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### Information Technology In The Courts

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Abstract: 'Improving Justice through Innovation' was the theme of a conference on court technology held in Dallas last year. It proved to be a showcase for a bewildering range of applications of technology to the court environment and this paper is a brief conducted tour of some of the more interesting offerings. In addition, we touch briefly on an experiment in the Official Referees' Court in London which introduced one of the products on show in Dallas, real-time transcription, to a British courtroom.

#### Integrated Justice Systems (IJS)

*IBM in Harris County, Texas:* The court manager for 14 criminal courts in Harris County began by describing the traditional justice system as being a) designed vertically b) agency specific c) supporting tasks, not decisions d) processing data rather than creating information, and e) having no relationship to management or strategic planning. These features have hidden costs. Data are not shared with the result that the same data are paid for many times, and decisions are made on intuition instead of information.

A truly integrated system provides an information infrastructure by linking everyone involved in case processing. At the centre of the system design is a relational database accessible to all and using a common data dictionary. In Harris County, a central IBM 3090 stores shared data and is connected through proprietary IBM SNA gateways with nine agencies including different levels of courts, the offices of the administrative judge and the district attorney, the pre-trial services agency, probation and prisons. Video conferencing is used for probable cause hearings and arraignments in conjunction with document transmission by fax. Such hearings are easier to arrange, take up less time for participants and avoid the cost and risk of transporting defendants from prison to court. The police routinely videotape arrests for driving while intoxicated and the presentation of these tapes at video conferences has apparently resulted in a 50% guilty plea rate.

*SCALES in five States:* The Software Group Inc. showed its Shared Court and Law Enforcement System (SCALES). The system is already installed in 650 County offices, and provides integrated software applications for District and County attorneys, clerks, sheriffs, prisons, court administrators, judges, justices of the peace and probation officers. The system keeps track of criminal cases by providing a central 'clearinghouse' for all information about the case and software modules to perform specific case processing functions.

#### Imaging Technology

Even in the U.K. the potential contribution of document imaging to litigation support has been much publicised. The use of this technology by the courts themselves is perhaps less well known.

*Imaging in Illinois:* The Illinois State legislature has passed two bills enabling the Du Page County Court which has 39 judges to defray the costs of technology by collecting specially earmarked fees. Every time there is a conviction in a traffic or criminal case or a civil filing, the court levies a fee that goes towards automation. Another fee, for the purpose of improving document storage, is collected whenever any documents are filed with the court. The clerk and chief justice of the circuit have complete discretion in how the fees should be spent. The clerk says this allowed the court to move quickly into automation at a time when it could not otherwise have afforded the technology. Documents are now processed in under 24 hours compared with eight days to 'push paper' through the system.

Data input operators give each new document a number as it is scanned by the IBM ImagePlus system, which then creates the index by automatically linking the document number with the matching record on the court's records management database. Most enquiries can be handled from the database, but when more information is needed, it is easy to retrieve the documents for viewing. Scanned documents are stored magnetically for six days before being placed on an optical disk. During this period, all document numbers are verified and checks are made to ensure that documents have been scanned into the correct files. The six days after filing are when the documents are in greatest demand, and magnetic storage provides quicker access than optical. The court plans to implement a pre-fetching system, in which case files required for a trial scheduled the next day will be searched and retrieved during evening hours and loaded onto magnetic drives for quick display.

Users of the system include court staff, judges, secretaries, prosecutors, public defenders and police. They have a view-only capability and can look at a full-page document on one side of the screen while running the database or another function on the other side. A tab function is used to view specific sections or pages of a case file rather than the entire document.

The potential advantages of providing simultaneous access to case materials is enormous, but the willingness of users to read from the monitor is crucial. Du Page County Court did not report any resistance, but when the federal Fourth Circuit Court of Appeals experimented with imaging, it found that judges were unwilling to read briefs from the computer screen, even with a facility that allowed them to take notes. For the Fourth Circuit, the only advantage would have been space saving and this was not considered sufficient to justify an imaging system.

## **Judicial Support**

The high proportion of judges among conference delegates at Dallas reflects the enormous interest in the support that computers can provide for carrying out judicial functions. Several sessions were designed specifically to satisfy this appetite for information.

