the current operator, and (b) the UM is large and could be highly competitive if unaffiliated competitors were granted access to the monopoly facility. "[I]t may sometimes be necessary in the consumers' interest to also protect competitors that are not 9yet) as efficient as the dominant company." *Green Paper* para 67

I. Treating Joint Venture Interchange Networks More Stringently than Dominant Single Firm Networks in the U.S.

- Joint ventures in the U.S. The U.S. courts and agencies have been much tougher on successful joint ventures than on successful monopolists when it comes to compelling access to facilities or rights in order to create or enhance UM competition. D. Baker, *Compulsory Access to Network Joint Ventures Under the Sherman Act: Rules or Roulette?* 1993 Utah L. Rev. 999, 1020-1025 (1993) *("Compulsory Access")*. Using "boycott" principles, they have done this even where the joint venture network faces substantial competition in the NIM. See *Associated Press v. U.S., 326 U.S. 1 (1945)*.

- Monopoly Networks in the U.S. By contrast, U.S. law gives individual firms—even those with substantial market power—very substantial latitude to refuse to deal for whatever reason they want. See *U.S. v. Colgate & Co.*, 250 U.S. 300 (1919) ("In the absence of any purpose to create or maintain a monopoly, the [Sherman] act does not restrict the long-recognized right of a trader or manufacturer engaged in a purely

private business, freely to exercise his discretion as to the parties whom he will deal"). The few leading few cases in which the U.S courts have ordered compulsory access against a single-firm network monopolist have generally involved situations where (a) network access was clearly essential to entry into the UM and (b) the vertically integrated the network monopolist clearly discriminated against particular the UM parties that it competed with. See *Otter Tail Power Co. v. U.S.*, 410 U.S. 366 (1973) (regional electric power transmission network) and *MCI Communications Corp. v. A.T.&T,* 708 F.2d 1081 (7th Cir. 1983) (local telephone networks).[3] By contrast, there was no Section 2 liability for a major network arrangement that gave the vertically integrated owner "some leverage over its [downstream] competitors...[but its] power fell far short of the power to *eliminate* competition seen in *Otter Tail* and *MCI."* See *Alaska Airlines v. United Airlines,* 948 F.2d 536 (9th Cir. 1991) (airline reservation system run by a leading airline). Moreover, the U.S. does not impose upon a dominant network operator a duty not to discriminate against particular UM participants if it does not itself compete in the UM. *Official Airline Guides v. FTC, 630 F.2d 920 (2nd Cir 1980)*

- Dominant Networks in Europe. Most EC "essential facilities" cases are directed against dominant firm under Article 82 rather than a joint venture under Article 81; and the European law is generally more stringent on refusals to deal by dominant firms. See, e.g., *United Brands v. Commission,* Case 27/76, [1978] ECR 207, *Stena Sealink, Magill* and the *Green Paper* paras 225-236.

- Joint Venture Networks in Europe. These have not been the main focus of "essential facilities" law in Europe as they have in the U.S. However, Articles 81-82 have been used to compel access to an association or standards body where it is essential to carrying out a commercial activity. E.g. *Floral*, OJ 1980 L39/51; [1980] 2 CMLR 285, *X/Open Group*, OJ 1987 L35/36, [1988] 4 CMLR 542. Also, both the European Commission and OFT have used Article 81 or the UK counterpart to attack the interchange pricing by Visa and MasterCard. See *Visa International—Multilateral Exchange Fee,* Case Comp/29/373 (EC

[3] *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 285 (1985) involved a dominant party's revocation of a long-standing joint interchange arrangement with the other party; and was treated by the Supreme Court as "a decision by a monopolist to make an important *change* in the character of the market" without a valid business reason. Based on a jury verdict it was held illegal under Section 2 of the Sherman Act.

2002); and *MasterCard MIFs (OFT 2005).* (This is significant because it is not clear that MasterCard's market shares, as found by the OFT, would justify a finding of "dominance" necessary to trigger action under Article 82 or Chapter 2 of the Competition Act 1998.)

J. Different Enforcement Institutions and Philosophies as Influencing Antitrust Outcomes

- The antitrust enforcement system in Europe is essentially an *administrative system* in which expert administrative agencies make detailed findings of an infringement which are then subjected to judicial review. The U.K. has adopted this type of essentially civil law process in the Competition Act 1998 and the Enterprise Act 2002—with the OFT (or a sectoral regulator) responsible for making findings of Competition Act and EU treaty violations, subject to detailed review by the new Competition Appeals Tribunal. See e.g., *MasterCard CIFs.*

- The antitrust enforcement system in the U.S. is essentially a judicial one in which findings of violations are made by Federal District Court Judges (in most Government cases) or by juries (in DOJ criminal cases and most private treble damage cases). The Government's job (in any DOJ civil case and any FTC preliminary injunction action) is to persuade the fact finder that it has proven the facts necessary to establish a violation. Findings of fact by either Judge or jury are accorded very substantial deference by the appellate courts, and are generally not set aside unless clearly erroneous.

- U.S. District Court Judges are generally reluctant to make the detailed types "regulatory" determinations over access terms that can be necessary to support an "essential facilities" order, especially if ongoing supervision is likely to be required; and this can, I believe, increase a judge's reluctance to find a violation that would require an "essential facilities" type of order against as single-firm monopolist. The situation is substantially easier for the judge in the context of a joint venture network—because often the court can order the joint venture to admit newcomers to membership on the same terms as existing members, even if the original members may have borne initial risks that the compulsory new members no longer have to be concerned about. This may help explain why "essential facilities" claims have been most often accepted in the joint venture context and rejected in the single-owner

network. See *Alaska Airlines v. United Airlines,* and *Verizon Communications Inc. v. Law Offices of Curtis Trinko,* 540 U.S. 398 (2004) *("Trinko").*

- Administrative agencies may be substantially more willing to make "regulatory" findings than judges because this is generally what is expected of them by parliaments and the public, and they have resources that judges lack to monitor technical compliance. Thus in Europe agencies make findings of excessive pricing in Article 82 abuse of dominance cases (or even Article 81 joint venture cases such as *Visa* or *Mastercard).* In "essential facilities" cases they have been willing to get down to such details as ferry scheduling to maximize use of a harbour. *Stena Sealink.* All this helps explain the more activist approach to "essential facilities" issues that we have seen in Europe.

K. Conclusions

- The European antitrust tradition is much stronger than the U.S. in dealing with refusals to deal or supply—and it provides momentum in support of "essential facilities" access and interconnection orders against dominant single-owner networks.

- The U.S. approach has generally been to leave these access and interconnection issues to sectoral regulators (most often the Federal Communications Commission), and to reject efforts (especially by private plaintiffs) to create parallel rights under Section 2 of the Sherman Act. See *Trinko.*

- The situation is different for joint ventures, where the US courts have been willing to apply Section 1 of the Sherman Act to denials of access that single firm networks could maintain. This is part of a broader picture of more stringent antitrust scrutiny of most joint venture pricing and operating decisions and rules; and may help explain why a number of antitrust-prominent joint ventures are switching to a public ownership (see, e.g., MasterCard, the New York Stock Exchange, and most of the leading regional ATM banking networks).

- This underlying institutional difference between the U.S. and Europe may help explain some of the conceptual uncertainty and operational confusion that surround the antitrust "essential facilities", or "bottleneck

monopoly" concepts. In determining whether to invoke one of these imprecisely-defined concepts, an antitrust enforcer or a court may be influenced not only by the defendant's market power, motives and conduct—but also by whether it can frame an effective and fair remedy that it could effectively enforce against a foot-dragging monopolist

– & that would be less costly long term to the market it hopes to help!

- To the extent that broad substantive difference exist between Sherman Act Section 1 and 2 and Articles 81-82, this reality may take on increasing practical importance in a world of increasingly global networks and systems—and doubly so if private antitrust litigation becomes an important tool in Europe. See European Commission, *Green Paper on Damages Actions for Breach of EC Treaty Antitrust Rules* (20 December 2005); and D.I. Baker, *The EU Green Paper on Private Damages—An Ambitious Response to a Very Difficult Set of Practical and Philosophic Issues,* Competition L.J. (March 2006).

- The stakes may be quite high. Network access or interconnection remedies, if ordered by a *national* agency or court, may often have a *global* effect in the modern interconnected world.

- We could reasonably anticipate that UM competitors (or others) excluded by a *important* (but not necessarily dominant) *joint venture network* would be more likely to look at Sherman Act Section 1 remedies from the U.S. courts or enforcers. On the other hand, UM competitors that had been refused access by a *dominant single-owner network* would be likely to look at the enforcers in Brussels or the Member States for relief under Article 82 EC Treaty or its national counterparts. Private litigation under these laws in the courts of the Member States may also become a more significant likelihood.

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U.S. gold in telecom olympics?

By Jim DeMint

Like many Americans, last month my family enjoyed watching our Olympians push themselves to the limit, mentally and physically, to compete and win against the world's best.

With every millisecond counting, we would never dream of asking these athletes to carry extra weight. Yet this is exactly what Congress and the Federal Communications Commission (FCC) asks each day of our telecommunications providers.

While Congress claimed to "deregulate" the industry with the Telecom Act of 1996, regulations continue to handicap the nation's telecommunications sector. Just one of the orders implementing the Act was 737 pages long with more than 3,200 footnotes. Since the Act's passage, FCC spending has gone up 37 percent, the number of Federal Register pages devoted to the FCC record has tripled and, perhaps most disturbing of all, there has been a 73 percent increase in telecom lawyers to litigate these new rules.

In today's digital world, cable, phone, wireless and satellite companies strive to offer competitive packages that provide consumers a full suite of video, voice and Internet services. Internet service providers such as Google and Yahoo are poised to enter the market as well, and producers of content and applications are competing to offer consumers an exciting array of new services. Unfortunately, each provider is bound by a different set of confusing and burdensome rules that in many cases were written before these technologies even existed.

Today, wireless phones and VoIP are replacing traditional phones. Americans are trading in slow dial-up connections for broadband. Commuters listen to music or watch movies they've downloaded to portable gadgets; and wireless e-mail devices, often dubbed "crackberries," are gaining new addicts every day. Innovation has opened up a whole new world of telecom services and transformed once-limited wires and wireless facilities into converged platforms that can deliver an array of voice, video and data.

Most dramatically, cable and phone companies are attempting to rewrite their business models with an eye toward each another's customers. Cable companies already offer telephone service, and phone companies are ready to deploy new high-speed networks that allow them to offer video programming. But outdated franchise laws threaten to derail these efforts by needlessly impeding entry into new video markets.

Fortunately, the FCC has sought to keep cable free from "legacy" telephone regulations. This philosophy should be expanded to avoid placing any unnecessary burdens on new competitors in the video market as well.

Regulatory barriers that stifle innovation and restrict consumer choice are also harming our standing in the global economy. Asian competitors are leaving the U.S. in the dust. A recent study shows that since 2001, America has slipped from fourth to 12th place among the top-30 world economies in the percentage of people with broadband connections. South Korea, which ranked first in the study, boasts nearly 25 percent of its citizens having broadband access compared to only 12 percent of Americans. What's more, Americans who have broadband access pay nearly twice as much for it as their South Korean counterparts.

