Project A-672-003

ATLANTA DATA PROCESSING, 1969

Prepared for
The Atlanta Chamber of Commerce

by
James A. Donovan

Industrial Development Division
Engineering Experiment Station
GEORGIA INSTITUTE OF TECHNOLOGY
June 1969

ATLANTA DATA PROCESSING, 1969

Purpose

This study describes the extent and capabilities of the electronic data processing industry in the Atlanta Metropolitan Area in 1969.

Foreword

Atlanta is one of the fastest growing major cities in the United States and the capital city of a state which ranks 12th in percentage growth among the 50 states. Just as Atlanta is the center of transport and industry in the Southeast, it is the heart of the region's electronic data processing (EDP) services. One of the nation's most dynamic growth industries, EDP also is the new tool of modern industry in the Southland.

This brochure presents information of interest to manufacturers, users of EDP, and people interested in the potentials of Atlanta. The information is based upon surveys and research by the Atlanta Chamber of Commerce and the Industrial Development Division of the Engineering Experiment Station of the Georgia Institute of Technology during 1969.

Summary of Atlanta Capabilities

More than 200 Atlanta firms have data processing installations and hundreds more are customers of over 50 data processing, programming and service centers in the area.

Eighteen major computer and related hardware manufacturing companies have regional, branch or local offices in Atlanta.

There are over 53 data processing equipment and supply companies supporting the industry in Atlanta.

Three of Atlanta's institutions of higher learning -- Georgia Tech, Emory University and Georgia State College -- have computer centers.

An estimated 9,500 people in metropolitan Atlanta are employed in the data processing field by manufacturers, service centers and firms with their own installations.

Survey of Atlanta EDP Firms

The Atlanta Chamber of Commerce is frequently queried by manufacturing firms, distributors, and other users of electronic data processing who are considering expanding their operations or are studying a possible move to the Atlanta area and who desire information about the nature, extent and capabilities of the data processing industry in Atlanta. The Industrial Research Section of the Chamber of Commerce, in conjunction with the Industrial Development Division, Engineering Experiment Station, Georgia Institute of Technology, undertook a survey and study of the Atlanta data processing industry early in 1969. The purpose was to provide an informative brochure dealing with the full spectrum of EDP in Atlanta that would be of value and interest to both local business and others interested in the possibilities of the Atlanta area. This monograph is one of a series published periodically by the Chamber of Commerce to document Atlanta's economic resources and potentials as part of a continuing effort to keep Atlanta moving forward in the forefront of the New Industrial Southland.

The survey of the EDP businesses covered three general groupings: companies which manufacture and sell computers, peripheral equipment, and related maintenance and services; data processing service centers, software, programming and time-sharing companies; and major local companies which own or rent and use computers essentially for the management of their own operations.

Over 300 companies in the Atlanta Metropolitan Area were identified as being qualified in one or more of the above categories. They were contacted by direct-mail questionnaire, phone interview, or visit and interview. A lengthy and comprehensive questionnaire was the basis of each interview, but each company was allowed to provide only that information they considered unclassified and appropriate. The objective was to arrive at composite data rather than reveal any specifics related to individual companies. So, although detailed data on hardware, functions and personnel have been provided in considerable amount by the respondent companies listed in the Directory at the end of this brochure, only totals, percentages and overall magnitudes are used herein.

Undoubtedly, a number of companies were unintentionally overlooked by the survey. Computer firms are increasing so rapidly in the area that in a six-month period over 20 new firms appeared in the area that were not listed in

the September 1968 telephone directory. There were also a number of companies, including a few major EDP firms or large-scale users of computers, who did not desire to reveal any detailed information about their operations. In spite of these exceptions, it is believed that this report is based upon sufficient scale and scope of information to be both valid and, hopefully, of some value. But it is recognized that the dynamic growth of the EDP industry nationwide, which also is reflected in Atlanta, will make this information obsolete by the time it is published; thus the title, "Atlanta Data Processing, 1969." An updated study will be planned for the future.

Our representatives called upon over 27 principal computer sales companies and major data processing service and software firms in the Atlanta area. Without exception, these firms were interested, cooperative and courteous. Their help and the cooperation of all respondents has been sincerely appreciated.

