Telecommunications: Three Case Studies

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The Industry
Overview

Telecommunications is defined in the American Heritage Dictionary as, "the science and technology of communication by electronic transmission of impulses, as by telegraphy, cable, telephony, radio or television."\(^1\) This definition shows the wide range of activities considered to be part of telecommunications, but the definition is constantly expanding to include more advanced technology.

Because of this constantly changing technology, the outlines of the telecommunications industry and markets are unclear. These outlines will become much clearer in the years to come, as newer products and services become more available for general use. As this occurs, consumers will make their preferences known by their consumption, and the industry will respond by focusing its directions.

Prime users of telecommunications include individuals, businesses, government and the military. The potential for misuse and possibilities for the future have led to government regulation in the telecommunications industry. In the House of Representatives, there is even a subcommittee for telecommunications.

Regulation has tended to be more in the traditional "telephone" areas of the industry. Part of this regulation has been to oversee the activities of American Telephone and Telegraph. Regulatory areas are changing now to include more in satellite communications. Government regulation has led
many companies to expand into newer areas of telecommunications which are not so heavily regulated. The current trend of the government, though, seems to be toward less regulation and more competition. This continues to be a much debated topic, as many smaller companies believe regulation is necessary for them to compete with giants such as AT&T.

Applications

Telecommunications are playing an increasing role in business, and this role will continue to increase over time. Besides increased labor productivity, mechanizing commerce can increase capacity, speed, responsiveness, reliability and economy. This is true of the office as well as the production line. Information workers (managers and other professionals) account for one-third of the work force and this number is growing. These people spend an estimated 75% of their time on communications, so communication methods and costs are very important considerations.

Yet, during the 1970's, office productivity increased only 4%, with a capital investment of only $2000 per employee. This compares to an 80-90% increase in production productivity, with a capital investment of $25,000 per employee.

There are many services available and being developed to help increase office and manager productivity. Three of these areas are: electronic mail, data communications, and teleconferencing.

Electronic mail can be divided into five categories: public postal services, teletype, facsimile, communicating
word processors, and computer-based message systems. Depending on the category of electronic mail being discussed, electronic mail speeds delivery and response time and can cut the amount of actual paper being handled.

The U.S. Postal Service offers Electronic Computer Originated Messages (ECOM). In this system, magnetic media are keyboarded in a participating post office. The message is transmitted to a receiving post office then delivered by postal employees. A similar service is provided for international messages.

Teletype has been in existence since the late 1950's. A Telex/TWX call costs much less than a regular phone call and provides the receiver with a hard copy of the message. Equipment for this process is constantly improving with new capabilities to cut costs and improve efficiency even further.

Facsimile is the process by which one copier electronically sends a document to a remote location where it is reproduced. Facsimile is a high speed alternative to the mail system. In addition to text and numbers, photographs, charts and handwritten information may be sent using facsimile.

Communicating word processors allow documents stored on media in one word processor to be sent over phone lines directly to another word processor. In this system, time is saved by not having to rekeyboard information and no hard copy needs to be made unless specifically requested.

Computer-based message systems allow messages to be sent over phone lines and stored until the recipient accesses his
messages on his computer terminal. Users can send messages to anyone in the computer network. Though networks tend to be expensive, CMBS's directly increase office efficiency as the secretary does not have to be involved and no paper is handled.

Data communications is the sending of data via public or private phone lines or satellite systems. Communication of data is different than voice communication in that data communication is digital and voice communication is analog. Traditional phone lines are set up for analog communication, which is only an approximation of sound. In order for data to be communicated via phone lines, it must be transmitted digitally, converted to analog, then converted back to digital for reception.

Now there is also the possibility of using data-grade, digital lines, which can transmit the signals from end-to-end without converting to analog signal. This eliminates the technical problems inherent in achieving high quality service while converting digital-to-analog-to-digital.

Satellite communication has been found to be the most economical for high-speed batch transfer of computer data and digital facsimile. For interactive applications and data base inquiries, however, telephone communication is more economical.

One of the largest growth areas in telecommunications is teleconferencing. Participants in a teleconference meet at a center in their office or a special location to hold a meeting via audio-visual equipment with others in a similar center
elsewhere in the country. The idea is to provide face-to-face contact without incurring costly travel expenses. Teleconferencing has been found to be most effective when the participants know each other and/or the objective is problem solving, discussion or exchange of information.

With ever increasing travel costs as well as executive salaries and time spent, it is understandable that teleconferencing is becoming increasingly popular. By 1984, there will be an estimated 1000 teleconferencing centers operating in the U.S.; this is opposed to 32 centers operating in 1979. 7

Financial Information

Currently, the telecommunications industry employs approximately 1,130,000 workers, of which 75% are involved in production. The total number of workers has increased 1.3% annually since 1980. 8 Though this is a small increase, at least it is an increase.

Telecommunications industry sales were $17 billion in 1980, are expected to be $25 billion in 1985, and are expected to reach $35 billion in 1990. 9 This shows that telecommunications are expected to play a greater role in the world in the years to come. It takes time for new technologies to be accepted and adopted into common use.

Telecommunications industry revenues were $64 billion in 1980 but are expected to rise to $115 billion in 1985. This is a 12.4% annual increase. 10 The industry median 5-year return on equity is 14.3%. Recently, the FCC raised allowed return on equity to 17.4%. The net profit margin is 10.3% and the five-
year average earnings per share is 8.2%.\textsuperscript{11}

Independent telephone company (non-Bell) revenues are predicted to grow annually by 30% through 1986.\textsuperscript{12} Reflecting the increased interest in satellite communications, independent telephone companies had purchased 220 satellite earth stations by 1981, but are expected to purchase 600 such stations by 1991.\textsuperscript{13}

\textbf{AT&T Events}

On January 8, 1981, the Justice Department ended a seven year anti-trust battle with AT&T. The result was a basically three-pronged agreement.\textsuperscript{14}

The first segment of the ruling calls for divestiture of the local phone companies from AT&T. These will become separate entities. AT&T will retain Bell Laboratories, Western Electric and the LongLines Division. A new entity may be created in order to enter new areas and somewhat unify the existing segments of AT&T.