That is why I have introduced the Digital Age Communications Act (S. 2113). This legislation would sweep away the archaic rules that accumulated over the last century and open the market to all service providers who would play by the same rules. Consumers in a competitive market, not regulators in government, would decide what services best suit them.

Providers would be forced to compete for customers and rather than attempt to establish new rules for every new technology, the FCC would focus its efforts on guarding consumers against any abuse of market power.

We no longer live in a monopoly era. It is past time that Congress act to protect American jobs, by getting the FCC out of the way of this dynamic market.

As Congress begins to debate this and other legislation that will determine the future of our high-tech sector, you can be sure that companies who enjoy government protection from competition and lawyers who profit from the current system of litigation will emerge from the woodwork to try to defend their piece of the regulatory pie. Congress must resist these pleas to pick winners and losers, and instead put the focus where it belongs: on benefiting consumers through robust competition.

Jim DeMint, South Carolina Republican, is a member of the United States Senate.

CURRENT COMMENT.

An Italian bank, called the Banca Napolitana, has just been opened in Centre street, New York.

Our courts are not so very slow after all. The Supreme court of Pennsylvania has just decided a case that was begun only twenty-six years ago.

The next notable spike-driving in this country will take place next New Year's on the Mexican Central railway, and will doubtless be an international affair.

Zola has nearly completed another novel. "What a wonderful sewer contractor was spoiled when this person took to literature!" remarks the Chicago *News*.

On January 1, 1881, the mileage of railroads in Louisiana was only 632; to-day it is 1238, having very nearly doubled in the short space of thirty-four months.

Mr. Tilden's yacht Yosemite has been laid up for the season and the contemplated Southern cruise abandoned. It is quite improbable, by the way, that the idea was ever entertained.

When Senator Edmunds heard of the result of the Ohio election he is said to have remarked: "I am not surprised and shall certainly feel reconciled if it leads to the return of my old friend Thurman to the Senate."

Sarah Bernhardt must be hard up for money, or very slow pay, or she would hardly have allowed her household furniture to be levied on for a debt of only $245. She paid the bill, but not until the property was advertised for sale.

This year probably no foreign literary celebrity will meet with a warmer reception from the intelligent American people than Mr. Matthew Arnold, in spite of his fearlessness, frankness of expression, and his religious views.

The sentence of death recently passed upon Maria McCabe at the Wentworth assizes, Ontario, for the murder of her illegitimate son, will probably be commuted by the government. The hanging of women can never be made popular.

A new club is shortly to be established in London, having for its object the bringing together of all sorts and conditions of men who reside in or visit the metropolis. It will be known as the "British," and will be opened with 5,000 members.

Mrs. Murray, the wife of "Adirondack Murray, has just returned from Europe with a diploma from the Vienna Medical College, both as physician and surgeon, being, her friends say, the only woman in the country with this certificate.

The Prince of Bulgaria never commanded a regiment in the field, yet possesses thirty-seven decorations. He is still unhappy, however, says the *Courier-Journal*. "His commission as a Kentucky colonel has been delayed somewhere in the mails."

An artesian well is being sunk in New York on the site of the old Washington hotel, No. 1 Broadway, and has reached a depth of nearly 1,000 feet. It is intended to drill several hundred feet further, in the hope of striking a large stream of pure water.

Says the Cincinnati *News Journal*: "Vanderbilt is worth about 4,000 times his own weight in gold, or about 50,000 times his own weight in silver. It would be difficult to find a half decent man who doesn't consider himself worth a great deal more than that."

A florist in Boston furnished 20,000 roses, 20,000 carnations of different colors, 1,000 spikes of tuberoses, 500 bunches of violets, 1,000 sprays of heliotrope, 2,000 strings of smilax and 2,000 yards of English laurel for the decorations for the ball to the marquis of Lorne and the Princess Louise in Montreal.

The consolidation of telephone exchange companies in New England with the American Bell Telephone company has at last been effected in the hands of the new company, therefore, the telephone will continue to be used for local purposes in small areas, and will not be developed for long distance work.

The president of the Danner Land and Lumber company of Mobile, which has recently bought 600,000 acres of land on the Mobile and Ohio railroad, is Mr. A. C. Danner, originally from Winchester, Va. Only a few years ago he was a day laborer on the wharf at Mobile; he is now the wealthiest lumberman in the South.

Miss Josephine Yorke, a Cincinnati lady, is a member of Mapleson's opera company this year and will sing next week at the Academy. She is a contralto, and made her first appearance in Italian opera at Milan in 1878. Her London debut took place in 1875 in "The Marriage of Figaro," while she was connected with Carl Rosa's English opera company.

The prince of interviewers, M. De Blowitz, the Paris correspondent of the London *Times*, was recently interviewed. He said that he thought European, and especially English journalism, was passing through a transitional stage. There is at the present time a general awakening to the exigencies of the age; still the dignity of literature must be kept up, and two lines well written will always command the eye and imagination of the people.

Mr. John H. Douglass, now a New York assemblymen from Brooklyn, was in the early part of the war a member of the Seventy-first New York infantry, and while near Fairfax Court-house, in July, 1861, found a Bible belonging to the Ball family, which he took home with him and carefully preserved, in the hope of eventually restoring to the family what was evidently much valued. The identity of the owner has been recently established and the Bible was last week forwarded to Colonel Mottrom Delany Ball, of Langley, Fairfax county, Va.

use of its lines for long distance communications. The hostility of the Bell Company is no longer so formidable as it was a few months ago, however, and inventors will no longer be deterred by its indifference or its active opposition from spending their time and money in perfecting useful devices for which a market can be found as soon as the Bell monopoly is broken. The chief obstacle to long distance telephony at present is the cost of the wire, which would necessarily make the charges high so long as it could be used for only one message at a time. A multiplex telephone may not be an impossibility, however.

Further proof of the practicability of using the telephone for long distances was afforded by the success of the experiments made yesterday with a telephone between this city and Washington, a distance of 230 miles. The Bell Telephone Company, which now controls a large number of telephone patents, is not disposed to promote experiments in this direction, as its agreement with the Western Union Company forbids the

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The Bell Telephone Company has asked the Massachusetts Legislature for permission to increase its capital stock by the addition of $10,000,000 upon the ground that it desires to spend almost as much as this in extending the long-distance lines. But it has not been the policy of the Bell Company to erect and maintain wires. We do not understand that the existing long-distance lines were put up by this company, and an impression prevails that extensions of them will not be made by it. The making of a long-distance system has been intrusted to auxiliary companies, and the municipal exchanges and their wires are owned and operated by local corporations that pay the Bell Company $14 a year for the use of instruments that cost only $3 42. The Bell Company does not propose to build wire systems, but it would like to raise its capital so that the dividend rate would not appear so high. The present capital is the result of repeated dilution, but the company earns about 24 per cent. on it and cannot well avoid dividing 18 per cent. If the capital should be doubled by issuing new shares at par, the dividend rate could be reduced and would not then so clearly direct attention to the company's greed.

Article

The AT&T Antitrust Consent Decree: Should Congress Change the Rules?

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I. Introduction

The telecommunications industry in this country was long dominated by AT&T, a fully integrated provider of telecommunications services. Western Electric manufactured equipment; the Bell Operating Companies ("BOCs") provided local exchange service; AT&T provided interexchange (long distance) service that linked the local exchanges into a national and international system; and Bell Laboratories researched future industry developments. The antitrust history of the industry has been played out not only in the courts, regulatory agencies, and related settlements, but also in Congress. The most significant single event was the entry in 1982 of a consent decree that separated AT&T, Bell Labs and Western Electric from the BOCs, which were in turn restructured into independently owned and operated Regional Bell Operation Companies ("RBOCs"). The RBOCs were to provide local exchange services and were allowed to sell customer premises equipment, but were restrained from providing interexchange service, manufacturing telephone equipment, providing information services, and, except with court approval, engaging in other unregulated non-telecommunications businesses. The RBOCs are restive under these "line-of-business restrictions," particularly the prohibition against manufacturing

telephone equipment. They argue that allowing them to enter this business would make manufacturing more competitive, not less. Having failed to persuade the courts to eliminate the principle line-of-business restrictions,[1] the RBOCs have turned to Congress for relief.[2]

In this Article we consider whether legislation loosening the manufacturing restriction would be sound competition policy.[3] Our inquiry indicates that local exchange service remains a natural monopoly, and that markets for manufacturing telephonic equipment are workably competitive. So long as these two conditions prevail, there would be grave risk of serious competitive harm and little possibility of significant competitive advantage in allowing the RBOCs to enter telecommunications manufacturing markets.[4] We conclude that under the conditions now prevailing in the industry, the case for legislative relief has not been made.

Section II provides a brief overview of the facts and legal history leading up to the 1982 consent decree. Section III examines changes in industry conditions which have occurred since the decree. In Section IV, we present an analysis of (A) the competitive harms likely to flow from lifting the restriction, (B) the potential benefits from RBOC participation in manufacturing, (C) the possible effects on R & D in telecommunications, (D) the existence of less onerous alternatives to the manufacturing restriction which might be used to obtain potential benefits, and (E) the possible effects of lifting the restriction on the United States' balance of trade. Section V reviews our conclusions.

II. The Relevant History

The 1982 consent decree represented the culmination of more than forty years of executive, judicial and legislative efforts to deal with the formidable anticompetitive harms caused by AT&T's monopoly over all aspects of the telecommunications industry. The details of this history have been thoroughly aired elsewhere,[5] but the technological and social factors leading to the decree, and the theory underlying the decree's structural remedy, can be profitably reviewed here.

Industry observers had long assumed that the entire telecommunications industry would remain a monopoly. Local exchange service and long distance operations were assumed to be natural monopolies while other segments such as equipment manufacturing, though potentially competitive, were thought to function most efficiently when linked to the two monopoly segments within a single firm. Under this reasoning, a single integrated system would assure the most reliable and effective national telecommunications network.[6]

In the 1960s, this assumption was challenged from two directions. The first was technological; with the discovery that microwaves could be substituted for telephone wires in long distance service, AT&T's monopoly in this sector was no longer natural. Without duplicating either the switching system or the enormous network of wires controlled by AT&T, a number of firms could compete in the provision of microwave transmission.

The second challenge was socioeconomic in nature. At mid-century, the United States initiated a major monopoly case against AT&T that was settled with limited relief by a consent decree in January, 1956.[7] However, beginning in the late 1960s, the Federal Communications Commission was deluged by complaints from small central office and user-premise equipment manufacturers claiming to produce efficient, high quality products which AT&T refused to buy, or even to permit end-users to buy.[8] The Commission struggled throughout the 1970s to enact regulations which could monitor AT&T's relationship with these competitors, but by the end of the 1970s it was apparent that its relatively small staff could not keep up with the various technological, accounting and pricing strategies which AT&T

could devise to limit competitive incursion by other manufacturers.[9]

In 1974, nearly a quarter of a century after the first suit was brought, and while the first decree was still in effect, the government sued again.[10] It alleged that AT&T had used its lawful monopoly over local exchange services, operated by the BOCs, to also monopolize interexchange (long distance) services and telephone equipment manufacturing by restricting and eliminating competition from other long distance companies and suppliers of telephone equipment. Coinciding as this did with a growing awareness among economists, government policy-makers, and the public at large of the limits to regulation, the groundwork was laid for the deregulatory solution adopted in the 1982 antitrust decree.

