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Next Governing Board Meeting: 4-5:30 p.m., Sept. 8, 8:00-9 p.m., Sept. 9, at the Mayflower Hotel, Washington, D.C.

UPDATE

AFIPS Washington Report

Pender M. McCarter

AFIPS Washington Office

Privacy Commission submits report

After years of study, $1,750 million in expenditures, and 60 days of hearings and meetings, the Privacy Protection Study Commission last month presented its final report to the President and the Congress. The 654-page report, Personal Privacy in an Information Society,* contains recommendations designed to preserve the privacy of individuals in their record-keeping relationships with credit grantors, insurance companies, employers, doctors and hospitals, schools and colleges, social service agencies, and government.

Summarizing the panel's recommendations, Privacy Commission Chairman David J. Linowes said that an individual should (1) have access to all records that concern him, (2) be allowed to correct any inaccuracies in personal data, (3) be assured that data is being maintained only for the purposes for which it was originally intended, and (4) be permitted to control the secondary distribution of personal data beyond its starting point.

The study, presented on July 12, calls for a mixture of federal or state laws implementing its recommendations, amendments to the Fair Credit Reporting Act, and voluntary compliance. On the same day, Sen. Birch Bayh (D-Ind.) and Rep. Barry M. Goldwater, Jr., (R-Calif.) and Rep. Edward I. Koch (D-N.Y.) introduced 11 bills to implement the recommendations. The 10 bills introduced by commission members Koch and Goldwater will be combined with additional legislation to form the Omnibus Privacy Act of 1977.

On receiving the study from Chairman Linowes at the White House, President Carter assured the commission that the report would receive his personal attention. He offered to brief his cabinet at its next meeting.

Major recommendations. In most circumstances recommended legislation would require government agencies to obtain administrative or judicial subpoenas to access personal information. The commission also suggests legislation allowing a private citizen to recover up to $10,000 from businesses which willfully or intentionally violate his right to privacy.

Specific legislative recommendations include requests for (1) limits on the amount of time that electronic funds transfer records may be maintained, (2) opportunities to correct inaccuracies in EFT records, (3) limits on government operation of EFT mechanisms involving transactions among private parties, and (4) restrictions on the use of Social Security

*UPDATE

BACKGROUND

The Privacy Commission was created by the Privacy Act of 1974 which guarantees citizens the right to examine and correct government files containing personal data. The Privacy Act also limits dissemination of government information to third parties. On January 4, 1977, Rep. Goldwater and Rep. Koch reintroduced to Congress H.R. 8644, legislation which would apply the principles of the 1974 law to data systems in the private sector.

In addition to Linowes, Koch, and Goldwater, other members of the seven-person commission include Vice-Chairman Willis H. Ware, Rand Corp.; William O. Bailey, Aetna Life and Casualty Co.; William Dickenson, retired managing editor, Philadelphia Evening Bulletin; and Robert J. Tennessen, Minnesota state senator.
numbers and other labels as universal identifiers.

Finally, the commission suggested establishment of a federal privacy board to help implement its recommendations.

Ordering information. Copies of the final report, Stock Number 052-003-00395-3, can be obtained for $4.00 through the Government Printing Office, (202) 783-3238, or the AFIPS Washington Office (enclose $5.00). *

Computer Systems Protection Act introduced in Senate

A bill making it a federal offense to misuse computers owned by the federal government, employed in interstate commerce, or used in certain government regulated or insured financial institutions was introduced in the Senate on June 27. The Federal Computer Systems Protection Act, * offered by Sen. Abraham Ribicoff (D-Conn.) provides penalties of up to 15 years in prison and/or a $50,000 fine.

The bill is said to be the first federal legislation ever introduced to control computer crime. It is designed to curb entering fraudulent data; misusing computer facilities; altering or destroying information; and stealing money, financial instruments, property, services, or data by electronic means.

