MINUTES OF THE ___SENATE___ COMMITTEE ON ____WAYS AND MEANS_____.

The meeting was called to order by _____Senator August "Gus" Bogina_____ at
                                                    Chairperson

__11:00__ a.m./p.m. on _____January 30_____, 19_85_ in room __123-S___ of the Capitol.

All members were present except:

Committee staff present:
Research Department: Robin Hunn
Revisor's Office: Norman Furse
Committee Office: Judy Bromich, Doris Fager

Conferees appearing before the committee:
Dr. Russell Getter, Director, Division of Information Systems and Communications
Dr. Mike Harder, Secretary of Administration

Dr. Getter distributed a packet of material to members of the committee.
(See material attached to these minutes). He then used a flip chart to
present that material to the committee.

During Dr. Getter's presentation there were questions concerning various
aspects of the computer system in Kansas. When asked if business managers
at the Regents' institutions had accepted the idea of a centrally located
KIPPS program, he said he was not certain, but was aware of some anxiety about
the future of adding payrolls on the campuses to the KIPPS system. There
was discussion concerning the University of Kansas payroll last year; and
it was noted the only module which had been withdrawn from the system was
the University of Kansas payroll module. When asked why that University was
permitted to withdraw from the state computer system, Dr. Getter indicated
that one reason was because the system was overloaded.

Senator Feleciano asked why Dr. Getter did not present a history of the
IBM system as well as the Sperry system. He replied that there has not been
a problem with the IBM system. In answer to a question from Senator Doyen,
Dr. Getter said the MSA package cannot be placed on the Sperry system without
additional hardware.

During discussion concerning Item VIII (B) in Attachment A, Dr. Getter gave
the background of consultants used in the Computer Operations Overview. He
stressed that none of them are connected with vendors of computers. There
was extended discussion concerning the consultants, including questions con-
cerning the lack of printed material available for study by the Legislature.
Secretary Harder verified Dr. Getter's confidence in the consultants used,
in spite of the fact that detailed studies from each consultant were not
available.

Dr. Getter specifically referred to the final page of Attachment A, labeled
Impact Analysis. He stated this was part of a more detailed document which
has been made available to the Legislative Research Department.

At this point, Dr. Getter made reference to Procurement Histories for IBM
and Sperry Univac (Attachments B and C).

Following is an outline included on the flip chart which was not included
in attachments:

     XIII. Managing procurement with a vendor in a non-competitive
            environment

        A. Sperry upgrade--early February 1984

            1. All options for hardware, Sperry software and maintenance
                range from $12 million to $17 million.

MINITES OF THE ___SENATE___ COMMITTEE ON _____WAYS AND MEANS_____,

room _123-S_, Statehouse, at _11:00_ a.m./p/m/on _____January 30_____, 19_85_.

A. Sperry upgrade--early February 1984 (Continued)

    2. Total costs range from $13 million to $19 million

    3. Does not include interest

B. Sperry Upgrade, late February 1984

    1. Sperry recommendations

        (a) 1100/91 in State Office Building
        (b) 1100/92 in Santa Fe Building

    2. Total cost: $11.6 million (Details in Attachment A)

C. Sperry Upgrade--September 1984

    1. 1100/63 to 1100/74 (currently in Santa Fe Building) $6 million
    2. 1100/92 $7.8 million
    3. 1100/91 $5.5 million
    4. Interest charges not included

D. Net savings by raising the issue
        1100/92 in Santa Fe Building -- $4.2 million

XIV. "The importance of persistence"

  A. See handout from Representative Kahn from Minnesota (Attachment D)

Since Committee members had many questions, the Chairman noted that more time would be given for that purpose on Monday, February 4.

APPROVAL OF MINUTES

Motion was made by Senator Doyen and seconded by Senator Talkington to approve committee minutes for January 16, 17, 22, 23, 24, 28 and 29. The motion carried by voice vote.

The meeting was adjourned by Chairman Bogina.

GUEST LIST

COMMITTEE: _Senate Ways and Means_   DATE: _January 30, 1985_

NAME (PLEASE PRINT)	ADDRESS	COMPANY/ORGANIZATION
CARMEL HINKLE	TOPEKA	SPERRY
TERRY COPELAND	FAIRWAY	SPERRY
Dave Larson	Topeka	KCC
Dick Koerth	Topeka	Budget
Mary Adkins		
Sherry Brown	Topeka	Lloy Admin.
Barbara Paschke	Topeka	DISC
Virgil F. Basgall	1152-W S.O.B.	DISC
Ron Nein	627 S Topeka	Spery Legis. Counsel
DENNIS DEHN	TOPEKA	SEN. WERTS' INTERN
Jon Josserand	Topeka	Sec. of State
Dr. Russell Getter	"	Dept. of Adm. DISC
Dr. Mike Harder	"	Dept Admin
SARA OPPERUD	5401 SW 7th, TOPEKA	KASB

I. Wise use of the State's resources in communications and computing

    A. Inventory control system
    B. Maximum volume discounts
    C. Equipment compatibility with:
        1. Existing equipment, or
        2. Plan for change
    D. Performance integrity not degraded
    E. Financing at lowest possible cost
    F. Purchases have long term value
    G. Purchases based on meaningful competition
    H. Realistic depreciation schedules
    I. Unit costs at lowest possible level
    J. Meaningful central planning

II. IBM Center and Sperry contractual obligations--Totals

	FY	Sperry	IBM Center
A.	85	2,257,564	2,960,839
B.	86	2,248,344	2,802,493
C.	87	2,248,224	2,193,148
D.	88	1,631,517	1,690,271
E.	89	1,410,126	1,458,116
F.	90	828,922	1,282,565
	Totals	10,624,697	12,387,432

                      Grand Total   23,012,129

These are the current contractual obligations as of 9/11/84 for our entire computer center covering lease, purchase and maintenance of hardware and software.

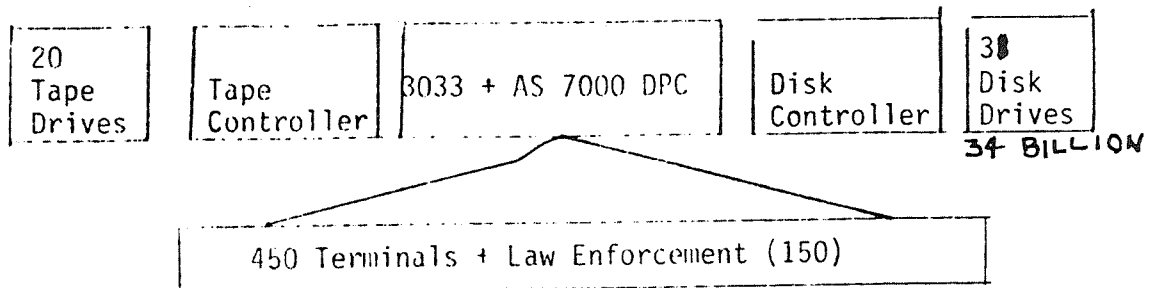III. IBM Center and Sperry continuing operations

	FY	Sperry	IBM Center
A.	85	3,109,670	5,343,514
B.	86	3,203,923	5,482,478
C.	87	3,203,803	4,873,133
D.	88	2,587,096	4,370,256
E.	89	2,365,705	4,138,101
F.	90	1,784,501	3,962,550

Note for Fiscal Analysts: The figures above are the on-going cost of operations, including existing contracts in II above, existing operations personnel, expected additional budgeted acquisitions in FY85, and a portion of other shared cost centers. From the large spread sheet that was used to prepare the impact analysis of phasing out Sperry-Univac these figures can be computed as follows: Sperry--Univac operations base budget + 22.1% (other cost centers base budget); IBM Center--IBM operations base budget + 45.1% (other cost centers base budget).

A 1-30

IV. Major objectives
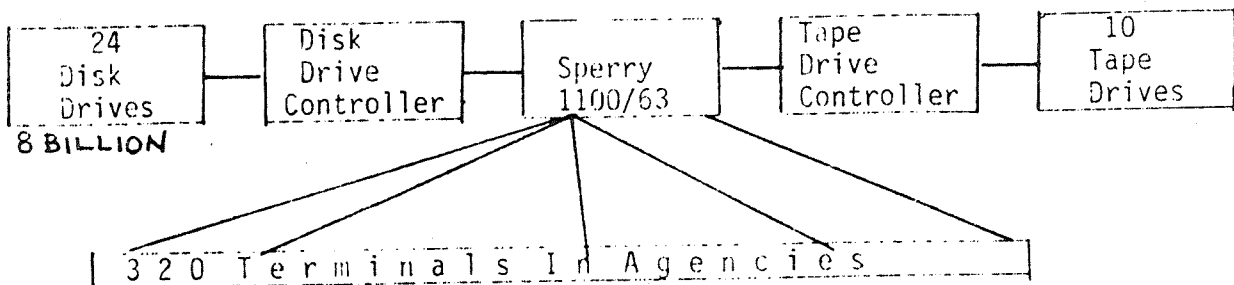
    A.   Reduce debt
    B.   Reduce costs of data processing per unit of output
    C.   Institute 5-year planning cycle
    D.   Provide certainty for critical applications, e.g.,
        1. Money-in
        2. Money-out
        3. Audit trail

V. Current IBM compatible configuration

20 Tape Drives	Tape Controller	3033 + AS 7000 DPC	Disk Controller	3⦿ Disk Drives

34 BILLION

450 Terminals + Law Enforcement (150)

    A.   IBM 3033: 5 MIPS
    B.   AS 7000: 4.5 MIPS
    C.   Usage rate: (See handout)
    D.   Must have upgrade at move to Santa Fe

VI. Sperry configuration

24 Disk Drives	Disk Drive Controller	Sperry 1100/63	Tape Drive Controller	10 Tape Drives

8 BILLION

3 2 0   T e r m i n a l s   I n   A g e n c i e s

A. 1100/63: 3.4 MIPS
B. Usage rate: 97 percent, with peaks of 99.7 percent
C. Growth rate: 12 percent, after KIPPS revision
D. Management restrictions/modifications
    1. Restrict use of Agency MAPPER
    2. Separate student processing in KIPPS
    3. Partial redesign of KIPPS
        a. Data compression
        b. Eliminate duplication
        c. Complete documentation for easier use
    4. New KIPPS manager (Don Clingenpeel)
    5. Structured design (retroactivity and for the future)
    6. Internal study of KIPPS (Carey Brown)
    7. Programming standards enforcement

VII. 1984 Legislative Session - Sperry history and decisions

A. Payroll crisis at KU
B. FY84 expenditure: $2.6 million
C. FY85 request: $4.5 million
D. FY85 base budget (with contracts): $3.2 million
E. Legislative appropriation (with Finance Council approval)
    1. $300,000 for Regents withdrawal from KIPPS
    2. $ 50,000 for consultants
    3. $300,000 for hardware (disk drives)

VIII. Actions taken

A. Regents withdrawal agreement (payroll module only)
    1. Not final action on Personnel/Payroll processing
    2. Schedule and $ distribution

a. WSU MARCH 1, 1985		$15,000
b. KSU APR 1, 1985		25,000
c. KU/KUMC APR 1, 1985		110,000
d. ESU AUG 1, 1985		20,000
e. FHSU AUG 1, 1985		75,000
f. PSU OCT. 1, 1985		35,000
g. KTI OCT. 1, 1985		20,000
		$300,000

B. Consultants
    1. Stiles Roberts
    2. Ken Orr
    3. Marlin Mackey
    4. Recommendation: Do not upgrade Sperry
C. $300,000 for hardware was not spent
D. Instead, request $300,000 supplemental for software

IX. Current KIPPS report

 A. Machine overloaded, given current version of KIPPS

 B. Current version of KIPPS incomplete

   1. Does not provide for batch updating

   2. Does not provide for distributed processing

   3. Does not meet needs of Regents institutions

   4. Contains data on unresolved policy issues, e.g., FTE--daily or annualized?

   5. Contains duplicate data

   6. Some users still cannot input data correctly

   7. Daily modifications and/or corrections necessary

   8. Current backlog of work (see handout)

 C. Current machine (Sperry 1100/63, with peripherals) ought to be large enough to run Personnel/Payroll/Accounting system.

   1. Mapper not good for large databases

   2. KIPPS software could be more efficient

 D. Sperry machine NOT compatible with IBM compatible equipment

 E. No backup for Sperry system

X. Lowest cost AND highest quality Personnel/Payroll processing can be accomplished in an IBM compatible environment

 A. IBM compatibles comprise 70-80 percent of the market

 B. Result: Applications software is written for IBM compatible machines

 C. Advantages of commercially available software

   1. Mistakes and errors removed

   2. More efficient

   3. Adaptable to changing conditions

   4. Many experts for implementation

   5. Maintenance and updating are accomplished by all users -- not just one

 D. Saves State of Kansas $7.7 - $8.0 million (see handout: Impact Analysis)

XI. Recommendations

 A. Continue to use existing Sperry equipment through end of FY88

 B. Do not upgrade Sperry equipment *IN 1986 FY*

 C. Purchase IBM compatible software in FY85

 D. Upgrade the IBM-compatible center to the following 21 MIPS center upon the move to Santa Fe

   1. IBM 3081 K, or its equivalent (15 MIPS)

   2. AS 7000 (owned) (4.5 MIPS)

   3. AS 5000 (owned) (1.5 MIPS)

 E. Begin adaptation to IBM compatible center in FY86

 F. Begin migration of applications to IBM center in FY87

Looking Ahead:
Key Forces That Will Shape The World of Computing

T he third wave has engulfed the world of computers—the microcomputer. As it surged beyond the point reached by its predecessors, the mainframe and the minicomputer, the microcomputer wave deposited active elements on the shores of the world of computing. These catalytic agents have now transformed computing, those who use computers, and even the nature of our society and life in this century.

The past 25 years have seen vast changes. The first was the advent of large-scale computers in the early sixties. The descendants of these machines are mainframes or host processors. This technology brought centralized data processing, the professional EDP staff, and the MIS department in large organizations.

In the seventies, the second wave—the minicomputer—decentralized computer processing. Lower-cost minicomputers meant that individual depart-

1

There Will Be a Computer on Almost Every Desk by the Early Nineties.
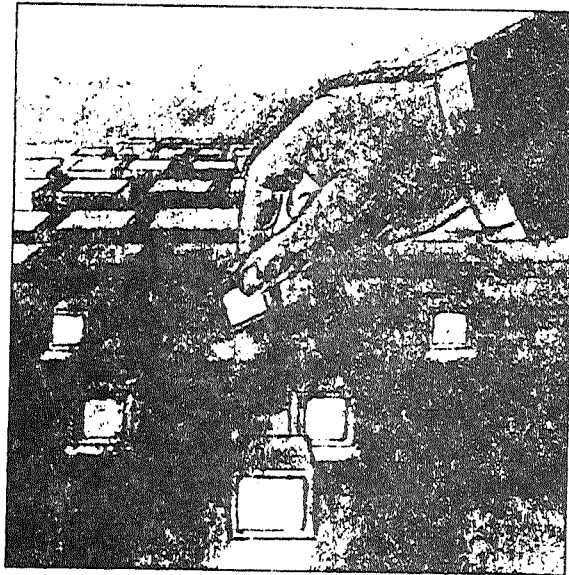
ments and smaller companies could afford their own computers. And many more people had access to computer technology, specifically software know-how.

Today, the microcomputer has enabled a new group of hands-on users to participate in the computer world. The lower cost of entry-level hardware and the increased number and quality of software applications are revolutionizing computing. And the changes are just beginning to gather force. They will penetrate more than computing. The entire modern world will experience the effects of the microcomputer wave.

This impact comes when social scientists are observing huge changes in all walks of life. As John Naisbitt argues in *Megatrends*, many feel we must prepare to deal with changes by adopting a new strategy. Naisbitt proposes his megatrends tactic, incorporating careful observation of the present and a continuing review of the past to discern the major patterns of change that will determine the future.

Taking a cue from Naisbitt, I have looked at the forces changing computing and have identified 15 dramatic results of the microcomputer wave. With a bow to Naisbitt, I call this approach "megacomputing" and the 15 changes I predict, "megacomputing trends." I present the 15 changes—change-agents as well—as the rational basis for megacomputing planning, preparing for the future by broadly analyzing the effects of the microcomputer wave.

In the same way that the telephone, the typewriter, and the photocopier have become basic business necessities, the keyboard and video display will become indispensable tools for every office worker at all levels by the beginning of the next decade. As a matter of fact, many information workers will probably have more than one desktop or portable, integrated workstation: in their offices, their homes, and even in their briefcases.

Low cost is the most important factor responsible for this rapid proliferation of personal computers. Priced at $3,000 to $5,000 and offering increasing capabilities, video-based workstations contribute more to an organization while costing less in proportion to the overall expense of maintaining employees. Productivity increases of 5 to 10 percent pay back investment in microcomputers in less than a single year.

Entry-level employees with computer skills will help to enhance the effectiveness of the new dependence on the computer for business. They will have been introduced to computers at a very early age, never having known what the world was like without them. Computer skills learned in the classroom will have reinforced the video-game generation's experience. This new generation in the work force will find the computers on their desks very familiar.

Illustration: Ivan Powell

2

*By the End of the Century,
at Least as Many Computers as TV
Sets Will Operate in the Home.*
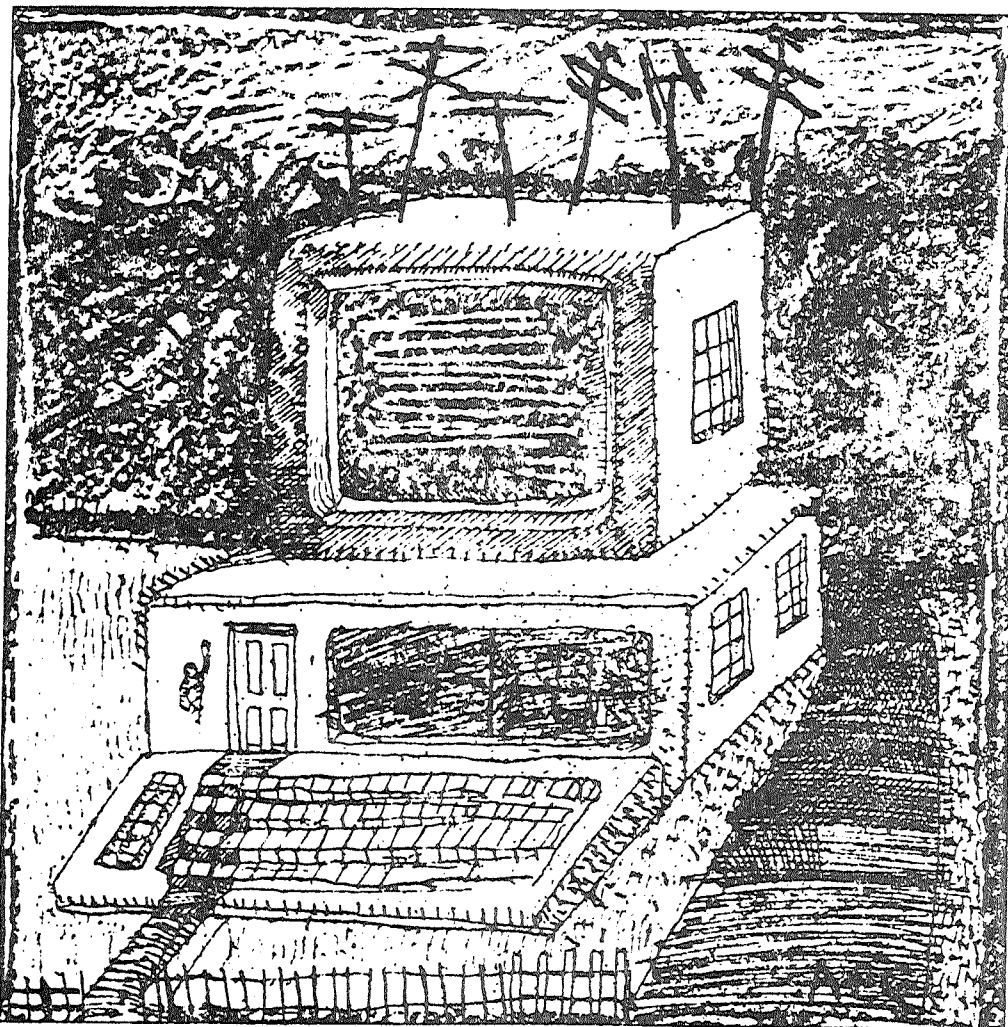
Several years ago, I was rather skeptical of predictions of the computer's widespread use in the home in the near future. Now, however, I find myself astounded by the rapid acceptance of the microcomputer for such uses as recordkeeping, word processing, education, housekeeping, personal finances, and entertainment. I predict that by the end of this century, computers in the home will equal or outnumber television sets. In fact, each television and telephone openly invites the owner to attach a computer. Or perhaps the TV and/or the phone will actually encompass the computer. New software will make many more applications possible, sweeping the home computer market as dramatically as *VisiCalc* captured the professional market several years ago.

A clue to the force that will drive the home computer market is the banking industry's determination that banking at home electronically is an economically sound approach to controlling banking expenses. Banking via personal computer will alone anchor the computer solidly in the home. Videotex services and educational software targeted at the family will make the home market even stronger.

3

*Computer-Based Word Processing Will
Be* the *Means for Recording and
Transmitting the Written Word.*
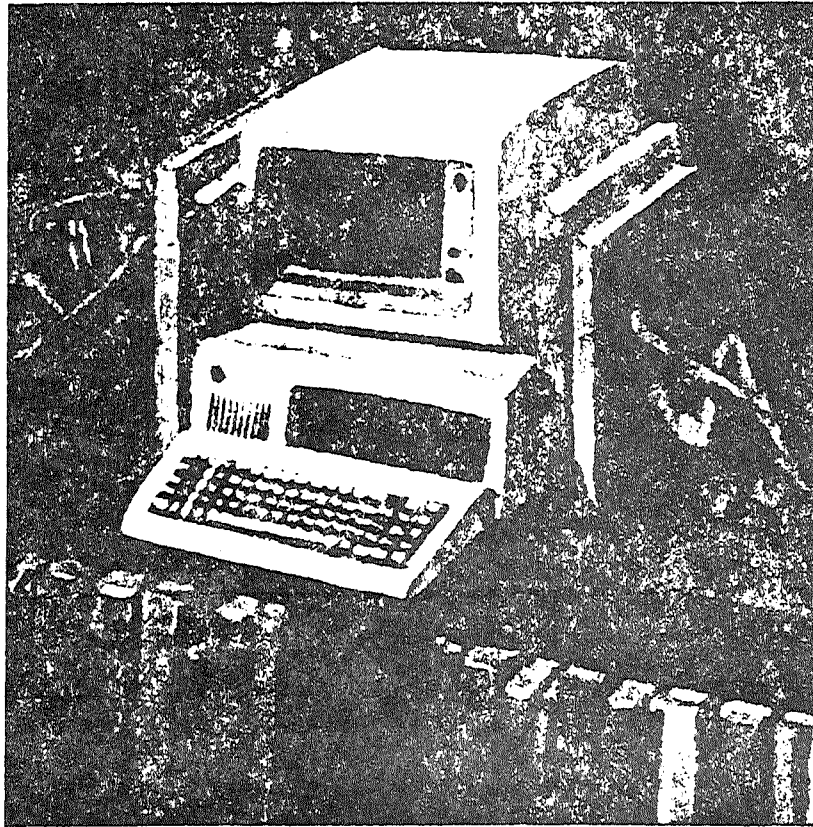
First the alphabet, then paper, the printing press, and the typewriter made the written word easier to disseminate. Now electronic processing of words does the job for today's communications. If not already the established leader in computer uses, written communications will become the most popular application for computers.

No single word processing applications program will serve the needs of the entire market. The requirements of student, secretary, information worker, manager, and professional writer will encourage development of many different types of word processing systems—simple line editors, memo writers, manuscript developers, engineering documentation systems, and record-keeping facilities. Many alternative software and hardware combinations will be designed to support the needs of this broad spectrum of users. This technology should in turn promote improved communication skills. Spelling checkers, syntax analyzers, automatic indexing systems, and thesaurus support will be widely available. Imagine the fast progression grade-school students will be able to make using these kinds of learning aids and the time businesspeople will save by having the personal computer handle grammar and style while they concentrate solely on composing correspondence, planning strategy, and so forth.

Suppliers of word processing products will proliferate to meet the incredibly expanding needs of a marketplace that encompasses office, home, and school. Word processing's effect on the handling of words will be similar to that of the pocket calculator on the handling of numbers.

Capturing text electronically is just a small step away from transmitting it electronically. New forms of electronic mail will ultimately replace many of the ways people presently communicate with each other.

4

The Personal Computer Will Be a Paradigm of Performance, Leading the Way to Increased Productivity.
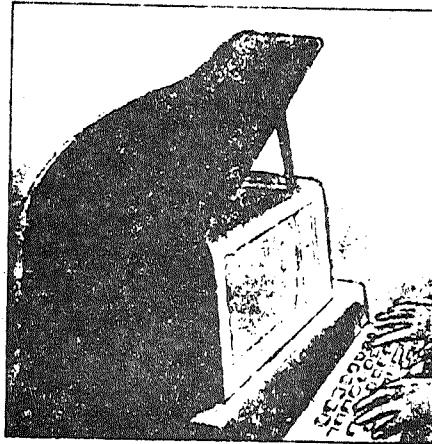
To increase their levels of productivity, individuals must be motivated. Yet even when motivated, they still often find it difficult to judge their own behavior objectively. No absolute ..uidelines can tell them what and how to improve. They lack a paradigm of performance. The personal computer, however, has begun to supply one.

