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Chicago's Electronic Recording of Interrogation Project

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TECHNOLOGY TALK

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he Chicago Police Department, in meeting a state legislative mandate to record the interrogations of suspects in capital cases, has established itself as a technology leader in digital recording. The department equipped its Detective Area Centers, Cold Case Squad, and Polygraph Unit with a state-of-the-art video management system. The key to the system is its ease of use. A detective can activate the entire recording system with the flip of a single switch. The system then self-manages the collection, storage, and transfer of the digital imagery to a central secured repository in police headquarters.

In 2003 the Illinois State Legislature passed Public Act 93-0206, which grew out of the governor's death-penalty reform movement. This act required that electronic recordings be made of custodial interrogations for any of the following crimes: murder, second-degree murder, involuntary manslaughter and reckless homicide, drug-induced homicide, intentional homicide of an unborn child, voluntary manslaughter of an unborn child, and involuntary manslaughter and reckless homicide of an unborn child. Under the act a recording is defined as a motion picture, audiotape, videotape, or digital recording. The effective date of the act was July 18, 2005.

Goal: Make Investigations Transparent

Given the circumstances that led to this legislation, I instructed my top command and technical staffs to design and implement a system that would ensure the openness of the entire investigative process. My command staff first held a series of design meetings with the working detectives to see what it was that they looked for in the recording system.

The Chicago Police Department has some of the most professional, highly trained, and hardest working detectives in the country. Unfortunately they have been unfairly tarnished with unproven allegations of misconduct stemming from investigations conducted more than 20 years ago. In order to ensure that the ghost of investigations past was finally put to rest, we decided that our system would record not only audio but full-motion video as well. This was well beyond what the law in Illinois mandated.

We also decided to record the entire time an interviewee is in our custody at a detective area, not just when a detective is in the room interacting with the interviewee. Our detectives wanted the opportunity to demonstrate to the juries who will watch these recordings what really happens during the interview process. They insisted on getting a system that could dispel any preconceived notions that jurors may have formed by watching so-called police shows on television.

Objectives: Ease of Use, Future Accessibility, and Reliability

The main objective was to do nothing that could impede the investigation process. A detective conducting a homicide investigation must not be distracted or burdened with complicated recording procedures. Given this, the main design goal was simplicity of use. In meeting this objective all movement and replication of files was automated.

The second objective was to use the digital format MPEG-4. The technical staff insisted that the recording be made in an open format and would not tolerate a proprietary viewer. Their reason was simple: a digital video file created today may not be retrievable in the future if nonstandard industry formats were used. The MPEG-4 format allowed us to stream the digital video and then transfer it to the prosecutor's office. Future accessibility is important because digital imagery collected in capital cases must be retained until the end of the republic.

The third objective was reliability. The department had to ensure that a recording would not be lost due to technical failure. To prevent loss, the department collects the imagery in two ways. The analog signal from the camera is brought into the control room and split. The first pathway leads into a digital video recorder, or DVR. This recorder has the ability to record 14 days' worth of video. Detectives and prosecutors are allowed to review and copy files from this device. Two DVD burners are provided in each location to make physical, transportable copies of the files as needed.

The second pathway immediately encodes the analog signal into the MPEG-4 format. Each hour of recording is segmented into its own individual file. Under this file arrangement, each hour of imagery is collected with a manageable file size of just under one gigabyte. All files are stored locally in the Detective Area Center until the completion of the interview. After a detective terminates the recording process, the file replicates itself to the central storage server in police headquarters. In the first 120 days of using this system, more than 3.5 terabytes of digital imagery were collected.

How Each Room Is Equipped

Each interview room is outfitted with a corner-mounted sealed surveillance camera. This camera records in color when in standard operating mode but can also record in black and white, should the lights be turned out to allow the subject to sleep. There is also a covert microphone installed in the ceiling of each room. This microphone is wired into an audio processor that allows it to capture a whisper anywhere in the room.

A simplified control panel mounted outside each interview room allows the detective to control the entire system for that room from just outside the door. This system does not require the loading of VHS tapes or DVDs before use.