If enacted, the law would complement “Title 18” of the United States Code, which contains approximately 40 statutes previously used to combat computer-related crime in lieu of specific laws concerning computers. The proposed legislation is the culmination of a year-long investigation by Sen. Ribicoff’s Committee on Government Operations into security issues raised by three General Accounting Office reports: Improvements Needed in Automated Decision-making by Computers Throughout the Federal Government; Computer-Related Crimes in Federal Programs; and Managers Needed to Provide Better Protection for Federal Automatic Data Processing Facilities.

Last February, the committee released a staff study, Computer Security in Federal Programs.


CONTU committees recommend copyright protection

Two committees of the National Commission on New Technological Uses of Copyrighted Works (CONTU) have recommended extending copyright protection to computer programs and data bases. The committee suggested that copyrights will enhance the availability of software and data bases as well as the potential for financial reward to their developers.

The Software Committee’s report* equates programs with literary works, which are entitled to copyright protection under the present law, and notes disadvantages in other forms of protection such as patents and trade secrets.

The Data Base Committee’s report equates proprietary data bases with telephone books, city directories, and The Reader’s Guide to Periodical Literature—all of which qualify for copyright protection under present law.

Hearings on the recommendations are scheduled by CONTU for this fall. Written comments are requested by September 1. Further information is available from Arthur J. Levine, executive director, CONTU, Washington, D.C. 20558.

AFIPS offers assistance in reorganization effort

AFIPS has offered its assistance to parties involved in the Federal Reorganization Project on matters relating to computer science and technology. AFIPS’ offer of assistance is contained in a July 6 letter from the federation’s president, Dr. Theodore J. Williams, to President Jimmy Carter and was prompted by the President’s June 29 Memorandum for the Heads of Executive Departments and Agencies covering a Comprehensive Review of Administrative Services Delivery.

In his memorandum, President Carter stated, “I have directed my Reorganization Project staff at the Office of Management and Budget to begin a comprehensive review of the management of administrative services within the federal government. The project will be administered jointly by OMB and the Administrator of the General Services Administration… A major objective of the study is to improve administrative services to federal agencies. It will assess the roles of the General Services Administration and others in the provision of services related to real and personal property, automated data processing, telecommunications, and records management.”

In a separate Request for Comments on the Federal Data Processing Reorganization Study, printed in the Federal Register on July 1, OMB asked that all comments be received on or before July 30. The announcement requests public comments on the data processing issues, problems, and solutions that should be considered by this study.

In his letter to the President, Williams expressed concern that the reorganization plan might encompass several federal groups of vital importance to computer science and technology, principally the Office of Telecommunications Policy in the Executive Office of the President and the Institute for Computer Science and Technology in the Department of Commerce. He noted that the OMB has indicated it will place a high priority on federal computer utilization and management policies, with attention to major agencies having responsibilities under the “Brooks Act” (P.L. 89-306).

“There are crucial policy functions resident within this structure of computer related groups,” he said. “It has been well recognized by both the Federal Communications Commission and the Congress that there is a convergence of technologies from the regulated field of communications and the non-regulated computer industry. Each of these industries taken separately has great importance to our national economy and capabilities; taken together this area has broad national policy implications.

“We are most concerned that the importance of these groups is recognized in the course of developing the Reorganization Plan, and that the reorganization relating to them is carefully considered,” he said.

Williams also cited current Congressional activities relating to telecommunications, computers, and information policies; and pointed to the need for the Executive Branch “to be in a position to adequately respond to proposals which will be forthcoming from the Congress.”

According to Williams, a coherent national policy is necessary for an unencumbered growth of this beneficial technology. Decisions in areas which are regulated—including communications, electronic mail, and electronic banking—should be made from a broad perspective of national policy considerations, with a full understanding of the interrelationships between the regulated and non-regulated sectors of these technologies.

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Cont’d from p. 7

“We recognize that numerous federally funded studies have been undertaken to analyze relationships and possible reorganization of the groups outlined above,” Williams said. “However, we deem it most important that the Reorganization Plan take into account the importance and impact of these bodies as seen by professionals from within the information processing field.”