After lengthy discovery, the trial began in the District Court for the District of Columbia before Judge Greene. The government's evidence tended to show that AT&T had planned and executed strategies to foreclose market access to telephone equipment and long distance services offered by others, including services and equipment that were as good or better than those AT&T provided. It imposed barriers on other long distance companies seeking to link with the BOCs, caused all the BOCs to buy from Western Electric, and obliged BOC customers to use Western Electric equipment.

Defendants moved to dismiss at the end of the government's case. In denying that motion, Judge Greene summarized the situation as follows:

> The government's evidence has depicted defendants as sole arbiters of what equipment is suitable for use in the Bell System-a role that carried with it a power of subjective judgment that can be and has been used to advance the sale of Western Electric's products at the expense of the general trade. First, AT&T, in conjunction with Bell Labs and Western Electric, sets the technical standards under which the telephone network operates and the compatibility specifications which equipment must meet. Second, Western Electric and Bell Labs ... serve as counselors to the Operating Companies in their procurement decisions, ostensibly helping them to purchase equipment that meets network standards. Third, Western also produces equipment for sale to the Operating Companies in competition with general trade manufacturers.
>
> The upshot of this "wearing of three hats" is, according to the government's evidence, a rather obviously anticompetitive situation. By setting technical or compatibility standards and by either not communicating these standards to the general trade or changing them in mid-stream, AT&T has the capacity to remove, and has in fact removed, general trade products from serious consideration by the Operating Companies on "network integrity" grounds. By either refusing to evaluate general trade products for the Operating Companies or producing biased or speculative evaluations, AT&T has been able to influence the Operating Companies, which lack independent means to evaluate general trade products, to buy Western. And the in-house production and sale of Western equipment provides AT&T with a powerful incentive to exercise its "approval" power to discriminate against Western's competitors.[11]

Judge Greene further concluded that the essential facility doctrine mandated that AT&T give competitive long distance companies reasonable, non-discriminatory access to BOCs.[12] Under that doctrine, as he viewed it, BOCs would have a duty to release technical information and compatibility specifications to all would-be suppliers.

The defendants responded that antitrust liability cannot be based on failure to release trade information to the general public, citing *Berkey Photo, Inc. v. Eastman Kodak, Co.*[13] Berkey Photo alleged that Kodak had attempted to monopolize the market for processing film by introducing, without advance

notice, a new film which could be processed only with equipment procured from Kodak, and by refusing to disclose the chemicals used in the new photo finishing process. The Court of Appeals for the Second Circuit held that a decision to withhold information from competitors would constitute an antitrust violation only if it involved abuses of market power rather than aggressive competition on the merits.[14] Convinced that Kodak had done no more than take advantage of its integration across possible market boundaries, the court concluded that Kodak's conduct was merely aggressive, competitive behavior.[15]

AT&T's behavior, by contrast, looked to Judge Greene much more like market power abuse than competition on the basis of a new, improved product. Kodak's conduct had increased Berkey's costs, but Berkey had still been able to process the new film despite Kodak's non-disclosure. By contrast, AT&T's non-disclosure was far more harmful:

> No piece of equipment can be interconnected with the country-wide public switching network unless it conforms to the compatibility standards set by Bell. An inability to obtain Bell technical information/compatibility standards thus constitutes an insuperable barrier to entry to the market (and the record does not show a reasonable basis for defendants' having withheld this type of information).[16]

During the pendency of the government's suit, William Baxter had become Assistant Attorney General in charge of the Justice Department's Antitrust Division. Viewing antitrust through the lens of neo-classical microeconomic theory, Baxter was convinced that AT&T had an incentive to cause regulated BOCs to pay Western Electric hidden premiums on its equipment, to get monopoly profits where it faced little competition, and to subsidize markets where there was political pressure to keep prices low.[17] Although earlier settlement negotiations had focused on possible conduct remedies, Baxter supported a plan to break up AT&T.

As viewed by Baxter, the 1982 decree was necessary because AT&T's control over the natural monopoly segment of the industry, local exchange service, had placed it in the position to leverage its power into other industry segments which depended on the local exchange network. For example, AT&T could leverage power by denying local service access to competitors, or discriminating in the quality of such access. AT&T's 1960s and 1970s behavior in long distance service and manufacturing utilized this strategy to some degree. Other leveraging devices, possibly used against manufacturing competition, included: (1) foreclosing opportunities of competitors either through direct self-dealing or through the more subtle means of product differentiation, price discrimination, delayed notification of changes in design, etc.; and (2) cross-subsidizing its competitive products and services by shifting costs incurred in competitive activities to its regulated local exchange monopoly, thereby breaking the link between price and cost in both the competitive and regulated markets. As regulatory oversight had failed to control these practices adequately, Baxter believed that the decree's structural solution was required. The relevant opinions make clear that the district and reviewing courts accepted essentially this conception of the decree.[18] Even AT&T saw the wisdom of Baxter's approach after Judge Greene denied AT&T's motion to dismiss. The expense and risk of litigation made a consent decree more attractive for AT&T. Some eight years after litigation began, a settlement was reached and the consent decree entered.

The decree relied on the theory that separation of local exchange service from industry segments vertically linked to the local exchange network was essential.[19] This separation resulted, on the one hand, in an AT&T divested of its power over the local exchange market, and, on the other, in seven RBOCs,[20] forbidden from entering manufacturing, long-distance, and other related markets. As Judge Greene took pains to demonstrate in considering the RBOCs' 1987 motion to modify the line-of-

business restrictions, these restrictions were not ancillary to the deregulatory solution adopted in 1982, but went to the very "root [of] the problem of claimed monopolistic conduct in telecommunications."[21]

III. Post-Decree Industry Developments

Since the decree, a number of technological and business developments have occurred, some as a direct result of divestiture, others not. While many of these changes have enhanced competition in segments such as manufacturing and interexchange service, none of them alters the basic division of the industry into a natural monopoly in the provision of local service and competitive markets in other industry segments.

The natural monopoly in local exchange services remains intact. While it would be perilous to predict long-range industry developments, industry analysts agree that it will remain impossible to organize competitively the core of that monopoly-the millions of wires providing the initial link between a residence or business and the first switch joining this user to the local network-at least until as yet unforeseen technological changes[22] and accommodating regulatory responses[23] have become realities. A few large, high-volume users have invested in the equipment needed to bypass the local exchange through multi-site private networks or by connecting with an interexchange carrier directly. There has also been a gradual growth of competition within some Local Access Transport Areas ("LATAs") for the carrying of calls from the first switch to other points within the LATA. The potential for this kind of competition arises not because local exchange natural monopolies are eroding, but because some LATAs, serviced by a single RBOC, are large enough in area and dense enough in usage so that different regions within one LATA could support competitive microwave connecters. An example is competitive connections between local exchanges in two cities in separate parts of a LATA. But even this development, which leaves the basic natural monopoly undiluted, is tentative, limited both by scale and scope economies and by regulatory hesitancy.[24] To the extent feasible, intra-LATA competition should be encouraged and regulators discouraged from restricting it.

To the extent that any RBOC's local exchange service natural monopoly is narrower than a LATA serviced by that RBOC, users should have the benefit of available competitive options, just as they do for inter-exchange service. But further development of such intra-LATA competition would not deprive RBOCs of their natural monopolies. In order to pose a genuine threat to the natural monopoly of user-to-switch wiring, it must be technologically possible and economically feasible for large numbers of users to bypass the initial exchange link. A number of factors militate against the large-scale use of bypass.[25] First, with present or foreseeable technologies, there remain substantial economies of scale and scope in local exchange telecommunications, making bypass prohibitively expensive for almost all users.[26] Second, from the point of view of the consumer, bypass only substitutes dependence on the local exchange network for dependence on the interexchange network to which one establishes a link. In order to avoid dependency altogether, a user must establish links with a number of competing services, wastefully duplicating costs.

In other telecommunications segments, by contrast, competition has thrived since the decree. There are now a number of significant interexchange carriers. Competition in the equipment manufacturing market is even healthier. Both the customer premise and the transmission equipment segments are occupied by numerous suppliers, small and large.[27] The most concentrated portion, the private branch exchange ("PBX") market, has three major and many smaller suppliers that compete effectively.[28] In central office equipment, the market for many products is vigorously competitive,[29] while in the only segment that remains at all concentrated, central office switches, there is, at worst, a decidedly rivalrous international oligopoly.[30] As could be expected, prices for customer premise equipment have dropped significantly.[31]

Innovation in equipment design and service, such as voice-instructed machines, in-coming call display, and call filtering devices, has dramatically improved.[32] It is noteworthy, however, that competition in the manufacturing industry comes largely from foreign firms, often powerfully positioned in their own countries through government subsidy or integration with exchange services, thereby facilitating self-supply at high prices which are passed on to consumers in their own countries.[33]

IV. Analysis of the Manufacturing Restriction

Deciding whether or not it would be wise to lift the restriction on RBOC participation in telecommunications manufacturing requires a weighing of the risks of anticompetitive injury against any potential benefits from RBOC entry. Separate consideration should be given to the effects of lifting the restriction on R & D in the telecommunications industry as a whole. One must inquire whether less onerous alternatives to the current blanket restriction exist. Finally, one must examine the foreseeable impact of lifting the manufacturing restriction on the United States' balance of trade. In other words, given the history and current conditions of the industry, is the remedy embodied in the 1982 consent decree still appropriate?

A. Competitive Harms Likely from a Lifting of the Manufacturing Restriction

As the review of current industry conditions suggests, despite slightly improved possibilities for bypassing local exchange networks, erosion of the natural monopoly in local exchange operations has been minimal, and the possibility for significant competition in these operations seems quite remote. Given this conclusion, the overwhelming competitive harm of lifting the manufacturing restrictions would be to provide an RBOC with both the capacity and the incentive to leverage its monopoly power into the manufacturing sector. Such power could be used to cross-subsidize its manufacturing operations with returns from its regulated monopoly and to coordinate local exchange services with manufacturing so as to prefer its own equipment and foreclose possibly more efficient competitors from access to the RBOC as a buyer. A variety of undesirable scenarios is imaginable under either the cross-subsidization or foreclosure strategy.

The principal feature facilitating cross-subsidization in the telecommunications industry is the high degree of common or joint costs of operation; that is, costs which cannot be clearly attributed to one industry sector because of the complex interdependence between wiring, servicing, switching and equipment functions.[34] This feature, intensified by the dynamic nature of technological change in many sectors of the industry, allows for costs from manufacturing to be subsumed under the local exchange cost umbrella in ways which are extraordinarily difficult to detect in a timely fashion.

If an RBOC entered manufacturing, cross-subsidization would allow it to market equipment at prices competitive with, or below,[35] those of other firms in the market, while covering some of its own actual manufacturing costs under its regulated local exchange rates.[36] Such cross-subsidization, unless plainly *de minimis,* would distort competition in the manufacturing market in which the RBOC's activities were being subsidized. By insulating the RBOC from the rigors of competition, cross-subsidization would enable it to attract market share from more efficient firms, thus distorting the allocation of resources in the manufacturing market. This distortion, which would always be present to some degree, would be significant where the subsidized RBOC had significant market share, and might be acute in markets like central office switches and transmission equipment, where the RBOC would likely be its own primary customer, and thus would be able to raise prices and earn monopoly profits in manufacturing at the expense of local rate payers.[37] Over time, of course, an RBOC could gain power in a market in which it originally had none, not by virtue of efficiency but through cross-subsidization.[38] Alternatively,

monopoly returns from cross-subsidization might take the form of excessive payments to management, labor, or other factor suppliers, or potential profits might simply be dissipated through waste which remained sheltered from competitive pressures, thus distorting resource allocation not only in manufacturing but in related input markets as well. Such cross-subsidization would also "tax" local service rate-payers, and frustrate the regulatory goal of keeping local exchange service rates properly related to costs.

