



FROM THE CALL BOX TO THE COMPUTER

An ITI Whitepaper On

THE CHANGING FACE OF TECHNOLOGY IN LAW
ENFORCEMENT

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THE WAY IT WAS



It is difficult to imagine how police officers were able to carry out their duties before the age of modern technology. Before there were telephones, teletype-systems, automobiles, two-way radios and computers there was crime. Officers and deputies enforced the law on foot or horseback in those days. Technology has enhanced officer safety and increased effectiveness in preventing and solving crimes. It has also changed how law enforcement agencies manage information and provide services to the public.

THE WAY LAW ENFORCEMENT COMMUNICATES AND MANAGES DATA

In 1844, Samuel Morse's wired telegraph system was connecting Baltimore with Washington D.C. By 1855, 23,000 miles of telegraph lines crisscrossed the country. In 1876, Alexander Graham Bell introduced the telephone and in 1877 organized Bell Telephone Company. Public Safety agencies were quick to realize the benefits of these technologies. In 1877, the Albany, New York Fire and Police Departments became the first to use these new technologies for internal communication, first in Fire Alarm boxes and later in Police Call Boxes. By the late 1880's the police call box was being used in cities across the United States.

With the advent of two-way radio cars in the 1930s officers were able to for the first time communicate from the field to the station. The first computer-assisted dispatching system was installed in the St. Louis Police Department in the 1960's. Computerized dispatching improved the processing of calls for service and management of resources.

In 1966 the National Law Enforcement Telecommunications System (NLETS), a message-switching facility linking all state police computers except Hawaii, was born.

In 1967, the FBI inaugurated the National Crime Information Center (NCIC), the first national law enforcement computing center. In many cases NCIC was the first contact many smaller departments had with computers.

In 1968, AT&T established a special number - 911 – for emergency calls to police, fire and other emergency services. Within several years, 911 systems were in use in large urban areas. The introduction of the 911 systems not only provided the public a standardized number to call for emergency services but also increased the timely reporting of incidents to the police.

In 1968, the Omnibus Crime Control and Safe Streets Act created the Law Enforcement Assistance Administration (LEAA). Between 1968 and 1981, LEAA provided \$7.5 billion to law enforcement agencies. One of the priorities of the LEAA was to increase the use of computers by law enforcement. Using LEAA funding, many departments began to acquire computers in the early 1970s. By the 1980's computers were being widely used for dispatching and managing information.

By 1993 more than 90 percent of U.S. police departments serving a population of 50,000 or more were using computers. Many were using them for such relatively sophisticated applications as criminal investigations, budgeting, dispatch, records management and manpower allocation. Today, departments across the country utilize computer technology in all aspects of crime fighting, including mapping and crime analysis.

TECHNOLOGY CHANGES THE ROLE OF POLICE AND HOW THEY CARRY OUT THEIR DUTIES

The first gasoline powered automobile appeared on the U.S. market in 1891. The first recorded automobile accident occurred in March 1896 in New York City when a car struck a bicyclist and broke his leg. The driver was arrested and spent the night in jail. It was not until ten years later that police departments began very limited motorized patrol. In 1906 the Chicago Police Department purchased its first police car. The Detroit Police Department followed in 1909 with their first motorized vehicle. With the addition of motorized patrol the role of the police changed. Quick response to calls for service became one of the key measurements of law enforcement's effectiveness.

In 1995, the Office of Community Oriented Policing Services (COPS) was created by the Violent Crime Control and Law Enforcement Act of 1994. By the end of 2003, COPS provided grants of over \$10.6 billion dollars to law enforcement agencies. The grants provided funding to hire and train officers in Community Oriented Policing, to test innovative policing strategies and to acquire and deploy technology.

With the introduction of the Community Oriented Policing model, a dramatic change occurred in how agencies measured their effectiveness. The emphasis on quick response to calls for service and the number of arrests made and crimes cleared was replaced by the reduction of crimes committed. The COPS program promoted the development of close police/citizen relationships with a focus on improving the quality of life on a neighborhood-to-neighborhood basis. From this effort grew programs such as Neighborhood Policing and Problem Solving Policing.

For the COPS concept to be successful officers needed timely information about crime patterns and other social problems occurring on their beats. The use of in-car laptop computers connected to their agency's in-house records management software via commercial wireless carriers provided officers for the first time real time access to this information. With funding provided by COPS and other federal and state grant programs, the use of computers in law enforcement gained widespread acceptance in law enforcement agencies of all sizes.

