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people, events, techniques

Time Sharing Services Already Run Risk of Glutting Market, Provider Warns; Many Now Provide Services Below Costs

Time shared computer services—only a gleam in a few visionary eyes five years ago—have arrived to such an extent that there is real danger of an oversupply of service, Patrick J. McGovern, president, International Data Corporation, told a recent meeting of the American Bankers Association Automation Conference in Chicago.

A growing overabundance of service, a weakened price structure, and too narrow an approach to market needs create a “precarious future for conventional time sharing,” he said.

He declared that recent studies by his company have indicated a growing trend toward internal

time sharing systems and a growing requirement for either specialized knowledge of specific jobs or proprietary data bases for success in the open market.

Prices steadily dropping

He said that prices for time sharing have been steadily declining and now average about \$13 per input-output terminal per hour of use.

For many of the time sharing computer services now in existence that revenue rate is actually below the cost of operating the system, he said.

While the pressure on compa-

nies offering time sharing services may be increasing, the number of potential users is expected to continue rising, according to a recent survey by The Diebold Group. The report says that 40 per cent of the nation's computer users employ remote terminal devices today; this number is expected to increase to 90 per cent of all computer users by 1972.

The Diebold report was based on a survey of 1,687 firms using computers.

There were, however, some reservations noted, the most important of which was terminal prices: more than 40 per cent of survey respondents consider a price cut of

50 per cent or more necessary before increasing their use of terminals, and more than 80 per cent consider a 30 per cent price reduction essential.

Of all the terminal users surveyed, the transportation industry showed the highest number of terminals within single organizations, primarily due to the "large number of airline reservation system terminals and railroad car accounting system terminals presently installed."

In the next three years, however, the greatest increase in number of terminals is expected to occur in educational institutions.

These findings do not necessarily conflict with the McGovern report, since airline, railroad, and educational time sharing systems would all be "in-house" affairs.

However, the report also indicates that terminals are being planned for nearly all functional applications that can be performed by computers.

Survey gives additional support

Another indication of support for the McGovern position came with the Diebold survey finding that many aerospace and electronic companies, currently the largest industrial users of commercial time sharing services, plan "to discontinue the use of outside services when their own time sharing systems become operational."

Most popular output terminal, the report says, is the cathode-ray tube display screen. Most popular input device is the alphanumeric keyboard.

Copies of the report are available from The Diebold Group, Inc., 430 Park Avenue, New York, New York 10022, Attn: Diebold Data Files.

Meanwhile, independent companies, undeterred by the dire warnings, continued to join the time sharing service complex. It's now reached the point where independent, but previously unaffiliated, companies have joined in a two-nation organization.

EDP Central, a time sharing corporation with sales offices in Portland, Oregon; Kirkland, Washington; and Boise, Idaho, has announced its association with a newly formed company, REACT Timesharing Ltd., of Vancouver, B.C., Canada. The name of the joint American-Canadian Company will be REACT Network Associates, and it has already granted exclusive marketing rights for the REACT System to the Canadian firm for Canadian clients.

REACT, a "conversational" version of IBM's PL/1 language, is the primary language of the REACT System, although a modification of the Basic language can be used.

IBM Wins One; Programmatics Suit Is Dismissed

Legally embattled IBM has one less case to worry about; Programmatics, Inc., a Los Angeles-based software company, has been refused a preliminary injunction that would have prevented IBM from distributing its sort program free to its computer users.

Of the five civil antitrust cases IBM has been currently involved in, this is the first to result in a ruling of any consequence. Other IBM legal opponents are the U.S. Department of Justice; Control Data Corporation, a manufacturer specializing in large-scale EDP machines; Data Processing Financial and General Corporation, a software manufacturer; and Applied Data Research, a software company, which has postponed its scheduled acquisition of Programmatics as a result of this injunction's denial. (For details of other cases see M/S Jan.-Feb. '69, pp. 14-15; March-Apr. '69, pp. 5-6; May-June '69, pp. 11-12.)