Similarly, were RBOCs to enter manufacturing, they would have a variety of strategies at their disposal for foreclosing the business opportunities of competing manufacturers and self-preferring in purchasing telephone equipment. As under the pre-decree AT&T regime, RBOCs could delay the release of local service design information, thereby handicapping competitors in the timely production of new equipment.[39] Furthermore, RBOCs would now have an incentive to make unnecessary or inefficient changes in local service technology to facilitate self-preference, to the ultimate detriment of the consumer who pays for such needless innovation.

In their 1987 motion to eliminate line-of-business restrictions, the RBOCs argued that none of them, acting alone, could foreclose more than 15% of the national market in equipment and, consequently, that any self-preference in purchasing could have only limited anticompetitive effect.[40] It seems likely, however, that were one RBOC to prefer itself in the manufacturing market, others would follow suit, whether for "corporate image" reasons, as Judge Greene suggests,[41] or simply because they learn how to increase profits from one another's behavior. If RBOCs self-preferred in an interdependent manner, they could achieve, by conservative estimates, an aggregate foreclosure of as much as 70% of the market.[42] The further possibility of explicit or tacit "live and let live" relationships developing between the structurally similar RBOCs cannot be dismissed; after entry into manufacturing, RBOCs might quickly learn that they have much to gain by not competing aggressively among themselves and by jointly pricing significantly above cost.

As Judge Greene points out, the problems posed by the pre-decree AT&T regime were not essentially problems of size; hence, the 1982 division of the single national firm into seven regional firms did not diminish the basic risk of anticompetitive behavior which follows when a regulated monopolistic market and other competitive markets are combined under unitary control.[43] RBOCs can, and from a stockholder's point of view should, decide complicated issues of accounting, design and marketing strategy to their own advantage.[44] One need not assume dark-heartedness to recognize that leveraging monopoly power from the local exchange sector into manufacturing is far more than a speculative possibility. It is a likely outcome of eliminating the structural separation of local exchange service monopolies from competitive markets embodied in the 1982 decree.[45]

B. Competitive Benefits Possible from a Lifting of the Manufacturing Restriction

But for the line-of-business restriction, RBOCs would be potential entrants into telephonic equipment manufacturing. The principal benefit which could flow from lifting the restriction, then, would be the addition of seven potential entrants to the market. However, given (1) that the customer premise, transmission, and some portions of the central office equipment submarkets are already highly competitive, and (2) that the central office switching market is at worst an increasingly rivalrous international oligopoly, the addition of these potential competitors seems of modest significance.[46]

The RBOCs' presence as potential competitors might be helpful to discipline the pricing and strategic behavior of manufacturing firms, but as there are already sufficient firms in the market to assure market discipline, this theoretical benefit is superfluous at present.[47] Even actual entry by RBOCs would lack

significance because there are already enough firms in manufacturing to yield effectively competitive results. Furthermore, in manufacturing segments other than central office switching, there are many potential entrants besides the RBOCs,[48] and there may be some in the central office switching segment as well.[49] If the manufacturing markets RBOCs might enter were presently non-competitive rather than already workably competitive, the addition of seven potential entrants would be a counterweight tending to offset the competitive risks that arise from the possibility of leveraging monopoly power from the local exchange service market to the manufacturing market. But given the already competitive condition of the manufacturing markets, there is little benefit to offset the risk of monopoly leveraging that would follow from lifting the manufacturing restriction.

The significance of the RBOCs as potential entrants is further reduced by the likelihood that in central office switching, the only segment where performance might be noticeably improved, RBOC entry would be achieved through vertical joint venture relationships with foreign manufacturers already in the market.[50] Such entry would do nothing to deconcentrate the central office switching industry, and might not even yield new capacity. Indeed, its most probable consequence is to harm competition further by encouraging the newly integrated unit to try to foreclose other manufacturers and by stabilizing market shares. In any event, there is a high probability that foreign firms would further displace domestic firms in the manufacture of crucial central office equipment. It is conceivable that a particular RBOC might in the future show an interest in entering the central office switching market *de novo* by investing in new capacity rather than by entering into a joint venture and likely preferred customer relationship with one of the firms already in that market. If this occurred, that RBOC could still seek focused relief from the manufacturing restriction to allow for such entry. The court, at that point, could then evaluate the current state of the central office switching market and weigh any apparent benefit from entry against leveraging risks. Although having the court review the RBOC's investment plans would be awkward, it is certainly preferable to a blanket lifting of the restriction on the strength of the unlikely possibility that *de novo* entry might occur and that, if it did, it would be on balance competitively helpful.

Finally, the possibility of integrative efficiencies in establishing manufacturer-RBOC links must be examined. Such efficiencies could include facilitating information flow between industry sectors, and cooperative planning among local service providers and manufacturers for the future technological and marketing directions of the industry. However, not only are such efficiencies notoriously difficult to measure, but also any effort to attain them gives rise again to the dangers of cross-subsidization and foreclosure discussed above.

C. The Effects of Lifting the Manufacturing Restriction on Telecommunications R & D

The effect of lifting the manufacturing restriction on the locus, direction and volume of R & D is to some extent imponderable. Some distinctly unfavorable effects seem likely, as do some favorable ones. Some effects are not predictable with any confidence, as perhaps is inevitable when considering the dynamic consequences of significant structural change in a complex industry. Nonetheless, certain tendencies and incentives can be identified, and industry history utilized, in an effort to evaluate possible outcomes.

Before any effort was made to stimulate competition through antitrust or regulatory means, a vertically integrated AT&T was an inaccessible market to other manufacturers, who thus had no incentive to invest in innovation that would improve AT&T's performance. During this period, AT&T, being fully integrated and unencumbered by regulation, had strong incentives for innovation since it could exploit economies of scale and scope, capture the profit from any innovation produced by its research, and exploit interactive relations between segments doing R & D and segments using equipment.

Beginning with *Carterfone,*[51] the structural conditions for R & D took on a second configuration which may well have represented the worst of all worlds for innovation. Manufacturers other than the integrated AT&T, while encouraged to compete with AT&T, could hardly be confident of having consistent access to necessary information in comparison to AT&T's own manufacturing arm. Thus, the R & D incentives of these manufacturers, while improved, were not maximized. At the same time, regulatory efforts to make the playing field level, such as the FCC's highly complex *Computer II* requirements[52] and threats of even more complicated information flow regulations, adversely affected the R & D incentives of AT&T itself, since AT&T could no longer count on being able to appropriate all of the returns from its R & D. Also, because of regulatory constraints, its transaction costs rose, and its potential for information-flow and learn-by-doing efficiencies in product development were reduced.

Divestiture under the consent decree set the current stage in motion. There is no doubt that divestiture has had positive effects on the level of telecommunications innovation in the short run, and these effects are apparently continuing. Virtually all segments of manufacturing have been broadened to near global dimensions, and this competitive energy has led to new, better and greater varieties of products for user premises, interexchange and local exchange services.[53]

Most importantly, the incentives for all major actors are now free of conflict. RBOCs, so long as they remain out of manufacturing and "captive market" joint ventures with foreign suppliers, have strong incentives to study the equipment offerings of all suppliers, to inform those suppliers about their needs, and to encourage non-restrictive open interface standards and compatibility among alternative suppliers in order to avoid lock-in problems in the future. These ends are advanced by the standard-setting and clearinghouse activities conducted by the RBOCs through Bellcore. AT&T, in turn, has incentives to innovate on interexchange products where integration efficiencies are available. In local exchange products, AT&T's incentives as a potential seller are also clear. Like other suppliers, it must seek to learn about RBOC needs from Bellcore and from individual RBOCs, must innovate to meet those needs, and must keep RBOCs informed about its product development programs. Moreover, its performance is spurred by the presence of other competing manufacturers who now do perceive a level playing field. All competing manufacturers, none of whom needs now worry about an in-house advantage for AT&T,[54] have fresh incentives to innovate for the RBOC market.

If the manufacturing restriction were lifted and RBOCs independently entered manufacturing markets, those RBOCs would gain R & D incentives they do not now have. RBOCs, hoping to meet their own equipment needs and to benefit from the information flow and interactive advantages of their vertical integration, would no doubt engage in product development activities. But these newly gained incentives would likely be offset by the reduction in incentives for all other manufacturers, since existing manufacturers would no longer expect equal access to the integrated RBOCs as buyers. Moreover, the new incentives for RBOCs would not be maximized. The RBOCs' potential for attaining the kind of integration advantages AT&T possessed before regulation would be diluted by the inefficiencies resulting from inevitable and necessary, but imperfect, regulatory attempts to keep the playing field level. Regulatory efforts to assure information flow to competing manufacturers would put manufacturing RBOCs in the same unhappy situation AT&T faced before divestiture but after regulations to stimulate competition were enforced. Inevitably, RBOCs would be motivated to evade these regulatory requirements, and knowing that, the R & D incentives of competing manufacturers would be weakened. Finally, if the RBOCs entered manufacturing by linking with existing foreign suppliers, incentives might be even more distorted, thereby increasing the likelihood of regulatory evasion and weakened competition.

In most respects, the balance of incentives to integrate would likely be the same as it was shortly before divestiture. One might expect marginally fewer inefficiencies to result from regulation now than from

pre-divestiture regulation due to improved regulatory techniques. But in one important respect the situation might be even worse. Under the current regime, RBOCs have an incentive to standardize in ways that facilitate both nationwide system harmony and wide access by competing manufacturers. When AT&T was the single integrated firm, even if it made efforts to hamper competition by design changes, those efforts did not endanger system-wide standardization. But if seven separate RBOCs are each trying to design away from competition, they may also be designing away from the standardization needed for an effective, integrated national telecommunications system.[55]

In sum, though some of the outcomes are speculative or imponderable, there seems little likelihood that aggregate telecommunications innovation could be improved by lifting the restriction and considerable reason to fear the opposite result.

D. Are There Less Onerous Alternatives to the Line-of-Business Restrictions?

There are two conceivable ways to protect against the harms noted in sub-section (A) above: (1) controlling against cross-subsidization and foreclosure by regulation; and (2) relying on market forces, such as the counter-strategies of adversely affected firms, to deter these competitive harms.

