MIS Manager

1/15/92

SACRAMENTO REGIONAL TRANSIT
M.I.S. Department

Meeting Future Goals Using Computers

Historic Overview

In 1981 the District began in-house data processing on an IBM System/38. Prior to that time, four off-site service bureaus were used. Today the IBM System/38 handles over 80% of the District's data processing needs which includes, but is not limited to, Service Performance Data, General Ledger, Accounts Payable, Accounts Receivable, Payroll, Risk Management, Word Processing, Fuel and Oil, Work Orders, Purchasing and Inventory.

In addition to the System/38, the District is in the process of implementing a Personal Computer (PC) Local Area Network to computerize Run-Cutting, Scheduling, Operator Timekeeping, Dispatching, and Ridership. The remainder of the District's data processing is handled by standalone personal computers. The PCs are used for wordprocessing, graphics, presentations, oil analysis, record keeping, desktop publishing, project control and transfer/sharing of data to outside consultants and agencies.

Role of the Management Information Systems Department

The Management Information Systems (MIS) Department comes under the auspices of Administrative Services Division. The MIS Department provides the computer data processing technology and resources that are essential to the every day functions of the District and the development and implementation of transit expansion. MIS provides daily assistance and guidance to all District staff with data analysis, decision making tools and the necessary hardware and software to ensure that the District fully utilizes the potential of computer technology.

The traditional role of the MIS Department was to develop and maintain transaction processing applications, (i.e., Financial Applications) and operating the host computer, (i.e., backing up the data, data entry, maintaining the hardware and troubleshooting). Today, the MIS Department's responsibility is to design and maintain the computing infrastructure of the District that has the flexibility and power to meet the current and future demands of the District.

The MIS Department's main function is that of a liaison, bringing together departments to design applications that meet the data processing needs of all without duplicating data and work. This includes software development and enhancements;

computer training and managing of data; a resource place for information and overseeing the computer hardware and software purchases, installations, and maintenance. Instead of automating the way a task has always been done, MIS Staff continually evaluates the process to utilize the appropriate technology and techniques, whether that be a manual procedure, enhancements to the current application, or a new application, thus attempting to "achieve more for less".

The MIS Staff performs the duties of an Information Center/Help Desk which provides User assistance on technical issues and assists in doing their job more efficiently. They assist Users in trouble-shooting questions as to why this is happening, retrieve statistical information for budgeting, negotiations, etc. and acts as the liaison between departments.

The Database Administrator sets in place standards so that data can be gathered and entered once, for all data to be accessible to authorized users, while being safeguarded from unintentional or unauthorized altercation, destruction, and disclosure. Guidelines have been written to meet the needs of computing users. This insures proper control of security, applications development, hardware/software selection and backup procedures.

The Programmer/Analysts design and code new applications and enhance existing ones to meet the demands of the departments. This involves bringing together staff from different departments who share data and information. Databases are designed to allow users to manipulate data and retrieve information directly through report writers (QUERY and SQL) on a timely basis without the aid of MIS Staff.

The Microcomputer Coordinator's major task is to assist in the management of all microcomputer hardware and software so that all PC capabilities exist consistently throughout the District. In-house training courses on off-the-shelf PC software is provided, along with one-on-one assistance.

With the continuous advancement of technology and the need for the District to use this information, the MIS Department is responsible for maximizing data processing computer effectiveness and lowering overall costs while still meeting District goals. The Department is flexible enough to react to continuing changes as the technology advances.

Where Is RT Now

Given that RT is embarking on an ambitious service expansion program, the agency administration will need an expanded and more sophisticated computer support system. The PC platform needs to be expanded and the System/38 upgraded. The computer

systems will evolve to be a vital support network to the administrative staff as well as to the ridership.

Once RT enhances it's internal computer functions, computer-oriented innovations can happen. For instance, fuel and mileage data collection, and vehicle tracking can be automated and staff will be able to access the data immediately. In the future, customers will be able to obtain scheduling information at the transit centers on-line.

There is no single computing platform that is best suited for all applications. Some applications require an easy user interface, and others require heavy-duty number crunching or massive database capabilities. Some require centralized processes with data distributed to the users. One does not have the company's centralized database on a PC nor do spreadsheet applications run efficiently on a host computer. Each machine type is best suited for particular applications.

System/38

The majority of all computer data processing is performed on the IBM System/38. In 1989, the District implemented a new fully integrated financial application including purchasing/inventory and payroll. This replaced software that was over ten years old. MIS Staff is constantly customizing the existing applications to meet the particular needs of the District, making it more "user friendly" and at the same time developing new applications.

There is an urgent need to upgrade the System/38 with additional memory, processing speed, a workstation controller to handle additional users, and a second communication line to Light Rail. Currently there are 110 devices (terminals, printers and personal computers) on the System/38. There is room for only 27 additional devices. Due to the constraints of the System/38, the 27 devices are restricted to selected locations.

