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The Divestiture of AT&T: Financial Benefit or Financial Harm to Its Owners

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THE DIVESTITURE OF AT&T: FINANCIAL BENEFIT OR FINANCIAL HARM TO ITS OWNERS?

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An Abstract Presented to the Faculty of the Graduate School of Lindenwood College in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration

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ABSTRACT

This thesis examines the history of AT&T, the divestiture of its operating companies in 1984 and the subsequent impact on the parent company, its offspring and the telecommunications industry. The focus is on the impact to AT&T's original owners.

The Bell Telephone Company which spawned AT&T was formed in 1877 with Alexander Graham Bell's invention of the telephone. AT&T became the largest telephone company in the world and one of the most powerful economic forces within the United States. However, over the course of its history, it fought three separate antitrust suits filed by the U.S. Justice Department. The last, filed in 1974, was ultimately responsible for dismantling AT&T. At the time of the suit, AT&T was both vertically and horizontally integrated. After the settlement, it lost its operating companies which provided local telephone service across the country, but retained its research and development, manufacturing and long distance branches. By agreeing to this arrangement, AT&T broke free from the cycle of antitrust litigation,

restrictions from entering other lines of business and intense regulatory scrutiny.

The purpose of this study is to examine divestiture's impacts and determine whether the deal made by AT&T's management benefitted its owners/investors or whether there is evidence to indicate it harmed them.

AT&T's divestiture had many impacts. Certain consumer burdens were short lived, such as local service price increases and service delays. The most lasting negative impact may have been on employees due to massive layoffs. However, the benefits of divestiture continue to accrue. Consumers experienced sustained lower long-distance rates, competition thrived and both AT&T and RBOC earnings were good.

Financial data, including dividends and share price appreciation, were examined both pre- and post-divestiture for AT&T and post-divestiture for the RBOCs, the S&P 500 and the S&P utilities. Comparative results indicate that the original AT&T shareholders, on a cumulative basis, benefitted financially from divestiture even though the hypotheses were not proven statistically due to limitations of the data and the nature of the tests.

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INTRODUCTION

Just over ten years ago on January 1, 1984, a major upheaval occurred in America's business community which directly or indirectly impacted virtually every citizen in this country. The American Telephone and Telegraph Company (AT&T) divested its Bell Operating Companies (BOCs), which provided local telephone exchange services, from its long distance, manufacturing and research and development branches. It did not do so entirely upon its own volition, but did so in order to resolve a Justice Department antitrust suit. In so doing, the nature of telecommunications changed in the United States as did the perception by the investment community of the future of telecommunications.

Fundamental to understanding why AT&T would agree to such a radical break with the past is to understand that past. AT&T's history is replete with intermittent but long-running battles with competition, antitrust investigations and ultimately, the regulatory process itself.

AT&T is an old institution which can trace its beginnings to Alexander Graham Bell's invention of the telephone in 1876. The start-up company, the Bell Telephone Company, was formed in July 1877, with patent partners, Thomas Sanders and Gardinar Hubbard, financee, Mabel Hubbard and associate, Thomas Watson as shareholders and with Bell as a minority shareholder (Kleinfield 6; Brooks 55). Gardinar Hubbard, who became Bell's father-in-law and who had been one of his financial backers, was responsible for the company's business affairs (Kleinfield 6).

In 1878, Hubbard hired Theodore Vail, as general manager of the company. Prior to this assignment, Vail was a telegraph operator, station agent for the Union Pacific Railroad and eventually, head of the federal Railways Mail Service. As Vail accepted his new job, Western Union, who had a nationwide telegraph network, became interested in the telephone business. It bought the patents of Elisha Gray who filed only hours after Bell had submitted his patents. Bell thus began suit against Western Union for patent infringement (Brooks 64). In a settlement resolving this dispute, Western Union agreed to keep out of the telephone business and Bell agreed to stay out of the telegraph field (Kleinfield 7). Additionally, Western Union gave up

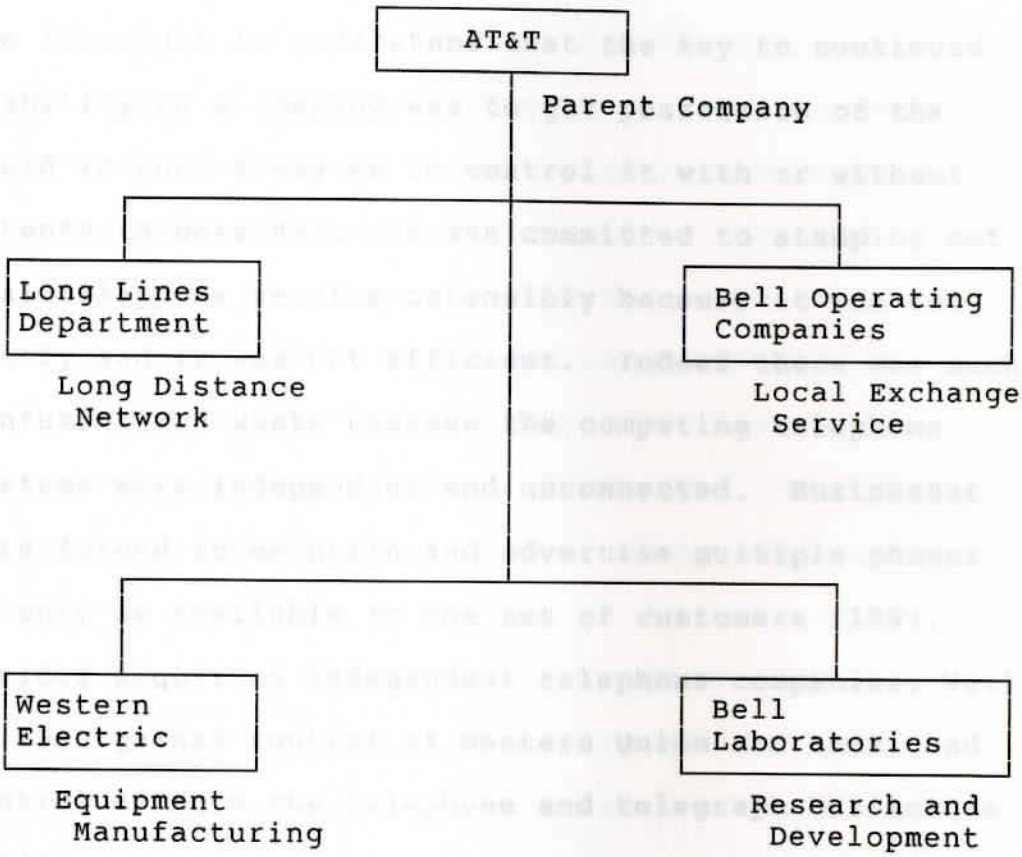
all its patents and claims covering technical improvements and a network of 56,000 telephones in exchange for 20% of telephone rental receipts over the 17-year life of the Bell patents (Brooks 71). In the immediately ensuing years, no fewer than 3 other patent fights were won by the Bell System effectively shutting out competition (Brooks 76-80).

In 1880, only 4 years after the invention of the telephone, the American Bell Telephone Company was founded as the parent company of the system (Kleinfield 8). Two years later, Vail acquired control of Western Electric, which had previously supplied Western Union's telephone equipment and which became the equipment-manufacturing arm of the business (Brooks 83). In 1885, Theodore Vail became President of the American Telephone & Telegraph Company. Its charter was "to build and operate long lines connecting the city exchanges throughout the U.S., Canada and Mexico and the rest of the world as that might become desirable" (Kleinfield 8). This organization, including vertically integrated manufacturing, and research and development arms, as well as geographically organized local service arms, established AT&T's modern corporate

structure which endured until divestiture. Table 1 illustrates that structure.

Table 1

AT&T's Corporate Structure



SOURCE: "The Fall of the Bell System" by Peter Temin

In the ensuing years, competition became a major concern as the Bell patents expired in 1893 and 1894, and independent telephone companies challenged Bell.

By 1907, fully half of the phones in service in the United States belonged to independent companies. In the face of competition, Vail raised money and bought and merged into the Bell System, many of those independent telephone companies (Kleinfield 8). He had the foresight to understand that the key to continued viability as a company was to get possession of the field in such a way as to control it with or without patents (Brooks 83). He was committed to stamping out dual-telephone service ostensibly because it was too costly and it was not efficient. Indeed there was much confusion and waste because the competing telephone systems were independent and unconnected. Businesses were forced to maintain and advertise multiple phones or only be available to one set of customers (109). Besides acquiring independent telephone companies, Vail in 1909 gained control of Western Union and thus, had control of both the telephone and telegraph businesses (134).

In addressing competition, some of AT&T's practices were "orthodox" such as rate cutting. In other instances, AT&T built its network using ruthless business practices. When a rival company built a competing exchange, AT&T would refuse them interconnection with its network and thus, exert

pressure on the company until it sold out to AT&T. In other cases, AT&T would exert pressure on bankers not to lend money to independents, or use political muscle to deny franchises or even secretly buy-up independents through a company controlled by Bell (Brooks 112-113). The Justice Department advised AT&T of its concern that acquisitions were in violation of the Sherman Antitrust Act and the Interstate Commerce Commission began an investigation of these practices (35). In 1919, a settlement was reached between Vail and then President Woodrow Wilson. This agreement was known as the Kingsbury Commitment. In exchange for halting its anticompetitive business practices, AT&T informally became the country's telephone monopoly subject to regulation (Coll 58).

In this first skirmish with the U.S. government, AT&T agreed to relinquish the telegraph business, agreed not to purchase any more independent telephone companies unless approved by the Interstate Commerce Commission and agreed to interconnect customers of the independent companies to the Bell network. From that point until divestiture, AT&T expanded very little from a geographical perspective maintaining control of about 85 percent of telephone business in the United States (Kleinfield 8).

Once AT&T accepted regulation in return for retaining its monopoly status, its heritage became a unique one. It became a private enterprise with a public trust. It had a fiduciary responsibility to its shareholders, but at the same time, it was responsible to the public and the nation as a whole (Tunstall 2).

A set of mutually agreed upon public policy goals were established which also recognized the company's needs as a private enterprise. The Communications Act of 1934 formalized industry objectives and established the Federal Communication's Commission (FCC) as the federal regulator or enforcement body (Tunstall 2). By 1920, state regulatory commissions regulated telephony within their respective state boundaries in all but three states (Evans 42).

The company's objectives as stated by Theodore Vail in 1910 endured through divestiture:

> The telephone system should be universal, interdependent and intercommunicating, affording opportunity for any subscriber of any exchange to communicate with any other subscriber of any other exchange... that some sort of connection with the telephone system should be within reach of all... that all can be accomplished... under such control and regulation as will afford the public much better service at less cost than any competition or governmental-owned monopoly. (Tunstall 2-3)

This same vision was shared by Chairman John de Butts in 1975 when he said:

> The Bell System's goal, as I see it, is to insure "the widest availability of high-quality communication's services at the lowest cost to the entire public." That is my definition of the basic social purpose for which this business exists. It is my definition of public interest. (Tunstall 3)

This vision of one system providing universality of service, as self-serving as it may have been, also provided the highest quality telephone service at the lowest prices to the most customers of any phone system in the world (Brooks 4; Coll 71; Kleinfield 4-5).

In 1949, the company again found itself in trouble with the Justice Department. This time the DOJ sued seeking to force AT&T to divest Western Electric. The operating companies bought all their telephones from Western Electric. Consequently, AT&T had a captive audience for its phone equipment business (Coll 58).

However, due to the case's complexity as well as to political changes, this case was not immediately tried. By 1956, it had still not been heard and was not ready for trial. Eisenhower was considerably more supportive and tolerant of big business, than was his predecessor. His Attorney General, Herbert Brownell, Jr. provided the impetus necessary to move forward with a

settlement. On January 12, 1956, a "consent decree" was filed which settled the case. This time, in exchange for keeping its equipment subsidiary, Western Electric, AT&T agreed not to enter the computer business and to provide only communications services and facilities. In 1956, this didn't seem to be a major concession. Computers were in their infancy and AT&T was not relying upon them for its future (Coll 59).

Because of the nature of the settlement and the embarrassment suffered by the Antitrust division by being forced to settle the case, it continued to closely monitor and investigate AT&T (Temin 16; Coll 77).

AT&T's regulated monopoly status and its informal oversight by the FCC continued through the 1950s into the 1960s. This oversight typically included review and approval of AT&T's proposed rate decreases. To the extent that AT&T's costs were declining and savings were passed through to customers, neither formal nor stringent audit reviews were established. However, in 1965 the FCC initiated an investigation into the Bell System's rates for interexchange (long distance) and foreign communication's services (von Auw 67).

Within days of the announced investigation, AT&T's

stock price fell over seven percent from 67 1/8 to 62 dollars per share. Obviously, investor confidence was shaken. It wasn't until January 21 of 1983 when the stock closed at $67.38 (the highest price in more than 17 years) that investors fully regained confidence. This announcement clearly was a reminder to owners/investors that the regulators would have as much impact on the company's future as its management (von Auw 66).

The FCC's investigation was to address not only the level of Bell's interstate rates, but the validity of the prices it charged and Bell's structure. Of special interest, were its vertical integration and whether the public or only Bell's interests were being served by it. This investigation had many phases and subphases; which, in turn, generated other dockets and new phases and subphases. At the time divestiture was announced, 17 years later, it was still going on (von Auw 67).

On the competitive front, other equipment manufacturers fought for the right to connect their equipment with the Bell System. In June of 1968, the FCC ruled that tariffs barring connection of customer-owned terminals were "unlawful". This became known as the Carterfone decision (von Auw 407).

During 1968 and 1969, the executive branch of

government, through its Task Force on Communication's Policy as well as the FCC, endorsed competition in the private line arena. In August of 1969, the FCC authorized MCI to offer private line services between Chicago and St. Louis (von Auw 408).

In the early 1970s, competition increased as the FCC affirmed MCI's and other carrier's rights to provide full service through access to AT&T's distribution facilities (von Auw 410).