The RBOCs have argued that these dangers can be addressed through regulatory means. It must not be forgotten that the history of the 1982 decree is a history of failure to regulate effectively these delicate intra-enterprise problems. The FCC's failure was extensively documented at the trial leading to the 1982 decree,[56] and was an integral consideration in the design of the decree's structural remedy. A regulatory agency must attempt to penetrate RBOC accounting systems and pricing strategies, to evaluate the utility of new devices, and to try independently to weigh the reasons given for releasing or refusing to release specific information to other segments of the industry. It cannot be expected that a regulatory body, with limited access to the internal planning decisions of the RBOCs, will achieve such objectives in an effective and timely fashion. If this was true at the time of the decree, it seems more likely now when regulatory agency staffing has been cut, and when the target of regulation would no longer be one large integrated company but seven large integrated companies. It may take years for regulators to uncover and prove cross-subsidization or other distorting strategies, making effective remediation for consumers or competitors nearly impossible.[57] The likelihood of a satisfactory regulatory solution is further diminished by the change of regulatory philosophy over the past few years and, perhaps, by a faltering determination by regulators to deter such practices.[58]

The unaided market will similarly fail to provide effective protection against cross-subsidization and self-preference. Because of the additional profits inherent in the RBOCs' control over local monopolies, the only counter-strategy likely to occur to competing manufacturers without a current RBOC link is imitative vertical integration with another RBOC and self-preference. Thus, if one RBOC linked itself with a major foreign equipment manufacturer, foreign equipment manufacturers and AT&T itself would be pressured to seek out links with other RBOCs. But such steps would not be solutions; from the point of view of the public, they would simply exacerbate the problem. As Judge Greene explained, "Regional Company [RBOC] claims of wishing only to participate with others in ... restricted businesses on a level playing field obscure the fact that there is no level playing field when one of the participants holds an unassailable franchise on the goal lines."[59] Moreover, any attempt to encourage market forces by regulation would most likely require the repartitioning of the accounting, design and marketing functions of the two segments of the vertically integrated RBOC, thereby reducing, if not eliminating altogether, precisely those efficiencies which might be obtained through the RBOC's vertical integration.[60] Unfortunately, no regulatory approach seems adequate to overcome the dangers posed by allowing the monopolistic local service sector of the industry to join forces with the competitive

manufacturing sector.

E. Balance of Trade Concerns

Finally, the effect of RBOC entry into manufacturing on America's international trade and balance-of-payments is not sufficient to justify lifting the manufacturing restriction. If RBOCs entered manufacturing on their own, and conducted their manufacturing operations in this country, lifting the manufacturing restrictions would increase America's share of aggregate world production. However if, as is more likely in the central office switching segment, RBOCs entered the market through vertical integration, there would probably be a geographic division of labor, with product-oriented research and development and basic parts manufacturing performed offshore, leaving only assembly to be performed in the United States.[61] The result would be to increase America's technological dependence on foreign countries. On balance, the possibility of benefits for America's balance-of-payments is speculative at best.

V. Conclusion

The lessons of ten years of experimentation with deregulation in this industry and others are relatively clear. Significant gains can be achieved by freeing regulated industries from the expensive and cumbersome constraints of regulatory agencies if, and only if, the antitrust laws are subsequently applied with vigor. As experience in the airline industry demonstrates,[62] little is gained when lax antitrust enforcement allows the newly liberated marketplace to be dominated by the anticompetitive strategies of a tight, and perhaps interdependently cooperative, oligopoly. In the telecommunications field, where technological and organizational limits on competition set by the local service natural monopolies are so evident, the case is even stronger for conscientious and assiduous antitrust oversight aimed at maintaining a structure in which competition is the principal protector of the public interest.

At the present time, the risks of competitive harms likely to follow from RBOC entry into manufacturing are manifest and substantial, while the benefits of potential competition are both more speculative and less weighty. If technology and regulatory responses developed to the point where local exchange service itself became workably competitive, then the need for the current constraints would end. But today, there are simply no realistic and effective alternatives to the structural separation of markets embodied in the 1982 consent decree.

CHAPTER FOUR

The Divestiture

Subsequent to the divestiture agreement, AT&T and the Justice Department agreed upon a Plan of Reorganization, a blueprint for how the nation's telephone system was to be restructured. The plan addressed a variety of details, the most important of which were the following:

- The Regional Bell Operating Companies [RBOC's] - the number and composition of the Regional Bell Operating Companies that would be formed by grouping the BOC's.
- Local Access and Transport Areas [LATA's] - the formation of new geographic areas, LATA's, that would distinguish local telephone service areas from long distance service areas.
- Equal Access - what steps to take and when to offer the other long distance companies the same type, quality, and price of access to the BOCs local exchanges as AT&T Long Lines [renamed AT&T Communications after divestiture] enjoyed.

Reorganization Of AT&T

Immediately after divestiture, AT&T reorganized as AT&T Communications, the regulated long distance company; and AT&T Technologies, an unregulated corporation combining research, manufacturing, and equipment marketing. AT&T's income comes from two principal sources:

- The sale of long distance telephone services.
- The manufacture and sale of telephone equipment.

The Reorganized Bell Operating Companies

Following the divestiture, the 22 Bell operating Companies were formed into 7 Regional Bell Operating Companies [RBOC's] that were entirely independent of AT&T and each other. The seven regions are as follows:

- Nynex
- Bell Atlantic
- Bellsouth
- Ameritech
- Southwestern Bell
- US West
- Pacific Telesis Group

Since the RBOC's no longer had access to the technical support services that had formally been provided by Bell Labs, Western Electric, and other AT&T groups, they banded together to form a new service organization, which is known as BELL COMMUNICATIONS RESEARCH, INC. [BELLCORE]. BELLCORE is funded equally by the seven regional operating companies. In addition to such services as new product evaluation, assignment of new area codes, and special projects requested by the BOC's, BELLCORE serves as a standardization agency for the industry. Local Access and Transport Areas [LATA's]:

Local calling areas were mapped into 165 local access and transport areas throughout the United States. The operating companies were empowered to handle calls within their LATAs and to charge all long distance companies, including AT&T Communications, for connecting their customers to the long distance company networks. Only long distance companies were empowered to provide telephone service between LATAs.

The Reorganized GTE

In 1987 GTE reorganized its headquarters group in Stafford, Connecticut, into seven operating companies:

- GTE California
- GTE North
- GTE Florida
- GTE Southwest
- GTE Northwest
- GTE South
- GTE Hawaii

Other significant developments occurred in GTE operations, including:

- The purchase of the Airfone Corporation.
- The consolidation of their subsidiaries, manufacturing lighting products, precision materials, and advanced telecommunication equipment, into one major group called PRODUCTS and SYSTEMS.
- The sale of US Sprint.

Airfone provides air-to-ground telephone service for passengers on commercial airlines. The connection is established from the airplane to one of nearly 70 ground stations located around the country. The call is then routed over land lines to the desired telephone. Formerly owned by Western Union and A. F. Holding Company, it was purchased by GTE in early 1987.

In addition to basic telephone operations, GTE produces a variety of consumer and telecommunication products, which are sold to the public and to telephone companies. At one time GTE was the sole owner of US Sprint, the third largest long distance carrier in the country. Later, GTE sold half ownership to United Telecommunications. In 1988, GTE sold its remaining interest in Sprint to United Telecommunications, thereby removing itself from the long distance telephone business.

Interconnect Vendors

Interconnect vendors provide customer-premise equipment, such as telephone sets, modems, private branch exchanges, speakerphones, answering machines, and related telecommunication equipment. This industry, made possible by the landmark Carterfone decision, was stimulated by the development of the MODULAR JACK, an interface device which provides easy interconnection of telecommunication equipment to telephone company lines. After initially witnessing an explosion of products and services in the marketplace, the industry has recently experienced a tremendous shakeout of small companies.

The Bell Operating Companies

Since the divestiture, the Bell Operating Companies are no longer responsible for providing maintenance and repair on CPE's.

Telephone Repair: The local telephone companies are responsible for maintaining the telephone lines connecting subscribers to the central office. They are not responsible for the wiring on the customer's premises or for the terminal equipment. Thus, when a subscriber has a problem, it is the customer's responsibility to determine whether the trouble is in the telephone instrument, the wiring on the premise, or in the telephone company's facility.

Common Carriers

As a result of the Modified Final Judgment, the terms, Bell System and Independents disappeared from the telecommunication vocabulary, and new names evolved to describe various segments of the industry. Local Exchange Carriers: The BOC's and the other telephone companies that furnished the local telecommunication service within their franchised areas are known as LOCAL EXCHANGE CARRIERS [LEC's]. The LEC also provides access to and

connection with a long distance carrier. Interchange Carriers [IXC's or IC's]: Inter-exchange Carriers provide long distance telecommunication services in a competitive environment. They include specialize carriers, value-added carriers, satellite carriers, and resale carriers. IXC's purchase access facilities from the LEC's to obtain connections from the customer's premises to the IXC locations known as the POINT OF PRESENCE [POP]. The IXC is regulated by the FCC for interstate business and by the state regulatory agency for interstate business.

International Carriers

There now exist two types of international carriers:

- International Record Carriers
- International Carriers

International carriers are permitted to carry voice and data traffic, while the International Record carrier can carry voice, data, record, [message/telex], and other traffic, such as facsimile.

Government Agencies

The FCC exerts substantial influence on telephone regulatory matters. There are, however, three other important sources that exert indirect but considerable influence on telecommunication regulations:

- The Congress
- The Judiciary
- The White House

Since the FCC was created by Congress and is subjected to its authority, Congress wields substantial influence over it. The Judiciary's power is to review, revise, and possibly reverse FCC rulings makes them a regulatory force. Although the FCC does not deal directly with the White House, it usually reflects its regulatory philosophies, because commissioners appointed by an administration usually reflect that administration's policies in their decisions.

Equal Access

The MFJ required that all Bell Operating Companies with electronic switching systems and with a market of at least 10,000 access lines offer equal access to all long distance carriers. It also required the access to be phased-in during the period between September 1, 1984 and September 1, 1986. Equal Access is defined as access that is equal in type, quality, and price to that provided to AT&T. Equal Access is also called "DIAL 1" or "1 PLUS" service. The first equal access conversion took place in Charleston, West Virginia, on July 1, 1985. It is estimated that by 1990 about 90% of the conversions will have taken place; however, the process will not be completed before 1992.

Access Charges: Access charges are of two types:

- Those levied on the long distance carriers.
- Those levied on residential and business customers, The latter are known as the Federal Customer Line Charges.

Federal Customer Line Charges: Prior to divestiture AT&T long distance revenues were shared with the local telephone companies based on the local telephone company investment and expenses in providing access from local customers to the AT&T network.

Federal Customer Line Charges were implemented on June 1, 1985, after considerable controversy. The initial monthly charge was $1.00 per line. On June 1, 1986, it was increased to $2.00 per line. On April 1, 1989, the charge was increased to $3.50 per residence and business line.

Bypass

Bypass is the use of private communication facilities or services to go around or avoid the local telephone exchanges of

the public switched network. A decision to bypass is usually based upon economic factors that justify the expenditure of large sums of money to avoid using the services of the local telephone company.

Teleports

Teleports are extensive earth station and satellite antenna complexes constructed to serve large volume users in metropolitan areas. Teleports usually build their satellite antennas away from densely populated downtown areas and run high-capacity microwave or fiber optic links from customers in the city to the earth station complex.

Computer Inquiry III [CI-III]

Computer Inquiry III examined the degree to which telecommunication carriers could offer enhance services. In a 1987 decision, the FCC decreed that AT&T and the BOC's could offer unregulated, enhanced services under a set of complex provisions known as OPEN NETWORK ARCHITECTURE [ONA]. Before the services could be offered, however, plans for implementation of ONA had to be approved by the FCC. Many details remain to be resolved in this matter.

