DEVELOPMENT OF TELECOMMUNICATIONS INDUSTRY

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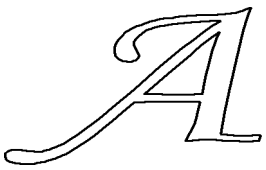
Chapter 1

EARLY HISTORY

LEARNING OBJECTIVES

After reading this chapter you should be able to

1. Explain the evolution of the Bell company.
2. Understand how the Bell company, led by Theodore J. Vail, acquired and defended its telephone monopoly.
3. Discuss the system of licensing implemented by the Bell company.
4. Explain the Bell's motives behind creating AT&T.
5. Describe the structure of AT&T.
6. Explain the character of the early long distance service.
7. Analyze the AT&T's strategy that influenced public to accept the theory of natural monopoly and the universal service standard for telephone companies.
8. Discuss initial telephone regulation.
9. Summarize the most important facts related to the Kingsbury Commitment of 1913.



lexandar Graham Bell was a teacher of the deaf who became interested in the development of a "speaking telephone". Bell was in competition with many other scientists engaged in developing a telephone. On February 14, 1876, Bell filed his basic patent application for a device that was capable of conveying sounds, but not speech. A month after the filing of the patent application, Bell sent the famous words over a telephone to his assistant: "Mr. Watson, come here; I want you."

1.1. INITIAL TELEPHONE SERVICE

Bell and his two partners, Gardiner Hubbard and Thomas Sanders, formed the **Bell Patent Association** on February 27, 1875 to jointly supply the capital and share equally in any patents that Bell might obtain. They offered to sell the 1876 patent to Western Union for $100,000 shortly after it was filed, but were turned down because Western Union's management believed the telephone was impractical.

Bell telephone patents protected telephone instruments, not wires or switches. Initial telephone service consisted of the company renting instruments to its customers who

had to provide their own connecting wire. That system was inefficient for connecting large number of individuals.

The complex structure of the Bell system evolved gradually. On July 9, 1877, three original partners formed a Massachusetts trust called the "**Bell Telephone Company, Gardiner G. Hubbard, trustee**."

In 1877 it seemed that another company, Western Union, had equipped itself with superior resources to compete with the Bell company and undercut its rates. Western Union acquired several telephone patents that made its technology superior to Bell's.

However, Western Union took another direction in fighting the Bell company by instigating a lawsuit in 1878. In July 1878, as a response to this lawsuit and other factors that imposed a financial burden on Bell, the Massachusetts trust was incorporated as the **Bell Telephone Company**. Theodore J. Vail, a man of extraordinary managerial skills, was appointed general manager of the Bell company.

Under Vail's management, the lawsuit was settled and Western Union agreed to withdraw from the telephone business in exchange for being paid a royalty of 20 percent on all telephones used in the United States. It also agreed to assign all of its telephone patents to the Bell company. The agreement was to end at the expiration of the basic Bell patents in 1893. The consequence of this agreement was that when the basic patents expired, the Bell company was far ahead of its competitors which had difficulties in obtaining more advanced patents and keeping in pace with the Bell system.

1.2. DEVELOPMENT OF TELEPHONE MONOPOLY

In 1878, telephone exchanges were established in major cities. Telephone exchanges are switching centers connected to all subscribers by paired copper wires. The Bell company was the only provider of lines, switches and telephone instruments. By monopolizing the telephone exchanges, Bell could control the access to local networks. Access is defined as the connection of users to the network, which is the nearest telephone switch.

This expansion led to the creation of a new entity, the **National Bell Telephone Company,** in March 1879. New incorporation of the **American Bell Telephone Company** after the acquisition of Western Union's equipment occurred on April 17, 1880.

The Bell company designed its initial policies with regard to the specific characteristics of the telephone business. The most important characteristic is the interactivity of the network. Interactivity means that a weakness in any part of the system reduces the ability of the other parts to operate effectively. A bad transmitter, for instance, will give inferior sound flowing to the receiver. Those weaknesses can retard the expansion of the network, lower its quality, or in a similar way negatively affect revenues. This is why the Bell management sought control over each piece of equipment and service within the network.

The Bell company had an option of performing this control by using a system of ownership or a system of licensing under Bell's standards. It first chose licensing because it required less capital than ownership. In this way, Bell was able to make the best exploitation of local markets. It would offer local operating companies (licensees) permanent licenses in exchange for their stock. In individual cities, the parent Bell company franchised its patent rights to particular operating companies in return for 30 to 50 percent of their stock. Licensees had a limited scope of operation. They rented telephones from the parent company and were prohibited from building lines [1]outside their assigned territory. The only way they could connect to other operating companies was through the parent Bell company.

The licensing system allowed Bell to conserve capital for long distance and other phases of telephone business and at the same time maintain influence to assure that licensees took a long-run view of the business and deployed innovation. It assumed the role of network manager to guarantee the performance of the entire system.

However, smaller towns and rural areas were still not provided with the telephone service. Although the number of telephones grew substantially in the early years, the number of telephones rose from 1.1 per thousand people in 1880 to only 4.1 per thousand people in 1894.[1]

1.3. EARLY LONG DISTANCE SERVICE

1.3.1. CREATION OF AT&T

Another specific property that influenced development of the Bell system is that the value of telephone service to any subscriber depends on the number of persons that can be reached through that service. The greater the number is, the more valuable the service is. A telephone that is not connected with other telephones has no value. This characteristic is called network externality.

[1] Brock, Gerald W., *Telecommunications Policy for the Information Age*, Cambridge: Harvard University Press, 1994., p. 63

Because the value of access to a network increases when the number of people that can be reached on that network increases, interconnection of two separate networks increases the value of both. Interconnection rights can therefore be used to create a competitive strategy.

In order to control communication through interconnection, Bell focused on developing switched long distance service. Switched long distance service allows the caller to access any other subscriber on the network through the switching machines (switches) of the long distance company and the relevant local exchange companies. Switching is the heart of a network because it allows each user to communicate with a large number of other persons through complex system of switching and transmission equipment.

Interactivity of the network and its increasing complexity made it important to strive for direct ownership of each part of an integrated network – local loops, long distance, customer premises equipment, and switching and transmission equipment. A local loop is comprised of the entire system of wires, cables and facilities to the customer's premises. Long distance services were initially called "toll" services. Traditional customer premises equipment related to plain old telephones.

These considerations led to integration of research, planning, engineering, design, manufacturing and operating capability within one firm, AT&T, formed to act as a network manger for the Bell system.

In 1885, **American Telephone and Telegraph Company (AT&T)** was created as a long distance subsidiary of the parent Bell company. AT&T operated the Bell system's long distance service through the Long Lines Department.

The new company organized much of its activity internally. AT&T owned controlling shares in **Western Electric**, an electrical equipment manufacturer, and in the local operating companies (licensees). The last important part of the AT&T structure - the **Bell Telephone Laboratories (the Bell Labs)** - was added in 1924. The Bell Labs became one of the preeminent research organizations in the world.

1.3.2. BEGINNINGS OF LONG DISTANCE SERVICE

The first long distance services established were New York - Philadelphia (1885) and New York - Boston (1889).

Long distance service was charged by the minute. This was a charge for connecting service from one local exchange switch to the switch in a distant city. Early long distance telephone rates were much higher than telegraph rates. The trend of the

overall increase in telegraph rates and the overall decrease in telephone rates over the next period resulted in lowering the minimum telephone rate below the telegraph rate by the early 1960s. The disparities between long distance telephone rates and minimum telegraph rates are illustrated in Table 1.1.

