

SECTION 2

The Telephone Policy Subsystem of the United States

INTRODUCTION

When examining the development of telephone communications in the United States, historians have generally broken its development into six periods of time. The first period, known as the Early Years, lasted from 1876 till 1880. This was a time of unfettered competition, with no government regulation, in which Bell established its initial patent claims to the telephone. The second period of time, known as the Monopoly Years, ran from 1880 till 1894. During this period government regulation was almost non-existent, and Bell successfully fought to maintain its patent monopoly. The third period, the Competitive Years, lasted from 1894 to 1914, and was a time in which Bell went through two periods of development. The first stage of development, from 1894 to 1907, was a time of conflict between Bell and newly created telephone companies. Fierce competition, and an almost predatory atmosphere, dominated the communications arena. During the second stage, 1907 till 1914, we see the development and use of government policy directed at the communications industry, especially the use of anti-trust laws, and a gradual accommodation by Bell to the acceptance of government regulation, provided that it was able to maintain its strong competitive position and reach cooperative agreements with its competitors. (Bickers, 1986: 4 - 30)

After 1914, we also see the development of another three stages in the creation of the telephone communications industry in the United States. From 1914 to 1933 we see the Spread of Regulation. During this time, AT&T's competitive position remains strong, but a movement develops for greater government regulation of the communications sector. From 1934 until 1984 we enter a Regulatory Period in which a monopolistic regulatory system is established, but which has within it a tension between the nature of anti-trust regulation, and the desire to maintain an efficient, but monopolistic, national communications system. The traditionally defined final period, known as the Divestiture Period, dates from 1984 to the present, and is usually seen as a period when the need to promote social efficiency, by maintaining a high quality communications system, is balanced against the principles of allowing business and personal equity through a competitive marketplace (Cohen, 1992: 22 - 23)

To this traditional chronology, we must now add a seventh stage of development. This is the period of time from 1995 on in which telecommunications is deregulated, and the promises of a fully competitive free market are once again introduced into the telecommunications field.

We will begin our examination of the development of telephone telecommunications policy by first looking at the formative period of the wire communications industry in the United States with the development of the telegraph. The Basic Principles developed during the formation of the telegraph industry set the stage for the later evolution of the telephone sector. Once we have completed this initial review, we will then examine, in depth, the various periods, outlined above, and their impact on the current system of voice and data communications systems within the United States.

CHAPTER 3
The Telegraph

"What Hath God Wrought"

Samuel Morse

The Founding of Wire-Based Communications

In 1832, on a voyage from Europe to the United States, Samuel Morse envisioned a method of sending messages over an electrical wire. By 1835 Morse had secured a position as Professor of Literature of Arts and Design at New York University. Within the walls of academia Morse worked on his concept, and, in 1837, perfected his version of the electric telegraph (Lewin, 1987).

At first Morse's invention struggled to establish itself. Morse was challenged by other scientists who claimed that he had stolen their ideas and patents. He also struggled against a public attitude which looked upon the new invention as a means of creating unfair advantage in the regional investment and banking markets (Jones, 1952). In addition to the public perception that the device would be used in an unscrupulous manner, few people could envision a reason to apply the device in their day-to-day life, either for business or personal activities. While people flocked to see demonstrations of the device, few were willing to pay for its use to increase personal communications, and even compared it to the psychic-science of mesmerism (Thompson, 1972: 17).

Forced to locate funding, Morse sold shares in his invention to a small group of investors. Initially, his financial partners were Alfred Vail, son of a wealthy New Jersey iron works owner, and Professor Leonard Gail, a professor of chemistry at the University of the City of New York. While both men provided Morse with the necessary resources required to continue his work, neither Morse or his partners were able to move the telegraph, in the eye of the public or business community, beyond the point of a curious and novel development in electrical science (Vail, 1914: 11). But Morse's fortunes suddenly changed in 1838 when he was invited by the Secretary of the Treasury to provide a demonstration of his device to Congress.

While making his demonstration, Morse met United States Congressman Francis O. J. (FOG) Smith of Boston. Smith, literally a self-made man, had risen from near poverty to the United States Congress by exercising a great capacity for work, skill at manipulating opportunities, a solid legal background, and a lack of scruples to impede his ambitions. While not at all interested in science, Smith saw in Morse's invention an opportunity to become wealthier than he had every imaged. So impressed was he by the opportunities for profit, that between 1838 and 1844 Smith purchased over 25% of the stock in Morse's patent (Jones, 1952).

Representative Smith also happened to be the Chairman of the House Committee on Commerce. In 1844 Representative Smith was able to secure a \$30,000 Congressional grant for Morse to build a telegraph line between Washington, DC and Baltimore Maryland: a distance of 40 miles. By the end of 1844 Morse and Associates had completed the first telegraph line in the United States, and in 1845 the Postmaster-General of the United States took over operation of the line on an experimental basis (Harlow, 1936).

Other entrepreneurs, sensing the potential profits to be made, obtained licenses for Morse's telegraph from Morse's partners, and began a frenzied process of constructing new telegraph lines up and down the East Coast. At this time, the general opinion was that the government would eventually purchase all the telegraph lines, and run the system as a public service linked to the Post Office.

