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Technical Bulletin

featuring emerging technologies in criminal justice information management

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Court Automation and Integration: Issues and Technologies

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Editor's Note: This Technical Bulletin is the first in a series on court automation and integration. Future Bulletins will explore in more detail some of the technologies outlined in this issue that enable integration.

Court systems stand on the threshold of a new era. Rapid advancements in technology and declining costs promise to make courtrooms more efficient and, more importantly, allow courts to access and exchange information in a timely and accurate manner. Such information exchange is crucial, given that highly publicized crimes have raised clamor over court accountability to a fever pitch. The public is more interested than ever in learning what factors are considered when an individual is released on bail, given probation or sentenced to prison.

Stricter laws enacted in response to high-profile crimes require improved collection, dissemination and sharing of information by justice agencies. For three-strike laws, courts need complete and comprehensive criminal histories at their disposal during trials and

Bureau of Justice Assistance, SEARCH Explore New Technologies

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The *Bulletins* identify, describe and assess new and emerging technologies that have existing or potential application in criminal justice information management. They alert practitioners to the existence of technologies which can benefit their management of information.

If you would like to submit an article for publication in the *Technical Bulletin*, please contact SEARCH, The National Consortium for Justice Information and Statistics, at (916) 392-2550.

sentencing. Public notification laws require justice agencies to monitor an individual's progress through the penal system. Acute public awareness requires more effective supervision of parolees, particularly sex offenders.

Court systems must incorporate new ways to conduct business to control costs and to maintain effectiveness while responding to these new external pressures.

Courts must also evolve to accommodate growing internal pressures caused by heavier court calendars, increased paper flow, shrinking storage space and budget cuts that could reduce personnel and limit the courts' ability to respond to growing demands.

Recent activities at the state and federal levels also place a greater burden on courts and other justice agencies. The

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Brady Handgun Violence Prevention Act requires the establishment of the National Instant Criminal Background Check System, a database to check the criminal history records of those wishing to purchase guns. Megan's Law requires law enforcement agencies to notify residents when sex offenders are released into their communities. These mandates require complete, timely and accurate disposition reporting.

To be successful, the FBI's Integrated Automated Fingerprint Identification System (IAFIS), the Interstate Identification Index (III) and the National Crime Information Center (NCIC) 2000 Project also require the accurate and timely reporting of informa-

tion by justice agencies.

Fortunately, electronic information technology provides courts and justice agencies with an opportunity to meet the public's heightened expectations. Automated, integrated information and "paperless" court management systems enhance data exchange, ease processing, storage and retrieval of information, reduce costs and make agencies more efficient. No wonder courts are taking a closer look at new technologies and the capabilities they provide.

As a rule, courts are the most visible component of the justice system. If the system's failure to maintain data quality produces an inappropriate verdict, the public's ire will be focused on the court. It is in the court's interest to take the necessary steps to ensure the highest quality of data possible.

"You need to provide judges and other decision makers with all the information they need to make the most informed decisions possible," said Mr. Bob Wessels, the Criminal Courts Manager of Harris County, Texas. "You don't want to find out after a bail hearing that someone walked out the door with three prior convictions."

Automation

For years, those interested in improving court efficiency watched the evolution of information technology with growing interest. They envisioned using electronic tools to modernize the courts so each associated justice agency could plug into the

same information system. The agencies could access the same files and share and transmit information. Repetitive data entry tasks would be eliminated. Data quality would improve. Paper flow would be reduced. Courts would be more productive. Money would be saved.

From a technological perspective, that day has arrived, albeit not in the fashion envisioned. Initial interest in multi-user systems faded when it became apparent they provided too much information to users. The internal tasks of each agency were of no interest to other agencies on the system. Users faced the prospect of plowing through copious amounts of nonessential information to find what they needed. Systems designed for a variety of needs proved less than ideal for the specific demands of individual agencies.

"Files would contain all kinds of things that would be of no interest to anyone outside a specific agency," said Mr. Lawrence P. Webster, Executive Director of the National Center for State Courts' Court Technology Programs. "Moving inmates from cell to cell is irrelevant outside the jail. Police may make several arrests and assign multiple case numbers that the prosecutor reduces to one case number. With different case numbers assigned, you lose the ability to track a case." Attention turned to the creation of a process that allowed the exchange of essential information between disparate systems maintained by specific agencies.

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ware applications that selectively extract and organize data directed to the warehouse. Warehousing provides more precise categorization of data, allows higher quality analysis and reduces response time for queries.

Planning

The success of integrated, electronic information systems depends on the level of planning that precedes implementation. Those departments expected to contribute information to the system must be represented during any planning process.

"It's not rocket science," Mr. Wessels said. "The first thing a community must do is put a planning group together. The group should have the elected or appointed heads of all the agencies that will be expected to use the system involved in the planning process."

Integrated systems can be doomed by one department's recalcitrance. Some agencies perceive system integration as encroachment on their turf and a loss of control.