ACM’s McCracken testifies on telecommunications and privacy

ACM Vice-President Daniel D. McCracken testified June 22 before the House Subcommittee on Communications on the impact of telecommunications technology on the right to privacy. The subcommittee of the House Committee on Interstate and Foreign Commerce is revising the Communications Act of 1934.

McCracken, who noted that he was not speaking for ACM members, told the subcommittee that the rapid growth of technology over the last 30 years is not apt to diminish and that the combination of computers and telecommunications “creates a new entity that is bigger than the sum of the two.” Differentiating between the computer and the communications link is not “terribly useful.” According to McCracken, the location of two computers—i.e., whether they are in the same room, or separated by a thousand miles—is inconsequential.

Economic restraints cited as obstacle to increased R&D spending

Economic restraints, President Carter’s plans for a balanced budget, and zero-base budgeting reviews are viewed as obstacles to increased R&D expenditures, according to participants in the Second Annual AAAS Colloquium on “R&D in the Federal Government,” held June 15-16 in Arlington, Virginia.

One speaker said R&D is eliminated from the federal budget because it represents a portion of the 30 percent of the budget that can be changed. Perhaps 70 percent of the federal budget was estimated to be fixed—i.e., unchangeable expenditures such as Social Security payments authorized by Congress on a continuing basis. It was noted that R&D is especially vulnerable to budget-cutting because its benefits are not always immediately recognizable or even tangible.

According to W. Bowman Cutter, executive associate director for the budget, OMB, President Carter views all requests for R&D equally in the sense that—taken all together—they are more than the nation can afford. Thus, the President’s use of zero-base budgeting is a review of all proposed expenditures for a particular area in contrast to a review of incremental changes in expenditures from year to year.

However, Cutter also noted the salutary effect of R&D on sustaining economic growth. William D. Nordhaus, a member of the Council of Economic Advisers, suggested that the scientific community could also stress the technological achievements attainable through R&D.

In a dinner speech, Sen. Adlai E. Stevenson (D-Ill.) attributed the downturn in R&D funding to over-selling of science and technology in the late 1950’s and early 1960’s. If the focal point for federal R&D, the Office of Science and Technology Policy, is combined with a new Office of Planning and Analysis as presently discussed, it would represent an additional setback for R&D, he said.

Task force reviews ANSI Z39 Committee

The Task Force on the American National Standards Committee Z39 Activities and Future Directions held its second and third meetings in Washington, D.C., May 25-27 and June 29-30. Melvin Day, deputy director of the National Library of Medicine and a former president of the American Society for Information Science, represents AFIPS on the 13-person task force which is reviewing the activities and charter of the ANSI Z39 Committee. Since 1939, the committee has formulated standards related to libraries and information science.

The review panel has prepared a draft document, American National Standards Committee Z39: Recommended Future Directions, and discussed it line-by-line. A second review by mail and another meeting are scheduled before submitting the final document to the Council on Library Resources, the National Science Foundation, and the National Commission on Libraries and Information Science.

Ralph R. Wheeler, newly elected chairman of the National Computer Conference Board, also represents the Society for Computer Simulation, a participating organizer of the NCC in addition to the Association for Computing Machinery, the Data Processing Management Association, and the IEEE Computer Society.

NCC board chairman announced

Ralph R. Wheeler, manager of timesharing services for Lockheed Missiles and Space Company, has been elected chairman of the National Computer Conference Board. Responsible for operating the annual National Computer Conference sponsored by AFIPS, the board has full authority in policy matters affecting the organization and program of the NCC. Wheeler, a graduate of the University of Denver with a B.A. in mathematics, has served on the board as vice-chairman for the past two years.

Also serving on the board for one-year terms which began July 1 are Dr. W. Smith Dorsey, vice-chairman; Walter Johnson, treasurer; and Lowell D. Amdahl, secretary.