Table 1.1. Early long distance telephone rates and telegraph rates compared

Year		Long Distance Telephone Rate	Minimum Telegraph Rate
1902	New York-Chicago	$5.45 per call	$.40 - $.60
1915	New York-San Francisco	$20.70 per three min call	$1.00

Source: Brock, Gerald W., *Telecommunication Policy for the Information Age*, 1994

Early long distance telephone rates were much higher than telegraph rates, particularly for the long distances.

1.4. THE FIRST ERA OF TELEPHONE COMPETITION

The basic Bell patents expired in 1893 and 1894. This resulted in the entry of many new competitors. They first started operating in the areas not served by the Bell system and later expanded to the major cities to directly compete with Bell. The Bell system faced competition in many local markets and in long distance. An antimonopoly atmosphere was dominating the 1890s, and telephone competition was expected to lower the prices.

In 1899, AT&T and American Bell reached a decision to move the corporate headquarters from Massachusetts, Bell's state of incorporation, to New York, AT&T's state of incorporation. This decision was made because New York state was far more generous on the issue of increasing corporate capitalization. Consequently, AT&T became the parent company.

The Bell system aggressively responded to the competition through patent control and the purchase of independent telephone companies. Its attempt to buy up sufficient patents to keep ahead of its rivals failed because of adverse court decisions. Around 1900 competitors were prospering and more than five hundred[2] independent telephone companies were being established annually. Also, AT&T was unsuccessful in preventing municipalities from granting telephone franchises to its rivals.

The critical move was made by AT&T when it embraced the theory of natural monopoly. The theory held that service to the public is best undertaken by a single company or a natural monopoly. Under the leadership of Vail, AT&T recognized the

[2] Stone, Alan, *How America Got On-Line*, New York: M.E.Sharpe, 1997., p. 30

benefits of public utility regulation through regulatory commissions, in exchange for which AT&T and its licensees promised to provide universal service and technology development. AT&T imposed the opinion that its private interest was identical with the public interest.

In the 1910 Annual Report, AT&T made a critical argument in favor of natural monopoly and the universal service standard. Vail had defined universal service as a system in which a telephone in every home is connected to every other telephone in the country. The universal service standard, according to Vail, assures that virtually everyone could obtain a telephone. Telephone companies were said to be public service institutions and would be compelled by regulators to attain such standards, but regulators should not manage the business. While the early interpretation of universal service proclaimed affordability of *telephones*, the modern universal service standard proclaims universally available and widely affordable *telecommunications servi*ce.
The following is the Vail's argument that favors monopoly:

The 1910 Annual Report: Vail's argument in favor of monopoly

If there is to be State control and regulation, there should also be State protection-protection to a corporation striving to serve the whole community (some parts of whose service must necessarily be unprofitable) from aggressive competition which covers only that part which is profitable…

That competition should be suppressed which arises out of the promotion of unnecessary duplication, which gives no additional facilities or service… State control and regulation, to be effective at all, should be of such a character that the results from the operation of any one enterprise would not warrant the expenditure or investment necessary for mere duplication and straight competition…

Two local telephone exchanges in the same community are regarded as competing exchanges, and the public tolerates this dual service only in the fast disappearing idea that through competition in the telephone service, some benefit may be obtained… Two exchange systems in the same place offering identically the same list of subscribers… are as useless as a duplicate system of highways or streets not connecting with each other.

Source: Stone, Alan, *How America Got On-Line*, New York: M.E.Sharpe, 1997.

The 1910 Annual Report established public opinion that competition should be replaced. AT&T committed itself to be a network manager of the Bell operating companies and noncompeting independents. AT&T rejected, however, to interconnect with independent companies that competed with either a Bell licensee or with an affiliated independent on the ground that such interconnection was redundant. This gave AT&T's affiliates competitive advantages because they were able to provide long distance service, while the independents were not.

1.5. INITIAL TELEPHONE REGULATION

The Bell system promised to provide universal service so that virtually everyone could obtain a telephone. The **public utility commissions** (PUCs) would regulate intrastate telephone pricing. Businesses approved the PUCs idea expecting reasonable rates and high grade of service. Therefore, the competing independents, those that favored competition and rejected the independent regulatory commission idea, were isolated with no access to long distance service both politically and by the Bell system refusing to connect with them. The first era of competition was in this way ended.

While local telephone service was given the status of a regulated monopoly, interstate telephone service remained an unregulated monopoly. Interstate regulation was formally given to the **Interstate Commerce Commission (ICC)** by the 1910 Mann-Elkins Act, but there was no effective regulatory involvement until the 1934 Communication Act.

1.6. KINGSBURY COMMITMENT

As a consequence of AT&T's efforts designed to protect its monopoly position, the competitors threatened with antitrust action. The U.S. attorney general investigated the AT&T's strategy of acquiring independent telephone companies. Because some licensees were not cooperating in the development of long distance and the telephone uniformity, AT&T purchased their stock whenever it could. The attorney general initiated litigation, alleging that AT&T had violated the antitrust law, specifically the Sherman Act, by acquiring a small long distance company in the Pacific Northwest.

In order to avoid the litigation, AT&T negotiated with the Department of Justice. The suit was settled in 1913 with a consent decree, embodied in a letter from Nathan Kingsbury, AT&T's vice president, to the Attorney General. According to this decree, known as the **Kingsbury Commitment**, AT&T agreed to stop buying competing telephone companies and to connect them to its long distance lines. It also agreed to sell its interest in Western Union.

Although the Kingsbury Commitment was considered a victory for the government, it did not achieve competition in interstate telephone service. AT&T still had significant freedom of action. The Bell system and the competitors exchanged territories until there was a monopoly in each market. The Bell system ended up serving the major cities while the independent companies served the small towns and rural areas. The result of the Commitment was a transformed industry structure. The industry became fully monopolized in both local and the long distance markets.

Additionally, the importance of the Kingsbury Commitment was nullified by the changed circumstances in the early 1920s. The focus of public policy shifted from the preservation of competition to the achievement of efficiency. In 1921, Congress enacted the **Willis-Graham Act**, giving the ICC the power to exempt AT&T from the antitrust laws for the purpose of acquiring independent telephone companies. In this way it effectively cancelled the part of the Kingsbury Commitment prohibiting AT&T's acquisitions. Of the 234 independent companies purchased by the Bell system under the ICC jurisdiction, the ICC approved 223 purchases.[3] AT&T's equity holdings in the independent companies increased to more than 90 percents by the mid-1930s.[4] The structure of the U.S. telephone market in 1982 is shown in Table 1.2.

Table 1.2. The Structure of the United States Telephone Market in 1982

	Telephone Lines	Geographic Territory
25 Bell System Operating Companies	81%	19%
1,432 Independent Operating Companies	41%	59%

Source: Brock, Gerald W., *Telecommunication Policy for the Information Age*, 1994

The early pattern of non-Bell companies concentrated in sparsely populated areas (small towns and rural areas) has continued to the present. Therefore, policies created "to promote rural development" have the same goal as those created "to assist small independent telephone companies".