AT&T's response to competition was to oppose it. Chairman John de Butts stated that it would "harm service and increase costs." Bell also joined the independent telephone companies in requesting from Congress a definition of a telecommunication's policy that would confirm the common carrier principal (maintain monopoly franchise rights). This came at a time when the FCC opened various sectors of telecommunications to competitors. To the extent that the Commission's decisions all leaned toward more competition, it appeared unpursuaded by Bell's contention that competition would create higher prices and poorer service (Coll 66-71).

On November 20, 1974, the DOJ filed an antitrust suit charging unlawful conspiracy to monopolize interstate trade and commerce in telecommunication's

service and equipment. The DOJ requested divestiture of Western Electric and some or all of AT&T Long Lines from some or all of the Bell Operating Companies (von Auw 412). The Justice Department claimed it was the manner in which AT&T responded to competitive threats that was the subject of the antitrust suit.

> Broadly, the major features to AT&T's exclusionary conduct in the intercity services market have been the manipulation of the terms and conditions under which competitors are permitted to interconnect with AT&T's existing services and facilities, including those of the local exchange operators, and the repricing of AT&T's own intercity services in competition with the new entrants. (Evans 43)

Also, during this time, a number of private antitrust suits were filed against AT&T. MCI filed suit a few months before the DOJ charging AT&T with monopolization of intercity private line markets. Litton Systems, Inc. filed suit alleging monopolization of the manufacture, distribution, sale, rental and leasing of PBX and key telephone equipment. Both won their suits prior to the end of the Justice Department's suit (von Auw 411-413). Southern Pacific Communication's Corporation (then parent of Sprint, another long-distance provider) also filed an antitrust suit (Coll 376). Additionally, Congress, rather than affirming the monopoly, considered bills which

encouraged competition.

Early during the course of the Justice Department's trial, AT&T protested that the charges made by the DOJ fell not within the federal court's purview, but within the FCC's. This jurisdictional question took three years to resolve, ultimately in the DOJ's favor (Coll 82). At various times during the lengthy proceeding, settlement discussions were held, but to no avail (120-147). Hearings began in earnest in early 1981. Some consideration was also given to dropping the suit as proposed by members of the executive branch of government. As AT&T began presenting its case, it became clearer that Judge Greene seemed to support the Justice Department's case (261-267). Additionally, the theme of the DOJ's case had shifted from divestiture of Western Electric and the operating companies to just the operating companies. However, late in 1981, it appeared that the judge was more convinced that Western Electric should be divested than the BOCs (288-290). This became a concern to AT&T who could not risk losing its manufacturing branch. Consequently, AT&T approached the Justice Department with a deal to settle the case by divesting the operating companies. In August of 1982, a consent decree was filed with and approved by Judge Greene which dismissed the U.S. v

AT&T Suit (Coll 362).

In considering the consequences, Charlie Brown, CEO of AT&T at the time, came to the conclusion that AT&T desperately needed to get on with business and get out from under continued litigation and uncertainty. To the extent that AT&T could become deregulated and the original 1956 consent decree lifted, all AT&T's stakeholders would be better off. The 1956 consent decree barred AT&T from pursuing what increasingly appeared to be profitable lines of business related to new computer technologies (Coll 293). As Brown envisioned it, this represented "an opportunity to regain control" of AT&T's destiny and to "compete on equal terms" with its new competition (300). AT&T anticipated no harm to its owners to the extent that the equity value of the entire Bell System would not be devalued by its breakup in the short term. In the long term, AT&T would retain its most profitable, cash-rich subsidiaries while divesting the relatively less profitable and heavily regulated operating companies. The operating companies were expected to survive through higher local rates authorized by the state commissions (301).

The agreement entitled Modification of Final Judgment voided the "Final Judgment" of 1956. It provided for:

> the transfer from AT&T and its affiliates to the BOCs, or to a new entity subsequently to be separated from AT&T and to be owned by the BOCs, of sufficient personnel, facilities, systems and rights to technical information to permit the BOCs to perform independently of AT&T exchange telecommunications and exchange access functions including the procurement for, and engineering, marketing and management of those functions.... (Tunstall 208)

The BOCs were to provide equal access to AT&T's competitors, which meant that it would ultimately have to be as easy for consumers to use MCI, Sprint and other long-distance companies as it was currently to use AT&T. Additionally, AT&T was allowed to determine how to divest two-thirds of its assets through a submission of a "plan of reorganization" (POR). The divested phone companies were to provide local phone service only (Coll 305). Ultimately the BOCs were allowed to keep the highly profitable Yellow Page Directory operations, to provide for sale but not manufacture of telephone equipment and retained the "Bell" name. The agreement cleared the way for AT&T to get rid of its antitrust problems and to eliminate the provisions of the 1956 Consent Decree restricting AT&T

to telecommunications. At the time AT&T also hoped to gain complete deregulation of the new AT&T (Cole 8-10).

From the Justice Department's perspective this deal was exactly what it was seeking. This split would clearly separate the competitive part of AT&T from the regulated, monopoly part. Judge Greene agreed to it, as well, believing that "competition" would give the country the most advanced, best, cheapest telephone network" (Coll 358). However, the Judge did leave the door open for the BOCs to enter into deregulated lines of business if they could prove they wouldn't impede competition as a result of their monopoly power (Cole 10).

In December of 1982, AT&T filed its POR. The twenty-two operating companies would be consolidated into seven Regional Bell Operating Companies (RBOCs). These RBOCs would take approximately 75 percent of the Bell System's assets, 60-70 percent of its employees and approximately half of its revenues. The companies were organized by geographical region and were roughly equivalent in size (Coll 362).

The organization and relative size of the RBOCs are reflected below in Table 2.

Table 2

The Regional Bell Operating Companies

	RBOC BOC	Number of Telephones
1.	Ameritech	
	Illinois Bell	8,481,000
	Indiana Bell	2,619,000
	Michigan Bell	6,280,000
	Ohio Bell	5,002,000
	Wisconsin Bell	2,360,000
2.	Bell Atlantic	
	Bell Telephone of Pennsylvania	7,951,000
	Chesapeake & Potomac Chesapeake & Potomac of MD Chesapeake & Potomac of VA Chesapeake & Potomac of WV	8,784,000
	Diamond State	540,000
	New Jersey Bell	6,620,000
3.	Bell South	
	South Central Bell	10,678,000
	Southern Bell	13,035,000
4.	NYNEX	
	New England	7,110,000
	New York	11,678,000
5.	Pacific Telesis	
	Nevada Bell PACIFIC	16,639,000
6.	Southwestern Bell	
	Southwestern Bell	16,993,000
7.	U.S. WEST	
	Mountain States	8,114,000
	Northwestern Bell	5,656,000
	Pacific Northwest Bell	3,864,000

SOURCE: "For Whom Does The Bell Toll Best?" by Richard Phalon

As AT&T embarked upon this change, not everyone was optimistic. Customers, employees and state regulators were concerned about local service rate increases, loss of end-to-end telephone services, loss of the vertically efficient AT&T structure and loss of career and promotional opportunities for employees (Coll 350).

By forcing the breakup of the Bell System, the U.S. government was responsible for dismantling the largest corporation in America at the time. It had assets of $150 billion, it was the country's second largest employer with more than one million employees and the nation's most widely held security with over three million shareholders (Cole IX). It served over 140 million telephones (Phalon 248). If it had remained intact, it was projected to be 5 percent of the GNP by the year 2000 (Kleinfield 306).

The purpose of this study is to investigate the impacts and effects of divestiture, with particular attention on the impact to shareholders.

Chapter II

LITERATURE REVIEW

In order to fully analyze the impacts and effects of divestiture on the original AT&T shareholders, it is important to review all operational facets of the new AT&T and its divested companies. Consequently, the effects on prices, services, customers and employees, as well as the industry competitive environment and financial performance of the companies are addressed in this section.

The Predictions

As AT&T and the nation considered the consequences of the announced divestiture, there was a media competition for the most insightful predictions related to the effects of the AT&T split. Among those predictions from the editorial staff of Nation's Business were: 1) a head-to-head confrontation of AT&T with IBM, 2) lower long-distance rates, 3) higher local service rates, 4) aggressive marketing of residential phone products, 5) faster deployment of electronic distribution of news and 6) an end to antitrust actions (14).

Susan Leisner, a Florida Public Service Commissioner, was a severe critic of the projected breakup predicting dire consequences for the RBOCs or what became termed as the "Baby Bells". She stated that without the ability to enter competitive businesses, the operating companies could be expected to become increasingly less attractive to investors. She added that many analysts expected them to go the way of the "beleaguered electric utility industry - saddled with low bond ratings, soaring capital costs" .... (13).

Leisner also noted it ironic that the RBOCs would be prevented from the more exciting and lucrative fields of manufacture of telephones, installation of burglar alarms and provision of data processing services, even though competitive and similarly sized companies such as GTE, United, and Continental as well as other independent telephone companies were currently offering such services and would continue to be allowed to do so (19).

In addressing the impact of the AT&T split on its owners, Richard Phalon cited financial analysts as believing that as of late 1982, people had underestimated the RBOCs. Specifically, analysts contended that the new telephone system unbundled might

be worth more to its owners than it was whole (246). At divestiture, each share of AT&T stock was substituted with a share of the new AT&T and for every ten shares of the original AT&T stock, one share in each of the seven RBOCs was awarded.

Phalon also noted that the market would not value all of the regional stocks equally. Variables such as underlying demographics, debt coverage and particularly, regulating climate would determine the relative attractiveness of the stocks. As advice to potential investors, financial analyst Gerald Morgan recommended the following: if growth is the objective, convert all regionals into new AT&T shares; if income is the primary objective, sell the new AT&T shares and keep the four or five best regionals (248). This advice was founded on the assumption that the new AT&T would evolve from utility to industry status and as a consequence, plow a bigger chunk of its earnings back into the business resulting in lower dividend payout. Conversely, the RBOCs would remain utilities with higher dividends and slower growth (250).

The Reality

The reality in certain cases was right on target compared to the predictions. For instance,

long-distance rates were lowered, competition among residential phone providers increased dramatically and antitrust action has diminished. In other cases, the predictions never materialized. There was no confrontation between AT&T and IBM, and the Baby Bells did not experience financial distress or investor disinterest. Additionally, we seem to be no closer to electronic distribution of news today than we were in 1982. In still other cases, the consequences were short lived. Local rates increased immediately after divestiture only to stabilize thereafter. In yet other cases, there were unforeseen impacts of divestiture such as customer confusion.

Albert Halprin and Mary Beth Hess summarized by saying that divestiture resulted in benefits as well as burdens (91). They identified the benefits as reduced long-distance rates, unlimited choices in customer premises equipment and nondiscriminatory interconnection. The burdens included costs expended to achieve the split, inconvenience and confusion. The real key, as Halprin and Hess assessed the situation, is that most of the burdens are in the past while the benefits will continue to increase (92).

In the winter of 1987, Robert Crandell echoed Halprin and Hess's conclusions, but noted another

benefit because the increased local rates and reduced long-distance rates were more in line with the utilities' cost of providing the services (37-44).

Universal Service

Predictions of higher local service prices were based on the fact that historically, local rates had been kept low by the cross-subsidy from long-distance service profits. In other words, long-distance bills were higher than they would have otherwise been because there was an effort to keep local service rates low or below cost (Payson 13). As an example, the average cost of providing dial tone (local service) to a customer was in the range of $25 to $30 while the average rate or price to the customer was only $6 to $10 (Tunstall 43). This provided the foundation for the concept of "universal service" which was the national policy of bringing affordable service to all American homes. With the advent of competition in long distance, came the erosion of this subsidy and a move to cost-based pricing.

Local Service Prices

Parker Payson found that by 1989 local rates had increased dramatically since divestiture. His figures

indicate that the average consumer local service bill was $13.35 starting in 1984 ($12.10 for basic plus $1.25 taxes). By 1988, the cost of basic local service had increased only 2 percent to $12.33 from $12.10. But, total monthly payment to cover all local service increased to $19.76. That price included wire maintenance charges, monthly rental charge for phone, increased taxes, in certain cases a surcharge for emergency 911 service, and a federally mandated subscriber line charge. This ($19.76) represents an increase of $6.41 or nearly 50 percent (10-11).

The largest portion of the increase identified above by Payson relates to the implementation of the subscriber line charge. This charge came about in an effort to reduce the cross-subsidy that existed between AT&T's long distance and local services described earlier. After divestiture, some portion of the cost of telephone wires, poles, etc. that linked consumers to the telephone network, was passed directly to the consumer in the way of subscriber line charges in order to make up for the lost subsidy (13). This finding is consistent with Crandell's conclusion that the new, increased rates are more in line with the actual cost of providing the service.

Roger Noll and Susan K. Smart found that

local service rate shock (large price increases) occurred, but was over by 1986. Noll and Smart state, that state regulators may have overreacted in terms of giving regulatory relief to the RBOCs immediately after divestiture. Shortly thereafter, they decreased rates. After $5 billion in increases given across 1984 and 1985, the RBOCs were required to give back nearly $2 billion during 1987 and 1988 as illustrated in Table 3 below (190).

Table 3

Bell Operating Company Rate Requests and Outcomes

Year	Requested ($Million)	Granted ($Million)
1984	4,023.7	3,875.5
1985	1,627.2	1,154.9
1986	643.7	290.0
1987	146.3	-519.0
1988	378.9	-1,366.4

SOURCE: "Pricing of Telephone Services" by Roger Noll and Susan K. Smart.

Consistent with that finding, the Federal Communication's Commission (FCC) reported that between 1989 and 1992 even though $2.1 billion in revenue increases was requested in state telephone rate cases,

state commission's ordered telephone companies to reduce rates (revenues) by another $1.9 billion (FCC, 15).

Daniel Brenner, Director of Communications Law at UCLA found that even though local rates did rise shortly before and after divestiture, the dire predictions of drop-offs from the network, due to price jumps, did not materialize. His findings indicated that the increase in local service pricing served to get the industry closer to cost-based pricing and, at the same time, the overall use of the network did not decline as of 1988 (253).

Also, Steve Coll identified other areas of increased telecommunications costs for consumers. He found that the cost of installing and repairing telephone equipment rose in some areas by ten times after divestiture (366).