Morse, himself, was largely responsible for creating the initial impression that eventually the government would own and operate the telegraph systems of the United States. While it would take some time for the rest of the country to understand this new type of communications, Morse

had recognized, almost from the beginning, the great potential, for both good and bad, that such a device offered. Shortly after the Congressional appropriation for the Washington to Baltimore line had been approved, Morse sent a "Memorial to the Congress of the United States" outlining the potential for good and evil that the telegraph possessed, and encouraging Congress to buy, outright, all existing and future telegraph lines within the country (Prime, 1875: 507 - 509) A few months later, Morse wrote to the Secretary of the Treasury, warning him, and Congress, of the consequences of delay in making a decision:

"For myself, I should prefer that the Government should possess the invention, although the pecuniary interests of the proprietors induce them to lean towards arrangements with private companies." (House Executive Document, 1844).

While Congress agreed to consider Morse's proposal, no action was taken, and the matter remained dormant while Congress monitored the operation of the Washington to Baltimore Line (Prime, 1875: 507-509)

The press agreed with Morse's position that the government should own the telegraph system, and began to voice its concern over the matter. The Philadelphia Public Ledger immediately came out in support of Morse's "Memorial to the United States Congress":

"The government should possess itself at once with this triumph of American genius, and give to every city throughout the Union the advantages which may be derived from it." (Philadelphia Public Ledger, 1844)

The New York Express also voiced it's concerns:

"Stock gambling, bread gambling, or political gambling of the most frightful kind may be carried on secretly by it, and successfully, too, often in the hands of adroit men, whose fortunes might be made by single operations." (Harlow, 1936: 110)

At the same time the implications of the new systems abilities began to dawn on the media. The National Police Gazette began to speak of a national currency and the discontinuation of state government currency, and the New York Express had a farsighted view of the future when it stated;

"The power of the States will be broken up in some degree by this intensity and rapidity of communication, and the Union will be solidified at the expense of the State sovereignties. We shall become more and more one people, thinking more alike, acting more alike and having more one impulse." (Harlow, 1936: 116)

Even the famous newspaperman James Gordon Bennett felt that the nature of the telegraph's potential, for both good and evil, required that the "...government must be impelled to take hold of it." (New York Herald, 1845)

The press's position did persuade some in Congress of the necessity of government ownership of the system. Henry Clay, fearful of private interests monopolizing information, led the Congressional faction which supported nationalization of the system,

"I think such an engine should be exclusively under the control of the government." (Harlow, 1936: 110)

But after one year of operation, the Postmaster-General sadly reported that revenues for the line from Washington to Baltimore had only accounted for \$413, while expenses had mounted to \$3,925. Even with this shortfall, the Postmaster-General also maintained that the government should own the system.

"If permitted to be thus held... (by the private sector)..., the public can have no security that it will not be wielded for their injury rather than their benefit"
(Postmaster General, 1845: Document 2)

But the spirit of Congress began to change in 1846, and it soon appeared likely that Congress would not nationalize the telegraph system. Morse and his associates, in a final desperate attempt, offered to sell their patents to the government for \$100,000. Congress declined the offer (Jones, 1952)

In 1845 Congress had been preparing for war with Mexico. Faced with the cost of the war, Congress appropriated only \$8,000 to keep the line running a few more months. At this same time, new investors entered the telegraph market, and spurred telegraph line growth. Such notables as John Butterfield, founder of the Overland Mail Line to California, and Henry Wells, first president of the American Express Company and founder of Wells, Fargo & Company and the Philadelphia, Wilmington and Baltimore Railroad Company, all established telegraph lines in connection with their transportation companies (Harlow, 1936).

The final blow to government ownership came in July, 1846 when the Treasurer's report for the line showed only a \$516 profit. The Postmaster General, sensing the changing mood of Congress, made one last appeal for public ownership:

"It is the settled conviction of the undersigned that the public interest, as well as the safety of the citizen, requires the government should get the exclusive control of it, by purchase, or that its use should be subjected to the restraint of law. (Executive Document, 1846: 689)

Congress refused to listen to the supporters of government ownership, and, in December, 1846, Congress leased the line from Washington to Baltimore to a private carrier company. Finally, in April, 1847, Congress sold the line to the Magnetic Telegraph Company (Stone, 1991). Thus ended the first experiment held in the United States of public ownership of a public telecommunications system.

The Congressional explanation for not purchasing Morse's invention was the belief, by the majority of Congress, that the telegraph business would never make a profit (Ault, 1974). A little reflection, though, causes one to question this explanation. Apparently some of the wealthiest entrepreneurs in the United States, at the same time, were so convinced of the profit potential of the telegraph that they fueled a corporate expansion which led to the creation of fifty telegraph companies across the United States within the first five years after Congress's decision. This also corresponds to the time when the majority of other nations in the world not only developed telegraph services, but nationalized them under their postal services.