Reassessment Of The Modified Final Judgment

In order to ensure that the conditions of the Modified Final Judgment were working as planned, AT&T and the Justice Department agreed that progress would be reviewed every three years. First Triennial Review: On September 8, 1987, Judge Greene announced the result of his first triennial review of the restrictions that had been placed on the Bell Operating Companies. The most Noteworthy restrictions placed on the Bell Operating Companies were that they were prohibited from the following:

- Providing inter-LATA service.
- Entering the telecommunication equipment manufacturing business.
- Providing information services.

In his report, Judge Greene continued the first two restrictions in their entirety. However, he did relax the restrictions on the BOC's regarding the provision of information services by permitting the BOC's to provide the transport of information. They were still restricted from providing actual information.

United States v. AT&T: Court Documents, 1974–1984

By virtually any measure, *United States* v. *AT&T* ranks at the top of all the major cases in American history involving law and business. Before the divestiture of its local phone companies on January 1, 1984, AT&T was the world's largest corporation. Now, after years in court and thousands of pages of legal motions and briefs, tens of thousands of pages of testimony, still more thousands of pages of reorganization plans, and hundreds of pages of court opinions (all published in UPA's collection for the first time), AT&T has changed dramatically—into eight independent companies—and the telecommunications industry has entered a new era of competition, invention, and uncertainty.

At its core, *United States* v. *AT&T* was a classic antitrust case pitting the federal government against big business. There were allegations of monopolistic control over a major industry; and there were counterclaims, first, that no such control existed and, second, that, even if such control existed, it was incidental rather than purposeful and unlawful. Following more than six years of pretrial discovery, the trial commenced in January 1981 before Judge Harold Greene in the U.S. District Court in Washington, D.C.

The trial was beginning its second year when the government and AT&T announced that they had reached a settlement and that the settlement would involve the breakup of AT&T's Bell System. After six months of deliberation Judge Greene approved the basic principle of the settlement—divestiture of the local phone companies—and after another year he issued his final opinion.

Whatever the ultimate assessment of the breakup of the Bell System, the common point of departure for any research or study of the past or future of AT&T and the telecommunications industry will be the landmark court case, *United States* v. *AT&T*. As an antitrust case, it will be of great importance to attorneys and legal researchers. As a pivotal point in the evolution of the telecommunications industry and as an exhaustively detailed examination of the history and business practices of the world's largest corporation, *United States* v. *AT&T* will be of no less importance to business historians. For those attorneys, researchers, historians, and anyone else interested in the case, an authoritative record of the valuable documents generated by the case will be essential, and such a record is what is published for the first time in *United States* v. *AT&T: Court Documents, 1974–1984.*

Included among the more than 30,000 pages of this collection are the legal briefs and arguments, the pretrial and trial testimony, the major reorganization plans, the opinions and modifications of Judge Greene, and other documents. With all of these materials conveniently available, researchers at last are able to trace the development of the case, weigh the claims of the opposing parties, and begin to evaluate the outcome.

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HOUSEHOLD FINANCING OF THE FIRST 100 FEET?

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Currently most households obtain access to the Internet through dial-up modem. Modem technology has improved dramatically in the past five years. In 1991 customers typically obtained access through a 2400 baud modem; today the default rate is 28,800 with a fair likelihood that new dial-up modems will be operating at 56,000 baud in 1997. 1 Despite this unanticipated growth in modem speed over ordinary telephone lines, there is a widespread feeling that fundamentally different technology must be adopted by users in order to exploit the full potential of the Internet, particular new video and graphics-oriented services.

The provision of high-speed data access is likely to come from one of four suppliers: the telephone company, electric power networks, cable networks, or satellite systems. 2 With the first three of these technologies, a supplier needs to make large, customer specific investments in cable and electronics. Such a course is risky because the investments are sunk. If a subscriber does not use the installed technology, the equipment has almost no resale value. It is unlikely that a telephone, cable, or electric facility provider will find it economical, or possible to recover their cable. While it may be possible to recoup the electronics, such as a high-speed modem, there will be a high-transaction cost associated with the activity.

Not only are the investments risky due to asset specificity, but there is a great deal of uncertainty associated with the investments. Businesses that have studied investing in new loop technologies for data and video services have often found that the current market and industry structure makes it quite difficult to justify the investment in new infrastructure. Because of the unhealthy prospective returns, many businesses have scaled back the infrastructure plans announced a few years ago. For example, many telephone companies have scaled back their plans for upgrading their networks for provision of video dial-tone. 3

Around the world, nations are changing their regulation of communication businesses in order to improve the earnings potential of customer access investments. In order to improve the economics of facility-based competition, barriers that separate voice, data, and video markets are being removed. 4 Even with these changes in-place, businesses are investing incrementally in new customer access networks. There is a low likelihood of rapid deployment of a high-speed data network to the home.

In this chapter we explore taking a different path towards infrastructure investment. Instead of relying on private capital, we explore the possibility of using consumer dollars to finance the construction of the first 100 feet from the household. As we show in the following section, subscriber-financed access lines played an important role in developing the nation's telephone network. The historical precedent can be used to illuminate the salient factors that made this a viable path. After examining these events, we address in the following section the practicality of pursuing a similar course today.

User Capital and the Development of Rural Telephony.

The period 1893 to 1911 is best known for the expansion of rural telephony during the competition between AT&T and independent local exchange companies. The development of rural telephony did not begin in earnest until after 1893, when Bell's fundamental patents began to expire. Rural America had been largely ignored by Bell during the patent monopoly period. Bell had followed this investment

strategy because it believed that the market for telephone service was primarily for business users in major cities. In fact, the Bell companies seriously underestimated the demand for telephony in rural areas and small towns. 5

For a variety of reasons, investment capital was scarce during this period of American history, particularly in rural markets. The scarcity of outside capital did not deter the farmers and businessmen in rural areas. Instead of depending on regional or national markets to fund the development of local telephone companies, local independent telephone companies relied almost exclusively on local capital and labor. Subscribers in rural communities were frequently required to buy stock in the new telephone companies. The sale of stock certificates to customers, at prices ranging from $25 to $50, provided sufficient money to cover the cost of installing the customer's phone. These installation fees served as the primary source of capital for many companies. 6

The developers of rural telephony were also able to hold down the financial cost of constructing a telephone company by requiring subscribers to donate labor and material. Customers were often required to build the drop-line that connected their farm house with the distribution line running down the main road. Rural subscribers were also asked to aid in the setting and stringing of the distribution lines and wires that connected the different rural houses to the switchboard. 7

By relying on local capital, and the cooperative effort of its patrons, rural companies were able to overcome the shortage of capital that was, in part, responsible for the delayed development of telephony. 8 The size, organization and construction methods of the independents varied considerably. Sometimes rural "roadline" companies were established in which six to twelve farmers would share one line. The line would be constructed by stringing together the roadside wire that marked the farmer's property lines. When first established, the physical plant of the roadline companies did not connect into any switchboard. The customers could only contact other customers on their line. 9

Eventually the commercial telephone companies competed vigorously to interconnect these "roadside" companies with their toll lines and exchanges in nearby villages. The independent village companies were often established by doctors who wanted to enhance their ability to contact and be contacted by other doctors and patients. In addition, local businessmen recognized that the telephone enhanced the commercial standing of their city. After a telephone system was installed, residents in and around surrounding communities found it easier to transact business with village merchants. 10

The financing of the village and "roadside" companies differed. The village companies were more likely to be funded by a few professionals and businessmen who foresaw an opportunity or a need to enhance the value of their businesses by improving the infrastructure of the town. The "roadside" companies, on the other hand, relied almost exclusively on subscriber contributions. The farmers were more concerned with the social benefits of the phone, most noticeably how it reduced their level of isolation. They were less concerned about the financial externalities associated with a phone. 11

The firms that competed with Bell usually obtained their financing from a few local businessmen. The businessmen in these larger cities were businesses such as law or railroads. But in at least four competitive Wisconsin exchanges, Wausau, Merrill, Rhinelander, and Grand Rapids, the stock holding was not concentrated in the hands of any one or two groups of businessmen. The founders of the Wausau Telephone Company established a rule which prohibited anyone from holding more shares of capital stock than the number of phones rented for his personal use. They did this in order to ensure that no party would establish a pricing policy that would allow the firm to earn supranormal profits. 12

In order to provide high-quality toll service, the city exchanges constructed by the commercial

independent companies were based on the same construction practices as the Bell System. In order to minimize transmission impairment on toll calls, the entrants used metallic circuits to connect customers to the central office and for interexchange circuits. Rural exchanges, which were more likely to have used single wire, grounded, iron conductors, were at times refused interconnection with the Independent toll network because of the larger exchange's concern about maintaining high-quality service. 13

Would Customer-financed Networks Succeed Today?

The success of rural telephone companies suggests that it may be possible to repeat the experience of the start of the century by bringing new telecommunications services to residential households through customer financed networks. There are some important similarities between the events at the turn and the end of the twentieth century, but we argue below that there are important differences.

Demand Uncertainty

One of the biggest impediments to investments in telecommunications infrastructure is the uncertain demand for new services. Telecommunications suppliers, for example, hesitated to deploy high-speed telecommunications networks in Iowa, Nebraska, and North Carolina, despite the clear desire by these state governments for the deployment of leading-edge technology. The telephone companies in these states were concerned that the demand for new services would not materialize. They refused to begin construction until the State governments shared the risk of the undertakings. 14 Due to the uncertainty about future demand levels, many other suppliers have exhibited a similar hesitancy about infrastructure investments. 15 Firms are reluctant to invest in infrastructure modernization because of the uncertainty regarding consumer interest in the new products that can be sold through the technology.

The telephone system also faced a kind of demand uncertainty at the turn of the century. The Bell system had misconceived the nature of telephone demand, assuming that it was primarily suited for an urban, business market. They therefore targeted their investments on cities and ignored small towns, farm areas, and short-haul toll lines. The opportunity for end-users to make their own investments provided a huge stimulus to telephone development. It did so by providing an opportunity for the real pattern of demand to emerge spontaneously. It signaled to the supply-side of the market that there were pockets of intense demand that had been overlooked. Due to the network externality, rural customers' investments in outlying areas increased the value of the investments of commercial exchanges in villages and towns once they were interconnected, and also provided a stimulus to the development of the toll (long distance) market.

The importance of end-user investments as part of the "discovery process" that defines and develops the market can hardly be overstated. End-user investments are more fungible and more capable of responding to highly variable levels of demand than investments made by large-scale, capital-intensive carriers. Whereas the latter must worry about the common denominator of demand in a neighborhood and how an investment in that neighborhood would be recovered from *aggregate* usage patterns, a consumer only has to worry about his/her *own* needs. And who knows those needs better than him/herself?

There is an important difference between the early 1900s and the present, however. The self-financed telephone networks of the early 1900s provided service and products that were already available and accepted in other parts of the country. Farmers knew exactly what they wanted from a telephone -- they knew that they could use the instrument to overcome social isolation and to expedite commercial transactions. Telephone service constituted a tangible, significant improvement in the farm dweller's quality of life. Indeed, many farmers had tried for years prior to the expiration of the Bell patents to

construct their own telephones and lines but were prevented from doing so by Bell system patent infringement lawsuits. 16 Far from being plagued by the kind of demand uncertainty facing new and enhanced telecommunications services today, there was huge pent-up demand for telephone service.