The small computer can be both a measuring device and an instrument of improvement. Though inanimate, it can establish a paradigm of performance for the individual. It guides the user, leading and setting the pace for handling specific t sks. The personal computer conducts a ...sistent, unthreatening dialogue with the user, helping to improve his or her performance without causing jealousy, resentment, or a diminished self-image.

Using the microcomputer, a worker responds faster; the computer sets the pace of execution via screen-generated prompts. The computer user develops more far-seeing, in-depth, and alternative strategies by following the step-by-step ch n of operations set up by the computer hierarchical menu structures and multiple processing paths. And the user's ability to consider and execute several processes at the same time is enhanced by the computer's multitasking features.

Substantial technological improvements enable the microcomputer to respond quickly to requests for multitasking operating systems and to create new user interface environments. These new environments offer additional data processing facilities, including fast screen painting and response, full screen-editing operations, bit-mapped graphics, additional input devices ("mouse" and touch-activated devices, for example), screen system management via windows, and user environments with all these features as well as general-purpose functions and operations that improve user comprehension when dealing with many applications.

Recent advances in overall hardware performance have yielded empirical data that suggest that the performance of the terminal operator increases as the response time of an on-line data processing application decreases. In selected studies reported by IBM (see *The Economic Value of Rapid Response Time,* IBM Document GE 20-0752-0, November 1982), end-user performance is optimal when response time is decreased from the 2 seconds promoted in the seventies to as low as 3/10 of a second. Several experiments cited in this report indicate that terminal operators can improve their productivity by as much as 100 percent when these changes in hardware performance are in place.

Observations of individual performance with a spreadsheet program or word processing package confirm these findings. The end user can become a virtuoso at the keyboard, performing with remarkable gusto, paced by screens that move and flash with unusual speed. No wonder software is now being appraised as much for its screen performance as for its practical usefulness.

But response time is not the only consideration in improving the performance of the computer user. Multitasking or concurrent operations add another dimension. When the user can perform overlapping tasks, he or she is encouraged to accomplish more per unit of time than ever before.

Finally, new man/machine interfaces further accelerate ease and comfort of computer use, also improving user productivity. These creative interfaces include bit-mapped graphics, including icons and windows of the sort that adorn Apple's Lisa and VisiCorp's Visi On, as well as touch-sensitive color graphics, such as those in Interactive Images's Easel system.

Armed with such intellectual stimulants and analytical tools, computer users find that they can increasingly control and improve output. Inspired by success, they generally renew interest in the job, conceive and develop new approaches and solutions to old problems, and assume more responsibility.

5

*Desktop Computers Will Lead
to Overall Personal Productivity
Increases of up to 20 Percent.*
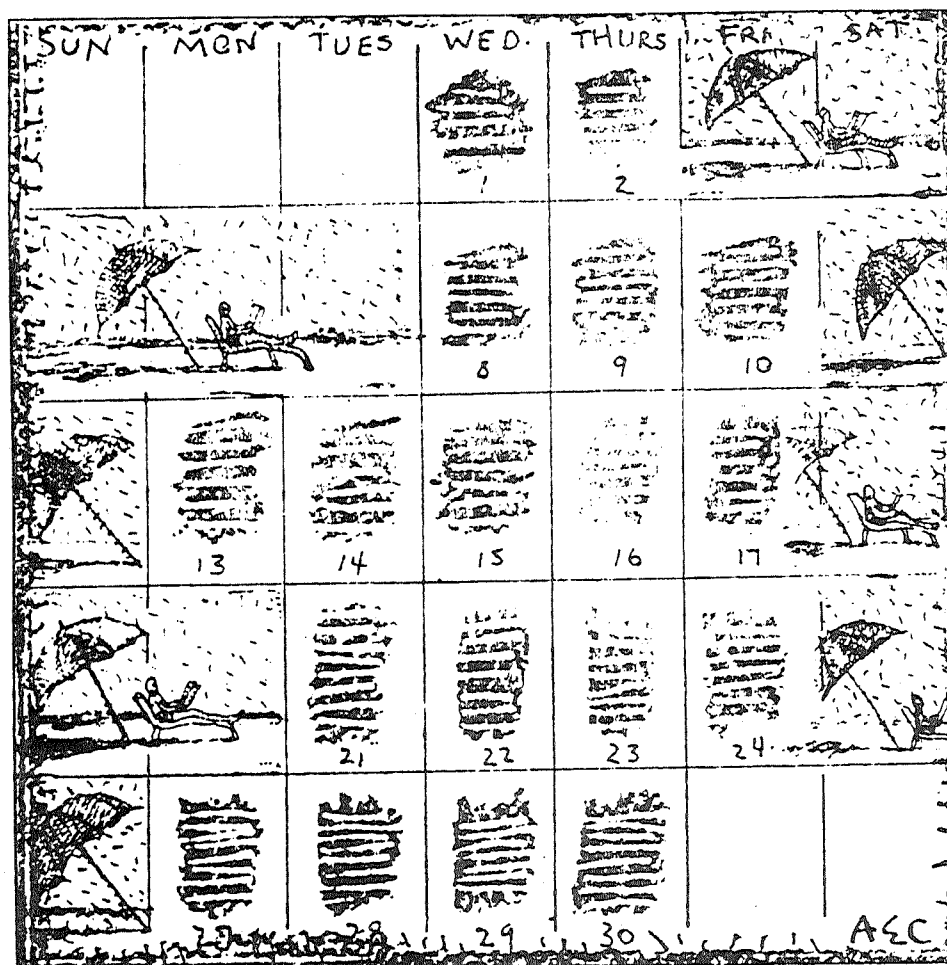
These benefits of the microcomputer wave will improve workers' overall personal productivity. Supported by a desktop system as a component of departmental computing, workers will increase their efficiency in handling conventional tasks such as organizing schedules, keeping calendars, writing memos, filing electronically, preparing for meetings, tracking events and projects, managing phone communications, and coordinating their efforts with those of other personnel. In addition, software developments will create new capabilities for individuals, leading to their even more effective performance or ability and readiness to assume more responsibility.

All these advantages will give them each an additional hour or two in the day. This additional time can lead either to a shorter work week or increased production, both in turn increasing productivity. Widespread use of computers in home and at the office, along with word processors, spreadsheet analyzers, and record keepers, will thus improve individual productivity by as much as 20 percent.

Students, housekeepers, salaried employees, and independent business owners will all benefit from the savings of up to 2 hours a day. The 1-year value of this improvement, measured in relation to the economic value of the individual worker's output, approximately equals the cost of the computer system. In other words, the system can easily pay for itself in 1 year.

Illustration: Alan Cober

6

*People Will Communicate
More, and More Effectively, via
Computer Networking.*
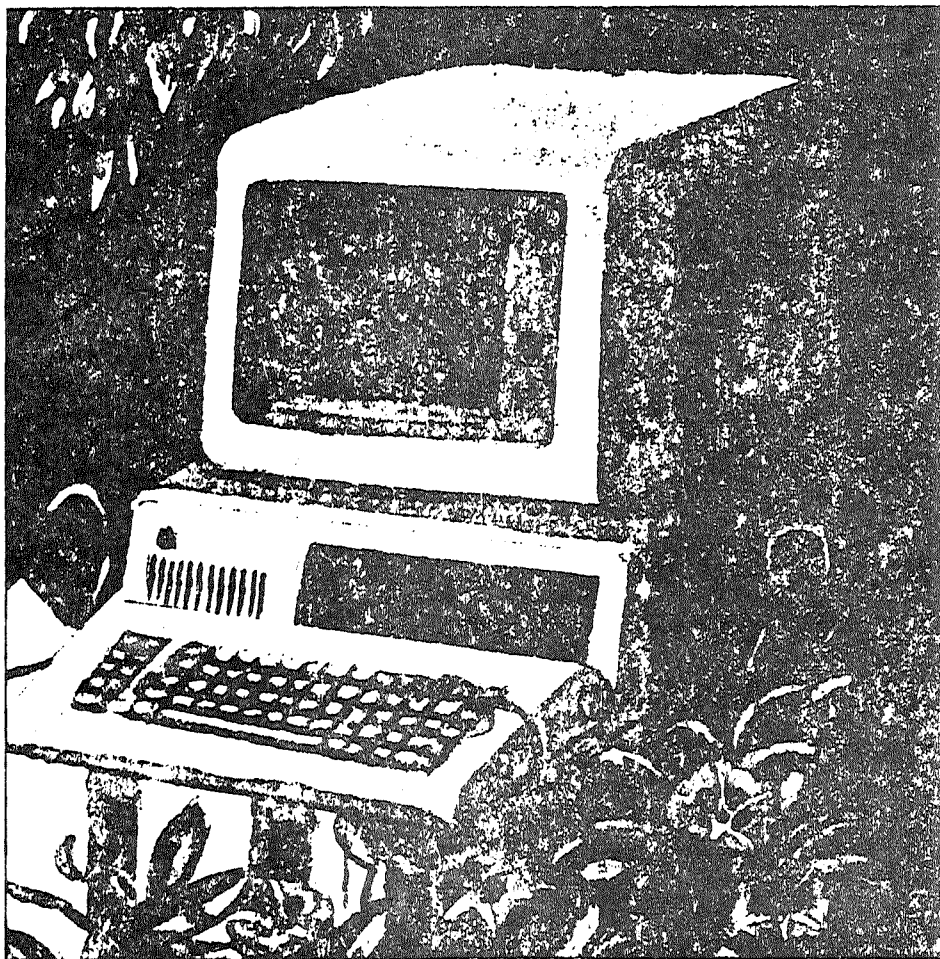
Yes, the personal computer is having a profound impact on individuals' performance, but individuals don't work alone. Their relationship to organizations and to co-workers means that networking will grow more important—at the local level and on a remote basis. The local area network will be the key to intra- and interorganizational communicating via shared resource facilities as well as shared file capability. Electronic mail, file transfer, and data sharing will link an electronic community of users shaped by the needs of "departmental" computing, rather than the more impersonal corporate or organizational MIS data-processing-type computing.

The personal computer on every desk will be as familiar and as oft used as the telephone— both allow people to communicate better, easier, and faster. They complement each other, the telephone offering voice and the computer adding memory and information storage. Their combined facilities will merge and become a multifunctional workstation operating in a network environment.

Local area networking and wide area communications will connect people in new ways, letting them transfer data and share hardware and databases. Electronic mail will greatly improve communications, through its speed and ability to file, archive, and reduce inefficiencies automatically (a relief from today's "telephone tag").

7

The Widespread Use of the Personal Computer Will Encourage the Growth of the Mainframe, Not Inhibit It.
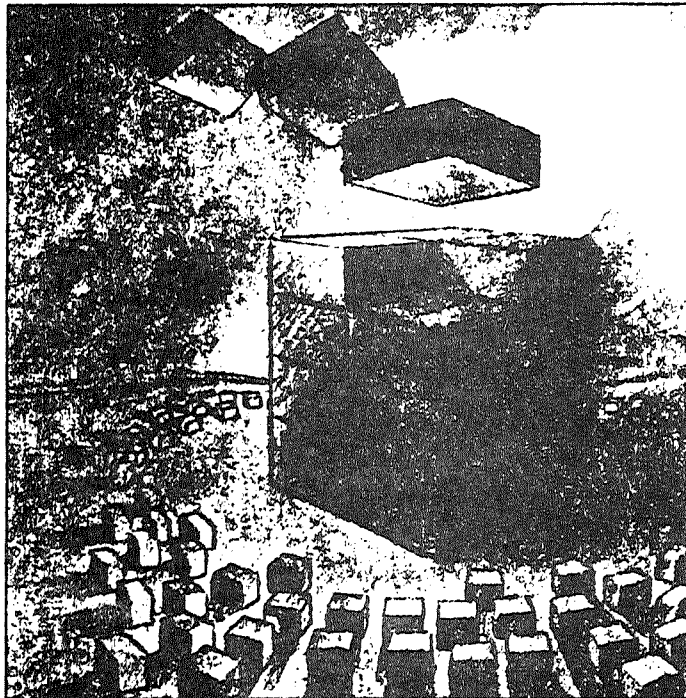
Some have already proclaimed the demise of the mainframe. In fact, many have dubbed mainframes present-day dinosaurs. But I predict that mainframes will increase in size, number, and performance—because of the personal computer, not in spite of it.

The surging microcomputer wave and the likelihood that the sales of personal computers will surpass those of mainframes will increase the need for host processors dramatically in the next 10 years. Two trends support this prediction. First, applications to exploit new opportunities for linking micros to mainframes to create distributed data processing environments will become more and more complex. Home banking alone will demand many of these links. Second, the need—and competition for—more and more information

will explode the data generation and distribution market (which is basically based on mainframes), offering formatted data and videotex products. Larger-scale computing will grow in demand in response to this need for more and better information.

Picture millions and millions of small computers on desks throughout corporate America. Much activity will be local, both in terms of processing and data needs, but a great need will emerge for access to other computing points, whether centralized mainframes in the corporate hierarchy, other personal computers, or publicly available utilities, as sources of data banks and auxiliary services. Individuals will want to connect with other computers to execute host-based applications, send or get a file to or from a mainframe, access

data from mainframe databases, use the mainframe as a back-end processor, send messages electronically, enter data for processing by the mainframe, and execute applications developed for distributed processing.

The potential impact of the microcomputer on mainframe computing needs is apparent when you look at the situation this way. First, accept the prediction that more than 30 million personal computers will occupy desks throughout the United States, and then assume that on the average each user will require connection to some host/mainframe 20 minutes a day over a peak 5-hour time frame. You'll see that with the average host supporting 100 personal computers at any time, 20,000 additional mainframes will be required to support this load.

8

*The Economics of Computer Hardware
Will Become More and More Like That
of the Automobile Market.*
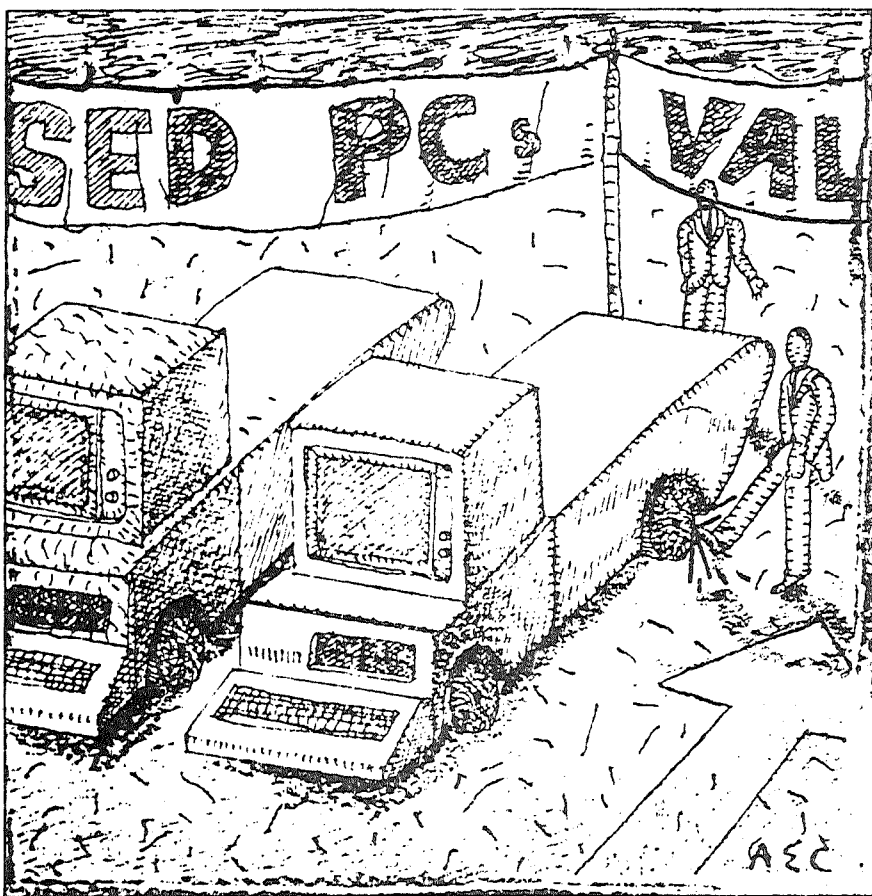
The American automobile industry is a model for the future economic evolution of the computer hardware sector. Three factors are characteristic of this industry: mass production is the basis of economies of scale; standardization permits use of interchangeable parts and encourages the growth of ancillary, third-party suppliers; user interfaces are sufficiently alike that consumers are familiar with the use and requirements of various vendors' products.

Each automobile supplier is essentially selling the same product "under the hood," the outer shell of the vehicle is what differs the most markedly from vehicle to vehicle. While most of the automobile's internal mechanisms, especially the engine, remain pretty much the same over time, the external appearance receives an annual "face lift" to satisfy or attract new consumers. Most people buy new models for their new looks and style rather than for any improvements in automotive technology.

Computer hardware vendors have now almost reached the point where these same factors will determine the personal computer market. At $5,000 to $10,000 a unit, computer hardware will be viewed and merchandised in exactly the same way as the automobile in the next few years. People will replace their systems with newer models every 3 or 4 years. Just as a vast used-car market has developed, so too will a similar business grow for computer "retreads." Indeed, the Model T of the computer world is the already "old-fashioned" 8-bit CPU. And today's "standard six" is the 16-bit machine, with the 32-bit model fast becoming the "standard eight."

Illustrated: Alan Cober

9

Standardization of Software Is Becoming the Dominant Influence on Data Processing.

Just as hardware is reaching a level of standardization, software is also becoming more uniform, but much more slowly. The general environment for software users, specific functional areas (spreadsheet, word processing, and database), and data formatting are all virgin territory for standardization. The economics of the software market are not yet strong enough to force the kind of progress the hardware market has seen. And no clear leader in software has emerged to compare with the influence and the power of IBM in hardware.

However, it's only a matter of time before the underlying pressures for standards force a change. Take user environment. Why should users be confronted with differences that are purely a question of arbitrary choice in language? Since commands like COPY and PIP are intrinsically the same, the software industry should either accept them as interchangeable terminologies or select one as the standard designation. Help, Escape, Return, and Master Menu should all designate standard requests in every product, and in all cases you should be able to select them by using the same method. Actually, screen presentation, cursor movement, and selection of options are becoming increasingly similar.

As far as applications are concerned, much has already been standardized. The standardization of commands and operations among competing word processing systems, for instance, is astounding. They all have Insert, Delete, Search, and Print, and these common functions are used most of the time. With mature, well-understood applications, probably 20 percent of the functions and features serve the user 80 percent of the time. Even more

astounding, users can generally handle 80 percent of the jobs to 100 percent satisfaction with these basic functions and features.

The most important standardization yet to be attained will affect data formatting and communications. When these are more uniform, computing will go beyond supporting the user infrastructure and contribute to more efficient software production. Such software standards will parallel those of any mature industry, as with standards for phonograph records, cassette tapes, and film cartridges to accommodate the design of the various hardware devices that require them.

Some data-formatting standards are already common throughout the industry, including ASCII files, the simplest and most common denominator of likely file content and format, limited to "text" or what are often called print files; MS-DOS files, nearly a standard owing to the current dominance of the Microsoft operating system, MS-DOS (adopting this "standard" presupposes that you also accept consistency with the associated file directory system); SYLK (SYmbolic LinK) files, a standard promulgated by Microsoft

that encompasses file formats that mix data and formulas, designed to make a highly encoded or binary file readable (the genesis of this attempt at standardization was the well-known *MultiPlan*); and DIF (data interchange format) files, the actual standard of file representation, with objectives similar to those of SYLK and advocated by Personal Arts Inc. and adopted by a number of vendors, solely because of the popularity of *VisiCalc*. In addition to these efforts to standardize file formatting, other activities focused on the goal of achieving commonality in file communication protocol. One of these efforts, introduced by Microcom, produced Microcom Networking Protocol (MNP). With MNP, error-free transfer of files from one computer node to another is possible within the framework of the International Standards Organization's reference model of open systems interconnection.

Only a beginning, these efforts may not be sufficient for the long run, when more sophisticated formats and structures will be required, especially for mainframe computing. Already, vendors have moved in the direction of IBM's standard protocols, such as Systems Network Architecture for general communications, and other standardization schemes, such as Document Control Architecture for standardizing directives that control document format and Document Interchange Architecture for interchanging protocols (specifications for transmitting and receiving documents).

In a few more years, such formatting and communication standards will be more prevalent. Both the industry and the users will demand them increasingly, giving impetus to even more standardization in the next decade.

Illustration Barry Root

10
Software Will Be Expendable.

With the advent of mass purchasing of personal computers, software became a consumer product. A variety of retail distribution outlets opened to transact business selling software, prompting *Business Week*'s cover story on the phenomenon in its February 27, 1984, issue. And the trend has really just begun; in fact, software products are fast becoming expendable consumer goods.

In accounting, expendable goods are purchased items expensed on a current basis. Typically, good accounting practice defines the expendable item as one whose value to an organization endures less than 1 year, or whose cost is less than some reasonably agreed on amount. Items totally expensed within a relatively short accounting period are not considered assets worthy of being recorded on a company's yearly balance sheet and subsequently depreciated.

Software seems to be heading in this direction. I predict that it will become a low-cost, replaceable item for a number of reasons. First, the price of a software unit is already relatively low—in the $250 to $500 range. And large organizations will buy software in large quantities, at discounts of 30 to 50 percent. Second, software is revised within surprisingly short intervals; often less than a year elapses between revisions. These new versions are usually available to existing users for a modest replacement fee. Often, new revisions replace earlier versions entirely. Third, new, competitive products catch the interest of the consumer, making previously available items seem obsolete. And as data- and file-formatting standards become more prevalent, replacing old software with new software will become relatively easy. Fourth and last, buyers can often justify purchasing software on the basis of a single project and therefore write the cost off over the lifetime of such an activity. This is clearly the case, for example, with a $250 spreadsheet program used to produce and analyze dozens of comparative financial models for a single corporate acquisition study. The fact that the spreadsheet package may be used to analyze other acquisitions does not alter the intent of the initial purchase.

People will therefore accumulate software the same way as they do books, magazines, and other collectible items. Users will take programs off their shelves from time to time as they need them. The rest of the time many of them will accumulate dust as they line the walls decoratively, like so many books on the shelf.

11

The Applications "Backlog" Will Disappear.
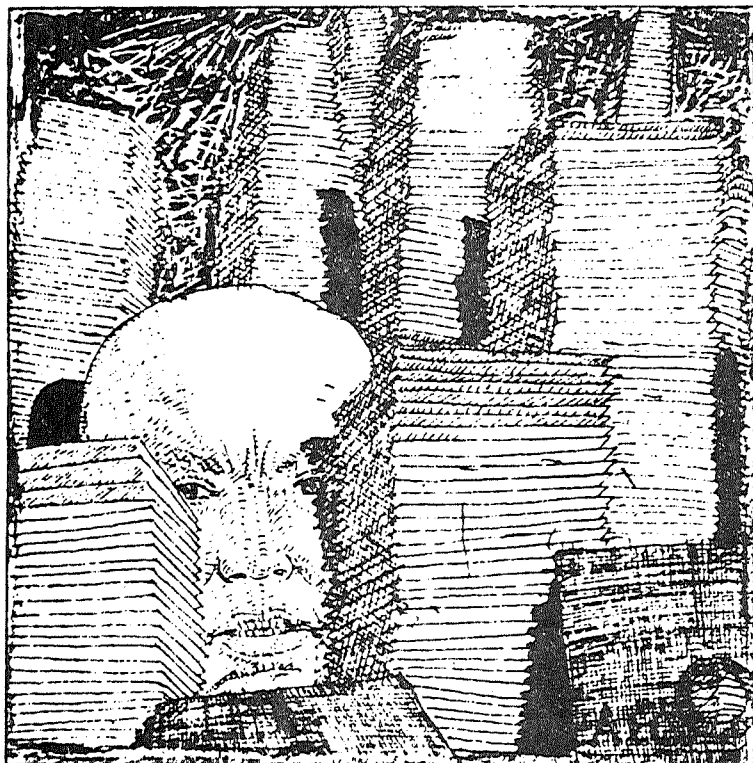
During the past decade, industry reports on the growing applications backlog plaguing computer users in large organizations have alarmed many businesspeople. Popular belief maintains that large organizations currently have software backlogs of more than 30 months; in other words, at any point in time the existing software development staff could be kept busy for 30 calendar months handling only those tasks already identified and targeted for completion.

Some statistics have also pointed to a so-called hidden backlog, no less in size than the expressed demands. This hidden backlog reflects user needs that are not even submitted to MIS departments because users believe that they would

arouse little interest or no response. Users generally abandon requests for support when they feel that the best outcome expected would only solve tomorrow's problem with yesterday's specifications.

Soon users will break their dependency on the professional MIS staff. The personal computer will increasingly give them new tools and solution-oriented software so that even those without much training will be able to solve their own problems, and do so on a current basis. What will happen is that needs for computer assistance will be one of two kinds: those which are organizational, requiring complex, integrated applications performed by centralized, professional data processing personnel, and those which are individual

and based more on demand and geared to a particular result, readily handled in the software environment of the personal computer and by the relatively untrained user. When this breakdown of needs into those which are organizational and those which are individual is a fact of business life, the 80/20 rule will apply. Then 80 percent of the tasks required will be accomplished via personal computing, leaving 20 percent to be handled by centralized data processing departments.

More than eliminating backlogs, this change will make computing more democratic. For the first time responsibility for solving problems and the tools for solving them will both be in the hands of those who count most—the end users.