The second segment of the ruling solidifies the cost-based rate structure. Rates are based on cost data, but the documentation requirements for this cost data are now stricter. In addition, differences in rates for services and facilities must be cost justified.

The third segment of the ruling states that local companies must offer all long distance carriers equal interconnection facilities and services. This has been a topic of much controversy in the past.
In many ways, the FCC ruling to divest AT&T may work to AT&T's benefit. Charles Jackson, a telecommunications consultant, says the FCC ruling is "a dream come true" for AT&T. This is because American Bell could be a good entry into high-growth, high-tech areas such as data processing and the office of the future. The markets Bell can expand into and compete in now include, as examples, satellite transmission and home computers.

These newer areas are less regulated than the traditional telephone industry, which may be attractive to AT&T. As John Jones, telecommunications analyst, says, "The less regulation of these functions, the more a corporation like AT&T will like the business." Analysts are predicting a bright future for American Bell, with first year sales expected to be $2 billion. This would put American Bell on the Fortune 500 list of corporations in its first year of operation.

Because deregulation actually will increase Bell's competitive advantage in some areas, companies who compete head on may have problems. Bell also uses a migration strategy to both raise rates and discourage competition. Bell will announce a substantial rate increase in a system it wishes to phase out, causing customers to look to non-Bell companies that do not have the capacity to handle the number of new companies wanting service. The customer then accepts the Bell-offered alternative. Bell loses an estimated 10% of its market when using this strategy, but the revenues outweigh this cost.
Competitors who can find a specialized or complementary to Bell market are in good position to compete with Bell. For example, consumer electronics may be a difficult market for AT&T to be competitive in, because it lacks an effective distribution system. The Bell Phone Center Stores have not proven very profitable in the past. An independent telephone company consultant had this to say, "We're setting up to exploit Baby's (American Bell's) weaknesses, like its inability to sell to the small businessman at reasonable cost. Of course, anybody who underestimates AT&T is out of his mind. But it's going to take Bell awhile to get organized."'

The market will become a vastly different place in the future. Bradford L. Peery, a vice president at Paine Webber, says:

The independent telephone companies have the financial muscle to effectively enter other markets. Because of substantially improved cash flow over the next five years and the entry of non-telephone business, they will become quite different entities.

Harry Edelson, vice president of research at the First Boston Corporation, says, "Results are going to be much more difficult to predict and much more dependent on the acumen of management and acquisitions made."

The telecommunications field is expanding very rapidly, and there are numerous opportunities. The key to success may well lie in aggressive but carefully, strategically planned management.

Following are three case studies of companies representing different areas of the telecommunications industry.
MCI Communications Corporation
Overview

MCI Communications is a relatively new company which has experienced astonishingly rapid growth during the past few years. The company is primarily in the business of long distance dial up telephone service.

In 1963 John D. Goeken applied to the FCC to build a microwave relay station between St. Louis and Chicago. This action was strongly opposed by AT&T, and eventually Goeken could no longer keep his company—Microwave Communications—afloat. William G. McGowan agreed in 1968 to pay off the debts, manage the firm and seek FCC approval to build the relay station.

To avoid resubmitting the FCC application under the new management, McGowan did not formally take over Microwave Communications, Inc. Instead, he formed 17 additional companies with MCI as part of their names. Each of these 17 companies applied to the FCC to build part of a national network. The image of strength this created helped the original application be approved. McGowan then formally took over Microwave Communications. By 1972, all of the companies had received approval, and McGowan merged all 17 with Microwave Communications.

MCI thus began as a company which offered private line service between two points to large-volume business customers. This did not prove to be profitable enough to keep the company out of the red, so in 1975 McGowan decided to move into the dial up long distance market.
This created a whole new set of regulatory problems. McGowan went to the FCC to seek approval for a "modular tariff." This concept had never been used in the past and was only vaguely described by McGowan. The FCC approved the modular tariff, not realizing McGowan's true intentions. Once its true nature became apparent, the FCC ordered a stop to the service. A federal court modified this decision to simply refraining from signing up new customers. Finally, in 1978 the federal court of appeals ruled that since AT&T had never been granted a monopoly on long distance service, the FCC had no cause to deny entrance to this market to MCI.23

MCI is now seven times bigger than it was in 1978. Upwards of 50,000 new individual and business subscribers are being added each month, bringing the total customers to approximately 750,000. William McGowan says, "The only limit on our growth is our ability to build the network."25

MCI is organized into eight functional groups, with each group headed by a senior vice president. These groups are: law, regulation and industry relations, network operations, sales and marketing, transmission systems, corporate development, planning and administration, and finance. Corporate development was just added as a functional group in 1981 to reflect the company's interest in expansion and development. 26

MCI also has several subsidiaries. Until August of 1981, MCI owned 95% of a company called N-Triple-C, Inc. At that time, MCI offered the remaining 5% of the stockholders a 2 to 1 conversion deal. Each of the 320 stockholders re-
received 1 MCI common share for 2 shares of N-Triple-C. 27

On June 30, 1982 MCI acquired WUI, Inc. from Xerox Corporation for $195,000,000. WUI, Inc. was a holding company for Western Union International, Airsignal International and WUI/TAS. In July 1982, Airsignal International was divorced from WUI, Inc. to become MCI Airsignal, Inc., a separate MCI subsidiary. 28 MCI Airsignal is in the business of cellular mobile radio and pocket paging services. The subsidiary is being headed by Gerald H. Taylor, formerly vice president of development for MCI. 29 WUI/TAS provides telephone answering services. This does not fit with the MCI overall strategy for the future, and the company will be sold. 30 MCI Communications also operates several other subsidiaries, all of which contain MCI in their titles.

