

Management Adviser

Volume 8 | Number 2

Article 1

3-1971

People, Events, Techniques

American Institute of Certified Public Accountants

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Recommended Citation

American Institute of Certified Public Accountants (1971) "People, Events, Techniques," *Management Adviser*. Vol. 8: No. 2, Article 1.

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people, events, techniques

Management Services Title Changed to Management Adviser to Reflect Growing Role of MAS in Institute, Expanding Scope of Readers

With this issue, which, incidentally, marks the beginning of its eighth year of publication, *Management Services* has changed its name to *Management Adviser*.

This change of title is in keeping with the practice of CPA firms, many of which now call their former management services departments management advisory services departments. It is also in keeping with the new terminology in use at the American Institute of CPAs, where the former management services activities were recently organized into the new division of management advisory services.

These changes in terminology and nomenclature reflect both a tangible and intangible change in

the stature of the management advisory services function in the world of accounting and business. Seven years ago management services was very much the junior of the traditional accounting services: auditing, taxes, and management services. Today, a recent survey by the AICPA has shown that the emphasis is changing rapidly: Of 800 students surveyed in accounting and business schools, half of the respondents expected to spend three years or less in auditing whereas 43 per cent expected to spend six years or more in management services and 33 per cent in taxes. So, in spite of the fact that the students still felt the greatest job security was to be expected in auditing, their clear preference

among the three traditional accounting fields as a lifetime career was management services—or, to denote the wider scope which this field now embraces, management advisory services.

Those are the tangible changes. Among the intangibles are a change in attitude and knowledge. The first issue of the magazine carried among its articles "A Reader's Guide to the Electronic Data Processor," which spelled out such concepts as "random access," "batch processing," "real time," and "binary notation." Another, while frankly labeled an orientation article, discussed the "Psychology of Consulting."

The magazine—and its readers—have come a long way since then.

Its field of coverage has widened. It has chronicled the steady growth of interest and involvement by its readers in various socio-economic problems of the day. This issue carries an article outlining the role CPAs are beginning to play in the national effort to restore an ecology that today shows every symptom of decay.

The day when simple concepts were explained in detail is past—and has been for some time. And that is the reason for the new title.

Canadian Businessmen Feel MAS No Threat To Audit Independence

More than half of a group of Canadian businessmen recently surveyed believe that it is possible for chartered accountants to perform management services and still maintain their audit independence, three researchers report in the January *Canadian Chartered Accountant*.

Jerry Dermer, Martin G. Evans, and Thomas J. Pick had 89 responses to their questionnaire. "Of the total respondents, 28 per cent strongly believe that independence can be maintained, 43 per cent that it possibly can, 13 per cent that it possibly cannot, while 16 per cent believe strongly it cannot," the researchers found.

Differs from U.S. studies

"This greater than two-to-one ratio can be compared to an almost one-to-one ratio (45 per cent saying that independence can be maintained and 55 per cent that it cannot) which was obtained in a similar survey conducted in the United States," the researchers point out.

"This comparison indicates that independence is a much less controversial issue in Canada. The reason for this could be, however, that the issue has never been previously raised in Canada for a

large percent of the 'third parties,'" the report states.

The researchers say that 60 per cent of the total respondents indicated they had never before been faced with the potential incompatibility in the performance of the two functions by accountants. Having been faced with it, 60 per cent of the respondents indicated their confidence in audit independence was not affected; 26 per cent indicated a lessening of confidence; and 14 per cent remained undecided. The authors point out a similar study conducted in the United States by A.A. Schulte (see *Accounting Review*, July, 1965, pp 587-93) had comparative results of 43 per cent, 33 per cent, and 24 per cent, respectively.

The size of the accounting firm was a major factor for the respondents in determining compatibility of the two functions, the authors observed. They feel this implies specialization and separation of services within a firm provides protection for the professional image of the auditor.

Federal Reserve Gives Bank Data Processing Services Tentative OK

Implementing the new one-bank holding company act, the Federal Reserve Board has specified ten activities "so closely related to banking or managing or controlling banks" it proposes to permit such companies to hold shares in them. One of the ten activities is data processing.

The Federal Reserve Board has to date only proposed these regulations and will hold hearings on them before final adoption or rejection. After the adoption of initial regulations the board will accept proposals for additional permissible activities.

Under the proposed regulations one-bank holding companies may have an interest in a company that

engages in "providing bookkeeping or data processing services for (i) the holding company and its subsidiaries, (ii) other financial institutions or (iii) others, *Provided*, That the value of services performed by the company for such persons is not a principal portion of the total value of all such services performed."

Other activities approved

Other activities that are proposed as acceptable are acting as an investment or financial adviser; acting as fiduciary; servicing loans; operating as an industrial bank; and making loans as would be made by a mortgage, finance, or factoring company.