EDP, the Growth Industry

The computer industry is one of the fastest growing in the United States, averaging 30 percent a year. It also is one of the nation's healthiest, most open-ended, competitive industries, as well as one of the most innovative and progressive. By just about every standard, the electronic data processing business is revealed as the nation's most dynamic industry. Increasing competition, as still more companies enter the industry, has brought with it enormous improvements in machine capacity and speed, sharp reductions in cost, and rapid growth in applications. All help to demonstrate the extraordinary vitality of an industry which is attracting scores of entrepreneurs.

Manufacturing and Sales. Between 1960 and 1968, computer installations nationwide increased twelvefold, from 5,000 to over 60,000. During that period, some 40 or more newcomers to the industry have invested hundreds of millions of dollars and are competing successfully in the manufacture of computers. There are more than twice as many manufacturers today as there were in 1960.

In the short 16-year history of the computer industry, U. S. manufacturers -- which dominate the free world markets -- have placed just over 66,000 computers. Forty percent, or about 26,000, were placed during 1967-68, and at the beginning of 1969 there were unfilled orders for nearly 20,000 computers -- or enough to increase the total by 30 percent.

Various studies suggest there will be over 100,000 computers in place by 1970 and perhaps 170,000 by 1975. The computer industry is still in its infancy and its dollar revenues are expected to grow at a 15-20 percent annual rate over the next five years.

Certain characteristics of the computer industry are important:

1. The majority of computers installed are leased rather than purchased.
2. There is generally a lag between the ordering of a computer and its delivery.
3. Computers are time-saving, labor-saving, money-saving tools.
4. Although computers were once considered office machines, the description is no longer valid. Computers have affected almost every aspect of life, from space exploration and military applications to traffic control, weather forecasting, medicine and education.
5. The U. S. Government continues to be the industry's largest customer by a wide margin.

The computer has already passed through three technological revolutions -- vacuum tubes, transistors and integrated circuitry. It has been made steadily cheaper to use, steadily easier to use, and many times more versatile in the ways it can be used. There have been great reductions in computing costs, and these economies have been passed on to users. U. S. computing power has been doubling every year since 1955. The computer will soon become as commonplace as the family car and simple arithmetic -- and just as influential in the average American's everyday life.

Computer Applications. Businesses in every major industry, and institutions in education, government and medicine, are now demanding that their line administrative and managerial personnel, as well as their top executives, understand and participate in the organization's computer operation.

EDP is a tool for management, for making decisions in a more confident, better informed, intelligent manner. Computers make it possible for businesses to do all kinds of things never possible or practical before.

Computers are already solving complex problems in technology -- measuring, guiding and controlling many kinds of production systems. Looking ahead,

advanced systems will soon be applied to a whole range of challenges from community problems to stellar exploration.

Now that individual computer applications have proved so successful, whole integrated systems are growing around the computer. Computers are being linked to communication devices, to instrumentation, to control equipment and to advanced equipment.

In terms of technical achievement, the computer revolution in United States business is outrunning expectations. In terms of economic payoff on new applications, however, it is rapidly losing momentum. The keys to success in the use of computers can be expressed only in very general terms. Even for a particular industry, it is seldom possible to pinpoint inventory management, or financial planning, or sales performance measurement as the application holding most immediate promise of profit in 1969 and beyond.

Service. With 60,000 computer installations nationwide, manufacturers have made possible the formation of hundreds of new enterprises in computer support services, programming and leasing. Growth in computer manufacture has led to a large array of separate data processing services, or "software" houses. "Software" comprises all things that augment the use of the computer. It is the human contribution to computing. It represents people, things and ideas, problem analysis, system design and implementation, operation research, computer programming and education in areas that enable fuller use of the machine. This may all be called "programming."

The computer industry is highly competitive. Services are provided by a large number of data processing service organizations, some of which are owned or controlled by substantial industrial companies, including major computer manufacturers and computer leasing companies which also offer data processing services to both commercial and scientific customers.

There are also many small computer software companies whose sole purpose is to provide the brains which make the computers work. They do not manufacture anything. The number of these software companies is increasing daily and their record has displayed dramatic and accelerated growth.

The computer business is becoming software-oriented, and the growth of the software business reflects this claim. It is the fastest growing part of the computer world, which makes it one of the fastest growing of all industries.