**Strategy**

MCI has a main goal of increasing usage of its networks. The strategies the company employs are aimed at attaining this goal, which is, of course, directed at increasing profitability. To educate communications managers outside of MCI to use MCI more effectively, MCI set up a school of telecommunications. To stimulate business for those companies who use MCI, and thus increase those companies usage of MCI networks, MCI set up a telephone directory organized by profession which emphasises those businesses which use MCI. These activities are not directly a part of running MCI but do reflect on MCI's profits. 31
Another strategy MCI uses is to move into an area initially by leasing another company's circuits. MCI can then construct its own system, while developing a customer and revenue base. Five major additions were made to the microwave network during fiscal 1982. Growth will continue in this fashion to achieve the goal of reaching "90% of the nation's telephones by 1986."\(^{32}\)

Part of MCI's strategy has been shaped by the divestiture of AT&T. In the past, AT&T has subsidized its local companies with revenue from long distance calling. Where this has inflated AT&T's long distance prices, MCI has had to pay a much smaller subsidy. This difference in subsidy has accounted for 70% of MCI's ability to undercut AT&T's prices. By 1988, the heavy subsidy paid by AT&T will be phased out, so the price margin between AT&T and MCI will be considerably less.\(^{33}\)

MCI is therefore placing great emphasis on expansion during the next five years. Steven Chrust, an analyst with Sanford C. Bernstein & Company, says Mcr could widen its share of the long distance market from 2% to 5% in that time. This could be a very lucrative share, since demand is growing at a rate of 10% per year.\(^{34}\)

**Management**

Founder of the modern MCI, Chairman of the Board and Chief Executive Officer is William G. McGowan. McGowan has been much of the driving force behind the rapid growth of MCI, taking an aggressive stance with the company and encouraging the employees. McGowan understood the regulatory process well enough and was creative enough to receive approval to build the microwave network and then take on AT&T and the
FCC to start a dial up long distance service.

V. Orville Wright serves as President and Chief Operating Officer in the company. Wright complements McGowan well in his management style in attending to the daily concerns as well as the future concerns of the company.

MCI uses a decentralized style of management where possible, in those areas which can be better served from field locations. For example, there are now nine field regions to oversee sales and operations. Two of these regions were created in fiscal 1982, one in Atlanta and one in San Francisco.35

Without its aggressive actions in the past, MCI would not be in the successful position it now occupies. Growth seems assured for the next several years, so one concern of management is that the employees will lose their aggressive attitudes. MCI wants to continue to meet new challenges as they occur with the same drive which has brought them so much success thus far. Perhaps the continuing training programs being set up by the human resources department will help accomplish this.

Production

MCI does not make its own equipment. McGowan is quite clear in his thoughts on this matter. The capital expenditures necessary to stay ahead technologically in the telecommunications industry would be tremendous. McGowan believes the capital can be better spent in other ways. He has even
offered the opinion that Western Electric will come to be a liability for AT&T. 36

Research and development at MCI consists mainly of talking with manufacturers to bring new products for evaluation by MCI. New technology is very important in telecommunications, but MCI takes the attitude that these products are better developed by someone else and used by MCI as it sees fit. Collecting patents is definitely not a priority.

Marketing

In 1978 when the ban on signing up new customers was lifted, MCI had 11,000 customers. Through aggressive marketing efforts by salesmen working solely on commission, that number increased to 41,000 by 1980. MCI's basic Execunet service was offered at that time only to businesses.

MCI began offering Execunet to residential customers in 1980. It was then that their number of subscribers soared from 41,000 to 750,000 in 1982. This is a 328% increase. 37 McGowan says of this, "We underestimated people's perception that competition to the phone company existed." 38 MCI now markets primarily toward residential customers, saying the residential market is much more eager to try new things than the commercial market.

In fact, MCI markets toward that segment of the residential market which has phone bills of at least $30 per month. MCI rates do not include Bell's charge for connecting the telephone with the MCI switchboard or the $5 monthly fee for
night and weekend service. It takes a monthly bill of at least $30 to offset these charges. However, it is this 10% of the phoning population who make 49% of all long distance phone calls. 39

MCI makes extensive use of television advertising to reach this residential market. The sales force is also constantly encouraged to keep up the fast growth pace. One of MCI's main selling points is that rates can be 30% - 50% lower than those of Bell. With the previously explained divestiture developments, this percentage may be cut down to closer to 15%. 40 MCI also offers a free 10 minutes of calling on Christmas day, a tradition which began in 1980. MCI is also setting up point of purchase displays in shopping malls and advertising to college students in 56 universities. 40

MCI is also expanding its services. "Omni Call" allows subscribers in 100 cities to place all interstate long distance calls through MCI. Execunet only allowed calls to areas serviced by MCI. MCI is constantly expanding this program to include a wider area of availability.

Another new service is known as Amex. This allows American Express to market MCI services to its cardholders, which currently number over 9,000,000. During the first six weeks of this program, 75,000 customers signed up. 41 American Express is responsible for the customer service, billing and accounts receivable of these customers. One problem MCI and American Express may encounter in this venture is not having the threat of disconnection in collecting past due
receivables. American Express, however, can have a more direct impact on the individual's credit rating. So far, the program seems to be working very well.

In the past, interconnection with the local phone companies has been a problem. This is changing with the court ruling and technology. MCI has not had access before to residential customers who have rotary dial telephones, as MCI impulses do not carry along this equipment. Local carriers only offered MCI inferior connections, which shut off 60% of the potential market to MCI--rotary dial telephones. The ruling states that all carriers must be offered the same quality interconnections.

Not only will MCI be available to individuals with rotary dial phones, it will be easier for MCI customers to make an MCI call. Presently, the customer must dial seven digits to reach the MCI transmitter, then five digits of identification code for billing, then the long distance number to be called. In 1984, phone users will simply inform the local carrier what long distance company they intend to use regularly.

MCI has already made strides in this area through agreements with Northwest Iowa Telephone and Sugar Land Telephone. Customers of these two local companies have complete choice between AT&T and MCI. To use MCI, a customer simply dials "5" plus the long distance number. This proves that full interconnections are technologically practical, which had previously been refuted by AT&T.
Finance

Before the federal court of appeals decision in 1978 allowing MCI into the long distance dial up market, the financial situation was bleak. MCI was almost totally dependent on lease financing.

In September 1979, MCI filed a statement to issue two million shares of convertible preferred stock at $15 per share convertible at $10 per share. There was so much interest in this offering that MCI sold 4,950,000 shares. In October 1980, MCI issued 3.3 million shares of preferred convertible stock at $15 per share with a conversion price of $18 per share. MCI has favored convertible debt as the issuer saves on interest expense, while at the same time getting a chance to sell equity at higher than present prices. Also, convertible debt yields a steady income to the investor while waiting to convert into common stock. The proceeds of these two issuances covered the bank debt and allowed MCI to discontinue lease financing.