The Programmatics action centers around its PI SORT program for the IBM System/360 computer.

The company claims PI SORT does the same work that IBM's 450-Sort does and in half the time. About half a dozen clients now rent PI SORT for \$200 a month.

However, this year, after spending more than \$800,000 in development, IBM introduced 483-Sort free of charge to its computer users. The program has features similar to those of PI SORT. Programmatics contends that IBM introduced 483-Sort to drive the small Los Angeles company out of business.

Programmatics' net income for the year ending March 31 was \$600,000, and the company reported to the court that it was already in bad financial condition.

New York Federal Court Judge Edward C. McLean ruled, after a four-day hearing, that Programmatics had not presented sufficient evidence to support its charge, nor had it shown it would suffer irreparable damage if IBM continued to distribute its new program gratis.

Attorneys for Programmatics said they were considering an appeal from the decision.

EDP Salaries Have Risen \$2,000 Since 1968, Agency Says

Starting salaries for financial and EDP executives have risen as much as \$2,000 since last year, reports a 1969 prevailing wage survey conducted for the Robert Half Personnel Agencies, Inc., a nationwide firm with New York headquarters.

The survey included two separate but related groups: the controllers, accounting executives, and corporate and public accountants and the EDP, or computer-directed, groups. These two groups, about 1,250,000 people, constitute 25 per cent of the entire U.S. executive force, according to Robert Half, president of Robert Half Personnel.

Their all-time peak starting salaries are at their pinnacle in New

York, Los Angeles, Chicago, and San Francisco, where salaries run ten per cent above the national average.

Controllers, accountants up

Comparing salaries of 1969 to those of 1968, the survey found: In companies where annual sales range from \$5 to \$10 million, controllers now start at \$14,000 to \$20,000, compared with last year's \$11,000 to \$13,000. Companies making over \$250 million show no change for controllers; they still command \$40,000 to \$60,000. Senior internal accountants in large firms currently start at \$14,000 to \$16,000, while last year they ranged from \$12,000 to \$15,000; though minimum salaries for senior internal accountants in medium-size firms have risen from \$10,000 to \$11,000, the top of the range, \$14,000, has remained the same. New graduates starting in medium-size firms as internal accountants receive from \$8,000 to \$9,000, \$500 more than last year, but in larger firms they may get \$10,000; beginning public accountants in small-size firms draw \$6,500 to \$7,500, as opposed to last year's \$6,000 to \$7,000.

Age, sex barriers dropping

There is an increased demand for male financial executives who are in their mid-50's or 60's and for women, reports Robert Half. He attributes this to the experience and reliability of the older men and the draft-free status and good detail work of women.

Mr. Half also observed that the EDP field is now being separated from the financial and accounting function and is showing a trend to becoming a semi-autonomous unit within the corporate structure. Although job jumping has traditionally been discouraged by corporations, Mr. Half maintains that recently these moves have been tacitly encouraged, with some EDP executives changing jobs several times a year.

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Iowa Legislators Given Visual Display Units; Congress Weighs Possibility of Using EDP

Iowa legislators now can literally "watch out" for their constituents' interests; computer-linked visual display terminals provide state senators and representatives instant graphic status reports on all bills and resolutions introduced in the current session.

Many state governments have installed computers to ease the legislative load, but Iowa is one of the first to use the display terminals, rather than simple printouts from the computer.

Thirty-three IBM 2260 display units, which look like small television receivers with keyboards, are connected by telephone lines to an IBM System/360 Model 40 computer, which stores legislative information. The terminals are stationed near the House and Senate

chambers as well as in the offices of the governor, State Insurance Commission, comptroller, and departments of revenue and finance. State officials expect the system will handle about 1,000 inquiries daily.

It is estimated that approximately 1,500 bills will be introduced in the current legislative session. These will be categorized under 600 different subject headings ranging from "agriculture" to "zoo." The legislator can either request a subject directly or, if he prefers, he can call up one of these general categories for display on the screen and then electronically run through the file until he comes to the bill he wants.