*'Improving Judicial Performance with Modern Technology':* This session was related more directly to judicial work. A judge from Nova Scotia described his structured approach to the use of files and directories in WordPerfect 5.1. The compilation of jury charges was used as an example. Relevant files are stored in three WF51 directories on the hard disc. Files in the first directory comprise a series of jury charges used extensively by judges throughout Canada. The second contains criminal jury charges published by the Continuing Legal Education Society of British Columbia which are also used commonly by Canadian judges. The charges include instructions which should be given in every trial and others appropriate only in specific situations such as when a directed verdict is called for. They are available either in hardcopy or on disc in a wide range of formats. The third directory contains charges which the judge had prepared personally over the years. Separate files in this directory dealt with issues such as general comments, expert evidence, circumstantial evidence and the defendant's criminal record. The charge itself is compiled by inserting standard sections as

appropriate in text prepared specifically for the case in question.

A similar approach is adopted to the preparation of trial decisions using the free text searcher ISYS version 2.07. This identifies the occurrences of words or phrases in WP51 files created by the judge during the course of the trial and also in other files dealing with specific points of law and legal precedents.

*Judicial chambers of the future:* This presentation described the evaluation of a pilot project in the federal court in Dayton, Ohio where civil and criminal caseloads are double the district average. The objectives of the pilot were to make the work of chambers more efficient and less time-consuming by creating an automated environment in which a judge, law clerk and secretary can function as a viable work group sharing files, documents, calendars and e-mail. The project provided chambers' personnel with systems that are intuitive to use and require little training because the user interface is consistent. NCR's Program Manager COOPERATION was selected for the first phase.

*American Bar Association (ABA) Minimum Standards Judicial Workstation:* A judge from Pennsylvania led this session dealing with draft guidelines produced by the Technology Committee of the State Trial Judges Conference of the ABA Judicial Administration Division. The report describes computer technology for judges as vital to the administration of justice and a key feature in addressing the ever increasing backlog of civil and criminal cases. It states:

'Individual judges should have a computer in chambers to assist in the performance of their judicial duties. (This is in addition to computer support for a court system.) Judges should have full-featured word processing, a communication package, appropriate utility programs for backup and other functions, and other programs appropriate for their specific needs. They should have access to a laser printer. Judges and their staff should have adequate training to enable them to utilise the capabilities of the computer.'

The report goes on to specify in detail the precise hardware, software, communications and training that represent the acceptable minimum system with which judges should be provided. In a commentary to the specification, the report emphasises that laptops should be considered as they are the cheapest way of ensuring judges have access to a computer in the courtroom, in chambers and at home.

## **Courtroom Presentation**

*Video in the Courthouse:* Once a courtroom has been equipped with video equipment, there is a considerable incentive to use it in as many ways as possible. A team of presenters described various applications, including video conferencing between police and prosecutor as part of pre-trial preparation, procedural hearings and arraignment using video conferencing, using video for special evidentiary hearings, using video to present all of the testimony in a civil trial to the jury and video court reporting.

*Linking police and prosecutor by video:* Los Angeles is one of the world's most sprawling cities. Members of its police department travel routinely to the criminal courts building in downtown LA to review crime reports and evidence with deputy district attorneys prior to the filing of felony complaints. This is a time-consuming process for both parties and is not helped by a recent Supreme Court ruling which reduced the time for investigating and preparing in-custody cases for arraignment from three to two days.

In a pilot project, video is being used to file certain kinds of crime including burglary, auto theft, assault, receiving stolen property, robbery and domestic violence. In the future, the project is to be extended to offences of murder, rape and child abuse. Paperwork associated with the case is transferred by fax or messenger the previous day. In addition, a special scanner/viewer is available to

allow shared viewing of evidence at the two locations. The police have dedicated a room to hold the equipment but the District Attorney's office uses mobile equipment which can be moved from office to office. The project will attempt to answer the following questions: what savings in travel time for detectives does video filing produce; is a telephone call rather than a video conference a feasible solution; can video filing be implemented on a wider basis throughout the State; what are the cost/benefits; are there security problems; can detectives and the DA's office be convinced that video filing is a feasible alternative to the present system; and, will video filing lead to an improved crime clearance rate?

*Video Arraignment:* This is now quite common in courts in the U.S. and is of interest in the U.K. where an experiment is being conducted with video linked remand hearings at an East Anglia prison and magistrates' court. In the U.K. experiment, the defence solicitor attends the court. In the U.S., the defence attorney at a video arraignment is usually in the prison with his client. Not all lawyers have welcomed this initiative and many had to be given maps to find the prisons.

In Oakland County Michigan, video arraignment was a natural development of the use of video to create the court record which began in 1988 and is now installed in 23 courts. The extension of the system to video arraignment began in 1990 when new courtrooms were being built and the impact on the design of providing video facilities was being considered. The possibility of a link to the county jail was considered and found to be possible using coaxial cable as the distance involved was only about 1/4 mile. When the video courtroom was installed, an additional cable was run through the underground tunnel to the jail. A camera, television monitor, microphone and speaker were installed in the jail.