[3] Temin, Peter, *The Fall of the Bell System*, Cambridge University Press, 1982., p.11

[4] Stone, Alan, *How America Got On-Line*, New York: M.E.Sharpe, 1997., p. 29

QUESTIONS FOR REVIEW

1. Explain the early evolution of the Bell company. What was the importance of its agreement with Western Union?
2. What does the interactivity of network mean?
3. Discuss the Bell's system of licensing.
4. What is the network externality? What was its importance for the Bell company?
5. Describe the structure of AT&T.
6. Explain the character of the early long distance service.
7. What is the theory of natural monopoly? What is the universal service standard?
8. What were the authorities of the public utility commissions (PUCs) and the Interstate Commerce Commission (ICC)?
9. Why did the U.S. attorney general initiate a litigation against AT&T?
10. What was stipulated by the Kingsbury Commitment?
11. Analyze the effectiveness of the Kingsbury Commitment.

CHRONOLOGY OF EVENTS

Chronology	Events
February 27, 1875	"Bell Patent Association" formed
February 14, 1876	Bell filed his basic patent application
July 9, 1877	"Bell Telephone Company, Gardiner G. Hubbard, trustee" formed
1877	Western Union acquired superior telephone patents
1878	Western Union filed a lawsuit against the Bell company
July 1878	"Bell Telephone Company" was formed and Theodore J. Vail appointed general manager of the company
1878	Vail successfully settled the lawsuit with Western Union. All telephone patents transferred to Bell.
1878	Telephone exchanges established in major cities.
March 1879	"National Bell Company" formed
April 17, 1880	"American Bell Telephone Company" formed after acquiring Western Union's equipment
1885	"American Telephone and Telegraph Company" (AT&T) formed
1885	The first long distance service between New York and Philadelphia
1889	Long distance service between New York and Boston established
1893 and 1894	Basic Bell patents expired
1899	AT&T became the parent company of the AT&T-Bell system
1900	More than 500 independent telephone companies established annualy
1910	AT&T's Annual Report proclaimed the natural monopoly theory and the universal service standard
1910	Interstate Commerce Commission formed to regulate interstate service
1913	AT&T signed Kingsbury Commitment
1921	Willis-Graham Act enacted

SUMMARY OF THE MAIN IDEAS

Basic telephone patent protected only telephone instruments.

Telephone exchanges are switching centers connected to all subscribers by paired copper wires.

Access is defined as the connection of users to the nearest telephone switch.

Interactivity of network means that a weakness in any part of the system reduces the ability of other parts to operate effectively.

System of licensing under Bell's standards was an offer of permanent licenses to local operating companies (licensees) in exchange for their stock.

Network externality defines how value of telephone service depends on number of persons that can be reached through that service.

Interconnection between two networks increases the value of both.

Switched long distance service allows the caller to access any other subscriber on the network through the switching machines (switches) of the long distance company and the relevant local exchange companies.

AT&T was created as a long distance subsidiary of the Bell company. In 1899, it became the parent company of the entire Bell system.

Western Electric was an electrical equipment manufacturer and a subsidiary of AT&T.

Bell Telephone Laboratories (The Bell Labs) was a preeminent research organization and a subsidiary of AT&T.

The theory of natural monopoly holds that service to the public is best provided by a single company.

Universal service standard originally proclaimed that everyone should obtain a telephone. Today, it proclaims universally available and widely affordable telecommunications service.

Public Utility Commissions (PUCs) are regulatory bodies with the authority of regulating intrastate telephone pricing.

Interstate Commerce Commission (ICC) has the authority of regulating interstate service.

Kingsbury Commitment was a consent decree by which AT&T agreed to stop buying competing telephone companies and to connect them to its long distance lines.

Willis-Graham Act gave the ICC power to exempt AT&T from antitrust laws for the purpose of acquiring independent telephone companies.

SOURCES

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Chapter 2

THE COMMUNICATIONS ACT OF 1934

LEARNING OBJECTIVES

After reading this chapter you should be able to

1. Explain the essence of the Communications Act of 1934 and how the Federal Communications Commission (FCC) was created.
2. Analyze the purpose of the FCC.
3. Understand what is meant by the common carriers and how the Communications Act of 1934 regulates them.
4. Describe the structure of the FCC.

Telecommunications industry at the beginning of the 1930s was privately owned, with four types of regulatory authority. First, state regulatory agencies (PUCs) regulated intrastate rates. Second, the ICC regulated interstate telephone service. Third, the Federal Radio Commission was established in 1927 to prevent radio interference. Fourth, the executive branch of the government had authority over international telecommunications and radio. Influenced by the effects of Great Depression, the Roosevelt administration formed a committee to determine recommendations for the industry development. It proposed continuing private ownership together with stronger and centralized regulation.

2.1. THE FEDERAL COMMUNICATIONS COMMISSION

As a result of the government recommendations, Congress passed the **Communications Act of 1934** (the Act) to provide the basis for extending the regulation of communications. By the same act, it created the **Federal Communications Commission** (FCC) with the purpose of regulating communications. It was designed to combine the radio regulatory functions of the Federal Radio Commission (FRC, created in 1927 to grant, renew, or revoke station licenses) and telephone regulatory functions of the ICC into a unified agency. The Commission was given broad authority to regulate radio, TV broadcasting and so-called common carrier activities. Common carrier activities were traditionally used to describe telephony. Common carriers are today defined as telecommunications carriers.

The FCC goals were formulated in its statement of purposes.

Statement of Purposes

"For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges, for the purpose of the national defense, for the purpose of promoting safety of life and the purpose of securing a more effective execution of this policy by centralizing authority heretofore granted by law to several agencies and by granting additional authority with respect to interstate and foreign commerce in wire and radio communication, there is hereby created a commission to be known as the "Federal Communications Commission", which shall be constituted as hereinafter provided, and which shall execute and enforce the provisions of the Act."

Source: *Communications Act of 1934*, Section 1, codified at 47 *United States Code* 151

2.2. COMMON CARRIER PROVISIONS OF THE ACT

The common carrier (telephony) provisions of the Act were taken and adapted from the ICC Act. They provided for the stronger regulation of compelling interconnection and for suspending tariffs. The following are the common carrier provisions:

1) Common carrier obligation to serve all those that request service.
2) Right of the FCC to require interconnection with other carriers.
3) Rates to be just and reasonable.
4) Prohibit unreasonable discrimination by a common carrier.
5) Publicly available tariffs for all communications charges must be filed and followed in a non-discriminatory manner.
6) The FCC may suspend new tariffs for up to five months to hold a hearing on lawfulness.
7) The FCC can prescribe tariffs after an appropriate hearing.
8) The FCC can investigate complaints against carriers.

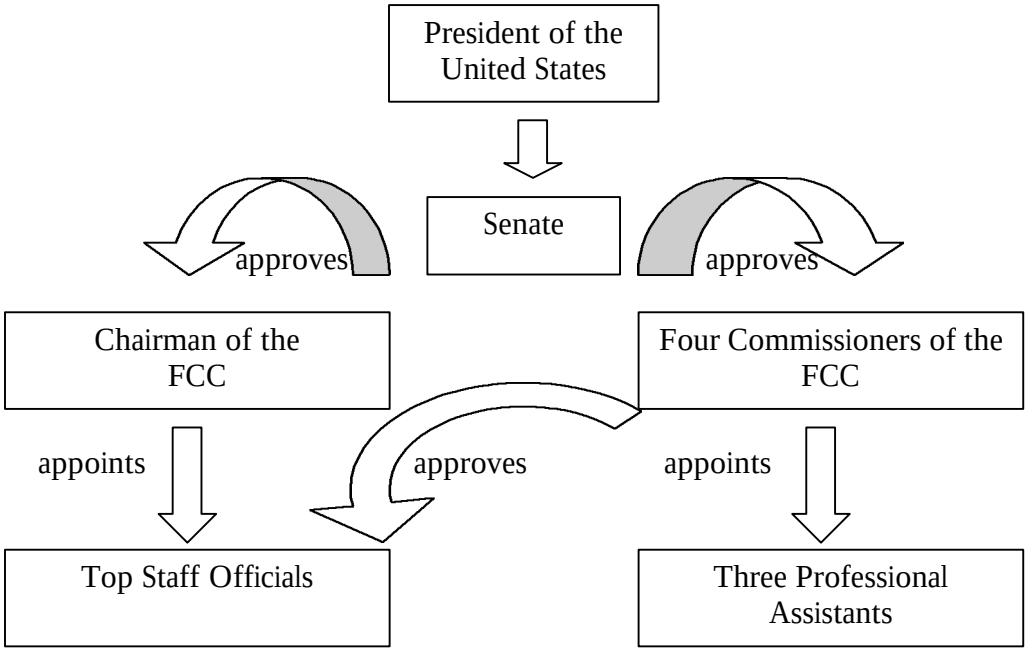
9) Extension of facilities can only occur after the FCC ascertains that satisfies the test of meeting the public convenience and necessity requirement.
10) The FCC can prescribe the accounting system and the depreciation charges for the carriers.
11) The FCC can compel information from the carriers.