The regulations would also allow one-bank holding companies to engage in leasing personal property, where the initial lease provides for payment of rentals that will reimburse the lessor for the full purchase price of the property; acting as insurance agent in connection with extensions of credit by the holding company or its subsidiaries; acting as insurer for the holding company and its subsidiaries or with respect to insurance sold by the holding company or any of its subsidiaries as agent or broker; and making equity investments in community rehabilitation and development corporations engaged in providing better housing and employment opportunities for low-income and moderate-income population.

Hearings planned

The board stated that interested persons are to be given the opportunity to request a hearing on the question whether an activity specified in the proposed amendment is "so closely related to banking or managing or controlling banks as to be a proper incident thereto."

If the board's proposals for one-bank holding company activities are accepted, one result will be some clarification of the relationship of EDP to banking (see M/S, May-June '70, p. 7).

Executives, Educators Disagree on Training For Manager of Future

Business executives and educators are not in total agreement about what training entry-level managers will need in 1990, concluded a recent survey conducted by Dr. Arvind Phatak and Thomas R. Tirney, both of the management department of Temple University's School of Business Administration.

"There is a dissimilarity between the perceptions of business executives and academicians regarding the managerial skills and abilities that will be required of entry-level managers in large firms in the future," the survey team said. They polled the *Fortune* 500 companies, members of the Academy of Management, and deans of all business schools.

Multinational company foreseen

The survey respondents agreed that the 1990 company will be a multinational corporation. Managerial control of the subsidiaries abroad will be in the hands of the host country. The 1990 company will be geared toward a balance between service and production, they felt.

For entry into lower-level management in 1990 the business executives believe a college degree will be a necessity. For entry into middle management they believe a graduate degree or other specialized formal education will be a minimum requirement.

Educators, on the other hand, believe that entry-level management of the future will need more education than an undergraduate degree. A general education plus expertise in one area will be needed, the educators predict.

All surveyed agree that businessmen will be able to continue their education in several ways: attending company or noncompany seminars, attending a formal educa-

tional institute, and through reading current literature in their field. The median cost for the businessman's formal education will be \$24,000. The student and Government will pay an equal share of this cost and private business and foundations will also contribute.

The Temple team found the emphasis will be on a full-time educational program with a predominantly male enrollment. The average age of the student will be 23. The program of instruction will take the form of case methods and on-the-job training with businessmen participating as part-time instructors.

When asked which groups will pressure business into solving environmental problems, both the business executives and the acad-

emicians agreed that the Government will exert the strongest pressure. The businessmen then felt the second most important group would be the community itself, followed by community groups and nonprofit organizations. The educators felt the community groups would press for more environmental solutions than the company itself would. Fourth in strength, they agreed with the businessmen, would be the nonprofit organizations.

Both academicians and business executives agreed that there will be a decrease in the demand for unskilled employees and an increase in the numbers of skilled technicians and staff experts that will be needed, according to the researchers.

Dartmouth Establishes Joint Library Center For Schools of Business, Engineering

The increasing interdependence of engineers and businessmen has fostered the creation of a "bridge" academic center, with classrooms and a new library, Dartmouth College President John G. Kemeny has announced. The Murdough Center library will service both the graduate schools of business and engineering at Dartmouth.

"In light of the needs of our time," President Kemeny said, "it seemed to us that one of the most useful services an institution of higher learning might render would be to facilitate the cross-fertilization of ideas and information among future managers and engineers within an atmosphere of the liberal arts."

John W. Hennessey, Jr., dean of Dartmouth's Amos Tuck School of Business Administration, described the new Murdough Center library as "the only university library specifically combining management and engineering technology collections in one totality."

The Tuck School was the first

graduate school of business administration established in this country, in 1900.

David Ragone, dean of the Thayer School of Engineering, said it is important for engineers to have a broad understanding of both economic factors and human needs in their approaches to the solutions of engineering problems. The Tuck and Thayer schools collaborate in a program leading to joint graduate degrees.

The major contributors to the new interdisciplinary center are Mr. and Mrs. Thomas G. Murdough. Mr. Murdough recently retired as president and vice chairman of the board of the American Hospital Supply Corporation, Evanston, Illinois. Major financial donors for the building include Price Waterhouse & Co., Arthur Andersen & Co., Bell Telephone Laboratories, and International Business Machines Corp.

The Murdough Center will contain the joint library of more than 90,000 volumes, three specially de-

signed 75-seat classrooms, a 358-seat teaching auditorium, a computation room, conference and seminar rooms, faculty offices, and study alcoves for graduate students and faculty.

Included in the center's computation room will be terminals linking it to Dartmouth's Kiewit Computation Center, high-speed printers and other advanced input-output devices, graphic printers, and optical scanning and cathode ray tube equipment.

The special classrooms to be housed in the Murdough Center are designed in the arena mode and backed up by an array of audio-visual and computing devices.

Tuck has an enrollment of approximately 230 candidates for the degree of master of business administration. Thayer has 75 candidates for advanced engineering degrees and offers an engineering major to approximately 70 Dartmouth undergraduate students annually.

Corporations Warned To Be on the Alert For Possible Conflicts

Corporations must seek out areas of potential conflict with the public rather than wait to be radically confronted with the problems, GE Vice President Virgil B. Day writes in a recent issue of *Financial Executive*.