Computer Society expands Distinguished Visitors Program

To better serve both Computer Society members who reside in a Section with no active Computer Society chapter as well as other IEEE members interested in computer topics, the Computer Society is expanding its Distinguished Visitors Program on an experimental basis. The society will provide lecturers at no cost to a section when suitable subjects and timing can be arranged. A brochure providing full details can be obtained from the Computer Society Publications Office, 5855 Naples Plaza, Suite 301, Long Beach, CA 90803.
Wescon 77—a three-day event

For the first time, the Western Electronic Show and Convention scheduled for San Francisco this year will be a three-day event, September 19-21. An attendance of more than 30,000 engineers and executives is predicted. Wescon will feature 680 exhibit units and 32 professional program sessions. Two of these are planned as career aids for university-level engineering students, and a special exhibit is planned for students as well.

Wescon is sponsored by the San Francisco Bay Area and Los Angeles Councils of IEEE, and the Northern and Southern California chapters of the Electronic Representatives Association.

Midcon outstrips original goal

The premiere Midcon show and convention scheduled for November 8-10 in Chicago has outstripped its original exhibit floorplan.

William C. Weber, Jr., general manager, said that all 300 exhibit units offered have been contracted, and that 40 more exhibit spaces have been added at O’Hare Exposition Center to accommodate additional manufacturers. Weber also commented that Midcon’s technical program as finalized will consist of 29 half-day sessions.

Midcon is sponsored by national and regional elements of the Electronic Representatives Association and the Institute of Electrical and Electronics Engineers.

Three COMPSAC tutorials

Three one-day tutorials will be offered in conjunction with COMPSAC, November 8-11, Chicago, Illinois. All are scheduled for November 8, preceding the main conference. COMPSAC Tutorial Chairman, Richard Merwin has announced the following programs and instructors: “Quantitative Software Management,” Col. L. Putnam and Ray Wolverton; “Program Testing Techniques,” Edward J. Miller, Jr., and Leon Stucki; and “Software Design Techniques,” Anthony Wasserman and Peter Freeman. Look for the advance conference program in next month’s Computer.

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August 1977
IEEE good government group formed

To identify and endorse the best available candidates for IEEE president, vice-president, and director, a number of IEEE members have formed a good government group. A steering committee consisting of C. C. Cutler, Paul E. Gray, William R. Hewlett, John Pierce, M. E. Van Valkenburg, and F. Karl Willenbrock will coordinate the group’s activities. The first candidate to receive endorsement is Dr. C. Lester Hogan, a petition candidate for IEEE executive vice-president.

For additional information, contact the secretary of the steering committee, Dean F. Karl Willenbrock, School of Engineering and Applied Science, Southern Methodist University, Dallas, TX 75275.

Employment Register available at ACM Computer Science Conference

The ACM Computer Science Conference in Detroit, February 21-23, 1978, will feature a Computer Science Employment Register. The register, which provides a mechanism for establishing contact between computer scientists and data processing specialists and potential employers, operates as follows: the applicant completes a form giving identifying information, education, publications, experience, interests, references, position and salary desired. (An anonymous form can be submitted.) The employer completes a similar form giving identifying information; position available, starting date, salary, and benefits; and education, experience, and specialization requirements for the position.

To take advantage of the register, both applicants and employers must file official forms by February 1. Three forms are available: (1) applicant, (2) academic, and (3) business, industry, and government. Charges are as follows: no fee for students, $5 for nonstudents, $5 additional charge for anonymous form, and $20 for employers for each type of position advertised. Copies of the register will be available at the conference and afterwards—to obtain forms and get information about obtaining copies, write to Orrin E. Taulbee, ACM Computer Science Employment Register, Department of Computer Science, University of Pittsburgh, Pittsburgh, PA 15260.