The general rule of the FCC is to act "in the public interest" and to ensure that the prices for communications services are "just and reasonable". Hence, the FCC is to provide for universal service and nondiscriminatory rates.

2.3. THE STRUCTURE OF THE FCC

The appointment process of the FCC's commissioners and its top staff officials is illustrated in Chart 2.1.

Chart 2.1. Organization of the FCC



The President appoints and Senate approves the five commissioners. The President designates the chairman from among the commissioners. The chairman controls the agenda of the commission and selects the top staff officials, who must be approved by the entire commission. Each commissioner is entitled to appoint three professional assistants without regard to the civil service laws. The assistants are frequently chosen among engineers and economists. They advise and assist the commissioners in preparing the regulatory proposals.

Source: Brock, Gerald W., *Telecommunication Policy for the Information Age*, 1994

The FCC was established with seven commissioners. They were appointed by the President and confirmed by the Senate for a seven-year period. No more than four of the seven could be from the same political party.

In 1983, the number of commissioners was reduced to five. They are appointed for five years, in a way that each year one commissioner's term expires. No more than three commissioners can be from the same political party. They are full-time political appointees and cannot engage in any other business or receive income from the industries they regulate.

2.3.1. THE CHAIRMAN OF THE FCC

The President designates the chairman from among the five commissioners. The chairman has the following authorities:

- to preside over the meetings,
- to represent the FCC before Congress
- to coordinate the work of the FCC with the other government agencies
- to organize the work of the FCC in such a manner as to provide efficient disposition of all matters within the jurisdiction of the FCC

2.3.2. THE FCC STAFF

The 1934 Act provided the FCC with broad power to choose its staff. Initially, the staff was organized by its expertise into law, engineering and accounting groups. Today, the staff has merely economic background.

In 1973 the FCC created the Office of Plans and Policy (OPP):

- to conduct the FCC policy analyses and determine its effects on communication industry and services,
- to recommend appropriate FCC action,
- to recommend and evaluate research affecting FCC policy issues,
- to review the FCC proposed actions in terms of their policy implications.

QUESTIONS FOR REVIEW

1. Which government body passed the Communications Act in 1934, and for what purpose?
2. What authorities was the FCC given in 1934?
3. Summarize the purposes of the FCC.
4. What did the common carrier provisions provide for?
5. What is the general rule of the FCC?
6. Explain the political appointment system for the FCC commissioners.

SUMMARY OF THE MAIN IDEAS

The Communications Act of 1934 was enacted by Congress to define regulation of communications.

The Federal Communications Commission was established by the Communications Act of 1934 with purpose of regulating communications, that is radio, TV broadcasting and common carrier activities.

Common Carrier Activities was a notion used by the Communications Act to describe telephony.

Common Carrier Provisions of the Act provided for the stronger regulation of interconnection and for suspending tariffs.

The General Rule of the FCC is to provide for universal service and nondiscriminatory rates.

The Commissioners are full-time political appointees with the FCC. There are five of them. They are appointed by the President and confirmed by the Senate for a five year period.

SOURCES

Brock, Gerald W., *Telecommunications Policy for the Information Age*, Cambridge: Harvard University Press, 1994.

Communications Act of 1934, Section 1, codified at 47 *United States Code* 151

Stone, Alan, *How America Got On-Line*, New York: M.E.Sharpe, 1997.

Chapter 3

SEPARATION OF LOCAL AND LONG DISTANCE COSTS

LEARNING OBJECTIVES

After reading this chapter you should be able to

1. Understand the economies of scope in telecommunications.
2. Explain the cost allocation problem related to the economies of scope between local and long distance service.
3. Discuss the cost allocation incentives of the Bell company and state regulators.
4. Define the practice of cost separations.
5. Discuss the jurisdictional issues of the separations practice.
6. Explain the principles defined by the Initial Separations Manual.
7. Analyze the Initial Manual revisions conceptualized in the Charleston Plan and the Ozark Plan.
8. Differentiate between settlements and divisions of revenues.
9. Understand the consequences of separations.

One of the major regulatory issues is finding the cost allocation procedure that enables the benefits of new technology to be reflected in lower local rates. Separations process is a formula or procedure created in World War II to determine telephone costs, and thus prices. The significant increase in long distance calls during that period resulted in large profit increase for AT&T's Long Lines. The FCC asked AT&T to consequently reduce its interstate rates. AT&T responded that the increase in long distance calls was the result of war and that it struggled to provide service for the increased volume of traffic. It argued that a reduction in long distance rates would result in a further increase of long distance calls, which it would not be capable of handling. This is why the FCC began searching to reduce long distance profits without reducing its rates. This search extended into determining how to separate interstate and intrastate costs.

3.1. ECONOMIES OF SCOPE IN TELECOMMUNICATIONS

Economies of scope exist when it is cheaper to produce different products or services jointly then to provide them separately. Such economies are often linked to the existence of certain common or shared inputs for providing different products or services. Such inputs, once purchased for the production of one good, may also be available to produce another good.

There are large economies of scope between local and long distance service. Both services have a common input. This input is a number of very costly connections to other individual subscribers over the local loop. But once this costly connection is made, there are advantages of economies of scope. These economies mean that both local and long distance service can be provided over the same telephone instrument, wires and connections to the switch.

3.2. THE COST ALLOCATION PROBLEM

We will use an example to illustrate what problems may arise when there are economies of scope between local and long distance service. We will suppose that the local loop has the cost and demand characteristics as presented in Table 3.1.

Table 3.1. Local Loop Cost and Demand Characteristics: An Example

Products Provided By The Local Loop	**Average Cost Per Line Per Month**
Only Local Calls	$20
Only Long Distance Calls	$16
Both Local and Long Distance Calls	$24

The example illustrates economies of scope in the use of local loop (common input) for both local and long distance service. If we produce local and long distance calls jointly, we will incur the cost of $24. If we produce them separately, the cost will be $36 ($20 + $16). By using the advantage of economies of scope, we save $12 (which is the difference between $36 - $24).

From the example we see that there exist economies of scope. If we produce local and long distance calls jointly, we will incur the cost of $24. If we produce them separately, the cost will be $36 ($20 + $16). By using the advantage of economies of scope, we save $12 (which is the difference between $36 - $24).