Additional indexes catalog the legislative proceedings according to

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Iowa's lieutenant governor, Roger W. Jepsen (right) and house speaker, William H. Harbor, check legislative information on new terminal installed in Iowa legislature for quick reference by state legislators.

sponsoring legislator, sponsoring committee, or under such headings as "Senate Concurrent Resolutions" or "House-Senate Companion Bills." Each status report that is flashed on the screen includes the name of the bill's sponsor, a phrase describing the bill's contents, and the page reference in the House Journal or State Journal on which the pending item is printed.

The new legislation network joins Iowa's two-year-old computer-based statute retrieval system which indexes and stores some 3,000 pages of state laws and 30 pages of the state constitution.

Meanwhile, Congress, never noted for precipitate action, continued to ponder whether display

equipment of the type in use in Iowa could help its members to get the facts on the 29,000 bills they're required to consider at each session.

Congress far behind

Despite the fact that the Federal Government is the largest user of electronic devices of one description or another in the country, the legislative branch lags far behind the executive branch. Of a total of 4,600 electronic machines in use by the government, exactly three are used in Congress' halls—one in the Senate, one in the House, one in the Library of Congress. The three are used for the most limited of functions; the Sen-

ate uses its IBM 360 to address Senators' mail; the House its N.C.R. 500 to make out the payroll and keep track of mechanical equipment. Only the Library of Congress has reached the point of digesting proposed or pending legislation, and only the House Banking and Currency Committee has so far installed a high-speed printer connected to the Library's computer for retrieval of information about such legislation.

Now, however, there is mounting pressure for some radical modernization of information processes, particularly in the House, which has much smaller research staffs to collect and present needed information than does the Senate. Representatives have recently been exposed to a demonstration of a remote terminal visual device, Control Data's Digiscraper, which can either present on a screen pertinent information about any bill or print a transcript of the entire text.

The demonstration, held in the Rayburn House Office Building, was arranged by the clerk of the House, W. Pat Jennings.

One of the most determined of the proponents of greater use of computer abilities, Rep. William Moorhead (Dem., Pa.), has been joined by Rep. Robert McClory (Rep., Illinois) in his drive to establish a new legislative data processing center.

Human obstacles still loom, however. According to *The New York Times*, many committee chairmen feel freer access to information will lessen the magic influence of seniority. What is the use of years of service when any newcomer, by diligent attention to his information retrieval unit, can become more knowledgeable on any particular bill than the most seasoned veteran?

Another factor to be considered, the *Times* reports, is the entrenched interest of congressional staff workers who fear they will become unnecessary if a congressman can get any information he needs simply by dialing a request to a computer center.

The Lester Witte Foundation, which some time ago established an award for the best article published in the Practitioners Forum of The Journal of Accountancy, is establishing a similar award for the article appearing in Management Services best promoting or exemplifying the practice of management services by a small or medium-size firm. An illuminated plaque and a check for \$100 will be presented to the winning author at the AICPA Annual Meeting in the fall of each year. The winner will be selected by the board of consulting editors of Management Services from all articles published during the preceding year. The first award will thus be made at the AICPA Annual Meeting in October, 1970, in New York and will cover the period from this issue through the May-June issue, 1970.

NASA Grants \$50,000 For Study of Space Technology in Business

The National Aeronautics and Space Administration has just granted the Research Institute of the University of Denver a \$50,000 grant to study the opportunities for applications of aerospace management innovations to government and industrial projects.

Particular attention will be devoted to the use of advanced management and systems analysis methods in attacking complicated public administration problems such as housing and transportation.

The study will also attempt to provide a clearer understanding of the processes by which management technology can be transferred from one type of activity to another and will match as far as possible realized and anticipated management needs with advanced management techniques developed within the aerospace field.

The research is expected to result in a published report illustrating the potential translation of

aerospace management technology to nonrelated fields.

The 16-month research study will be directed by Dr. J. Gordon Milliken of the Research Institute's Industrial Economics Division.