"Society is demanding practical action on a host of fronts, and any institution that fails to come up with some movement, constructive or otherwise, will be crushed in the momentum of events," he says.

He recommends that companies work closely with concerned, sincere activists but take care not to cater to radical extremists. Corporations can demonstrate their public spirit by improving the quality of life within spheres which are

generally recognized as relevant to their own business functions, he said.

"The world is changing, but it is not such a drastic upheaval that we can prudently discard all that we have learned about running a successful business," Mr. Day said. "The job of the corporation is still to earn a profit . . . a proposition referred to as the sanctity of the southeast corner of the profit-and-loss statement."

U. S. Computer Sales Abroad Rose in 1970, Offset Domestic Drop

International sales have helped the U.S. computer industry achieve a 17 per cent growth in total revenue in 1970 despite a drop in domestic sales, the International Data Corporation, a computer industry research firm, reports.

While shipments of general purpose computers in the United States during 1970 dropped \$400 million, American manufacturers shipped \$2.9 billion in computers to customers outside this country, IDC finds.

Dedicated-application computers, including minicomputers and process control systems, had between a 30 and 35 per cent increase in shipments over 1969, IDC says, as contrasted with figures for the overall computer market. Domestic shipments rose 15 to 20 per cent but international sales were up 40 to 45 per cent. IDC predicts strong growth in this field in 1971 due to expanded applications of this class of computer in communications and industrial control areas.

Because of the 1970 budget pinch, independent peripheral manufacturers prospered while the independent software industry suffered, IDC reports. The research firm explains that the peripheral manufacturers prospered because their basic business is one of sav-

ing users money, renting their tape, disk drives, and terminals for 15 to 20 per cent less than computer manufacturers. However, the software companies did not do well because in the economic slowdown many users deferred expenditures for proprietary software packages and contract programming, IDC notes.

Higher budgets forecast

C. Oakley Mertz, director of IDC's corporate planning service, says that his firm's recent studies indicate that in 1971 EDP budgets at user sites in the United States will increase, especially in companies with over 5,000 employees. Smaller firms will increase their EDP expenditure level by mid-1971, Mr. Mertz reports. He forecasts computer equipment manufacturers will experience a 15 to 17 per cent growth in revenues during 1971 and firms offering computer software and services will have a 23 to 25 per cent increase in revenues.

Univac also optimistic

Robert E. McDonald, president of the Univac Division of the Sperry Rand Corporation, also believes the future is promising in the computer industry. "While the growth rate in the industry has slipped from the high rate of 15 to 20 per cent that it has enjoyed over the past few years, there still exists a broad demand for computers from all areas of business and industry," he said. "The data processing industry was one of the last to be affected by the business dip and many observers believe it will be among the first to recover as the economy accelerates."

Arthur E. Peltosalo, vice president and general manager, GE Information Services Division, Bethesda, Md., said that his company realized significant sales growth and development of its commercial time sharing service business during 1970.

Computer Utilization Rate Improved by Use Of New Time Analyzer

The Hartford Insurance Group has reported improved computer utilization thanks to a software program which pinpoints stretches of idle EDP time. The MVT Dynamic Analyzer was developed by Value Computing, Inc., Cherry Hill, New Jersey.

Hartford installed the Analyzer in two IBM 360/65s and one 360/50 computer. Within a week management was able to identify periods when excess computer resources were available. After receiving this information the insurance firm improved its computers' multiprogramming capabilities by creating a better distribution of job mix. This resulted in improved computer scheduling, better job mix, and better testing turnaround for the programmers.

William L. Harrison, director of data processing for Hartford, said, "The Analyzer has freed a lot of computer time and cleared up many complaints. Our operators now have a good picture of each shift's output. It certainly beats the intuitive evaluation we depended on previously."

Maps time usage

The Analyzer is essentially an inquiry-status system which prints out a black and white map of computer time usage. The blacker the report the greater the computer's productivity. White spaces mean idle memory, and long blank stretches signify inefficiency and waste.

According to Value Computing, its Analyzer lets operators increase multiprogramming usage and minimize core fragmentation of IBM 360/50s and 65s. It also provides an exact audit of which jobs have been processed in what kind of job mix and how effectively computer resources have been used.

The MVT Dynamic Analyzer is priced at \$1,500 for installation on the first central processing unit and \$500 for installation on each additional CPU.

Inventiveness Called Key to U. S. Success In World Marketing

The only way for the United States to remain competitive in world markets is by offering inventive solutions to product problems, Paul Hanson, Jr., president of Rolamite, Inc., San Francisco, said recently.