Long-Distance Prices

Parker Payson found that long-distance service rates dropped dramatically after divestiture. Calls that cost $53.80 in 1984 (based upon certain routes) cost only $32.29 in 1989 for a savings of $21.51 or 67 percent. From his findings, the local increase of $6.41 monthly, described earlier, was more than offset

by $21.51 reduced long-distance rates (11).

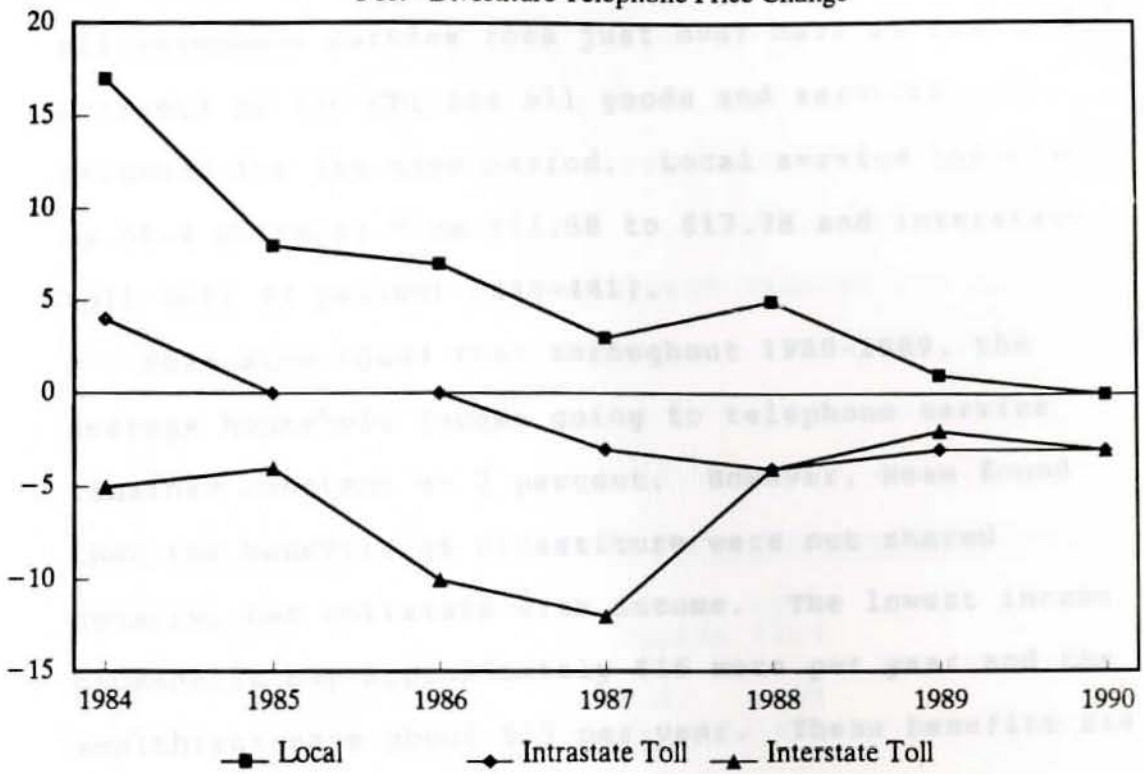
Current FCC studies also show that long-distance prices have declined. Since divestiture, a 5-minute, New York-to-Chicago call dropped 56 percent in price (McCue 29). One component of long-distance price, the access cost an Interexchange Carrier (IXCs) pays to the local carrier for access to the local network has also fallen dramatically. Originally, the carrier common line premium access rate was $5.24 in 1984. By May of 1993, the national average rate was down to 79 cents for originating, 95 cents for terminating minutes (29).

Overall Price for Telecommunications Services

William F. Fox and John W. Mayo also found that rapid increases in local telephone prices occurred in 1984 and 1985. Additionally, a modest increase in intrastate toll and modest decreases in interstate toll prices resulted. However, since 1986, they found that telephone service is relatively more affordable. Interstate toll prices declined approximately 40 percent from 1984 to 1990, with intrastate toll rates declining modestly and local rates stabilizing as reflected in Table 4 (12).

Table 4

Post–Divestiture Telephone Price Change



SOURCE: "State-Level Telecommunications Policy in the Post-Divestiture Era" by William F. Fox and John W. Mayo.

In studying the real price changes for telecommunications services relative to the price changes for all goods and services, Martin McCue found that the overall CPI increased annually 3.8 percent while the telephone CPI increased only 2.6 percent for a consistent net advantage of 1.2 percent under inflation each year (29).

Consistent with McCue's findings, Eli M. Noam found

that since divestiture, the consumer price index for all telephone service rose just over half as fast (19.7 percent) as the CPI for all goods and services (34 percent) for the same period. Local service increased by 56.2 percent; from $11.58 to $17.78 and interstate toll fell 33 percent (440-441).

Noam also found that throughout 1980-1989, the average household income going to telephone service remained constant at 2 percent. However, Noam found that the benefits of divestiture were not shared equally, but correlate with income. The lowest income households pay approximately $16 more per year and the wealthiest save about $15 per year. These benefits are tied to the use of interstate toll. Business customers, the biggest class of long-distance (toll) customers, reaped the largest benefits (441).

W. Brooke Tunstall compared U.S. telephone price changes, after divestiture, to those of Canada and reached some startling conclusions. Even though Tunstall acknowledged the positive correlation between divestiture and lower long-distance rates, he believes the real cause for lower rates was the massive shift of the subsidy from long distance to local rates. He notes that this change could have been accomplished without the enormous costs and burdens of divestiture.

His belief is hinged on his findings from Bell Canada, which was not broken up by the government. Between 1984 and 1988, Canada experienced the same 30 percent reduction in long-distance prices that the U.S. did. However, local service rates in Canada rose only nine percent compared to the 44 percent rise in the U.S. as reflected in Table 5 below (43).

Table 5

Comparison of U.S. - Canada Rate Changes 1984-1988

Long Distance	-	U.S.	-30%
		Canada	-30%
Local	-	U.S.	+44%
		Canada	+9%
Overall	-	U.S.	+12%
		Canada	-15%

SOURCE: "Disconnected Parties: Divestiture in Retrospect - Part I" by W. Brooke Tunstall.

Because of the similarities in structure, services and technology between AT&T and Bell of Canada, Tunstall concluded that the disparity in overall price trends for this period resulted from the enormous costs of dismantling and reorganizing the U.S. "Bell System" which were passed through to customers. Overall, on a

nominal basis, he found that rates increased in the U.S. by 12 percent while they declined by 15 percent in Canada (43).

Consistent with the findings of others, Tunstall also concluded that the winners of divestiture have been large business and upper-income residential customers who are the major users of long distance with the losers being the lower-income individuals and families who use long distance more sparingly (43).

Confusion

There was also widespread confusion among customers over which company was responsible for what services during the period immediately following divestiture. Additionally, there was evidence that the quality of service declined during that time.

Stephen Coll noted that the local telephone company was barred from leasing phones which were already located in the homes; that was the province of AT&T who retained ownership of the "embedded equipment". Additionally, in most cases, the local telephone companies provided AT&T with a billing service for long-distance calls, but not for phone equipment leasing. Consequently, customers received one bill

which included both local charges from the RBOC and long-distance charges owed to AT&T (or another IXC) as well as a separate bill for equipment charges sent separately from AT&T (Coll 366).

W. Brooke Tunstall analyzed the impacts of divestiture in 1992, some ten years after the announcement of the dismantling of AT&T. He also found significant evidence of customer confusion (41-44).

Tunstall specifically found that the immediate impact on customers materialized into two serious complaints: 1) they did not know whom to call for installation, repair or assistance and when they did call, the RBOCs blamed AT&T and AT&T blamed the RBOCs and 2) they received two bills from two companies which were error-ridden due to the complexity of the change in operations (43). Evidence of this confusion surfaced in the way of customer complaints to public service commissions. In California, complaints rose 20 percent in the first two years and didn't return to normal for three years. One of the worst impacts was on business customers who experienced significant delays of many months for deployment of private-line services. As illustrated in Table 6 below, this lasted five years before normal provisioning levels could be restored (43).

Table 6

Provision Levels After Divestiture

	1983	1985	1988
Private-Line Service	27	48	19
800/WATS Services	7	21	7

No. of Days
Before Onset
of Service

SOURCE: "Disconnected Parties: Divestiture in Retrospect - Part I" by W. Brooke Tunstall.

Telephone Subscribership

Eli M. Noam found that telephone penetration did not decline after divestiture. In fact it increased from 91.4 percent in 1983 to 93.6 percent in 1991. Additionally, senior citizens and rural customers experienced penetration rates above the national average. This is significant as it shows they weren't pushed off the network with the local rate increases (440).

Martin McCue also found that telephone penetration rates increased after divestiture. By March 1993, 91.6 million U.S. homes had telephone service which represents an increase of 13 million since divestiture.

He also notes that these figures don't include the 13 million cellular phones that have been added since 1983, which is more than twice the number of homes currently without telephone service. McCue's findings for the ten-year period after divestiture reflect that the percentage of households with telephones increased from 91.4 percent in November of 1983 to 94.2 percent in early 1993 (28).

Network Use, Reliability and Service Quality

McCue also found that access minutes of use (the number of minutes starting from the time a long-distance number is dialed until hang-up) increased so significantly that the current phone network handles as much traffic in a month as it previously did in a quarter (28). Network reliability is also quite high at 99.998 percent reliable. Absent scheduled downtime reliability is 99.999 percent (McCue 30).

Further, Noam found that service quality had remained high for non-labor intensive functions. Dial tone delay has remained constant and transmission quality has actually risen. However, consistent with findings of delays for service provisioning of business customers noted earlier, on-time performance on orders for residences suffered a steady (but minor) reduction

since 1987. Also, intraLATA calls have maintained a high level of call completions at 99.5 percent. Additionally, the deployment of fiber for transmission has improved sound quality (441).

Customer Satisfaction

Based upon a New York Times poll, 80 percent of U.S. telephone customers were satisfied with their service prior to the AT&T breakup. In 1985, three years after the announced split, Louis Harris and Associates found that 64 percent of Americans thought the breakup was a bad idea, 25 percent thought it was a good idea and 11 percent were not sure (Coll 367).

Fred Knight reported on the results of a Touche Ross survey conducted during the first half of 1989. U.S. business leaders were polled on the impact of competition and AT&T's divestiture. Sixty-six percent believed that competition and deregulation have stimulated telecommunications research and development. However, only 39 percent of those actually in the telecommunications industry think that it has been stimulated. The survey also confirmed that many believe residential customers to be the biggest losers of divestiture (72-76).

Competition

One of the goals of the Justice Department in ordering divestiture was to encourage competition. In that respect, they were largely successful. Most authors who have studied post-divestiture competition in telecommunications conclude that competition has increased considerably in the equipment and long-distance arenas. Most authors also conclude that local service continues to be a monopoly even though circumstances are changing such that within five to ten years competition from cable companies, wireless providers and Competitive Access Providers will be a major threat to the Local Exchange Carriers.

Equipment

In addressing equipment competition specifically, Eli M. Noam reported that AT&T's national market share for central office switches dropped from 70 percent in 1983 to 53 percent in 1989, as Northern Telecom's (Canadian firm) share reached 40 percent (444). This happened in some measure because the RBOCs were free to pursue agreements, unfettered by AT&T, with other firms which could offer lower prices.

Peter Temin found that divestiture was a boon to

competitive equipment firms even though the equipment suppliers to gain were European, Asian and Canadian because the RBOCs were prohibited from the manufacture of telephone equipment. However, he did find that there are many new choices in equipment as well as prices and qualities (362).

Consistent with Temin's findings, Bruce L. Egan found that due to the RBOC prohibition from equipment manufacturing, 75-80 percent of customer premises equipment (equipment used on customer's premises to originate, route or terminate telecommunications) is from overseas manufacturing facilities (141).

Trade

The impact of the RBOC equipment manufacturing prohibition and loss of AT&T's market share has been that U.S. firms have lost enormously in terms of markets since divestiture. The U.S. trade balance for telecommunications equipment, which had been positive though shrinking in 1981 and 1982, became deficits in 1984 of $1.15 billion, in 1986 of $2 billion and in 1988 of $2.6 billion. Imports increased from $2.8 billion in 1983 to over $7.1 billion in 1987 while exports grew from $2.3 billion to $6.3 billion. In the area of central office switches, foreign companies'

share increased greatly. Additionally, the use of foreign telecommunications equipment grew, especially from Asian suppliers; in 1987 only 43 percent of new terminal equipment certifications went to U.S. firms, while 49 percent went to Far East firms (Noam 445).

Long Distance

In addressing the state of long-distance competition, Egan found that AT&T's market share for long-distance (toll) service declined from 91 percent in 1984 to 78 percent in 1988. Additionally, the number of interexchange carriers (IXCs) expanded from 123 in 1984 to 577 by the end of 1989 (126). Conversely, he found that the local service market was still a monopoly in 1989 even though there were some pockets of competition primarily for business customers (136). As Egan states it, evidence of local company market power comes from continued growth of market penetration despite a greater than 40 percent rise in rates for basic local service since divestiture (133).

In a speech by Daniel Brenner, Director of Communications Law at UCLA, delivered on November 1988, Brenner recognized the increased competition in the long-distance market. He found that even though most traffic is still handled by AT&T, the growth of MCI,

Sprint and others has led to more kinds of service, cheaper service and mostly, better quality services (252).

The Telephone Engineer and Management's Editorial Staff found a number of changes to the competitive environment. AT&T's market share in the long-distance market dropped from 84 percent in 1984 to just over 60 percent in 1992. MCI's share increased to 16.5 percent and Sprint's to 8.8 percent (53).

Competitive Access Providers (CAPs) have come into existence since divestiture. They are primarily located in large, metropolitan communities and provide large business customers direct access to IXCs. MFS and Teleport have approximately 70 percent of the market share. While they are still not big revenue generators ($350 million in 1993), they are gaining in the regulatory arena. MFS was granted "co-carrier" status in New York putting it on equal footing with New York Telephone, a NYNEX company. These companies are heavily owned by cable companies (54).

