A STUDY OF RECORDS MANAGEMENT SYSTEMS

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The Huntsville Police Department is currently encountering a problem not unlike other Texas police departments of the same size. A tremendous amount of time is devoted to the recording, processing, and storage of information on a daily basis. Years of accumulation of such documents creates a demand for more physical storage space as well as sophisticated techniques for tracking and retrieval of such information. Often, information is lost or, due to the sheer volume of information that must be sifted through, retrieval is delayed for long periods of time.

Advances in computer technology have made possible a variety of record management programs that can assist and simplify the information process. As a result, patrol officers should be able to deliver more police services to the community and spend less time on paperwork. Records personnel should have more time to devote to other clerical tasks and spend less time on information processing.

Current Problems in Records Processing

The Huntsville Police Department uses an NCR I-Tower computer that has a processor memory controller with a 10 MHz MC68000 Microprocessor. The system has a hard disk with 72 megabytes of available storage space. Also included is a 5 1/4" disk and streaming tape capabilities. Information that is stored within the system ranges from offense reports to employee equipment inventories. An important function of the system is the assistance it provides in compiling information for the Uniform Crime Reports.

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Due to the amount of information that is being processed, the system can only hold offense and arrest reports that date back to 1986. Prior information is moved off-line to make room for recent records. Streaming tape is used as a means of creating duplicate copies of the information in case of computer malfunction. Streaming tape cannot be used for information storage for long periods of time. It would be impractical to use the tape as a storage means because accessing the information on the tape would require moving information on the disk drive off-line to make room for the information on the tape. The process may also cause information to be inadvertently lost.

Information that is removed from the computer system is stored in the basement of the police department and requires a manual search of the files should they need to be accessed.

The computer system operates on a twenty-four hour cycle. Reports are submitted from three shifts throughout the twenty-four hour day. The department has one clerk assigned to the Records Department who works an eight-hour day five days a week. Thus, while information is being submitted throughout a 168-hour week, it is only being processed in a forty-hour time frame, and only if the employee is at work. This system places the clerk in a position where catching up is the norm. The problem is compounded on weekends and holidays.

Prior to entry into the computer system, all reports have to be coded in compliance with the software program. This is done manually and subtracts from the clerk's available time. When the coding and entry of the reports is complete, all original copies of the report are filed manually. Again, this subtracts from the clerks time and also places a demand on the physical space available for storage.

Estimates, based on previous years figures, indicate that approximately 44,000 pieces of paper will require filing and storage for the year 1990. This is the equivalent of five four-drawer file cabinets.

The Huntsville Police Department has had an increase in the amount of paperwork that requires completion by patrol officers. As a result, officers are spending more time on the completion of this paperwork and have less time available for delivering the main product of police services to the community.

Goals

Officers now spend more time on the completion of paperwork than what may be necessary. The majority of officers observed will arrive at the scene of a call for service and take notes on standard offense reports, accident reports, etc. and later re-copy the information to a clean report sheet. The double copying of information results in neat reports but also takes twice the time to complete. A reasonable goal of reducing the time required for the completion of a report would put the officer back on the street sooner.

Records personnel spend the majority of a work day processing information. A reduction in the amount of time required for information processing and storage would free up time for other clerical tasks. Clerks would also need the ability to quickly retrieve a document in the original form it was entered in, regardless of the date of entry.

One of the most important aspects of a records management system is the amount of physical space required for the storage of information. However, record storage should be durable and not compromise space for special storage conditions, e.g., controlled environmental conditions.

Finally, any system installed would need to have the ability to expand and network as the need arose. Currently, whenever the Walker County District Attorney's Office needs a copy of a report, a duplicate is made from the original and delivered by hand. A workstation installed in the District Attorney's Office would reduce the time between request for a report and its delivery, reduce the time spent transferring paperwork between the two agencies, and reduce the cost of reproduction of reports by the Huntsville Police Department.

Options

Optical scanners are devices that can be moved over the surface of text and store that information into a computer that has compatible software. Logitech Inc. of Fremont, California, manufactures a quality scanner under the name *Scan Man*. The smallest of these devices is hand held and is designed for use with IBM Personal Computers, XT, AT, PS/2, and compatibles. It may also be used with larger computers with the appropriate software. One of the problems with the hand-held scanner is that it is impractical to use for mass storage of information. The software that is required for the scanner cannot distinguish lines and boxes that are inherent to the variety of police forms used. The information may be copied but have an entirely different appearance when retrieved.

A step up from the hand-held scanner is the *Flat Bed Image Input Device*. Flagstaff Engineering, Flagstaff, Arizona, manufactures both the scanner and related software. The image scanner uses an interface board for connection to IBM PC/AT, XT, PS/2, and compatibles. The system requires a minimum of 512K RAM, Dos version 3.0 or later, and a CGA, EGA, VGA, or Hercules graphics card. Larger computer systems should have no problems with the

software. The system used by the Huntsville Police Department would still have the problem of storage on disk, i.e., space is limited.

The image scanner increases the image handling capabilities of various types of software, e.g., desktop publishing systems, optical character recognition systems, word processors, etc. These devices and the software are relatively inexpensive. Software is approximately $800.00 and scanners are under $2,500.00.