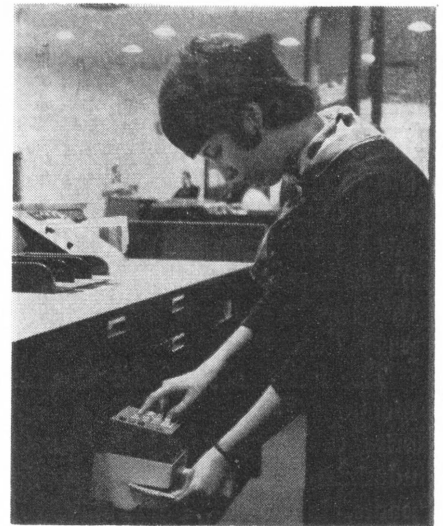
"With the price of raw materials basically standard throughout the world and the labor differentials in the U.S. markets and in foreign markets, the one area where industry can make significant gains is in the upgrading of mechanical and electromechanical products," Mr. Hanson said. "In fact, this remains the one area that can save many American products from becoming noncompetitive in world markets."

The development of the transistor in the electronics industry was one example of a creative product Mr. Hanson cited. "This same sort of approach must now take place in the mechanical and electromechanical industries for them to remain viable and competitive," he said.

Overspecialization dangerous

"In general, internal R&D departments specialize in a single area, and thus lose an objective perspective on their work. The blinders of expertise are often as harmful as too little knowledge," he continued.

Mr. Hanson's firm finds applications for the rolamite, a roller-band device with no sliding friction, and develops new devices for industry.



United Air Lines is using this computer system developed by TRW Data Systems to check for stolen and counterfeit airline tickets at Los Angeles International Airport. As a passenger checks in, his ticket number is entered into a touchtone terminal; the computer instantly indicates its validity by flashing a red or green light.

Communication Course Is Offered to Bridge Gap Between Functions

To help marketing, technical, managerial, and other professional personnel "speak the same language", the General Learning Corporation, New York, has introduced a new in-house program called the Communications Workshop.

The seven-session client-conducted program utilizes a variety of training materials. It includes group and individual exercises, case studies, programmed workbooks, prerecorded audio tapes, role playing, and optional video exercises.

The entire program requires approximately 16 hours of class time, conducted on either a once-a-week or twice-a-week basis, and 12 hours of outside preparation. Six to eight people can participate in each group, and it is recommended that the participants come from different company functions. According to General Learning, the

person administering the program needs no special training because the materials are self-explanatory.

Skills are practiced in a general business environment, and then as the program progresses the workshop operates in a totally job-related environment. Particular emphasis is placed on communications that regularly occur between company departments.

The initial cost of the Communications Workshop program, covering the materials required for the administrator and eight participants, is \$2,000. For subsequent groups the same administrator's materials are used but new participant materials cost \$50 per person.

Florida Firm Building National Data Network For Small Businesses

A national computer network is being constructed by Western Union Computer Utilities, Inc., Fort Lauderdale, Florida, a firm not related to the telegraph and communications utility. Forty-seven computer utilities offices have already been established and another 108 are scheduled to open within the next three years. Eventually 300 local centers will comprise the nationwide network.

Western Union Computer Utilities has over 2,000 computer programs that are tailored to the needs of various types of enterprises. The company now has on file customized program packages for construction firms, insurance agents, tire dealers, truckers, newspapers, fuel oil dealers, dry cleaners, medical groups, electrical suppliers, and others.

More power planned

Once WUCU establishes all the necessary 300 centers, more powerful data-handling units will be spotted around the country in key cities. Ultimately, the firm hopes

to provide data collection, communication, and reporting throughout the network.

"We have the technology to do it now," Boris Ellison, WUCU's founder, says. "It's primarily a matter of building the network in a solid, businesslike way that will profit both the licensee and his customer."

For the present, small and medium-sized businesses are the major prospects for the Computer Utilities network. However, Mr. Ellison hopes the network will eventually service larger organizations.

Despite tight money and slow business in many areas, Mr. Ellison points out that licensed investors are adding new offices to his network. "Actually, this is a time when the services we can provide are most valuable to small and medium-sized businesses. Our licensees sell information processing at less cost than the businessman could do it himself with his own employees and equipment."

Major New York Banks Now Have Automated Transfers of Funds

Fifteen to twenty billion dollars a week of interbank transfers are now being handled by a computerized communications network, CHIPS.

Nine New York City banks are using CHIPS (Clearing House Interbank Payments System). The system is responsible for 3,000 separate transactions a day on behalf of foreign banks with a total of more than 4,000 accounts. According to John F. Lee, executive vice president of the New York Clearing House Association, CHIPS represents the first true employment of electronic money within the commercial banking system.

CHIPS has eliminated more than 15,000 checks each week that were necessary for interbank payments. The messengers who moved these

checks along the streets of the financial district are also no longer needed.

The banks participating in CHIPS are The Bank of New York, The Chase Manhattan Bank (N.A.), First National City Bank, Chemical Bank, Morgan Guaranty Trust Company of New York, Manufacturers Hanover Trust Company, Irving Trust Company, Bankers Trust Company, and Marine Midland Bank—New York.

Each participating bank has two leased telephone lines connecting the terminal computers, 42 Burroughs TC 500s in the nine banks, to the central computer, a Burroughs B3500 installed in the Clearing House building. Each bank also has an additional dial line to be used in case the leased lines should be unavailable.