**TECHNOLOGY ENHANCES OFFICER SAFETY AND INCREASES THEIR CRIME SOLVING
EFFECTIVENESS**

Significant technological breakthroughs have resulted in products that have improved officer safety and increased their crime solving effectiveness.

In 1972, the National Institution of Justice initiated a project that lead to the development of lightweight body armor. Soft body armor has saved hundreds of officers from death or serious injury.

In the mid-1970s, the National Institute of Justice funded the Newton, Massachusetts, Police Department to assess the suitability of six models of night vision devices for law enforcement use. The studies lead to the widespread use of night vision gear by today's police agencies.

In 1975, Rockwell International installed the first fingerprint reader at the FBI. This technology resulted in the creation of automatic fingerprint identification systems (AFIS). AFIS has resulted in the clearance of thousands of crimes that would have otherwise gone unsolved.

In 1980, police departments begin implementing "enhanced" 911, which allowed dispatchers to see on their computer screens the address and telephone number from which a 911 emergency call originated. This information used in conjunction with Computer Aided Dispatch software allowed dispatchers to warn officers of potential dangers and the history of previous calls at locations prior to their arrival.

By the 1990s, the use of non-lethal weapons such as the Taser, beanbag shells and pepper mace had been added to the list of force options available to officers in the field.

The miniaturization of body microphones and closed circuit television has benefited law enforcement in a variety of investigative and crime prevention initiatives.

**TECHNOLOGY CAN ASSIST LOCAL LAW ENFORCEMENT AGENCIES MEET THE NEW
CHALLENGES OF TERRORISM AND CYBER CRIME**

The pace of the use of technology in law enforcement continues to accelerate. New technologies such as the use of DNA for criminal investigation, the growth of AFIS and Livescan fingerprinting systems, GPS tracking, and reverse-911 software are all computer dependent systems now being more widely used by agencies around the county. New hardware such as Personal Digital Assistants (PDAs) and other wireless devices such as web-enabled cellular telephones are changing the way information is collected and shared.

The requirement for dispatching agencies' 911 systems to meet Phase I and Phase II compliance has precipitated the use of computerized mapping and links between 911 systems and computer aided dispatch software. Incident-based reporting is being implemented across the county requiring new records management software designed to capture and report crime statistics electronically.

The 1995 Oklahoma City bombing and the 2001 attack on the World Trade Center and the Pentagon significantly increased awareness for the need to share information between law enforcement agencies at all levels of government. Antiquated radio systems are being replaced so that multiple agencies can communicate during joint operations and disaster responses. Integration of computer databases is being developed for intelligence gathering and criminal investigation. Detection technology, protection equipment and training are being provided to public safety personnel to meet the challenges of a nuclear, biological or chemical threat as well as an attack using conventional weapons.

The use of the Internet for the commission of crimes is increasing at an alarming rate. Thieves, hackers, hate groups, pedophiles, cyberspace stalkers, drug cartels and terrorist groups freely use the Internet to carry out their illegal activities.

Only in the last few years has law enforcement addressed this reality by training a limited number of their officers on how to investigate and prosecute these types of criminal activities. Unfortunately, the number of officers and specialized units prepared to meet this type of activity are not sufficient to meet the sheer volume and multiple types of crime being committed over the World Wide Web.

The Internet also offers many benefits to law enforcement. The ability to share information between agencies and with the public has been greatly enhanced by the use of the Internet. Agency websites have expanded exponentially and the term E-Government is now part of the common language.

In 2003, the Office of Homeland Security began providing millions of dollars to public safety agencies to assist them in purchasing equipment and technology to meet the terrorism threat. This new source of funding is expected to promote the development and implementation of new technology just as has happened previously as a result of the LEAA and COPS funding initiatives.

Progressive law enforcement agencies understand that they must routinely upgrade their computers, software and staff training to meet current and future challenges. Law enforcement agencies that fail to recognize this need will quickly become ineffective, just as the call box is today.

ABOUT ITI

Information Technologies, Inc. (ITI) is a leading provider of public safety software throughout the United States. ITI was founded in 1988 and serves over 500 public safety agencies in 43 states and the U.S. territories. ITI has been involved in the development and support of public safety software and mobile computing solutions for over ten years.