Engineering Foundation research initiation grants

Five engineering research initiation grants during 1978-1979 have been announced by the Engineering Foundation. One $10,000 grant per founder society will be awarded, respectively, by the IEEE; American Society of Civil engineers; American Institute of Mining, Metallurgical, and Petroleum Engineers; American Institute of Chemical Engineers; and The American Society of Mechanical Engineers. Directed toward young, full-time engineering faculty members who are without research support, the fellowships will be awarded on a competitive basis to a member of each founder society for a proposed research project of mutual interest to his society and the Engineering Foundation.

Proposed reviews must contain a short specific statement of the relevance of the proposed research to engineering. Encouraged are projects directed toward innovative engineering approaches to solving major national problems or developing new engineering proposals. Proposals must be submitted to the founder societies postmarked no later than December 1, 1977.

For full details and procedures, IEEE members should contact N. P. Dwivedi, Director, Technical Activities, IEEE, 345 East 47th St., New York, NY 10017; (212) 644-7890.

SIGCSE Bulletin describes computer science curricula recommendations

The June 1977 issue of the SIGCSE Bulletin presents two working curriculum reports. The first, by the ACM Curriculum Committee on Computer Science, contains recommendations for core studies at both the elementary and intermediate levels in undergraduate computer science programs. The second report, by the Subcommittee on Community and Junior College Curriculum, addresses recommendations for two-year institutions.

Both reports are being circulated as working papers to receive the widest distribution possible so that interested individuals can review the material and supply inputs. Copies of the June SIGCSE Bulletin are available for $2 from the Association for Computing Machinery, 1133 Avenue of the Americas, New York, NY 10036.

Northwestern merges EE and Computer Science Departments

Northwestern University is expanding its educational and research programs by combining the faculties and facilities of its Electrical Engineering and Computer Science Departments.

In announcing the merger, effective September 1, 1977, Bruno A. Boley, dean of the Northwestern University Technological Institute in Evanston, Illinois, said, "Combining our already strong departments of electrical engineering and computer science ... will enable us to stress the increasingly important areas related to computer systems and computer hardware-software interaction without lessening our emphasis on other segments of either field."

The new Department of Electrical Engineering and Computer Science will be headed by Stephen S. Yau, professor of computer science and electrical engineering and chairman since 1972 of the Department of Computer Science. Yau is a specialist in computer systems reliability and maintenance, fault-tolerant computing, real-time systems, and pattern recognition.

Active in many professional organizations, Yau is a director of AFIPS and IEEE and was president of the IEEE Computer Society, 1974-75. He also is a Fellow of IEEE and a Life Fellow of the Franklin Institute. He holds the BS degree in electrical engineering from the National Taiwan University and the MS and PhD degrees in electrical engineering from the University of Illinois.

DPMA forming CDP group

DPMA is forming a provisional special interest group for certified data processors, International President Robert J. Marrigan, CDP, has announced. Membership is limited to individuals holding the Certificate in Data Processing granted by DPMA or the Institute for the Certification of Computer Professionals.

Serving as acting president during the new group’s formation period is Beverly Madron, CDP, assistant professor at Western Kentucky University, Bowling Green, with responsibilities in the EDP instructional area.

Details about the DPMA CDP provisional special interest group can be obtained by writing to Madron at DPMA International Headquarters, 505 Busse Highway, Park Ridge, IL 60068.
DataComm 78 conference committee appointed

Stuart K. Wichert has been named Conference Chairman for DataComm 78, the national conference dealing with computers and data communications, which will be held Feb. 21-23 in Washington, D.C.

Wichert, president of The Conference Company, sponsors of DataComm, said that about 75 companies will display their products and/or services at the conference.

DataComm is held annually in the nation’s Capital because of the high level of Government involvement in regulating data communications policies and offerings. Part of each year’s program includes sessions with members of Congress and their advisory staffs, representatives of the Federal Communications Commission, and end-users from both government and business.

Information on DataComm can be obtained from The Conference Company, 60 Austin Street, Newton, MA 02160.