Attorneys had already become acclimatised to the idea of video through its use in creating the record. When video arraignment is in use, attorneys appear at the jail with their clients. The assistant prosecutor remains in the courtroom but is available before the judge takes the bench to negotiate with defence counsel over the telephone. Documents needed to conduct video proceedings are faxed between the jail and the court.

The courtroom is equipped with voice-activated video cameras, videotape recording machines (VCRs), microphones and monitors. The microphones and cameras in the jail and the courtroom are switched automatically as different people speak. The system operates like a closed-circuit television system with the person who is talking being recorded on tape. However the judge's monitor is fixed throughout on the defendant and the defence attorney in the jail arraignment room. They in turn see the judge on the bench in their monitor.

During plea proceedings, the judge, who controls the technical components of the system, locks the cameras on the defendant so that he or she is all that appears on the tape. The judge's voice is heard as questions are put to the defendant but the picture recorded is of the defendant's face.

Video arraignment has already eased the burden on the Sheriff's Department which is responsible for escorting prisoners to and from court. Security concerns, particularly for high risk prisoners, are correspondingly reduced. Video arraignment saves time as the court does not have to wait for prisoners to be brought up from the cells in the courthouse. Defence attorneys also save time as the judge usually tries to hear such proceedings as soon as the defence lawyer is ready. Not all scheduling problems disappear, however, and defence attorneys continue to complain about being kept waiting for their case to be heard.

Advocates of the system were critical of the Michigan Supreme Court, which has not yet permitted the use of the video system for sentencing. There was no discussion of the implications for justice.

*The presentation of demonstrative evidence:* DOAR Communications (described as Personal Courtroom Exhibit Specialists), demonstrated a range of products aimed at prosecutors and law firms

for the presentation of demonstrative evidence in the courtroom. As is the trend with many of these technologies, DOAR provides a consultancy service as well as selling the products to lawyers for in-house use. Because of the potential contribution to expediting trials, they emphasised the availability of drug enforcement grants and forfeiture funds as sources of financing this technology in the prosecution of drug enforcement cases.

DOAR's message is that the jury's ability to reach consensus will be improved by good visual presentations focusing on the major themes of the case and simplifying complex details. In facilitating consensus building, DOAR describes what it does as 'arming the juror advocate'.

They recommend that lawyers inspect courtroom lighting in advance and consider how the judge, jury and witness will see an exhibit. They advocate installing dimmer switches, if necessary, in the courtroom because they can have a considerable impact at low cost. Positioning in the courtroom is also crucial, and DOAR advised lawyers to pay attention to what they called the 'ping pong effect': if 'props' are placed so that the witness has to look at them consciously, the jury will also look. Where monitors are used, they recommend always putting one on the judge's bench. In one case, at a point where the judge was particularly interested in the evidence, he took his glasses off to look more closely at his monitor, an unconscious cue to which it was felt the jury paid attention.

Products marketed by DOAR include Postermaker, which permits the feeding through of 8 1/2" x 11" documents in the courtroom to produce a large poster. Thus a blow up of a floor plan framed in colour holds the focus of the juror's eye. Visual Presenter is a high definition video camera which works with minimum ambient light. In presenting, for example, an original document, the camera can zoom in and out easily and be linked either to a TV or a video projection system. Evidence presented this way can be preserved in full on videotape. Three dimensional objects can be shown under the video camera, and it can be used to demonstrate an intricate task to the jury e.g. a doctor illustrating how a surgical procedure is conducted. The camera can also be used to compare forensic evidence.

DOAR also demonstrated its 'Snake process' by which exhibits are heat sealed in plastic and linked together, thus graphically demonstrating to the jury the 'connection' of the evidence.

*Multimedia animation:* In only a year, this technology has dropped in price to one tenth of the original cost, making it feasible for lawyers to purchase systems for in-house use. Multimedia presentations no longer invariably require the involvement of external consultants. Quoting Bill Gates, Chairman of Microsoft ('Multimedia will be bigger than everything we do today') a firm called D Animation presented a product called Autodesk. Graphics and computer simulations are created on a standard VGA monitor for presentation in the courtroom. Example applications include motor vehicle accident re-creations, industrial accidents, structural failure, animated charts and graphs, and live video incorporating computer presentations. Although the initial use was in personal injury cases, such technology is now appearing in criminal cases as well.

Many courts, while allowing the use of simulations, do not want images shown to the jury to look too realistic and may stipulate, for instance, that the sky should be yellow. The admissibility of computer simulations in U.K. courtrooms is likely to receive attention in the near future.