Commercial, Scientific Capacities Linked in Marketing Agreement

Scientific computing ability will be linked to commercial data processing marketing facilities and capacity under a new agreement negotiated between the Chi Corporation, Cleveland engineering service company, and Stat:Com, the commercial concern.

The joint marketing agreement reached will use Stat:Com, the Statistical Communications Division of Statistical Tabulating Corporation (STC), of Chicago, sales offices and data centers throughout the country. The Chi Corporation, owned by Case Western Reserve University, has its head-

quarters in the University Circle Research Center, Cleveland. Stat:Com will establish an office there too, in which a team of consultants will be trained in the use of Chi Corporation's UNIVAC 1108.

The first terminal tied into the 1108 will be an IBM 1130 computer at STC's Chicago data center. Eight other major city data centers will also serve as terminals.

Stat:Com will market

Stat:Com will market the 1108's abilities as an extension of its services, calling on Chi for specialized support when necessary. Chi will directly market its own services in the northeastern Ohio area.

"The third generation 1108 computer and Chi's excellent staff will provide STC with a logical extension of its services into the area of complex computing," said Michael R. Notare, president of STC, "while our established national sales structure and network of data centers will allow Chi to greatly broaden the marketing of their computer time." STC, established in 1936, is one of the nation's oldest commercial data processing companies.

Importation of Company Presidents From Outside the Company Is Accelerating; Succession Problem Seen in Age of Vice Presidents in Most Concerns Surveyed

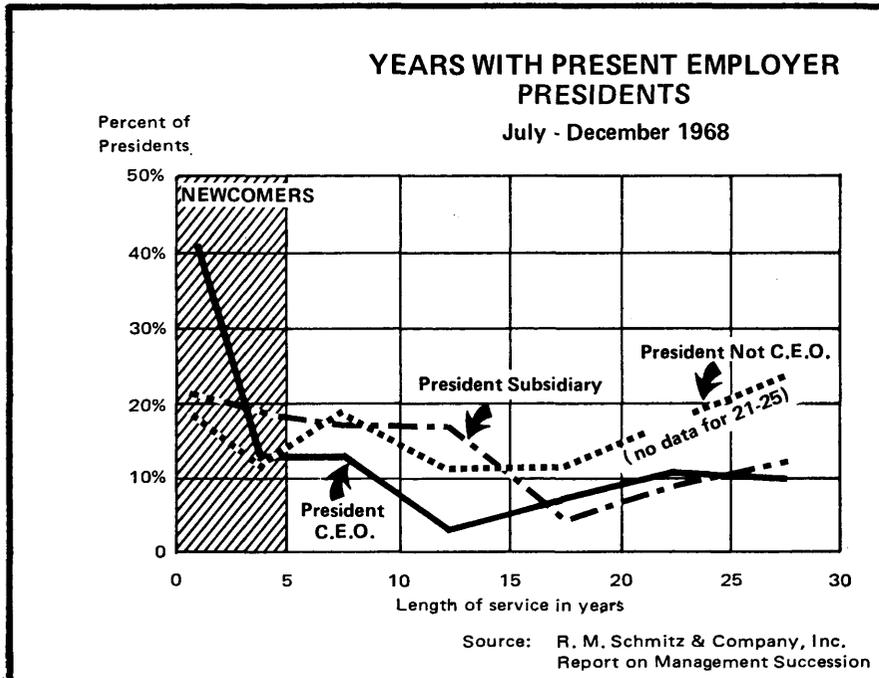


Chart shows Schmitz findings of length of service with company for company presidents covered in survey.

The number of company presidents imported from outside the company is continuing to rise, according to an ongoing survey launched in 1966 by R. M. Schmitz & Co., Inc., Chicago and New York management consulting firm.

The survey, which covers about 500 executive promotions per year, shows that 29 per cent of newly promoted presidents came from outside the company in the last six months of 1966; 30 per cent in 1967; and that the figure increased to 43 per cent in the last half of 1968.