12

Computing Will Be
Done in Two Tiers.

The computing environment is rapidly moving into a two-tiered structure with the user at one end and some form of centralized processing at the other. Under this structure, intelligent processing nodes located with individual information workers, professionals, support personnel, and production workers will be connected to central processors and public utilities. This is a departure from earlier structures typified by dumb terminals connected in an on-line or time-sharing mode to a host processor.

Once, it looked as if three levels of computing might emerge. In that case, the middle element, often represented by the minicomputer, would have reflected divisional or departmental computing. But it is now clear that such an intermediate level is neither necessary nor economically justifiable. In the future, departmental computing will be handled by linking personal computer nodes into local area networks, with shared resources and databases.

Illustration: Barry Root

13
Application Generators Will Become Less Important.
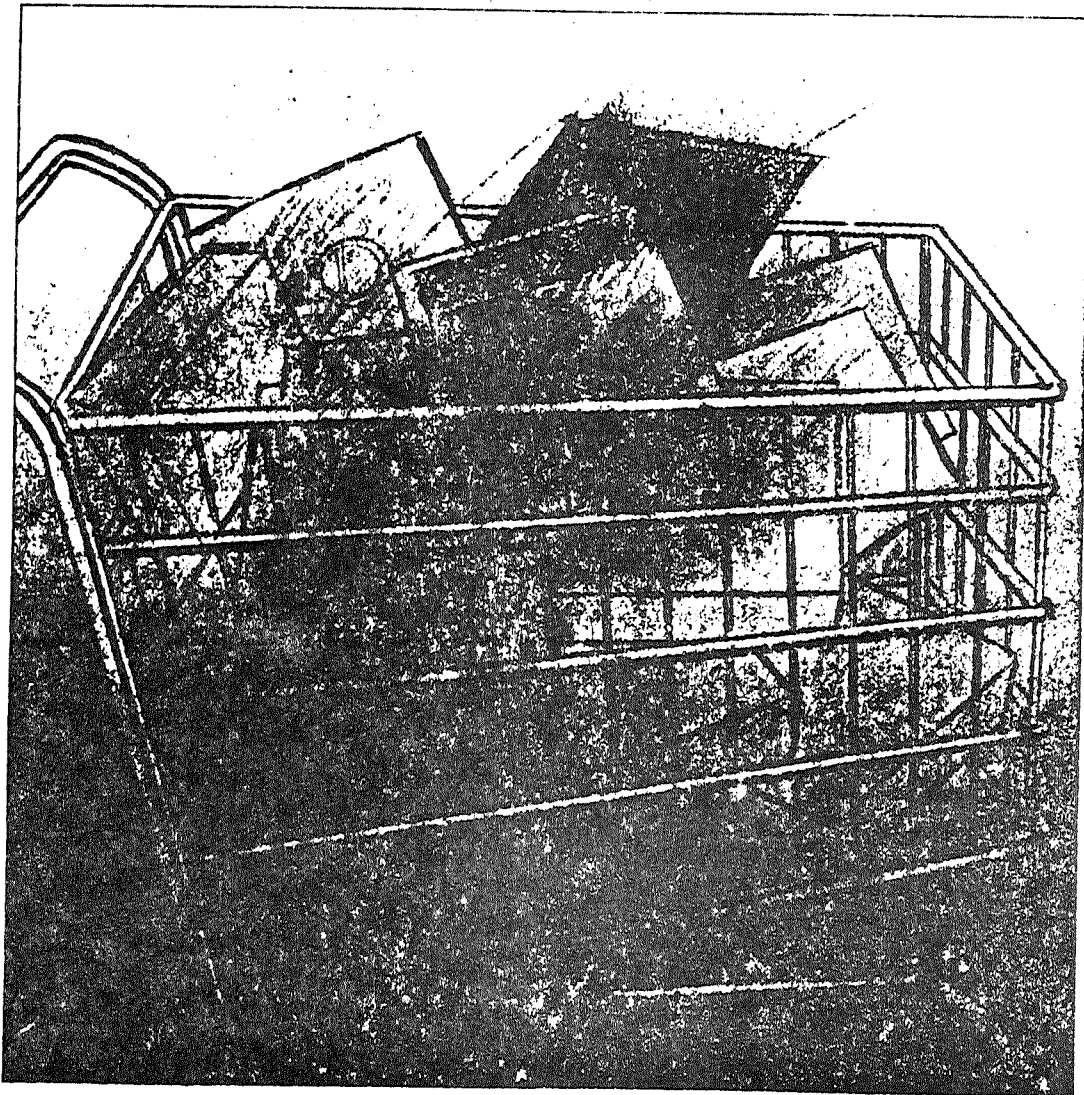
Application generators are typically software systems that create directives to dictate the logic of input, processing, and output comprising a specific application quicker and easier than individual software programs. Often, application generators are designed to give end users powerful means with which to specify and generate custom-oriented applications. This purpose is antithetical to the dominant and growing trend to off-the-shelf, reasonably priced solutions for an endless variety of applications.

Who really needs an expensive application generator if the solution is only a few hundred dollars away via a software program? Perhaps the need for these systems is limited to turnkey vendors who build applications; the end user certainly does not need application generators. Therefore, their market is relatively small, and demand will be modest. Eventually, they will become obsolete for the purposes of the end user.

130

14

Executives Will
Use the Computer Keyboard
Enthusiastically.

Assertions that executives will not use keyboards are excuses for failing to provide adequate support systems for decision makers. No evidence shows that top management will not use a personal computer. I predict that executives will be enthusiastic personal computer users.

New software will help executives improve their performance. This is a motivation for executives to use computers. Also, alternate input devices like pointing devices and touch-sensitive screens make personal computers easier to use.

Also, today's heirs to executive positions in corporate America already have computer exposure. These executives recognize the value of the computer and will demand its constant aid. In the future, executives who ignore the power of the personal computer will be unable to compete in a business world moving at an accelerating rate. Management without the computer will be the exception.

15

*Voice Input Is the Sole
Remaining Untapped Innovation in Computing
(and the Most Promising One).*
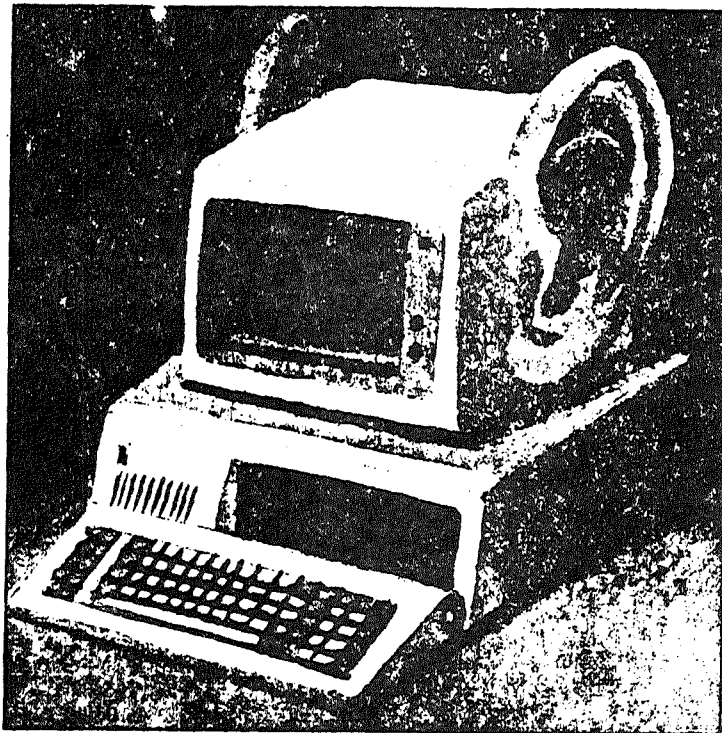
With hearing, touch, and sight already incorporated into the most common computing systems today, the single dimension left to be exploited is sound. Since sound synthesis is already widely practiced, the remaining challenge facing developers is voice recognition.

Although modest capability for voice recognition already exists, vocabulary is limited. By the end of this decade, however, computers will be able to recognize more of the spoken word. Voice input will play a most important role in replacing the usual keyboarding and menu selection alternatives as well as providing a path for entirely new computer applications and markets. These new opportunities include adapting computers for environments where keyboarding is not possible or is limited, and for use by the handicapped; using computers to respond to and coach new learners of an application as well as to redirect procedures of users who are making errors; eliminating intermediate work steps such as transcribing dictation or other writing tasks; and transforming every telephone into a full-fledged computer terminal for both input and output.

These dramatic changes all reveal the need for more megacomputing, looking at the world of computing with an eye to the future and what it will bring. To prepare for this new world—battered into a new configuration and given new vitality by the third wave, the microcomputer—strategists and planners must examine where the computing world is going and how it will affect other aspects of the way modern men and women work and live.

In *Megatrends*, Naisbitt says that the wide availability and dissemination of information will be the "great equalizer" heralding a more egalitarian society. He predicts that "the computer will mask the pyramid" created by organizational hierarchies and information overloads. These 15 megacomputing trends will indeed affect personal productivity and extend the individual's activities as well as his or her control over wide responsibilities. And the microcomputer wave, essentially the personal computer, will be the means that will make these changes a reality in the next decade, creating a new world where people and computers work in new ways to shape the future. ∎

State Information Systems: Cutting Processing Costs

- **State governments are experiencing a high demand for data processing and telecommunications services.**
- **To control costs, states must halt the proliferation of duplicative data center operations.**

State governments like the Federal Government, are experiencing a rapid escalation in demand for data processing and telecommunications services. The costs of supplying these services are also escalating as states seek to acquire equipment and personnel resources to meet the growing demand. To control costs and meet demand, states will have to make maximum practical use of equipment and personnel. This means they will have to bring a stop to the proliferation of independent and duplicative data center operations.

Currently, most electronic communication within states is comprised of separate voice and data networks. Telephone systems are commonly multi-vendor networks consisting of equipment ranging from modern to archaic, with service levels varying by location. And data communication is usually managed by multiple state data centers.

In most states, major data communication networks are discrete, and there is a great deal of redundancy among the networks. Data processing services for state governments are generally supplied by the multiple data centers.

These centers are separately managed, not electronically connected, do not operate in compatible environments, and have limited floor space for expansion. The autonomous nature of the data centers prevents effective use of personnel at a time when skilled data processing professionals are difficult to find and expensive to retain.

Given the current rate of increase in expenditures and the escalating demand for data processing and telecommunications services, annual expenses could double by 1990. A way must be found to meet these demands that provides a cost-effective return on taxpayer dollars. Such a solution should make it possible for states to gain the advantages inherent in economies of scale and the application of proven state-of-the-art technologies.

This goal can be met through the establishment of centrally managed, integrated computer and communications utilities that provide high-quality service in a cost-effective manner. However, to achieve these cost savings and efficiencies, states will be required to make more tough economic and management decisions.

A Suggested Solution—

In most states, the development of an integrated statewide telecommunications and data processing network will require a significant initial capital outlay.

A major portion of these expenditures would go for the construction of a state headquarters facility for hardware and personnel. The headquarters facility would coordinate and support data processing and telecommunications services at other sites. But, the most important, and most difficult, step in the creation of a unified communications network will be the establishment of a management team that has the authority to govern the creation of the new network. Under this management team, all existing large computer centers would be electronically connected and would eventually operate with totally compatible hardware and software.

All discrete data networks and existing multiple voice networks would be replaced by a single, statewide communications utility capable of voice, data, and image transmission.

- **Leveraging Critical Skills**—This new environment would increase the productivity of critical personnel through the establishment of centralized support groups for software, communications, technical training, and high-volume output control.

Initially, the software support staff would be responsible for working with new computer and communications utility management to develop a standardization schedule for the data centers, and for assisting the data centers in installing and replacing software packages. The software support staff would also be responsible for maintaining all systems software at the central data center and for assisting the other centers in solving systems software problems. Once the standardization process was underway, this group would also be responsible for issuing all software products to the data centers.

A complementary group, the centralized communications support staff, would be responsible for managing the creation of a telecommunications network that combines voice, data, and image transmission. It would assist in the selection of network concentration nodes, assist in

the installation of communications equipment throughout the state, and main. the entire integrated communicatio... utility.

A centralized training staff would be responsible for recruiting and training computer operations personnel for all data centers and for developing ongoing computer-based instruction for the continuing education of data center personnel. Centralized training would both ensure the standardization of data center operational procedures and allow data centers to share resources when staffing level imbalances occur.

- **New and Improved Products**—The unified structure would also provide new and enhanced capabilities to all state agencies in such areas as office automation, electronic mail, and payroll and personnel services.

For example, all network users would have the ability to access a statewide payroll system in order to electronically submit update transactions. Personnel and other administrative functions that have been supported separately by various data centers could be consolidated to create integrated administrative information data bases. The centralization of these functions would make possible uniform administration and reduce the maintenance costs inherent in duplicative systems.

- **Improved Disaster Recovery**—The development of integrated computer utilities would significantly improve disaster recovery capabilities in most states. The compatible data centers would adopt identical operating systems, tape library and disk management systems, and operational support software packages. As a result, the data centers would be able to share resources to assist in recovering from a disaster in any individual data center.

An off-site tape library could be established at the central data processing facility to store backup for all critical production files.

- **Balancing Data Center Work Loads**—The creation of a central data center, and the standardization of other data centers, would provide states with new capabilities to shift work loads among centers. As new applications were developed, the central data center could be utilized to balance production loading in the computer network by assuming responsibility for the execution of these new applications. Existing production jobs could be transferred to the central data center to further assist in balancing work loads throughout the computer network.

For state governments, like their federal counterpart, the cost savings and efficiencies inherent in systems integration are rewards well worth the effort and could well help relieve the pain now expected as a result of the anticipated Federal financial belt-tightening.

PERCENT OF CAPACITY
CPU USAGE
IBM 3033

TIME FRAME
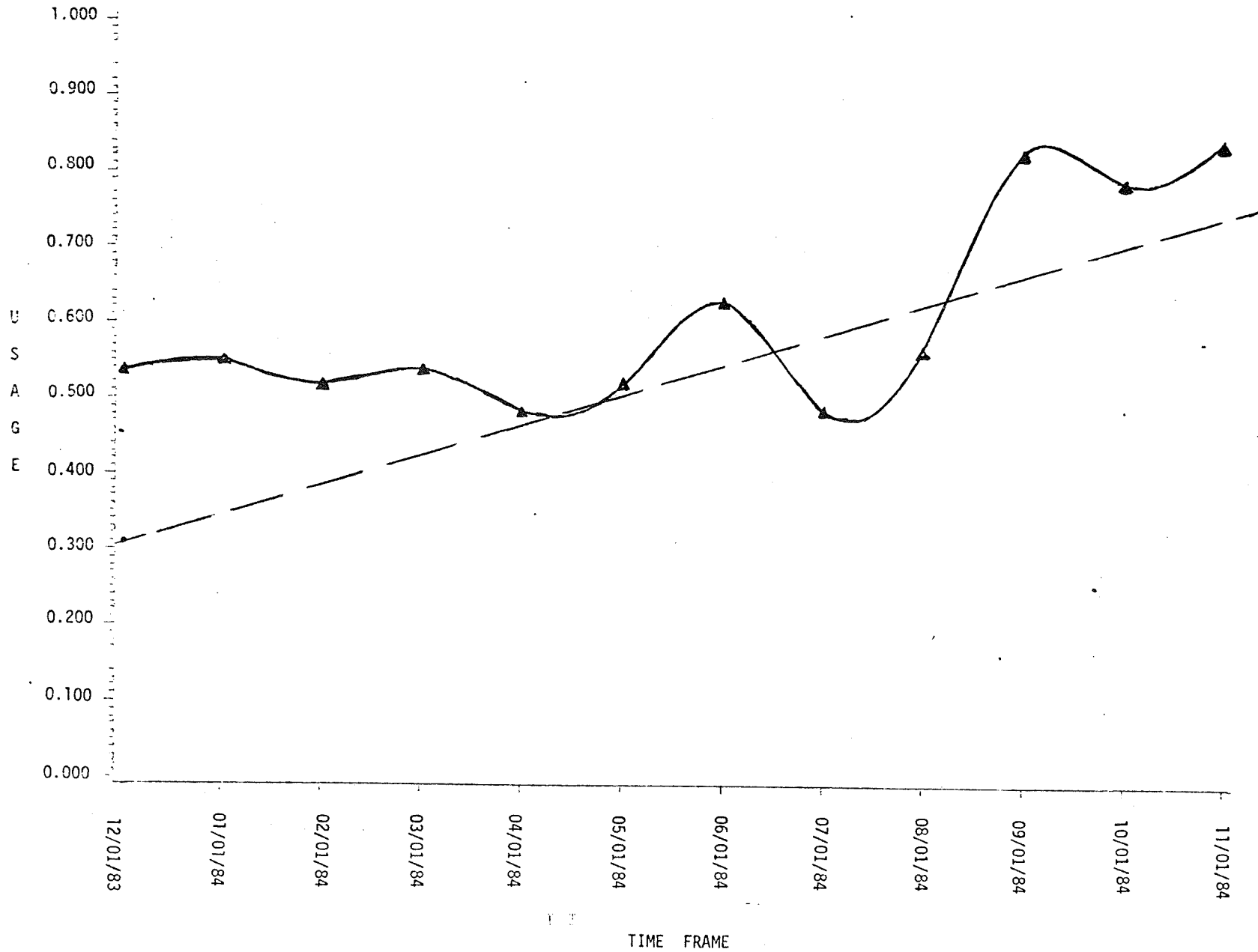
PERCENT OF CPU
USED BY ALL APPLICATIONS
NAS/7000

TIME FRAME
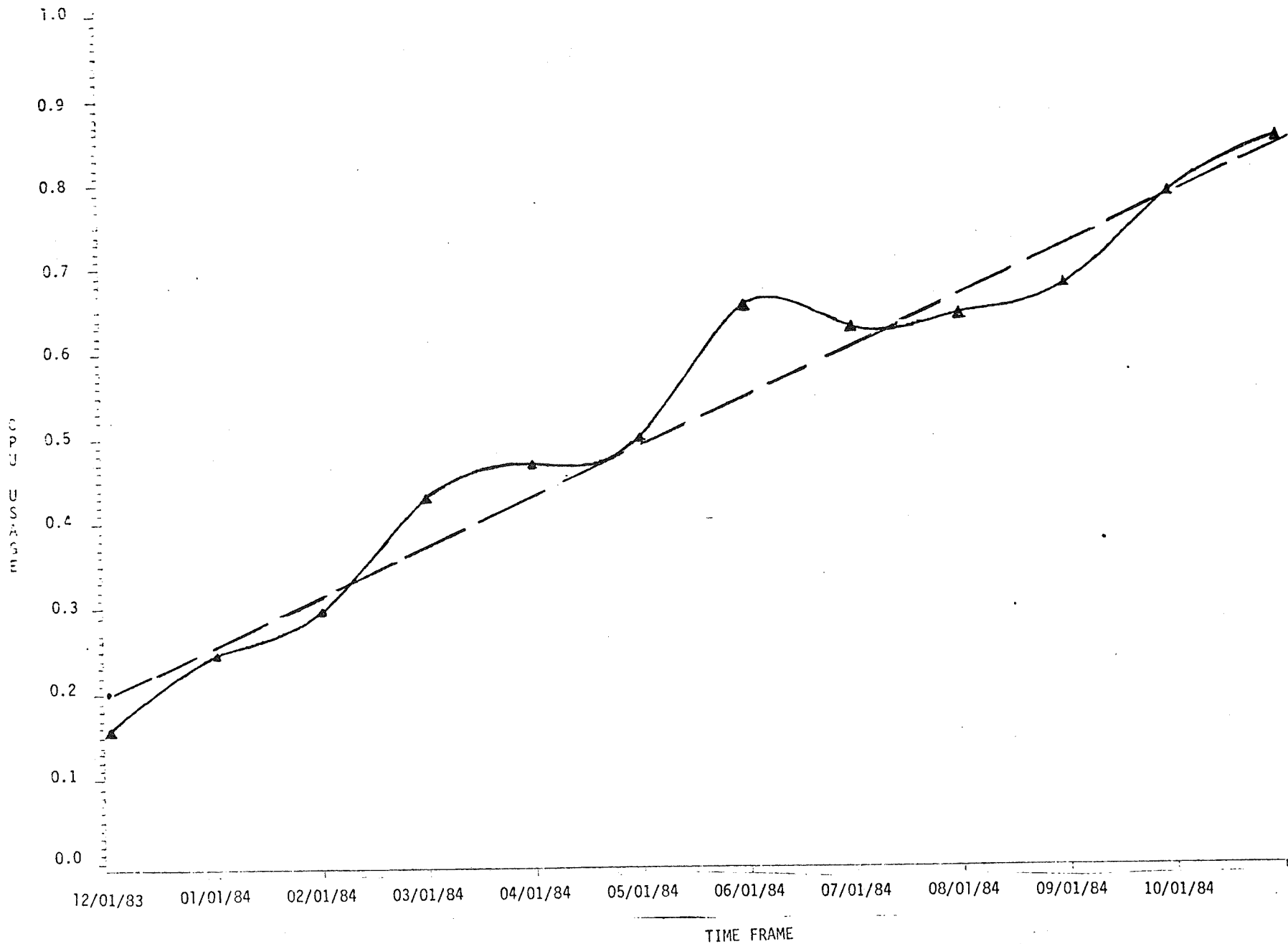
UPGRADING THE SPERRY-UNIVAC COMPUTER SYSTEM

February 1984

I. INTRODUCTION

The largest application in the Sperry-Univac Computer Center is, and will be, the Kansas Integrated/Personnel Payroll System (KIPPS). This system includes four major components: (1) Applicant, (2) Position, (3) Employee, and (4) Payroll. The first three components are fully implemented statewide. The fourth is implemented for approximately one half of the State's employees. In other words, all State employees are managed with KIPPS, but only half of them are being paid by it. The remaining employees are paid through the old payroll system.

The major benefits of this application go beyond employing and paying people. KIPPS provides executives at all levels of State government the features needed to effectively access and analyze personnel/payroll management information. Even in its incomplete implementation status, several State managers, knowledgeable in the use of KIPPS, have taken advantage of these opportunities.

II. BACKGROUND

During the 1980 planning for the KIPPS development project, the State selected the Sperry-Univac software product, MAPPER. MAPPER is an easy to use data base management/programming language. This fourth generation systems development tool permits the fast implementation of systems by allowing user personnel to write many of the programs themselves. To operate this software, the State entered into a seven year lease agreement with Sperry-Univac in 1980 for a Model 1100/60 computer and associated peripheral equipment. As the planned development of KIPPS progressed, this hardware configuration was updated periodically to meet the expected workloads. At the present time, the configuration is composed of three central processing units, ten magnetic tape drives, approximately eight billion characters of disk storage and over 250 terminal devices.

III. PROBLEM

At this time, this equipment cannot provide adequate terminal response time because of the heavy workloads in KIPPS. The Sperry-Univac equipment is experiencing a severe capacity problem. The mainframe now indicates routine use levels around 94%, reaching as high as 99% during peak periods.

During the spring and summer of 1983, State and Sperry technicians modeled the remaining expected KIPPS workloads. The resulting statistics indicated that the FY 1984 upgrade would handle the added workloads. Further supported by the data contained in the individual agency long range plans, and given the budget restraints imposed at that time, it appeared reasonable to believe that no mainframe upgrade would be needed until FY 1986. However, the consensus was that it would be "tight". A moratorium on the development of new Sperry applications was imposed until KIPPS was fully implemented in order to see if there would be any leftover resources. It is now evident that the forecasts were too low.

Considerable efforts have been made to make the application programs more efficient and have resulted in some performance improvements. However, not enough resources have been or can be recovered to fully implement the remaining 12 agencies in the KIPPS payroll component.

IV. FORECAST UPDATED

During early December 1983, Sperry technicians remodeled the KIPPS workloads based on the most recent KIPPS experiences. They also interviewed several major State users to determine their Univac needs and desires. Although Sperry's final conclusions are not published as of this writing, preliminary findings described indicate several factors/concerns:

1. Sperry recommends the use of a 70% system utilization threshold rather than the 80% factor used for State long-range planning. The 70% factor should improve response time, but will require more processing power than for the 80% threshold used for State planning.

2. It is expected that implementing the remaining 12 agencies will create a 37.5% increase to the current KIPPS workloads during peak periods.

3. It is expected that KIPPS use and data base size will grow around 12% every six months through FY 1986. This growth will result from four factors: (1) addition of new data elements required to comply with future administrative and statutory reporting/operating requirements; (2) increase in numbers of transactions recorded and reported; (3) additional agency and staff usage of MAPPER in lieu of manual methods to meet management data needs and reporting requirements; and (4) expansion of the reporting capability to support other auxiliary functions such as budget, grant and other cost funding systems.

4. Based on the preliminary findings described from the Sperry interviews, it is evident that the long-range planning and budgeting review processes tend to discourage the generation of data processing wish lists. Sperry disclosed that several users wanted to develop many other MAPPER systems--not KIPPS related. These unplanned systems would more than triple the current need for computer resources just to operate them.

Nevertheless, it now appears that about an 80 - 100% system upgrade is needed to implement the remaining agencies into KIPPS and to provide all agencies reasonable response times during peak workload periods.

V. OPTIONS

In order to meet these anticipated KIPPS workloads, five Sperry equipment options have been identified. Each option views the estimated life-cycle costs during FY 1984 through FY 1991. All cost data are <u>incremental costs</u> (in addition to existing Sperry contracts) and are expressed as <u>constant 1984 dollars</u>.