The national software market currently is about $5 billion and is growing at about 25 percent annually. Computer manufacturers' software efforts account for 80 to 90 percent of this market, while the independent software houses compete for a $500 million to $1 billion market.

The horizon is boundless for the software and EDP service companies. Every new technological breakthrough uncovers another layer of potential customers. Spending on software is already as heavy as that on hardware and is expected to increase more rapidly.

Computer Sales and Service in Atlanta

Market reports show that the industrial growth in the South is greater than in other parts of the United States, which would also indicate a greater growth in computer usage. The computer industry in Atlanta has attracted large companies, small companies, established and new companies -- and the numbers grow at a rapid rate. It is an industry that favors not size but innovation.

Computer manufacturing and sales companies and electronic data processing centers and programming companies have increased their number in the Atlanta area rapidly in recent years. Of the companies in these categories responding to the survey, 59 percent have been established in Atlanta since January 1966. Only four of such reporting companies were in Atlanta prior to 1950.

The EDP companies surveyed in Atlanta were requested to define the nature of their market or their clients in terms of the approximate percentage of their total annual business. Although some companies did not respond to this question, there were sufficient returns, indicated in parentheses (), to provide a general picture of the nature of the local market for EDP sales and services. The percentages shown are the average for the companies defining their markets and products or services:

Market	Hardware	Software	Repair & Maintenance	Supply
Business	(21) 55.9%	(30) 65.0%	(5) 38.2%	(8) 44.5%
Scientific	(12) 17.9%	(15) 17.2%	(4) 5.7%	(5) 18.2%
Educational	(13) 17.8%	(12) 11.8%	(5) 9.6%	(9) 12.4%
Government Agencies	(15) 21.6%	(11) 23.7%	(4) 8.5%	(7) 21.6%

Manufacturers Represented in Atlanta. A number of today's major computer manufacturers did not enter the market until after the arrival of second-generation transistorized equipment in the 1950's. They were able to do this because they brought innovation, improved performance and lower prices.

The manufacture of computers has attracted three kinds of companies: those with demonstrated competence in electronics, those who foresee computers as a natural extension of their lines of business machines, and inventors who undertake to form new companies to exploit their new ideas.

Major electronic manufacturers with offices in the Atlanta area are Radio Corporation of America, General Electric, and Honeywell. Other industrial leaders crossing over into the computer industry as they gain experience and competence in computer technology are such major aerospace giants as Lockheed.

Major business machine manufacturers represented in Atlanta are International Business Machines, Burroughs, National Cash Register, and Sperry Rand. Among the new computer companies in the area are Scientific Data Systems and Control Data Corporation. Computer manufacturing is highly competitive, but these producers are preparing for a 20 percent per year growth for the industry and are making plans for expansion.

Some 85 firms in the Atlanta area who responded to the survey indicated that they were primarily in the business of manufacturing or selling computer hardware and supplies, or were mainly in some aspect of EDP service, programming or software operations.

Only four local companies stated that they actually manufactured computers or peripheral equipment in Atlanta. This accounted for an average of 56.2 percent of their total business efforts in Atlanta. However, at least 18 major companies have offices or branches in Atlanta devoted largely to the sales of computers and peripheral hardware and they devote over an average of 53 percent of their efforts to such sales. Most of these companies also provide computer accessories, supplies and parts, accounting for an average of 39 percent of their remaining company efforts. Two-thirds of these equipment or hardware companies also provide maintenance and repair services for EDP hardware.

Atlanta as an EDP Service Center. There has been a proliferation of computer software houses in Atlanta. Many are branch offices of national concerns and many are Atlanta-based with nationwide regional outlets.

In Atlanta there are more than 50 independent service bureaus.

Some 14 firms offer time-sharing on central computers.

There are many software houses, ranging from two-man shops to relatively large organizations.

The 85 Atlanta computer sales companies, service bureaus and software houses surveyed reported that they utilize EDP equipment largely for accounting and business management purposes. An average of about 86 percent of these companies' EDP services are for the management of their clients' businesses.

An average of 40 percent of the services provided by 10 companies are directed at EDP support for industrial control, and 14 companies report an average of 31 percent of their efforts are for education and instruction. Seven EDP companies devote an average of 17 percent of their time to the support of government agencies and offices in the area, and seven firms are also utilizing their computers for scientific research 14.3 percent of the time.