To understand the dynamics of United States policy in this area, one must first realize that this is the period of the beginning of the industrialization of the United States. The political and social forces at work within the United States, at this time, set the stage for the United State's government's policy toward direct provision of public services in this arena, a tradition, that to a great extent, is still maintained to the present time.

The Political Economy of the Founding of Wire-Based Communications

The External Political Framework

The election of Andrew Jackson to the Presidency in 1828 was a decision that ultimately affected the basic nature of Constitutional interpretation. It resulted in a shift of power from the federal government to the state governments. The evolution of strict constructionalism of the Constitution, coupled to states rights, eventually developed into the theory of dual federalism, and became a cornerstone for Jacksonian legislation. Jacksonian democracy was also a social and cultural movement, which was built on the ideas of restoration of republicanism, defense of slavery, preservation of the Union, and opposition to mercantilist centralization, all social factors that were beginning to manifest themselves in the commercial and social life of the country (Kelly, 1991). "It was the expression of divergent responses to changes in social organization brought on by the transportation revolution and the development of the national marketplace" (Feller, 1990: 150).

It was during this same time period, 1828 through 1850, that the United States expanded both industrially and geographically. The distribution of the natural wealth of the nation was a major policy issue, and directly linked to the development of commerce. Prior to Jackson, the Federal government had taken a proactive role in the development of national commerce. After the rise of Jackson, though, the Federal government withdrew gradually from direct involvement in commerce, money, and banking, and instead allowed economic development to devolve to each State. The decision to allow these areas to fall to the domain of the States, under the principles of dual federalism, resulted in each state developing separate commercial policies, and promoting their programs enforcing through each state's police and eminent domain powers (Kelly, 1991).

Jacksonian Democrats had an underlying distrust of both central government and government supported capitalism; commercialism was seen as a threat to individual equality. The Jacksonians theory of economic development was based on a free, self-regulating economy, in which a wide range of small, regionally based, competing enterprises stimulated broad economic growth across all layers of the society. Under the Jacksonian view, the free market required a minimum of government intervention, especially from the national government. To the Jacksonians, government intervention in the free market was only necessary to prevent abuses that resulted from unfair economic competition between suppliers. In essence, the Jacksonians distrust of concentrated power, whether legislative or economic, called for a decentralization of authority and power in both the public and private sector (Taylor, 1951: 151)

The Jacksonian position, after 1836, was opposed by the Whig Party. The Whigs developed an essentially Hamiltonian concept of government and economics. The Whigs championed capitalism's entrepreneurial drive, and sought to create an economic development policy in which government support and promotion of commercial enterprises were seen as a positive development in the evolution of the American system of governance. They actively encouraged the development of the internal infrastructures of industries, utilizing Federal funds to underwrite the costs of such developments, and additionally sought to create a unified national banking system. To the Whigs, the social and political equality of the Jacksonian philosophy represented democracy by the mob, and a force that drove a class wedge between labor and capital. While the Whigs believed in a more active role for government in the development of American commerce and economic growth, they still maintained that such development and growth should be fostered under the concept of private ownership (Feller, 1990)

It was in this atmosphere that Morse's invention was considered for purchase by the Federal government. Considering the Jacksonian decision to withdraw from commercial development which was coupled to a general distrust of government, and the Whigs position in support of national government backed free enterprise coupled to private ownership, it is not surprising that, eventually, the federal government declined Morse's offer, and the development of telecommunications fell exclusively into the hands of private enterprise.

The External Economic Framework

The American Constitutional order constructed a delicate balance between the powers of the central government, and the powers of the state governments. The restriction of the national governmental powers resulted in a lack of a national economic development policy. Rather there developed in the United States a series of local and state economic development policies that were interpreted through various shared principles of English Common Law (Nelson, 1987).

Notwithstanding Alexander Hamilton's 1791 "Report on Manufactures", the bulk of economic development occurred through state governmental policies. Measures that were used included inspection laws, pilotage regulation, subsidies, occupational licensing, chartering laws for businesses, and educational promotion of the local workforce. Building upon Lockean concepts of private property and individual economic uplift, the underlying assumption was that the development and encouragement of localized industrial development would lead to a rise in wealth for all, and thus promote the common good (Schwartz, 1965).

While promoting the development of industry, the states also retained a level of control and regulation of these developing industries through their "police powers" granted under the Constitution - which were reinforced by the earlier rulings of the Marshall Supreme Court. Devices such as inspection laws, quarantine laws, and health laws were used extensively to ensure that the public good was achieved, and public safety was maintained (*Gibbons v. Ogden*, 9 Wheat. 1, 203, 1824).

Thus there developed a symbiotic relationship between state policy makers and the business community. Under this concept of state stewardship, the state fostered unregulated economic development through its promotional policies, while still retaining a level of regulation that both assured the public safety and aided the developing industries from excessive outside competition. The level of state oversight exercised was dependent on the political perception of the degree to which the industry was incorporated into the fabric of both commercial and social life within the society. The greater the penetration by the industry into the two spheres, commercial and social, the higher the level of state oversight exercised. While the development of state policies assured economic development, there was no distinction made, at this time, between regulated versus unregulated business. All business, to some extent, was regulated, and the only distinction made was to the degree of state oversight that was exercised (Stone, 1991).