Option 1: No Upgrade In The State Office Building

<u>Description:</u> Do not add a processor beyond that already present. The purpose of this option is to have KIPPS and its users run in the current environment, freezing the KIPPS project where it is, continuing the moratorium on development of new Sperry systems, and limiting or restricting use of existing systems. The next Sperry system upgrade (1100/90) would be done in the Santa Fe Building.

<u>Benefit:</u> The major benefit is that it is the cheapest immediate direct cash outlay alternative.

<u>Costs (ESTIMATED):</u> The initial costs are primarily indirect: (1) the continued use of two payroll systems, (2) the delay of KIPPS management benefits until a later date and (3) the worsening of performance problems. These costs are significant and will be avoided if other options are selected. It will not provide reserve computer resources to handle mechanical failures or when other situations disrupt the normal processing schedules. The result may include delayed issuance of paychecks, overtime expenses for agency personnel, etc. The upgrade costs in the Santa Fe Building will be around $19,859,760 for a capital lease or around $13,041,414 for purchased equipment (includes computer equipment, ancillary equipment, people, and consultant costs). However, combined with the indirect costs to the State caused by the two year delay, the total costs for this option will far exceed these amounts. (See appendices 1 and 2.)

Comment: This action would forestall effective use of CASK and other existing systems to meet current and future data reporting requirements. It would also promote pressures to seek other data processing options, thus establishing the climate: (1) for performing data manipulation manually, or (2) doing without, or (3) for the acquisition and proliferation of data processing equipment and facilities in the agencies.

Option 2: 1100/64 Upgrade In The State Office Building

Description: Add one processor to the existing Univac computer complex along with some peripheral equipment. The purpose here is to continue to implement as many other agencies as possible with a minimal upgrade. The major Sperry system upgrade (1100/90) will be done in the Santa Fe Building.

Benefit: This option is the second smallest immediate direct cash outlay.

Costs (ESTIMATED): Adding the fourth processor (1100/63 to 1100/64) in the State Office Building and the future upgrade in the Santa Fe Building will cost around $24,603,908 for a capital lease or around $16,571,146 for a purchase (includes computer equipment, ancillary equipment, people, and consultant costs). (See appendices 1 and 2.)

Comment: It is doubtful that this option will provide enough computer resources in the State Office Building to fully implement KIPPS and provide adequate levels of service to terminal users. It again will not provide reserve computer resources in the State Office Building to handle mechanical failures or when other situations disrupt the normal processing schedules. The result may include delayed issuance of paychecks, overtime expenses for agency personnel, etc.

Option 3: Added Computer Complex In The State Office Building

Description: Add a comparable computer system side-by-side to the existing system thereby doubling the processing power. The purpose here is to provide the computer resources needed to fully implement the remaining agencies into KIPPS only and address the KIPPS usage growth anticipated. The next Sperry system upgrade (1100/90) would be done in the Santa Fe Building.

Benefit: This option offers an equipment proposal to fully implement the remaining agencies into KIPPS during FY 1984-1985.

Costs (ESTIMATED): The total estimated costs for this option is around $27,862,153 for a capital lease or around $19,305,763 for a purchase (includes computer equipment, ancillary equipment, people, and consultant costs). (See appendices 1 and 2.)

Comment: This option has the reasonable potential to fully implement the remaining agencies into KIPPS during FY 1984-1985.

Option 4: 1100/90 Upgrade Now

Description: Add a large scale 1100/90 computer complex to the existing 1100/60 computer complex. The purpose is to meet now the KIPPS processing requirements anticipated over the next 5 - 7 years.

Benefit: This option would provide a 4 - 5 time increase in computing resources.

Costs (ESTIMATED): The total estimated costs for this option is around $22,176,701 for a capital lease or around $15,358,355 for a purchase (includes computer equipment, ancillary equipment, people, and consultant costs). (See appendices 1 and 2.)

Comment: This is really Option 1 until the new equipment is delivered, and then the processing power is available for only one year until the move to the Santa Fe Building. It complicates the relocation move.

Option 5: Future 1100/90 Upgrade

Description: Commit to Sperry to acquire a large scale 1100/90 computer complex for the move to Santa Fe Building. The purpose here is to have Sperry provide whatever interim equipment is needed in the State Office Building to fully support KIPPS at discounted prices.

Benefit: This option offers the same benefit as Option 3 with the interim upgrade equipment costs for the next few years being discounted by Sperry until the move to the Santa Fe Building. It does resolve the relocation move strategy and risks.

Costs (PROVIDED BY SPERRY):   The total costs provided by Sperry and Architectural Engineers is $20,762,252 for a capital lease and $14,828,447 for purchase (includes computer equipment, ancillary equipment, people, and consultant costs). (See appendices 1 and 2.)

Comment: This comprehensive alternative provides a long range solution.

VI. __SUMMARY__

In effect, we can upgrade or not. If we choose not to upgrade (Option 1), the expected annual KIPPS growth will only increase the capacity problems. Some agencies may have to revert to the old payroll system and be taken out of KIPPS completely. The resulting manual workloads will create several problems in both A&R and DPS. Operating two payroll systems for that long will also create unplanned maintenance workloads in DISC.

If we choose to upgrade, the choices are varied. One option (Option 2) upgrades the equipment without much hope for complete success in the State Office Building. The processing power guarantees offered by getting the large upgrade option now (Option 4) can possibly create similar problems as for not upgrading because of the late equipment delivery, and can create relocation problems resulting in processing delays in the future. An interim upgrade that defers the acquisition of a large computer system until DISC relocates to the Santa Fe Building presents attractive options. One of the two (Option 5) includes "Sperry guaranteed" sufficient processing power now, but with longer commitments; the other (Option 3) provides the equipment deemed needed now to fully implement the remaining agencies into KIPPS without committing to future Sperry equipment upgrades, but with greater overall costs.

dj29/DJ3

LEASE

	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	TOTAL	
OPTION 1										
equipment	0	0	0	3851952	3851952	3851952	3851952	3851952	19259760	No upgrade in the
people	0	0	0	100000	100000	100000	100000	100000	500000	State Office
consultant	0	0	0	100000	0	0	0	0	100000	Building
SUBTOTAL	0	0	0	4051952	3951952	3951952	3951952	3951952	19859,760	¢ 20 million
OPTION 2										
equipment	0	614532	614532	4466484	4466484	4466484	4466484	4466484	23561484	1100/64 upgrade in
AC/Struct	0	60000	0	0	0	0	0	0	60000	the State Office
people	0	54632	54632	154632	154632	154632	154632	154632	882424	Building
consultant	0	0	0	100000	0	0	0	0	100000	
SUBTOTAL	0	729164	669164	4721116	4621116	4621116	4621116	4621116	24603908	# 35 million
OPTION 3										
equipment	0	929196	929196	4781148	4781148	4781148	4781148	4781148	25764132	Added Computer
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	Complex in the
consultant	0	100000	0	0	0	0	0	0	100000	State Office Buildir
AC/Struct	0	150000	0	0	0	0	0	0	150000	
SUBTOTAL	0	1443199	1193199	5045151	5045151	5045151	5045151	5045151	27862153	# 28 million
OPTION 4										
equipment	0	3851952	3851952	3851952	3851952	3851952	419460	419460	20098680	1100/90 update
AC/Struct	0	230000	0	0	0	0	0	0	230000	now
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	
SUBTOTAL	0	4345955	4115955	4115955	4115955	4115955	683463	683463	22176701	# 22 million
OPTION 5										
equipment	61623	972750	2536868	3531180	3531180	3531180	2952870	1466580	18584231	Future 1100/90
consultant	0	100000	0	0	0	0	0	0	100000	upgrade
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	
AC/Struct	0	230000	0	0	0	0	0	0	230000	
SUBTOTAL	61623	1566753	2800871	3795183	3795183	3795183	3216873	1730583	20762252	# 21 million
BASE										
SPERRY CENTER	3299383	3616638	3616602	3616602	3234492	2938098	2292510	2077314	24691639	

*NOTES:

1. All costs are expressed as 1984 constant dollars.

2. The costs for each option are _incremental costs_ to the base Sperry Center.

PURCHASE

	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	TOTAL	
OPTION 1										No upgrade in the State Office Building
equipment	0	0	0	10763574	419460	419460	419460	419460	12441414	
people	0	0	0	100000	100000	100000	100000	100000	500000	
consultant	0	0	0	100000	0	0	0	0	100000	*≈ 13 million*
SUBTOTAL	0	0	0	10963574	519460	519460	519460	519460	13041414	
OPTION 2										1100/64 upgrade in the State Office Building
equipment	0	2522900	94068	10857642	513528	513528	513528	513528	15528722	
AC/Struct	0	60000	0	0	0	0	0	0	60000	
people	0	54632	54632	154632	154632	154632	154632	154632	882424	
consultant	0	0	0	100000	0	0	0	0	100000	*$ 17 million*
SUBTOTAL	0	2637532	148700	11112274	668160	668160	668160	668160	16571146	
OPTION 3										Added Computer Complex in the State Office Building
equipment	0	3660408	184320	10947894	603780	603780	603780	603780	17207742	
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	
consultant	0	100000	0	0	0	0	0	0	100000	
AC/Struct	0	150000	0	0	0	0	0	0	150000	*≈ 19 million*
SUBTOTAL	0	4174411	448323	11211897	867783	867783	867783	867783	19305763	
OPTION 4										1100/90 update now
equipment	0	10763574	419460	419460	419460	419460	419460	419460	13280334	
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	
AC/Struct	0	230000	0	0	0	0	0	0	230000	*≈ 15 million*
SUBTOTAL	0	11257577	683463	683463	683463	683463	683463	683463	15358355	
OPTION 5										Future 1100/90 upgrade
equipment	61623	3907151	4537560	3654876	489216	0	0	0	12650426	
consultant	0	100000	0	0	0	0	0	0	100000	
people	0	264003	264003	264003	264003	264003	264003	264003	1848021	
AC/Struct	0	230000	0	0	0	0	0	0	230000	*≈ 15 million*
SUBTOTAL	61623	4501154	4801563	3918879	753219	264003	264003	264003	14828447	
BASE										
SPERRY CENTER	3299383	3616638	3616602	3616602	3234492	2938098	2292510	2077314	24691639	

* NOTES:

1. All costs are expressed as 1984 constant dollars.

2. The costs for each option are <u>incremental costs</u> to the base Sperry Center.

Watchdog agency draws criticism for costly, incomplete computer

WASHINGTON — The General Accounting Office, the congressional agency that investigates waste in the executive branch, has itself been accused of spending almost $13 million in developing a computer system that never was completed.

The criticism came in a report by the Senate Governmental Affairs Committee. Sen. William V. Roth Jr., a Delaware Republican who is the committee chairman, said the General Accounting Office's problem was "particularly disturbing" because the agency was "in the business of auditing and evaluating the procurement activities of government departments and agencies around the world and providing expert advice to the Congress on procurement policies."

Mr. Roth said his committee's investigation indicated that management errors by the agency were the major reason for the failure of what was to be the Consolidated Administrative Management Information System.

But Charles A. Bowsher, head of the General Accounting Office, said in a letter to Mr. Roth that he believed the blame should be attributed to poor management of technical issues by Boeing Computer Services, contractor for the project. Boeing Computer is a division of the giant Seattle-based aerospace company.

A spokesman for Boeing, John W. Alter, explained that because of a company policy to close from Christmas to New Year's, it could not comment.

The General Accounting Office was established by Congress in 1921 to give it a way to investigate spending by the executive branch. It has about 5,000 employees and an annual budget of $294 million, and it submits hundreds of reports to Congress each year on the various weaknesses of the federal government.

The Senate committee said that while the General Accounting Office was having trouble with the new computer system, it also was investigating efforts by the Social Security Administration to buy a $115 million computer network linking 1,350 of its offices. On July 9 the General Accounting Office issued a report that criticized the Social Security Administration's procedures on the project.

The Senate committee's report said work on the General Accounting Office's new computer system began in November 1980. The goal was to build a system that would take over all the agency's administrative procedures, provide accurate and timely information to its investigators and minimize unnecessary duplication.

The project was to replace 18 different systems now used to help manage in such areas as personnel and payroll. Seven companies submitted bids, and Boeing's bid of $13.9 million was selected as the best on June 25, 1981.

"As early as August of 1981," said the Senate report, issued Wednesday, "there were indications that Boeing's original cost estimates for completion of the project were unrealistic."

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*               K I P P S   S T A T U S   R E P O R T                 *
*                      JANUARY 16, 1985                               *
************************************************************************
................SECTION 1 - ACTIVITIES IN PROCESS OR PENDING ...............
 (AN ACTIVITY THAT HAS BEEN CHANGED SINCE THE LAST REPORT IS INDICATED WITH AN *)
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			ORIG	CURR		
REF	P	-------------DESCRIPTION-------------	MNDY	MNDY	AS	ST
XXXX	X	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX.X	XX.X	XX	XX
E064	1	SALARY OVERPAYMENT ENHANCEMENTS	5.0	5.0	TH	
M072	1	REVISE W-2 FILE (YEAR-END PROCESSING)	30.0	2.0	TG	IP
E126	1	W-2 FILE SALARY OVERPAYMENTS UPDATE PRIOR YEAR (1005)	3.0	3.0	MG	
E146	1	UPDATE KIPPS W-2 FROM OLD PAYROLL SYSTEM PAYTAPES (1077)	18.0	18.0	LH	
E152	1	CHECK FOR PLACE TO FIND CURRENT YTD TOTALS (1096)	3.0	3.0	DA	
E154	1	MOVE SALARY OVERPAYMENTS PER-REIM W-2 FILES (1099)	3.0	3.0	MG	
E155	1	FIND W-2 FILES IN SUS-RES FROM SALARY OVERPAYMENT (1100)	3.0	3.0	MG	
E156	1	FIND W-2 FILES IN PAY CALC CLEANUP FROM SAL-OPAYS (1101)	3.0	3.0	MG	
M276	1	ALLOW PAYROLL TO ADD GHI CODES (1113)	6.0	6.0	MG	
M278	1	PRINT FEDERAL EMPLOYEE W-2 FORMS (1115)	6.0	6.0	TG	
E040	3	ADD W-2C FLAG TO W-2 FILE (799)	1.0	1.0	MB	
E077	3	ADD DUMMY SAL EXP LINE FOR WCI ADJ IN BATCH PAYCALC(883)	2.0	2.0	RA	
E107	3	ADD BENEFITS CROSS TO KPERS EXTRACT (925)	5.0	5.0	JA	IP
E108	3	ADD BENEFITS CROSS TO TIAA EXTRACT (926)	5.0	5.0	JA	IP
M025	3	PAY CALC CLEANUP - PROBLEM WITH MULTIPLE REFUNDS	3.0	3.0	DG	
M044	3	INCORRECT COMP TIME BALANCE SHOWN ON LEAVE INQUIRY	1.0	1.0	DG	
M075	3	DIFFERENCE OF OPINION ON SPLITTING LEGISLATIVE PAY (838)	1.0	1.0	LH	
M198	3	REPRODUCE KIPPS PAYROLL MICROFICHE (1028)	4.0	4.0	RA	
M204	3	MODIFY PAY CALC CLEANUP W-2 UPDATE FOR REFUNDS (1032)	4.0	4.0	DG	
M207	3	PAY CALC CLEANUP MISSED SOME REFUNDS (1036)	1.0	1.0	DG	
E134	3	MODIFY PAY CALC CLEANUP FOR REFUNDS CASK TRANS (1039)	4.0	4.0	DG	
M234	3	SUPPLEMENTAL NOT CALCULATED CORRECT (1071)	3.0	3.0	DA	
M266	3	SUPPLEMENTAL WITH EMPLOYEE ON MULTIPLE POSITIONS (1095)	6.0	6.0	DA	
M269	3	CHANGE REFUND BACK DEDUCTION FUN (1105)	8.0	8.0	JA	
M272	3	GHI REPORT FOR KU-MED THREE PAY MONTH (1108)	6.0	6.0	BB	
M280	3	POSITION WITH NEW FUNDING CHARGED TO OLD FUND (1116)	5.0	5.0	BB	

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........................................................................
*                          L E G E N D                                *
........................................................................
REF -
     U=UNSUPPORTED BY ENHANCEMENT REQUEST OR MAINTENANCE REQUEST
     E=ENHANCEMENT REQUEST REFERENCE NUMBER
     M=MAINTENANCE REQUEST REFERENCE NUMBER
P   - PRIORITY, AS ASSIGNED BY DISC.  IN MOST CASES, THIS IS THE SAME PRIORITY
     REQUESTED BY THE USER.
     1=U=URGENT (IMMEDIATELY)              2=H=HIGH    (BY NEXT PROCESSING RUN)
     3=M=MEDIUM (AS TIME PERMITS)
ORIG MNDY=NUMBER OF WORK DAYS ORIGINALLY ESTIMATED TO COMPLETE ACTIVITY
CURR MNDY=NUMBER OF WORK DAYS CURRENTLY ESTIMATED REMAINING TO COMPLETE ACTIVITY
AS - PERSON RESPONSIBLE FOR THE ACTIVITY.  NOT NECESSARILY THE PERSON WORKING ON
     THE ACTIVITY.
     RA  BOB ANDERSON        DG  DIEGO GARCIA         TH  TERRI HIPSHER
     JA  JIM ASHLOCK         TG  TIM GRIFFIN          DR  DARREL RANGEL
     BB  BETTE BRINCLE       MG  MARGARET GUNSELMAN   WS  BILL SOUTHARD
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MB MIKE BURRIS   JH JOYCE HANSCHU   MT MARK TORREZ
DC DON CLINGENPEEL   IH IVAN HATCH   DW DON WILLIAMS
RD RAY DASHNAW   LH LARRY HAYES   TK TAMMY KERWIN
DA DON ANDERSON   MM MARK MAENDELE   JG JOHN GONZALEZ
KC KATHY CUMMINGS

ST - STATUS OF THE ACTIVITY

IP=IN PROCESS (ACTIVE)   BLANK=NOT YET BEGUN   OH=ON HOLD

• •

REF-	----------------I T E M----------------	SENT -TO-	DATE -SENT-	---COMMENTS-
XXXX	XXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	XXXXX	XXXXXXXXXXXXX
E079	SUM UP LEG LEADER AND LEG ALLOW IN EXTRACTS	DAR	841009	(608)RESUB DIS
E017	CHANGE PRRPR32	DAR	841217	(488)RESUB DA
U013	DEVELOP SUMMER LEAVE WITH BENEFITS PROCESS	DAR	840615	
U039	FILE MAINT RUN - REFUNDS (10C)	DAR	840625	
E090	WRITE NEW UCI STAT REPORT BY AGY FOR DHR	DAR	841205	(637)RESUB DIS
U003	REWRITE FUNDING VERIFICATION	DAR	840709	
E057	MODIFY REPORTS THAT ACCESS SAL EXP	DAR	840824	(567)RESUB DAR
M023	WCI ADJUSTMENT SHOWING AS PAY INSTEAD OF DEDUC	DAR	840823	(752)RESUB DAR
E055	INCLUDE K DOCUMENTS IN PRT143 REPORT	DAR	841214	(565)RESUB DAR
U034	FILE MAINT RUN - SALARY EXPENDITURES	DAR	841126	RESUB DIS
M039	ERRONEOUS ASTERISK LINES WRITTEN TO SAL EXP	DAR	840824	(785)RESUB DIS
E133	ADD SALARY EXPENDITURE INQUIRY	DAR	840830	(718)
E066	EXPLAIN WHERE TO GET INFO FROM NEW SAL OVERPAY	DAR	841107	(878)RESUB DAR
E068	BATCH PAYCALC ADDS REFUND AMT INTO YTD GROSS	DAR	841009	(860)RESUB DIS
M109	CLEANUP TRANS NOT WRITTEN CASH RID - ARREARAGE	DAR	841001	(898)
E118	ADD ERROR LISTING TO GHI REPORT DIFFERING DED	DAR	841016	(967)
M149	SALARY ADV NOT WRITING CORRECT WARR ISSUE DATE	DAR	841018	(968)
U044	FILE MAINT RUN - W-2 FILE	DAR	841026	
E093	ADD EDITS FOR CLEARING FUNDS TO PAY CALC CLNUP	DAR	841029	(902)
M099	RUN 20-290 TO 100-1090 MISMATC AGY 33100,67000	DAR	841101	(874)RESUB DIS
E114	CHANGE PAY CALC CLEANUP TO WRITE AGY USE FIELD	DAR	841102	(939)RESUB DIS
E117	ADD Y-T-DTE UPDATE ROUTINE TO PAY CALC CLEANUP	DAR	841102	(967)
E076	ADD "F" LINE TO SALARY OVERPAY FIL, DATA BASE	DAR	841105	(869)
M095	BATCH PAYCALC SUSPENDED PERSON TO ROCK FILE	DAR	841106	(863)
M173	SALARY OVERPAYMENT INFORMATION IN WRONG FIELDS	DAR	841126	(1000)
E073	DO NOT UPDATE YTD EARNINGS ON PRIOR YEAR OVERPA	DAR	841126	(872)
M097	UPDATE W-2 FILE FROM SAL OVERPAY-PERS REIMB	DAR	841126	(870)
M161	SALARY OVERPAYMENT PERSONAL REIM FROM X EMPLOY	DAR	841126	(984)
M157	OVERPAYMENTS - MULTIPLE AGENCY PROBLEM	DAR	841126	
E061	MODIFY SAL OVERPAY TO RECORD YTD DIFFERENTLY	DAR	841126	(858)
M117	REF PRIOR IMPL EXPEND NOT MATCHING RECEIPTS	DAR	841130	(917)
E129	COMBINE ALL DOCS 500-5050 SALARY EXPENDITURES	DAR	841207	
M206	PAY CALC CLEANUP - OVERPAY USED WRONG W-2 CODE	DAR	841207	(1035)
M225	REFUNDS PRIOR - CHANGE GHI EDITS	DAR	841211	(1059)
E128	W-2 FILE ARREARS PAY CALC CLEANUP UPDATE PRIOR	DAR	841212	(1037)
M235	REFUND CLEANUP RUN DEDUCTION CODES 01 OR 02	DAR	841212	(1074)
M236	ARREARAGES CLEANUP RUN YTD RECORDS INCORRECT	DAR	841212	(1075)
E145	ADD NEW EDIT FOR VERIFICATION OASDHI PAYOUT	DAR	841219	(1067)
M231	SALARY OVERPAYMENT NOT COMPARE ON POSITION NO.	DAR	841226	(1066)
M184	SALARY OVERPAYMENT PERS REIM PAY FREC	DAR	841126	(1015)
M264	SALARY EXPENDITURE ROUNDING PROBLEM	DAR	841226	(1091)
M265	YELLOW SHEET EXTRACT 18TH TO END OF MONTH	DAR	841226	(1092)
M131	SALARY OVERPAYMENT - WRITING WRONG AGY TO SAL	DAR	841126	
E157	NO REFUND FOR EMPLOYEES IN AGENCIES NOT ON KIPP	DAP	841227	(1105)
M270	REFUND ADJUSTMENT RUN MESSAGE ERROR	DAR	841227	(1106)
M267	ALLOW NEW AND UPDATE W-2 FILE AT SAME TIME	DAR	841228	(1100)
M271	ERROR MESSAGES IN ERROR ARREARAGE CLEANUP RUN	DAR	850102	(1073)
M260	ALL CANCELLED WARTS NOT ON GROUP TERM LIFE RPT	DFS	850102	(1097)
M268	MULTIPLE OVERPAYMENTS ON SALARY PAYMENT CLEAN	DAR	850109	(1108)

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E1..  UPDATE W-2 FILES FROM REFUND ADJUSTMENTS          DAR   850111 (1098)   *
M263  MAINLINE PAYROLL BATCH TOO LARGE                  DAR   850111 (1090)   *
M063  CHECK TRANSACTIONS OUTPUTTED BY REFUND PR IMPL    DAR   850114  (822)   *
M284  REFUND RUNS ENCUMBER 143 EXPENDITURES             DAR   850114 (1121)   *
M281  SUSPENSE RESOLVE NET PAY ADJUST ERROR             DAR   850114 (1117)   *
E163  CREATE THREE NEW REPORTS FOR LEGISLATURE          DAR   850116 (1122)   *
E129  W-2 FILE ARREARAGES PER REIM UPDATE CASH COLL     DAR   850116 (1008)   *
M249  REPORT ANNUAL LEGISLATIVE ALLOWANCE TOTALS        DAR   850116 (1087)   *
E164  MODIFY GHI TABLES TO ALLOW FOR NEW CARRIER        DAR   850116 (1125)   *
M259  CHECK ALIGNMENT OF W-2'S FOR 1984                 DAR   850117 (1107)   *
E112  KPER DEDUCTION WORDING ON W-2 FOR 1984            DAR   850117  (948)   *
E131  W-2 FILE CASH COLLECTION UPDATE CASH COLL FIELDDAR   850116 (1010)   *


...................SECTION 3 - ITEMS APPROVED THIS PERIOD.........................