The lesson that can be drawn here is that it is unrealistic to expect consumers to finance on their own initiative any part of the infrastructure needed to support *non-existent advanced services*, such as video-on-demand, extensive home shopping, or video dial tone. The value of these services is purely speculative, and in some cases their differences with services currently delivered by cable TV is rather subtle, to put it charitably. But for services such as Internet access, where the nature of the service and its perceived benefits are clear, and the current infrastructure is perceived as inadequate by many users, consumers may well have the incentive to take the initiative.

Standardized Technology

Not only was the value of telephone usage well understood by the farmers, but so was the technology. Through their trade associations, the independents quickly established construction standards that essentially emulated the methods adopted by the Bell System. 17 The technology was not especially complicated. Iron or copper wire was strung from the household to a manual switchboard in the nearest town. Therefore when rural customers decided to finance their own network, the choices in technology were rather limited: copper or iron wire, ground or loop return.

Today of course, there are a myriad of choices: ATM, frame-relay, fiber, hybrid fiber-coaxial, SONET, compression, fiber, multiplexer, coaxial cables, power sources, set-top boxes, etc. Rather than being able to simply string up a wire on a pole, an investor has to consider the multiple technologies available today, and be able to make a reasonable forecast of future technologies. An early adopter wants to avoid making a commitment to a technology that will not be compatible with other communications technologies, or expensive relative to facilitates that can be deployed in the near future. Established suppliers are having a difficult time determining what is a sensible network architecture; residential consumers hardly have the expertise or the resources to evaluate the comparative advantages of these different technologies.

That being said, users face some of the same uncertainties with regard to their investments in computer terminals and software. Technology is imperfectly standardized and heterogeneous. This has not prevented them from making substantial investments in PCs, modems, and other CPE. But the degree of uncertainty and heterogeneity is much greater for access facilities relative to CPE. Consumers obtain information about computers from magazines, friends, and associates at work. All of these information sources are inexpensive relative to the cost of assessing the merits of different customer access technologies. Due to this high cost of information, there are few early adopters of customer access facilities. Until a substantial critical mass of users exist that create an inexpensive market for information, users may find themselves committed to inferior, but well accepted technology. 18

Deciding what is the appropriate technology is not a barrier where the use of the network is well-defined. In Project "Net Day," volunteers, working in cooperation with private companies, worked to wire schools and libraries with Internet access. The success of Project "Net Day" shows that collective resources can be marshaled to provide an improved infrastructure at a low cost once a community decides to adopt a particular platform. But the technology used in these undertakings is hardly leading edge; the goal is often to provide 28,800 bytes per second connection over the existing telephone network. 19 Like the development of rural telephony, the Net Day project is expanding the use of an existing technology, not deploying new technology whose applications and value are uncertain.

The danger of deploying state-of-the-art technology in anticipation of new uses is illustrated by recent developments in North Carolina:

> [W]hile North Carolina involved potential users during the planning for its network, the project has experienced slower-than-anticipated acceptance by some users because of the high cost of using the system. One reason for this lower acceptance is that the system was designed to carry two-way video to multiple sites. However, some of the schools that the state anticipated would use the network wanted to buy only access to the Internet at higher speeds than were available over conventional telephone lines, which is a less expensive service to provide.[footnote omitted] As a result, some users were unwilling to pay for the capacity to send and receive video images, when they would rather have had less expensive data connections. Since the rates the state pays the telephone companies were based on estimates of use that have not been met, these rates, and ultimately the rates charged to users, could go up to allow the telephone companies to recover their investment, further discouraging use of the statewide network. 20

This example illustrates some of the inherent limitations of supply-side-driven efforts to gauge demand. Companies make investments based on what users tell them they want; but until the users actually have to pay for the service over a significant period of time, their real utility function cannot be discerned. In a user-driven network, there is much less of a communication gap between the investment and the value. Users make specific investments (e.g., an improved modem) to achieve specific results. Granted, they may make errors and/or be disappointed with the results, but the risk of loss is much smaller than when such a decision is made on the scale of an entire city, state, or nation.

Outsourcing vs. In-sourcing

The critical issue we wish to raise is this: assuming that there are significant numbers of consumers who want something new and better from their access line, does the presence of an increasingly heterogeneous and competitive market for telecommunications channels eliminate the need for them to make the investment themselves? Suppose, for example, that end users want higher-speed access to the Internet. One solution is to build it themselves. Another is to hope that entrepreneurs develop alternative access technologies, such as satellite-based Internet access, cable modems, ISDN, or a new wireless service in the PCS band. Yet another alternative is for the consumer to put their investments in increasingly powerful and sophisticated on-premises equipment (computers, modems, consumer electronics) that provide the intelligence to overcome the limitations of the access lines. If these alternatives are compared systematically, we find that a combination of the latter two (service provision by competitors and improvements in CPE investments) are more likely to be optimal for consumers than taking over the first 100 feet.

CPE equipment provides the consumer with more flexibility than investment in the first 100 feet. With a computer, different modems can be connected depending on if satellite, cable, wireless, or telephone access to the Internet is selected. Depending on the service provider, a different modem, possibly supplied by the network provider, will be used. For example, cable companies will be supplying high-speed modems to their subscribers that are willing to pay a monthly access fee of $40-50 a month. 21 On the other hand, the first 100 feet from the household to a shared facility, such as a pedestal, is likely to be equipment that will be more closely tied to a particular technology. For example, a consumer might invest in cable that can be used to obtain high-speed wireline service, but is of little use when service is obtained from a wireless supplier. 22 Due to this asset specificity, the household will not be in a good bargaining position with a supplier. The cost of the cable will be a sunk cost that has little

alternative use to the owner. The content supplier, knowing that the cable has limited alternative uses, will likely seek contractual terms that extract much of the value from the user. 23

Endnotes

1. Peter H. Lewis, "New Modem Plans by U.S. Robotics entices Wall Street," New York Times, October 21, 1996, D6.

2. There is some possibility that high-speed access could be provided using the licensed and unlicensed PCS spectrum now allocated to paging and mobile telephony operations. Currently, however, most applications associated with this spectrum run at fairly low speeds. In such cases the high opportunity cost of using large bands of spectrum for high-speed data to the exclusion of many voice channels makes this an unlikely path for high-speed data access at least in the near term. Over the longer term, unlicensed spectrum applications and improvements in wireless data protocols may solve this problem.

3. Kevin G. Wilson, "Canada's New Regulatory Framework: A Formula for Infrastructure Development?", p. 22. Telecommunications Policy Research Conference: 1996.

4. For example, Kevin Wilson notes that the Canadian government has recently adopted policies that encourage cable and telephone companies to enter into each other 's markets:

> Although I have found no explicit mention of it in the framework decision, it is reasonable to assume that it is grounded in the economics of infrastructure development, or more appropriately, the *un*economics of infrastructure modernization. The CRTC's policy would appear to be grounded in the supposition that projected revenues from broadband common carriage will be not be sufficient to foster investment in this technology. Ergo, the opening to common carrier participation in programming and other types of service content. Presumably, network operators will be able to justify investment in networks if they are allowed to benefit from revenues generated at the level of programming and other services carried over their networks. The presumption that network revenues will be insufficient to justify investment would appear to be born out by the slow growth of broadband implementation in the local loop. The CRTC's newfound tolerance of vertical integration in the telephone industry is clearly designed to create the most favorable conditions possible for investment in broadband technology.
>
> Ibid., p. 19.

See, also, Richard A. Cawley, "Adapting the European Union Telecommunications Regulatory Framework to the Developing Digital and Integrated Services Environment," working paper, April 1996.

5. Milton Mueller, Universal Service: Interconnection Competition and Monopoly in the Making of the American Telephone System. Cambridge, Mass. and Washington, DC: MIT Press/AEI Series on Telecommunications Deregulation, 1996, Chapter 5.

6. See, for example, Wisconsin State Telephone Association, pp. 5, 10, 31, 44, 77, and 111; Constitution of the Kegonsa Independent Telephone Company, located in Minutes of the Board of Directors, WSHS; and Western Electrician 16 (November 30, 1895), p. 267. A twenty-five dollars expenditure in 1895 dollars is equivalent to about $320 in 1986 dollars. Historical Statistics of the United States, 1: 211; and United States Department of Labor, Bureau of Labor Statistics, CPI Detailed Report: June 1986, p. 28.

7. See, for example, Wisconsin State Telephone Association, pp. 8, 31, 50; and Ettrick Telephone Company Records, p. 36, General Telephone Company, Wausau, Wisconsin.

8. In the early 1880s, it was the policy of American Bell to rely almost exclusively on local capital. The president of the Company at the time, Forbes, believed that it was advantageous to the firm to have the stock owned by local people. This policy began to change around 1883 when the Company concluded that it would be easier to connect different exchanges if they were under one management. Beginning in 1883, the Company started to consolidate operations into regional operating

companies. Concurrent with this development, Bell exhibited a greater reliance on regional and national capital markets. Warren J. Stehman, The Financial History of the American Telephone and Telegraph Company. Boston: Houghton Mifflin Company, 1925; reprint ed., New York: Augustus M. Kelley,1967, pp. 37, 42-43.

The nascent era of rural telephony had also been delayed because of Bell's refusal to sell its equipment to independent telephone companies. Not until the patents expired were rural communities able to obtain telephone equipment from independent manufacturers. The failure of Bell to allow others to develop markets in which it had little or no interest, was one of the high costs associated with the patent period.

9. By 1905, 10,000 of the 40,000 subscribers to Wisconsin Independent Telephone Companies were farmers. Most of these farmers belonged to roadline associations. Proceedings of the Select Committee on Telephone Systems (Ottowa: S.E. Dawson, 1905), 2:121.

10. See, for example, Wisconsin State Telephone Association, pp. 4, 7, 11, 42, 60, 70, 81; F.G. Johnson, "Experience of a Pioneer Physician in Northern Wisconsin," Wisconsin Medical Journal 38 (July 1939), p. 580; and Harry Barsantee, "The History and Development of the Telephone in Wisconsin," Wisconsin Magazine of History 10 (December 1926), p. 156.

11. See, for example, Wisconsin State Telephone Association; and Atwood, p.84, 117, 179, and 393. In Wisconsin, the effort of these "roadside" and village companies to bring telephone service to the less dense areas of the state was aided by legislative policy. In 1895, legislation was passed that granted these companies the right to construct their lines alongside public highways, providing that consent was first obtained from the appropriate public officials. George Mason Keith, "An Historical View of the Taxation of Telephone Utilities in Wisconsin," (Master Thesis, University of Wisconsin, 1931), p.5.

12. Circular from "Office of Wausau Telephone Company, February 16, 1897, DCTP, p.2; John A. Gaynor, letter to S.C. Thayer reprinted in "Telephone Service at Cost: The Wisconsin Valley Plan, Solon C. Thayer, pamphlet, 1905, p. 19; W. F. Goodrich, "Telephone Systems in La Crosse," La Crosse Historical Sketches (La Crosse: La Crosse Historical Society, 1938), 4: 64; and letter from B.B. Clarke to Robert M. La Follette, August 30, 1895, DCTP. La Follette was one of the original financiers of the Dane County Telephone Company. In later years, while the governor of Wisconsin, he played a primary role in establishing the Railroad Commission.