Programming is performed by over 25 computer firms or management service organizations in Atlanta, constituting an average of 20 percent of their work.

Eighteen Atlanta firms utilize data processing equipment for research purposes, with an average of almost 15 percent of their total effort being so used.

Twenty-eight companies have indicated that they devote an average of over 16 percent of their work to systems design, and 21 companies stated that an average of 22 percent of their effort is in the field of software design.

Companies in Atlanta which are essentially EDP service centers or which perform service center operations in addition to selling hardware report the following service type functions, listed in order of relative amount of business:

1. Programming
2. Accounting reports
3. Systems analysis
4. Customer services
5. Statistical analysis
6. Inventory
7. Computer time rentals
8. Punched card applications
9. Sales analysis
10. Sales forecasting
11. Tape to card conversions
12. Engineering computation
13. Scientific programming
14. Scientific research
15. Market potential predicting
16. Miscellaneous other functions

Computer language capabilities in Atlanta EDP service centers cover the spectrum of electronic data communications, with FORTRAN, COBOL and Basic the

most widely used. In order of usage, RPG, PL/1, ALGOL and the other languages are also utilized.

Time-Sharing in Atlanta. The shared use of computer power represents a natural outgrowth of the mushrooming data processing industry. Although its operational ancestry dates back to the early 1960's, the first commercially oriented time-shared system was not offered until 1965.

In its basic form, a time-sharing system allocates small portions of a central processor's time to various remotely located users who desire to run their own programs. The customer generally is charged for the use of the computer, as well as for memory storage and the amount of time connected to the processor. The burgeoning commercial applications for time-sharing services are expected to move the industry away from its current academic and scientific orientation.

Only 14 area EDP companies reported that they provided or operated a computer time-sharing system, while 23 companies stated that they did not. These same companies reported that at least 20 have time available on their computers to share with other users. It is deduced that approximately 65 percent of the area service center computers have time available. Those companies reporting indicate that as much as an average of 257 computer hours per week are available to additional customers.

Atlanta Industries Using Computers

Many concerns in Atlanta perform their own data processing. The development of higher-speed, smaller and less costly equipment and other technological changes which cannot now be anticipated undoubtedly will increase such usage.

Of the 155 major companies in the Atlanta Metropolitan Area which responded to the survey, 123 of them reported that they possessed and employed computers in the management of their businesses.

Computers used by these companies cover the range of first, second and third generation equipment. The IBM 360 series computers are the most frequently used by private companies, and at least 53 percent of all the computers in use are various IBM models. All common systems of operation are reported, with magnetic tape and punch cards most used on a ratio of about two to one as compared to random access systems.

The average number of computers per company is 1.6. Twenty-nine companies reported they had two to four computers. Sears, Roebuck and Company operates six computers of one manufacturer.

Uses. The Atlanta business concerns using computers reported that their primary employment is for business data processing and accounting. This amounts to 80 percent of the computer usage for 119 companies. Computers are employed 11.8 percent of the time for miscellaneous business management functions by 59 reporting companies. Thirty-five companies employ their computers an average of 12.3 percent of the time for marketing planning and analysis. Production control utilizes an average of 30.1 percent of the data processing equipment time of 26 companies. Computers are employed an average of 8.7 percent of the time for financial planning by 22 companies, and 19 companies report they use an average of 22.3 percent of their data processing capability for scientific research. Twelve companies use their computers an average of 31.1 percent for educational and training purposes.

Thirty-three percent of the companies indicated that they also made their computers available for use by their customers or other clients. An average of 15.3 percent of the capacity represented by these companies' computers is being used by customers or clients for their own purposes. The companies which permit their data processing facilities to be utilized by other business firms or clients average about 36 percent of this usage by industrial concerns, 11 percent by government agencies, 11 percent by scientific organizations, 22 percent by educational institutions, and 30 percent by miscellaneous organizations, such as local service bureaus.

Of the companies operating their own computers for business management purposes, 31 percent utilize only one shift of computer operators and support personnel per day, 41 percent operate with two shifts, and 28 percent have three shifts operating their computers during each 24-hour period.

Following are typical examples of computer usage by Atlanta-based companies:

A large area retail house operates eight computer units and employs 64 EDP support personnel with a requirement for additional people.