In addition, the detective does not need to enter any identifying suspect or investigator information before use. This data is all entered after the investigation is complete and the suspect is either charged or released. A small video monitor mounted in the control panel allows other detectives or prosecutors to watch the interview. Two audio headphone jacks are also provided to monitor the audio. There are no audio speakers anywhere in the system.

A Special Feature: The Attorney Switch

The command staff recognized a potential problem: how to keep recording while private counsel visited with an interviewee. They did not want to interrupt the digital recording process nor move the interviewee to another room.

But how could the department ensure confidentiality of the consultation and yet not stop the recording process?

The technical staff overcame this obstacle by designing a switch that interrupts the video and audio signals originating from the interview room while the system continues recording; after the counselor flips the attorney switch, as it is known, the date and time appear on a black screen. This feature allows the department to document the attorney visit while maintaining client confidentiality. A tone sounds in the interview room every 30 seconds to confirm to the attorney that the system remains in the proper mode.

Storing and Viewing the Interviews

The heart of the system is a state-of-the-art computer program developed in house that allows authorized users to manage and retrieve the video files 24 hours a day. Once a detective completes an interview and it replicates itself into the central storage server at police headquarters, users enter what is called metadata: the case number, the incident type, the interviewee's name and information, and the interviewer's name and information. Once the metadata is added to the record, the video is marked as permanently stored and assigned a video inventory number.

Prosecutors are allowed access to the department's intranet. This allows them to call up and view by way of video streaming any interview, provided the case has been charged and the subject has been remanded for trial. The prosecutor's office is also allowed to transfer all digital imagery files relating to a cleared case to their office for purposes of answering discovery. This saves my department hundreds of person-hours a year from having to burn individual DVDs for this purpose.

Another feature of the video management system is the allowing of the detective to tag specific parts of the digital imagery file. Since a subject can be held and recorded for up to 48 hours, simply playing a file for review purposes is impracticable. In our system a detective can add an unlimited amount of chapter markings to the file. This allows future reviewers the ability to jump to relevant parts of the interview without wasting their valuable time searching through hours of irrelevant recordings. The system also logs each time an imagery file is played, transferred, tagged, or replicated. No one can do anything to the digital file without it being permanently documented in the file log.

The department's video management system also put into place a robotic DVD burning system. Three robotic DVD burners were installed at police headquarters. Each of the robotic DVD burners holds up to 25 blank DVDs. This burning system allows authorized department members to order up entire digital case files from their desk. Once ordered the system replicates and labels the requested digital files to DVD. Each disc contains up to five hours of sequential digital imagery in the MPEG-4 format. As DVD digital storage technology improves, I expect this to rise to 10 hours per DVD. Currently, the system can replicate and label five hours of digital imagery onto a DVD in 20 minutes. Additionally, the system segregates each interviewee to its own set of discs. This way, separate interviews or interviewee's are not commingled onto the same disc.

Implications for Police Practices

Designed though the cooperation of the Chicago police Department's command staff, the end users, and technical staff, this interrogation recording system allows our detectives the ability to view crime scene videos within 24 hours of their occurrence. It gives them added tools to use in confronting suspects with inconsistencies in their statements and that of their associates. And it also allows for an easy, cost-effective exchange of information with our prosecutor's office.

The recording of interviews in capital cases is merely the first step. I fully expect the requirement to record interviews in capital cases to quickly expand to cover other crimes and spread across the nation, if not the world. How we in law enforcement learn to manage and use this new dimensional form of evidence is crucial. The issue is how we learn to use the imagery once collected.

Besides the recording of interviews, police agencies routinely collect other images like undercover surveillance video, private-sector surveillance video, criminal deterrent video, and so on. As time goes on and our video libraries are expanded, we must have in place management systems that are cost-effective so we can index, store, and retrieve these images on demand. We must ensure that our detectives have the ability to search and retrieve all of our files from these video libraries in a timely manner in order for it to be useful during interrogations. It is not unreasonable to expect that a suspect in a homicide investigation may already be recorded and stored in our video library on a narcotic surveillance or a private-industry security camera recording. The ability to confront suspects with evidence of other wrongdoing can change the dynamics of an interview, but first we must have the ability to do this. The infrastructure we provide now is going to be the key to successful case outcomes later. This is going to be the new dimension in detective work. How successful it becomes is based on the decisions and commitments we make now. ■

[Top](#)

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