M187  NEW OASDHI RATES                                  DAR   850110 (1018)   *
M283  ADJUSTMENT RESOLVE LABEL MISSING                  DAR   850109 (1120)   *
M282  DATES MISSING RETIREMENT CODE UPDATE RUN          DAR   850110 (1118)   *
M112  SALARY OVERPAYMENT - PERSONAL REIMBURSEMENT       DAR   850116  (545)   *
E051  'A' LINE MISSING IN 10C FOR REFUNDS PRIOR IMPL    DAR   850116  (819)   *
E016  REFUNDS - WRITE CURRNT DATE TO 'A' LINE (111-6)DAR   850116  (755)   *
E115  REFUNDS - CHG DATA BASE FORMAT TO OLD VERSION     DAR   850116  (686)   *
E027  ADDITIONS TO DATA BASE FOR RECONCILIATION         DAR   850116  (521)   *
M168  REFUNDS PRIOR TO IMPLEMENTATION- UPDATE OF YTD    DAR   850116  (655)   *
E045  SALARY OVERPAY - CASK TRANSACTION CHANGES         DAR   850116  (555)   *
M137  SAL OVERPAY-PERS REIMB WRITING TAB LINE           DAR   850116  (603)   *
M138  SAL OVERPAY-PERS REIMB DUPLICATED SAL EXPS        DAR   850116  (604)   *
M175  W-2 UPDATE PROBLEM FROM SALARY OVERPAYMENT        DAR   850116  (660)   *
M184  SALARY OVERPAYMENT PERS REIM UPDATE YTD GROSS     DAR   850116  (673)   *
E042  WRONG OBJECT CODE EMPLR OASDHI - PAY CLEANUP      DAR   850116  (806)   *
M094  SALARY OVERPAYMENT WRITING FY84 TO CASK WORK      DAR   850116  (861)   *
E072  ADD NEW FIELDS TO SUSPENSE FROM SAL OVERPAY       DAR   850116  (866)   *
E073  ADD NEW FIELDS TO SAL OVERPAY SUSPENSE RESOLVE  DAR   850116  (867)   *
M111  PAY CALC CLEANUP DUPLICATED REC IN CASK WK PID DAR   850116  (900)   *
E091  ADD NEW SAL EXP DEDUCTION CODES TO M250, 225B     DAR   850116  (903)   *
M133  PAY CLEANUP NOT WRITING AMT COLLECTED TO CASK     DAR   850116  (941)   *
M134  SAL OVERPAY NOT CONSIDERING CANCELLED WARRANTS DAR   850116  (942)   *
M156  SALARY OVERPAYMENT PAY DETAIL NOT AGREE EXPENDSDAR   850116  (978)   *
M165  SALARY OVERPAYMENT ADJUSTMENT RESOLVE COMBINE     DAR   850116  (987)   *
E127  W-2 FILE SALARY OVERPAY PER REIM UPDATE CASH      DAR   850116 (1006)   *
E127  MODIFY UPDATING  500-5050 SALARY EXPENDITURES     DAR   850116  (714)   *
M209  PROBLEM UPDATING 500-5050 SALARY EXPENDITURES     DAR   850116  (717)   *
M211  REFUND PRIOR IMPL NOT WRITING K DOCUMENT NO       DAR   850116 (1042)   *
M053  REFUND RECEIPT TRANS PER FISCAL YEAR              DAR   850116  (878)   *
E098  REFUNDS - HANDLE MULTIPLE PAY PERIODS             DAR   850116  (667)   *
E096  SALARY OVERPAY-PER REIM-WRITE TO ALL LINES        DAR   850116  (886)   *
E092  REFUNDS AND REFUNDS PRIOR TO IMPL - KPERS MODS DAR   850116  (635)   *
M087  REFUND ADD REFUND AMT TO YTD REF FOR SPEC WAR     DAR   850116  (856)   *
E115  CHG SAL OVERPAY TO SUM NET OVERPAYS IN 8C,M250 DAR   850116  (943)   *
M210  '9' NOT IN SAL EXP COLS 131-1 FOR WAGE ASSN       DAR   850116 (1040)   *
M017  TABLE MAINTENANCE - DISTRIBUTION CODES - DEL      DPS   850116           *
M205  ACCRUAL PROBLEM - UNCLASSIFIED TEMPORARY EMPL     DPS   850116           *
E081  ADDITION OF ELEMENT TO DATA BASE - SUPVISORY T    DPS   850116           *
E059  ADD DELETE FEATURE TO SECURE                      DPS   850116           *
M150  ACCRUAL FOR 61000 TEACHERS WRONG FOR 9/17/84      DPS   850116           *
M123  TIME REPO PICKED UP WRONG RATE FOR MULT RATES     DPS   850116           *
M182  AGENCY 38500 GIVEN SORT OPTION FOR POSITION IV    DPS   850116           *
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E152 PROVIDE UPDATE TO SALARIES OF CERTAIN TITLE CD  DPS    850116
M219 SHIFT OVER PRINTING ON APPLICATION MAILERS       DPS    850116
M219 MODIFY APPLICANT SCORING FOR VETERANS PREFER     DPS    850116
M220 ADDRESS PROBLEM IN APPLICANT LETTERS             DPS    850116
M221 APPLICANT SCORE EXCEEDING 100.00                 DPS    850116
M243 JUDICIAL RATE WRONG AFTER PERCENT CHANGE         DPS    850116
M244 CHANGE SCORE RUN DOES NOT UPDATE MAILER          DPS    850116
E148 ST PRINTER SPECIAL TITLE CODE SALARY INCREASE    DPS    850116
M241 CORRECT PAY RATE ON CERTIFIED LISTS              DPS    850116
M254 SALARY CHANGE WITH NEW GEOGRAPHIC LOCATION       DPS    850116
M253 TAKE TERMINATED EMPLOYEES OFF TRANSFER LISTS     DPS    850116
M214 MODIFY APPLICANT LETTERS FOR NEW DPS PROCEDURESDPS      850116
M261 INQUIRY GROSS PAY NOT STATED CORRECTLY           DPS    850116
M255 EMPLOYEE AGENCY 36300 NOT ACCRUING               DPS    850116
M252 TERMINATING EMPLOYEES STANBY PAY SHOULD BE 1.000DPS     850116
M242 DUPLICATE NAME ON CERTIFIED LISTS                DPS    850116
M192 ACCRUAL FOR MISC EMPLOYEE IN AGENCY 62800        DPS    850116
M274 AGENCY CONDITIONAL EMPLOYEE LIST                 DPS    850116
M279 UNCLASSIFIED SALARY APPROVAL FOR NEW YEAR        DPS    850116
E149 MOVE WORKERS COMP UPDATE TO AGENCY MENU          DPS    850116
E025 WARRANT CROSSFOOT RUN                            DAR    850116
E008 FILE MAINT RUN - ARREARAGES   (8C)               DAR    840911
E019 CHANGE "P" RECORDS ON KPER BUYBACK END DATE      DAR    840822
E056 CHANGE SUBTOTALS IN PR40 TO MATCH PR32           DAR    840911  (828)
E060 O OF A CLEARING SHOWING AS PART OF FUNDING       DAR    840910  (843)
E075 MODIFY ALL RPRTS - ADDITION OF F LINE, M250,8C   DAR    840924  (868)
E086 MODIFICATIONS TO W-2 FILE FOR KPERS              DAR    841121
E113 CHG REF, REF PRIOR IMPL WRITE NET TO "P" DOC     DAR    841010  (938)
E116 ADD $2.00 FEE TO 543 TOTAL IN KIPP01             DAR    841010  (944)
E248 CHANGE LEGISLATIVE EMPLOYEES TO REQUIRE TIME     DAR    841219  (1085)
M114 ADJPR02 WRITING WRONG DISTRIBUTION CODE          DAR    850116  (909)

              ..... END REPORT .....
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IBM COMPATIBLE VENDORS*

Central Processing Units
      IBM
      National Advanced Systems
      Amdahl
      Third party marketplace

Tape Drives
      Telex
      IBM
      Storage Technology Corporation
      Third party marketplace

Disk Storage
      IBM
      Storage Technology Corporation
      National Advanced Systems
      Memorex
      Third party marketplace

Terminal Equipment
      IBM
      Telex
      Harris
      Courier
      Lee Data
      Beehive
      Third party marketplace

Distributed Systems that function through IBM compatible
communications controllers
      IBM
      Harris
      Data General
      Wang
      Burroughs
      NCR
      Third party marketplace

*This listing should not be regarded as complete. Other
vendors may also manufacture compatible equipment in some or
all of these areas.

JOHN CARLIN
Governor

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TO: Russell Getter, Director, DISC

FROM: John Carey Brown, EDP Policy Analyst, DISC

DATE: January 21, 1985

SUBJECT: Payroll/Personnel Systems

According to the last NASIS Report, twenty-seven states operate payroll/
personnel systems in a "large" IBM environment (OS/VS, MVS, Etc.). No
state gave a clear indication of using an integrated package (all data
elements in the NASIS document the same), no state was using UNIX on
payroll/personnel, many of the systems in use date from the mid-1970's,
most are done in COBOL, and few use fourth generation languages (NATURAL,
NOMAD2, FOCUS).

I listed the 27 in order by how much their population differed from ours
on an assumption the state's size would affect employee count and
personnel/payroll functions/size:

Population Difference*	State	Population Difference*	State
0	Colorado	- 1.6	North Dakota
0	Mississippi	- 1.7	Delaware
- .1	Oregon	+ 1.7	Maryland
- .3	Arkansas	- 1.7	Nevada
+ .4	Oklahoma	+ 1.7	Tennessee
+ .4	South Carolina	- 1.9	Wyoming
- .7	Nebraska	+ 2	Wisconsin
+1	Kentucky	+ 2.4	Georgia
-1.2	New Mexico	+ 2.9	North Carolina
+1.3	Alabama	+ 3.5	Massachusetts
-1.4	Hawaii	+ 5	New Jersey
-1.5	South Dakota	+ 9	Texas
+1.6	Minnesota	+ 8.5	Ohio
-1.6	Montana	+17.8	California

* In millions

The remaining states from the survey are listed below, with an indication of the preliminary reason for not including them further at this point:

        Alaska - DOS-Based system(s)
        Arizona - Honeywell site
        Connecticut - Sperry site
        Florida - Multiple vendors
        Illinois - Multiple vendors
        Indiana - NCR site
        Iowa - Proprietary site
        Louisiana - Honeywell site
        Maine - Honeywell site
        Michigan - Burroughs site
        New Hampshire - Honeywell site
        Rhode Island - DOS-Based system
        Vermont - DOS-Based system
        Virginia - Multiple vendors
        West Virginia - Digital site

Another indicator of potentially useful sites was a January 1983 survey performed by the State of New Jersey. From that survey, the following states (of the "useable" 27 listed above) were operating "integrated" payroll/personnel systems, as compared against "interfaced" systems.

        Arkansas (redesign in process)
        Idaho (redesign in process)
        Minnesota (redesign in process)
        Montana
        Nevada (redesign in process)
        Wisconsin (redesign in process)
        Wyoming (redesign in process)

In addition, three states not responding to the NASIS survey, Utah, Washington, and Missouri, also indicated they were operating integrated systems in an "IBM" environment.

The Tennessee Department of Transportation did a survey of the states in October, to identify accounting system approaches used by state transportation departments, who must account for large complex projects with both state and federal funding. Of the 34 states in the survey, twelve indicated use of a "Big Eight-Type" accounting firm in the development or implementation of the project, four implemented a "custom" solution with work done either by a Big-Eight firm or a big project firm (McDonnell Douglas Automation), and eight indicated they acquired a package.

Five package vendors were described in the Tennessee survey. Of these five, three do not have payroll/personnel systems in their product line. I contacted the other two, MSA and AMS, and they are included in the list and discussion that follows.

During the past several months, we've contacted numerous vendors. Of those, the following appear to have significant promise for the reason(s) shown (listed alphabetically):

American Management Systems (AMS)
20 North Clark Street
Chicago, IL 60602
Contact: Don Quinn, Regional Sales Manager
(312)-269-0275
 AMS delivers a well-respected government-oriented product line. Their strongest offerings are in financial packages, and they themselves point out that their own payroll/personnel package is appropriate only for smaller cities and county governments. In cases where larger payroll/personnel systems are required (like ours would be), they recommend pairing their packages with those from Integral Systems, Inc. (ISI), covered below. AMS was the company selected to develop and install from scratch a complete new data center and all the financial management software used during the New York City financial crises a couple years ago.

Cullinet Software, Inc.
35 Corporate Woods
9101 West 110th Street
Overland Park, KS 66210
Contact: William A. Archer, Account Executive
(913)-451-0085
 Cullinet has delivered a very successful data base package (IDMS) for years, and released a relational version (IDMS/R) within the last couple of years. During the same time, the company has broadened their basic product line offering to include: a Fourth Generation Language, connections to distributed and office automation processors (WANG, Data General, DEC, etc.), data dictionaries, teleprocessing monitor programs (CICS replacements), automatic documentation, report generator, and artificial intelligence packages. At the same time, Cullinet has also entered the application software marketplace, delivering a full range of packages for manufacturing, banking, and service industries. Payroll/personnel and financial packages are included in these offerings.

Information Science, Inc. (InSci)
2 North LaSalle Street, Suite 750
Chicago, IL 60602
Contact: Pat Pedicone, Account Executive
(312)-641-2301
 Information Science, Inc. (InSci), specializes in payroll/personnel software packages. Their product line includes not only payroll/personnel packages, but also pension programs (defined benefit as well as defined contribution type, health claim administering systems, and flexible fringe benefit ("cafeteria") systems. InSci is really an offshoot from an earlier (late 1960's and early 1970's) WANG effort to enter the applications software market. Their software currently runs not only on IBM and compatible mainframes but also on WANG systems in either a distributed or standalone mode.

Integral Systems Inc. (ISI)
1431 Opus Place, Suite 602
Downers Grove, IL 60515
Contact: Jim Kirk, Sales Manager
(312)-810-1400

    Integral Systems Inc. (ISI) is another company that specializes in payroll/personnel software packages. They reportedly are favored heavily by the college and university community across the nation for the flexibility of their package, and their installed customer list at least shows they have a wide following in this area. ISI has another advantage in that they work with the data base packages we already have installed, and the mainframe relational data base packages (IDMS/R and ADR Datacom/DB) that are most often found in the marketplace. Fort Hays State University has reportedly already signed a contract with ISI for providing their internal payroll/ personnel system as they work to migrate from the KIPPS system.

Management Science America (MSA)
10401 Holmes Road, Suite 311
Kansas City, MO 64131
Contact: Bruce Switzer, Marketing Representative
(816)-941-3603

    Management Science America (MSA) is absolutely the largest company in the packaged software industry. They are very proud of the fact, for instance, that they spend more annually on "Research and Development" for their packages than many of their competitors take in as gross revenues for the year. MSA's product line is a full set of packages, including payroll/personnel, accounts receivable, general ledger, accounts payable, purchasing, inventory, and budgetary control, along with offerings for manufacturing companies and other industries which don't match our immediate needs. MSA packages also work with the data base systems we already have and the two mentioned above as well (IDMS/R and ADR Datacom/DB).

None of the Kansas regents institutions are presently using a commercial payroll/personnel package, although some are being pursued or considered. As far as Database systems go, the following are in use at this time (for administrative work):

    WSU - DL/1*
    KSU - IDMS   * Called IMS in the MVS Shops,
    KU - DL/1*   DL/1 in the DOS Shops.
    KUMC - DL/1*   Usually run under DOS under
    ESU - DL/1*   VM in several shops.
    FHSU - DL/1*
    PSU - Information (PRIME)

JCB:ee
jcb28/JCB

PHASE OUT SPERRY-UNIVAC   KEEP SPERRY-UNIVAC

	PHASE OUT SPERRY-UNIVAC							KEEP SPERRY-UNIVAC						
	FY85	FY86	FY87	FY88	FY89	FY90	TOTAL FY86-FY90	FY85	FY86	FY87	FY88	FY89	FY90	TOTAL FY86-FY90
IBM OPERATIONS:														
LESS: AS 5000 CPU & PERIPHERALS	0	0	0	0	0	0	0	0	0	-146076	-146076	-146076	-146076	-584304
LESS: OLD STC DISK STORAGE	0	0	0	0	0	0	0	0	0	-199068	-199068	-199068	-199068	-796272
REPLACE UNIVAC TERMINALS WITH IBM	0	39600	269935	269935	269935	269935	1119340	0	0	0	0	0	0	0
REPLACE 3081-K CPU WITH 3084-Q (NET)	0	0	0	0	0	855420	855420	0	0	0	0	0	0	0
10 DISTRIBUTED MINICOMPUTERS	0	0	909720	909720	909720	909720	3638880	0	0	0	0	0	0	0
SUB-TOTAL	0	39600	1179655	1179655	1179655	2035075	5613640	0	0	-345144	-345144	-345144	-345144	-1380576
UNIVAC OPERATIONS:														
BASE BUDGET	2880301	2956626	2956506	2339799	2118408	1126804	11498143	2880301	2956626	2956506	2339799	2118408	1537204	11908543
LOANER 4TH CPU FOR 1100/63	0	0	0	0	0	0	0	0	27756	0	0	0	0	27756
ADD 1100/91 CPU & SOFTWARE	0	0	0	0	0	0	0	0	367288	1101864	1101864	1101864	1101864	4774744
ADD DISK STORAGE 4X4 8480	0	0	0	0	0	0	0	0	72056	216168	216168	216168	216168	936728
ADD 4 TAPE DRIVES	0	0	0	0	0	0	0	0	15104	45312	45312	45312	45312	196352
ADD CASHE STORAGE 2X2	0	0	0	0	0	0	0	0	74792	224376	224376	224376	224376	972296
UPGRADE TO 1100/92 CPU & SOFTWARE	0	0	0	0	0	0	0	0	0	650568	650568	650568	650568	2602272
LESS: 1100/63 CPU & SOFTWARE TRADE IN	0	0	0	0	0	0	0	0	0	-638700	-463506	-405108	-153612	-1660926
ADD TWO DCP-40 COMMUNICATIONS PROCESSORS	0	0	0	0	0	0	0	0	37692	113076	113076	113076	113076	489996
COMUNICATIONS LINK WITH SANTA FE	0	7320	21961	21961	21961	7320	80523	0	7320	21961	21961	21961	21961	95164
MOVE TO SANTA FE BUILDING	0	0	0	0	0	0	0	0	88426	0	0	0	0	88426
ADDITIONAL FREIGHT	0	0	0	0	0	0	0	0	8500	2800	0	0	0	11300
RELOCATE COMMUNICATIONS CIRCUITS	0	0	0	0	0	0	0	0	17500	0	0	0	0	17500
LESS: PHASED OUT OPERATIONAL POSITIONS	0	0	0	0	0	-211690	-211690	0	0	0	0	0	0	0
10 DISTRIBUTED MINICOMPUTERS	0	0	0	0	0	0	0	0	0	1377120	1377120	1377120	1377120	5508480
SUB-TOTAL	2880301	2963946	2978467	2361760	2140369	922434	11366976	2880301	3673060	6071051	5626738	5463745	5134037	25968631
UNIVAC SPACE REQUIREMENTS:														
BASE BUDGET	120543	126443	126443	126443	126443	42148	547920	120543	126443	4312	4312	4312	4312	143691
COLD SITE FOR DISASTER RECOVERY	0	6888	6888	6888	0	0	20664	0	6888	6888	6888	24006	24006	68676
ADDITIONAL 5,866 SQ. FT. SANTA FE BLDG.	0	0	0	0	0	0	0	0	62375	187125	187125	187125	187125	810875
SUB-TOTAL	120543	133331	133331	133331	126443	42148	568584	120543	195706	198325	198325	215443	215443	1023242
SYSTEMS DEVELOPMENT:														
PURCHASE KIPPS PACKAGE	300000	0	0	0	0	0	0	0	0	0	0	0	0	0
ADAPT KIPPS PACKAGE	0	350000	0	0	0	0	350000	0	0	0	0	0	0	0
SUB-TOTAL	300000	350000	0	0	0	0	350000	0	0	0	0	0	0	0
GRAND TOTAL	3300844	3486877	4291453	3674746	3446467	2999657	17899200	3000844	3868766	5924232	5479919	5334044	5004336	25611297
SAVINGS TO PHASE OUT SPERRY-UNIVAC	-300000	381889	1632779	1805173	1887577	2004679	#7712097							

Net
Savings

Date Of Contract	General Description	Total Obligation	Bidders	Award Date
2/15/80 to 9/30/87	#850119 Lease and maintenance of interim 1106 computer and 1100/61 computer system composed of 1100/61 model C1 computer, (2) DISC Control, (6) DISC Drives, Console, (1) Tape Control, (5) Tape Drives, Printers, Card Reader, Card Punch, (51) UTS400 Terminals, communications controller and related systems software. Agreement #5101600	$3,639,428.33	Bid sent to 9 Vendors only 3 actual Bidders (1) Sperry Univac (2) IBM (3) Honeywell Awarded to: Sperry Univac RFQ 39571	12/7/79
10/1/81 to 9/30/87	#850121 Lease of (100) Display Terminals (16) Printers, and related support equipment. Add-on to lease agreement #5101600 dated 12/7/79. Ref. RFQ 39571	$1,117,344.10	Bid sent to 15 Vendors only 1 bid received Awarded to: Sperry Univac RFQ 46881	7/29/81
11/15/81 to 9/30/87	#850120 Lease of upgrade 1100/61, Model C1 to 1100/62 Model E1, CPU and peripheral equipment including a tape drive and controller and disk storage system. Add on to lease agreement #5101600 dated 12-7-79. RFQ 39571	$1,417,328.00	Sole Bidder Awarded to: Sperry Univac RFQ 48145	11/12/81
7/1/82 to 9/30/87	#850122 Lease of (12) Display Terminals (15) Printers and related support equipment. Add on to lease agreement #5101600 dated 12-7-69. Ref. RFQ 39571	$342,001.00	Sole Bidder Awarded to: Sperry Univac RFQ 50221	6/15/82

Date Of Contract	General Description	Total Obligation	Bidders	Award Date
9/30/82 to 9/30/89	#850124 Lease of upgrade from 1100/62 Model E1 to 1100/62 H1, (2) U-36 magnetic tape drives, (1) 2x4 8470 disk system and peripheral equipment. Add-on to lease agreement #5101600 dated 12-7-79. Ref. RFQ 39571	$1,174,057.13	Sole Bidder Awarded to: Sperry Univac RFQ 51452	9/24/82
10/1/82 to 9/30/87	#850126 Lease of (7) CTS-STD(F1974-00) and (7) CI Modems. Add-on to lease agreement #5101600 dated 12-7-79. Ref. RFQ 39571	$31,437.00	Sole Bidder Awarded to: Sperry Univac RFQ 51084	8/13/82
10/18/82 to 9/30/87	#850125 Lease and maintenance of (23) Printers, (5) Controllers and (28) Display Terminals. Add-on to lease agreement #5101600 dated 12-7-79. Ref. RFQ 39571	$614,286.00	Sole Bidder Awarded to: Sperry Univac RFQ 51393	9/28/82
7/5/83 to 9/30/89	#850118 Lease of upgrade from 1100/62 Model H1 to 1100/63 H1, (2) U-36 magnetic tape drives, solid state disk storage, cache disk storage and peripheral equipment. Add-on to lease agreement #5101600 dated 12-7-79. Ref. RFQ 39571	$3,765,015.00	Sole Bidder Awarded to: Sperry Univac RFQ 52987	3/22/83
11/1/83 to 10/31/88	#850303 Purchase and maintenance of (200) Display Terminals and related support agreement. Open end contract with only 34 purchased to date. Per agreement #5102275 dated 9/21/83.	$243,644.00	Sole Bidder Awarded to: Sperry Univac RFQ 54753	8/19/83

Date Of Contract	General Description	Total Obligation	Bidders	Award Date
12/1/83 to 9/30/89	#850127 Lease of (25) Display Terminals. Add-on to lease agreement #5101600 dated 12-7-79 Ref. RFQ 39571	$179,520.00	Sole Bidder Awarded to: Sperry Univac RFQ 54753	9/19/83
1/1/84 to 12/31/84	#850304 Lease of the software product on-line. System Activity Monitor (OSAM)	$1,800.00	Under $2,000.00 per year No bid needed. Direct order to Sperry Univac	10/6/83
7/10/84 to 7/9/85	#850123 Lease of the software product log analyzer.	$1,440.00	Under $2,000.00 per year No bid needed. Direct order to Sperry Univac	6/30/82
	TOTAL	$12,537,300.56		

vb12/C4

APPLICATION INVENTORY
Payroll, Personnel Records, and Position Control
By State

The following pages contain an inventory of payroll, personnel records, and position control systems for each of the fifty states. The primary language in which the programs are written, the monitor type (system software), and central processing unit (CPU) (hardware) are given for each application. Data are taken from the National Association for State Information Systems (NASIS) report for 1983-84, specifically from their "Application Inventory and Description -- State Agencies (Exclusing Higher Education)" on pages A-18 through A-227.