In the 1982 annual report, President V. Orville Wright had this to say of the offerings, "Virtually all of the preferred shares were converted into common stock, thus eliminating the corresponding preferred stock dividend requirements." In terms of future financings, Chief Financial Officer Wayne English says, "From now on we'll depend for the most part on internal funds and public financings." Being able to raise capital is important to MCI to finance the plans for expansion in the future.
At present, MCI is doing very well financially. McGowan set a target several years ago of revenues being at $100,000 per employee. That figure has been exceeded and the new target is $200,000 per employee. In contrast, AT&T Long Lines only achieves $30,000. In addition, MCI needs only spend 1/2 the capital to earn a dollar of revenue that Bell must spend. 47

Some additional financial information is as follows: 48

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Expansion and Diversification

To reflect MCI's interest in expansion and diversification, Corporate Development was added to the functional areas of the company, bring the total to eight. This group is headed by Senior Vice President H. Brian Thompson. This area is responsible for long range planning and new business development. MCI is growing in two main directions:

1. extending the network internationally
2. widening the scope of activities. 49

Internationally, MCI has received permission to extend the Execunet service into Canada. This makes MCI the first non-AT&T company to offer voice communication internationally. 50 In purchasing WUI, Inc., MCI has taken steps to move into the international market. Recently, telex service has been set up between the U.S. and Ghana and between Zambia and Kenya. Agreements have been signed to provide service to Togo and Nigeria. Facsimile service is available in Italy and New Zealand. 51 MCI has fairly recently received permission to
expand into the voice and data markets in two European countries. These markets are much larger and faster growing.\textsuperscript{52}

There are several markets that MCI is very interested in entering. Among these are pocket paging, mobile telephones and digital termination services.

The purchase of WUI Inc. helps MCI in entering pocket paging and mobile telephone markets, in addition to helping in the international telex market. One of the three companies comprising WUI Inc. was Airsignal International, which has since been set up as a separate subsidiary of MCI called MCI Airsignal Inc. Mobile telephones have been just a status symbol in the past, but increased technology is changing this. Winston Himsworth, an analyst with Lehman Brothers Kuhn Loeb, estimates this market in Los Angeles alone to be $200 million per year.\textsuperscript{53} MCI Airsignal is working to tap this market and expand the possibilities of this market.

Pocket paging units also have great potential. These units are most often offered by the same companies who market mobile telephones, as is the case with MCI Airsignal. Increased technology in this area could allow the wearer to read a message displayed on the unit instead of just hearing or feeling a signal to call for the message. Another possibility would be combining the technologies of the two areas to create an interactive device which signals the holder, then allows the holder to call with the unit.
MCI has filed an application to offer Digital Termination Service. This would allow MCI to transmit data end-to-end in the digital mode over lines dedicated for this purpose. Though data transmission comprises only 10% of today's phone traffic, a dramatic surge in this traffic is expected in the future.54

MCI is heading toward being a telecommunications company which can offer its customers almost any service they could desire. The network is growing rapidly and the goal of being able to reach 90% of the nation's telephones by 1986 has already been stated. New markets such as pocket paging, mobile telephone and data transmission are being entered. As Brian O'Reilly writes in an article about MCI in the January 24, 1983 issue of Fortune, "It's also poised to go on doing what it has done so well during its brief life: scrutinizing the market for new opportunities, ferociously assaulting its competitors, and racing to the courtroom to redress any perceived injustices."55 This has worked well for the company in the past, and there is every indication that the strategy will continue to work well for the company in the future.
Overview

Continental Telecom is the third largest independent telephone company in the United States, and serves as a holding company for a variety of other companies in telecommunications.

The company was started in 1960 by Charles Wohlstetter, when he took control of an Alaskan telephone company he had an interest in. From this base, Wohlstetter began building a network. He analyzed 4000 independent telephone companies to see where economies of scale could be achieved through acquisitions and what prices should be paid. When a phone company Wohlstetter was interested in went on the market, Wohlstetter would fly to the company, examine the situation personally and make an offer. The company was actually incorporated under the name of Continental Telephone.56

By 1970, Continental served 1,600,000 telephones across the country. Today, Continental serves in excess of 3,000,000 telephones across the country.57 The vast majority of these telephones are in rural areas, in fact, many customers still have party lines. Continental employs 21,271 people (as of December 21, 1981) in 37 states and the Caribbean.58

The name of the company was changed to Continental Telecom in May of 1982 to reflect the company's growing interest in other areas of the telecommunications industry than telephones. Continental has systematically acquired interest in other companies, acquired other companies outright and started joint ventures with other companies to move into other
areas of the telecommunications industry.

Continental is divided into five operating groups to reflect its various markets. These groups are: telephone operations, business communications systems and supply, information services, international consulting and contracting, and network services.

The telephone operations group is the main segment of Continental, comprised of the various telephone companies. There is great potential for this group in upgrading existing equipment and services. As technology increases, the telephone is being used for far more than just voice communications.

The business communications systems and supply group is comprised of Executone, Inc., ConTel Supply and Service, and ConTel Credit. Executone manufactures and markets communications systems, such as private telephone systems, intercom systems and specialized health care systems. ConTel Supply and Service provides purchasing and supply functions for the telephone operations group. The company supplies more than 3000 products to Continental companies as well as others. ConTel Credit Corporation was formed in 1980 to provide lease financing to Executone distributors, other companies in Continental, and outside companies.

The information services group consists of ConTel Information Systems, National Bancard Corporation, ConTel Data Services Corporation and Leland Mast Directory Company. These companies provide information services consulting, software products, data processing and directory publishing.
ConTel Information Systems, Inc. was created by merging Network Analysis Corporation (NAC) and International Computing Company (ICC). Headquarters of this company are in Great Neck, New York. Many analysts considered Network Analysis Corporation to be the thread that would tie Continental's many recent acquisitions together. NAC was the largest consultant for corporate telecommunications. The merger of the two companies, ConTel Information Systems, carries on the consulting work. In addition, the company creates custom software packages, markets software products, and combines all of these services for business, industry and government clients.63

National Bancard Corporation (NaBanco) was acquired in August 1981 and provides clearance of bank card/third party credit cards. NaBanco has installed point of sale equipment in retail stores that are linked to NaBanco's processor in Fort Lauderdale, Florida to provide quick authorization of accounts.64

The Ieland Mast Directory Company publishes telephone directories for Continental and other telephone companies and non-telephone suburban directories. Some 525 different directories are published.65

The International Consulting and Contracting Group directs the operations of Continental Page. Continental Page offers a range of telecommunications services in Germany, the United Kingdom, Nigeria, Sudan, North Yemen, Saudi Arabia, Egypt, Peru, Trinidad and Tobago, and the United States.66
The Network Services Group consists of American Satellite Company and Space Communications Company. American Satellite Company is jointly owned in equal part by Continental and Fairchild Industries. AmSat provides satellite transmission services to approximately 250 customers. AmSat also has a 20% interest in Western Union's Westar satellite system.