People's Computers magazine announced

People’s Computer Company announces both a format and name change in its 5-year old publication, which is now People’s Computers magazine.

The bimonthly publication, aimed at everyone who wants to learn more about computers, has a readership that includes computer hobbyists, beginning and intermediate programmers of all ages, students, and educators.

Subscriptions to People’s Computers are $8 a year in the United States, $12 in Canada. For more information, contact Dwight McCabe, People’s Computers, 1263 El Camino Real, P.O. Box E, Menlo Park, CA 94025.

Computer stores — good investment potential

Computer stores are the small business opportunity showing the greatest investment potential for the coming year, according to a survey conducted by International Entrepreneurs Magazine. For investors interested in getting into their own business or owning a portion of one, the survey classifies computer stores as a “medium-size investment” with initial cash requirements starting at around $10,000.

As an example of the potential, the first shop to be opened (Dick Heiser’s in Santa Monica, California) grossed more than $500,000 during the past year.

Details of the study are available from International Entrepreneurs Magazine, 631 Wilshire Blvd., Santa Monica, CA 90401.

Department of Commerce exhibit set for Caracas

OFISISTEMAS 77, an exhibition of U.S. advanced business equipment sponsored by the Department of Commerce, will be held in Caracas, Venezuela, December 5-10, 1977.

An important part of Venezuela’s efforts to establish a modern industrial economy includes doubling purchases of business equipment and computers, according to Hans J. Amrhein, project manager. The country’s total market for advanced business equipment is expected to grow at an average annual rate of 28% from 1976-79, boosting annual consumption from $67 to $150 million. As the leading supplier, the U.S. is expected to increase its share to 64%.

Among products with the highest sales potential are minicomputers, intelligent terminals, data entry systems, CRT terminals, electronic calculators, microfilm and microfiche equipment, optical printers and readers, disk drives and packs, modems, computer software packages, and word processing equipment.

Participation in OFISISTEMAS 77 is limited to 45 companies. For participation information contact Hans J. Amrhein, project manager for Venezuela, Room 4036, U.S. Department of Commerce, Domestic and International Business Administration, Washington, D. C. 20230; (202) 377-2332.

Reader Service Number 81
ISI introduces multidisciplinary index to conference proceedings

The Institute for Scientific Information has introduced the Index to Scientific & Technical Proceedings (IS&TP), the first multidisciplinary tool to permit searching and bibliographic verification of individual papers published in proceedings literature.

The ISTP will enable users to locate proceedings and conference papers by editor or individual author; conference topic; title words of books, conferences, and papers; conference sponsor; meeting location; and individual authors’ organizations. These indexes will direct users to a main entry section that contains a complete bibliographic description of the proceedings and each paper presented. It will also include information necessary to acquire the proceedings from publishers or to request it through interlibrary loan; information will also be given to facilitate reprint requests.

Beginning in 1978, the index will cover around 3000 proceedings annually including such disciplines as life sciences and clinical medicine; engineering and applied sciences; physical and chemical sciences; and biological, environmental, and energy sciences. The IS&TP will appear monthly, with semi-annual cumulations.

Further information on the new index is available from ISI, 325 Chestnut Street, Philadelphia, Pennsylvania 19106.

μP cassette offered

A recording of the three principal talks given at a microprocessor tutorial is now available on standard magnetic tape cassettes. It includes addresses by the keynote speakers, Dr. Robert Noyce of Intel and Floyd Kvanne of National Semiconductor, and by the wrap-up speaker, Dr. Adam Osborne of Osborne Associates.

The 1976 tutorial, “How to Use Microprocessors,” was held at Stanford University and was sponsored by the IEEE Computer Society and the Electron Devices and Reliability Groups, Santa Clara (Silicon) Valley Section.

To obtain the cassette tape, send a check for $6.00 to IEEE Section Office, 701 W.lake Ave., Palo Alto, CA 94304. Notes of the speaker’s blackboard presentations and viewgraphs will be included.

Change the ANS flowchart standard?