## **Access to Court Records**

Although court databases were originally created for management of the court's workflow, they can also be used to meet the information needs of the public and legal community. Moreover there are potential long-term benefits to the courts in employing databases for this purpose. These include reduced demands on court staff in responding to enquiries although pressure for accurate and timely data is increased.

*Public Access to Court Electronic Records (PACER):* This system gives access to electronic case data in federal courts through ordinary phone lines. A user with a PC and modem can connect to a court computer to which basic case information has been down-loaded from the court's main computer. Participants can copy an entire docket sheet (case record) and print a copy identical to that produced at court. Primary users are law firms and information companies that collect data and sell it to the general public. Access was initially free but experiments with two separate billing procedures are now being conducted to determine the most effective method to collect fees. Both systems provide for certain classes of user to be exempt from fees. Users must register with the office of the appropriate clerk of court, and are assigned a password and user's guide.

*Voice Case Information System (VCIS):* This is available in 56 federal bankruptcy courts. It uses an automated voice response system to read case information directly from the court's database in response to touch-tone telephone enquiries. VCIS is free but similar systems in other courts are offered to subscribers or have access fees which appear as telephone bill charges (the proceeds being shared by the court and the telephone company). These services provide a range of civil and criminal case information including child support payment status and land records. Users can even schedule a court date, arrange a continuance (when given the case identifying information the system provides the caller with scheduling options) or use a credit card to pay fines or post bail. A court of general jurisdiction in Norristown Pennsylvania which has offered remote public access to court records since 1982 reports over 350,000 transactions per month.

*Electronic Filing (ELF):* This is a document submission service that allows attorneys to use their computer to file documents with the court electronically, using either an ASCII or WordPerfect text file. ELF was introduced into two federal courts at the end of 1991. The courts have imposed different restrictions on the kinds of documents that may be submitted electronically.

*Appellate Court Electronic Services (ACES):* This is an electronic bulletin board for the rapid dissemination of federal appellate court information. The service allows subscribers to view and download published opinions, court calendars, court rules, notices, reports, and press releases. The service was expanded to all federal appellate courts in 1992. A model of this type could prove of enormous value in our Prison Service, where management information is currently only available in an unstructured mass of Circular Instructions, Standing Orders and directives to governors which individual establishments have great difficulty in maintaining.

*Touch screen technology:* Long Beach Municipal Court, which collects more than \$12 million in traffic fines annually, received an award from the Judicial Council of California when it launched its 'Auto Clerk' in February 1992. These are 24 hour, 7 day a week automated kiosks, like bank cash machines, through which the public can pay traffic fines. Users can access a range of transactions through the main menu and pay fees or fines by credit card, debit (ATM) card or personal cheque. The machines offer touch screen operation with simple instructions in English and Spanish. Auto Clerk also provides available court dates and can schedule future appearances. The system is linked to the county's central data processing centre. A similar system in Florida is claimed to have improved the level of fine collection.

## **Barcoding**

*Los Angeles Municipal Court:* Attendance and many other juror functions are monitored using a bar code scanner. A portion of the summonses mailed to each juror is a perforated bar-coded badge. When jurors report for duty, the badge is scanned to indicate attendance and again when the juror returns from the courtroom to re-enter the jury pool assembly room. The information contributes to a jury management system which includes processing payments and production of statistics.

*Sacramento Bankruptcy Court:* In this court, pre-printed bar-coded court files were produced as a

result of an analysis of document flow and work procedures. A pilot project is underway in which law firms submit pleadings which have already been bar-coded.

## **Computer aided 'Real-time' transcription**

Although real-time transcription systems were on display in abundance in Dallas, we would like to discuss in this section an experiment which introduced one such system to a British courtroom. We were involved as evaluators of the impact of the system on the judge and other courtroom participants. Our observations and major findings are outlined below.

First a brief explanation of the system's capabilities. In traditional computer-aided transcription, the stenographer's keystrokes are fed directly into a computer which converts them into English. The text is then inspected for errors which can be corrected before the transcript is distributed. Real-time systems take the process one step further. Participants are provided with terminals on which the transcript appears within a few seconds of the words being spoken. Annotation facilities allow each user to select text and either assign an issue code or add a written note. Everyone creates in this way their own annotated version of proceedings which cannot be accessed by anyone else. The transcript can be searched for particular words, phrases or annotations to assist the user in retrieving information inside or outside the courtroom.

