THE TECHNOLOGY TRAP: MANAGEMENT OF NEW LAW ENFORCEMENT TECHNOLOGY IN THE FUTURE

JOURNAL REPORT

BY

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PEACE OFFICER STANDARDS AND TRAINING

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This Command College Independent Study Project is a FUTURES study of a particular emerging issue in law enforcement. Its purpose is NOT to predict the future, but rather to project a number of possisble scenarios for strategic planning consideration.

Defining the future differs from analyzing the past because the future has not yet happened. In this project, useful alternatives have been formulated systematically so that the planner can respond to a range of possible future environments.

Managing the future means influencing the future--creating it, constraining it, adapting to it. A futures study points the way.

The views and conclusions expressed in the Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).

INTRODUCTION

Law enforcement is no stranger to the use of technology. From fingerprints to DNA, police officers everywhere solve crimes using technological expertise. As the title of this study implies, however, there are pitfalls in over-reliance on technology. Police departments will be stretched physically and fiscally to accomplish their tasks in the future. That is a condition that has occurred before, however. What will be important in the future, though, is not to allow technology to solve the current problems of police agencies, at the expense of creating new ones.

As Stewart Stokes states in Controlling the Future, "changes in technical systems almost always result in changes in social systems. . ." .[1] This is similar to Salter and Wolfe's statement in Managing Technology: Social Science Perspectives, that ". . . as access to communication and information technology expands, the potential for problems with regard to privacy of data and information also arises".[2]

Managers must be aware of the effect that one change has upon other systems already in place. Safeguards are needed by law enforcement to assure that its own information is not being compromised by criminals, and that law enforcement personnel are trained in the correct and legitimate use of the data base.

There are concerns that the lure of sophisticated technology could tempt police managers to balance their

budgets, or accomplish certain tasks, by replacing humans, or human skills, with computers and other technology. To do so would be shortsighted, and would subject the community to a level of service that would ignore human needs and isolate officers from the community. In Managing New Technology, Boddy and Buchanan echo this concern when they say, "as conventional job boundaries become obsolete, and as interdependencies become more complex, the human and organizational issues that accompany technical change become more, rather than less, important." [3]

This project is the result of the above concerns about technology isolating law enforcement from the community, about possible abuses of information, and because the time to be prepared for the issue is the present, not after technology is the driving force in policing. Study of the Issue, and Sub-Issues will allow for pro-active, rather than re-active, management.

The issue question for the future is:

"How will Law Enforcement Manage the Impact of New Technology by the Year 2001?"

Sub-Issues considered in this study are:

1. What Technology Will Be Available?
2. How Will Law Enforcement Officers Be Trained to Effectively Use New Technology?
3. What Will the Community Expect of Law Enforcement and its Management of Technology?

THE FUTURE

Journey ahead a few years, into the next century. Imagine it is the year 2001, the place is a medium-sized city in Southern California, and one can see what happens in the police department.

Phone calls into police headquarters reach pre-recorded messages directing callers to press certain combinations of buttons to reach the specific bureau handling the type of complaint or service the caller requires. This type of phone answering machine has been used by police in one way or another since the early 1990's, and has never been fully accepted by the citizens who call. It's now the early 2000's and the system is so ingrained that most citizens either put up with the inconvenience, or they just don't report crimes.

Even when a caller puts up with the messages, and presses the correct buttons, there is no guarantee the call will be answered by a human. Voice recognition is so perfected in computers that the call for service can be handled without human intervention. The callers identify themselves, give their address, and the type of service required. Then the computer prioritizes the call and dispatches it to the appropriate police unit, or units, in order of its

importance. No radio broadcast is necessary as the call appears on the voice actuated computer in the assigned officer's mobile unit.

Should the call be of a higher priority than the one the assigned officer is engaged in, the computer will alert the officer. At that time, the officer can redirect the call to another unit, if the current situation warrants, or accepts the new call. If he or she accepts the call, there is a choice about the response mode. The officer can manually direct the unit to the new location, using a "heads up" display on the windshield, or can direct the computer to automatically dispatch the unit to the location of the call. Computers interact with the unit, the global navigation system, and the local environment to safely move the unit from place to place, usually faster than an officer can drive.