In the last few years, cable companies have grown and serve twice as many customers since divestiture. These companies, as competitors, partners and customers, are having an impact. As regulatory barriers fall, technologies converge and revenue

increases, competition between cable and telecommunications companies becomes more direct (54-55).

New Services

While there have been delays in the deployment of certain new services, due to difficulty in obtaining consensus on standards, many other new services and technologies have been deployed including Custom Calling, Caller ID, payphone blocking and screening and others focused on business applications. By 1994, 95 percent of customers had equal access and nearly 60 percent were served by Signaling System 7 (facilitates custom calling and Caller ID services). Fiber deployment has also increased twelve fold (McCue 29).

Local Exchange Carriers (LECs)

The number of companies providing local telephone service (Local Exchange Carriers (LECs)) at divestiture was 1454 and has declined to 1300 today. By contrast, the number of IXCs has grown tremendously. More than 400 companies provide long-distance service and 250 companies provide operator services today compared to only a handful at divestiture (McCue 30).

Denis Gilhooly noted that in February of 1987, the

Justice Department ruled the seven RBOCs could compete in information services and nonregulated telecommunications services. Judge Greene amended the MFJ and issued an order on March 7, 1988, permitting the RBOCs to sell voice mail, audiotex, information gateways and electronic mail services (Scott 43). However, Gilhooly contends that the continuing manufacturing and long-distance restrictions have made expansion into international markets appear increasingly attractive. This is evidenced by Bell South's purchase of a 40 percent share of a United Kingdom radio communication company, Ameritech's operation of a directory service in Thailand, and Southwestern Bell's cellular and paging contracts overseas (Gilhooly 48-62).

Justice Department Goals

Peter Temin points out that one thing divestiture did not accomplish was the separation of the monopoly and the competitive parts of the business which was the Justice Department's primary goal. As the DOJ saw it, a single company should not be providing both types of services because there was no way to prevent cross subsidy of the competitive services with monopoly revenues. However, as Temin points out, by 1986, the

RBOCs were allowed to sell telephone equipment and advertising and Judge Greene was overwhelmed with requests for waivers to enter other lines of business (354).

Glen O. Robinson suggests that some deregulation has taken place since divestiture: it has disappeared for equipment, interstate service regulation has diminished with adoption of price regulation over rate-of-return regulation and surveillance of competitive services was curtailed. Even so, he concludes that regulation is more active and pervasive currently than in the monopoly era, even though competition is prevalent (84-85).

Regulatory Relief

Alan Pierce also found that despite promises to the contrary, the RBOCs faced more regulation not less and the Modified Final Judgment (MFJ) continued to restrict operations. Those restrictions banning RBOCs from manufacturing equipment and offering long-distance services are still in effect. The information services restriction was, however, lifted. Foreign-owned telecommunications and information companies, while actively competing with RBOCs, also promoted policies and lobbied to deny RBOCs domestic opportunities in

cable TV, movie and program production, equipment manufacturing and wireless services. The RBOCs are actively pursuing relief through the courts and legislation which would allow them into cable, long-distance and other prohibited areas (38-39).

Employees

Temin found that employees didn't fair as well during the time since divestiture as consolidations and reorganizations served to reduce force. The total telecommunications work force shrank more than a third (Temin 53).

Tunstall also found that of all the constituents of divestiture, employees had the toughest ride. Starting with divestiture's announcement and ending with divestiture, there was a redeployment of vast numbers of employees. By 1984, AT&T's corporate staff had been drastically cut from 16,000 to 1,500 people (44). McCue reported that altogether nearly 100,000 employees lost their jobs between the announcement of divestiture and its completion. Tunstall also found some 136,000 employees were transferred across corporate boundaries. Then, during the next eight years, AT&T and the RBOCs downsized consistent with what the rest of corporate America did. They used early retirements, as well as

other mechanisms, to accomplish this in the most humane way. As of 1992, AT&T and the RBOCs have shrunk the work force by about 200,000 employees from nearly one million as detailed in Table 7 (44).

Table 7

Corporate Downsizing

1984	RBOCs	600,000 Employees
	AT&T	400,000 Employees
	TOTAL	1,000,000
1990	RBOCs	475,000 Employees
	AT&T	300,000 Employees
	TOTAL	775,000

SOURCE: "Disconnected Parties: Divestiture in Retrospect - Part I" by W. Brooke Tunstall.

Some of this loss, especially at the RBOCs, came from the lower manpower requirements of new technologies, especially from deployment of digital equipment. Also, these kinds of cuts can be expected to continue since there have been recent announcements of future cuts (Noam 444-445).

Wage Growth

Study results of James H. Peoples, Jr., from 948 telephone operators, indicate that after divestiture:

wage growth slowed at AT&T, wage negotiation results were increasingly responsive to regional economic conditions, and union wage premiums within telecommunications were significant (105).

Labor Productivity Gains

Walter Bolter and James McConnaughey found that by the end of 1988, employment had declined 14.8 percent from the 1983 level. Also, the number of access lines (or roughly customers being served) rose 14.7 percent. This led to an overall labor productivity gain of nearly 35 percent as reflected below in Table 8 (294-5).

Table 8

Labor Productivity Gains for Bell Companies
Lines Per Employee

Number of Access Lines
(thousands)

	1983	1984	1985	1986	1987	1988
Ameritech	14,114	14,337	14,555	14,755	15,094	15,469
Bell Atl.	14,358	14,677	15,090	15,509	16,056	16,541
Bell South	13,612	14,000	14,500	15,000	15,700	16,400
NYNEX	12,829	13,226	13,623	13,962	14,415	14,851
Pac. Tel.	10,930	11,307	11,630	12,063	12,525	13,090
SWB	10,329	10,650	10,898	11,083	11,105	11,340
US West	10,610	10,871	11,167	11,332	11,613	11,878
Bell Totals	86,782	89,068	91,463	93,704	96,508	99,569

Number of Employees

	1983	1984	1985	1986	1987	1988
Ameritech	95,238	77,514	74,883	77,538	78,510	77,334
Bell Atl.	80,600	77,788	73,036	77,358	80,950	81,000
Bell South	120,174	96,000	92,300	96,900	98,700	110,280
NYNEX	117,042	94,900	89,600	90,200	95,300	97,400
Pac. Tel.	97,647	76,881	71,488	74,937	71,877	69,502
SWB	74,000	71,900	71,400	67,500	67,100	69,900
US West	73,000	70,765	70,202	69,375	68,523	69,765
Bell Totals	657,701	565,748	542,909	549,808	560,960	560,181

Lines per Employee

	1983	1984	1985	1986	1987	1988
Ameritech	148	185	194	190	192	200
Bell Atl.	178	189	207	211	198	204
Bell South	113	146	157	155	159	163
NYNEX	110	139	152	155	151	152
Pac. Tel.	112	147	163	161	174	188
SWB	140	148	153	164	165	175
US West	145	154	159	163	169	170
Bell Totals	132	157	168	170	172	178
Cum. Gain		18.9%	27.2%	28.8%	30.3%	34.9%

SOURCE: "Innovation and New Services" by Walter Bolter and James McConnaughey.

Financial Performance

Although John Brooks concluded that AT&T, as an investment, had largely been a failure through the early 1970s, most authors found that if pre-divestiture investors had retained their holdings in either AT&T and/or the RBOCs, they would have benefited financially in comparison to other investments. Brooks, however, noted that common stock had no more than doubled since 1900 to the early 1970s, even though the cost of living more than quintupled. Consequently, an investor who didn't reinvest his dividends had far less buying power than he started with. Brooks did acknowledge that investors received an unbroken string of dividends as well as certain valuable rights offerings to stockholders (5).

Coll notes that with the advent of "equal access" to AT&T's competitors, access cost more. When MCI started to pay equivalent rates per access line to AT&T, the company's profits fell and its stock price plummeted in 1985 from $20 per share to under $7 per share (369).

AT&T was also negatively impacted immediately after divestiture. The cost of access to the local companies' networks was taking 60 percent of its

revenues. Additionally, regulation, rather than going away, was stronger than ever. Western Electric's foray with competition was less than successful, and its market share was steadily eroding. AT&T's ventures into data processing were plagued by technical problems and an unenthusiastic marketplace. Fourteen thousand employees were laid off or asked to retire early. Market share for long distance dropped to 80 percent. Profits were $1 billion short of projections for 1984. Conversely, the RBOCs, whose future seemed less certain prior to divestiture, exceeded their financial predictions for 1984 (Coll 370-372).

Payson contends that subscriber line charges and higher local service rates boosted local phone company profits by 18.8 percent from 1985 to 1986. He further adds that return on equity for the RBOCs was two to four percentage points higher than other competitive firms across 1985 and 1986 (14).

As of March 1987, Diana Henriques reported in an initial read-out that since divestiture AT&T's financial performance had been disappointing and its stock price approached its 52-week low of just under $22 a share (8). She believed that the difficulty of the transition from regulated utility to competitive venture was underestimated by analysts and shareholders

alike. Even though, as of 1987, AT&T had failed to meet expectations, Henriques predicted AT&T was starting to reposition itself through restructuring, updated depreciation methods and work force cuts (9).

Brenner found that the AT&T and RBOC stock prices increased dramatically which benefited investors (252). He noted that AT&T common stock traded at $61.50 when the spin-off occurred. However, by November 1988, almost five years later, AT&T was worth about $27 per share and seven shares of or one each of the RBOC stocks added to nearly $400.

Mitch Betts writes that as of December 1988, parent At&T has struggled in the computer business while the seven RBOCs have turned into highly profitable giants. Betts noted that each of the seven RBOCs had operating revenues in excess of $7 billion. Consequently, AT&T and all but one of the RBOCs are among the 100 largest corporations in the world (1). Divestiture also gave viability to firms such as Sprint and MCI. The competition for customers has been vigorous, and Sprint's investment in fiber optics forced AT&T to modernize faster than it would have (92).

Gary Slutsker charges that the RBOCs have "been in clover" since divestiture. They have become Wall Street favorites by pursuing the comfortable business

of "collecting monthly rent for telephone lines" and charging a large commission to the long-distance companies for the connection to the local network. As evidence, he points out that by 1991 the stock prices of the Baby Bells had on average tripled to twice their book value since divestiture (118). However, he also found that the circumstances leading to those profits are no longer valid. The monopolies are being challenged by: pressure from AT&T, MCI and Sprint to have the FCC reduce access charges, private telecommunications networks bypassing the local telephone company networks, the advent of personal communications networks (new, inexpensive form of cellular service for home and office) and cable companies deploying fiber with intent to provide telephony (118).

Tunstall found that eight years after divestiture, the stock prices of the RBOCs had tripled and AT&T stock had nearly doubled. He also found it interesting that the earnings for the RBOCs remained flat in constant dollars which led him to conclude that the market price of the RBOC stock was driven by "bullish" expectations for the "information industry" not by growth or earnings performance. Consistent with the findings of Coll, Henriques and Betts, Tunstall also

noted the rocky start that AT&T got off to by virtue of its loss of market share to competitors, its abortive entry into the computer business and massive costs related to recreating billing systems lost to the RBOCs. By the early 90s, however, it had turned around and is starting to show greater expectations from the investment community (44).

It is also John Bain's view that divestiture benefited the original AT&T investors. His assessment of the post-divestiture, competitive environment is that there is plenty of evidence showing relaxed regulatory constraints, even within the local exchange industry. Choices are available for long-distance carriers and customer premises equipment is extremely competitive. Wireless technology is growing. Features and pricing plans abound. These circumstances have increased the size of the telecommunications pie which has ensured growth for all. MCI and Sprint have thrived, and currently AT&T stock is trading at close to all-time highs after the announcement of the McCaw Cellular acquisition in 1993 (34).

Martin McCue also found that telecommunications companies are still making money and that customer telecommunications spending for local services (about one-third of all spending for telecommunications) has

been stable since divestiture. Long-distance price decreases have been offset by more calling (29).

As an indication of the financial success of telecommunication companies, there were twice as many shareholders in the RBOCs in 1993 than at divestiture. McCue found that the value of most local and long-distance telecommunications companies has increased substantially (29).

Full Circle

Mark Dziatkiewicz found that AT&T and the RBOCs have, over the course of the ten-year separation, ventured into similar areas. Immediately after divestiture, both AT&T and the RBOCs experienced successes as well as failures as they ventured forward, independently. Both AT&T and the RBOCs entered the international markets. The RBOCs immediately jumped into cellular with much success. AT&T avoided moving into cellular until late 1993 when it announced its acquisition of McCaw Cellular, the largest cellular operator, ostensibly moving it back into local exchange operations. Much like AT&T before it, Pacific Telesis, one of the RBOCs, has spun off its competitive business from its local exchange operations. To the extent that MFJ restrictions are lifted and the RBOCs become free

to offer long-distance services and equipment manufacturing, then AT&T and the RBOCs, rather than providing different services, will be providing a full line of competing services (46).

Tunstall identified the cost of dismantling AT&T at $19 billion. Much like Dziatkiewicz, he also identified recent trends which may serve to re-establish end-to-end service: deregulation of local exchange service and new wireless technologies which cost less than the current wireline network. Consequently, he questions whether an alternative solution to the full dismantling of AT&T would have brought the same results without the cost (Managing the Breakup 335).

Conclusion

Based upon the findings of the authors cited in this chapter, there is some overall consensus regarding the impacts of divestiture and its winners and losers. Local rates increased (at least immediately) and long-distance rates declined which benefited business users and the more affluent residential consumers (major users of long-distance services) and had a negative effect on poorer residential consumers.

Immediately after divestiture, there were delays in service provisioning and much confusion among customers regarding which company had responsibility for what. Even so, telephone subscribership continued to improve post-divestiture. Competition, particularly in the equipment and long-distance markets, increased greatly. Even though AT&T and RBOC employees may have suffered the most from divestiture, due to massive layoffs and restructurings, the financial and earnings performance of the companies (at least the RBOCs) was never in jeopardy. Business success has led to investor interest. As time goes forward, the benefits appear to increasingly outweigh the burdens.