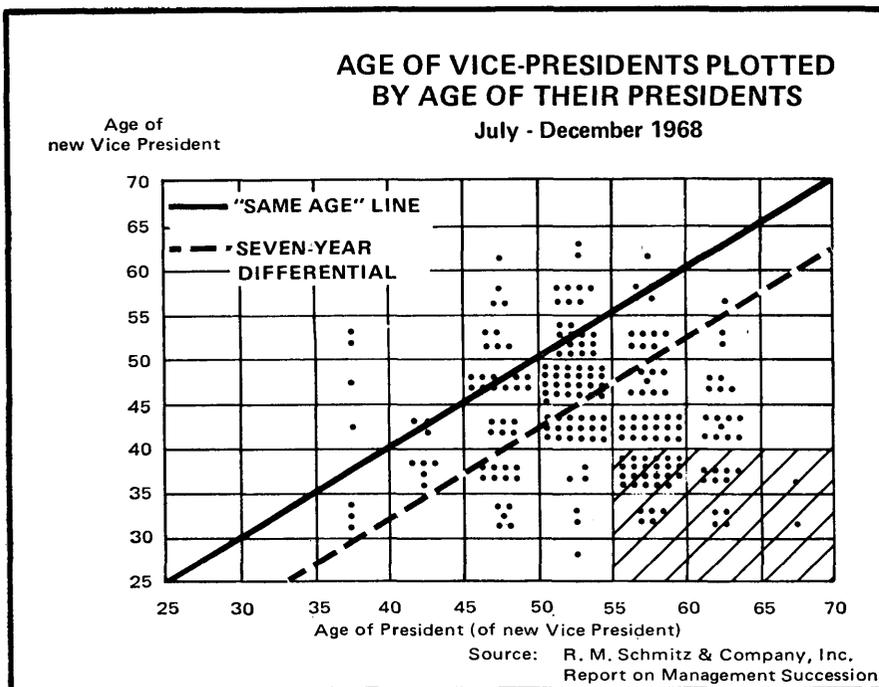
The study conducted by the Schmitz organization in cooperation with Dr. W. A. Owens of the Graduate Studies Research Center, University of Georgia, indicated that the very slight age differential between company presidents and their vice presidents may account for so many companies' going outside their boundaries for new top men.

Age differential important

"The average new vice president is 46 years old and the president of his organization is 53—a seven-year differential," commented Roy M. Schmitz, president of the consulting organization. "Only half the new VPs are seven years younger than their presidents. Most boards like to look to a minimum of 10 years of service for their new president and realistically can only choose from 40 per cent of the company's vice presidents."

The 544 executives surveyed in 1968 included 106 new presidents, 97 presidents of subsidiaries or divisions, 42 executive vice presidents, 35 senior vice presidents, 27 group vice presidents, and 237 vice presidents of various functional areas.

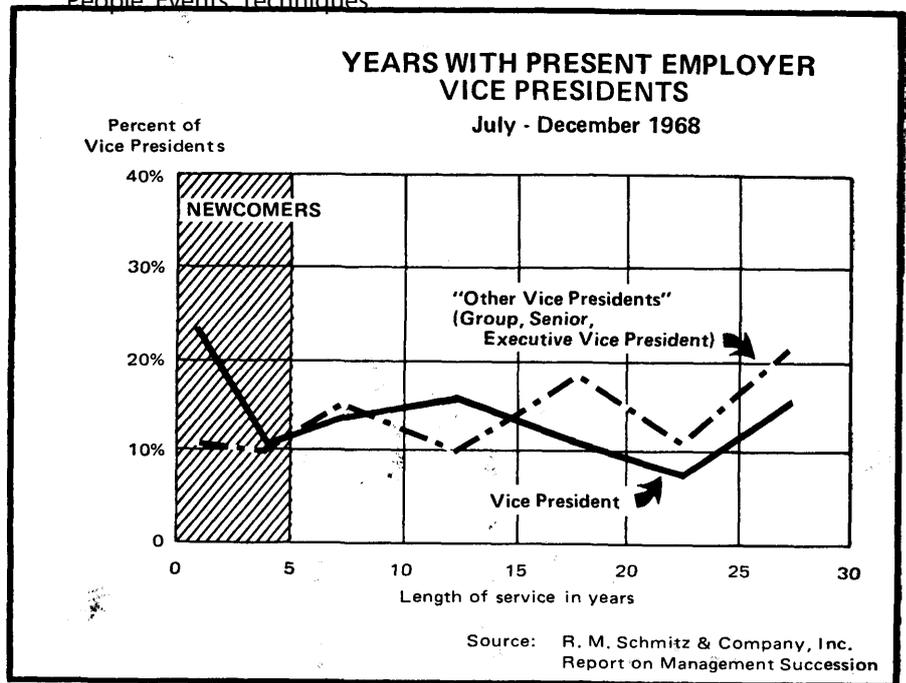
The men selected for promotion to presidencies and vice presiden-