How it works

The Clearing House central computer stores and forwards interbank payment messages as they are approved for release during the day by sending banks. The central computer at the end of the day correlates all the transactions, nets out the debits and credits, and prints detailed reports showing which banks owe money to other banks and which banks have money due them. The next business day a copy of summary information is delivered to the New York Federal Reserve Bank, where adjustments on the appropriate books of account are made.

"While we are dispensing with official checks, we are not dispensing with commercial payment instruments. Hard copy records created at both sending and receiving terminals, in conjunction with end-of-day computer reports, can be used to prove the accuracy of electronic transmission," NYCHA Vice President Lee said.

Mr. Lee looks forward to larger networks for payment exchanges and interconnected networks covering large geographic areas. "This will have to evolve, however, as

costs, capacity, and needs are evaluated. The point is that we have developed the system, and we have the computer equipment and programs available to make expansion, in terms of single or multiple systems, entirely feasible," he said.

Another computerized service being offered bankers is for the management of collateral loans. Called Margin Monitor, it is offered on an on line or off line basis by the Bank Computer Network Corporation, Chicago.

Margin Monitor provides description, daily pricing, and detailed analysis of a bank's security and chattel collateral for loans outstanding. For banks with lower loan value, mailed reports are substituted for direct computer connection.

The Bank Computer Network Corporation (BankCom) assures that bank file integrity is maintained in the Margin Monitor system. A three-level security code system is used, and while low-level personnel can enter information, they cannot retrieve it.

Margin Monitor daily updates prices and dividends for 8,000 securities. BankCom claims that even the off line version provides management with more timely and detailed collateral situation reports than are available by traditional in-house manual methods.

Payroll Service Offered Restaurant Industry

A computerized payroll information service designed for the restaurant industry is being offered by The John K. Paden Co., Dallas.

The service will produce 941-A and W-2 forms for the client. According to Paden, the service eliminates many of the paperwork problems created by the industry's rapid turnover in personnel.

Paden says its system can handle unlimited types of income. Regular earnings, overtime, cash or credit tips, and meals are stand-

ard parts of the system. Deductions, including salary advances, insurance, savings, or uniforms, are reported by the system. With each payroll processing an employee earnings statement will be produced giving individual year-to-date earnings and tax information.

Necessary payroll information will be available to the client within 48 hours after Paden receives the correct input information, the firm says.

EDP Service Designed For Wholesaler Use By Datafile Systems

A data processing service designed specifically for wholesalers has been developed by Datafile Systems Corporation, Blue Bell, Pennsylvania.

Datafile/500 provides invoicing and a broad range of accounts receivable, inventory, sales, and profit reports, the company says.

Keyboard/printer terminals are located at the user site and linked on line to Datafile's two 3500 Burroughs computer systems in Blue Bell. The system has immediate random access to the customer file and the inventory file to allow updating for invoicing and inquiry purposes. Datafile says its system collects and monitors the usage for each item in inventory and can automatically adjust reorder points.

Payments are entered into the system by referencing the customer, invoice, amount, and date. Datafile/500 then produces an aged (30-60-90) open item A/R trial balance and, optionally, delinquent lists by salesmen and aged open item statements. The system can point out vendor shipments which are critical or late.

Reports are produced at the terminal sites either daily or monthly. Invoices are produced immediately after an order is entered.

Costs for the Datafile/500 system are based on the services used.

New Facsimile System Claimed Within Reach Of Most Businesses

A high-speed facsimile mail network, Faxmail, has been unveiled by Facsimile Transmission Network, Inc., Santa Barbara, California. The network covers more than 200 metropolitan centers throughout the 50 states and Canada.

Faxmail transmits hard copy duplicates of written, drawn, printed, or photographed materials from city to city. The facsimile transceivers used operate over regular telephone lines and transmit a page 8½" x 11" in about six minutes.

The Faxmail service arranges for messenger pick-up and delivery to and from the sending and receiving stations. Including handling time, the entire transmission process requires a few hours.

Available to most firms

The service claims to have Faxmail stations so located that they can reach 85 per cent of the business community. New York and Los Angeles each have ten stations with additional ones planned. Other cities with multiple stations include San Francisco, Denver, Chicago, Detroit, Boston, and Toronto. The company also hopes to link the network to major European business centers.

Faxmail rates are based on how frequently the service is used. The occasional user will pay \$5 a page plus the normal long distance telephone charge and, if required, the fee for the messenger service. Clients that transmit more than five pages a month become "commercial subscribers." They pay a small monthly fee, receive a one-third discount on transmissions, and are given monthly summaries of transmissions and expenditures.

The third type of Faxmail customer is a "network affiliate." This is a company with its own internal facsimile machine; this can be used to transmit to the public Faxmail stations to reach locations not with-

in the company's own system.

Faxmail cites as some of its typical customers hospitals that need to send EKGs or other medical records quickly, businessmen who need exact graphic material, and lawyers who require legal documents.