In ordering divestiture, the Justice Department of the United States ostensibly had the best interests of the American consuming public in mind. In agreeing to the split, AT&T management had the interest of its owners or stockholders in mind. Based upon this review, it appears AT&T made a wise decision on behalf of its owners.

Hypothesis

Ten years after divestiture, most analyses indicate divestiture had a positive impact on AT&T investors, if not a consistently positive impact on company earnings.

Consequently, the following hypotheses are made:

1. If the original AT&T investors retained, in tact, their new shares of AT&T and RBOC stocks, the combined price appreciation and dividend growth from 1984 through 1993 (total yield) exceeded total yield for the ten-year period preceding divestiture 1974 through 1983.

2. If the original AT&T investors retained, in tact, their new shares of AT&T and RBOC stocks, these stocks outperformed (total yield) the rest of the market as measured by the S&P 500.

3. During the ten-year period post-divestiture (1984-1993), the RBOCs outperformed (total yield) AT&T.

4. During the ten-year period post-divestiture (1984-1993), the RBOCs outperformed the S&P utilities.

5. There is no correlation between either price appreciation or dividend growth and earnings growth for the RBOCs.

Chapter III

RESEARCH METHODOLOGY

Data

The hypotheses, related to the impacts of divestiture, were tested through analyses of various financial data. The subject companies included AT&T, the seven regional companies formed at the divestiture of AT&T: Ameritech; Bell Atlantic; Bell South; NYNEX; Pacific Telesis; Southwestern Bell and U.S. West, the Standard and Poor's (S&P) 500 companies and the S&P utilities. For AT&T, financial data was gathered and reviewed for the years 1974 through 1993. For all other companies, financial data for 1984 through 1993 was used. The data reviewed included earnings as measured by net income and certain shareholder information on earnings per share, dividends per share and share price appreciation.

Source

The main vehicle used to capture the data necessary for the analysis was the online data base available through Compustat. Compustat is owned by Standard

and Poors which is a company that reports, analyzes, and rates the financial performance of publicly held industrial companies as well as utilities. It also provides various comparative financial and statistical information for both the aggregate market and individual stocks (Zikmund 111, 137).

As a check or secondary test, the annual reports for AT&T and the seven regional companies were reviewed to ensure data base accuracy and test reliability. For each company, at least three years' worth of financial data, selected randomly, was matched to the online base of data.

Procedure

To test the first hypothesis, AT&T's financial data for ten years prior to divestiture (1974 through 1983) was compared to financial data for the ten years immediately following divestiture, 1984 through 1993. Specifically, dividends per share, stock price appreciation, and the combination thereof or total yield was compared one period to the other.

To test the second hypothesis, post-divestiture financial data for AT&T and the seven regionals was combined and compared to that for the S&P 500. Again, dividends per share, stock price appreciation and total

yield were the data items tested.

The third hypothesis was tested by comparing the cumulative financial results for the seven regional companies with the AT&T results. This comparison was for post-divestiture data (1984 through 1993) only, including dividends per share, stock price appreciation and total yield.

The fourth hypothesis was tested by comparing the same post-divestiture financial data accumulated for the seven regionals to data for the S&P utilities.

The fifth and final hypothesis was tested by comparing certain post-divestiture financial data accumulated for the seven regional companies to other financial data for the same seven regionals. Specifically, dividends per share and share price appreciation were compared to net income and earnings per share growth rates in order to determine whether there was a correlation.

Data Analysis

The nature of the hypotheses separated the analyses into two types. Descriptive financial and statistical data was used for both.

For the first four hypotheses, data as described above, was gathered and summarized. Annual growth

rates were calculated for both dividends paid and share price appreciation. For comparison purposes, total growth measuring 1993 over 1984 (or 1983 over 1974) and the related annual compound average growth rate (CAGR) were also calculated for both dividends and share price appreciation. In this way, relevant comparisons could be made between sets of data. Additionally, total annual yield was calculated using the following formula:

$$Y_1 = (P_1 - P_0 + D_1) \div P_0$$

Y_1 = Total shareowner yield for year 1
P_1 = Share price for year 1 at Dec. 31
P_0 = Share price for year 1-1 at Dec. 31
D_1 = Dividends paid for year 1

A statistical test was made on total annual yield. This involved testing the difference between two population proportions or means in the first four hypotheses. Since it was hypothesized that one population would produce better results than the other, in each of the four hypotheses a single-tailed test was selected. It was decided to use the .05 level of significance. To the extent that the sample was small, student's t test or t distribution was utilized as the test statistic. The formula used for t is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(N_1-1)S_1^2+(N_2-1)S_2^2}{N_1+N_2-2}\right)\left(\frac{1}{N_1}+\frac{1}{N_2}\right)}}$$

$\bar{X}_1$ = Arithmetic mean for total annual yield of first group

$\bar{X}_2$ = Arithmetic mean for total annual yield of second group

N_1 = Number in Sample 1

N_2 = Number in Sample 2

S_1^2 = Variance in Sample 1

S_2^2 = Variance in Sample 2

(Mason and Lind 428)

The critical value of t with N_1+N_2-2 degrees of freedom is 1.734 (Mason and Lind 856). Consequently, if the computed value of t falls within the acceptance region (< 1.734), the null hypotheses will be accepted at the .05 level of significance.

Cumulative annual shareholder yield was also calculated using the following formula:

$$CY = (P_L - P_0 + D_X) \div P_0$$

CY = Total cumulative shareowner yield

P_L = Share price for last year in list at Dec. 31

P_0 = Share price of year 1-1 at Dec. 31

D_X = Dividends paid for year 1 through last year in list

The cumulative shareholder yield, as of the last year in the list, was used as a secondary test to further check whether the first four hypotheses were true.

This test specifically shows whether the shareholders are better or worse off on a cumulative basis at the end of the comparison period.

The fifth hypothesis required a determination of whether there is a positive correlation between either share price or dividends and the RBOCs' earnings growth as measured by both net income and earnings per share.

The coefficient of correlation or Pearson's r was used to test the strength of the relationship between the two sets of variables. The formula for r is:

$$r = \frac{n(Exy) - (Ex)(Ey)}{\sqrt{[n(Ex^2) - (Ex)^2][n(Ey^2) - (Ey)^2]}}$$

n = the number of paired observations
Ex = the x variable summed
Ey = the y variable summed
(Ex^2) = the x variable squared and the squares summed
(Ey^2) = the y variable squared and the squares summed
$(Ex)^2$ = the x variable summed and the sum squared
$(Ey)^2$ = the y variable summed and the sum squared

(Mason and Lind 496-97)

The critical value at the .05 level of significance, using a two-tailed test, was used to determine significance. Again, because the sample size was small, student's t test was selected and the following formula was used:

$$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

(Mason and Lind 502)

For eight degrees of freedom (N-2), 2.306 is the critical value (Mason and Lind 856). Consequently, if the computed t falls above -2.306 or below 2.306, the null hypothesis will be accepted at the .05 level of significance.

Chapter IV

RESULTS

Following are the results from testing the hypotheses formulated and described in earlier chapters. The sample size was reduced to nine years (1984-1992) from ten years for the fifth hypothesis. The spin off of the regulated telephone company operations occurring within Pacific Telesis, effective in 1993, made earnings figures meaningless for comparison purposes from an historical perspective. Consequently, 1993 was dropped from the correlation analysis of earnings and dividends/share price.

To test the hypotheses, data for the following companies were studied:

Pre-Divestiture:

AT&T

Post-Divestiture:

AT&T

RBOCs: Ameritech, Bell Atlantic, Bell South, NYNEX, Pacific Telesis, Southwestern Bell and U.S. West

S&P 500

S&P Utilities

Table 9 identifies AT&T shareholder returns for the ten years prior to divestiture in tabular as well as bar graph format.

TABLE 9

Shareholder Return for AT&T - Pre-Divestiture

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1973			50.125			
1974	3.24		44.625	-10.97%	-4.51%	-4.51%
1975	3.40	4.94%	50.875	14.01%	21.62%	14.74%
1976	3.80	11.76%	63.500	24.82%	32.29%	47.51%
1977	4.20	10.53%	60.500	-4.72%	1.89%	49.91%
1978	4.60	9.52%	60.500	0.00%	7.60%	59.08%
1979	5.00	8.70%	52.125	-13.84%	-5.58%	52.35%
1980	5.00	0.00%	47.875	-8.15%	1.44%	53.85%
1981	5.40	8.00%	58.750	22.72%	33.99%	86.31%
1982	5.40	0.00%	59.375	1.06%	10.26%	98.33%
1983	5.85	8.33%	61.500	3.58%	13.43%	114.24%
	80.56%		37.82%	(Total Growth 1983 over 1974)		
	6.79%		3.63%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 170.36%

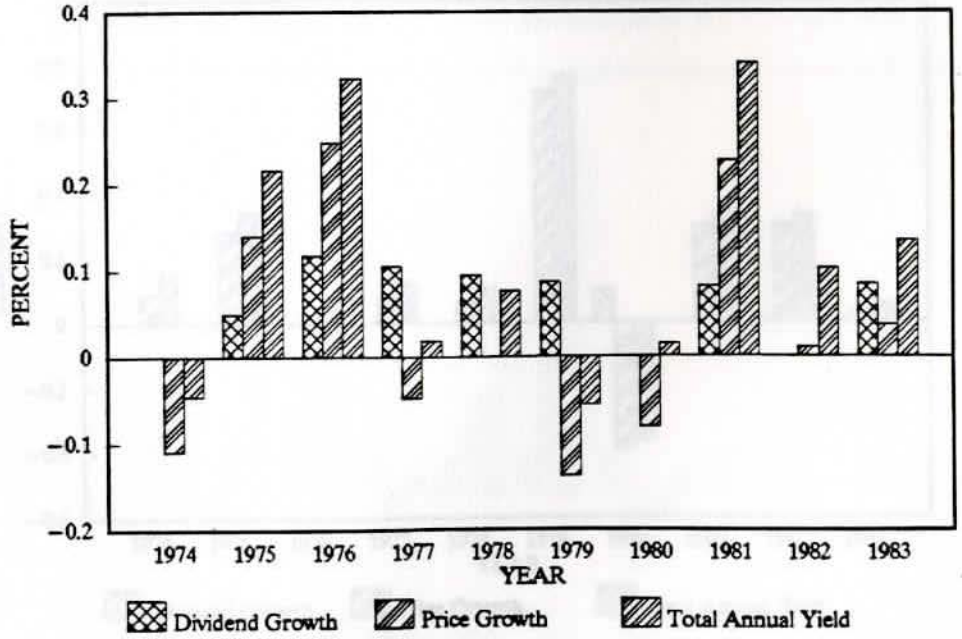


Table 10 reflects AT&T shareholder returns for the ten years immediately after divestiture in tabular as well as bar graph format.

TABLE 10

Shareholder Return for AT&T - Post-Divestiture

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			17.875			
1984	1.20		19.500	9.09%	15.80%	15.80%
1985	1.20	0.00%	25.000	28.21%	34.36%	53.29%
1986	1.20	0.00%	25.000	0.00%	4.80%	60.00%
1987	1.20	0.00%	27.000	8.00%	12.80%	77.90%
1988	1.20	0.00%	28.750	6.48%	10.93%	94.41%
1989	1.20	0.00%	49.500	72.17%	76.35%	217.20%
1990	1.32	10.00%	30.125	-39.14%	-36.47%	116.20%
1991	1.32	0.00%	39.125	29.88%	34.26%	173.93%
1992	1.32	0.00%	51.000	30.35%	33.73%	247.75%
1993	1.32	0.00%	52.500	2.94%	5.53%	263.52%
	10.00%		169.23%	(Total Growth 1993 over 1984)		
	1.06%		11.63%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 333.05%

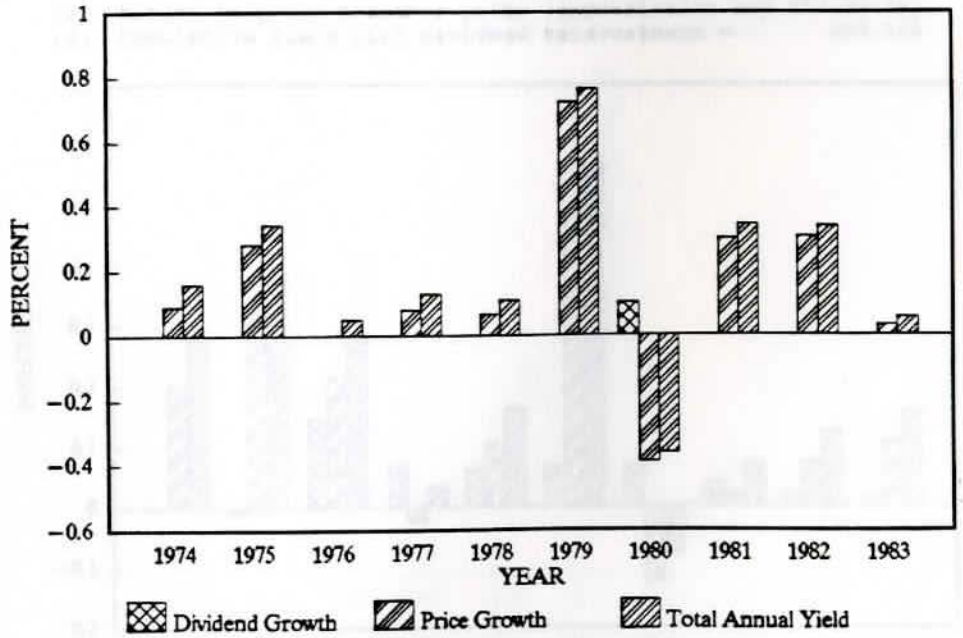


Table 11 illustrates the combined shareholder returns for the RBOCs for the ten years immediately following divestiture in tabular as well as bar graph format. (Appendix A contains the shareholder returns for each RBOC individually.)