Upon arrival at the scene, the officer engages the external sensor of the unit in order to detect the presence of explosives, fire, toxic gases, illegal drugs, or L.A. Raider clothing. After the necessary microseconds, the sensors signal an "all clear". At this time, the officer has the option of exiting the unit alone, taking the robot partner (affectionately

called "Bumper") along, or just sending Bumper into the location. There are usually no other officers available to assist.

Bumper is often sent in alone. This leaves the officer with time to stay in the unit and complete some of the average 100 reports a day that are assigned. While Bumper handles the call, the officer monitors the call on one of the screens in the unit. Should there be a danger of Bumper being damaged, the officer must call for assistance. It's difficult to hurt Bumper, but the officer is responsible for a one million dollar robot so he, or she, is always alert.

Bumper is especially effective in arrest situations as robots are equipped with restraint systems that quickly neutralize even the largest subject. Robots do not react to verbal abuse so there is seldom any uncalled for action. This has greatly reduced the number of complaints since the computers in the police robots make quantifiable decisions to arrest based upon specific pre-programmed criteria, developed by the court.

As good as Bumper is in arrest situations, he doesn't do very well in family disputes or juvenile counseling. Actually, Bumper causes

more problems than he solves when used on calls that require person-to-person contacts, other than to arrest, take a report, tow a car, or write a ticket. It seems that many people calling for police assistance, especially when there is a family crisis, are offended when a robot appears at the door.

After approximately 4.2 minutes (the average for a call of this type), Bumper emerges from the location of the call and enters the unit. The officer plugs Bumper into a terminal and downloads Bumper's account of the call. They are now ready for the next assignment.

Is this the Twilight Zone, or is it the future? It could be without management. There may even be many law enforcement professionals who would welcome this type of scenario. Without attention to the essentials of policing, departments could very well find themselves overusing technology, substituting technological devices for people, attempting to serve the community without actually seeing, touching, or talking to them, and isolating officers from the people they serve and who support them. As Boddy and Buchanan said in Managing New Technology, ". . computing and information technologies do not entirely replace the 'human element' in work". [4]

A futures methodology making use of the Nominal Group

Technique considered these and other factors during the development of trends and events leading to three scenarios depicting possible futures of the issue. The preferred scenario was one in which technology could be managed without negative aspects.

Trends that the NGT group forecast included changes in technology, changes in the sources of funding for police departments, changes in what the community will expect of their police, the impact of regionalizaton, and changes in the skills and qualifications to be a police officer. Events that were forecast included a national recession, mandated electronic monitoring of all police contacts, police responding to "in-progress calls" only, a mandate for computer fluency for all officers, and the marketing of an advanced laptop computer for under $5,000. All of these trends and events could be combined to show scenarios ranging from "worst-case" to a favorable future arrived at through recognition of future problems now, and the exercise of management.

There are some who encourage a mass rush towards technology. In the long run it's cheaper, it's more reliable, and it seems to get better every year. If we rely on the simplistic answers shown in statistics alone, that view could be valid.

Police officers, however, do not live in a simple world. Neither do the people they serve. To many police managers, there are disturbing signs that their officers

already rely too much upon their technological devices..[5] For example, try to find a patrol officer in a department that issues belt radios, who will begin the shift without one. Ignoring the fact that the officer is equipped with a handgun (usually a state-of-the-art semi-automatic), generous amounts of ammunition, tear gas, a baton, handcuffs, and is assigned to a police car containing a shotgun, lights and siren, and a police radio capable of broadcasting and receiving on several frequencies, officers are reluctant to the point of sometimes expressing fear for their well being if asked to go in service without a portable radio. This cannot accurately reflect the officers' courage or the ability to do the job, as that is demonstrated daily. More likely, this phenomena relates to habit, culture of the department, training and experience. In other words, these things happen because we let them happen, over time.

As an illustration of officers' reliance on technology, even today, consider this actual incident from about one year ago in a police department in Orange County, California. As a patrol officer approached several males in an apartment house garage area, most of them ran away. They had been breaking into an automobile. The officer immediately gave chase on foot, but one of the males drew a gun and fired. The officer drew his gun, a semi-automatic, and fired twice. According to the officer, the gun jammed. Fortunately, the suspect ran after being fired at and the

officer survived. For some time after the incident, the officer believed the gun to be faulty. Later, after finding gunpowder residue on the side of his portable belt radio, the officer realized he had drawn his gun and radio simultaneously (quite a feat), and held the radio next to the gun. The gun jammed as the slide contacted the radio, not because it was faulty.