ACM’s SIGDOC group has started a review of the flowchart standard (ANS X3.5-1970). The committee seeks written comments and suggestions for the improvement, modification, or change of the current standard.

All types and levels of suggestions and comments are welcome—even those in favor of the status quo. Everybody in the computer field is eligible. Send your written comments and suggestions to Ned Chapin, Flowchart Committee Chairman, InfoSci Inc., Box 7117, Menlo Park, CA 94025.

Cryptologia publishing

Cryptologia is a new quarterly devoted to all aspects of cryptology. According to Editor Brian J. Winkel of Albion College, the journal will publish research papers, general articles, book reviews, regular columns, and personal accounts. Topics included are computer encryption, paper and pencil cryptanalysis, history and literature of cryptology, mathematical cryptology, cipher machines, and reading ancient languages.

A one-year subscription is $16.00. Further information may be obtained from Cryptologia, Albion College, Albion, MI 49224.

Dramatic growth predicted for distributed processing

Distributed processing will be the most dynamic growth segment of the data processing industry by 1981, according to a multi-client study by Creative Strategies, Inc. Starting at virtually zero dollars in 1975, the worldwide distributed processing market will grow to $4.6 billion by 1981 with the most pronounced increase in the simpler data entry applications rather than in distributed data base management systems.

The CSI report, based on a questionnaire mailed to 10,000 users and potential users and 100 detailed personal interviews, indicates that (1) distributed processing represents a major threat to timesharing and computer service bureaus unless rapid adaptation is made; (2) excellent business opportunities exist in the data entry market, which is still open to competitors; (3) data base management, dominated by large mainframe manufacturers, presents significant entry barriers to smaller companies; and (4) cost does not appear to be as critical a factor in distributed processing as in other markets since purchase decisions tend to be based on system performance.

Military computer market totals $2.6 billion for FY 1977-1981

Funding for military computers is estimated to be $2.6 billion for FY 1977-1981, increasing 58% during the period, states a Frost & Sullivan, Inc. examination of the market.

The U.S. Air Force will be the major buyer, with the Navy and Army ranking two and three in market-size. Aircraft avionics systems will represent the largest dollar segment, with missiles using larger numbers of relatively simple and inexpensive units.

The study defines a “militarized” computer as (1) designed to meet military performance specifications; (2) general-purpose in nature, i.e., programmable; (3) primarily digital; and (4) identifiable as a separate and distinct element of any system or subsystem in which it is used.

Components included in analysis are the central processor, input-output circuitry, main memory, control panel and power supply.

The B-1 bomber will be the major Air Force program, with a demand for 5000 computers of varying sophistication. The F-16 fighter is forecast to be the next largest. Other important efforts will be the A-10 and F-15.

Combined aircraft/avionics programs will be the primary Navy submarket. Spending for A-7E and F-14A computers will be sizeable in the late 1970’s, with LAMPS and F-18 budgeting surging in FY 1980. Navy spending for missile computers will expand steadily, with the shipboard computer submarket remaining at a fairly constant level.

In Army computer purchases, the aircraft/avionics submarket will lead, as the Army introduces new weapon systems into existing aircraft to extend operational life. Spending in the weapon control/command control market in FY 1980 will accelerate, with the TACFOIRE and Battery Level Computer Systems Programs going into production. Acquisition of missile system computers will increase slightly.

Floppy disk market growth immune to solid-state advances

According to a study of the floppy disk drive industry by Venture Development Corporation, widely vaunted advances in solid-state technologies such as bubble memories and CCS's will have no appreciable effect on the rapidly growing sales of diskette drives.

Solid-state technologies will not find application in areas where the media must be removable and stored for future reference. The study indicates that removing bubble memories for archival storage in this period would be expensive and inconvenient, but that such devices would be useful in severe environments where heat, vibration, and dust would preclude floppy disk drive applications. CCD's would not replace floppy disks to any appreciable extent, the study concludes, because they are volatile and lose data upon removal of power.