One of reasons for failure of vice presidents to be promoted to top spot was given as nearness of age group to presidents'.

cies seem to have different personal characteristics too. Of those promoted to president only 11 per cent had been in their former position for more than five years. Of the newly promoted senior vice presidents, 39 per cent had had more than five years' experience in their former jobs. Similarly, promotion to the presidency usually was accompanied by an immediate pay rise; only 13 per cent of the new president-chief executive officers moved without an increase in compensation. On the other hand nearly half of the senior vice presidents received their new titles without pay increases.

(Right) Vice presidents, unlike new presidents, had generally served some years with company.



New Processing Service Launched by Commercial Credit, Control Data

The progeny of last year's combination of the Commercial Credit Company, Baltimore, Md., and Control Data Corporation, Minneapolis, Minn., has arrived. On June 2, Central Information Processing Corp., the new offspring, began a new computerized processing and management decision service at its Baltimore headquarters.

"By coordinating Control Data's technical abilities in the computer field with Commercial Credit's expertise in providing commercial and financial services to business and industry we have been able to develop a comprehensive service which will fill a wide void for tens of thousands of companies throughout America," Donald S. Jones, president of Commercial Credit Company, said.

Subscribers will be able to process any volume of information on business subjects ranging from accounting applications, such as payroll and accounts receivable, to complex decision problems, includ-

ing cash flow forecasting and lease-versus-buy analysis, said Mr. Jones.

Control Data's 3000 series computing systems will be used. Subscribers can have their work handled at the center either through on-site batch operations, which need no connections to the subscribers' offices, or by remote batch facilities, which employ telephone or private wires between client and central computer for immediate response.

According to President Jones, his company will provide subscribing professional accountants and small businessmen with millions of dollars worth of electronic equipment and processing programs available to them "on an as required basis."

Physical PERT-Charting System Shown on Coast

A PERT-charting method employing magnetized physical symbols and a board to which the symbols adhere was introduced recently in San Francisco at a meeting of the Society for the Advancement of Management.

The new device, according to its

inventor, James Halcomb, eliminates the time-consuming pencil and paper PERT drafting phase which has prevented many management people from becoming directly involved with PERT. It