One-Third of Top Fiscal Officers Are CPAs, Survey Shows

Today's chief financial officer is younger, is better educated, has been in his position a shorter period of time, and is receiving greater compensation than his counterpart of five years ago, the management consulting firm of Heidrick and Struggles, Chicago, concludes on the basis of a survey it recently conducted.

One out of three chief financial officers is a CPA, the report revealed.

Chief financial executives of 441 companies responded to the consulting firm's mailed questionnaire. The form had been sent to 747 organizations included in the *Fortune* compilation of leading companies.

Heidrick and Struggles reports the study revealed that the chief financial officer most often has the title of vice president—finance and reports to the president or chairman. He regards money management and financial planning as his most important activity.

Educational background

Nearly nine out of ten chief financial officers hold baccalaureates, about one-fifth hold MBAs and an equal number have been awarded second master's or law degrees. Nearly one-third possess CPA certificates, and about a quarter have attended special management programs.

The median age of the chief financial officers responding is 51. They typically have had one or

two previous employers and have been with their present employer less than 16 years. Most have been in their present position less than five years and receive cash compensation of between \$50,000 and \$75,000 (including salary, bonus, and deferred pay).

According to the consulting firm, "Respondents to the recent survey concur that the chief financial officer has become increasingly influential in the corporate hierarchy as the demand for capital has burgeoned in an era of inflation, high interest costs, and tight money. In the future, the heads of finance believe that the chief financial officer will play an even larger role in corporate senior planning and policy formulation."

The consulting firm's last Profile of a Chief Financial Officer survey was conducted in 1965.

New Tax Programs Offered for U. S., Local Returns

A program that calculates Federal, state, and some local withholding taxes has been developed by Datasonics, Inc., New York.

According to Datasonics, TAXCAL can handle all state income taxes, and taxes for four cities in Ohio: Akron, Cleveland, Cincinnati, and Toledo, as well as Kansas City, New York, Philadelphia, Pittsburgh, and St. Louis. It also computes withholdings for Maryland county income taxes; disability taxes for California, New Jersey, New York, and Rhode Island; employee unemployment taxes for Alabama, Alaska, and New Jersey; New Jersey Emergency Transportation tax; and the withholding taxes for New York residents working in Connecticut.

TAXCAL is written in COBOL and requires 2,500 to 18,000 bytes of core. It is modularized, and as tax regulations change new modules are sent out.

TAXCAL with calculations for FICA, Federal Withholding Tax, and ten state modules costs \$500. Each additional state module costs \$50. The entire package costs \$2,000. Annual maintenance costs are 15 per cent of the purchase price.

Closed-Circuit TV Computer Programing Course Launched

Computer Programing Techniques, a television course of 41 half-hour lessons, is being made available for closed-circuit office and factory use by National Instructional Television, Bloomington, Indiana.

The programing course was originally designed for the State University System of Florida. It was developed by Dr. Robert J. Wimmert, professor and chairman of the industrial systems department of the University of South Florida, Tampa. Dr. Wimmert is the instructor seen in the television series.

Computer Programing Techniques is broken up into three parts, "Basic Computer Systems," "Machine/Assembly Language," and "FORTRAN." Abridged versions of the 41-lesson course are available. The basic unit plus the machine/assembly language unit is available as a 16-lesson course, while the basic unit plus the FORTRAN unit is available as a 28-lesson course.

The television programs are used in coordination with two extensive student workbooks. In these the course material is presented as a series of partially completed class notes, to enable the student to concentrate on the televised instructor without being distracted by note taking. Each section of the workbook includes practice problems. There are also two instructor's manuals keyed to the student workbooks.

Educational institutions can obtain Computer Programming Techniques for transmission by open-circuit and 2500 MHz systems.

The programing series is being offered by National Instructional Television, Box A, Bloomington, Indiana 47401, for purchase, rent, or long-term lease.

Data Processing Growth Permanently Slowed, Auerbach Reports

Although business for the data processing industry should improve by the end of 1971 the rate and nature of its future growth will not be what it once was, Isaac L. Auerbach, president of the Auerbach Corporation, a Philadelphia consulting and publishing firm, predicted recently.

"The days of headlong growth and over-expansion have come to an end," Mr. Auerbach said. "Users are realizing that in far too many cases their computer installations have not resulted in the creation of additional profits. That realization, coupled with the caution generated by the dull economy, will cause most businessmen to move very slowly toward introducing any new computer devices into their companies unless it's clear that they can increase corporate profitability."

Competition from Japan

Mr. Auerbach predicts there will be increasingly strong competition in the EDP field. Several smaller U.S. hardware manufacturers will merge into a new industry giant, he says. Also, a significant international challenge, particularly from Japan, will be made to U.S. dominance of the computer industry.

Another significant development during the 1970s will be the establishment of a nationwide computer utility, Mr. Auerbach says.

The utility will be capable of handling interactive on line time sharing, remote batch data processing, and the interrogation of consolidated data banks.