Officers are trained to shoot two handed, which this individual was attempting. There is no known training that requires the officer to draw his radio at any specific time. Experience and a feeling of connection to the station caused this officer to bring his radio out even when it endangered his life.

To prepare for the future use of technology, managers must develop a strategic plan. As part of this strategy, it will be necessary to have a policy that will guide each department in the acquisition of technology. The policy will be the result of collaboration on the part of numerous individuals, from the chief, down through the rank and file. People from outside the police department, who possess expertise or a vested interest in the community, should be included in the formation of the policy also. Having a broad base of interests on the policy committee will help to assure that the policy serves law enforcement and the community equally well.

Another part of any strategy should be to establish liaison with industry to be in on the ground floor of

equipment design and development. This should help in controlling costs and in making devices "user-friendly" for law enforcement.

Training programs should be started as soon as possible, and continued on a regular basis. This training should be shared with the academy so that current employees, and new recruits have the same skill levels with regard to technology.

Police Managers are obliged to train, equip, and staff their agency in such a manner that the community will be safe. The ability to do this depends upon many factors. Budget is often thought of as the major limiting factor. True as that is, particularly in the present, it may be more important to consider other factors such as how the duties of police will change as the expectations of the community will change, and what type of people we will be able to recruit to the police service in the future. Budgets will always be a problem, as they have always been, but essential police service has survived. In the future, we must assure that whatever new technology we introduce, whatever new duties we take on (either forced upon us by law or as necessary for effective law enforcement), and how our workforce is made up, contributes to the basic role of public safety. We must avoid the attraction of "bells and whistles", of high-tech "strike forces", that some managers envision as the police department of the future. [7]

Good cops are the ones who know people best. No matter

what era we look at, good cops are the ones who can talk with "good guys" and "bad guys", gain the confidence of those around them, understand human nature, and be smart enough to not only catch a crook, but make it stick in court. Those who manage good cops must provide them with training and resources to make the good cop's job as easy as possible. "The most successful formula seems to be to start with innovations to assist the officer in the street." [8] Years ago it was a matter of giving them cars that were as fast as the criminals' cars, reliable guns, and two-way radios. That progressed through portable radios, bullet proof vests, semi-automatic pistols, and computer terminals in the cars. Backing up these officers were labs able to lift prints from surfaces at one time thought to be impossible, identifying people from mere fragments of fingerprints, tracing minute particles of physical evidence, and positively identifying suspects from their DNA.

What does the future hold for good cops? Will they be replaced by computer specialists, or lab techs? Will it be necessary to send police officers out into the streets, and into people's houses, to talk to victims and suspects when we have sophisticated communications via picture phone and FAX's? Will professional counselors replace good cops when families call for help in the middle of the night because of drugs, alcohol, runaway, or another emotional crisis? Can good cops be found who can also use the latest technology? The answer is that we will still need good cops in the

future, no less than we need them now. Our recruitment of officers must stress many of the same attributes we seek now. It will be important to have individuals with strong people skills, high morals, commitment to service, and a strong work ethic. Intelligence and aptitude for the job must be measured, of course, but to the job description we must add the ability to utilize technology.

Police Officers' duties will grow in the next ten years. Enforcing environmental laws will become a major concern. Domestic issues will use up much of the officers' time. It is not unlikely that certain matters of discrimination now considered as violations of civil law (such as sexual harassment) could fall under the jurisdiction of the police. As we add to the burden of law enforcement's responsibilities, technology will be invaluable in providing assistance to our officers, whose numbers may diminish as resources shrink. Even with technological aid, however, issues facing police officers in the future will not be solved by "technoids" accessing data bases in isolation from members of the community. "As conventional job boundaries become obsolete, and as interdependencies become more complex, the human and organizational issues that accompany technical change become more, rather than less, important." [9]

Not only will the community refuse to accept police agencies overly dependent on high tech, many advocates of civil liberties will object. Establishing and maintaining