State	Application	Primary Language	Monitor Type	CPU
ALASKA	Payroll	COBOL	DOS/VS	3031
	Personnel Records	COBOL	OS	3033
	Position Control	COBOL	OS	3033
ALABAMA	Payroll	ASM	MVS	3081
	Personnel Records	COBOL	MVS	3081
	Position Control	COBOL	MVS	3081
ARIZONA	Payroll	COBOL	GCOS	HDPS3
	Personnel Records	COBOL	GCOS	HDPS3
	Position Control	COBOL	GCOS	HDPS3
ARKANSAS	Payroll	COBOL	OS/MVS	IBM 4341 AMD470/V6
	Personnel Records	COBOL	OS/MVS	IBM 4341 AMD470/V6
	Position Control	COBOL	OS/MVS	IBM 4341 AMD470/V6
CALIFORNIA				
	Payroll	COBOL	MVS	IBM
	Personnel Records	ASSY	OS	AMD
	Position Control	COBOL	OS/VS2	LG
COLORADO	Payroll	COBOL	MVS	3033
	Personnel Records	COBOL	MVS	3033
	Position Control	COBOL	MVS	3033
CONNECTICUT				
	Payroll	COBOL/BAL		U 9480
	Personnel Records	COBOL	OS/IMS	370/168
	Position Control	No Directly Comparable Data Available		
DELAWARE	Payroll	COBOL	VM/MVS	3033
	Personnel Records	COBOL	VM/MVS	3033
	Position Control	COBOL	VM/MVS	3033

FLORIDA	Payroll	COBOL	MVS/SP1.3	AMDV/7A
		COBOL	MVS/IMS	370/168
		COBOL	MCP	B7800
	Personnel Records	COBOL	DMS100	1100/82
		COBOL	MCP	B7800
		COBOL	MVS/IMS	370/168
		COBOL	DOS	4341-II
	Position Control	COBOL	DMS1100	1100/82
		COBOL	MVS/IMS	370/168
		COBOL	MCP	B7800
		COBOL	MVS/SP1.3	AMDV/7A
GEORGIA	Payroll	COBOL	OS/VS	3081
	Personnel Records	COBOL	OS/MVS	3081
	Position Control	COBOL	OS/MVS	3081
HAWAII	Payroll	PL/1	MVS	3033
	Personnel Records	PL1/COBOL	MVS	3033
	Position Control	COBOL	MVS	3033
ILLINOIS	Payroll	COBOL	MCP	BURR
	Personnel Records	No Directly Comparable Data Available		
	Position Control	COBOL	VS/MVS	3033
INDIANA	Payroll		VRX	
	Personnel Records	COBOL	VRX	NCR8550
	Position Control	COBOL	VRX	NCR8550
IOWA	Payroll	COBOL	MVS	3033
	Personnel Records	COBOL	MVS	3033
	Position Control	COBOL	MVS	3033
KANSAS	Payroll	MAPPER	EXEC 8	1100/63
	Personnel Records	MAPPER	EXEC 8	1100/63
	Position Control	MAPPER	EXEC 8	1100/63
KENTUCKY	Payroll	COBOL	OS/VS	370
	Personnel Records	COBOL	OS/VS	370
	Position Control	COBOL	OS/VS	370
LOUISIANA	Payroll	COBOL 74	GCOS	DPS-8/70
	Personnel Records	COBOL 68	GCOS	DPS-8/70
MAINE	Payroll	COBOL	GCOS	
	Personnel Records	COBOL	GCOS	HON
	Position Control	COBOL	GCOS	HON

MARYLAND	Payroll	COBOL	MVS	3081G
	Personnel Records	COBOL	MVS	3081G
	Position Control	COBOL	MVS	3081G
MASSACHUSETTS				
	Payroll	No Directly Comparable Data Available		
	Personnel Records	COBOL	MVS	3033
	Position Control	COBOL	MVS	3033
MICHIGAN	Payroll	COBOL	MCP	B 7800
	Personnel Records	COBOL	MCP	B 7800
	Position Control	COBOL	MCP	B 7800
MINNESOTA	Payroll	ASSEM/COBOL	CICS	3033
	Personnel Records	ANS/COBOL	OS/VS2	3033
	Position Control	No Directly Comparable Data Available		
MISSISSIPPI				
	Payroll	COBOL	OS	AMD V-8
	Personnel Records	COBOL/CICS DPLS	IMS-VS	AMD V-8
	Position Control	COBOL/CICS DPLS	IMS-VS	AMD V-8
MONTANA	Payroll	COBOL	OS/MVS	3033
	Personnel Records	No Directly Comparable Data Available		
	Position Control	COBOL	OS/MVS	3033
NEBRASKA	Payroll	COBOL	MVS	3033
	Personnel Records	No Directly Comparable Data Available		
	Position Control	COBOL	MVS	3033
NEVADA	Payroll	COBOL	MVS/SP	370/168
	Personnel Records	COBOL	MVS/SP	370/168
	Position Control	COBOL	MVS/SP	370/168
NEW HAMPSHIRE				
	Payroll	COBOL	GCOS	H 6060
	Personnel Records	No Directly Comparable Data Available		
	Position Control	No Directly Comparable Data Available		

NEW JERSEY

Payroll	COBOL	MVS/SE	3033-N
Personnel Records	COBOL	MVS/SE	3033-N
Position Control (Payroll)	COBOL	MVS/SE	3033-N

NEW MEXICO

Payroll	COBOL	OS/MVS	3033
Personnel Records	COBOL	OS/MVS	3033
Position Control	COBOL	OS/MVS	3033

NORTH CAROLINA

Payroll	BAL	MVS	370/168
Personnel Records	COBOL	MVS	370/168
Position Control	COBOL	MVS	370/168

NORTH DAKOTA

Payroll	COBOL	MVS	4341
Personnel Records	No Directly Comparable Data Available		
Position Control	COBOL	MVS	4341

OHIO	Payroll	COBOL	MVS	370/3081
	Personnel Records	COBOL	MVS	370/3081
	Position Control	COBOL	MVS	370/3081

OKLAHOMA	Payroll	BAL	MVS	3031
	Personnel Records	COBOL	IMS	3033
	Position Control	COBOL	IMS	3033

OREGON	Payroll	COBOL	OS/MVS CICS	3033
	Personnel Records	COBOL	OS/MVS CICS	3033
	Position Control	COBOL EASYTRIEVE	OS	3033

RHODE ISLAND

Payroll	COBOL	DOS/VSE	4341
Personnel Records	COBOL	DOS/VSE	4341
Position Control	COBOL	DOS/VSE	4341

SOUTH CAROLINA

Payroll	COBOL	MVS/SP3	4341-2
Personnel Records	COBOL	MVS/SP3	4341-2
Position Control	COBOL	MVS/SP3	4341-2

TENNESSEE

Payroll	COBOL	MVS	3033
Personnel Records	COBOL	MVS	3033
Position Control	COBOL	MVS	3033

TEXAS	Payroll	COBOL	OS	AMD V/8II
	Personnel Records	No Directly Comparable Data Available		
	Position Control	No Directly Comparable Data Available		
VERMONT	Payroll	COBOL/DLI	DOS/VSE	4341
	Personnel Records	COBOL/DLI		4341
	Position Control	COBOL/DLI		4341
VIRGINIA	Payroll	COBOL	MVS	3033
	Personnel Records	COBOL	DMS	1100/84
	Position Control	COBOL	DMS	1100/84
WEST VIRGINIA				
	Personnel	No Directly Comparable Data Available		
	Personnel Records	No Directly Comparable Data Available		
	Position Control	No Directly Comparable Data Available		
WISCONSIN				
	Payroll	COBOL	MVS	3033
	Personnel Records	COBOL	MVS	3033
	Position Control	COBOL	MVS	3033
WYOMING	Payroll	COBOL	OS/VS	3031
	Personnel Records			3031
	Position Control	No Directly Comparable Data Available		

BP:DISC-1/29/85

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
7/1/78 to 6/30/83	Purchase of (1) AS/5000 cpu (2) 7835 Disk Controllers (16) #7350-131 Disk Drives and Maintenance and (4) mega Bytes of Memory	$ 2,434,027.92	(1) IBM (2) ITEL Award to: ITEL	32094	7/78
9/1/78 to 6/30/85	Maintenance of 7211 Printer and (2) Print Trains	$ 136,968.00	(1) TELEX (2) IBM Award to: TELEX	33405	9/78
12/1/78 to 11/30/83	Lease/Purchase of mod. 78 RJE System - Revisor of Statutes	$ 435,461.00	Awarded to: DATA 100/NT	33882	11/78
7/1/78 to 6/30/83	Lease/Purchase RJE Data 100 - 78-103 System - Health	$ 216,415.82	Awarded to: DATA 100/NT	38114 93804 19424	79 5/74 77
11/1/79 to 6/30/85	Lease of Software ACF/NCP (5735-XX1) SSP (5735-XX3) PCF 11 (5798-CLW) SAME (5740-A43) and RMF (5740-XY4)	$ 86,365.00	Awarded to: IBM	39146 39157	10/79
5/80	Purchase of (2) TC 279 Model A Remote Display Terminals (1) 6803-1 Tape Controller (4) 4862-1 Tape Drives	$ 4,600.00	Awarded to: TELEX (outright purchase)	40731	5/80
3/26/80 to 6/30/80	Maintenance of (1) Megabyte of NAS Main Memory AS/5000	$ 43,644.19	Awarded to: NAS	41181	3/80
7/1/80 to 0/85	Lease of Software Information/MVX (5665-955)	$ 20,280.33	Awarded to: IBM	42499	7/80

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
8/1/80 to 6/30/85	Maintenance of Model 76 RJE System - Revenue	$ 31,071.00	(1) Northern Telecom (2) IBM Awarded to: Northern Telecom	42500	7/80
8/1/80 to 7/31/85	Lease of (9) ComLink III A-2 Modems	$ 14,040.00	(1) Racal Milgo (2) Southwestern Bell Awarded to: Racal Milgo	42501	7/80
8/13/80 -	Purchase and Maintenance on the 5th Megabyte of NAS Memory and One Time Purchase	$ 97,880.00	Awarded to: NAS	42873	9/80
7/29/81 to 6/30/84	Lease of Displaywriter, Related Equipment and Word Processing System for IBM Displaywriter	$ 89,714.67	Awarded to: IBM	43360	9/80
11/1/80 to 12/31/84	Lease and Maintenance of (27) Display Terminals (3) Printers (2) LTC Controllers (1) Remote Terminal Controller (1) 120 cpu Printer (1) 60 cpu Printer and 2721 LTC Controller	$ 24,199.19	(1) IBM (2) *Courier (3) *Harris (4) TELEX (5) Computer Systems (6) Southwestern Bell Awarded to: Courier	43631	3/80
1/1/81 to 6/30/85	Storage Technology Corporation - Purchase and Maintenance of IBM 3380 - B-04 Disk Storage Unit (4) Disk Controllers (16) Disk Drives (1) 8652 Disk Drive (1) 8000 - 4 Disk Control Unit and (2) 8652 Disk Drives (1) 8650 Disk Drive	$ 1,002,052.00	Awarded to: Storage Technology Corporation	43862	10/80

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
3/15/81 to 3/16/86	Lease and Maintenance of (2) Tape Controllers and (16) Tape Drives	$ 217,776.00	(1) TELEX (2) Com Disco Awarded to: TELEX	43980	11/80
11/1/80 to 5/31/86	Purchase Conversion of (1) d-580-1 Data Scope Monitor and (1) DPU 2403 Digital Path Unit Assembly and Annual Maintenance/Lease of (40) Short Haul Modems (3) Modems Self-Assemblies (2) Communications Interface	$ 70,320.00	(1) *Smith Data (2) *Racal Milgo Awarded to: Smith Data	44068	11/80
4/1/82 to 3/31/85	Purchase Conversion and Maintenance of Display and Printers (28) Displays (7) Facilities (10) Additional Features and (20) Display Stations	$ 17,038.00	(1) TELEX (2) IBM Awarded to: TELEX	44108	11/80
7/1/81 to 6/30/85	Lease of Software (2) MVS/SP1 (5740-XYS) (1) RM FV2 (5740-XY6) (1) SAME (5740-AM2) and (1) Feature 6143 for MVS/SP (Master Agreement B02437)	$ 182,481.50	Awarded to: IBM	44338	3/81
1/1/80 to 6/30/85	Maintenance of 74 RJE and Lease Maintenance (1) 0772 Keystation – Fish and Game	$ 46,716.00	Awarded to: DATA 100/NT	44496	12/80
10/1/81 to 10/1/84	Purchase Conversion of 3705/3706 Communications Controller; Lease of Card Punch and (4) Print Trains	$ 164,114.52	Awarded to: IBM	43594/ 45156 45455	10/80 to 4/81
1/1/82 to 1/31/87	Purchase and Maintenance of Data Streaming, Local Program Support for System Control Programming on 3033 cpu and 3705/06 Communications Controller; Purchase of Model Upgrade to N12 for 3033 cpu and Purchase of 3033 cpu Console	$ 2,665,223.70	(1) IBM (2) Amadahl (3) National Adv. Systems (4) Municipal Leasing Awarded to: IBM	45862	6/81

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
6/1/81 to 12/31/86	Lease of (24) Short Haul Modems and (3) Long Haul Modems	$ 26,085.00	(1) Racal Milgo (2) Paradyne (3) General Data Comm. (4) Com Data (5) Codex Awarded to: Racal Milgo	45929	5/81
6/21/81 to 7/31/86	Lease and Purchase Conversion of (7) 3278 Display Stations	$ 197,498.73	Awarded to: IBM Memo Award through Purchasing 6/2/81 to 6/9/81	46247	6/81
12/1/81 to 12/31/86	(13) Computer Processors and Associated Peripherals, Terminals, Software and Services	$ 1,482,244.18	Awarded to: IBM	46811	7/81
11/1/81 to 10/31/84	Lease of Software ATMS III OS/VS (5760-XYL)	$ 60,193.40	Awarded to: IBM	46951	7/81
11/1/80 to 12/31/84	Maintenance of (27) Display Terminals (3) Printers and (2) LTC Controllers and 2721 LTC Controller	$ 92,629.84	(1) ITT Courier (2) IBM (3) TELEX (4) Northern Telecom Awarded to: ITT Courier	47031	3/80
9/1/81 to 5/31/87	Lease and Maintenance of (24) Short Haul Modems (34) Long Haul Modems (1) Model Shelf Assembly and Maintenance of (42) MPS 48 (4) 9601's and (3) 24 LSI	$ 193,745.00	(1) Racal Milgo (2) Codex Awarded to: Racal Milgo	47613	10/81

IBM - PROCUREMENT HISTORY

January 25, 1985
Prepared by: Maribell Shevlin

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
11/18/81 to 11/30/86	Purchase and Maintenance of 298 Display Terminals, Local and Remote Terminal Controllers, Terminal Printers, and Various Features to be Installed on the Equipment	$ 1,937,072.14	Awarded to: IBM	47909	10/81
5/10/82 to 5/31/85	Purchase and Maintenance of Model 3705 Upgrade to G08 Scanner, Lib Type I Clock 600 bps (4) 1-D Line Sets	$ 22,210.00	(1) IBM (2) CMI Awarded to: IBM	48700	1/82
4/1/82 to 6/30/88	Lease of (5) 24 LSI MARK II (32) MPS 48 Features (6) MPS 9601 Fastrn (7) 252 Interface	$ 167,170.00	(1) Racal Milgo (2) Southwestern Bell Awarded to: Racal Milgo	49117	3/82
1/1/83 to 12/31/84	Lease of Local Program Support on Software	$ 42,846.40	Awarded to: IBM	49119	3/82
6/82 to 8/31/87	Purchase and Maintenance (3) 4955 Systems	$ 319,398.10	Awarded to: IBM	49214	3/82
6/1/82 to 6/30/85	Annual Maintenance of Natural (MVS Version)	$ 166,000.00	(1) Software AG (2) Cullinance Awarded to: Software AG	49804	5/82
11/29/82 to 11/30/85	Lease/Purchase Tape Library Management System Software Package	$ 24,300.00	(1) UCC (2) Capex Corp. (3) Value Computing Inc. Awarded to: UCC	50719	9/82

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
1/1/83 to 11/1/89	Lease of (1) 24 LSI and 24 MPS 48 Single Ports and (8) Omnimode 48 and RMC	$ 120,190.00	(1) Racal Milgo (2) Southwestern Bell Awarded to: Racal Milgo	51154	11/82
11/1/82 to 6/30/85	Annual License for Software Products SAS/SAS/Graph and SAS/FSP	$ 22,400.00	Awarded to: SAS Inst.	51252	9/82
3/15/83 to 3/14/86	Lease/Purchase of (1) Inspector IV MPC and Continued Maintenance of (1) Inspector III Tape Cleaner	$ 69,343.88	(1) Graham (2) Inernational Computer Group (3) Informatin Products Inc. Awarded to: Graham	51372	9/82
11/15/82	DTSS Temp RTM-78 On-Line Terminal Response Time Monitor	$ 2,508.00	Awarded to: DTS Inc.	51374	9/82
10/1/82 to 9/30/87	Purchase and Maintenance of 8880-2 Disk Controller and (2) Channel Switch and Lease and Maintenance (8) Disk Drives	$ 405,472.85	(1) Storage Tech. Corporation (2) IBM (3) Control Data Corp. Awarded to: Storage Tech. Corp.	51459	9/82
3/22/83 to 3/21/85	Lease of Software MVS/TSO/VTAM Data Set Print	$ 14,400.00	Awarded to: IBM	52479	1/83
4/8/84 to '30/85	Lease of Software vs Fortran Compiler and Library	$ 7,884.00	Awarded to: IBM	52586	2/83

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Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
7/21/83	Annual Maintenance Fee for Omegamon/MVS and DEXAN/MVS	$ 7,600.00	Awarded to: Candle (Confirming)	53460	6/83
8/1/83 to 7/31/85	Lease of the Software Data Facility	$ 3,976.00	Awarded to: IBM	53521	5/83
6/9/83 to 6/16/85	Annual Maintenance for Software Products, Intertest/Symbolic	$ 12,600.00	Awarded to: On-Line Software	53761	5/83
7/21/83 to 7/31/85	Annual Maintenance Fee for Omegamon/CICS 2nd Copy	$ 65,500.00	(1) Candle (2) Applied Data Research (3) Boole & Babbage Awarded to: Candle	53840	7/83
7/1/83 to 12/31/84	Lease of Software ACF/VTAM and 2nd Copy (5665-280) ISPF/PDF (5665-268) ISPF (5668-960) and DFD 55 (5740-UTS)	$ 57,396.99	Awarded to: IBM	53865	6/83
10/28/83 to 11/7/88	446 Terminal Devices over a 2 year Period Beginning 7/83	$ 747,399.28	(1) *IBM (2) *TELEX Both Awarded Bid	54403	8/83
5/1/84 to 4/30/85	Lease of Software vs APL (5748-AP1) APL EXT Editor (5796-PLY) A DRS-11 (5796-PLM/01) with Feature 6030, PL/1 Trans. Lib (5734-LMS) GDDM-Base (5748/XXH/01 with Feature 6049)	$ 34,834.00	Awarded to: IBM	54556	7/83

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
12/6/83 to 6/30/86	Lease Purchase of (1) AS/7000 Central Processing Unit and (1) AS/700 DPC	$ 929,778.00	(1) NAS (2) CMI (3) Municipal (4) ComDisco (5) IBM (6) Thomas Nationwide Computer Awarded to: NAS	55004	9/83
1/1/84 to 1/1/87	Lease and Maintenance of (1) Control Unit and (1) Tape Drive	$ 79,700.00	(1) TELEX (2) NAS (3) ComDisco (4) Computer Sys. Graphics Inc. (5) STC (6) STC Awarded to: TELEX	55203	10/83
1/1/84 to 1/31/89	Lease Purchase of (1) 1620 Remote Job Entry System	$ 177,724.00	(1) Harris Corp. (2) Northern Inc. Awarded to: Harris Corp.	55300	10/83
1/1/84 to 12/31/88	Purchase and Maintenance of TIS Data Base Software Products	$ 879,644.60	Awarded to: Cincom	55477	10/83
1/17/84 to 12/31/84	Lease of Software Hierarchical Storage Manager (5740-XRB) and 2nd Copy	$ 17,832.86	Awarded to: IBM	55603	11/83
9/4/84 to 10/11/89	Purchase and Maintenance of (1) 3880 Controller and (2) 3380-AA4 Disk Storage Unit (1) 3380-BO4 Disk Storage Unit	$ 406,242.79	(1) MLC (2) IBM (3) NAS (4) STC (5) CMI Awarded to: MLC	55763	12/83

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Prepared by: Maribell Shevlin

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
12/1/83 to 12/31/84	Lease of Software Products EDX Basic Supervisor (5719-XS4) and EDX Prog. Prep. (5719-XX5)	$ 7,723.00	Awarded to: IBM	55834	11/83
2/28/84 to 2/28/85	Lease of Software Network Comm. Control Facility (5737/XX6/01) with 2nd Copy. One Time Basis License Charge for Network Management Productivity Facility (5798-OPC)	$ 7,749.18	Awarded to: IBM	56191	1/84
2/24/84	Telco Telecommunications Billing and Inventory Control - Permanent License	$ 39,000.00	Awarded to: Telco Research Corp.	56198	2/84
3/1/84	CICS Screen Generation System Permanent License	$ 7,900.00	(1) GT Software (2) Multiplications Inc. Awarded to: GT Software	56727	3/84
8/20/84 to 8/31/89	Purchase and Maintenance of (1) 3725 Communications Controller and (1) 3727 Operator Console and Lease of Software ACF/NCP Version 2 (5667-124) and ACF/SSP Version 3 (5735-XXA)	$ 153,505.28	(1) IBM (2) NCR/Compten Awarded to: IBM	56851	3/84
8/15/84 to 4/30/87	Purchase and Maintenance (1) 7850 Teletypewriter Adapter and (1) 6307 Storage Addition for SRS Series I Network	$ 12,122.35	Awarded to: IBM	57312	5/84
11/7/84	Data Communications Protocol Converter, Data Lyrx and Dial Port Security Device and Dial-up Communications Modems, Pathway 212 A Modems	$ 12,166.50	(1) *Computer Dataco (2) Information Products, Inc. (3) *Digialt Pathways, Inc. Awarded to: Computer Dataco	58432	7/84

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
12/1/84 to 11/30/85	Computer Software Package for Capacity Planning (for 046562)	$ 42,000.00	Awarded to: BGS Systems	58600	8/84
11/1/84 to 10/31/85	Lease of Security System Software for (1) IBM 3033 (1) NAS 7000 (CCS 850375)	$ 17,400.00	(1) CGA Computer (2) IBM (3) Cambridge Sys. Awarded to: CGA Computer	58601	8/84
10/29/84 to 6/30/85	Channel Adapter Upgrade for 3725 Communications Controller	$ 2,227.50	Awarded to: IBM	59639	10/84
12/6/84 to 6/30/85	3274 Model 1B Terminal Controller	$ 7,753.25	(1) Kennsco (2) CAI Ltd. (3) Diamond Pye Corp. (4) Reliable Computer Corp. (5) COMDISCO (6) Centran Awarded to: Kennsco	59925	12/84
11/30/84 to 6/30/85	Software Product ACF/TCAM Version 2 to Replace Currently Installed TCAM - 10	$ 12,736.00	Awarded to: IBM	59959	11/84
11/30/84 to 6/30/85	Four Channel Switch - Feature 8171 to be Installed on an STC 8880 - 2 Disk Controller	$ 3,390.00	Awarded to: Storage Tech. Corp.	59964	11/84
12/12/84 to 6/30/85	8020/006 Tape Drive Units	$ 7,470.00	Awarded to: TELEX	59995	12/84
12/12/84 to 6/30/85	IBM Software for 3rd cpu	$ 7,295.00	Awarded to: IBM	60011	12/84
2/7/84 to 6/30/85	IBM PL1 Compiler and Libraries, IBM Program Product 5734-PL-3	$ 2,954.00	Awarded to: IBm	60069	12/84

January 25, 1985
Prepared by: Maribell Shevlin

Date Of Contract	General Description	Total Obligation	Bidders	RFQ	Award Date
1/16/85 to 6/30/85	Top Secret License for 3 cpu	$ 6,600.00	Awarded to: CGA	60072	1/85
12/12/84 to 6/30/85	Third Copy of Syncsort to Run on a Third cpu	$ 2,700.00	Awarded to: Syncsort	60073	12/84
1/23/85 to 6/30/85	IBM Series 1 - Software Series 1 Event Driven Executive Basic Supervisor and Emulator - Version 4 (5719-X34)	$ 12,540.00	Awarded to: IBM	60362	1/85
	TOTAL	$17,159,440.94			

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V. THE IMPORTANCE OF PERSISTENCE

REPRESENTATIVE PHYLLIS L. KAHN, MINNESOTA

FOR RUSSELL AND BAKSHKA

In November 1974, Representative Phyllis Kahn received a letter from Andrew Mickel, a constituent who was a computer scientist employed by the University of Minnesota. Mr. Mickel had complained at a precinct meeting to two state legislators about the state purchase of a new computer system. They suggested that he write a detailed letter on the case. The three-page letter received by Representative Kahn was also addressed to the two other legislators who had spoken with Mickel at the precinct meeting.

The basic thrust of the letter was that the new computer system which was being installed and tested would be very costly and would not work. The computer was being purchased by the Minnesota Educational Computing Consortium (MECC) from the Univac Division of Sperry Rand Corporation. The Univac 1110 System, a centralized timesharing one, would serve the instructional needs of students at all public elementary, secondary, community colleges, and universities in Minnesota. The proposed system would be the largest timesharing one in the world.

Considerable early evidence pointed toward a failure of the new system, according to Mickel. The University of Minnesota Computer Center had heard a series of reports about the poor performance of the Univac 1110 System at other installations such as the Manned Spacecraft Center, Bell Laboratories, and the University of Wisconsin. The university was worried about the system's performance. In addition, two of the other instructional educational computer systems in Minnesota had made arrangements to keep their operations on the current timeshairing system.

Mickel's letter voiced the fear that the Univac 1110 would be a waste of the state's money and asked the three legislators to look into the impending purchase. Representative Kahn decided that the letter deserved further consideration. The oversight project that consequently developed occupied a large part of her time during the 1975-76 legislative biennium.