A major public utility company operates eight computer units, with 90 percent of the use for its business and accounting operations. The firm employs 250 people in its EDP operations.

The Southern Railway System has 11 computers in use and employs over 400 data processing people. Fifty percent of their computer use is for operations control and the remaining capacity is devoted to marketing and business management.

A local bank operates five computers with 55 people.

An electrical products company has a force of 195 people operating five computers for business and accounting purposes.

Another bank in Atlanta utilizes a total of five computers in four different models for its accounting operations. The bank employs 258 people for this function.

The Georgia Power Company has six computers for its accounting operations and employs 117 EDP people.

Another large bank operates four computers for its business and accounting and provides EDP support to other banks and businesses. The bank employs 100 data processing support personnel.

A major airline headquartered in Atlanta has six computers in four different makes and models which it uses for business accounting and for marketing. It employs over 200 people for these functions.

Emory University has two computers which are used largely for scientific research.

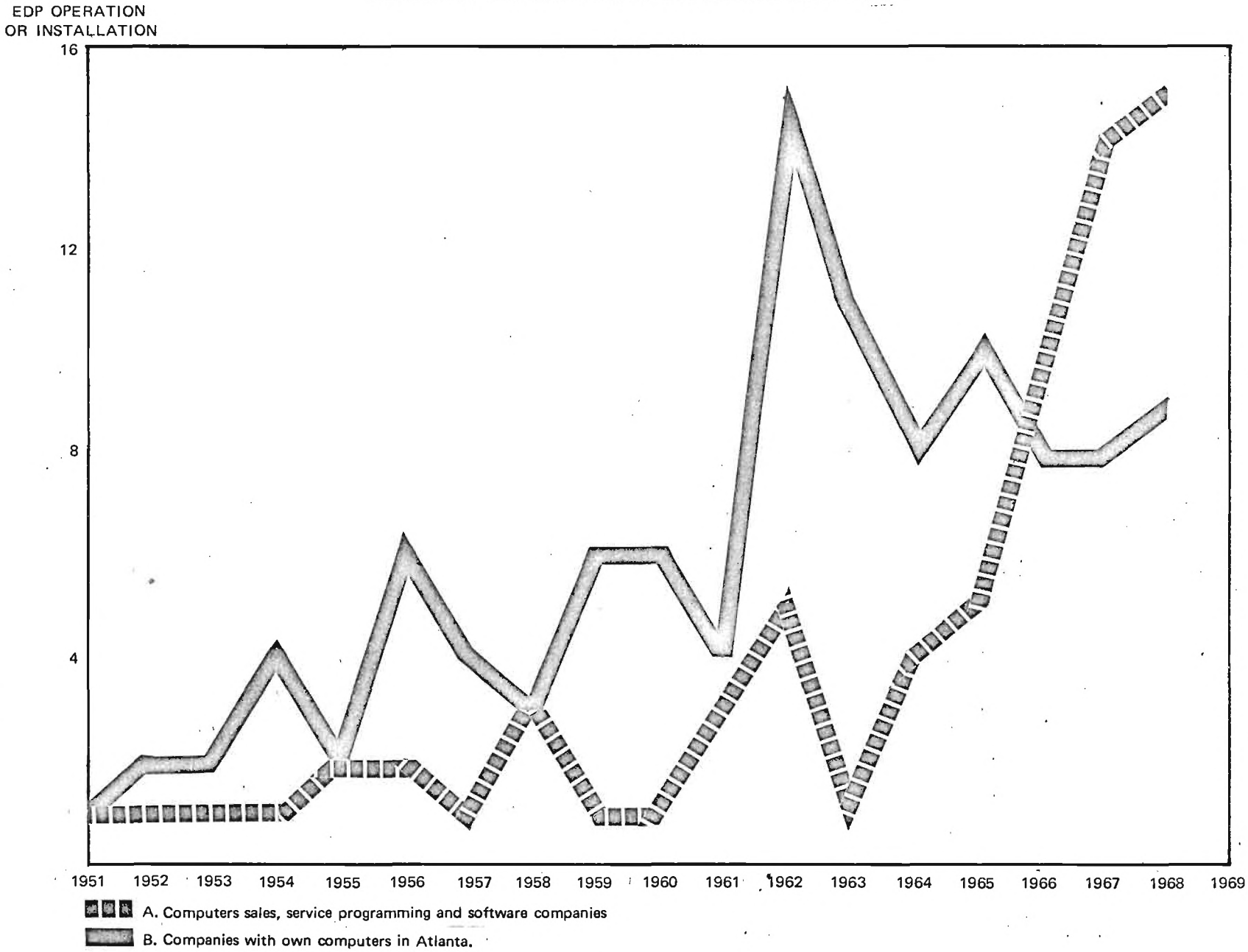
The Georgia Institute of Technology has two computers; they are for educational and instructional purposes as well as scientific research and administrative accounting. These units are available for outside clients and have been so employed about 20 percent of their time.