"It's not a technology issue anymore," Mr. Wessels said. "It's a management issue. Barriers to integrated justice are largely cultural within an organization. A community has to ask itself if it is prepared to put political and turf issues aside and come together to manage a system."

Proper planning and education will alleviate fears and contribute to the creation of a successful integrated system. Planners should also take long-range needs into account. While integrated information systems can

provide significant cost reductions, initial outlays for equipment and training can be substantial. A new system must be able to handle today's workload and, perhaps, the next decade's workload as well. Few budgets will be able to handle expensive equipment upgrades every few years. Constant changes could erode user confidence.

Standards

In order for any integrated system to be a success, it is crucial for courts to establish standards that system users would be expected to meet. Standards would govern the conduct of individuals and agencies using the system to ensure its integrity.

Information must be entered in such a way that it can be translated by the various automated systems and so that it is easily understandable and retrievable by all agencies plugged in to the system. In addition to developing comprehensive information exchange standards, individual agencies may be required to provide training or make personnel available for training to accomplish uniformity of information.

Strict deadlines may be required so critical information is available to assist an investigation or when a defendant appears before a judge. Courts must develop and institute measures to ensure that agencies importing information from outside sources (floppy disks, e-mail) do not allow viruses to invade the system.

Finally, court agencies undertaking an integration effort should develop stan-

dards to evaluate system and individual performance; to determine agency priorities and protocol; to identify who is authorized to use the system; and to respond to privacy needs.

Security

Any integrated system must contain safeguards to protect confidential information that each agency wants to keep separate from the integrated system. Improper use of confidential information or evidence that an unauthorized individual gained access to the information could reduce users' confidence and rekindle turf wars. Individual users are security's weakest link, as a single security breach in one agency can compromise the entire system. Constitutional rights to fair trial and privacy must be protected. Agencies may consider the following options to prevent internal and external security breaches:

Firewalls: A hardware and software combination that separates a network into two or more parts.

Encryption: Uses a branch of mathematics called cryptography that enciphers messages by transforming them into mathematical formulas. Messages are deciphered using the same formulas.

Digital Signatures: An encrypted code added to an electronically transmitted message to verify the sender's identity and to ensure the message is not altered during transmission.

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court's budget, according to some estimates.

Faster Justice: Electronic tools would drastically reduce trial time. For example, the time-consuming practice of processing paper documents is eliminated with electronic documents. Court proceedings conducted by two-way video eliminate the need to transport defendants from jail to court for early steps in the adjudication process. Document cameras and other visual aids allow the simultaneous display of evidence to all trial participants. The Internet can provide judges with a speedy reference tool that can also be used to communicate with other judges to reduce deliberation time.

Reduced Costs: Decreased paper use reduces costs associated with document processing and storage. More efficient use of personnel may allow reductions in staff and related personnel costs.

Electronic Tools

The way to accomplish these efficiencies is through technologies that enable automation and integration. Courts are beginning to use electronic tools in their daily routines. Electronic document filing, electronic mail (e-mail), document imaging, Internet use, real-time court transcription, two-way video and data warehousing are becoming more common as their benefits become more apparent. "They are the wave of the present and the wave of the future as well," said Professor Fredric I. Lederer of Courtroom 21, a national demon-

stration site for court technology at the College of William & Mary.

Electronic Filing: Allows documents to be filed electronically and processed automatically by court computers. Mark-up language instructs the court computer to extract pertinent information from the document to update databases and then to direct the document to its intended location. Electronic filing allows submission of documents around the clock and reduces the amount of paper being processed.

E-Mail: Permits electronic filing and other forms of electronic communication between justice agencies. Allows around-the-clock access to individuals wishing to contact the court. Provides judges with a quick, efficient and secure method for consulting with other judges during deliberations. E-mail can be stored in a database and retrieved as needed.

Document Imaging: Documents are inserted into a device called a scanner that reduces text to a series of electronic dots called pixels. The scanned document, which looks exactly like the paper original, can be stored electronically and automatically retrieved when needed. The document's text can be manipulated just as a document written on a word processor. Imaging allows parties at different locations to view documents simultaneously. The process protects the originals from rough handling, damage and loss.

The Internet: The Internet can provide access to rulings, verdicts, rules, electronic filing and filing deadlines, locations, trial dates, other Web sites, and instructions on how to contact administrative staff. Judges can use the Internet to access databases for laws, court briefs and legal precedents and to communicate with other members of the judiciary. More importantly, the Internet may be the vehicle of choice for allowing integration between disparate information systems located within various justice agencies.

Real-Time Court Transcripts: Real-time transcripts are 99 percent accurate, near-instantaneous records that are broadcast on courtroom monitors so trial participants can follow proceedings. Real-time court reporting also encourages public access to courtroom hearings by allowing hearing-impaired individuals to follow proceedings, and the transcripts can be broadcast by modem to remote locations.

Two-Way Video: Allows live, interactive transmission between two locations. Two-way video is used in approximately 1,000 court systems around the country for arraignment and first appearance. The appearances are broadcast from a jail or other remote location to the courtroom.