The Legislator

Phyllis Kahn holds a Bachelor of Art degree in physics from Cornel University, a doctoral degree in biophysics from Yale University, and has done post-doctoral research at both Yale and Princeton. She was born in Brooklyn, New York, but moved to Minneapolis from the east coast in 1964 with her husband who teaches at the University of Minnesota. The Kahns have two children. From 1965 to 1974 she was a research associate at the University of Minnesota in the Department of Genetics and Cell Biology. Her research interests include viral and bacterial

genetics and electron microscopy. Since 1974, however, her only occupation has been serving in the Minnesota House of Representatives.

Representative Kahn first got involved in politics as a result of the women's rights movement. She is a founding member of the Twin Cities National Organization for Women (NOW) and the Minnesota Women's Political Caucus. During the 1971 legislative session she was a registered lobbyist for NOW working on women's issues. She had never held an elective political office before running for the Minnesota House of Representatives in 1972. The decision to run for the legislature was prompted by two factors. One, in her words, was the "kind of evolutionary path that the women's rights movement was taking. It was felt that a better place to be was someplace where you could exert some political power, instead of always being on the outside asking people to do things for you." The second factor was the creation of an apparently safe Democratic House District with no incumbent as the result of the post-1970 census reapportionment.

In her first political campaign Kahn faced a tough nonpartisan primary fight. The Minnesota Democratic Farmer Labor Party (DFL) has a caucus endorsement system. At the district caucus a plurality of sixty percent is needed to receive the party's backing. Although she recieved more votes than any other candidate, Kahn failed to reach the sixty percent figure, so the party made no endorsement. During the primary campaign her main support came from women's groups, and she was attacked as being a one-dimensional candidate. To counter the charge that she was only familiar with and concerned about women's issues, the campaign stressed her scientific and technological background and interest. The claim that the legislature needed people with scientific backgrounds who could understand today's complicated technological problems proved to be extremely effective, particularly in her university district.

After winning the primary and general election in 1972, the district did prove to be a safe one for the DFL.Representative Kahn has faced only minor opposition, or none at all, in the general elections of 1974 and 1976. She has had no primary opposition whatsoever.

A Legislative Career Orientated Toward Technical Areas

Representative Kahn describes her occupation as being a state legislator and says that her legislative activities are essentially full time. This is a luxury

not enjoyed by most of her colleagues. Minnesota legislators receive a yearly salary of $8,400 in the 1975-76 biennium. The salary was supplemented by a per diem expense allowance of $33 for meetings held during interim periods Yearly compensation for the average legislator was about $12,000 not including interim expenses.

Kahn thinks her legislative career has been significantly shaped by the campaign rhetoric of the first campaign which stressed her scientific and technical background. It meant, she says, that "my choices of committees were those where I said my training would be beneficial." Kahn currently holds seats on the Agriculture, Appropriations, and Enviroment and Natural Resouces committees. In the 1975-76 biennium she was chairman of a standing subcommittee of the Enviroment and Natural Resources Committee.

The district which Kahn represents is heavily populated by people connected with the University of Minnesota. Her constituents are issue-orientated and more concerned with issues that effect the state as a whole. "Many people in the district," she states, "would have been much happier in an earlier time to have their representative sponsor a resolution condemning intervention in Vietnam than building a bridge." Kahn has been centrally involved in many high visibility issues such as control of smoking in public places, divorce, nuclear power plant siting controls, energy, women's atheletics, and decriminalization of prostitution. As a result, Kahn thinks she has probably received more press attention than most legislators who were first elected when she was. In reference to the educational computer system issue, Kahn says, "in a sense it has been a relief to get into this issue which nobody paid any attention to."

Terminating An Educational Computer System

The Minnesota Education Computing Consortium (MECC) is a "joint powers agreement" organization. Under Minnesota law, several counties, state agencies, or a state agency and one or more counties can join together without state or local legislative authorization and form organizations to accomplish tasks that involve more than one governmental unit. Such an agreement, for instance, would be used on the local level by two counties to cooperatively build a bridge over a river that formed the boundary between the counties.

In the case of MECC the State Department of Education, the University of Minnesota, the State Unversity System, and the state-funded community colleges formed an organization to provide computer services to its constituent members. Funds are appropriated to the members of MECC by the legislature. There is a line item in the budget bill for computer services for each of the four members of

MECC. In the worksheets of the two appropriations committees and conference committees on appropriations there are indications of how the legislature wants MECC to spend such funds on various projects. Thus, although there is no mention of MECC in state law or in the appropriation act, there is clearly a record of legislative intent.

In January 1974 MECC published performance specifications for an instructional timesharing system and requested bids. Bids were received from Univac, Honeywell, and Control Data Corporation among others, and the contract was awarded tentatively to Univac as low bidder. The Univac 1110 System was required to pass a rigorous benchmark test in the fall of 1974 before the final contract was signed. The MECC Board of Directors concluded in December 1974 that the Univac 1110 had passed the test, and the final contract was signed early in 1975. The system still had one operational hurdle to surmount. The system had to pass an acceptance test, after installation and initial operation.

The final contract signed by MECC with the Univac Division of Sperry Rand was a potentially costly one for the state of Minnesota. The direct cost of the Univac 1110 System, including system rental and MECC administrative and operations expenses over the seven year period specified in the contract would have been $13 million a year for a total of $91 million. Representative Kahn estimates that the indirect costs would have been about four times the direct costs without any upward adjustment for inflation. Thus the total seven year cost of the system would have ranged between $400 and $500 million.

The 1975 Legislative Session

There are 67 senators and 134 state representatives in Minnesota. Each Senate district includes two House districts. When Mr. Mickel complained at the precinct meeting about Univac 1110, he was talking to his state senator and one of his representatives, Martin Sabo, the Speaker of the House. His letter was addressed to these two members and Representative Kahn, since she was his other representative.

When the senator received Mr. Mickel's letter he referred it to a staff member from the Senate Office of Investigative Reseach. According to Representative Kahn, the staff member wrote a pretty good report, but since she really didn't have a good understanding of computers, the report was not as thorough as it might have been. No senator wanted to follow-through on the issue. Speaker Sabo made some inquiries concerning his constituent's letter, but Representative Kahn, who was most interested in the issue, was the one to really follow-through.

Representative Kahn decided to get another opinion on Mickel's complaint before proceeding further. She sent the letter and the documents that were en-

closed with it to another of her constituents, Professor Marvin Stein of the Department of Computer, Information, and Control Sciences at the University of Minnesota. Dr. Stein wrote back in December 1974 indicating his basic agreement with the points made by Mr. Mickel. He also thought there were serious problems with the way MECC was structured and how it operated. Kahn concluded that the matter deserved some serious legislative attention.

Minnesota has a biennial budget. If the legislature wanted to force MECC to cancel or alter its contract with Univac, action to that effect during the 1975 budget deliberations seemed crucial. However, Kahn had not had much time to study the proposed purchase. She discussed the issue with Fred Norton, Chairman of the Appropriations Committee, and he agreed to schedule two hearings on the problem. One hearing was held before the Education Division of the Appropriations Committee and the other before the full committee. The Appropriations Committee is divided into three divisions—Education; Health, Welfare and Corrections; and State Departments—and each division chairman has the prestige of being a full committee chairman. Representative Kahn was not a member of the Education Division in 1975-76; and, not surprisingly, none of the members of the Education Division had any background in computer sciences.

After two hearings on the complex issue, the committee was not prepared to take any action to stop the state from buying the Univac 1110 System. In the 1975 session, according to Kahn, "we didn't do anything except raise the question. If we had been prepared, that would have been the time to stop the appropriation." Since the final signing of the contract took place early in 1975, legislative refusal to appropriate money for the project would have killed it before it formally began. Kahn would have liked to explore other alternatives, or at least force MECC to go a little slower and take a harder look at the potential of the Univac 1110 System in 1975. However, she felt that a better understanding of the issue was needed before she could successfully advocate such a step.

At the end of the 1975 legislative session a special Computer Subcommittee of the House Appropriations Committee was established to investigate state computer operations in general and the MECC purchase of the Univac 1110 Instructional Timesharing System in particular. Representative Norton realized that more work in the whole computer area was needed, and since Kahn was interested in pursuing it further, she was named chairman of the eight member subcommittee. The subcommittee included those members of the full committee, regardless of divisions, who were interested in the issue. Representative Norton named himself a member of the sub-

committee, so the group began with a good deal of political clout. Kahn described the subcommittee as "the best group of people I have ever worked with in the Minnesota Legislature, and the Minnesota Legislature is one of the best in the nation.

Establishing Expertise on the Issue

The Computer Subcommittee studied state computer operations in several ways. During the 1975-76 interim period the subcommittee took a full-day course in the state use of computers that was arranged by the Information Systems Division which handles the computer needs of most state agencies. Site visits were made to schools where instruction in the use of computers was offered. Hearings were held with appropriate state officials as witnesses. Minutes of the MECC Board of Directors meetings were reviewed. Representative Kahn also spent considerable time talking to people, such as Mr. Mickel, Dr. Stein, and other experts.

The subcommittee also relied on out-of-state resources to accumulate background knowledge. The National Conference of State Legislatures (NCSL) was contacted. Kahn said that originally the subcommittee looked at other states to find an ideal state computer law or mechanism that could be implemented in Minnesota. No such ideal program was found, but NCSL proved helpful in bringing several knowledgeable people from the national scene to Minnesota for hearings and identifying people in the Library of Congress who provided background information.

The role of staff in the conduct of this oversight project was not the normal one of staff professionals who were experts, supporting legislators who were not. The House Appropriations Committee has a professional staff of five people who provide the usual range of fiscal staff services. There was nobody on the staff, however, who had any detailed expertise in the field of computers. When the subcommittee began to investigate the issue, the staff person assisting the subcommittee learned from scratch along with the members. Legislators had as much technical expertise as the staff did in this case.

Staff did provide valuable assistance to the subcommittee. In undertaking a project of this nature, Kahn believes you need someone who is less personally involved than legislators themselves. Relationships between legislators and top officials of the executive branch often generate a high degree of antagonism. In this type of situation it is often more fruitful to have staff pose questions or remind officials that they didn't provide the memo that had been requested. Staff can act as a depersonalizing wedge and be more successful in obtaining the data needed, as opposed to legislators who are personally committed to the project.

Legislative staff can also be helpful in establishing channels of communication at a lower level than that of legislator-top executive branch official. For example, if a legislator calls an official in an executive agency or a local school district, the official is often defensive and hesitant to give information. On the other hand, if a legislative staff person talks to his counterpart in an agency, the conversation is likely to be much more open. An undercurrent of relationships between legislative staff and agency staff can often be more beneficial to the legislature than that of legislators with top executive branch officials.

Dealing with the Executive Branch

The Computer Subcommittee spent over one-hundred hours gathering background information on state computer operations and studying the MECC purchase. Members felt that by the beginning of the 1976 session they were ready to confront the executive branch which was committed to the Univac 1110 System. The subcommittee wanted to force a termination of the MECC-Univac contract by rescinding the appropriations for the project made in the biennial budget during the 1975 session.

Partisan politics played no part in the MECC-Univac computer case. Both the executive and legislative branches were controlled by the DFL Party. The Democratic Governor had been reelected in 1974, and the DFL retained overwhelming control in the House by a 102-32 margin and comfortable control of the Senate by a 38-28 margin with one Independent. The oversight effort attracted almost no press attention, and no attention from the opposition Republican Party. The issue was highly technical one and therefore not conductive to stimulating press attention or partisan passions.

The major agency in this case on the executive side was MECC. The governor's office was involved in the issue but not in an antagonistic way. Kahn believes this was true, because "the executive branch knew that we (the legislature) were right, that nobody had kept a handle on this, and that it had gone completely out of control. There was nobody in the executive branch who was really competent to deal with it, except those who were directly involved." The issue was an embarrassment to the governor's office. Even though they knew a mistake had been made, nobody in the governor's office could really do anything because they just did not understand the problem well enough to speak authoritatively. A governor's aide who became actively involved in negotiations during the 1976 session was always about two weeks behind what was going on.

Dealing with MECC was frustrating for several reasons. In the first place there was high turnover of personnel in the agency. The former director quit his position in 1975, as soon as the first questions were asked about the Univac 1110 purchase. For a while the agency was run by an acting director, and finally a new director was appointed. The chairman of the MECC board also left during the controversy. He was replaced by an chairman who lasted only one month, and the position was then left vacant.

Another frustrating aspect was the hostile attitude of MECC personnel toward legislative intervention throughout most of the two years. No attempt whatsoever was made to assist the committee in understanding the issue. During two legislative sessions MECC fought legislative efforts to terminate the contract, and then when it became clear that the contracts should be scrapped, they were prepared to blame the legislature for delaying termination.

Perhaps the most important non-legislative group involved in the issue was the Univac Division of Sperry Rand. Throughout most of the two years Univac worked very closely with MECC in an effort to block further legislative action after passage of the original appropriation in 1975. Univac spent most of its time dealing with MECC until late in the 1976 appropriations process, because they apparently didn't understand the importance of the legislature in state finance. Representative Kahn said, "Univac thought that the agency (MECC) was being ridiculous in listening to the strident voices in the the legislature."

Proposing Termination of the Contract

The battle lines were clearly drawn early in 1976. On one side was the Computer Subcommittee of the House Appropriations Committee; on the other were MECC and Univac, with additional groups and individuals becoming involved from time to time. The whole fight took place with little attention being paid by the general public. This is partly true because the press has ignored the issue. It is simply too complicated. "The press just looked at the topic," says Kahn, "and decided they didn't want anything to do with it."

During the 1976 session the Computer Subcommittee met on several occasions in January and February to collect further information. In March, Representative Kahn wrote a lengthy and detailed memo to the other members of the subcommittee covering the MECC acquisition of the Univac 1110 System. The memo began by stressing the need for immediate legislative action, if anything was to be done concerning the issue. The MECC-Univac contract had been signed, the hardware had been installed, and the acceptance testing for the system was scheduled to begin on April 15, 1976. Final acceptance of the system by MECC under the contract provisions was possible within thirty to ninety days after the beginning of the acceptance test.

The four possible ways the MECC-Univac contract could be terminated were outlined in Kahn's memo.

The first was the failure of the state or local school districts to appropriate funds for the system. A clause in the contract allowed the state to terminate the contract in this way without penalty. The other three would involve decisions by MECC that Univac had failed to live up to the various provisions contained in the contract. Kahn was convinced that MECC would never force termination of the contract, because "members of the subcommittee have seen little indication of MECC's ability to pursue the evaluation of acceptance of the Univac 1110 in an objective manner." At every point during the dealings concerning the system, MECC personnel had bent over backwards to accommodate the failures of Univac to meet contract provosions. It seemed clear to Kahn that unless the legislature intervened, the system would eventually be accepted by MECC. Kahn recommended that the legislature rescind the appropriation for the Univac 1110.

At one level the case for legislative action to terminate the contract was based, according to Kahn's memo, on the "fundamental mistake made early in the decision process to have a large centralized system with a mixture of users having different requirements." It made no sense to design one system to serve both elementary school and post-doctoral students. A decentralized operation that would have separate systems for K-12 and various higher educational institutions would make much more sense, and be much less expensive. Such a system would mean that MECC could probably dispense with the technical staff required to manage a large highly complex centralized system. The number of technicians needed to run several smaller and less complex systems would not be as large. Several smaller systems would save on the communications costs involved in a centralized system. A decentralized operation also would allow the Department of Education to have its own computer operation at very likely half the cost of their involvement in the Univac 1110 System which had to be designed to accommodate the university users.

At a more practical level, Representative Kahn insisted that available evidence indicated that the Univac 1110 System simply would not work. It seemed clear that the system would fail any rigorous, objective acceptance test. However, the acceptance test was not structured so that it would be an objective one. To pass the test the system had to be in operation ninety percent of the time for a period of thirty consecutive days within ninety days of April 15, 1976. The highest period of usage for an instructional computer system obviously would be during the regular school year, and the system should be tested at peak usage. The acceptance test period, however, meant that the system could pass the test by operating ninety percent of the time between June 15th and July 15th.

People other than members of the Computer Subcommittee also concluded that the system would never work well. The University of Minnesota and the State University System were deserting the Univac 1110. Moorhead State University agreed to participate only if funding for its own computer system was increased. The attitude of the University of Minnesota during the two-year period was instructive. Originally the University just worked to see that it would not have to be involved in the Univac 1110 System. The University wanted to keep their own instructional system which was working well, and so took steps to isolate it from the Univac 1110. Everybody else could have the new system, although the University would nominally be involved in it. As things progressed, however, some University of Minnesota faculty and staff began to see the system as a huge sponge that would soak up all available computer funds. They were convinced that the Univac 1110 System would never work well, and that to make it work at all would take so many developmental dollars that there would be no funds available to allow the University to make any progress in its own computer operations.

The Computer Subcommittee decided to accept Representative Kahn's recommendation to rescind the appropriation for the Univac 1110 System. The recommendation was written into the 1976 supplemental appropriation bill in the full Appropriations Committee. The language stated that all funds appropriated for Fiscal Year 1977 in 1975 for the Univac 1110 System "shall not be expended." The section further stated the legislature's intent to discontinue the centralized timesharing MECC system and provide funds for the purpose of establishing several separate computer systems based on different educational and geographic needs. To that effect the section appropriated $1.1 million to the four members of MECC: the University of Minnesota, the Department of Education, the State University System, and the community colleges.

Univac Gets One More Chance

With the chairman of the full Appropriations Committee as a member of the Computer Subcommittee, there was no difficulty passing the subcommittee's recommendation in committee. But when the issue got to the full House, difficulties arose. Univac and MECC began a massive lobbying campaign to have the language suspending the MECC-Univac appropriation removed from the bill. On March 17, 1976 everyone using the Univac 1110 System received the following message from the computer:

> The state legislature is in the process of voting to eliminate instructional time-sharing services within the state. If passed current services will be discontinued immediately and it appears probable that no service will be available in the

near future. The voting on this matter is anticipated within the next 48 hours. Your senators and representatives would be interested in your feelings on this subject. House 612-296-2146; Senate 612-296-4916.

The message contained erroneous information. The appropriation cutoff would not take effect until July 1 and all members of MECC could have backup systems ready by using the funds provided in the bill. Univac also mounted a very thorough letter writing campaign. Everybody on the Computer Subcommittee who knew individuals connected with Univac got a letter from one of them. Other legislators and legislative staff members received correspondence. In addition, Univac had a battery of lobbyists and lawyers swarming over the House. It seemed clear to Representative Kahn that at this point Univac was "clearly running the show."

The Computer Subcommittee decided to adopt a fall-back position, when it became obvious that the MECC-Univac lobbying campaign was having a significant impact on opinion in the House. The members of the subcommittee sponsored an amendment to the supplemental appropriation which was adopted without a roll call vote. The amendment basically said that the appropriation for the Univac 1110 System could not be expended unless the system passed the spring acceptance test during a period of high usage. If the system passed the test during a thirty-day period after the May 28 end of the school year, then it would also have to pass the test during the fall semester between October 1 and December 22. Since members of the subcommittee were sure the Univac 1110 could not pass a legimate acceptance test, they felt confident with waiting until the completion of the test.

The subcommittee, however, was concerned that the MECC Contract Monitoring Team would interpret the results of the acceptance test in a manner favorable to Univac. The test results on a sytem as complex as the Univac 1110 leave much to interpretation. Therefore, another section of the amendent appropriated $100,000 for the hiring of a consultant by the governor to monitor the contract and acceptance test. The consultant's decision in their report to the governor on whether the Univac 1110 passed the test would determine if the contract would be terminated. The amendent also appropriated funds for back-up computer services for MECC users if the contract was terminated.

The action of the House left MECC and Univac dissatisfied even though the final product gave Univac a chance to prove that their system would work. Their attitude was that they could take care of correcting the system and making it work without any intervention by the legislature. They did not want any language in the law that would restrict their options or madate certain actions. On the basis of past per-

formance, however, Representative Kahn and the Computer Subcommittee were simply not willing to trust MECC and Univac to handle the situation adequately without legislative intervention.

In Minnesota each chamber introduces and passes its own version of appropriations bills. The Senate approved supplemental appropriation bill for 1976 did not address the Univac 1110 System issue and thus contained no language contitionally rescinding the appropriation. That left the issue to be resolved by a conference committee. Following the advice of Representative Kahn and with the full support of Representative Norton, Chairman of the Appropriations Committee, Speaker Sabo selected House members for the conference committee who were committed to retain the Computer Subcommittee's amendment in the bill. In the negotiations over the amendment the Univac attorneys presented their case in person to the Senate conferees but with little success. The amendment, with a few slight modifications favorable to Univac, remained in the bill, and the bill passed in April 1976 without any substantial opposition.

Interim Follow-Up

The Computer Subcommittee continued to oversee the MECC-Univac contract in the 1976-77 interim period, while also holding hearings on other issues. After the amendment was adopted with MECC opposing it, the attitude of MECC toward the Univac 1110 System began to shift significantly. Officials at MECC began to take a harder line in their dealings with Univac. This was reflected in the negotiations between MECC and Univac over the acceptance testing procedures and guidelines. Univac attributed the changing attitude to legislative interference, as is evidenced in the following paragraphs regarding testing procedures in a letter dated April 27, 1976, from Univac to the Chairman of the MECC Board of Directors.

In confronting us with demands which are both unreasonable and contrary to the contract, your letter presents further evidence of an apparent mood of hostility on the part of MECC towards Sperry Univac which has characterized MECC's dealings with us from the time that certain state legislators charged that MECC was being to "lenient" with Sperry Univac.

Sperry Univac must conclude that these demands and threats are the product of legislative and third party interference with our contract. It would be calamitous if the benefits of the innumerable hours of hard work and the millions of dollars expended by Sperry Univac were to be lost to the system's user because of MECC's over-zealous attempts to appease each and every critical third party element in the state, no matter how ill-founded the criticism might be.

An agreement between MECC and Univac on acceptance test procedures and guidelines was finally reached on May 24, 1976. The Governor's office hired the consulting firm of Rude, Aschauer, Dooley and Associates Inc., of Phoenix to monitor the contract and the acceptance test. The thirty days of continuous operations specified in the contract were completed on July 14. Since the thirty-day period fell after the May 28 end of the school year, the Univac 1110 would still have to pass an acceptance test during the fall semester as specified in the supplemental appropriation bill, if it had passed this spring test.

On August 13 the Computer Subcommittee met to hear reports from the MECC Contracting Monitoring Team and the consultant from Rude, Aschauer, Dooley, and Associates. The latter concluded that the Univac 1110 had passed the spring test and was entitled to a fall test. In their opinion, however, the system would fail the fall test. They recommended that the state immediately negotiate a settlement with Univac terminating the contract and take steps to arrange for viable timesharing services for the fall beginning of the new school year. The MECC Contract Monitoring Team, on the other hand, concluded that the Univac 1110 System failed to pass the spring test. Of the forty-four system performance features specified in the contract, fourteen were not achieved and MECC concluded that these failures were sufficient to indicate that the contract had not been met.

Thus, the consultants who were hired only after the Computer Subcommittee insisted on an outside opinion, reached the binding conclusion that Univac had to be granted the opportunity to pass a second acceptance in the fall. The MECC team, by contrast, reached the conclusion that the contract should be terminated immediately. Now MECC began to blame the legislature for forcing the state to continue the contract for the defective Univac 1110 System. This marked a sharp turnabout in MECC's position.

Univac indicated that it wanted a chance to pass the fall acceptance test. The Computer Subcommittee went before the Legislative Advisory Committee to request funds for the fall test. The Legislative Advisory Committee has five members: the chairmen of the House and Senate Appropriations committees, the chairmen of the two taxation committees, and the governor. The committee controls a contingency fund that can be allocated for emergencies that arise between legislative sessions. Although the legislators on the committee can make recommendations, the governor has the final power to grant or refuse requests for funds. The funds for a fall acceptance test were granted.

The Computer Subcommittee also secured funds from the advisory committee to allow the hiring of outside counsel by the State Attorney General. During the whole project, whenever legal questions arose, the Attorney General assigned one of his attorneys to work with MECC on the Univac contract. The subcommittee felt that since the same attorney had been involved in the project from the start, a new look was needed. In anticipating the possibility of negotations concerning the fall acceptance test criteria or a negotiated settlement, an attorney who specialized in contract procedures was hired.

Univac Throws in the Towel

Univac gave up shortly before the beginning of the fall testing period. Apparently realizing that the 1110 System would fail the fall test, the company decided to negotiate a settlement. In a final attempt to save face, Univac drafted a proposed statement to be released with the termination agreement that praised their 1110 System. The Univac draft said the system was designed only to "evaluate the feasibility" of a centralized instructional timesharing system, that it had been "acclaimed by many as the best answer to all the State's education needs," and that the system had met all "expected milestones, dates and requirements."

With strong objections to such a statement from the Computer Subcommittee, MECC insisted on toning it down. The final negotiated statement made it clear that the Univac 1110 had been an operating system, not one designed only to demonstrate feasibility, and that while the system had been judged by the consultant to have passed Phase I testing, the project was terminated before Phase II testing began. The termination agreement itself specified that Univac would continue to provide certain instructional timesharing services to MECC users throughout the 1976-77 school year to allow a transition to other systems with a minimum of disruption.

Representative Kahn said she felt like they were playing a "huge game of chicken" during the entire period of confrontation with Univac. Univac apparently believed that their best chance of prevailing lay in prolonging the issue until the legislature and MECC finally gave up and accepted the system. In the original contract there was no limit to the time period for the successful completion of the acceptance test. Univac could wait as long as they wanted before submitting the 1110 System to the test.