The U. S. Treasury Department, Internal Revenue Service, employs over 750 EDP operators for its accounting operations.

A major aircraft company has 17 computers in 11 different models which it employs largely for scientific research, with secondary uses being production control and business accounting. It employs over 550 EDP personnel and makes its computers available to outside clients in industry, scientific organizations and educational institutions about one percent of the time.

Growth of Atlanta Usage. The Atlanta area companies utilizing their own computers in the management of their business reported the year they first

GROWTH OF EDP OPERATIONS IN ATLANTA 1951 – 1969



established their EDP operations. Of those reporting, 12 percent stated they had data processing installations prior to 1950, 23 percent initiated EDP operations between 1950 and 1960, and 65 percent began EDP during the period 1960 to 1969. The year 1962 was a big year for computers in Atlanta, with at least 15 major companies establishing EDP operations during that time.

The surveyed companies also were asked if they bought electronic data processing services and time outside of their own facility. Responses were from companies who had no EDP equipment as well as those who did have company-operated computers. Of the 143 companies reporting, only 26 stated that they did buy time on outside EDP equipment. The average time purchased by these firms amounted to 13.2 hours per month. Thirty-seven of these companies indicated that they purchased additional services, such as programming.

An indication of the future growth plans and potentials for the data processing industry in Atlanta is the report by 81 percent, or 116 business firms of 143 responding, that they planned either to expand their existing hardware facilities or to initiate EDP capabilities within the next three-year period (1969-1972).

Data Processing Depends upon People

The future competitive position of companies in the computer services industry will be dependent, among other things, upon each company's ability to attract, develop and retain competent management and technical personnel in the face of industry-wide competition for such persons. One of the most serious limitations on the rapid growth in the nationwide use of computers in business is the shortage of qualified people to operate the machines, prepare data, and analyze business problems so they can be stored by computers. In this relatively new and rapidly expanding field, workers tend to be young and experienced people are rare. Personnel required for computer operation are programmers, systems analysts, keypunch personnel, machine operators, and EDP managers.

If computers are to become a common tool in our society, the training of system engineers, programming managers, and a wide range of advanced scientists must increase at a rapid pace. Massive as it looks and rapidly as it is growing, the investment in computer hardware is far from an adequate measure of business's stake in the computer. For every dollar spent on equipment, the typical company spent close to $2.00 on people and supplies.

Atlanta EDP Employment. The computer sales and electronic data processing and service centers in Atlanta reported data processing support personnel situations generally typical of the nation at large:

Eighty-five of these companies employ approximately 453 people classified essentially as programmers. Of these, 33 companies, or 37 percent, use their programmers primarily for client support or have programmers available to their customers. There is a shortage of programmers in about 15 percent of the reporting EDP firms, and the turnover in programmer personnel each year averages 27.1 percent.

These companies employ over 331 keypunch/verifier operators, and 12 of the reporting firms make their operators available for customer support. Only six companies reported a shortage in keypunch operators. There is an average 15.4 percent annual turnover of personnel in this category.

Over 126 computer operators are employed by the Atlanta EDP companies. Twelve companies make their operators available to their customers and only six firms report a shortage of computer operators, yet they also state that there is an average 22.6 percent turnover of computer operators in their companies each year.

EDP companies in the area employ over 50 operations research analysts, and 13 companies make these analysts available to customers. Only six companies reported a shortage of research analysts. Several companies stated that they have an average annual turnover of 11.7 percent of their analysts.