The response time on the System is 20 - 60 seconds when there are twenty or more users active. The acceptable response time is 1/2 - 2 seconds. Payroll processing (after checks are printed) takes over 6 hours to update master files and produce reports. With the increase in demand for more data, the response time will at least double.

The three 3370 Direct Access Storage Devices (DASDs) are 10 years old and should be replaced due to age and access speed. There have been three System failures and several mechanical problems in the past year on the System/38. The System/38 is no longer being supported by IBM, and enhancements and new software are scarce.

Instead of investing $110,500 to upgrade the System/38 to its maximum capabilities, the committee recommends that the System/38 be replaced with an AS/400. The cost of replacing the System/38 with an AS/400 is $260,000. The AS/400 will allow for growth and expansion. The District will outgrow an upgraded System/38 within 2-3 years and thus will require a new computer. The model AS/400 would meet the needs of the District for 7-9 years.

The IBM AS/400 is completely compatible with the System/38. The peripheral hardware, (i.e., tape drive, terminals, DASD, and printers) and RT's applications are transferable to the AS/400. Thus installation of the AS/400 will result in a minor loss of productivity time and very little, if any, re-training of the Users and MIS Staff. Because of the commitment the District has to the existing applications and hardware and the need to increase the computer technology, the AS/400 is the next logical computer platform growth path.

Personal Computers

The District owns 43 standalone PCs used by 86 employees. With the purchase of the remaining PCs and the 6 PCs for the Run-Cutting Scheduling System, there will be a total of 63 PCs at year end. Based on the MIS Steering Committee Survey, the average PC User spends 67% of his/her time using PCs and there is a need for at least an additional 63 PCs to meet the demands of the District. This includes PCs for clerical staff for wordprocessing. The PCs will replace some System/38 terminals. 18 of the current PCs are attached directly to the System/38.

Currently the District has little control over PC data. PC users now manually enter information into unverified spreadsheets or database programs, which do not take advantage of data integrity. Networking the standalone PCs on a Local Area Network (LAN) will decrease data entry errors and reduce labor hours. Security and backup of data, which are difficult and cumbersome on standalone PCs, will be the responsibility of the MIS Department.

There are a number of questions and decisions that need to be made when implementing LANs. How many LANs? What applications will be run on the LANs? How many PCs? Locations of the PCs and the type of cabling required? With the technology changing rapidly, a consultant will be necessary to assist in the development of specifications and design of the network. The cost of a consultant is estimated to be $75,000.

The real cost of a PC isn't the hardware, but it is the labor cost of a PC user. If a PC is used 20 hours a week for five years, what is the labor cost? Depending on the user the cost will be at least 10 times the cost of the hardware. Emphasis on

the capabilities of the PC ultimately results in cost savings and makes the organization cost efficient. The implementation and cost of the LANs and PCs will be part of the Consultant's study.

The System/38 does not work well in a network environment. The current word processing and graphics capabilities of the System/38 do not meet the needs of the District. The System/38 interface with PCs is not user friendly. Other than using a PC as a System/38 terminal, the sharing of data between the two systems is difficult and requires MIS Staff intervention and expertise. Wordprocessing, graphics and "what-if" analysis are best performed on PCs.

The AS/400 has the networking capabilities to interface directly with PC LANs. The District will be able to maintain the current centralized database, and standard reporting while off-loading some of the computer processing from the AS/400 to PCs.

Implementing LANs and integrating with the AS/400 would standardize PC software, hardware and sharing of data. The new computerized Run-Cutting and Scheduling LAN application will interface with an AS/400 and access to the data will be available to all AS/400 and personal computer users.

Other Agencies

Staff has contacted SMUD, Long Beach Transit, Tri-Met, and two local hospital administration offices. Each of these companies are either in the process or have already implemented PC LANs and are interfacing them with the host computer. They reported that personal computers on a LAN, with a host computer used for the major applications and the centralized database provides the independence, flexibility and creativity that is required to effectively conduct business. Long Beach Transit and both hospitals have AS/400s.

Conclusion

The District's data processing needs have evolved rapidly since the purchase of the IBM System/38 and standalone personal computers. There is now a need to expand computer processing to meet demands for today and tomorrow. The multi-computer platform of PC LANs and an AS/400 provides the foundation on which to build. Thus Regional Transit will be prepared to collect the data and analyze the information to successfully operate at the level of service necessary for the year 2010.

Since 80% of the District's computer needs are performed on the System/38, the committee recommends that the MIS Department begin the process of preparing the RFP for the AS/400. At the same time, retain a consultant to determine system requirements

and design of PC LANs, in order for the network to be in place soon after the installation of the AS/400. Departments have already requested 22 personal computers for FY 91 and 92; ten of these have already been purchased. The large number of personal computers should be networked as soon as possible.