Under this fragmented policy approach, we see a mix of public efforts developing. In 1808 Albert Gallatin, Jefferson's financial expert, promotes the development of public roads and canals to extend the benefits of American commerce. A few years later, in 1811, the New York State commissioners fund the construction of the Erie Canal. In addition, during this same time period, all state legislatures passed laws regulating tolls for both roads and canal, while, at the same time, providing financial backing and encouragement for the development of new transportation systems (including railroads). During this same time period, cities undertook the construction and operation of water and sewage systems, fire protection and police enforcement, and the licensing of local business operations (Cheape, 1980).

This period of time is referred to by economic historians as "rivalistic state mercantilism". This was due to the fact that the majority of American markets were highly localized at this time. Industries faced little domestic competition, and industrial development was seen as creating a self-sustaining infrastructure (Callander, 1902; Hartz, 1948; Lipset, 1963). Self-sufficiency was critical in order to overcome the high cost of transportation and the great distances between communities. Industrial and business development was viewed as integrated on either a local or regional level, and macroeconomic concepts of national markets were not conceived as important in the development of state or local wealth (Goodrich, 1949). In addition, there did not exist a national financial system that would have provided a cohesion to the system of national policies. In fact, the currency of the United States was fragmented into hundreds of local bank backed currencies, with various levels of value between regions.

Firm ownership also promoted this tendency toward local markets. Generally, firms were held by closely linked families, who not only owned the firms, but were the active daily managers of the businesses. This familial relationship tended to block the idea of expansion based on mergers, and perpetuated the focus on localized development and government/private partnerships (Chandler, 1977; Dalzell, 1987).

The end result of this localized ownership and development led to a value structure in terms of economics that was based on collaboration and mutualistic interests grounded in an organic community with close business and governmental ties. Competition was directed toward other communities within close geographic proximity to each other, and a form of local and regional "boosterism" developed that was linked to the public perceptions of governmental responsibility to improve the local community, which was coupled to direct government support - both financially and politically. Both the public official and the private entrepreneur saw their destinies intertwined, and supported the continuation of a localized and regional economic policy without control from either the national government or the developing national capital and industrial system.

Within this atmosphere of local and state development, Morse, and his partners, faced the problem of constructing a network of telegraph lines and stations across the expanse of the American continent. The estimated costs, approximately two hundred dollars per mile, required the infusion of large amounts of capital: the Baltimore to New York section, alone, was estimated to cost over \$100,000 - this was at a time when a five dollar annual subscription to a private lending library was the equivalent of dining-out in a restaurant over one hundred times. The level of funds required to build the system exceeded both previous experience in raising capital in the United States, and also exceeded the existing capacity of the banking and financial systems. Without the support and backing of the United States government, Morse and Associates were required to seek financial support from a great number of backers who had no personal or business history, or personal relationship, with each other, and who would be reluctant to pool their resources in a far-flung enterprise outside their own geographical area of influence. In addition, while the private market might be convinced to develop the system, the risks of investment would be high, thus the costs, in terms of control of the system, would, by necessity, need to be expanded to a larger and larger group of owners and investors.

In addition to the problem of raising capital, the telegraph presented the telegraph backers with a social education problem. The localization of daily life in America, at this time, was based on either face-to-face communications, or the use of mail within close regional areas. The idea of someone needing to have daily and immediate communications with other parts of the country, was not a concept that could be easily translated into either the business community or the social community of the country. The use of the telegraph would require time to become incorporated into the lives of

Americans. During this time of under-utilization, the costs of creating and maintaining the system would still be high, and returns on investments would be low.

While Morse sought to maintain control over both the development and use of the system by placing ownership in the hands of the government, the decision by the government to not purchase the system left him with no other choice but to turn to the private sector, and face the consequences that might develop under a free-market.

The Internal Political Framework

During the period of time that Congress was considering the purchase of the telegraph, the Postmaster General of the United States, Cave Johnson, argued for the nationalization of the telegraph system. Johnson's public argument in support of nationalization rested on Constitutional principles.

"It becomes, then, a question of great importance, how far the government will allow individuals to divide with it the business of transmitting intelligence - an important duty confided to it by the Constitution, necessarily and properly exclusive? Or will it purchase the telegraph, and conduct its operation for the benefit of the public?" (Report of Postmaster General, 1845)

What Johnson was referring to was Article I, Section 8, of the United States Constitution, which states that:

"The Congress shall have the Power...To establish Post Offices and Post Roads."
(United States Constitution, 1787)

Under the concept espoused by Johnson, the provision of a channel for public communications was the sole and exclusive monopoly of the Federal government, and thus not an area of private interest. In addition, Johnson was also expressing a fact of political life that had major consequences for both political parties at this time.