The report projects world markets segmented by product type and application. Among the application segments, small business systems will begin to dominate floppy disk drive shipments in late 1978. Word processing and microcomputer system applications will also grow rapidly. In terms of technology, among the important factors are double density recording codes, which will be used on 75 percent of all drives shipped in 1981, and dual-sided drives, which will constitute 40 percent of 1981 shipments.

The study indicates that the minifloppy disk drive, with less than half the storage capacity of its full-sized counterpart, will grow in shipments to 76,000 units in 1981 from only 1000 units in 1976. But minifloppies will not substantially replace their full-sized counterparts because they cost more in terms of "bits per buck." Their savings in size, weight, and cost, however, will create new applications—for example, in hobby computers for price reasons and in word processing systems for size reasons.

For further information on the report, contact Edward A. Ross, Senior Consultant, Venture Development Corporation, One Washington St., Wellesley, MA 02181.

Industrial market for electrical conservation controls to triple

Last winter, IBM introduced its first general purpose minicomputer, the Series 1, and just recently offered an energy management system as its first software application package for the new machine. That announcement underscores a significant trend on the industrial market for electrical energy conservation controls, suggests a 202-page report by Frost & Sullivan.

Complete energy management is the most sophisticated part of the industrial market. Such systems both limit electrical demand and reduce overall energy consumption. Less sophisticated power-demand controllers only minimize electrical demand charges, but this equipment sector, too, will undergo market growth.

The report finds that the 8000 or so installations that now employ electrical energy controllers of either kind account for 10 percent of the potential market. This will increase, however, to as many as 90,000 installations by 1986.

Microcomputers will become the leading edge technology as designs based on special-purpose logic disappear about 1980, while programmable logic controller-based units begin to succumb about that time.

Some financial projections tell the story. Shipments of microcomputer-based controllers at $5 million in 1976 will rise to $40 million by 1980 and $140 million by 1986. This 14-fold growth compares to only a tripling of shipments for minicomputer-based controllers over the same period.


New study of disk drive industry published

Fixed disk drives will capture over 50 percent of total worldwide shipments of moving-head rigid disk drives by 1980. And revenues from fixed disk drives will grow from $307 million in 1976 to $1588 million in 1980, according to a newly published DISK/TREND Report on rigid disk drives.

The report, initiated this year, is a detailed annual business review of the worldwide moving-head disk drive industry. It analyzes each year's disk drive shipments in individual product groups, along with underlying marketing and technical trends.

In addition to revenue projections, the study covers unit shipments, installed drive populations, average selling price, competitive market shares of manufacturers, and a breakdown by disk drive distribution channels. The report also contains a technical review of competing technologies and potential disk drive enhancements as well as details on drive manufacturers and their products.

For further information, contact James N. Porter, 1224 Arbor Court, Mountain View, CA 94040.

Government interest in automated factory

Programmable automation will soon be a necessary fixture in U.S. factories, according to a recent study by Creative Strategies, Inc.

The Federal Government's desire to make U.S. industry more productive will spur tax incentives for capital equipment investment and new funds for research and development. New plant facilities and equipment purchases are the primary markets for individual discrete manufacturing equipment and production line automation programs, the report states.

The domestic market for programmable automation equipment in the discrete part manufacturing industry has grown from an estimated $2.3 billion in 1971 to $3.5 billion in sales in 1976 and, the study predicts, will reach $7.7 billion by 1981. The most interesting and significant new component market segment is programmable controllers for assembly, welding, and finishing operations.

The analysis covers the market on two levels: by user industry (transportation, electrical and non-electrical machinery, instrumentation, and aerospace), and by type of programmable automation component (numerical controllers, programmable logic controllers, automated assembly equipment, industrial controllers, robots, test and inspection equipment, and materials handling equipment.)

For further information contact Creative Strategies, Inc., 4340 Stevens Creek Blvd., San Jose, CA 95129.