"intelligence" files is a very sensitive matter at present. Many police departments have been forced to abolish, or seriously curtail, their use of information on local citizens when it was found that no criminal activity led to the file entry. As data bases become larger, and more interaction between them occurs, will police have access to credit information, corporate personnel records, and other sensitive data? Surely, such information being available upon demand by police agencies would stir civil libertarians, as well as the majority of average citizens, to call for restrictions and safeguards. In Managing Technology: Social Science Perspectives, Salter and Wolfe state that ". . .as access to communication and information technology expands, the potential for problems with regard to privacy of data and information also arises". [10] Even when the information is legally input to the data base, law enforcement must assure itself that their own files are not being compromised by criminals. Safe guards will be needed in all directions.

Continuous training is a trademark of police officers, especially in California. From the extensive recruit academy, continuing through daily roll call updates, to the formal advanced schools and seminars that officers are regularly sent to, there is career-long opportunity to upgrade and enhance the knowledge and skills of all of our officers. Police managers in the future must use this training to assure that officers with people skills are able

to adapt to technology and use it effectively. Conversely, we must develop effective programs for officers who are strong on technological skills, but weak on interpersonal action. Kent Colton in Police Computer Technology, recommends ". . .effective training, education, and information dissemination". [11]

Managers must not restrict opportunities for training officers to formal settings. The culture of an entire department can be changed by constant and repeated messages establishing the importance of an issue. All managers within the agency must take every opportunity to repeat the message that the officers cannot isolate themselves from the citizens, that service to the community is the ultimate goal, that technology will only be acquired as its use is justified in accomplishing the goals of the department, and that the employee is still the most important resource of the department. Having a formal policy, and programs in place to accomplish these goals is necessary and important, but managers should not discount the effectiveness of constant, informal, reiteration of the message.

Transitioning from the present to the future will require identifying those groups or individuals necessary to accomplish the change, or who can prevent it from happening, determining what their present position on the issue is, and whether it needs changing. Should change be required, there must be an analysis of how much change is required, and how it is accomplished. Included within the transition is an

assessment of the organization needed for change, and what methods should be used to make the change happen. Of utmost importance is a feedback and monitoring mechanism so that managers can know if the changes are taking place, if they are working as planned, and if modification to the plan is needed.

CONCLUSION

In answering the issue question, "how will law enforcement manage the impact of new technology by the year 2001?" , it should be apparent that managing technology in the future must be studied now. Police managers must be prepared to make conscious decisions about technology, its application to law enforcement, and the ability of the workforce to properly use it. These decisions have to be made before the need arises so that reaction to technology is not in a "crisis" mode. Policies need to be formulated. Inputs from a great many people, experts and users alike, need to be solicited, and time for trial programs must be allowed. Alternative strategies should be tried and changed as necessary.

In dealing with the sub-issue of "what the community will expect of law enforcement", members of the community should be included for several reasons. Their expectations of law enforcement will drive the need for certain levels of service, and thus, technology. Funding for sophisticated devices may depend on approval of constituents and they will have to understand the need before they approve. The

community may be suspicious of some types of technology so they must be given the chance to understand and trust the devices themselves, and trust those who will use them.

The sub-issue of training must be approached as soon as possible. On-going training is mandatory.

We must also be prepared for the changing workforce. There are many people who could make a valuable contribution to law enforcement, but who are not attracted to the job. In the future, we must recruit these candidates. Technology will help many of those who may not be able to physically perform the job as structured today, but who otherwise possess talents and skills necessary to the future role of police officer. The proper management of technology will assure that we accommodate such people.

If we plan now, and manage well in the future, technology will not lead us astray. If we let technology guide us, we may find that law enforcement becomes isolated, too costly to afford, and ironically, obsolete.

The study of this Issue, and related Sub-Issues has revealed other interesting topics that would be of value for further study, independent of this project. Isolation of police, and the resultant impact on law enforcement would certainly provide the basis for on-going study. There are many possible reasons for the police being isolated from the community, technology being only one of them. Legal restraints upon the use of technology by law enforcement promises to be a major field of study in the future and

there is a need to have information available on that issue. Finally, the subject of service demands for law enforcement issues, and what drives these demands, will offer future researchers a fertile field of study. As this project touched upon, law enforcement service will change because of community expectations and changes in the law. It is likely there will be many more reasons for changes in service requirements and there is a need to explore them fully.