The Jacksonian "Spoils" system basically was a recognition of the mutualism that existed between both private entrepreneurs and public officials during this time. Few, if any, politically neutral, professional government managers existed at this time. From the earliest days of the Republic, mutual self-interest had existed in the relations between politicians, public administrators, and private commercial interests. The unique contribution that Andrew Jackson made to this process was to turn the process to a patently partisan end; namely the promotion of the Democratic Party (Aronson, 1964).

In order for the Spoils system to work, though, major opportunities, for both commercial development and personal employment, had to be created that promoted party organization and cohesion. A key area for this party organizational development was the Postmaster General's office.

The Postmaster General's office controlled two areas of local interest. The first was the funding of the construction of Post Roads. Post Roads were constructed by local firms, paid for by the Federal government, and used by the local inhabitants to move from area to area. In a nation, literally, carving its existence out of the wilderness, these roads represented a major improvement in both the quality of local life, and a means for commercial transactions through the transport of

goods. In addition to roads, postal subsidies also underwrote part of the costs for the shipment of goods aboard steamboats and flatboats, and were also beginning to become a major factor in the developing railroad industry. The actual allocation of funds for such construction, and shipment subsidies, often were determined by the political party affiliation of an area, and the companies operating within the area, and the local political sentiment either for or against the party in power (Fowler, 1924).

While direct funds were used to promote party cohesion, a far more important device was public employment. At this time, the Post Office was the largest of the Executive Departments, followed closely by the Treasury Department. Between the two departments they employed over ninety percent of the federal workforce. In their capacity as employees of these two departments, federal employees were expected to serve a dual role; namely representatives of the public service and the political party in power. In their political capacity, federal employees provided the necessary manpower to promote and maintain the political party at the grassroots, and also were a source of party revenues through the accepted practice of tithing two-percent of their income to the party. (Van Riper, 1958: 46 - 47)

The large extent of the postal patronage system was underwritten by the exclusive monopoly granted, under the Constitution, to the Postal Service. In addition to control of capital funds and employment opportunities, control of the postal service meant control of the only major communications channel available in the society at this time. The mails were not only the sole means for personal and commercial information, they also represented the only avenue for major distribution of news stories. Linked to the Postal Service patronage was also a quid pro quo relationship between newspaper editors and the Postal Service. At this time both the Postal Service and the Treasury controlled all Federal printing contracts, and used this power to reward politically friendly newspapers. (Van Riper, 1958: 47)

The telegraph poised a potential threat to the government monopoly over communication, and in turn a potential undermining of the power of the spoils system - for either party in power. In his annual report of 1845, Postmaster General Johnson warned Congress, and the party leaders, that Morse and Associates were already negotiating with private interests to extend telegraph service to all the major cities in the United States. Such a transfer, he felt, would not only undercut postal revenues, but would be used by private individuals without either legal or social restraint; i.e., party control:

"The use of an instrument so powerful for good or evil, cannot with safety to the people be left in the hands of private individuals uncontrolled by law" (Report of Postmaster General, 1845: 861)

In the end, Johnson was unable to make Congress, and the political party leaders, aware of the potential problems that would develop with a privately owned communications system.

The Internal Economic Framework

While the Postal Service was a major component of the political spoils system, it did contain within in certain standards for performance which were considered beyond the realm of politics. Many of these standards for performance related to the issue of maintaining the privacy of communications.

Communications privacy issues date back to Ancient Egypt and the Roman Empire. Egypt and Rome maintained public mail services, and mail delivery was a normal event in the day-to-day life of the citizens of both Empires. The mail services in Europe collapsed after the Fall of Rome, and

were not reestablished until the thirteenth century. During the thirteenth century, the universities, mercantile organizations, and monasteries developed private mail services between affiliated organizations and institutions. In the fifteenth century, the governments of Western Europe established government mail service to handle official communications, but restricted access to these systems to only government related organizations. In the early eighteenth century, the majority of the governments of Western Europe banned the private mail services, expanded access to the government mail services to the general public, and created exclusive monopolies for mail controlled by the State (Katz and Graveman, 1991: 72).

Privacy of the mails, during the eighteenth century, was not considered a personal right. Letters were constantly opened and read by government agents, with special attention directed toward prominent figures. "Interception", as the practice was termed, was common, and machines were developed that could break the wax seals that were used to secure the letters, and then reseal the letters with no detectable trace of being either manipulated or read. In colonial America, the disorganized postal service also resulted in letters being left in bags in public places, such as taverns, where individuals would randomly open other people's letters and read them. As a result, the early American mail service was neither organized or confidential (Baarslag, 1938).

After the American Revolution, the privacy of mail became an issue at the highest levels of government. Both Washington and Jefferson complained about their personal correspondence being opened and read by postal employees. This led to a series of postal regulations and laws that included penalties of either a year's imprisonment, \$500 fine, or flogging, for any postal employee prying into the content of letters sent through the mail service. These early postal regulations were further developed during the first half of the 1800's, and were reinforced by court decisions which extended greater protection of privacy over all forms of correspondence (Baarslag, 1938). To a great extent, this concept of privacy of communications was maintained by guarantees of the Federal governmental control over the communications system, and the internal regulations and procedures of the postal service.