13. J.C. Harper to William J. Bell, January 25, 1900; Bell to Harper, April 14, 1900; W. H. Buck to Harper, February 24, 1900; C.B. Salmon to William J. Latta, April 4, 1900, DCTP; and contract between Consolidated Telephone and Telegraph Company and People's Telephone Company, WSHS, series 1344, box 107, file 900.8.

14. General Accounting Office, "Telecommunications: Initiatives Taken by Three States to Promote Increased Access and Investment," March 12, 1996, GAO/RCED-96-68.

15. Kevin G. Wilson, "Canada's New Regulatory Framework: A Formula for Infrastructure Development?", p. 22. Telecommunications Policy Research Conference: 1996.

16. Mueller, Op cit, Chapter 3.

17. David Gabel, "Competition in a Network Industry: The Telephone Industry, 1894-1910," Journal of Economic History, September 1994, p. 548.

18. Farrell and Saloner have showed how uncertainty can delay the adoption of a new standard, even if the old standard is inferior. The same process that delays the adoption of a superior standard can also interfere with the deployment of new, improved facilities. Until a "bandwagon" effect exists, consumers are reluctant to embrace to the new product. Joseph Farrell and Garth Soloner, "Standardization, Compatibility, and Innovation," Rand Journal of Economics (1985) 19: 70-83.

19. See, for example, see the New York Times description of the Net Day project in Connecticut. "'Barn-Raisin' to Wire Schools for the Internet," August 22, 1996, p. B6.

20. General Accounting Office, "Telecommunications: Initiatives Taken by Three States to Promote Increased Access and Investment," March 12, 1996, GAO/RCED-96-68, pp. 26-27.

21. "From Couch Potato to Cybersurfer," Economist, July 6, 1996, p. 72.

22. For example, Omoigui, et. al. report that in a fiber-to-the-curb architecture, a drop to a suburban home would cost $766, $407 (53%) of which is for labor. The labor cost would be a sunk cost that is essentially tied-in irreversibly with use of the cable network. Nosa Omoigui, Marvin Sirbu, Charles Eldering, and Nageen Himayat, "Comparing Integrated Broadband Architectures From an Economic and Public Policy Perspective," in The Internet and Telecommunications Policy: Selected Papers from the 1995 Telecommunications Policy Research Conference (Mahway, New Jersey: Lawrence Erlbaum Associates, 1996), p. 181.

23. This pricing practice takes place in the telephone switching market. Once a buyer makes a commitment to a vendors product, the customer is locked-in to the vendor. The switching equipment has proprietary protocols and interfaces that preclude or limit the ability of users to switch to other suppliers without changing their entire switch. Knowing this, the supplier is able to charge high-prices for hardware and software after the initial switch is installed.

July 12, 1971, Monday

SECTION: Page 23, Column 3; (UPI)

LENGTH: 28 words

JOURNAL-CODE: NYT

ABSTRACT:
Crusading consumer advocate Ralph Nader says he suspects Comsat is more interested in protecting profits of AT&T than in advancing space tech for pub; to launch probe

NEW YORK TIMES

May 21, 1971, Friday

SECTION: Page 79, Column 2

LENGTH: 100 words

JOURNAL-CODE: NYT

ABSTRACT:
US, yielding to foreign demands for internatl control of Intelsat system, agrees to limit its ownership and direction to maximum of 40% in permanent charter of Intelsat; after a 6-yr transition, a dir gen and bd of govs will take over mgt role heretofore handled exclusively by Comsat; requirement that dir gen contract for operational services rather than set up own bureaucracy will preserve Comsat's actual mgt position, which Amer bargainers stressed that Cong would insist upon; 4-tier Intelsat structure defined in final agreement outlined; agreement comes after nearly 2 1/2 yrs of negotiations

May 12, 1971, Wednesday

SECTION: Page 60, Column 1

LENGTH: 89 words

JOURNAL-CODE: NYT

ABSTRACT:
Comsat annual meeting; corp says its business should grow 20% in '71 after nearly 50% growth in '70; repts 1st qr '71 net income of $6.69-million, more than double income of 1st qr '70; G Edwards elected dir; FCC orders Amer communications carriers to use 5 circuits of new high-capacity Comsat satellite for every 1 circuit of AT&T's TAT-5 trans-Atlantic cable used, in order to make greatest possible use of satellite and cable facilities; FCC gives Comsat 20 days to reduce its rates on Intelsat 4 satellite or explain why it cannot

April 15, 1971, Thursday

SECTION: Page 14, Column 1; (AP)

LENGTH: 40 words

JOURNAL-CODE: NYT

ABSTRACT:
Intelsat members to open conf, Washington DC, for final negotiating session on draft agreement to cut US voting power from current 52% to 40%; talks began in '69 under impetus from US; draft defers action on proposal to lower Comsat role

February 28, 1971, Sunday

SECTION: Page 28, Column 4; (AP)

LENGTH: 65 words

JOURNAL-CODE: NYT

ABSTRACT:
Comsat proposes to orbit 3 satellites which would provide TV, telephone and data services for US and PR; Comsat pres J V Charyk says system may cost about $248-million, will offer TV and other users service at about 1/2 rates they now pay; proposed system is 4th to be filed with FCC; Comsat system satellites would be positioned along with 3 others solely for AT&T 22,300 mi above equator

October 16, 1970, Friday

SECTION: Page 1, Column 3

LENGTH: 82 words

JOURNAL-CODE: NYT

ABSTRACT:
AT&T and Comsat expected to announce telecommunications system linking AT&T ground facilities with Comsat satellite system; would be nation's 1st wholly domestic system; plans call for Comsat to launch two 3,008-lb satellites from Cape Kennedy into 22,300-mi-high synchronous orbits; tech advances will permit satellites to transmit 840-million bits of data per second and carry 10,800 to 14,400 voice transmissions at a time; system scheduled to be in operation 30 mos after FCC approval

October 1, 1970, Thursday

SECTION: Page 83, Column 4; (CP)

LENGTH: 15 words

JOURNAL-CODE: NYT

ABSTRACT:
Telesat Canada and Hughes Aircraft (US) sign pact to build Canada's 1st domestic satellite

March 25, 1970, Wednesday

SECTION: Page 1, Column 2

LENGTH: 178 words

JOURNAL-CODE: NYT

ABSTRACT:
FCC announces it has not decided which types of satellite systems would be most usefule or who should operate them, extends invitation to Amer indus to submit specific plans; offers few guidelines; FCC chmn Burch says it will take at least 3 yrs to put domestic satellite system into operation; Comsat says it will ask permission to operate multi-purpose system; AT&T plans to use satellite facilities as supplement to ground cable network; FCC statement seen placing burden on AT&T to prove its monopoly on telephone system will not hamper competitive development of satellites; other potential applicants for satellite rights listed; FCC had been expected to choose between close regulation of Comsat system with other cos having chance to invest in ground stations, or Nixon Adm's recommendation for open and nearly unregulated exploitation of satellite mkt by any co financially and technically qualified; specialists doubt econ viability of satellites because of development of high-capacity cables and microwave lines that can carry more circuits at lower cost

February 17, 1970, Tuesday

SECTION: Page 64, Column 6

LENGTH: 64 words

JOURNAL-CODE: NYT

ABSTRACT:
Reprs of 100 nations meet, Washington, DC, to discuss permanent arrangements for managing international satellite communications; main problem is over Comsat's role as exclusive mgr of global network; many W Eur nations are pressing for greater share in mgt and technological benefits; A Washburn (US) elected conf chmn, E Valloton (Switzerland) and S N C Shrivastava (India) vice chmn

February 12, 1970, Thursday

SECTION: Page 75, Column 3

LENGTH: 42 words

JOURNAL-CODE: NYT

ABSTRACT:
3 networks hire Page Communications Engineers to study all possible methods of relaying their programs as way to avoid AT&T rate rises; apparently curb immediate interest in using domestic satellite system; Page to conf with Comsat and AT&T; details

February 1, 1970, Sunday

SECTION: Section 2; Page 25, Column 1

LENGTH: 105 words

JOURNAL-CODE: NYT

ABSTRACT:
J Gould comments on Nixon Adm's memo to FCC Chmn Burch, says it evades real issue and promises only delay in setting up satellite system; holds networks, which want to avoid rate increases by AT&T, will have to invest huge sums of money, perhaps $30-million, to begin new system; says memo suggests 3-5-yr satellite policy which would then be revd and revised, says such a policy has limited appeal to entrepreneurs; notes memo's emphasis on free enterprise ignores potential monopoly of airwaves, which are public property, by private interests; suggests these interests be taxed; says memo raises doubts about future of Comsat

October 30, 1969, Thursday

SECTION: Page 95, Column 3

LENGTH: 60 words

JOURNAL-CODE: NYT

ABSTRACT:
Comsat details proposed system, which will have capacity equivalent to 48 TV channels, enough to relay all network programs, CATV and various other non-TV services and which will exclude phone service for 1st time; chmn James McCormack and pres Dr J V Charyk brief heads of 3 networks and Pub Broadcasting Corp; further confs set on engineering and econ details

October 19, 1969, Sunday

SECTION: Page 1, Column 2

LENGTH: 134 words

JOURNAL-CODE: NYT

ABSTRACT:
Comsat, in secret plan submitted to White House Sept 8, says it is ready to build and operate immediately a domestic satellite system to serve commercial and noncommercial TV, supplant AT&T and ease rising congestion of US communications facilities; plan would let all users gain direct access to system without going through estab commercial carriers; would make Comsat full carrier in own right and thus able to offer service to other TV users; details; Comsat gets permission from Pres aide to declassify plans providing its contents be given only to heads of networks who will conf with Comsat this wk; Dr F Stanton says plan offers appealing econ features; AT&T's passive role linked to its contention that it would be able to lease its ground stations to retail users at higher rates than for TV

October 16, 1969, Thursday

SECTION: Page 95, Column 1

LENGTH: 78 words

JOURNAL-CODE: NYT

ABSTRACT:
AT&T, in major policy switch, says any group or orgn should be allowed to apply for operation of domestic satellite system; previously maintained that only commercial carriers of information should have such function; move follows CBS pres Stanton proposal that TV networks operate own system and abandon reliance on AT&T; Comsat comments; AT&T proposal detailed; UPI backs Dr F Stanton proposal, hopes press would get access to system; Audio Engineering Society meets

August 31, 1969, Sunday

SECTION: Section 3; Page 11, Column 3; (RTR)

LENGTH: 18 words

JOURNAL-CODE: NYT

ABSTRACT:
ITT World Communications gets FCC permit to begin US-Argentina service by leasing 5 circuits from Comsat

January 27, 1969, Monday

SECTION: Page 42, Column 4; (AP)

LENGTH: 24 words

JOURNAL-CODE: NYT

ABSTRACT:
Comsat station dedicated, central PR; comsat to cut by avg 35% rates for transmitting signals for prime carriers, not necessarily for TV networks

Latin America

March 1, 1968

SECTION: BUSINESS BRIEFS; LA II, 9; Pg. 67

LENGTH: 54 words

BODY:
The Japanese Nippon Electric company won a 3.8 million contract from the Peruvian Junta Nacional Permanente de Telecomunicaciones for the construction of a terminal for communications satellites. The contract had been previously held by the US Hughes Aircraft company, which lost it after a dispute about payment terms.