TABLE 11

Combined Shareholder Return for all RBOCs

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			98.760			
1984	9.43		120.752	22.27%	31.82%	31.82%
1985	9.28	-1.59%	159.136	31.79%	39.47%	80.08%
1986	10.80	16.38%	198.729	24.88%	31.67%	131.10%
1987	11.64	7.78%	191.532	-3.62%	2.24%	135.60%
1988	12.47	7.13%	212.314	10.85%	17.36%	169.27%
1989	13.36	7.14%	315.564	48.63%	54.92%	287.35%
1990	14.20	6.29%	289.438	-8.28%	-3.78%	275.27%
1991	14.83	4.44%	286.938	-0.86%	4.26%	287.76%
1992	15.18	2.36%	299.938	4.53%	9.82%	316.29%
1993	15.45	1.78%	337.375	12.48%	17.63%	369.84%
	63.84%		179.39%	(Total Growth 1993 over 1984)		
	5.64%		12.09%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 483.15%

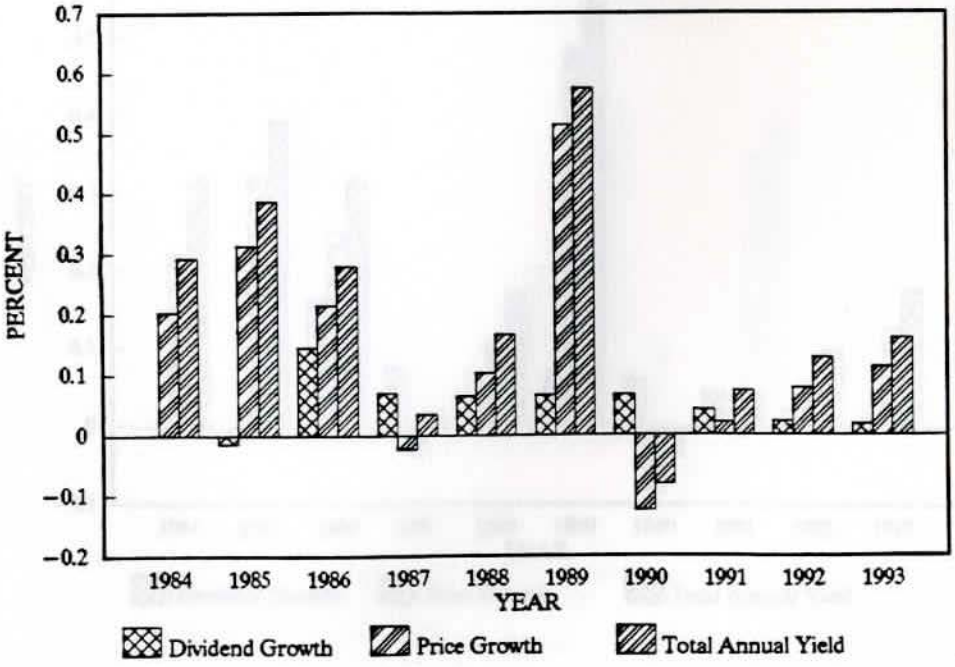


Table 12 reflects the combined shareholder returns for AT&T and the RBOCs for the ten years immediately following divestiture in tabular as well as bar graph format.

TABLE 12

Combined Shareholder Return for AT&T and the RBOCs

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			116.635			
1984	10.63		140.252	20.25%	29.36%	29.36%
1985	10.48	-1.41%	184.136	31.29%	38.76%	75.97%
1986	12.00	14.50%	223.729	21.50%	28.02%	120.21%
1987	12.84	7.00%	218.532	-2.32%	3.42%	126.76%
1988	13.67	6.46%	241.064	10.31%	16.57%	157.80%
1989	14.56	6.51%	365.064	51.44%	57.48%	276.60%
1990	15.52	6.59%	319.563	-12.46%	-8.21%	250.89%
1991	16.15	4.06%	326.063	2.03%	7.09%	270.31%
1992	16.50	2.17%	350.938	7.63%	12.69%	305.79%
1993	16.77	1.64%	389.875	11.10%	15.87%	353.55%
	57.76%		177.98%	(Total Growth 1993 over 1984)		
	5.20%		12.03%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 459.92%

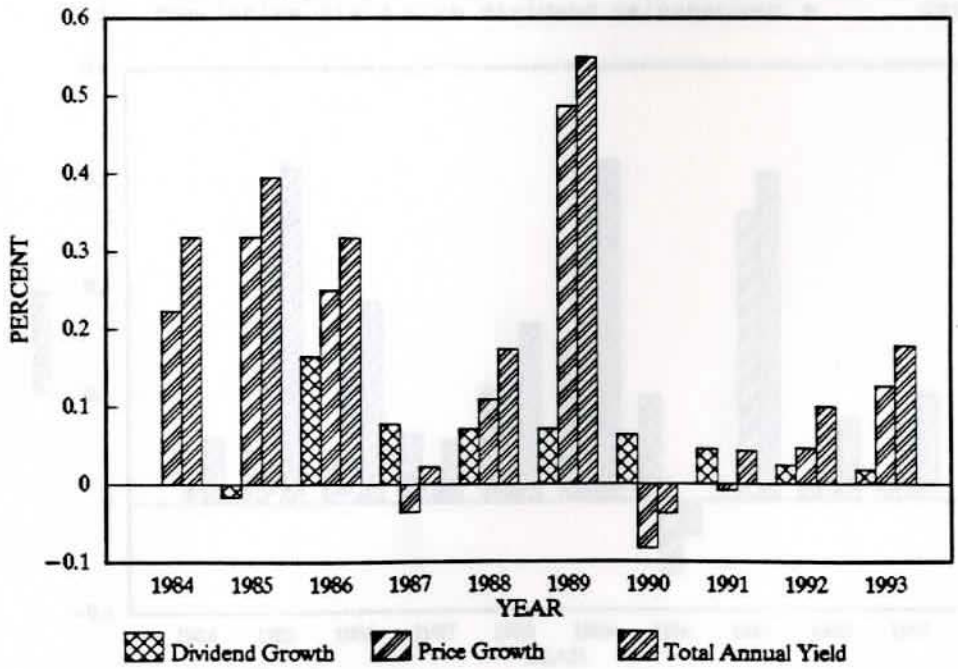


Table 13 reflects the average shareholder returns for the Standard and Poors (S&P) 500 companies for 1984 through 1993 (ten years post-AT&T divestiture) in tabular as well as bar graph format.

TABLE 13

Average Shareholder Return for the S&P 500

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			164.930			
1984	7.53		167.240	1.40%	5.97%	5.97%
1985	7.90	4.91%	211.280	26.33%	31.06%	37.46%
1986	8.28	4.81%	242.170	14.62%	18.54%	61.21%
1987	8.81	6.40%	247.080	2.03%	5.67%	69.53%
1988	9.73	10.44%	277.720	12.40%	16.34%	94.00%
1989	11.05	13.57%	353.400	27.25%	31.23%	146.59%
1990	12.10	9.50%	330.220	-6.56%	-3.14%	139.87%
1991	12.20	0.83%	417.090	26.31%	30.00%	199.94%
1992	12.38	1.48%	435.710	4.46%	7.43%	218.74%
1993	12.58	1.62%	466.450	7.06%	9.94%	245.00%
	67.07%		178.91%	(Total Growth 1993 over 1984)		
	5.87%		12.07%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 295.00%

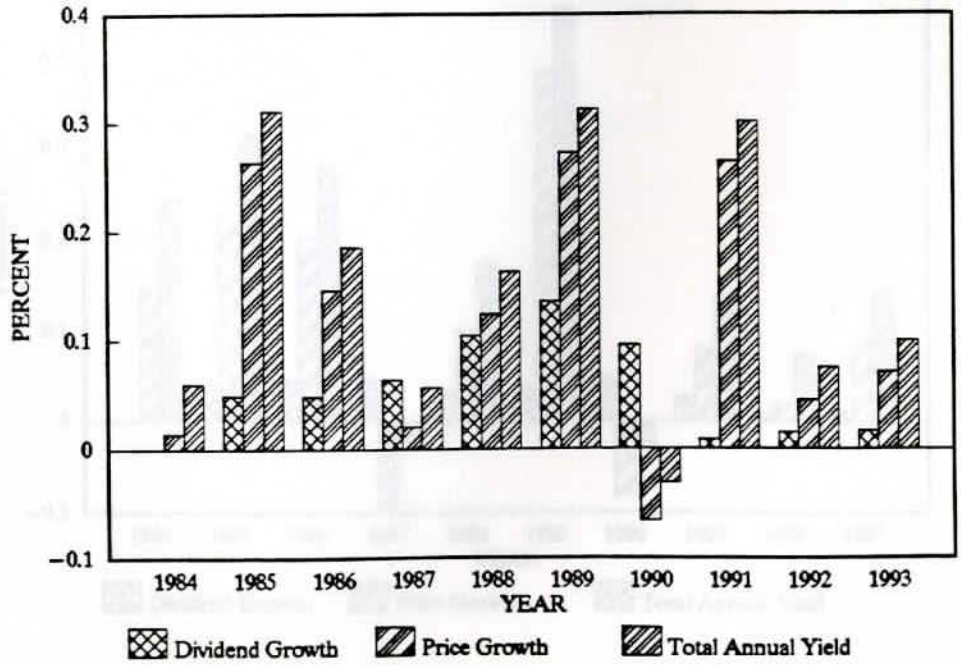


Table 14 reflects the average shareholder returns for the S&P utilities for 1984 through 1993 (ten years post-AT&T divestiture) in tabular as well as bar graph format.

TABLE 14

Average Shareholder Return for the S&P Utilities

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			66.170			
1984	6.47		75.890	14.69%	24.47%	24.47%
1985	6.73	4.02%	93.170	22.77%	31.64%	60.75%
1986	7.03	4.46%	112.300	20.53%	28.08%	100.29%
1987	7.38	4.98%	102.100	-9.08%	-2.51%	96.03%
1988	7.62	3.25%	112.600	10.28%	17.75%	123.41%
1989	7.89	3.54%	156.340	38.85%	45.85%	201.44%
1990	8.29	5.07%	143.590	-8.16%	-2.85%	194.70%
1991	8.51	2.65%	155.160	8.06%	13.98%	225.04%
1992	8.55	0.47%	158.460	2.13%	7.64%	242.95%
1993	8.66	1.29%	172.580	8.91%	14.38%	277.38%
	33.85%		127.41%	(Total Growth 1993 over 1984)		
	3.29%		9.56%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 378.96%

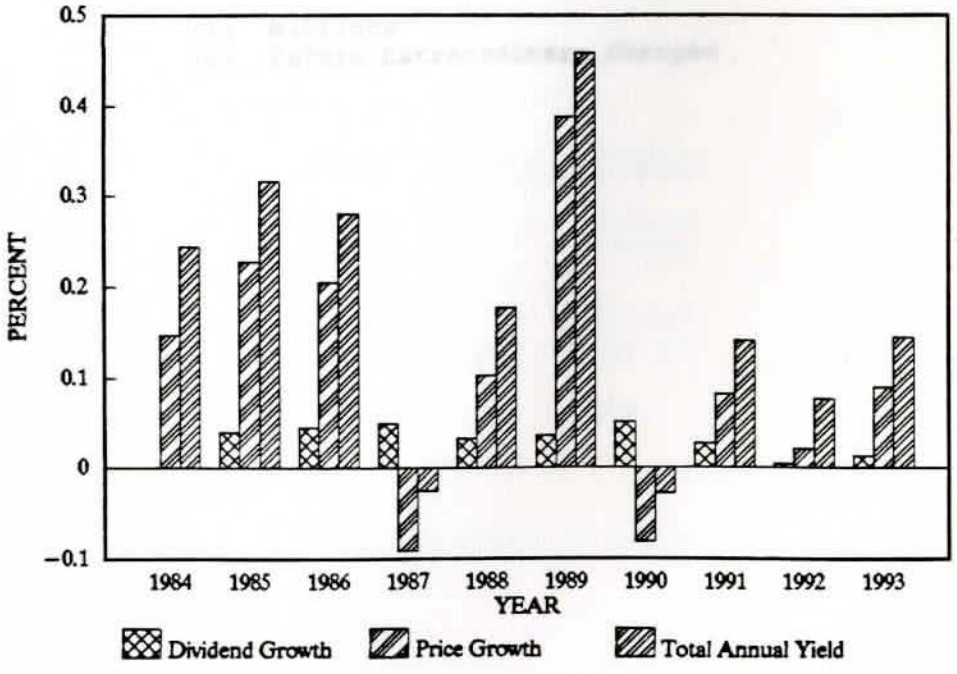


Table 15 reflects net income before extraordinary charges and earnings per share (EPS) for the combined RBOCs post-divestiture. (Appendix B contains earnings information for each RBOC individually.)

TABLE 15

Combined Earnings Growth for all RBOCs

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth	
1984	6,805.90		15.500		
1985	7,534.60	10.71%	16.770	8.19%	
1986	8,135.90	7.98%	17.920	6.86%	
1987	8,372.40	2.91%	18.420	2.79%	
1988	8,914.50	6.47%	20.080	9.01%	
1989	8,260.80	-7.33%	18.430	-8.22%	
1990	8,477.50	2.62%	19.030	3.26%	
1991	7,329.70	-13.54%	16.070	-15.55%	
1992	9,320.90	27.17%	20.120	25.20%	
		36.95%		29.81%	(Total Growth)
		3.56%		2.94%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Table 16 contains the actual versus the hypothesized value for hypothesis number 1 (yield for AT&T shareholders was greater post-divestiture than pre-divestiture).

Table 16

Hypothesis 1 Results

$Mean_1$ =	19.21
$Mean_2$ =	11.24
$Variance_1$	754.82
$Variance_2$	180.19
D.F. =	18
T =	.82

Hypothesized T Value = >1.734

Table 17 contains the actual versus the hypothesized value for hypothesis number 2 (yield for AT&T and RBOC shareholders was greater than for S&P 500 average).

Table 17

Hypothesis 2 Results

$Mean_1$ =	20.10
$Mean_2$ =	15.30
$Variance_1$	322.85
$Variance_2$	134.01
D.F. =	18
T =	.71

Hypothesized T Value = >1.734

Table 18 contains the actual versus the hypothesized value for hypothesis number 3 (yield for RBOC shareholders was greater than for AT&T shareholders).