Data Warehousing: A central repository for information collected from diverse sources. Typically consists of a mainframe server and soft-

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Connective Systems

One option being explored is the potential of incorporating stand-alone equipment in specific agencies into a "connective" network that allows participating agencies to share information while maintaining systems designed for their individual operations. Some observers believe the connective model is a more realistic goal for achieving true integration compared to systems tailored for the needs of entire justice systems.

With connected systems, justice agencies would not necessarily have to compromise by using particular equipment or programs solely because they allow electronic interaction with other agencies. They could replace aging equipment piecemeal without having to fund a complete overhaul of existing systems. Planners need to determine what information agencies need to share and what standard will be used to code material so each agency can send and receive messages. The technology exists to allow such information exchanges.

"We can still meet the same goal of creating a smooth information conduit that eliminates the need to re-enter certain types of information," Mr. Webster said. "That can still happen."

Integration

Courts and their associated justice systems have been slow to take advantage of advances in information technology, and have not automated and integrated to the extent expected. There are a number of reasons why. Many agencies are discour-

aged by huge start-up costs. Individual agencies may have invested in automated systems for their own use and are wary of further investment in equipment that may not meet their needs. Turf battles and concerns about control are contributing factors.

While many components of justice systems have already automated their internal information capabilities to some degree, their ability to share data electronically with other agencies is most likely nonexistent. The benefits of integration are clear, but the lack of knowledge *about* these benefits is preventing implementation of connective systems. "Why do we have separate systems for law enforcement, for the district attorney, for the court clerk, for pretrial services, for probation?" asked Mr. Wessels. "Why don't we provide a consistent view? Most of the information is the same anyway."

Benefits of Technology

The benefits and declining cost of technology should encourage those with stand-alone systems to explore upgrading existing equipment to allow communication with their justice systems' agencies (police, jails, prosecutors, public defenders and courts) to share information and to access pertinent databases. Automation and integration of information systems will provide numerous benefits.

Data Quality: A single data entry point provides a quality foundation on which to build a case. It reduces the need to duplicate efforts as informa-

tion moves through the system, thus eliminating potential clerical errors. Additional information is added to the file as it travels through various departments to the court, but the original data remains untouched.

Increased Efficiency: Eliminating the burdensome job of recording documents by hand, filing them and removing them when requested frees personnel for other tasks.

Sharing Information: Justice agencies can share information easily when connected to an integrated system. Police officers, jailers, prosecutors, public defenders, defense attorneys and court personnel would all have access to the same documents and electronically stored evidence, such as mug shots, fingerprints and photos.

Access: For attorneys, judges and the public, electronic information systems provide quick retrieval of documents and allow individuals at different locations to view documents simultaneously. Quick retrieval and increased access would help justice agencies respond to disclosure requirements and would increase the public's confidence in the justice system.

Paper Reduction: Electronic documents can be filed, stored, retrieved and displayed on courtroom monitors without resorting to paper. Using less paper would dramatically reduce the cost of processing and storing documents, which can consume up to 50 percent of a

Passwords, User Names:

Allow system administrators to identify who is using the system. Distribution of passwords may be limited, allowing greater control of access and accountability.

Tokens: Physical identifying security devices attached to computers. They combine with a password to provide two levels of security.

Court Information Systems Technical Assistance Project

SEARCH and the Bureau of Justice Assistance (BJA), U.S. Department of Justice, have formed a panel of court professionals to provide direction and advocate the implementation of integrated justice systems in court jurisdictions nationwide.

The Court Information Systems Technical Assistance Project will focus specifically on the automation and integration of court information systems. Mr. Bob Wessels serves as chair of the 18-member Project Advisory Committee.

The Court Project's goals are to provide no-cost technical assistance and training to court jurisdictions in the United States; to investigate currently operating information systems to identify technical assistance needs and barriers to integration; and to produce a document exploring the benefits of information system integration and proposing strategies for achieving electronic information exchange.

The National Center for State Courts (NCSC), a partner in this project, is a national leader in providing information, experimentation and support of electronic court tools and integrated justice systems. Other Project partners are the National Association for Court Management (NACM) and the Conference of State Court Administrators (COSCA).

These organizations, along with SEARCH and BJA, have joined forces to utilize their experience and expertise to provide technical assistance for courts interested in

integrated systems.

Conclusion

"The technical hurdles to integration have diminished," asserted Mr. Wessels. "As far as I'm concerned, they're nonexistent."

The time has come for court jurisdictions that have not upgraded to some form of automation to do so. As Mr. Wessels noted, "It doesn't happen overnight and it's never finished."

In an age of increased public awareness of court activities, combined with legal requirements to maintain registries and to notify the public when certain individuals are released from prison, automation and integration provide the means to reassure the public that courts are capable of responding to its concerns.

"When people outside the criminal justice system hear about integrated justice for the first time, they ask, 'Why haven't you been doing this all along?'" Mr. Wessels said.



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