Kirsch Technologies Inc., St. Clair, Michigan, has designed *Info Station*, an entire system that uses VHS video tape for the archival storage of information. The system uses a flat bed scanner, as previously described, along with a computer and video cassette recorder. The computer is an IBM-AT 386 compatible CPU 25 MHz, 320 megabyte hard disk, 1.2 megabyte floppy disk, with 1 megabyte RAM. Documents are inserted into the scanner which copies the index information to the disk. Once inserted, the clerk indexes the file according to key words or unique file numbers. The file is transferred to VHS tape. One tape can hold 5,000 pages of information. The company states that quality video tape has a shelf life of forty years and is projected for archival use over the next 100 years. Input into the system can be done through scanner, phone modem, or FAX transmission and has the capability of networking.

The system also has the option of a Videofax Hub, which is the ability for mass storage of color pictures in a database. Input can be from any video source, including camcorder, VCR prerecorded, or live video. Options include the Videofax PT (Portable Terminal) and the Videofax RT (Remote Terminal) both of which will transmit still frame color pictures over ordinary telephone lines.

The suggested price for a basic *Info Station* is $39,000.00. Including the option of a Videofax Hub, the price escalates to $45,000.00. Training on the system

takes very little time and would be included at no extra charge. Basic maintenance costs would have to be contracted through Kirsch Technologies to a company in the state of Texas due to the distance between Texas and Michigan. The service contract is estimated at $2,200.00 per year for the basic system.

CPT Corporation, Eden Prairie, Minnesota, has also developed an entire system for archival storage of information. This system, named *IFS* (Image Filing System) is similar to the *Info Station* but relies on optical disks for storage. Optical disks are changed in a manner similar to floppy disks. The disks are either 5 1/4 or twelve inch disks. One twelve inch disk can hold 50,000 pages or the equivalent of six four-drawer file cabinets. The 5 1/4 inch disk can hold approximately 12,000 pages of information. Entry is, however, only through a flat bed scanner at this time.

The system unit is an 80386 CPU AT-compatible, 1 megabyte RAM, 1.2 megabyte 5 1/4 inch floppy drive, with an external 60 megabyte tape drive.

The suggested cost of a stand-alone station is $28,995.00 to $44,995.00. The network price is dependent on the configuration of workstations, printers, scanners, storage, etc. Training is minimal for the stand-alone station and consists of two operator manuals both of which are under fifty pages in length.

Tab Products, Houston, Texas, has developed the *Series 2000 LOFS*, (Laser Optical Filing System), that is similar to the CPT product. The only difference at this time is that *LOFS* allows entry into the system through flatbed scanner and through FAX transmission.

The computer is an IBM PC/AT compatible, 80286 10 MHz processor. It also has 1 megabyte RAM, 60 megabyte tape drive, 91 megabyte Winchester Disk, and a 1.2 megabyte 5 1/4 inch floppy drive. It also uses 5 1/4 or twelve inch disk which can be inserted like a floppy disk.

The suggested price of a basic system is $44,995.00 and increases with network options. Training is an additional $2,000.00.

All options so far have dealt primarily with hardware that would be utilized by records personnel. Grid Systems Corporation, Fremont, California, has developed a portable computer that can be used by patrol officers in the field. *GRiDPad* has a 80C86 10 MHz processor with 1 megabyte RAM. It also has 256KB or 512KB storage cards for mass storage. The unit is expandable to 20 megabytes for storage purposes if necessary. The power sources include rechargeable NiCad battery packs, standard AA size batteries or an adapter that would allow the use of an automobile cigarette lighter.

The GRiDPad can be programmed with a variety of different forms used by the police department. In the field, officers can retrieve the form needed while at a call for service. Once retrieved, the officer fills out the necessary information required. The GRiDPad has an internal modem so that information can be sent back to the police department or saved until the end of a shift where an officer would download information into the main computer.

The GRiDPad weighs 4.5 pounds and looks similar to an electronic clipboard. The display is a reflective high-contrast liquid crystal display with a ten-inch diagonal screen. The electronic pen is permanently attached to the computer. Company officials advised that the system has a mean time failure average of over 20,000 hours or once every 2.25 years. The suggested cost of the GRiDPad is under $3,000.00 including software. Software for the main computer is extra.

Recommendations

None of the systems previously described effectively

deals with all the goals as they were outlined. The optical disk systems appear to offer the best possible storage ability within limited physical space. The disks themselves would negate physical storage requirements for many years. Optical disks are durable and are touched only by light. The information on the disks is under a ROM (Read Only Memory) program so accidental erasure or overlaying of information is not possible.

The flat bed scanner would allow the records clerk to enter documents quicker than through keyboard entry of information. However, information would still have to be coded for the Uniform Crime Reports.

Retrieval of information would be through the use of a unique number assigned to each document. A separate system would be required to designate a number to a title of a document. Each title would have to be placed into a distinct category and dated for ease of retrieval.

The networking capability of the system would allow three workstations within the department, one for each division. This would allow division commanders to access necessary information without placing a time drain on the records clerk. An additional station could be set up with the Walker County District Attorney's Office which would further eliminate the time drain on the records clerk.

Optical disk filing systems would satisfy three of the four goals outlined. GRiDPad would reduce the amount of time officers spend on completing a report. However, at $3,000.00 per unit, GRiDPad may be cost prohibitive to an average size police department.

Technological computer innovations are replacing copying machines and file cabinets that have been the mainstay for records departments. As with any new technology, prices are extremely high when the product is initially offered to the public. Time will eventually allow smaller departments the use of computerized record management systems.

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