Systems analysts in Atlanta area EDP firms total over 250. Twenty-nine companies make their systems analysts available to customers, and only 13 companies report a shortage of this skill. There is an average annual turnover of 20.9 percent of the systems analysts employed by these companies.

Computer equipment and related hardware maintenance and repair personnel are employed mainly by the manufacturing and sales firms in the area which also service their equipment. Over 237 men are employed to maintain hardware for these companies. The companies do not report a serious shortage of maintenance personnel and indicate that there is only an average 6.8 percent annual turnover among computer repairmen.

About 25 percent of the data processing companies in Atlanta reported they provided "general" EDP services and another 25 percent stated they provide

other miscellaneous services, such as problem solving, time-sharing, management consulting, data collection, and on-line/real-time operations.

Over 13 EDP firms also train EDP support personnel and devote an average of 20 percent of their efforts to this purpose.

All told, the computer companies, service centers and software houses in greater Atlanta employ over 9,500 data processing support personnel, and their numbers and needs are growing daily.

Training. Many of these firms train their own personnel for computers, peripheral equipment and related operations and claim to prefer it that way. There are, however, a number of local schools which provide courses in the varied EDP support skills. Several of the local technical schools work with service centers where on-the-job training and experience is provided to students for six-week periods as a part of their instruction. In general, EDP firms are reserved in their opinions about the success of area training schools and feel there is room for improvement in the equipment and courses at the private schools.

Atlanta training schools offer advanced courses and seminars in computer sales training, optical character recognition systems, computer and programming concepts, and applications for business executives and data processing management.

Conclusion

In the complex business of running a company, control of cost is a major consideration. Managers seek new ways to save funds. Data communications let the computer system put information quickly where it will do the most good -- at the fingertips, in front of the eyes or to the ear of the decision maker. The integration of computer and communications technologies has improved system response times so that the computer can now perform many different jobs, get more work done, and do it all faster.

The advent of the electronic computer has had a profound effect on almost every aspect of our lives -- and the value of its use as a tool for better business management cannot be denied. It is in the interest of everyone involved in business management to become familiar with EDP techniques and to learn in what areas they can be applied.

Business leaders in Atlanta are aware of the potentials of the computer, and the electronic data processing industry in Atlanta is moving rapidly forward as the computer service center for the New South.

DIRECTORY

The following Atlanta Metropolitan Area companies participated in the Chamber of Commerce EDP survey.

Advanced Computer Techniques
All Purpose Service Bureau
Allstate Insurance Company
Ampex Corporation
American Oil Company
American Security Insurance Company
American Telephone & Telegraph Company
Anaconda Aluminum Company
Applied Systems Corporation
Associated Grocers Co-Op Incorporated
Athaua Corporation
Atlanta and West Point Railroad, Georgia Railroad
Atlanta Area Technical School
Atlanta Army Depot
Atlanta Athletic Club
Atlanta Baking Company
Atlanta Braves, Inc.
Atlanta Business Forms, Inc.
Atlanta Coca-Cola Bottling Company
Atlanta Data Processing Service, Inc.
Atlanta Federal Savings & Loan Association
Atlanta Gas Light Company
Atlanta Newspapers, Inc.
Atlanta Public Schools
Atlanta Transit System
Atlantic Steel Company
Autolite-Ford Division Ford Motor Company
Automatic Retailers of America-B & I Division
Avon Products, Inc.
Bell & Howell Company
Ben Christian
Bowles & Tillinghast, Inc.
Bowles, Andrews & Towne
Buckeye Ribbon & Carbon Manufacturing Company
Burlington Management Services Company
Burroughs

Caelus Memories, Inc.
California Computer Products Inc.
Call A Computer, Division Pillsbury Occidental Company
Centralized Automated Processing Service, CAPS, INC.
Citizens & Southern National Bank
City of Atlanta
Coastal States Life Insurance Company
Coats & Clark Sales Corporation
Colonial Baking Company of Atlanta
Colonial Pipeline Company
Colonial Stores, Inc.
Compu Search, Division Management Recruiters of Atlanta
Computer Applications Inc.
Computer Center of Atlanta
Computer Controls Corp.
Computer Credit Systems, Inc.
Computer Listings
Computer Processing Inc.
Computer Research & Technology Inc.
Computer Sciences Corp.
Computer Services Corp.
Computer Supplies Inc.
Computer Systems Analysts Inc.
Computer Research & Technology Inc.
Computer Usage Development Corp.
Computrol Systems
Computrol Systems Division of Squires Sanders Inc.
Computron Inc.
Control Data Corp.
Cotton Producers Association
Cotton States Mutual Insurance Co.
Courts & Company
Cox Broadcasting Corporation
Crawford & Company
Crawford W. Long Hospital
Curtis 1000

D. P. A. Inc.

Data Business Forms Inc.