The development of a communications system outside of government control and regulation, a system in which no prior body of legal decisions or legal theory were applicable, presented the postal service, and government, with a dilemma over the issue of maintaining the privacy of communications. To this point in time, privacy of communications was assured through both laws and postal regulations and procedures. Once a system was developed, though, which was completely under the control of the private market, no existing set of procedures or regulations could assure the public that privacy would be maintained.

Structurating Principles

Within the American social and political community, at this time, certain basic values and beliefs influenced the public and private perception of the level of involvement, of the Federal government, that should be manifested in the development of the telegraph system.

Both political parties supported forms of limited government, especially at the national level, and a respect for the concept of dual federalism. This underlying belief led to a continuation of the original Constitutional fragmentation of power between the Federal government and the State governments, with an emphasis on regulation being conducted under each state government's police powers. In terms of actual instrumental actions and policies, the two parties differed, with the Jacksonian Democrats oriented toward a Jeffersonian development concept of limited national support, and the Whigs adopting the Hamiltonian concept of national underwriting and encouragement of industrial development.

In general, both the political and social order held as sacred the concepts of private property rights, and extended protection of private property through both national and state laws. Wealth, at this time, was generally found within family relationships and ownership of enterprises, with the greatest personal protection found within each state's court systems interpretation of English Common Law principles of property, and the development of state based incorporation laws.

Linked to private property rights, was also a general acceptance of the Lockean concepts of the development of community wealth through individual efforts. This general belief was further reinforced by the localized nature of wealth within the community. Following from these beliefs and orientation, State government policies for the development of economic growth were focused on either state-wide or local regional development. This local orientation led to the use of state funds to encourage local and state industrial development, with regulation of such industries left in the hands of local officials acting under the state police powers and public safety concepts.

The earlier experience with government tampering with personal correspondence, led to a general social belief in the right to privacy within one's personal and business communications. This underlying value was translated into a communications monopoly granted to the Postal Service, on a national basis, and maintained through a series of postal regulations and legal penalties binding on all public employees engaged in the handling of mail communications.

The sense of personal destiny intertwined between both public officials and private entrepreneurs, led to a belief in the mutualism that existed between both the public and the private sector. The lack of a clear distinction between the public and private sectors, eventually, was translated into the spoils system founded under the Jacksonian Democrats, and implemented through the devices of political patronage.

Finally, the general perception and belief in everyday life, at this time, that one's life was integrated into a local organic community composed of known individuals, led to the belief in developing a local, self-sustaining infrastructure to provide for the necessities of personal existence. The localization of a sense of community, coupled to personal knowledge of the community members, resulted in a financial and capital market which was fragmented, and regionally based.

Process Model

In terms of pressure for change, in the case of the telegraph the pressure was exclusively technological in nature. Up to the time of Morse's invention, communications was grounded in either the spoken or written word. In both cases, the individual receiving the message had to be physically in the presence of the source - whether it was a person actually speaking, or in the presence of their written word through the vehicle of either a published or written document. The idea of a "mediating" form of transmission, one in which the persons words could be delivered instantly to a receiver at a great distance, was not a concept grounded in the existence of individuals living at that time. Yet that is exactly what the telegraph did, and did it with remarkable accuracy.

Faced with this new invention, and seeking to place its use in both a political and social context, decision-makers at the Federal level were unable to agree upon the type of response needed by the national government. Some of the decision-makers recognized the potential that the device had for changing the very nature of the society and relations within the society. Others, unable to grasp its potential, relegated the final decision to the market place and the eventual use that society would find for the device.

In the end, in spite of pressure from the media, government officials, and leaders of Congress, no consensus could be developed within the governmental body as to the necessity for a coordinated response, and the issue remained within the area of speculation. Without the ability to formulate a consensus on the problem, the matter was left to the future to see what events would develop.

The Duality of Structure

The telegraph presented, to the early and mid-nineteenth century American mind, a device which was both unfamiliar, and yet somehow familiar. On the one hand it was unfamiliar and unlike anything previously known to man. Here was a device that could transmit the written word across both distance and time, bringing instant written communications into the hands of each person in the nation. In essence, the telegraph bridged both time and distance, providing an immediacy in the communication of thought.

At the same time, though, the communication was still written, and in many ways resembled the types of written communications which mankind had been using since the earliest development of human civilization.

While Congress, and the nation, recognized the potential value that such a device might eventually bring to society, the collective society was unable to determine how, and where, this new device fitted within their existing frames of reference and knowledge structures. Attempts to equate it with the mail seemed somewhat correct, but at the same time slightly incorrect.

The society also faced a difficulty in understanding how such a device would be constructed, and how it fitted within the existing belief patterns in terms of both the political and economic structure of the country. The opposition to government growth, and expansion of government services into the private sector, caused a resistance on the part of government officials to incorporate the system into the existing service structure of government.

On the other hand, the decision to allow the device to fall into the private sector for development presented the nation with unique issues over the construction and operation of the first truly national company, one which would bridge both federal and state government authority. The localized nature of both business and law made it difficult for decision makers to perceive of a national company, and especially a national type of monopoly beyond the control of any one of the state governments.