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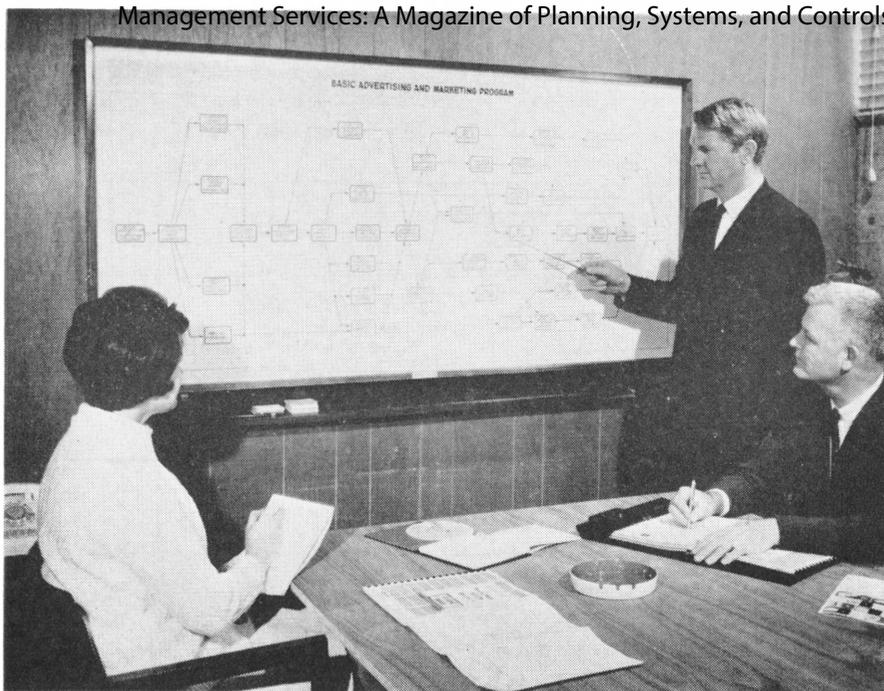
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Magnetic PERT-O-GRAPH, besides easing chart preparation by executives, is large enough to be used in demonstrations.

permits direct placement of the magnetized network event symbols on the board, while the frosted mylar board surface allows the connecting lines of the network to be drawn in by pencil, felt pen, or china marking crayon. Since symbols can be easily moved and lines altered, the board is said to encourage quick generation of original management plans by permitting instant organization and reorganization of management milestones and the interconnecting logic between such milestones.

The procedure used in the PERT-O-GRAPH system consists essentially of five logical planning steps. The first is to establish the overall objective of the program, which is symbolized by identifying and locating the program completion event on the right side of the board. Then each of the end item achievements necessary before completion of the overall program objective is identified. Next, management milestones are selected and organized on the board in proper sequence. Interconnecting arrows between these milestones are drawn in and time durations marked in. Then critical path times

can be identified and firm dates entered.

The PERT-O-GRAPH permits easy management control and allows management-by-exception decision making when actual progress deviates from planned progress, the manufacturers, Halcomb Associates, 149 San Lazaro Avenue, Sunnyvale, California 94086, point out.

Greater Sharing of Information Foreseen At Hospital Meeting

Representatives of 70 hospitals' time sharing central computer facilities began working toward greater sharing of information among themselves at a conference held recently in Scottsdale, Arizona.

The conference, sponsored by Arizona Blue Cross and Blue Shield at the Executive House Arizona, covered the administrative, technical, and programming aspects of hospital computing systems.

Important points of agreement reached at the meeting included: Small computers used to control medical processes or other special applications will be communicating with larger time sharing computers; increased use will be made of systems creating microfilm files from computer magnetic tape; and Common Business-Oriented Language (COBOL) will become the accepted standardized computer language.

More patient use foreseen

A holder of many hospital contracts, the Electronic Data Processing Division of Honeywell Inc., Wellesley Hills, Mass., recently completed a market research study that predicts more hospitals will use computers and that there will be increasing use of computers for clinical laboratory and patient care systems. Although currently only five per cent of the nation's approximately 7,200 hospitals use computers, the Honeywell study forecasts 75 per cent of the hospitals will be sharing time on computer facilities by 1980.

While today laboratory systems only account for about five per cent of the hospital dollar volume, by 1980 the study predicts a rise to nearly 25 per cent. Business uses will grow from the current 25 per cent to about 40 per cent, and insurance and medical research will average slightly less than 40 per cent, as compared with their present 70 per cent.

J. Richardson Adams, medical services market manager for Honeywell, said, "During the next two years at least, data processing will still be used mostly to solve the mundane paper work problems but there is a gradual but definite trend toward developing systems for clinical laboratory use in areas related to direct patient care."