The experiment which lasted eight days took place during a trial in the Official Referees' Court in London. Only the judge in the case was provided with access to the real-time facilities that the system offers and his views were recorded prior to and throughout the experiment. Other courtroom participants were interviewed to gauge their perception of the impact of the system.

The trial concerned a dispute about procurement of computer software. During the experiment defence witnesses were cross-examined by counsel for the plaintiff. The cleaned transcript of the day's proceedings was available at around 5:30p.m each day and a hard paper copy was delivered to both sets of solicitors. Only the judge was provided with transcript in computer readable form.

Even after the first session in which the system was used, it was clear that the judge was impressed by the contribution that real-time transcription could make to proceedings in the courtroom. He quickly acknowledged in his comments to the evaluators that the pace of the trial accelerated when the system was introduced. The evaluators had the opportunity to examine the judge's notebooks prior to and during the experiment. In the 12 court days beforehand, an average of about 20 pages of notes per day were taken. Although morning and afternoon sessions both lasted about two and a half hours, on 6 out of 88 days more notes were taken in the morning. After the experiment started, the judge's notes dropped to about five pages per day with a dramatic change in the notes themselves. Instead of a summary of proceedings, they now consisted of times, headings and bundle references and served only as a log of events with cross references to documents, orders and the transcript. An enhanced version of the system could eliminate the need for almost all notetaking by the judge.

The type of case used for the experiment normally proceeds quite slowly due to the heavy reliance on documentation, but it slows down even more when the judge makes a note and counsel is 'watching the judge's pen'. All the participants interviewed agreed that the pace increased after the introduction of the system. One counsel suggested that the overall pace is slowed because of the introduction of extra work outside the courtroom although this was based upon previous experience of transcripts as neither he nor his junior read the transcripts provided to them during the experiment.

An expert witness who had given evidence before the period of the experiment referred to the judge needing to halt proceedings for notetaking during his evidence, as the complexity of the argument made it impossible to listen and take notes at the same time. As there was no statistical data on the pace of the trial before the experiment, it is impossible to be categorical about a change of pace.

Nevertheless, there is strong anecdotal evidence from interviews with participants and the impressions of the evaluators that the pace was faster with the system. It is also clear from the comments of the expert witness that his time in the witness box would have been shorter had the system been used when he gave evidence.

The enthusiasm of the judge for the system was matched by the doubts and suspicions of others involved in the trial. Even the court clerk seemed to feel threatened by the presence of the system. Some of the adverse comments were actually criticisms of the experiment rather than the system and would not apply if the system was used throughout the entire course of a trial. This applies, for instance, to the concern of the defence solicitor that access to the transcript gave an unfair advantage to plaintiffs counsel during his cross-examination of defence witnesses.

Introduction of systems such as CIC can expect to encounter resistance from courtroom participants. As part of the preparation for their use, a programme of training and familiarisation is needed to explain the purpose of the systems and the benefits they can deliver. The most important issue concerning the use of real-time transcription is its impact on the quality of justice. Unless the use of such systems can be seen to enhance, or at least not to impair the quality of the justice dispensed they have no future in the legal system.

The judge's comments highlight the potential contribution of real-time annotation to the production of judgements in long or complex cases. Judges are under severe time pressure to start a new trial soon after the completion of the previous one, with little time set aside for the writing of the judgement. Despite the attractions of analysing a case as it proceeds, judges seldom find time during the trial to add a further manual 'layer' of work to the manual note by identifying issues, indexing and cross-referencing. When Solution CIC is fully developed, the judge in this case foresaw being able to produce self-contained reports every few days based on the annotations he made in the courtroom. By this means, the preparation of his judgement could be spread more evenly over the course of the trial. The judge would assume that any evidence of importance that he had not highlighted would be brought to his attention by counsel in their submissions during the final stages of the trial. He considered that this process would be immeasurably superior to his manual note, enormously labour saving in respect of out-of-court time, and instrumental in providing a foundation for the judgement.

Real-time transcription therefore has the potential to allow judges to adopt a more gradual and systematic strategy in reaching a decision. It makes it feasible to interpose a layer of review and analysis, which would not otherwise be possible, as the trial proceeds. Through the ability to search and retrieve information automatically, it makes the searching of testimony a more reliable and less painstaking process than at present.

Although the parties in the case were not provided with access to the real-time features of Solution CIC, it is reasonable to deduce that the same facilities that the judge found so useful would also enable lawyers to provide their clients with a better quality of service. Real-time transcription also offers the possibility of making court proceedings accessible to the deaf and hard of hearing. New legislation in the USA on the rights of the disabled may oblige courts to make available such systems and it seems likely that in the future there will be pressure for similar action in the UK.