In the end, working from their existing levels of both discursive and practical knowledge, decision makers placed the new device in the private market, and allowed its development to proceed in the same manner and fashion as previous industrial developments. Ultimately, the nature of the device, and its potential fit within the collective knowledge of the nation, would be allowed to evolve in an unfettered manner.

Unintended Consequences

The telegraph system posed a major problem for the existing political and economic framework of the late 1840s and early 1850s. The system's greatest capability was its ability to communicate across distance and time, and thus bridge the localism and regionalism that dominated the political, economic, and social life of the United States. Yet, in order for it to develop to its full potential, it was necessary that the parochialism that dominated the country change before the full potential of the telegraph was accepted. Initially, it was thwarted in this development by the failure of the

existing political and economic system to develop any form of national economic policy within this arena

While the values and concepts of dual federalism, coupled to state mercantilism, provided for the creation of local wealth, the existing governmental structure had neither the understanding of the nature of the new system of communication, or the administrative capacity, to formulate a coordinated policy for any type of industry which was both national in scope and outside the existing patterns for both organizational and cultural understanding. Thus the telegraph's potential would have to emerge over time, and within the limits of the localized market place, before the existing framework would shift to a new view of both economic and social development in the United States.

Over the next twenty years, 1850 to 1870, the telegraph became a part of everyday life in the United States. Telegraph lines covered the United States, and linked the nation from ocean to ocean and border to border. In many ways, the telegraph preceded the railroads in forging regional and continental linkages, and constructing a new vision of a united people flung across the great expanse of the American continent. (DuBoff, 1980)

The Congressional decision to not nationalize the telegraph industry, left its development in the hands of private investors overseen by a multiple set of fragmented state courts and legislatures. (Thompson, 1947) Initially, the development of telegraph systems can be seen as a period of aggressive competition between newly formed companies operating with little or no governmental oversight. The corporate landscape continuously changed as new companies were started and older companies merged with each other. Companies resorted to lawsuits claiming patent infringements on the use of equipment, or refused to interconnect systems or transfer messages between each other. (Reid, 1879)

The lack of government policy in the telegraph industry resulted in the regulation of the industry falling into the arena of the courts. Early on in its existence, the telegraph was viewed as a form of public service. As early as 1845, the New York Legislature passed a state statute seeking to supervise the telegraph as a public service. Over the following years, courts across the United States tended to recognize the importance that the telegraph played in both the commercial and social life of the community. As rulings mounted in various cases, courts established a body of rulings that tended to view the telegraph as a form of common carrier. The net result of this body of development in law was the establishment of the principle of "fair access" under which the telegraph company was required to accept all messages for transmission, but was not held liable for the content of the message transmitted. As long as access was provided, the courts allowed the market to set both prices and methods of transmission. (Jones, 1972)

In terms of the economic life of the United States, the telegraph had a profound affect on the methods and nature of business. In addition to its ability to foster an expansion and integration of regional markets into national markets, the telegraph also affected the actual costs of doing business. The telegraph caused a major reduction in the costs associated with both information and transactions. The reduction in the time required to obtain information and complete transactions, fueled an increase in the number of transactions conducted nationally. This led to an major increase in the level of capital movements and investments, and reduced the level of credit risk associated with transactions. The concept of a national financial market was now able to be realized, and the telegraph allowed the financial investors in New York to expand their investment possibilities through both stock and commodity exchanges. Due to the telegraph, by the mid 1870s, New York became the financial center of the United States.. The net result was that the telegraph, within

twenty years of 1850, significantly affected every aspect of business life in the United States. (DuBoff, 1980)

The telegraph also promoted the development of a common identification within the society by breaking down the isolating distances between regions, and providing information to the newspapers that was national in scope. Prior to the telegraph, national and international news was obtained through mail, couriers and carrier pigeons. The slowness of news reporting often had disastrous consequences, such as the brutal battle of New Orleans in 1815 - a battle fought six days after British and American representatives had signed a peace treaty in Ghent. The development of the telegraph, allowed news to be delivered almost instantaneously to any populated area of the country. For the first time, American citizens knew on a day-to-day basis what was occurring across their nation, and were able to forge a concept of themselves as a united people (Harlow, 1936).

As the volume of traffic increased, so did the level of profit of the various companies offering telegraph service. By 1851, over 50 companies were operating under Morse patent licenses. But the possibility of profits also fueled a fierce competition between the various companies. In order to compete, the various companies resorted to strategies designed to force competitors out of the business.