Table 18

Hypothesis 3 Results

$Mean_1$ =	20.54
$Mean_2$ =	19.21
$Variance_1$	311.66
$Variance_2$	754.82
D.F. =	18
T =	.13

Hypothesized T Value = >1.734

Table 19 contains the actual versus the hypothesized value for hypothesis number 4 (yield for RBOC shareholders was greater than for S&P utilities average).

Table 19

Hypothesis 4 Results

$Mean_1$ =	20.54
$Mean_2$ =	17.84
$Variance_1$	311.66
$Variance_2$	209.71
D.F. =	18
T =	.37

Hypothesized T Value = >1.734

Table 20 contains the actual versus the hypothesized value for hypothesis number 5 (no correlation between either dividends or share price and net income or earnings per share).

Table 20

Hypothesis 5 Results

1. Correlation of dividends to net income

r =	.55
t =	1.742
hypothesized t =	-2.365 to +2.365

2. Correlation of dividends to earnings per share

r =	.51
t =	1.568
hypothesized t =	-2.365 to +2.365

3. Correlation of share price to net income

r =	.54
t =	1.695
hypothesized t =	-2.365 to +2.365

4. Correlation of share price to earnings per share

r =	.49
t =	1.487
hypothesized t =	-2.365 to +2.365

Chapter V

DISCUSSION

Five separate hypotheses related to the divestiture of AT&T were developed in Chapter II, from the review of literature. The results of the consequent studies were presented in Chapter IV in both tabular and graph form. Following is discussion and interpretation of those results.

Hypothesis One

Tables 9, 10 and 16 include study results which relate to the first hypothesis: AT&T shareholders post-divestiture outperformed or received higher total yields than shareholders pre-divestiture. Based upon research results from the review of the literature, it was expected that AT&T service and financial problems occurring in the 1970s would serve to stagnate the stock price during that period. Even though the new AT&T suffered financial setbacks post-divestiture, its ability to survive those setbacks and be out from under regulation were seen as positives outweighing the negatives. Included in those setbacks were lost market

share due to competition, the large percentage of long-distance income eaten away through payment of access charges to local exchange carriers (estimated at 60 percent of revenues), failure in AT&T's computer lines of business and major restructurings.

Table 9 reflects AT&T shareholder returns for ten (10) years prior to divestiture, and Table 10 reflects AT&T shareholder returns for ten (10) years after divestiture. Pre-divestiture shareholders experienced 80.56 percent in total growth from dividends for the period, representing a compound average growth rate (CAGR) of 6.79 percent annually. Post-divestiture shareholders did not experience as high a growth rate in dividends with a total growth of 10 percent for the ten-year period and a CAGR of 1.06 percent.

Moreover, in the years prior to divestiture, earnings from dividends ranged from 6 to over 9 percent while post-divestiture the return ranged from 6.7 percent in 1984 diminishing to 2.5 percent in 1993. This change in dividend policy reflects the business change necessitated by AT&T going from a pure, regulated monopoly business (utility) to a competitive business venture which demanded retaining more money in the business.

Even though dividend growth was considerably higher

pre- versus post-divestiture, that trend was more than offset by total growth in price over the period. Total price appreciation was 37.82 percent with a 3.63 CAGR pre-divestiture compared to a 169.23 percent total growth and 11.63 percent CAGR for an equivalent period of time post-divestiture. Therefore, price growth was nearly 4 1/2 times post-divestiture what it was pre-divestiture.

Total yield and, in particular, cumulative total yield or the return to the investor from a combination of dividends and appreciation of the stock price is the best indicator for comparison purposes. Pre-divestiture cumulative yield at 1983 was 114.24 percent excluding dividend reinvestment and 170.36 percent presuming dividend reinvestment. Post-divestiture those figures are nearly doubled with a 263.52 percent cumulative return without dividend reinvestment and 333.05 percent including dividend reinvestment. As a consequence, clearly on a nominal basis or without taking into account the impact of inflation across the periods, investors earned a considerably higher total cumulative return (333.05 percent vs. 170.36 percent) post-divestiture compared to pre-divestiture.

Table 16 reflects the results of the statistical

test. The hypothesized value of t was > 1.734, but the resulting t value was .82 in testing the first hypothesis. Consequently, the hypothesis was rejected despite the fact that the means for total yield were so far apart (19.21 percent post-divestiture versus 11.24 percent pre-divestiture). Based upon an analysis of the inputs for the test formula, the small sample size and the fact that variance in total yield was so large combined to drive the test results outside the hypothesized area of acceptance. Therefore, even though it is clear that when comparing cumulative yields, AT&T shareholders post-divestiture earned better than shareholders pre-divestiture by a wide margin, the difference on an annual basis is not statistically significant at the 95 percent level of confidence. Had more years of data been available post-divestiture for comparison to pre-divestiture data, the results may have been different.

Hypothesis Two

Tables 12, 13 and 17 relate to the second hypothesis: the combined shareholder returns for the new AT&T and the RBOCs outperformed the S&P 500 average. Using the research results from the review of literature, it was expected that despite the

limitations imposed upon the RBOCs restricting entry into manufacturing and long distance and the early financial setbacks experienced by both AT&T and certain of the RBOCs, the strength and growth in the telecommunications industry and the easing of regulation would outweigh the growth in other industries and utilities.

Table 12 reflects the combined shareholder return for AT&T and the RBOCs for the ten years following divestiture, and Table 13 reflects average shareholder returns for the S&P 500 companies for the same period. Dividends for AT&T and the RBOCs grew 57.76 percent over the period with a 5.20 percent (CAGR). Dividends for the S&P 500 companies grew 67.07 percent over the period with a 5.87 percent CAGR. Consequently, the S&P 500 dividends grew slightly faster than those of AT&T and the RBOCs. Again, this change in dividend policy corresponds to the evolution from regulated monopoly to industry status for AT&T and to some lesser degree for the RBOCs with more dollars being retained in the telecommunications business. The combined return from dividends for AT&T/RBOC investors started at 9.1 percent return in 1984 and declined to 4.7 percent by 1993. On the other hand, the return from dividends for the S&P 500 companies declined from 4.5 percent in 1984

to 2.8 percent in 1993. So even though the growth rate was slower, the return from dividends remained higher for AT&T/RBOC shareholders than for S&P 500 investors as of 1993.

Price appreciation was also similar for AT&T/RBOC and S&P 500 investors with only a slight edge going to the S&P 500 companies. Total price appreciation for the period was 177.98 percent with a 12.03 CAGR for AT&T/RBOC shareholders. This compares to a 178.91 percent total price appreciation and 12.07 percent CAGR for the S&P 500 companies for the same period.

Cumulative total yield is the best overall comparison for investor return, and AT&T/RBOC investors earned better than the S&P 500 investors. Cumulative total yield for AT&T/RBOCs was 353.55 percent without dividend reinvestment and 459.92 percent with dividend reinvestment. S&P 500 investors earned 245.00 percent without reinvesting dividends and 295.00 percent with dividend reinvestment. So even though S&P 500 investors had a slight edge in growth of both dividends and price, the AT&T/RBOC investors earned better primarily because of the higher starting and continuing dividend payout or yield and the compounding effect therein.

Table 17 reflects the results of the statistical

test. The hypothesized value of t was > 1.734, but the resulting t value was .71 in testing the second hypothesis. The hypothesis was therefore rejected despite the fact that the means for total yield were far apart (20.10 percent AT&T/RBOC versus 15.30 percent S&P 500). Based upon an evaluation of the inputs to the test formula, the small sample size and the fact that variance in total yield was so large combined to drive the test results outside the hypothesized area of acceptance. Consequently, even though it is clear when comparing cumulative yields, the AT&T/RBOC investors earned better than the S&P 500 average, the difference on an annual basis is not statistically significant at the 95 percent level of confidence.

Hypothesis Three

Tables 10, 11 and 18 include results which relate to the third hypothesis: RBOC shareholders outperformed or received higher total yields than shareholders of the new AT&T post-divestiture. Based upon research results from the review of literature, it was expected that the RBOCs would outperform the new AT&T due to AT&T's early financial setbacks coupled with the surprisingly strong performance of the RBOCs and the high expectations within telecommunications

especially for the cellular business (largely RBOC owned during that period) and foreign investments.

Table 10 reflects the AT&T shareholder returns for the ten (10) years after divestiture, and Table 11 reflects the combined shareholder returns for the RBOCs. AT&T shareholders experienced only a 10 percent growth in dividends for the ten-year period, representing a (CAGR) of 1.06 percent. On the other hand, RBOC shareholders experienced a much larger growth rate in dividends with a total growth rate of 63.84 percent and a CAGR of 5.64 percent. This again reflects the fundamental change in AT&T's business environment which resulted in more money being retained in the business as it moved from utility to industry status. This also happened at the RBOCs but to a much lesser degree overall and at varying speeds among the companies. This is reflected in the return from dividends calculation. For AT&T, it went from 6.7 percent in 1984 to 2.5 percent in 1993. For the RBOCs, it went from 9.5 percent to 5.1 percent.

Not only was dividend growth and return from dividends higher for RBOC investors, but return from price appreciation was also slightly higher for that group. Total price appreciation for AT&T stock was 169.23 percent with a 11.63 percent CAGR compared to a

179.39 percent total growth and 12.09 percent CAGR for the RBOCs in the ten-year period post-divestiture.

Cumulative total yield for the RBOCs was predictably higher than for AT&T. Cumulative yield for AT&T was 263.52 percent without dividend reinvestment and was 333.05 percent with dividend reinvestment. Cumulative yield for the RBOCs was 369.84 percent without dividend reinvestment and 483.15 percent with dividend reinvestment.

Table 18 reflects the results of the statistical test. The hypothesized value of t was > 1.734, but the resulting t value was .13. The hypothesis was therefore rejected. In this case, the means for total yield for the two sets of data were similar (20.54 percent versus 19.21 percent). Consequently, even though the RBOC investors earned better than the AT&T investors for this period from a cumulative yield perspective, the difference on an annual basis is not statistically significant at the 95 percent level of confidence.

Hypothesis Four

Tables 11, 14 and 19 include study results which relate to the fourth hypothesis: shareholders for the combined RBOCs outperformed or received higher total

yields than shareholders for the S&P utilities post-divestiture. Based upon the literature review, it was expected that the RBOCs with access revenues paid by the interexchange carriers (long-distance companies), relaxed regulation and the heavy growth potential of cellular and other nonregulated properties would outperform other regulated and more conservative utilities which didn't typically capture the interest of investors.

Table 11 reflects combined RBOC shareholder returns for ten years after divestiture, and Table 14 reflects the S&P utility average returns for the same period. RBOC investors experienced 63.84 percent in total growth from dividends for the period, representing a (CAGR) of 5.64 percent. S&P utility investors experienced only a 33.85 percent total growth in dividends with a 3.29 percent CAGR. So despite a predicted diminishing dividend growth rate for the RBOCs, other utilities also experienced deep cuts in dividend growth. Actual return from dividends dropped from 9.7 percent in 1984 to 5.4 percent in 1993 for the S&P utilities, compared to a 9.5 percent in 1984 to 5.1 percent in 1993 for the RBOCs. Consequently, return from dividends is very equivalent between the two sets of data.

Even though return from dividends was similar between the RBOCs and the S&P utility average, total price appreciation was higher for the RBOCs than for the S&P utilities. Total price appreciation was 179.39 percent for the RBOCs with a 12.09 percent CAGR compared to total price appreciation of 127.41 percent for the S&P utilities with a 9.56 percent CAGR for the same period.

Cumulative yield for the RBOCs was consequently higher than for the S&P utilities. Cumulative yield at the end of 1993 for the RBOCs was 369.84 percent excluding dividend reinvestment and 483.15 percent with dividend reinvestment. Cumulative yield for the S&P utilities was 277.38 percent excluding dividend reinvestment and 378.96 percent with dividend reinvestment.

Table 19 reflects the results of the statistical test. The hypothesized value of t was > 1.734, but the resulting t value was .37 in testing the fourth hypothesis. The hypothesis was therefore rejected. Again, the small sample size and the large variance in total yield served to drive the test results outside the hypothesized area of acceptance. So even though based upon cumulative yield (and higher total yield mean) RBOC shareholders earned better than S&P utility

investors, the margin of difference based upon annual total yield is not statistically significant at the 95 percent level of confidence.

Hypothesis Five

Table 15 and 20 include study results which relate to the fifth hypothesis: a high positive correlation does not exist between either net income or earnings per share and dividends or share price. Based upon research results from the review of literature, it was expected that RBOC earnings performance as measured by net income or earnings per share would be relatively flat, while dividends and particularly share price would reflect growth based primarily upon investors' high expectations in the telecommunications area.

Table 15 reflects the earnings growth for the combined RBOCs. This data supports the proposition that earnings as measured by net income and earnings per share did not grow wildly in the ten years post-divestiture. Total growth in net income was 36.95 percent, with a 3.56 percent (CAGR) and total growth for earnings per share was 29.81 percent with a 2.94 percent CAGR. These results do compare favorably with the growth rates for dividends and share price. As noted earlier in Table 11, those growth rates are 63.84

percent total growth and 5.64 percent CAGR for dividends and 179.39 percent total growth and 12.09 percent CAGR for share price.

Table 20 reflects the results of the statistical tests. Four tests for correlation were made. Test results reflecting the strength of the relationships are as follows:

dividends to net income	r = .55
dividends to earnings per share	r = .51
share price to net income	r = .54
share price to earnings per share	r = .49

As indicated above, all produce a positive correlation (sign is positive) which is moderate in strength (zero = no correlation; +1 = perfect positive correlation). The statistical test to determine the significance of the correlation produced results within the area of acceptance for all four tests showing no correlation in the population at the 95 percent level of significance. Consequently, the hypothesis could not be disproven, and the hypothesis is accepted.