Currently a feasibility study on the use of a computer in the hospital laboratory is being conducted by the Hospital Services Division of Minnesota Blue Cross, the first organization to use the shared

computer concept in hospitals. The organization also plans to do a similar study later this year on computer analysis of electrocardiograms, and a third on the creation of a medical information system, which would involve cathode-ray tubes and light pens for entry and data retrieval by doctors at nursing stations.

Development costs not covered

The Hospital Data Center of Virginia, a service corporation handling data processing for six hospitals, now applies the system to payroll, discharged patients' accounts receivables for some 76,000 accounts, property ledger and in-house patient accounting, tumor registry, analysis of blood counts, and, in one instance, an operating room utilization report. The charge is \$11 per available bed per month. "The charges don't come anywhere near covering the \$2.7 million already spent developing applications on the computer," Carter Sullivan, the Data Center's executive director, said.

Costs for hospital computer systems range from \$10 to \$15 per bed per month, depending on the number of beds in the system. "Computers will never sufficiently reduce the cost for hospitals so they can pass savings on to the patient. Computers will only slow the spiraling increase," said Martin McDonough of the Massachusetts Hospital Association, an organization which handles on-line patient accounting data processing for 17 hospitals.

The national Blue Cross Association, with headquarters in Chicago, plans to install a \$2.5-million communications system linking 150 member plans nationwide, Honeywell reports.

While the major part of Honeywell's computer contracts are for medium-scale equipment shared by several hospitals, hospital industry manager James B. Turner said there were at least a dozen hospitals installing smaller computers, mostly for general patient accounting use.

People, Events, Techniques
Allegheny General, a 700-bed Pittsburgh hospital, began implementing an in-patient accounting system on a small-scale computer recently installed. Presbyterian-St. Luke's, Chicago, added a medium-scale Model 1250 computer last year to an existing larger Model 2200 and two smaller Model 200 computers assigned to general administrative data processing tasks. The Children's Hospital in Boston (see *Management Services*, May-June 1968, p.52 and July-August 1966, p.48), a pioneer in the computer utilization field, has a fully computerized clinic scheduling and bed allocation system.

Line Managers Fail To Utilize EDP, Says Diebold Conference

Ways of encouraging line management to make more adequate use of electronic data processing were among the problems discussed at the Diebold Research Program's 20th regular meeting, May 20 and 21 at The Homestead, Hot Springs, Va.

The findings result from an in-depth survey of approximately 50 large-scale computer users. The Diebold researchers interviewed four or five levels of management in each firm.

Two hundred corporate executives attended the conference sponsored by the international consulting firm.

Communications roadblock

One third of the largest companies questioned for the Diebold study found poor communications between data processing and line functions a major obstacle in developing EDP applications. Signs of this problem include the high turnover of EDP executives and systems personnel, as well as increasing under-utilization of EDP services by line managers and the

employees of their departments.

Investigators found to promote more significant and high-payoff applications of EDP some companies are: requiring their divisions to include projected EDP use in their one-, three-, and five-year plans; offering department managers frequent consultation with systems planners and analysts; and concentrating their sales effort on middle management, which as the direct beneficiary of EDP will work to win over senior management.

Updating personnel practices

Revision of personnel practices also has produced more effective EDP use. Companies studied are attempting to place EDP project managers and other systems personnel in line organizations. In one company both a general manager and a vice president were promoted from the EDP department. Movement in the opposite direction is also being used; companies are making people from the line organization "information coordinators," responsible for finding new and profitable areas for EDP use.

"Partial approach" attacked

Another highlight of the Diebold conference was an address by Sir Stafford Beer, executive of the United Kingdom Automation Council and British authority on cybernetics and computer technology. Sir Stafford accused nearsighted systems analysis, which inadequately identifies a total systems problem, of minimizing the gains of modern technology.

As an example, he pointed out that a total systems approach to travel problems in the airline industry should not focus only on plane scheduling but on the entire journey from point of departure to final destination. He observed that the advantages of jet travel are lessened when the time saved in flight is lost by inadequate connections for the final leg of the journey.