Also computers and computer-related technology will be increasingly applied to major U.S. social problems, Mr. Auerbach notes. His own corporation has been involved in job bank and job matching programs for the past three and a half years.

"There are two big contributions computers can make to social programs. First is in the area of collecting the voluminous quantities of information that exist and then presenting that information in some distilled, usable form. . . . The second big contribution is to enable people to respond faster to emergency situations, such as fires and crimes, with the right equipment," Mr. Auerbach says.

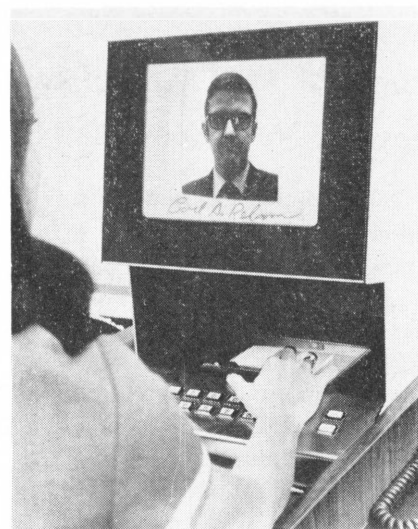
Housing and urban development, pollution, and transportation are some of the areas he mentioned that can be aided by the computer.

Auerbach Info, Inc., recently published a new report on software applications for information storage and retrieval systems. The report analyzes 37 IS&R proprietary packages now on the market.

For each package details of both hardware and software system requirements, support data, and 11 other significant characteristics are given. Some of the packages described are MARK IV, INQUIRE, CULPRIT, and QWICK QUERY.

Included in the IS&R report are an overview of the software industry and a definitional report. Guidelines for make-or-buy evaluations and criteria for evaluating software support are included.

The information storage and retrieval analysis is available as a separately bound report for \$90 or as part of a looseleaf reference service with an annual subscription rate of \$490. Sample pages and details can be obtained from Auerbach Info, Inc., Department 271, 121 North Broad Street, Philadelphia, Pennsylvania 19107.



For banks not offering credit card systems, Mosler has created this teller identification system. If someone unknown to a teller presents a check, the teller can summon a video image of the customer or his signature from central records.

New Software System Monitors Multiprogram Computer Systems

To aid in the management of computer installations performing multiprogramming a new software system, TABS, is being offered by the Datachron Corporation, New York.

TABS monitors all programs run under DOS S/360 and establishes job characteristics. It produces a DAILYLOG of all computer activity and a summary showing the distribution of time by function and by user. The system also checks daily performance against standards set up for jobs and makes an exception report.

Periodically TABS provides various analysis reports of the computer installation, including billing for time and/or facilities used by each department or customer.

Installation of TABS on the first computer costs \$3,500; for additional computers at the same location, \$1,000 each.

Hospital MIS, Ambulatory Care Being Studied in Pittsburgh; Several New Computer Systems for Medical Care Offered

Development of a management information control system to upgrade the efficiency of hospital administration and a study to examine needs and facilities in supplying ambulatory care to the poor have been funded by a grant of \$200,000 to Carnegie-Mellon University's Graduate School of Industrial Administration.

The grant was made by The Richard King Mellon Charitable Trusts. In charge of both research projects is Lester B. Lave, associate professor of economics at GSIA. The management information system created will be applied initially at Pittsburgh's Presbyterian-University Hospital.

The MIS program is aimed at slowing down the rate of increase of health care costs through accurate and detailed predictions of financial and personnel needs, use of facilities, equipment, and supplies, and by keeping a current record of the actual state of the entire hospital.

Three models being designed

The system will be composed of three models, one for forecasting admissions, another for resource allocations, and a third for cost accounting.

"Forecasting patient demands is the key to understanding and controlling the functioning of the hospital since they trigger the use of personnel and supplies," Dr. Lave explained. To form the models patients will be grouped into categories based on similar medical requirements. Then the treatment sequence for each category will be programmed into the resource model for immediate determination of needed supplies, equipment, personnel, and facilities. The cost accounting method will permit isolation of hospital situations which are out of control and will project

the complete financial status of the hospital, Dr. Lave said.

Once the management information system is working at Presbyterian-University Hospital attempts will be made to implement the system at other Pittsburgh hospitals and non-teaching hospitals elsewhere in the country.

The research on the ambulatory care of Pittsburgh's poor, accounting for about one-third of the \$200,000 grant, will include analyses of the locations of physicians' offices, patients' attitudes toward clinics, patient demands, and services provided by doctors.

Dr. Lave is a specialist in the economics of health and hospital management. He has recently gained national attention with his research on the dollar effects of air pollution.

Accounting, testing systems

One of the last cottage industries, the physician's practice, is increasingly being systematized with the aid of the computer. Systemedics, Inc., Princeton, New Jersey, is offering private physicians a system for management of accounts receivable and a standard health testing format that can cut the cost of a thorough physical examination.