There are two types of costs:

- traffic-sensitive that vary with use (where use is measured by telephone traffic), and
- non-traffic sensitive costs that do not vary with use.

These local loop costs are non-traffic sensitive costs and cannot be easily allocated to local or long distance service. They do not vary with the extent to which the facilities are used. The basic costs of installing and maintaining a local loop remain the same

whether the customer uses the loop no matter how many calls are made, and no matter whether those calls are local or long distance. How can we then separate those costs that were incurred to provide local and long distance service?

When deciding how to allocate costs between local and long distance services, we first need to take into consideration incremental costs. Each service should at least cover its incremental cost. This means local service should cover at least the $8 incremental cost ($24 - $16) and long distance should cover at least $4 ($24 - $20).

There is a question now how to allocate the remaining common costs. Allocating more to long distance would help lower the cost of local service and promote universal service. However, a monopolist who provides telephone services has a great incentive to allocate a greater proportion of these costs to the regulated service, in order to justify his request to the regulatory agency for higher prices. At the same time, by allocating a smaller proportion of these costs to the unregulated service, it can minimize the costs and the price of this service to secure profits.

Before 1934, long distance was unregulated and there was an incentive to minimize the costs allocated to long distance. This explains why at the beginning of this century the Bell company practiced minimizing the allocation of its common costs to the long distance service. The local service, on the other hand, was subject to regulation where the prices were designed to cover costs and provide a reasonable return on investment. By allocating a greater proportion of its costs to local service, Bell was able to ask regulators for higher prices.

State regulators argued in favor of reducing the price of local service that they regulated. Because long distance service is made possible by providing local connections they claimed that some of the costs of those connections should be allocated to long distance service. Or, in other words, a part of long distance revenue should be used to cover the cost of local service.

3.3. PRACTICE OF COST SEPARATIONS

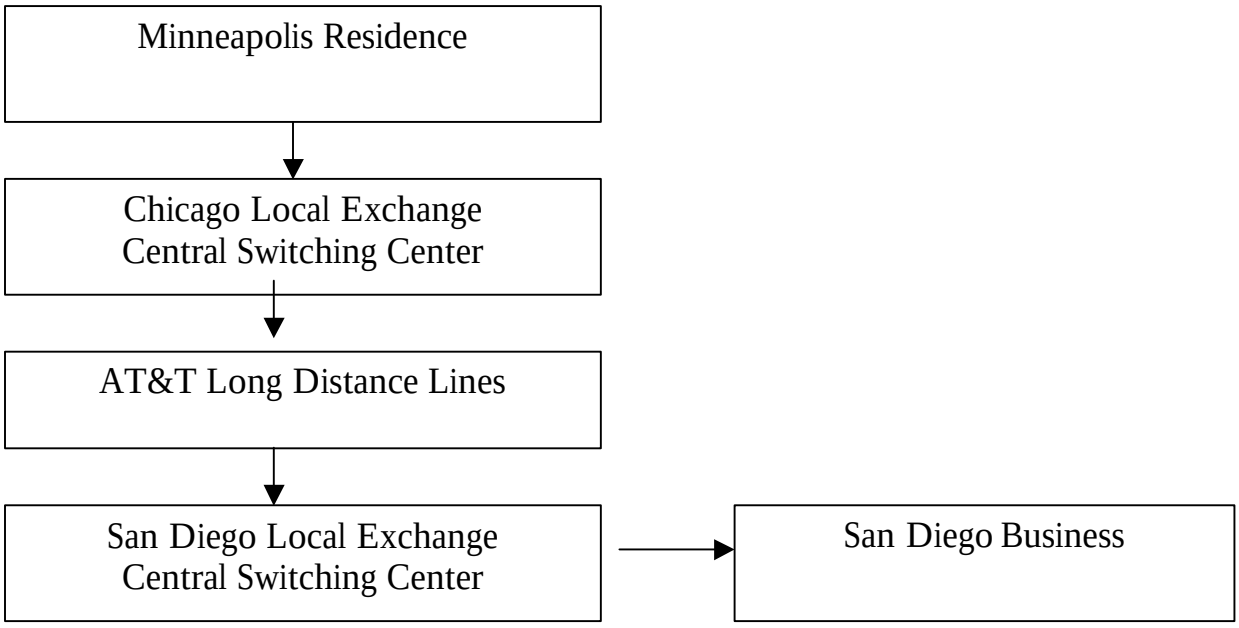
Separations is a cost allocation process by which common costs are allocated into intrastate and interstate jurisdictions. Each jurisdiction then sets its own policies that explain how these costs should be recovered.

The practice of cost separations began by an initiative of state regulatory commissions that demanded allocation of some of the local costs to the interstate long distance service to provide for a cheaper local service.

3.3.1. ESTABLISHING THE IDEA OF SEPARATIONS

Technically, every long distance call must begin and end in a local exchange. Local exchange is a geographical area for the administration of telecommunications services within which a local operating company is providing local exchange service (connecting different points within that exchange through switching centers). A call originating, for instance, from a residence in Minneapolis to a business in Chicago to a business in San Diego first goes to the local exchange central switching center in Chicago. The signal is then switched onto AT&T long distance lines where it is routed to the San Diego local exchange central switching center. Finally, the signal is delivered to the San Diego business. Chart 3.1. provides an example of sharing the facilities of local exchanges and call routing.

Chart 3.1. Sharing the Facilities of Local Exchanges: An Example of Call Routing



The example illustrates that local exchange facilities are used for both local and long distance service. Local and long distance services share the costs of equipment and plant.

Source: Horwitz, Robert Britt, *The Irony of Regulatory Reform*, New York: Oxford University Press, Inc., 1989.

This example illustrates how local exchange facilities are used both to connect callers within the local exchange (local calls) and to begin and end long distance calls. Local and long distance services share the costs of equipment and plant.

Separations began as an outcome of the 1930 *Smith v. Illinois Bell* case. Prior to this case, long distance providers did not have to pay local exchanges for common costs. The question in that case was whether the rates ordered by the Illinois state commission were too low to allow the company reasonable return on its investment. Illinois Bell argued that they were too low. The commission argued that they were not. The rates were found reasonable. The Supreme Court ruled that the local telephone network is a common input for both local and long distance service. Therefore, some of the costs of the local network must be allocated to long distance service.

But, this solution created another problem. There was no simple way to distribute local capital costs between local and long distance service. Many of the costs of the local plant are non-traffic sensitive and do not vary with use. Their allocation is completely arbitrary. Therefore, there had to be a formula to calculate this allocation.

We will now examine how the idea of separations evolved until the first separations procedure was established by the 1947 Initial Separations Manual.

3.3.2. SHARING OF LONG DISTANCE REVENUE: EVOLUTION OF THE SEPARATIONS CONCEPT

3.3.2.1. JURISDICTIONAL ISSUES

Separations affects both the price structure of the industry and the balance of power between state and federal regulators. Because part of the local costs is allocated to the interstate jurisdiction by the institution of separations, federal authorities gain power over local telephone companies. Therefore, local telephone companies are regulated both by state PUCs and by the FCC. Long distance traffic may be intrastate (for instance between San Diego and Los Angeles) and hence under state authority, or interstate (i.e., between Chicago and Los Angeles) under the federal authority. As a consequence, both state and federal regulators have a saying in determining prices of the local service. They had to get together to agree on the separations procedures.

Separations instigated many arguments between the FCC and states. Part of the problem was jurisdictional: the states had no authority over interstate rate making, although telephony was an integrated system. FCC had authority over both intrastate and interstate telephony, but no policy guide except that the rates should be "reasonable." The Communications Act gave the authority for solving these conflicts to **a Joint Board** of federal and state commissioners. The Board was created to recommend the final action to the FCC.