Datafax Corp.

Data Processing Bureau Inc.

Data Processing Center, VA Regional Office

Data Processing, Cobb County

Data Processing Services, Inc.

Data Supplies, Inc.

Davison-Paxon Company

DeKalb Area Technical School

DeKalb County, Board of Education

DeKalb County, Data Center

DeKalb General Hospital

Delta Air Lines, Inc.

Del-Mar Division, U.S. Plywood-Champion Papers, Inc.

Decatur Federal Savings & Loan Association

Defense Contracts Administration Services Region, Atlanta

Dixie Bearings, Inc.

E. C. P. I. (Atlanta Computer Education, Inc.)

Eastman Kodak Company

Electronic Data Systems

Electronic Design & Development Company

Electronic Tabulating Service, Inc.

Emory University

E. T. Barwick Industries, Inc.

Fedder Data Centers

Federal Aviation Administration

Federal Reserve Bank of Atlanta

First National Bank of Atlanta

Foote & Davies

Foundation Life Insurance Company

Friden Division, The Singer Company

Fulton Cotton Mills

Fulton County

Fulton Federal Savings & Loan Association

Fulton National Bank

GT & E Data Services Corp.

General Electric, Atlanta Information Processing Center

G. E. Credit Corp.

General Kinetics

General Hospital Computer Group

General Motors

General Motors Acceptance Corp.

General Services Administration

General Software, Inc.

Genuine Parts Company

Georgia Baptist Hospital

Georgia Casualty & Surety Company

Georgia Department of Agriculture

Georgia Department of Family & Children Services

Georgia Department of Labor

Georgia Department of Public Health

Georgia Highway Express

Georgia Hospital Computer Group

Georgia Institute of Technology

Georgia International Life

Georgia Life & Health Insurance Company

Georgia Revenue Department

Georgia State College

Globe Ticket Company, Inc.

Goodyear Tire & Rubber Company

Grady Memorial Hospital

Gulf Oil Company

Hackett Corp.

Hartford Insurance Group

Holder Construction Company

Honeywell E. D. P.

Insco Systems Corp.

Internal Revenue Service

I-T-E Imperial Corp.

International Automotive Company

International Business Machines

International Harvester Company
Irvindale Dairies, Inc.
Jackson/Atlantic Inc.
J. A. Jones Construction Company
J. A. Schaeffer Association, Inc.
J. C. Penny
J. M. Tull Ind., Inc.
Kraft Foods
Kroger Company
Lease Computer, Inc.
Liberty Mutual Insurance Company
Life Insurance Company of Georgia
Lockheed-Georgia Company
Lovable Company
Machine Brokers International Corp.
MAI Equipment Corp.
Management Control Methods, Inc.
Management Services, Inc.
Marriott Motor Hotel
McBee Systems
Mead Packaging (Div. of Mead Corp.)
Memorex Corp.
Mirobb Systems Inc.
Mohawk Data Sciences Corp.
MSA Computing Company
National Bank of Georgia
National Blank Book Company, Inc.
National Cash Register Company
National Data Corporation
National Service Industries, Inc.
North American Acceptance Corp.
Optical Scanning Corp.
Oxford Building Services, Inc.
Oxford Chemicals
Oxford Industries
Patterson & Dewar Eng. Inc.

Technical Programming Associates, Inc.

The Warren Company, Inc.

Teledata Corp.

Tennessee Corporation

Terminal Transport Company, Inc.

TLW Computer Industries, Inc.

Trust Company of Georgia

United Parcel Service

Univac Division of Sperry Rand

U. S. Penitentiary

USS Agri Chemical Company

Volt Technical Corp.

Westab, Inc.-Montag Division

Western Electric Company, Inc.

Western Union Telegraph Company, Inc.

Whittier Mills Company

Wright Line Division of Barry Wright Corp.