Continental and Fairchild Industries also each own 25% of Space Communications Company. The remaining 50% is owned by Western Union. Spacecom primarily provides tracking and data relay for NASA.

Strategy

Continental follows a basically three-pronged strategy:

1. Strengthen the telephone operations.
2. Diversify into promising new areas.
3. Test areas for future consideration.

In order to accomplish all three of these, Continental has used a series of strategically planned acquisitions. These acquisitions, several of which were made as joint ventures, should provide the pieces Continental needs to become a more fully equipped telecommunications company, able to offer nearly any telecommunications service.

Executone, Inc., for example, provides private branch exchanges (PBX's) and other internal communications equipment to customers. This can be used to build a base in intelligent terminals and digital telephone switches. Voice communication is no longer the only use for the telephone. The average residential telephone is in use only one half hour per day,
but when other uses are added to the telephone, this usage will increase dramatically. 72

AmSat, the joint venture with Fairchild Industries in satellite transmission is another example of strategic acquisition. Joint ventures are useful for Continental to grow in the areas it has chosen, given its size and limited capital resources. AmSat, though limited in the types of services it can offer, has a strong base of customers already. Continental is counting on this to compete with Satellite Business Systems, developed by IBM in a joint venture with Aetna Life and Casualty and Comsat General Corporation, which can offer more services. 73 Through AmSat, there is also the 20% interest in Westar.

Satellite communication is important to Continental, not only for its own sake but for the telephone operations as well. Says President James V. Napier, "Now that the FCC has permitted us to bypass the national telephone switched network, we'll be able to develop a better and cheaper way to deliver long-distance telephone service with AmSat. We can set up a satellite receiving station for approximately 10% less than it costs AT&T to lay comparable ground lines." 74

Though some industry analysts say Continental cannot possibly survive long term because of its size, Continental intends to use its size to its advantage. Continental looks for and develops "niches" in the market that large companies such as AT&T are not interested in pursuing. Chairman Charles Wohlstetter says, "I'd not go nose to nose with AT&T, and I
don't have to because in these niches we can be very dominant and profitable." Also, the smaller company with dynamic management can move much more quickly than a giant like AT&T. The telecommunications industry is, by nature of the current technological changes, a very fast paced industry which may demand quick decision-making and action.

For Continental's strategies to be successful, some analysts say there must be an explosion of demand in the areas of Continental's choosing. Where this would, of course, help Continental, most people in the industry and examining the industry seem to believe Continental has successfully prepared for the future. Says Winston E. Himsworth, analyst at Lehman Brothers Kuhn Loeb, "If you compare Continental to others in the industry, giving weight to the fact that they are small and coming from nothing, they have taken the most aggressive stance in moving forward into new areas in communications technology."  

Rosemary Avellis, communications analyst with Merrill Lynch, Pierce, Fenner & Smith, says, "Continental is positioning itself rather well for the next decade." Her sentiments are echoed in the Wall Street Transcript, which recommends Continental above the other companies in the telecommunications industry.

Management

Chairman of the Board, Chief Executive Officer and founder of Continental is Charles Wohlstetter. Wohlstetter began his
career as a runner on Wall Street after the crash of 1929. Wohlstetter has always been aggressive in making acquisitions and has not been afraid to act quickly. Wohlstetter has acted as Chairman since 1960.\textsuperscript{79} To bring the company into non-regulated markets, Wohlstetter brought in strong top management.

From 1978 - 1981, Robert La Blanc served as Vice-Chairman. La Blanc was a former engineer and former marketing manager at AT&T. He had an understanding of the competitive markets in telecommunications and was to primarily help implement long range plans. La Blanc resigned in 1981 but was to continue to serve as a consultant to Continental.\textsuperscript{80}

James V. Napier has been President of Continental since 1976 and has been with the company since 1966. Napier also serves as Chief Operating Officer and is recognized as "knowing the industry."\textsuperscript{81}

Continental has chosen to make the transition from a regulated monopoly to a marketing-oriented, competitive firm. This cannot be successful without talented, aggressive management. Top management at Continental seems to be this type of management. Continental's subsidiaries may be another matter. Continental provides centralized direction, assistance and economies of scale where possible; but the actual management of the companies is decentralized. The commitment to marketing efforts is a necessary one in an industry such as telecommunications. AmSat may have problems in this area, as may Executone after the retirement of Chairman Brody. This may be a crucial
area in the future.  

Production and Research & Development

Continental, as a holding company, has no manufacturing capability of its own. However, manufacturing firms can be acquired, and Continental has been acquiring companies as they fit strategically with the company's long range plans. Continental's subsidiaries do have a tremendous amount of technical expertise. These companies have much experience in the areas of software systems, installing telephone systems in lesser developed countries, and satellite communications. Continental was the first United States phone company with a local call metering service. This system was then sold to AT&T for $37 million. The technical knowledge is there in the research and development areas, should Continental and its companies decide to go into production.

Marketing

The companies in Continental not only market themselves individually, integrated proposals are also made. Understanding of the individual company's needs as well as the cooperation to develop package systems are necessary.

AmSat has a marketing strategy of being established in the marketplace and being economical. Satellite Business Systems, which is newer in the marketplace, is far more technically advanced. AmSat is hoping for customer loyalty, but has definite selling points of its own. AmSat is a point-to-point system, which it believes will be suitable for the majority of customers. In addition, Wohlstetter says, "What SBS plans to offer is beyond the pocketbook of 95% of
Continental's telephone companies operate largely in rural communities, and there is tremendous potential for growth in these areas. This is because rural areas are becoming more urbanized, and Continental's equipment has great potential to be upgraded. For example, only six percent of the subscribers have push button phones, and only one percent of the subscribers use custom calling features. Continental is making an effort to upgrade these facilities.