3.3.2.2. THE FCC POLICY OF NEGOTIATION

The FCC dealt with the separations issues by proclaiming in 1939 the principle of geographical (nationwide) rate averaging. This is the policy of charging equally for interstate calls of the same distance, regardless of the actual costs of routing. Rate averaging could serve two functions. First, it prevented rate discrimination. Second, it simplified the separations problem because it required only the determination of aggregate interstate costs. There was no need for determination of actual individual interstate costs.

Rate averaging illustrates how the FCC regulated telephony. The FCC preferred to deal with AT&T rates by negotiation rather than by holding formal hearings on separations procedures. Negotiation means that the FCC would watch AT&T reported earnings and then would ask for rate adjustment. There were no clearly defined standards or procedures upon which to assess the information given. This method was not effective and it never determined actual policy.

3.3.3. THE INITIAL SEPARATIONS MANUAL

By the 1940s, it became clear that the policy of separations had to be set. The Joint Board made the **Initial Separations Manual** in 1947.

The Manual divided the costs of interstate telephone service into:

- Traffic-sensitive and
- Non-traffic sensitive.

The Manual then explained how to allocate both traffic-sensitive and non-traffic sensitive costs incurred by local operating companies (local plants) for the purpose of providing interstate service. This can be viewed as a two step procedure:

1. The local plant's traffic-sensitive costs of supplying interstate service were calculated directly, and they were compensated out of interstate revenues.

2. Then the total non-traffic sensitive costs of local plant were allocated to intrastate and interstate use on the basis of **relative use, or subscriber line use (SLU)**. Relative use was defined as the time the local plant was used for interstate calls divided by its total time in use. In other words,

$$\text{Relative Use of Local Plant For Interstate Calls} = \frac{\text{Time spent on interstate calls}}{\text{Total Time of Local Plant Use}}$$

Total non-traffic sensitive costs were allocated to interstate service according to the percentage (relative) use calculated by this formula. These costs of interstate use were then compensated to the local plant from interstate revenues.

To summarize, AT&T Long Lines were required to compensate the local plant out of its long distance revenues for two types of charges, the sum of which was called "separations charges". First, it had to pay for the traffic sensitive costs, which were calculated directly. Second, it had to pay for non-traffic sensitive costs, which were calculated according to the relative use formula.

Requiring AT&T to allocate some cost to long distance by adding charges for the cost of capital used in completing interstate calls through the equipment of the local operating company, would reduce the long distance profits. The costs of the local operating companies that had to be covered by local (intrastate) rates also would fall because part of the local capital stock would be shifted to the interstate (toll) jurisdiction. Local rates could fall, encouraging universal service.

3.3.4. REVISIONS OF THE INITIAL SEPARATIONS MANUAL

3. 3.4.1. THE CHARLESTON PLAN

Due to inflation in the years after the Initial Manual, local companies asked the state regulators to increase the intrastate rates. The costs of long distance service, however, declined due to technological improvements. When the FCC acted to respond to this reduction in costs by decreasing interstate rates, the states objected.

The state regulators asked that the FCC change the separations formula instead of reducing the interstate rates. The reason was that the states wanted to preserve low local rates by increasing the costs allocated to the interstate service, which would ultimately increase the share of interstate revenue paid back to the local companies.

If a greater share of costs were allocated to the interstate service, then AT&T's earnings would decrease without change in its rates. In this way, the state regulators would avoid having to approve the local rate increases and AT&T would avoid reducing long distance rates.

The FCC changed its formula in 1951 by adopting the **Charleston Plan**. The plan shifted costs from the intrastate to the interstate service rather than lowering interstate rates. This increased the local companies' share of interstate revenue. The plan shifted enough revenue requirements to interstate operations to justify interstate rate increases in the next two years. These were the first interstate rate increases granted since the creation of the FCC. They also took place while technological improvements

were reducing the cost of long distance service and increasing wages were raising the cost of labor-intensive local service.

The consequence of the Charleston Plan was an increase of subsidy flowing from long distance to local service. In addition, due to its frequent changes, the plan eroded consistency and definition of the separations formula

3.3.4.2. THE OZARK PLAN

In the 1970s, the regulators used the so-called **Ozark Plan** of separations. The new cost allocation methodology changed existing practices by shifting more of the recovery of non-traffic sensitive costs from local to long distance rates. In other words, it secured lower local telephone rates by increasing the percentage paid to the local operating companies by AT&T Long Lines. The Ozark Plan shifted about 1 percent per year of non-traffic sensitive costs to long distance from 1971 to 1984 (The Irony).[5] As a result, the increase in local telephone rates in that period was the forth lowest among all goods surveyed in the Consumer Price Index.[6]

The plan still based the cost separations on relative use, but the separations used a factor of three to allocate non-traffic sensitive costs to interstate usage. In other words, interstate factor was multiplied by three. Hence, if six percent of the minutes of a local exchange were interstate, the non-traffic sensitive cost of the local exchange would be allocated eighty two percent to intrastate and eighteen percent (i.e., six percent multiplied by factor of three) to interstate.

3.3.5. DIFFERENTIATING SETTLEMENTS FROM THE DIVISION OF REVENUES

We have already defined separations as procedures by which regulators divided costs between the interstate and intrastate jurisdictions. State regulators and the FCC had to get together and agree on how to distribute the revenues to local companies to recover the costs which the separations formula had attributed to long distance. Settlements, on the other hand, was the term for similar procedures worked out between AT&T and independent local telephone companies. AT&T Long Lines, which operated long distance, and the local operating companies had to work out procedures, called settlements, for allocating among them the revenues on long distance calls. Therefore, sharing the revenues between long distance and local companies according to separations formula can be defined as:

[5] Horwitz, Robert Britt, *The Irony of Regulatory Reform*, New York: Oxford University Press, Inc., 1989.
[6] Ibidem

- **division of revenues (separations)** when payments were made between affiliated companies, or as
- **settlements** when payments were made between unaffiliated companies.

Both settlements and division of revenues were achieved by private contracts among the companies. These contracts provided for the local companies to recover that portion of their costs that were allocated to the interstate service from the interstate revenue. Dividing up the revenues was not a "fee for service" arrangement in which the individual companies would charge the long distance companies a price per minute for origination or termination service. Rather, it was based on a specific portion of costs. This means that the companies were entitled to revenues equal to a specified portion of their costs, determined through separations formula.

Separations and settlements constituted procedures by which the AT&T parent company paid local telephone operating companies for handling the local-exchange ends of long distance traffic. AT&T described this as a "partnership" among the interstate carrier (AT&T Long Lines), the Bell-affiliated local operating companies and the independent telephone companies.

3.4. CONSEQUENCES OF SEPARATIONS

Separations policy clearly favored local users in order to support local (especially rural) telephone service. An extremely high share of local exchange costs were allocated to long distance service (and indirectly to business users), so that local rates were lower and long distance rates higher than what they should have been. In other words, local users were recipients of a subsidy from long distance users.

However, despite such price disparities, interstate long distance rate structure remained unaffected. Long distance rates were still based on a geographically averaged basis.

What were the main consequences of increased interstate allocation in the separations formulas?