The first strategy attempted was to establish a patent monopoly that would prohibit others using equipment developed by Morse. While Morse was successful in convincing the majority of companies to seek licenses from him, ultimately the strategy failed due to the fact that there existed alternative methods of transmission that by-passed, or completely updated, Morse's original patents. When it became evident that the patent strategy would not succeed, companies began to resort to a second strategy built on the idea of industry consolidation. (Reid, 1879)

Starting in 1851, various companies began to discuss the possibility of merger. It was not until 1855, though, that merger became a real possibility. In that year the Vanderbilt family formed Western Union Telegraph Company, and using its great wealth, began a process of merger and acquisition that eventually led to an almost 100% consolidation by 1866. (Reid, 1879)

Up to 1855, no one company had enough financial resources to successfully dominate the new industry. But in 1855, the Vanderbilt family, one of the wealthiest families in the United States, established the Western Union Telegraph Company. Western Union was conceived as a holding company, primarily a parent company that held the majority financial control over a series of localized companies providing telegraph service on a regional basis. By interconnecting the lines of these regional systems, Western Union was able to create a national telegraph network that allowed messages to be transmitted from any point in the country to any other point without either being retransmitted, or channeled over competitors lines. At the same time, Western Union refused to interconnect to competitors lines, or retransmit messages. Since no competitor had an equivalent national system, Western Union quickly came to dominate the telegraph industry. (Lewin, 1987)

Eventually, through a careful program of acquisitions, mergers, and aggressive competition, Western Union, by the late 1860s, became the de facto telegraph monopoly for the United States. (Reid, 1879)

The Vanderbilt's were successful in their merger efforts because certain general tendencies were already becoming evident even at this early stage, in terms of telecommunications. The first aspect dealt with the large amount of funds necessary for the capital construction of a national telegraph system. In addition to the initial costs of construction, the fact that the system was outdoors and

exposed to the elements required an on-going high investment in facility maintenance. Unlike many industries, investment in facility maintenance. Unlike many industries extension of service costs was not reduced as new lines were added, each new town required the same level of initial investment regardless of what had previously been constructed. Technological development was also expensive. Upgrading equipment required a constant investment in research, and often research results did not achieve improvements, thus sunk costs were high with any research and development office. Market demand for interconnection also played a major role. As transactions increased, and the number of locations increased, the demand arose for straight through connection. The wider the system access, the more market use would be applied, meaning that small, localized regional systems became less profitable. Under this approach, the more widespread systems held the "whip hand". (Brock, 1981)

In the end, the largest, most widespread system with the greatest financial backing was in a position to either drive all its competitors out of business, or force them into merger. Yet the process of merger presented the United States with something it had never before experienced, a national monopoly. Western Union achieved the distinction of becoming the first national monopoly in the United States in 1866. While the nation was pleased with the new system of communications, and its pervasive reach, uncertainty existed as to how this new corporate entity meshed with the structural and social forms of American life and institutions.

As the telegraph became more and more integrated into the fabric of American commercial and social life, concerns arose over its operation and fairness of access. In general, the public and political perception at this time saw the use of the telegraph increasing, while, at the same time, the number of providers was decreasing. In addition to the reduction in the number of companies, concerns were also expressed over the rates charged for the transmission of messages. Up to this time, there did not exist any method or formula that could ascertain whether or not the rates being charged were fair or abusive. While nothing seemed to warrant the charge that rate gauging might be occurring, the possibility of it worried both business people and elected officials. (Thompson, 1947)

As one of the first truly national companies, Western Union's position as a de facto monopoly presented both the public and private sector with issues that previously had never been encountered. The policy of governmental coordination and oversight still remained fragmented and decentralized. While the nation was in a period of shifting to a national industrialized base, the structural properties of law and oversight remained grounded within state courts and basic English law concepts of ownership of private property. Attempts were made in Congress to pass national regulation of the industry, especially by Republican Senator John Sherman - who later would father the Sherman Anti-trust Act. But all attempts at national regulation failed due to the conflicting values still at work under the concepts of a fragmented federalism that divided power between both the federal and state governments. (Jones, 1972)

The lack of public support for national regulation was also a factor in thwarting the development of a national policy. In general, the public perception of the Western Union monopoly was favorable. Recognizing the potential corporate harm that could come from price gauging, Western Union developed a corporate strategy that emphasized low prices and quality of transmission. Pricing was established based on distance, and corporate funds were expanded on research and development of improved technologies for transmitting messages. In addition to both low prices and excellent transmission, the public perception existed that the telegraph was a method for breaking down local monopolies in the provision of goods and services, and expanding offerings in such a way that consumer prices would fall. As a means of lowering consumer prices for goods and services, the general perception was that the telegraph played a major role in advancing consumer protection and

choice in the market. By and large, the public felt that state judicial review coupled to state legislative oversight were sufficient structural mechanisms, and thus did not require any type of national policy (Hillard, 1991).

While national regulation of the industry was not viewed as necessary, Congress did pass an act that established the precedent that the federal government did accept a limited role in oversight of the system. The act passed was the 1866 Post Roads Act. Under this law, the Post Master General was given the authority to establish the rate to be charged for the transmission of governmental messages. While limited to only government messages, the act did encourage Western Union to reveal its costs of operation, and set the beginning stages for rate determination methods used in the early twentieth century for regulating the telephone industry. (Hillard, 1991)

It was under these combined legal precedents and political values set with the telegraph industry, that the later telephone industry would be viewed as it emerged into the commercial and social fabric of American life.

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