ConTel Supply and Service has opened retail phone outlets to encourage customers to purchase their equipment from them. Modular connections are used so the customer may install his phone himself. This adds convenience for the customer and cuts costs for the company. Continental now sells 15 times as many systems as its competitors in Continental-served areas.

Executone markets its products through a network of over 200 sales and service centers throughout the country. Only six of these centers are company operated. In addition, five zone offices support the independent and company-operated centers with service assistance and staff training.

As for integrated approaches, companies work together to sell data communications networks. ConTel Information Systems can design the system, AmSat can provide satellite capabilities, and Executone can provide terminal products. Continental is trying to bring out the "entrepreneurial
spirit" in the managers of these companies to aid in these endeavors.88

Finance

The past several years have seen Continental in an improving financial situation. Acquisitions are bringing in more and more profits. Executone has grown from $54 million in 1979 to $114 million in 1981.89 Revenues from AmSat grew by $6 million to $25 million in 1981.90 By 1984, Wohlstetter expects that one quarter of Continental's net income will come from non-regulated markets.

Through expansion, the company is entering more facets of the telecommunications industry. Wohlstetter has set a goal of reaching 5% of the data communications market by 1985. This would mean bringing in revenues of $7.5 billion.91

Joint ventures have eased the financial burden of entering new markets considerably. As vice president of corporate development Robert Ratonyi says, "We can't afford to invest hundreds of millions of dollars with a breakeven point five to seven years down the road."92 In 1981, Continental was only 70% capital self-sufficient. This should increase to 90% by 1984 and 100% by 1987.93

Some general financial information on Continental is as follows:94

<table>
<thead>
<tr>
<th></th>
<th>1981</th>
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</tr>
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<tbody>
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<td>Revenues</td>
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<td>$1,294,244</td>
</tr>
<tr>
<td>Net Income</td>
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<td>$116,122</td>
</tr>
<tr>
<td>Earnings per Common Share</td>
<td>$2.34</td>
<td>$2.09</td>
</tr>
</tbody>
</table>

$000 except per share
Expansion and Diversification

As John Thackray says in an article in Management Today, "Continental has taken on new roles in communications and has the means for considerable and profitable diversification away from conventional telephones--ventures that include PBX (private branch exchange), satellite-based communications and network consulting and design." 95

In addition to these areas, Continental is in the planning stages to provide electronic newspaper, information retrieval and bank-by-phone services to residential customers via the telephone. There are also discussions going on with utility companies about providing telephone-based energy management services. 96

Continental's acquisitions are assisting in making these services possible. Omni Communications Corporation is a cable television company based in Norwalk, Connecticut, which is one-third owned by Continental. Some analysts are wondering how Omni fits into the overall pattern of Continental's acquisitions. The company responds that Omni will assist Continental in developing a home entertainment center for residential customers. Eventually, cable systems may provide electronic mail services, bypassing the telephone system. 97

NaBanco provides third party credit card clearance. With the increasing use of credit and third party cards, this is a very necessary function. Growth is expected in this area.

AmSat is already providing satellite-based communications
services to over 250 corporate customers. Satellite-based communication can be more versatile and less expensive than traditional telephone communication. Satellite capabilities will be essential in providing communications networks for customers, which is Continental's goal.

Network Analysis Corporation, the largest consultant company in telecommunications, was purchased to integrate the various components of Continental and to keep those components current with networking needs. This company was merged with International Computing Company to form ConTel Information Systems. ConTel Information Systems carries on the work of Network Analysis and provides more hardware and software expertise.

Then Vice-Chairman LaBlanc said in 1981, "The new ventures are all complementary and lead in the direction that by the end of 1984, we will have a communications business that can handle any kind of high-technology communications problem."

Acquisition has been the main avenue used to enter these new ventures, and it has been achieved fairly quickly and easily. Expansion of these ventures may be a slower process. The data communications market is a recent development, which no one is sure how to best serve. Continental is hoping to form a strong network of companies which will be able to serve the needs of its customers, when those needs are determined more concretely. By not expanding too fast in any one direction right now, the base can be built from which
to eventually expand. LaBlanc said, "We may miss 10% of the market, but in the long run, we may do better than the competition." 100

V. Orville Wright, President of MCI Communications, summarizes Continental's actions this way, "Continental has done more than GTE, United Telecommunications (the two larger independent telephone companies), and the other big independent holding companies in telecommunications to position itself for competition." 101
Communications Satellite Corporation
Overview

Communications Satellite Corporation (Comsat) has a rare combination of factors which put it in good position to experience tremendous growth and profit during the coming years. First, the telecommunications industry (particularly satellite communications) is experiencing a growth period, as demand for services is increasing while costs are decreasing. Second, where Comsat is an independent corporation receiving no government subsidies, it does have strong ties to the government, which may lend political clout. Third, the company has a monopoly on U.S. international satellite communications.

During the Kennedy administration, emphasis was being placed on staying technologically ahead of the Soviet Union, particularly in the "space" areas. Communications satellites seemed to be a likely area to enhance. The Communications Satellite Act of 1962 provided that a corporation would be set up to have a monopoly on satellite communications between the U.S. and foreign countries. The company was to form an international communications satellite organization and to serve as the official U.S. representative to it. The organization set up was called the International Telecommunications Satellite Organization (Intelsat). In February 1982, a sister organization, the International Maritime Satellite Organization (Inmarsat), was formed with Comsat as the U.S. representative.
The Communications Satellite Corporation's 1981 Annual Report defines its main business as "providing communications services through the facilities of various international, domestic and maritime satellite systems." The company does this through three main structural areas: jurisdictional satellite systems services, non-jurisdictional satellite systems and services, and communications products and information systems.

Jurisdictional satellite systems services are grouped under the World Systems Division. This division handles representation in Intelsat and Inmarsat, Intelsat technical services, and Comsat laboratories. These activities are grouped in the same division to reflect their separation from competitive ventures. President Joseph V. Charyk says, "The move will permit FCC regulation of these services in one defined segment of the corporation and provide for clear identification of rate base elements and relevant costs."