The legislature as a whole, and the Computer Subcommittee in particular, took a number of steps to keep the pressure on Univac. First, the legislature passed the amendent which placed a limit on the acceptance testing period, provided for the hiring of a consultant to monitor the acceptance test results, and provided for back-up systems in case the Univac contract was terminated. Univac went through with the spring test, but delayed until the school year had ended.

The consultant's report indicated that Univac had to be granted the opportunity to pass a fall accep-

tance test. Univac indicated that it wanted the chance. In response the Computer Subcommittee went to the Legislative Advisory Committee and got the funds for the fall test. To insure that the Univac 1110 would be tested fairly, they also provided funds for the hiring of an outside attorney to shore up their legal advice on contracts. When the legislature proved to be persistent, Univac gave up.

Conclusion

Representative Kahn estimates that the full Computer Subcommittee spent about 135 hours on the MECC-Univac project. She and the staff member working with the subcommittee devoted substantially more time to the project. Apparently the legislators involved thought the experience was beneficial. A Computer Subcommittee of the House Appropriations Committee was again appointed for the 1977-78 biennum and Representative Kahn was once again named chairman. All members of the subcommittee were reelected in 1976 and all requested assignments to the subcommittee once again. The future work of the subcommittee will involve issues such as making MECC a state agency so it will be easier to oversee, establishing a data processing control board to oversee all state computer operations, and reviewing the future course of state computer development.

The work of the Computer Subcommittee may have an impact on the future operations of the full Appropriations Committee. This is the first time a separate subcommittee has been established outside of the three standing divisions of the committee, and the results have been favorable. Some people think similar subcommittees in other areas that also cut across the division jurisdictions could be beneficial. Members of the Computer Subcommittee, however, realize how much time this one project took, so there is some reluctance to rush headlong into a similar venture. Univac may have been close to the truth in believing that it could eventually wear down legislative resistance.

It seems clear that the activities of the Computer Subcommittee had a great deal of impact on the executive branch. After the termination of the Univac contract, MECC has again invited bids for a considerably less ambitious instructional time-sharing system. Perhaps a more important result has been the complaints the legislature now receives from state computer users. In the past users of computer services provided by MECC or the Information Systems Division had nowhere they could go with their complaints, since nobody in the executive branch other than the service providers could understand their problems. Now computer users can communicate problems they are having to the legislature. In addition, state agencies offering computer services now routinely provide the legislature with information on projects they want to conduct.

Imapact on the Legislator

Representative Kahn has ambitions to be elected to Congress some day, but that possibility seems remote at the present time. She says, "I have my eye open if there is a congressional vacancy in our district; along with sixty-five other people." She thinks the present incumbent who is only fifty-two years old is an excellent Congressman. Clearly the MECC-Univac oversight project to which Kahn devoted considerable time will not help her much in any campaign for higher office. The issue was invisible to almost everyone outside of the legislature.

The MECC-Univac project may help Kahn realize her more immediate political goal of becomming a committee chairman. The Computer Subcommittee developed an extremely good reputation as being hard-working and reliable. Increased respect from her colleagues could help her move up more quickly in the legislature.

Representative Kahn describes her involvement in the MECC-Univac oversight effort in this way: "It is the most interesting area I have ever worked in, yet it gets almost no attention from anyone except the principals because of its complexity." One would not expect a politician to invest so much time in such an issue. In addition to being a very active and involved political figure, however, Phyllis Kahn is also an academic. Her educational and work experience attests to the fact that she enjoys working on complicated scientific and technological problems such as this one. There was a large measure of truth in the campaign rhetoric that stressed this side of her qualifications for legislative office.

STATE OF KANSAS

HARDWARE FINANCING PLAN

The following financial plan is designed to provide the State of Kansas with the computer hardware capacity necessary to fully implement KIPPS and to accommodate the long term user demand for SPERRY Computer System resources:

(1) Schedule A - 1100/63 H1 to 1100/74 H1 upgrade. This upgrade is currently scheduled for delivery March 31, 1984. This upgrade will be billed at maintenance only until September 29, 1984. Effective September 30, 1984, this upgrade will be billed at maintenance plus 100% of the 5 year lease rates.

(2) Schedule **B** - 1100/72 H1 Interim CPU Complex. This upgrade is currently planned for delivery between May 1, 1984 and June 30, 1984. This upgrade will be billed at maintenance plus 10% of the 5 year lease rates. This represents a 90% discount on an interim system valued at $1,128,398. Effective with the ready for use acceptance of the 1100/91 complex (projected 3/31/85) the 1100/72 will be cancelled and returned to SPERRY. (An 1100/62 equivalent in processing power to the 1100/72 may be substituted if available sooner).

(3) Schedule C1 and C2 - Peripherals and Cache/Solid State Processors for use on the 1100/72 and 1100/91 complex. These peripherals are planned for delivery with the 1100/72 between May 1, 1984 and June 30, 1984. This equipment will be billed at maintenance only until March 30, 1985. Effective March 31, 1985, the peripherals will be billed at maintenance plus 85% of the 5 year lease rates.

(4) Schedule D1 - First DCP 40 Distributed Communications Processor. This equipment will be billed at maintenance only from installation (approximately 5/1/84 - 6/30/84) until March 30, 1985. Effective March 31, 1985, a second DCP 40 will be installed (Schedule D2). The State will then be billed for maintenance plus 85% of the 5 year lease costs reflected on Schedule D2.

(5) Schedule E1 - 1100/91 at State Office Building. The first 1100/91 will be billed at maintenance only from January 31, 1985 until March 30, 1985. Effective March 31, 1985, the 1100/91 will be billed at maintenance plus 85% of the 5 year lease rates.

(6) Schedule D2 - Second DCP 40. Effective January 31, 1985, the DCP 40 will be billed at maintenance only until March 31, 1985 at which time it will be billed at maintenance plus 85% of the 5 year lease rates. (See detail on Schedule D1 for pricing coordination of the multiple DCP 40s.)

02/17/84

(7) Schedule E2 – 1100/91 at the Santa Fe Office Building. This CPU complex is planned for installation at the Santa Fe Office Building March 30, 1986. Effective March 31, 1986, it will be billed at maintenance plus 10% of the 5 year lease rates. Effective July 1, 1986, it will be billed at maintenance plus 85% of the 5 year lease rates.

(8) All of the above contracts assume a sixty month term with the exception of the interim 1100/72 CPU complex.

(9) If the State of Kansas desires the second 1100/91 CPU complex to be coterminous with the initial system, it will be billed at 100% of the 5 year lease rates; if it is on its own 60 month term, it may be billed at 85% of the 5 year rates.

(10) A fifteen percent purchase allowance (discount) is authorized on all equipment schedules. This represents a potential $1,611,549. discount.

(11) If the purchase option is accepted, SPERRY will work with the State of Kansas in order to schedule the respective purchase payments in such a manner as to minimize their impact in any single fiscal year. It is our desire to provide as much flexibility in this area as required.

(12) Purchase versus Lease Analysis. Although SPERRY has provided a very significantly discounted lease proposal, the total life cycle analysis of hardware costs indicates a significant savings to the State of Kansas if the cash purchase option is exercised.

Exhibit A provides the detail of this analysis. The total savings to the State of Kansas would be $6,077,707., if purchased rather than leased for 60 months.

Exhibit B illustrates this cost savings in a different format.

Exhibit C provides a summary of the significant lease discounts provided if the State of Kansas decides to lease rather than purchase. The discounts provided over the life cycle of the lease total $4,146,329.

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SPERRY

EXHIBIT A

STATE OF KANSAS

CASH PURCHASE OPTION VS. LEASE PAYMENT

CONFIGURATION SCHEDULES	ANNUAL MAINTENANCE	TOTAL PURCHASE		TOTAL LEASE	
		LIST	DISCOUNT PRICE	FIVE YEAR	SEVEN YEAR
A	$ 27,756.	399,549.	339,617.	621,600.	702,719.
C1	65,568.	779,598.	662,658.	900,720.	1,197,878.
C2	108,696.	1,871,472.	1,590,751.	2,278,800.	3,030,916.
D2	30,720.	462,092.	392,778.	527,880.	701,905.
E1	122,904.	4,065,292.	3,455,498.	5,994,000.	7,971,992.
E2	74,292.	3,165,660.	2,690,811.	4,886,820.	6,499,471.
	$429,936.	$10,743,663.	$9,132,113.	$15,209,820.	$20,104,881.
				-9,132,113.	-9,132,113.
TOTAL AMOUNT SAVED IF PURCHASED RATHER THAN LEASED				$6,077,707.	$10,972,768.

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SPERRY

STATE OF KANSAS

SCHEDULE E1

1100/91 AT STATE OFFICE BUILDING

Type Number	Description	Qty.	Purchase Price	Monthly Maint. Charge	Five Year Lease	5 Year Less 15%
3054-99	1100/91 PROC COMPLEX	01	2,865,660.	5,551.	86,740.	73,729.
K3675-00	WORD CHANNEL MODULE	02	120,000.	256.	3,632.	3,087.
K3125-00	MSU STORAGE EXP. (1MW)	02	160,000.	340.	4,844.	4,117.
8513-00	MOTOR ALTERNATOR	01	58,000.	124.	1,756.	1,493.
1954-01	IPCU (COOLING UNIT)	01	68,000.	128.	1,816.	1,544.
8480-97	8480 DISK STORAGE	03	228,000.	1,425.	4,821.	4,098.
F2718-02	8480 DUAL ACCESS	03	21,600.	66.	462.	393.
F2994-00	FOUR CHANNEL CAPABILITY	06	38,832.	222.	828.	704.
5057-93	H1 PERFORMANCE CACHE PROCESSOR (DUAL)	03.	505,200.	2,130.	12,630.	10,735.
			$ 4,065,292.	$ 10,242.	$ 117,529.	$ 99,900.

COMMENCING 1/30/85 MAINTENANCE ONLY

COMMENCING 3/31/85 MAINTENANCE PLUS THE 5 YEAR LEASE RATE LESS A 15% DISCOUN

STATE OF KANSAS

SCHEDULE E2

1100/91 TO 1100/92 UPGRADE AT SANTA FE BUILDING

Type Number	Description	Qty.	Purchase Price	Monthly Maint. Charge	Monthly Equip. Charge	5 Year Less 15%
3054-99	1100/91 PROC COMPLEX	01	2,865,660.	5,551.	86,740.	73,729.
K3675-00	WORD CHANNEL MODULE	04	240,000.	512.	7,264.	6,174.
1964-00	IOP EXPANSION CABINET	02	60,000.	128.	1,816.	1,544.
			$3,165,660.	$ 6,191.	$ 95,820.	$ 81,447.

COMMENCING 3/31/86, MAINTENANCE PLUS 10% OF THE LISTED 5 YEAR LEASE.

COMMENCING 7/1/86, MAINTENANCE PLUS THE 5 YEAR LEASE RATE LESS A 15% DISCOUNT.

SOFTWARE

The software products required by this proposal are virtually the same as the software products currently operating on the 1100/63 H1. Two additional software products (TELCON and CMS 1100) are required in conjunction with the implementation of the Distributed Communications Processor. As stated previously, the transition to the new hardware configuration will require no disruptive conversion effort. The 1100 Series System is totally upward compatible.
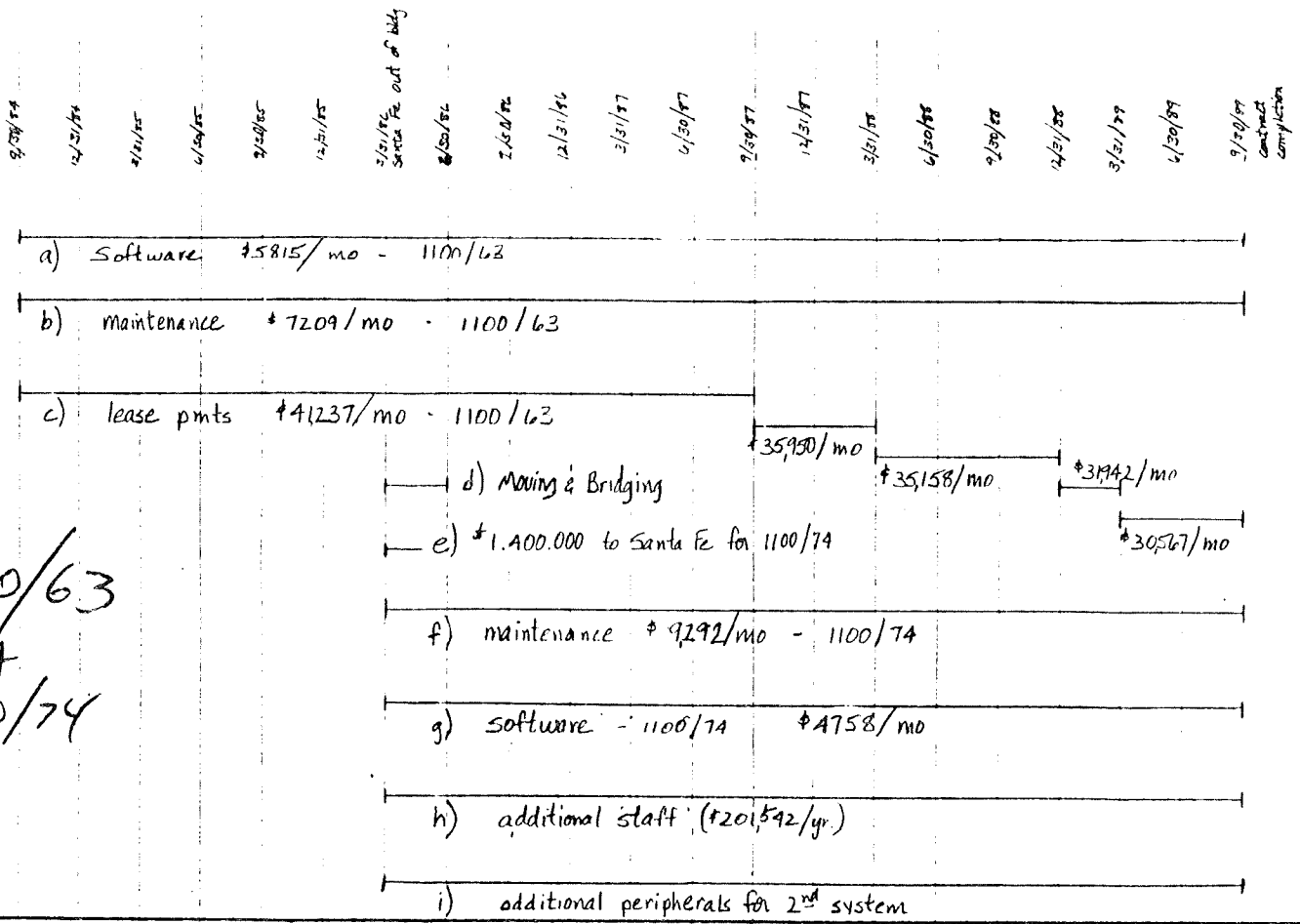
The monthly software and software support fee for the second redundant hardware system is $5,533. per month. This provides the State of Kansas with an annual software discount of $31,644. below list price.

State of Kansas

Dates across top: 9/30/84, 12/31/84, 1/31/85, 4/30/85, 9/30/85, 12/31/85, 3/31/86 Santa Fe out of bldg, 8/30/86, 7/30/86, 12/31/86, 3/31/87, 6/30/87, 9/30/87, 12/31/87, 3/31/88, 6/30/88, 9/30/88, 12/31/88, 3/31/89, 6/30/89, 9/30/89 contract completion

ion 1

in 1100/63
il contract
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rehase
/74 from
ta Fe

1100/63
+
1100/74

a) Software $5815/mo - 1100/63

b) maintenance $7209/mo - 1100/63

c) lease pmts $41237/mo - 1100/63

$35,950/mo

d) Moving & Bridging

$35,158/mo $31,942/mo

e) $1,400,000 to Santa Fe for 1100/74

$30,567/mo

f) maintenance $9292/mo - 1100/74

g) software - 1100/74 $4758/mo

h) additional staff ($201,542/yr)

i) additional peripherals for 2nd system

Costs - CPU only

a) = $348,900
b) = $432,540

c) = $2,295,882

d) = $241,610   B = $21,870/mo x3
                      M = $176,000

e) = $1,400,000

f) = $390,264

g) = $199,836

h) = $705,397

i) = ?

$6,011,429   Option 1

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on 2

e 1100/64
loaner

ase 1100/92
move to Santa Fe

1100/92

a) software 1100/63. $5815/mo

b) maintenance $7209/mo 1100/63

c) lease pmts $41237/mo 1100/63

d) 1100/92 $5,843,953

d') loaner 4th CPU for 1100/63

e) 1100/92 maintenance $11681/mo

f) 1100/92 software $7761/mo
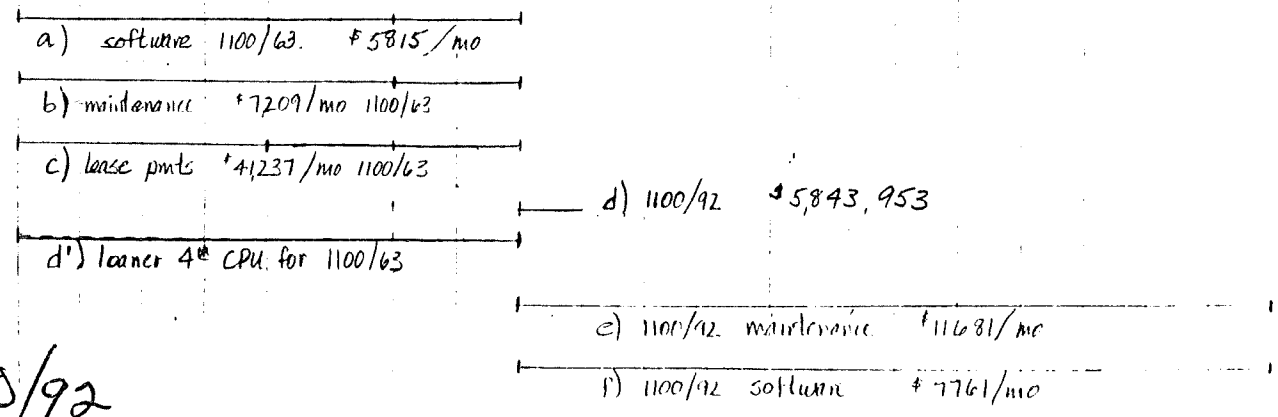
a) = $139,560

b) = $173,016

c) = $989,688

d) = $5,843,953
d') = $ 0
e) = $420,516

f) = $279,316

$7,846,129   Option 2

9-11-84

State of Kansas

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tion 3

-e 1100/61
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r move to
anta Fe

1100/91

a) software 1100/63 - $5815/mo

b) maintenance 1100/63 - $7209/mo.

c) lease 1100/63 - $41,237/mo

d) 1100/91 Purchase

e) software 1100/91 - $7386/mo

f) maintenance 1100/91 - $7013/mo

g) loaner 4ᵗʰ CPU for 1100/63 - $0
   maintenance only - $2313/mo

Costs - CPU Only

a) = $ 139,560

b) = $ 173,016

c) = $ 989,688

d) = $ 3,559,660

e) = $ 265,896

f) = $ 252,468

g) = $ 41,634

$ 5,421,922   Option 3

9-11-84

JOHN CARLIN
Governor

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Deputy Director
Telecommunications
503 Kansas Avenue, Room 240
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(913) 296-4124

DATE: January 28, 1985

TO: Russell Getter

FROM: J. Carey Brown

RE: Alternative Suggestion

During a recent encounter, Carmel Hinkle suggested that one alternative which might be worth considering would be to acquire MSA packages and run them on the Sperry complex rather than on the IBM complex. The primary reason for this would be to protect the State's existing investment in the Sperry equipment and gain additional returns.

I contacted the district MSA representative, who was able to provide some information from his reference material. The following packages are available for use in a Sperry environment:

        Human Resources (payroll-personnel)
        Accounts Receivable
        General Ledger
        Accounts Payable
        Budgetary Control
        Foreign Exchange

The packages run on (or require) the following Sperry configurations:

        1100/6X, 7X, 8X, or 9X Processors
        OS 1100 (38R2) Operating System
        TIP/1100 Teleprocessing Monitor
        UTS40 or UTS60 Terminals
        DMS/1100 Data Base
        All On-Line Versions Require DMS/1100

Of the full MSA product line, the following packages are not available for Sperry systems:

Inventory
Purchasing
Fixed Assets Accounting
Forecasting and Modeling

It is not clear whether the "Information Expert" series of MSA products is included. This could be a significant problem, as MSA's current research and development efforts are oriented around "Information Expert," as it is their future integration strategy for all the components of their product line. Since all MSA packages on Sperry systems are supported by Sperry, rather than MSA, this also means fixes and new developments will always come to us second-hand.

Any proposal to implement new or replacement systems within the Sperry center must consider the overloaded condition of the complex. The Sperry complex has been running at or near its capacity for some time now. We cannot add any noticeable work to the center without jeapordizing employee paychecks. A migration or installation of a new system within the Sperry complex would require the addition of more, expensive Sperry equipment. Even if we did add more central site equipment, and installed a replacement series of packages, we still would not have achieved a distributed system. To accomplish a distributed system, like what is being contemplated, would take even more, expensive Sperry equipment, since Sperry central-site systems are not (and have never been) directly compatible with any of the other state processing sites.

I concluded fairly quickly that implementing the MSA packages on the Sperry complex was not a sensible solution unless we wanted to spend large sums of money. I'd suspect other packaged software offerings for the Sperry would suffer similar disadvantages. Unless you can think of something I've overlooked, I don't plan on pursuing this Sperry alternative further.

JCB:jcbl:bdv

STATE OF KANSAS

JOHN CARLIN, *Governor*

STATE DEPARTMENT OF SOCIAL AND REHABILITATION SERVICES

January 16, 1985

ROBERT C. HARDER, *Secretary*

STATE OFFICE BUILDING
TOPEKA, KANSAS 66612

Dr. Russ Getter, Director
Division of Information Systems
   & Communications
State Office Building--1st Floor
Topeka, Kansas   66612

Dear Dr. Getter:

Pursuant to our meeting on January 14 regarding the hardware/mainframe
requirements for automated eligibility, we are submitting our best estimates
in the attached material.

If you have any further questions, please let me know.

                              Sincerely yours,

                              J. Charles Stevenson
                              Commissioner of Administrative Services

JCS:cr

Attachment
4477E

Preliminary Hardware Estimates for KAES

Currently, the Series I transactions that occur on behalf of the public assistance program are handled by the CenPay system. With Automated Eligibility, the following programs will either be included in the data base or will interface with the new system:

-- Public Assistance (IV-A)
-- Food Stamps
-- Title XIX
-- Refugee Assistance
-- General Assistance
-- Child Support Enforcement (IV-D)
-- Low Income Energy Assistance Program

Currently the CenPay system is the only feature that handles on-line transactions. The other programs are either handled in a batch-mode or are not part of any existing function.

We have surveyed different states with on-line systems and we find great diversity in program coverages as well as a lot of batch processing. These are states who say that they have distributive processing, however, the entire load winds up at the main computer (central) for the overnight batch processing.

Our APD and IFB allude to distributive processing as a potential alternative to terminal to host configuration. However, the feasibility of that approach will not be known until a system is selected and the contractor who transfers that system has had the opportunity to assess our hardware needs.

The basis for estimating the computer needs for Automated Eligibility was to take the count of ongoing cases and to estimate the transactions per case per day. The states we polled averaged 3.38 transactions per ongoing case per day. With the additional programs added to the Kansas system, we arrived at 3.468 transactions per case per day. With the current ongoing caseload at 118,500, that equates to 410,958 transactions per day or 100,684,710 transactions annually, based on 245 working days.

The systems operational that resemble Kansas, and are likely to be bid by potential contractors, are run on IBM 3081-D's. These are either dedicated or shared computers.

Additional Estimated Requirements	Number
Terminals with locks	455
Individual Printers	276
Acoustical Cabinets for Printer	276
Unit Printers	17
Acoustical Cabinets for Printers	17
Controllers/Modems	17
Necessary telecommunication lines	17

These items will be pretty much dictated by the system installed, as will everything else in the hardware arena. We assume that DISC has available hardware prices which we do not have. The other cost involved would be to determine a rate per transaction and the data base and system analyst personnel necessary to maintain the system.

The estimates do include the trade-off we would have with our current Series I's and the site preparation which has already occurred with the Series I's which would not have to be replicated with a new system.

4477E

COMPUTER ECONOMIC$ report

the financial advisor of data processing users

FORECAST: SPERRY PRODUCT STRATEGY

Sperry Corporation has recently outlined its long-range product development plans in which the company intends a significant expansion of its 1100 series. A cornerstone of Sperry's strategy is to develop multiple products from a single technology as it commits itself to extending and enhancing the 1100 series 36-bit architecture.

With code names, following is an outline of Sperry product plans and the fiscal year (April to March) in which the product is scheduled to be unveiled.

Fiscal Year:

1985   • Eagle: scientific processor in the 100 MFLOPS (million floating point operations per second) range which attaches in a tightly coupled configuration to the 1100/90

   • SNA 1100: network architecture compatible with IBM's SNA in all seven layers to be implemented over time on a phased release basis

1986   • Swift: series based on a 1 MIPS CMOS chip set

   • Swift   1.0 MIPS
   • Orion (desk-top size) 1.0
   • Coyote   3.6
   • Phoenix   5.0

1987   • Swift extension: series based on a 1.4 MIPS CMOS chip set

   • Pegasus II   1.4 MIPS
   • Orion II (desk-top size) 1.4
   • Coyote II   5.0
   • Phoenix II   8.0

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