The accounts receivable system begins with a fee ticket designed by Systemedics especially for each practice. The fee ticket is presented to the patient at the end of his visit listing the medical procedures that the doctor has performed for him and the charge for each. Either the patient can pay his bill immediately, or he will be asked for payment later by the computer.

Each month Systemedics sends the patient an itemized account statement printed on his doctor's stationery.

Monthly the doctor receives an alphabetical list of delinquent accounts, a summary of charges and payments for each account, and a breakdown of all his treatment activity, including the dollar amounts generated and the patient count for each activity. Standardized third-party insurance claim forms are prepared and returned to the doctor for his signature.

Systemedics will send out up to four credit letters automatically. The doctor decides how the letters should be worded and timed and can instruct the company which patients should not be dunned. The company claims a 96 per cent collection ratio.

Even computers can make errors, though, and once a member of the British peerage was accidentally dunned by the company on behalf of his American physician. Systemedics wrote a most apologetic letter to the nobleman.

Depending upon the number of patients the doctor sees the cost to process the fee cards is about 55 cents each. Since the passage of the Medicare bill in 1966 there has been a slow but steady increase in physician interest in the computerized account service, a Systemedics spokesman observed. The many forms that must be filled out and the necessary itemization of procedures are simplified by the system.

Other medical services

Systemedics also offers physicians assistance in setting up and managing a health screening laboratory and upon request will make the availability of this service known to other area physicians, industry, and consumer groups. The company will also provide self-administered patient questionnaires and the computer processing of the

results. Estimated cost for testing each patient is \$37, compared to the usual \$55 to \$100, Systemedics states.

As health testing volume increases Systemedics will assist the physician in a cost-benefit analysis to determine if and when more facilities and equipment should be added.

Richard I. Bergman, Systemedics vice president, pointed out that in handling personal information, safeguards to its access must be ironclad. Each of the questionnaires distributed by the firm contains a statement signed by both the patient and a representative of the medical office: "This medical questionnaire and related medical measurements from your examination will be processed by selected keypunch, computer and clerical personnel at the medical data processing center of Systemedics, Incorporated. Appropriate precautions have been taken to assure the confidentiality of this information. No one but your physician will be given your data without your additional written authorization."

A new service being offered by Systemedics is a health identification card. The patient's medical history and results of his standard health screening are microfilmed and attached to a wallet-size card the patient carries with him. These cards are available for approximately \$7.50.

Automated check-ups

Another company that is working to bring computers to the physical examination is Boeing Computer Services, Seattle. Boeing has developed a computer system for processing electrocardiograms by telephone and a method for conducting routine occupational physical examinations for industry.

Using the Boeing system, an electrocardiogram would be taken in the usual way, but the EKG machine is linked to a computer by telephone. The EKG readings are transmitted by phone and analyzed

by the computer in Boeing's headquarters in Philadelphia. The computer's report is then either mailed or teletyped to the place where the EKG was taken.

Boeing has another computer system that processes the information gathered in routine occupational physical examinations and either rapidly clears patients or produces exception reports which alert physicians to problem areas.

Shared service for hospitals

Not only private physicians but also an increasing number of hospitals are putting computers to work for them in financial control and patient care. The 44-member Hospital Association of Metropolitan St. Louis has recently signed a group agreement with the McDonnell Douglas Automation Company for time shared computer service.

McDonnell will contract separately with each member hospital when it selects the precise programs it wants.

Robert L. Harmon, executive vice president of the McDonnell Douglas divisional company, said the total net impact of the use of his company's financial control system services on the cost of performing a hospital's accounting and business office functions can range from a net total cost saving of 34 cents per patient day to a net total cost increase of 17 cents per patient day.

The hospital financial control system automates patient billing and accounts receivable, payroll and personnel profile, accounts payable, and financial statements. The system operates via terminals placed in hospital administrative offices that are connected by telephone lines to McDonnell's computers in Peoria, Illinois.

Gerald J. Malloy, executive vice president of the Hospital Association of Metropolitan St. Louis, said, "The data processing program fulfills a twofold objective of the hospital association: implementation of shared routine accounting applications and implementation of a full-

scale shared patient information system."

According to McDonnell Vice President Harmon, after a hospital gains experience in using the financial control system it can begin using the more sophisticated patient care system. Terminals would then be located in admission offices, nursing stations, and laboratories to allow entry and retrieval of required patient data. The patient care system includes handling of admitting and radiology and laboratory records.

Correction

Through a typographical error, the abbreviation ALC was inadvertently listed as PLC in the article "Evaluate Your Computer Installation" in the January-February issue of the magazine. *Management Adviser* regrets any inconvenience caused by listing the abbreviation for assembly language code as PLC.

We're close to a cure for leukemia.

A whole crop of kids are alive and well 5 years or more after getting a new kind of drug treatment for leukemia. And each year, the children who get leukemia have a better chance of cure than those of the year before.

The American Cancer Society plays a vital part in this exciting work. So, when our volunteer comes to your door this month, be generous. Especially if you have children. Or grandchildren.

American Cancer Society

We want to wipe out cancer in your lifetime.

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