The organization that was set up is known as the International Telecommunications Satellite Organization (Intelsat) and now has 107 member nations. Comsat has a 24.1% investment share in Intelsat, but this percentage is adjusted annually to reflect the U.S. portion of usage of the system.

Intelsat operates the satellites and leases services to its member nations. The organization grew by 1979 to have $523 million in assets and $195 million in revenues. Demand has increased and technical costs have dropped, so charges
to members have also dropped. These costs are predicted to drop throughout the 1980's, and will experience terrific reduction, if the space shuttles are able to routinely launch communications satellites.

In February 1982, the International Maritime Satellite Organization (Inmarsat), began providing satellite communications services to ships and offshore rigs. Comsat holds a 23% interest in Inmarsat, which is patterned after Intelsat. Over 1000 ships and rigs are served.107 Said vice president Robert Schwartz, "Once you set up a global system, you have a system of global policy. International communication is a business and it takes two to tango."108

Technical and laboratory assistance are provided to Intelsat's members through Comsat. In addition, earth station maintenance and supply services are provided. Comsat also operates a highly sophisticated satellite launch control center.109

Comsat Laboratories work to enhance satellite communication capability, flexibility and efficiency. This segment of the company is most heavily involved in research and development.

Non-jurisdictional activities consist primarily of the COMSTAR and MARISAT programs. Comsat General Corporation, the principal subsidiary of Communications Satellite Corporation, launched the COMSTAR satellites to meet AT&T's requirements for domestic satellite capability. Four satellites were launched: the first and second in 1976, the third in 1978, and the fourth in 1981. Since the launching of the fourth satellite, the two oldest satellites are
operated with reduced power, almost as a single unit. The leases on those two satellites expire this year, with the leases on the other two satellites to expire in 1985 and 1988.110

MARISAT is a joint venture among Comsat and three other U.S. companies. Satellite communications services are provided to military and civilian customers. There are three MARISAT satellites. Inmarsat is leasing satellite capacity from MARISAT. Inmarsat is taking over this type of communication as MARISAT is phasing out. As the equipment used is compatible, there have been no major problems so far.111

Communications Products and Information Services is a developmental segment of the company. Comsat General subsidiaries Comsat General Telesystems, Amplica, Inc., and Comsat General Integrated Systems, as well as Communications Satellite’s subsidiary Environmental Research and Technology are the main components of this segment. Equipment manufacturing, computer-aided design, manufacturing and test (CAD/CAM/CAT) products and environmental information services are performed by these companies. Another main component of this business segment is Satellite Television Corporation. This company will provide a direct broadcasting satellite system of pay television programs directly to subscribers’ homes, if the FCC approves the plan.

Comsat is also involved in a partnership with IBM and
Aetna Life and Casualty called Satellite Business Systems (SBS). This company provides satellite communications capabilities to business customers, allowing them to send vast amounts of paperwork, etc. among their facilities very quickly. Satellite Business Systems is a very sophisticated system which may be beyond the grasp of many businesses. Other companies, such as Boeing, are able to make good use of this system with all its capabilities.\textsuperscript{112}

\textbf{Strategy}

Comsat's involvement in international cartels (Intelsat and now Inmarsat) became so profitable, the FCC finally began regulating those profits. Still, the vast majority of Comsat's revenues come from these activities. In order to continue growing and increasing profitability, Comsat has developed a long-term strategy to enter new markets in communications which appear to be promising. Some of these areas have been in domestic satellite communications. Comsat began with the monopoly on international U.S. satellite communications.

Current emphasis is being placed on areas such as Satellite Business Systems, Satellite Television Corporation and the CAD/CAM/CAT efforts of Comsat General Integrated Systems. The capital necessary to develop these areas is being taken from the profits derived from the jurisdictional activities of Intelsat and Inmarsat. Satellite Business Systems, for example, is not expected to reach its break-even point until
at least 1984. 113 Comsat is in an excellent position to develop these interests as it does have the capital necessary to encourage these businesses.

Management

Comsat has a rather unique Board of Directors in that 3 of the 15 members are presidential appointees that are approved by the Senate. The remaining Directors are from other companies, with the exceptions of Chairman John D. Harper and President Joseph V. Charyk. 114

The management of Comsat is not widely discussed in the current literature. The direction seems to be to emphasize technological progress while at the same time being as financially conservative as possible. 115 Now that much of the competitive business is grouped under Comsat General Corporation, the management of these functions has become more decentralized. The separation of jurisdictional and non-jurisdictional activities is emphasized here again in this decentralization.

Production and Research & Development

Comsat Laboratories is the research and development arm of the World Systems Division. Research is constantly being done to expand and enrich satellite communications. A development which was introduced into the Intelsat system in 1982 is called time-division-multiple-access. This is a digital transmission technique which efficiently enlarges satellite capacity. 116
Comsat General Corporation houses most of the other research and manufacturing efforts through its subsidiaries. Telecommunications is expanding and developing very rapidly right now, so staying current with the latest developments is extremely important. Comsat General has acquired several companies in the last few years which greatly expand the manufacturing capabilities.

Comsat General Telesystems manufactures products used in digital communications. The main portion of its 1981 revenues came from the sale of echo cancellers, which are used to remove the echo that often results in telephone communication over long distances.117

Amplica, Inc. was purchased by Comsat General in 1982 to enhance its capability of producing solid-state amplifiers and related products. These are used in defense systems as well as commercial satellite equipment. This company is also in good position to provide products to be used in the direct broadcast satellite systems being proposed by the Satellite Television Corporation.118

Comsat General Integrated Systems works to fill the demand for CAD/CAM/CAT services used in sophisticated electronics equipment. Comsat General Integrated Systems has segmented its market at the digital and microwave areas of the electronics industry.119 In order to increase the capacity of Comsat General Integrated Systems, Applied Silicon Technology was acquired for its custom-integrated circuit designing capabilities.120
Marketing

As the activities of Comsat are so diversified, so are the marketing strategies of the various segments of the company. Comsat has a monopoly on U.S.-international satellite communications, so a great marketing effort is not needed in this area. Increasing technology is significantly reducing the cost of providing communications services to the point that Comsat estimates volume of Intelsat system services will quadruple by 1990.\(^{121}\)

Inmarsat activities are also part of Comsat's monopoly on US-international satellite communications. MARISAT laid the groundwork in establishing a customer base for maritime satellite communications. Comsat was chosen as the representative to Inmarsat, because of the pioneering work in MARISAT.