1. The purpose of increasing cost allocation to long distance service was supposedly meant to shift the cost burden from small users to large corporation that were heavy users of long distance calls. However, the largest corporations escaped most of the cost burden. The basis for cost allocation were switched long distance calls (those calls made through AT&T long distance) not those calls made over "private lines." Private lines allow business customers to establish their own networks without using the switches. To summarize: local telephone rates were lowered by increasing the

percentage paid to the local telephone operating companies by AT&T while private line systems of large business users did not have to include local plant costs in their rates.

High interstate switched long distance prices (AT&T prices) created incentives for large long distance users to find alternatives to using switched services of the AT&T's long distance system. Computer technology replaced electromechanical devices in switches. Sophisticated telecommunications can process data. This is why large users could use their private line networks for many telecommunications uses. This use of large networks of private lines to avoid switched long distance calls became known as "bypass" problem.

2. New competing long distance carriers had incentives for entry into the long distance market because the separations plan did not require them to include local plant costs in their rates. They could always undercut AT&T's rates.

3. Separations increased the total amount paid by medium-usage companies that were large users of switched AT&T service but were too small for effective private networks.

4. The interstate revenue sharing system was a particularly important source of funding for the small rural companies. They often had a high ratio of long distance calls and could recover a large share of their costs from the interstate long distance revenue fund.

5. The cost allocation practices reduced the total amount paid by subscribers with a lower than average use of interstate service per telephone line.

QUESTIONS FOR REVIEW

1. Define the concept of economies of scope. How would you explain the economies of scope in telecommunications?
2. What are the non-traffic sensitive costs? What kind of cost allocation problem between local and long distance service is there?
3. How do the Bell's cost allocation incentives diverge from those of state regulators?
4. Explain the jurisdictional issues of the separations practice.
5. According to what principle did the Initial Separations Manual allocate non-traffic sensitive costs between intrastate and interstate jurisdictions?
6. How did the Charleston Plan and Ozark Plan revise the Initial Separations Manual?
7. Define settlements and divisions of revenues.
8. What were the main consequences of the separations?

SUMMARY OF THE MAIN IDEAS

Economies of scope exist when it is cheaper to produce different products or services jointly then to provide them separately.

Economies of scope in telecommunications exist between local and long distance service. Both services have a common input. This input is a number of very costly connections to other individual subscribers over the local loop (telephone instrument, wires and connections to the switch).

Traffic-sensitive costs are those that vary with use and can be directly allocated to local and long distance service.

Non-traffic sensitive costs are that do not vary with use and cannot be directly allocated. There needs to be a formula according to which these costs can be separated into local and long distance.

Separations is a cost allocation process by which common costs are allocated into intrastate and interstate jurisdictions.

Smith v. Illinois Bell case established the principle that some of the costs of the local network must be allocated to long distance service.

Joint Board of federal and state commissioners was given the authority by the Communications Act to solve conflicts between state and federal regulators.

Geographical (nationwide) rate averaging is the policy of charging equally for interstate calls of the same distance, regardless of the actual costs of routing

The Initial Separations Manual of 1947 established the policy of separations on the basis of relative use. The Manual divided the costs of interstate telephone service into traffic-sensitive and non-traffic sensitive.

Charleston Plan shifted costs from the intrastate to the interstate service rather than lowering interstate rates to increase the local companies' share of interstate revenue.

Ozark Plan shifted more of the recovery of non-traffic sensitive costs from local to long distance rates. It secured lower local telephone rates by increasing the percentage paid to the local operating companies by AT&T Long Lines.

Division of revenues defines separations procedure when payments are made between affiliated companies.

Settlements define separations procedure when payments are made between unaffiliated companies.

Fee for service is an arrangement in which the individual companies would charge the long distance companies a price per minute for origination or termination service.

Switched long distance calls were those calls made through AT&T long distance that were subject to separations procedure of cost allocation.

Private lines allowed business customers to establish their own networks without using the switches and avoid separations procedure of cost allocation.

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Chapter 4

THE 1956 CONSENT DECREE

LEARNING OBJECTIVES

After reading this chapter you should be able to

1. Identify the main parts of the AT&T-Bell system structure.
2. Define the Averch-Johnson effect.
3. Explain why Western Electric had incentives to overcharge equipment sold to the Bell Operating Companies (BOCs).
4. Understand why the Department of Justice filed an antitrust litigation against Western Electric in 1949.
5. Analyze the provisions of the 1956 Consent Decree.
6. Discuss the effect of the 1956 Consent Decree on the position of AT&T.

In 1913, AT&T was threatened by an antitrust litigation that would investigate its monopolistic practices. As we have seen in the Chapter one, the company avoided the litigation by agreeing to interconnect with the independent telephone companies by agreeing to sign the Kingsbury Commitment. In 1930, the government filed antitrust litigation against AT&T, General Electric, and Westinghouse, charging that their cross-licensing agreement for radio-related patents was anticompetitive. That litigation was settled with a consent decree in 1932. The next important antitrust litigation was the one that resulted in the 1956 consent decree.

4.1. INTEGRATION OF THE BELL SYSTEM

At the time when the Communications Act of 1934 was passed, the AT&T-Bell system was providing all of the long distance and most of the local service.

Local service was provided by the 18 **Bell Associated Operating Companies** (**BOCs**) integrated in AT&T's **Long Lines** (long distance service). Various independent telephone companies operated in certain local markets, but they were also linked to each other and to the national network through the Bell system. AT&T's integration with the BOCs was allowed to be preserved as long as it was regulated effectively by state and federal agencies.

However, this tolerance did not extend to the AT&T's vertical integration. Its vertical integration relates to its ownership of **Western Electric** and the **Bell Telephone Laboratories (The Bell Labs)**. The FCC was given authority to regulate contracts between AT&T and its subsidiaries, Western Electric in particular. For better illustration of the AT&T-Bell system structure, please refer to Table 4.1.

Table 4.1. The structure of the AT&T-Bell system

Companies owned by the AT&T-Bell system	Function
Bell Associated Operating Companies (BOCs)	Local telephone service
AT&T Long Lines	Long distance telephone service
Western Electric	Equipment manufacturing
Bell Telephone Laboratories (the Bell Labs)	Research and development

Source: Temin, Peter, *The Fall of the Bell System*, Cambridge University Press, 1982.

The AT&T-Bell system operated local service through Bell Associated Operating Companies (BOCs), long distance service through AT&T Long Lines, equipment manufacturing through Western Electric, and research and development through the Bell Telephone Laboratories (the Bell Labs).

Western Electric, producer of telephone equipment, was purchased by the Bell in 1881 with the purpose of protecting its patent monopoly for telephone instruments. Bell first required that all telephones should be owned and leased by the company. Due to a rapid increase in demand, the company struggled to provide all the telephones. To solve the problem, it acquired Western Electric. Over the years, Western Electric ensured for technological uniformity among BOCs. AT&T operated its research and development through the Bell Labs.

4.2. ANTITRUST CONCERNS

Western Electric was operated as an unregulated subsidiary of the AT&T-Bell System. AT&T's ownership of Western Electric created problems that eventually resulted in an antitrust litigation.

In the system of rate of return regulation, AT&T had incentives to overcharge equipment sold by Western Electric to BOCs. Rate of return regulation of telephones allowed a reasonable rate of return on invested capital. Harvey Averch and Leland Johnson established a theory that this form of regulation might induce the firm to overinvest in capital relative to other inputs in order to increase its rate base. This tendency is called **Averch Johnson effect**.