Summary

These studies examined the financial impact of AT&T divestiture on its owners. Five hypotheses were developed with the intent of showing that the original AT&T management team who agreed to divestiture in order

to rid the company of its antitrust problems did so with the best interests of the shareholders or owners of the company in mind. Four of the five hypotheses were rejected or failed statistical tests at the 95 percent level of confidence: AT&T shareholders earned better post-divestiture then pre-divestiture, combined AT&T and RBOC investors earned a better return than the S&P 500 average post-divestiture, the RBOCs earned better than AT&T post-divestiture and the RBOCs earned better than the S&P utilities. However, in each case based upon cumulative total yield, the hypotheses were found to be true for the specific ten-year period. This disparity resulted from a combination of factors. The statistical tests were based upon annual total yield and were impacted by a small sample size and a large variance of the means. A larger sample with similar means might produce different results. However, even if it didn't, cumulative total yield reflects the cumulative or compound effect of the annual total yields at the end of the ten-year period while the statistical test relied on comparisons of annual total yield independent of each other. Consequently, it is accurate to state that shareholders, as predicted in the first four hypotheses, earned better on a cumulative basis for the

ten-year period, but not that the hypotheses were proven statistically based upon a year-by-year comparison. To the extent that equity holders are generally in the market for the longer term, cumulative yield is the better indicator and supports the proposition that AT&T management looked out for the interests of its owners in agreeing to divestiture.

The fifth hypothesis was accepted: there was not a high-positive correlation between earnings and stock performance, although there was a moderate-positive correlation. Once again, the small size of the sample may have impacted the outcome. To the extent that both earnings and share price appreciation were positive and share price appreciation even robust, there is no evidence that the original AT&T owners were harmed by divestiture.

Limitations

The value of the study is limited to the extent that AT&T investors had several investment alternatives at divestiture, each of which could not be independently tested. Eight new companies were formed: the new AT&T and the seven RBOCs. Presuming investors wanted to stay with telephone stock, they could have invested in a combination of all eight or invested

entirely in one company or some other combination depending upon expectations for the various regional companies and their respective regulatory climates.

Additionally, one severe, major limitation to the study was the amount of time post-divestiture (ten years) which served to reduce the possible sample set.

Suggestions for Future Research

It would be appropriate and ultimately more meaningful to replicate this research addressing the limitations described above. First, the data sample set should be expanded so that the sample size is larger. A more thorough investigation of input sources may produce the shareholder earnings information on a quarterly basis rather than on an annual basis. This expands the sample size from 10 to 40. Additionally, it would produce a better matching of earnings via dividends to stock price.

Additionally, in order to be more precise and produce a more conclusive result, comparisons pre- and post-divestiture could be made relative to market conditions. For instance, it may not be meaningful that post-divestiture shareholders earned better than pre-divestiture shareholders if the post-divestiture investors didn't earn as well compared to the other

investment alternatives on the market for the period. Consequently, it would be appropriate to make a market adjustment prior to comparisons.

Finally, even though it may have been originally envisioned that the RBOCs would be a monolithic group, as time has passed, this became less and less true. Each RBOC is diversifying differently, has different strategies, economic possibilities and regulatory restrictions. Consequently, viewing and testing the RBOCs independently may produce different and more persuasive results.

APPENDIX A

Shareholder Return for Ameritech

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			10.750			
1984	1.00		12.792	19.00%	28.30%	28.30%
1985	1.10	10.00%	17.750	38.76%	47.36%	84.65%
1986	1.20	9.09%	22.083	24.41%	31.17%	136.12%
1987	1.27	5.83%	21.156	-4.20%	1.55%	139.31%
1988	1.38	8.66%	23.938	13.15%	19.67%	178.03%
1989	1.49	7.97%	34.000	42.03%	48.26%	285.49%
1990	1.61	8.05%	33.375	-1.84%	2.90%	294.65%
1991	1.72	6.83%	31.750	-4.87%	0.28%	295.53%
1992	1.78	3.49%	35.625	12.20%	17.81%	348.14%
1993	1.86	4.49%	38.375	7.72%	12.94%	391.02%
	86.00%		199.99%	(Total Growth 1993 over 1984)		
	7.14%		12.98%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 513.50%

Shareholder Return for Bell Atlantic

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			16.310			
1984	1.60		20.094	23.20%	33.01%	33.01%
1985	1.70	6.25%	26.625	32.50%	40.96%	83.48%
1986	1.80	5.88%	33.750	26.76%	33.52%	138.20%
1987	1.92	6.67%	32.500	-3.70%	1.99%	142.31%
1988	2.04	6.25%	35.563	9.42%	15.70%	173.59%
1989	2.20	7.84%	55.625	56.41%	62.60%	310.09%
1990	2.32	5.45%	53.625	-3.60%	0.58%	312.05%
1991	2.48	6.90%	48.250	-10.02%	-5.40%	294.30%
1992	2.58	4.03%	51.250	6.22%	11.56%	328.51%
1993	2.66	3.10%	59.250	15.61%	20.80%	393.87%
	66.25%		194.86%	(Total Growth 1993 over 1984)		
	5.81%		12.77%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 515.91%

Shareholder Return for Bell South

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			18.720			
1984	1.73		22.667	21.08%	30.33%	30.33%
1985	1.40	-19.08%	32.667	44.12%	50.29%	91.22%
1986	1.99	42.14%	38.500	17.86%	23.95%	133.01%
1987	2.16	8.54%	36.375	-5.52%	0.09%	133.20%
1988	2.32	7.41%	39.875	9.62%	16.00%	164.29%
1989	2.48	6.90%	57.875	45.14%	51.36%	273.69%
1990	2.64	6.45%	54.750	-5.40%	-0.84%	271.10%
1991	2.74	3.79%	51.750	-5.48%	-0.47%	269.71%
1992	2.76	0.73%	51.375	-0.72%	4.61%	282.45%
1993	2.76	0.00%	58.000	12.90%	18.27%	332.59%
	59.54%		155.88%	(Total Growth 1993 over 1984)		
	5.33%		11.00%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 420.94%

Shareholder Return for NYNEX

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			15.380			
1984	1.50		18.563	20.70%	30.45%	30.45%
1985	1.60	6.67%	24.438	31.65%	40.27%	79.05%
1986	1.74	8.75%	32.063	31.20%	38.32%	139.94%
1987	1.90	9.20%	32.125	0.19%	6.12%	152.70%
1988	2.02	6.32%	33.000	2.72%	9.01%	171.52%
1989	2.18	7.92%	45.688	38.45%	45.05%	268.19%
1990	2.28	4.59%	35.563	-22.16%	-17.17%	217.18%
1991	2.28	0.00%	40.375	13.53%	19.94%	263.30%
1992	2.32	1.75%	41.938	3.87%	9.62%	288.54%
1993	2.36	1.72%	40.125	-4.32%	1.30%	292.10%
	57.33%		116.16%	(Total Growth 1993 over 1984)		
	5.16%		8.94%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 368.54%

Shareholder Return for Pacific Telesis

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			13.880			
1984	1.35		17.219	24.06%	33.78%	33.78%
1985	1.43	5.93%	21.156	22.86%	31.17%	72.45%
1986	1.52	6.29%	26.625	25.85%	33.04%	122.80%
1987	1.64	7.89%	26.625	0.00%	6.16%	134.62%
1988	1.76	7.32%	30.875	15.96%	22.57%	177.92%
1989	1.88	6.82%	50.375	63.16%	69.25%	331.95%
1990	2.02	7.45%	45.250	-10.17%	-6.16%	309.58%
1991	2.14	5.94%	44.625	-1.38%	3.35%	320.50%
1992	2.18	1.87%	44.375	-0.56%	4.32%	334.40%
1993	2.18	0.00%	54.250	22.25%	27.17%	421.25%
	61.48%		215.06%	(Total Growth 1993 over 1984)		
	5.47%		13.60%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 561.46%

Shareholder Return for Southwestern Bell

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			9.810			
1984	0.90		11.792	20.20%	29.38%	29.38%
1985	0.98	8.89%	14.250	20.84%	29.16%	64.42%
1986	1.05	7.14%	18.708	31.28%	38.65%	120.57%
1987	1.14	8.57%	17.188	-8.12%	-2.03%	116.70%
1988	1.22	7.02%	20.188	17.45%	24.55%	159.71%
1989	1.28	4.92%	31.938	58.20%	64.54%	292.54%
1990	1.36	6.25%	28.000	-12.33%	-8.07%	266.26%
1991	1.41	3.68%	32.313	15.40%	20.44%	324.60%
1992	1.45	2.84%	37.000	14.50%	18.99%	387.16%
1993	1.50	3.45%	41.500	12.16%	16.22%	448.32%
	66.67%		251.93%	(Total Growth 1993 over 1984)		
	5.84%		15.01%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 612.23%

Shareholder Return for US West

Year	Dividends	Dividend Growth	Share Price(1)	Price Growth	Total Yield(2)	Cumulative Yield(3)
1983			13.910			
1984	1.35		17.625	26.71%	36.41%	36.41%
1985	1.07	-20.74%	22.250	26.24%	32.31%	77.35%
1986	1.50	40.19%	27.000	21.35%	28.09%	122.29%
1987	1.61	7.33%	25.563	-5.32%	0.64%	123.53%
1988	1.73	7.45%	28.875	12.96%	19.72%	159.78%
1989	1.85	6.94%	40.063	38.75%	45.15%	253.51%
1990	1.97	6.49%	38.875	-2.97%	1.95%	259.13%
1991	2.06	4.57%	37.875	-2.57%	2.73%	266.75%
1992	2.11	2.43%	38.375	1.32%	6.89%	285.51%
1993	2.13	0.95%	45.875	19.54%	25.09%	354.74%
	57.78%		160.28%	(Total Growth 1993 over 1984)		
	5.20%		11.21%	(Compound Average Growth Rate)		

(1) As of December & restated for the effect of stock splits
(2) Return on prior December price (appreciation and dividends)
(3) Cumulative Yield with dividend reinvestment = 466.25%

APPENDIX B

Earnings Growth for Ameritech

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	990.60		1.700	
1985	1,077.70	8.79%	1.840	8.24%
1986	1,138.40	5.63%	1.970	7.07%
1987	1,188.10	4.37%	2.120	7.61%
1988	1,237.40	4.15%	2.270	7.08%
1989	1,238.20	0.06%	2.290	0.88%
1990	1,253.80	1.26%	2.360	3.06%
1991	1,165.50	-7.04%	2.190	-7.20%
1992	1,346.00	15.49%	2.500	14.16%
	35.88%		47.06%	(Total Growth)
	3.47%		4.38%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for Bell Atlantic

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	973.10		2.48	
1985	1,092.90	12.31%	2.73	10.08%
1986	1,167.10	6.79%	2.92	6.96%
1987	1,240.40	6.28%	3.12	6.85%
1988	1,316.80	6.16%	3.33	6.73%
1989	1,074.50	-18.40%	2.71	-18.62%
1990	1,312.50	22.15%	3.38	24.72%
1991	1,331.60	1.46%	3.41	0.89%
1992	1,382.20	3.80%	3.23	-5.28%
	42.04%		30.24%	(Total Growth)
	3.98%		2.98%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for Bell South

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	1,257.20		2.850	
1985	1,417.80	12.77%	3.130	9.82%
1986	1,588.70	12.05%	3.380	7.99%
1987	1,664.80	4.79%	3.460	2.37%
1988	1,665.50	0.04%	3.510	1.45%
1989	1,695.00	1.77%	3.550	1.14%
1990	1,631.50	-3.75%	3.380	-4.79%
1991	1,506.90	-7.64%	3.110	-7.99%
1992	1,658.40	10.05%	3.380	8.68%
	31.91%		18.60%	(Total Growth)
	3.13%		1.91%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for NYNEX

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	986.40		2.530	
1985	1,095.30	11.04%	2.710	7.11%
1986	1,215.30	10.96%	3.000	10.70%
1987	1,276.50	5.04%	3.130	4.33%
1988	1,315.00	3.02%	3.320	6.07%
1989	807.60	-38.59%	2.050	-38.25%
1990	949.40	17.56%	2.380	16.10%
1991	600.80	-36.72%	1.490	-37.39%
1992	1,311.20	118.24%	3.180	113.42%
	32.93%		25.69%	(Total Growth)
	3.21%		2.57%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for Pacific Telesis

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	828.50		2.120	
1985	929.10	12.14%	2.270	7.08%
1986	1,079.40	16.18%	2.510	10.57%
1987	950.00	-11.99%	2.200	-12.35%
1988	1,188.00	25.05%	2.800	27.27%
1989	1,242.00	4.55%	3.000	7.14%
1990	1,030.00	-17.07%	2.580	-14.00%
1991	1,015.00	-1.46%	2.570	-0.39%
1992	1,142.00	12.51%	2.830	10.12%
	37.84%		33.49%	(Total Growth)
	3.63%		3.26%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for Southwestern Bell

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	883.10		1.510	
1985	996.20	12.81%	1.670	10.60%
1986	1,022.70	2.66%	1.710	2.40%
1987	1,047.10	2.39%	1.740	1.75%
1988	1,060.10	1.24%	1.760	1.15%
1989	1,092.80	3.08%	1.820	3.41%
1990	1,101.40	0.79%	1.840	1.10%
1991	1,156.50	5.00%	1.920	4.35%
1992	1,301.70	12.56%	2.170	13.02%
	47.40%		43.71%	(Total Growth)
	4.41%		4.11%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

Earnings Growth for US West

Year	Net Inc. (1 & 2)	Net Income Growth	Earnings/ Share(2)	EPS Growth
1984	887.00		2.310	
1985	925.60	4.35%	2.420	4.76%
1986	924.30	-0.14%	2.430	0.41%
1987	1,005.50	8.79%	2.650	9.05%
1988	1,131.70	12.55%	3.090	16.60%
1989	1,110.70	-1.86%	3.010	-2.59%
1990	1,198.90	7.94%	3.110	3.32%
1991	553.40	-53.84%	1.380	-55.63%
1992	1,179.40	113.12%	2.830	105.07%
	32.97%		22.51%	(Total Growth)
	3.22%		2.28%	(CAGR)

(1) Millions
(2) Before Extraordinary Charges

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