Satellite Television Corporation's direct broadcasting satellite system will be in a competitive environment and thus requires more of a marketing effort. The programs will be broadcast at a single location and transmitted via satellite to 2 1/2 feet diameter dish antennas located on subscribers' rooftops. DBS will be a pay system, so commercial advertising is not necessary. Interest groups scattered throughout the country can be catered to, by specializing programming. According to George H. Billings, vice president of corporate development at Satellite Television Corporation, the marketing strategy planned is to sell the programs in similar fashion to the three national networks.\(^{122}\)
Satellite Business Systems has targeted the large business as its prime market. The capabilities offered are extensive but also expensive. Larger companies may be in a better position to decide the communications capabilities offered justify the capital outlay. Many companies are apparently not receptive to the benefits of such increased communications ability, as there was a problem with this marketing strategy. SBS is now also looking for smaller businesses to share the earth stations required for the system.

Financial

Comsat has two divisions of common stock. At the company's inception, 50% of the shares were offered to the public as Series I, and 50% were offered to AT&T and other common carriers as Series II. As of December 31, 1982, there were 7,992,121 Series I shares outstanding and only 7,893 Series II shares outstanding. This is because many companies sold the shares for the profits or to obtain clearance to enter the domestic satellite market.

Until October 1, 1982, there was a 3% stock ownership per investor limit on Series I shares. Congress had given Comsat the power to set the limit anywhere between 1% and 10%. In order to stimulate trading between Comsat's large investors, the limit was raised to 5%.

Comsat was in such a comfortable financial position from its Intelsat activities in the late '70's that the FCC stepped in. Comsat was ordered to take on debt which would equal 45%
of its $200 million FCC rate base by the end of 1983.\footnote{126}

Some selected financial data is:

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<thead>
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<th>1980</th>
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<td>4.79</td>
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<tr>
<td>Share</td>
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The net income figure is before adjustments in the accounting methods used were made to reflect investment tax credits. The revised figure for 1981 is $40,038,000. Earnings per share after the revision amount to $5.00.\footnote{127}

Expansion and Diversification

As previously stated, Comsat is making a commitment to future growth through expanding existing operations and diversifying into new complementary areas. As President Charyk said in a presentation to the Boston Security Analysts Society in 1980:

The SBS satellite system, direct satellite to home broadcasting, manufacturing and environmental services are some of the new activities on which we have been focusing our efforts as we seek in a broad sense to apply our technology in ways that increasingly will benefit the consumer and enhance our long-term profitability.\footnote{128}

Satellite Business Systems currently offers "advanced integrated voice, data and image communications services. Other plans are for a long distance telephone network aimed primarily at large volume voice users. A digital termination service is in the planning stages.\footnote{129}

Satellite Television Corporation sees great promise
for its direct broadcast satellite system. This system can provide service to subscribers living in rural and remote areas which cannot be served by cable. In addition, by targeting smaller audiences for individual programs, STC hopes to attract specialized subscribers.

Comsat has greatly enhanced its manufacturing capabilities with the acquisition of such companies as Amplica, Inc. and Applied Silicon Technology. Developing and manufacturing state of the art technology is crucial to the success of Comsat.

Environmental Research and Technology was acquired to develop the area of satellite communication in environmental data transmission. For example, work has been contracted with the U.S. Geological Survey to provide information services on water resources. Comsat expects environmental research and data transmission to be a growing area in the future.

Comsat intends to continue providing the lucrative Intelsat and Inmarsat services, while developing new areas of growth for the future. If the successes of the past are any indication, Comsat has a bright future ahead.
Conclusion
The three companies studied present different views of the telecommunications industry. They are diverse and yet have many similarities.

All three of the companies are less than 25 years old, which reflects the relative youth of the industry itself. All three also started in a specific direction—MCI with private line point-to-point business communication, Continental with rural telephone communications, and Comsat with U.S.-international satellite communications—and all three have diversified into other areas. Each company stressed the importance of diversification to satisfy customers' complete telecommunications needs in the future. No one is sure at this point exactly what these needs will be, but each company is preparing as much as possible.

There are definite ideological differences among the three companies. MCI and Continental are relatively small and present aggressive stances toward the future. Both of these companies have conquered formidable obstacles in the past—limited resources because of size, FCC regulations, etc.—and both are enthusiastically preparing to continue this in the future. Comsat began under more positive circumstances and takes a more conservative view of business, at least apparently. Using this philosophy, Comsat has matured into a successful diversified company.

Each company employs the strategy which it believes is most suited to its unique circumstances, and each company appears to be doing quite well with its strategy.


4. Ibid, p. 34.


9. Ibid.

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17. Ibid.


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22 Ibid.


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32 Ibid, p. 5.

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46 MCI Communications, p. 44.
50 O'Reilly, p. 72.
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69 CTC Annual Report, p. 23.
70 Ibid, p. 4.
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72 CTC Annual Report, p. 7.
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76 Ibid, p. 63.
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81 CT: Taking On, p. 52.
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83 Thackray, p. 65.
84 CT: Taking On, p. 56.
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87 Ibid, p. 12.
88 CT Taking on, p. 56.
89 CTC Annual Report, p. 11.
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91 CT: Taking On, p. 56.
92CT: Taking On, p. 51.
93Ibid.
95Thackray, p. 63.
96CT: Taking, p. 56.
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101Ibid, p. 50.
102Allen Sloan, "It's Mighty Cold Out There," Forbes, April 14, 1980, p. 44.
106Sloan, p. 45.
108Sloan, p. 48.
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112Sloan, p. 47.
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117 Ibid, p. 10.
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120 Ibid.
121 Comsat Annual Report, p. 7.
122 Sloan, p. 46.
123 Comsat Annual Report, p. 32.
125 "Comsat's Board Boosts Share Ownership Limit to 5% From 3% of Stock," Wall Street Journal, August 24, 1982, p. 3.
126 Sloan, p. 45.
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