In the rate of return regulation, the firm's allowed total revenues (TR) will equal operating costs (OC) plus the allowed return on invested capital (r_aK). The firm's true total costs (TC), however, will equal OC plus the true cost of invested capital (r_oK). When the allowed return is higher that realized return ($r_a > r_o$), the firm can earn positive economic profit $ð_e$:

$$ð_e = TR - TC$$
$$= (OC - r_aK) - (OC + r_oK)$$
$$= (r_a - r_o)K$$

where K is the amount of capital invested.

Thus, for every dollar of capital K the firms purchases, it earns economic profit in the amount $r_a - r_o$. For instance, if $r_a = 0.30$ and $r_o = 0.20$, then

$$ð_e = (r_a - r_o)K = (0.30 - 0.20)K = 0.10K$$

In other words, each $1 of capital invested will result in $0.10 profits. The monopolist has incentives to increase the amount of capital invested relative to the amount of labor in order to earn high profits under the rate of regulation system.

The rate base of the Bell system included equipment purchased by regulated BOCs from unregulated Western Electric. The prices that Western Electric was charging the BOCs for that telephone equipment were not regulated. They were internal transfer prices to the Bell System and determined the costs of the BOCs. Consequently, they affected the prices that BOCs were allowed to charge under regulation. If Western Electric inflated the prices it charged the BOCs, that would increase their rate base and result in higher profit acquired through the rate of return regulation. Hence, high Western Electric prices meant high manufacturing profits; a large rate base under the rate of regulation system meant larger profits in operations as well.

The FCC undertook large investigation of this arrangement in the late 1930s, claiming that there was a spread of profit between the manufacturing cost to the Western Electric and the prices paid by the BOCs which provided for both high profits on manufacturing and inflated rate base for operations. At that point, however, no antitrust action was filed.

4.3. THE 1949 ANTITRUST ACTION

In 1949 the Department of Justice filed an antitrust litigation against Western Electric. It charged Western Electric with monopolizing the market for telephone equipment. More specifically, it claimed that AT&T and Western Electric had conspired to

monopolize the market in telephone equipment, excluded other manufacturers and sellers of equipment from the market, and earned monopoly profits for the conspirators. The Department of Justice wanted that AT&T ends its ownership of Western Electric, and that it dissolves Western Electric into three companies. In addition, it wanted to end all restrictive agreements among AT&T, the BOCs, and Western Electric.

AT&T's defense claimed that Western Electric was not merely a subsidiary providing equipment that could otherwise be purchased on the open market, but was an integral part of a fully integrated company. It argued that the AT&T's ability to provide integrated control of complex telecommunications systems was vital national resource.

Because AT&T was vertically integrated to include research and development, manufacturing and provision of local and long distance service, it gained great support from the Defense Department. AT&T was a major defense contractor at the time and the Korean War caused the Secretary of Defense to postpone the antitrust litigation. In addition, Western Electric was rendering its services to the Atomic Energy Commission's Laboratories.

In 1953, the Defense Department continued supporting AT&T's arguments that the government should protect its integrated status. The Secretary of Defense gave his own contribution in supporting the company. Here are some excerpts from the letter sent by the Secretary of Defense to the Attorney General:

Excerpts from the letter sent by the Secretary of Defense to the Attorney General

Currently, Western has orders for equipment and systems for the armed services totaling over $1 billion… the severance of Western Electric from the system would effectively disintegrate the coordinated organization which is fundamental to the successful carrying forward of these critical defense projects, and its appears could virtually destroy its usefulness for the future… It is therefore respectfully urged that the Department of Justice review this situation with a view of making suggestions as to how this potential hazard to national security can be removed or alleviated

Source: Brock, Gerald W., *Telecommunications Policy for the Information Age*, Cambridge: Harvard University Press, 1994.

4.4. THE 1956 CONSENT DECREE

A consent decree designed to end the case was signed in 1956. The decree accepted the arguments of AT&T supported by the Defense Department that the AT&T's vertically integrated structure was an important national resource. It concluded that AT&T did not construe an illegal arrangement.

The consent decree required AT&T to license its Bell system patents. However, this measure had little influence since the market for telephone equipment made with these patents was not open to competition.

In addition, it limited the Bell System to the provision of common carrier communication services and restricted Western Electric to manufacturing only equipment for the use in telephony. Common carrier communications services were defined as "communications services and facilities, other than message telegram service, the charges for which are subject to public regulation under the Communications Act of 1934." This requirement also seemed insignificant since AT&T had already been withdrawn from its radio, motion pictures, and TV operations.

The decree was practically a victory of AT&T. The company remained completely vertically integrated, with Western Electric as a fully owned but unregulated subsidiary. There was no real sanction to AT&T. Although AT&T had to give up its right to use patents as a competitive weapon, this did not change much because AT&T had already eliminated the aggressive use of patents which it had practiced earlier to block competitors. The restriction to common carrier services represented a potential barrier to future expansion but not a limitation on its services at that point of time.

4.5. AFTERMATH

The AT&T-Bell System in the late 1950s existed as an organization with even more strength than before the 1956 consent decree. It fully achieved the strategy set up by Vail many years before. Vail had recognized state regulation as a way of extending Bell's nationwide monopoly of the telephone network. His successors similarly accepted federal regulation, a strategy that was strengthened with the 1956 consent decree.

Vail's strategy of universal service was also an inheritance widely applied during 1950s. In 1956 over 70 percent of households in the United States had telephones, connected by AT&T's long distance service to all others.[7]

AT&T expanded to become the largest company in the world, measured by the size of its assets, and had significant political power. Vail had introduced an organization model for the BOCs in 1909 that lasted for more than fifty years. The BOCs were organized functionally, through Plant, Traffic and Commercial departments. Similar organization facilitated communication between the AT&T's General Departments and the BOCs, and between the BOCs themselves.

While AT&T was technologically integrated, it was highly politically and managerially decentralized. AT&T controlled the senior management appointments, while the executive of the BOCs managed their own organizations and their relations with regulatory agencies independently.

The Bell System operated very successfully. Telephone service became increasingly cheaper, more available, more technologically advanced. Long distance service was extended nationwide. Coaxial cables and microwave radio transmissions were introduced. Dial telephones replaced operators. Major changes of telecommunications were in most cases the product of the Bell Labs. The significance of its research activities and technological advancements for the nation as a whole, provided AT&T with beneficial relations with the state and federal agencies.

QUESTIONS FOR REVIEW

1. What were the main parts of the AT&T-Bell system structure in 1934?
2. Explain the Averch-Johnson effect. How does this theory help you understand the relation between Western Electric and the BOCs?
3. What are the two benefits for AT&T if Western Electric overcharges the BOCs for its equipment?
4. Why did the Department of Justice filed an antitrust litigation against Western Electric in 1949?
5. What were the provisions of the 1956 Consent Decree?
6. Did the 1956 Consent Decree truly harm AT&T? Why?

[7] Temin, Peter, *The Fall of the Bell System*, Cambridge University Press, 1982., p.16

THE SUMMARY OF MAIN IDEAS

Bell Associated Operating Companies (**BOCs**) were owned by AT&T to operate local telephone service.

AT&T Long Lines were owned by AT&T to operate long distance telephone service.

Averch Johnson effect is a tendency by firms under the rate of return regulation to overinvest in capital relative to other inputs in order to increase its rate base and earn higher profit.

Western Electric's inflated prices that it charged the BOCs would increase their rate base and provide for higher profit acquired through the rate of return regulation, as well as high manufacturing profits acquired through Western Electric.

The 1956 Consent Decree required AT&T to license its Bell system patents, limited the Bell System to the provision of common carrier communication services and restricted Western Electric to manufacturing only equipment for the use in telephony.

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