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TECHNICAL REPORT

Introduction

How can cops work without advanced technology? Are criminals so sophisticated that police departments can't solve crimes without the use of scientific devices? Is law enforcement becoming so burdened with duties that they can't accomplish their tasks without extensive technological aids? Some police administrators answers to questions such as these have contributed to changes in their police departments in the last few years. Not only have police agencies invested heavily in technology, some departments have come to realize that their officers' reliance on technology can disrupt the organization. [1]

All managers are concerned because of the dangers of isolating their agencies from the community, [2] the possibility of over reliance on systems that can fail or be compromised, [3] the loss of important interpersonal skills and abilities among the officers, [4] and the chance that technology could be used improperly, thus violating rights of the citizens. As reported recently in the "Pacesetter Newsletter", police managers surveyed in 1985, and their counterparts who were polled seven years later, ranked concern for the management of technology among their top three emerging issues for the future in each instance. [5]

This project studies the management of technology as it applies to police in the future. Without a conscious effort to decide what role technology will take in law enforcement,

law enforcement could very well have the "tail wag the dog". Stewart Stokes in his book, Controlling the Future, shares this concern when he states, "Having the forethought and professionalism to anticipate the impact of change in one set of 'systems' upon the others will go far toward enabling organizations to manage change with a minimum of disruption and animosity". [6]

Technology applies to many levels of law enforcement. This study is limited to that which is used by patrol officers: the first-line service providers. As Kent Colton said in Police Computer Technology, "the most successful formula seems to be to start with innovations that assist the officer in the street". [7] The technology envisioned, therefore, is that which can assist officers in identifying suspects, apprehending them with certainty and safety, conducting preliminary investigations, documenting their activity, maintaining communication with other officers, the station, and data bases, and enabling the officers to be capable of expanding their activity so that new duties, sure to be added in the future, may be handled.

A study of the future of this issue involves more than just a forecast of the new technology, it encompasses the future role of police. Not only will the police role change and expand, but the way law enforcement organizes to accomplish its goals, will change. In Managing New Technology, Boddy and Buchanan write, "As conventional job boundaries become obsolete, and as interdependencies become

more complex, the human and organizational issues that accompany technical change become more, rather than less, important." [8]

Police do not operate in a vacuum. Each year sees added scrutiny by the community on police activity increase. An important component of this study is consideration of what the community will expect of law enforcement in the future, and their management of technology. Police hiring practices, budgets, training and sources of information may very well be the subject of civilian review boards. Those who manage technology must ensure that police are accountable for the results of access to comprehensive data banks, are well trained in the proper use of technology, and that acquisition and use of technology doesn't replace service to the community as the goal of law enforcement. Although aimed primarily at Canadian police, the following statement in Managing Technology: Social Science Perspectives, is appropriate to law enforcement everywhere and serves to illustrate a universal concern for the matter: "As access to communication and information technology expands, the potential for problems with regard to privacy of data and information also arises". [9]

Can police function in the future without increasing dependence upon technology? Most likely they can, but will they perform capably and fulfill the needs of the community? Possibly not. This study does not recommend curtailment of technology, but only to balance its use with human intellect,

intuition, personal interaction between police and the community, and an aggressive determination by police officers to provide a safe environment for the citizens who depend upon them. This will require that officers receive the best equipment, the best training, and the best support from their own administration and the people they serve. As Boddy and Buchanan say in Managing New Technology, "computing and information technologies do not entirely replace 'the human element' in work". [10]

To effectively employ technology, what will policing need in the future? One answer is that there must be the same basic ingredient law enforcement has depended upon in the past: excellent people. Officers must want to protect the community, catch criminals, and endure certain hardships in exchange for a satisfying career. Another answer is effective management. Those people charged with the responsibility of directing the efforts of the department, establishing goals and guidelines, and assuring that resources are provided to accomplish the job, must continually improve themselves, monitor their employees, and introduce change as needed. Such management is what Urs E. Gattiker referred to in "Technology Management in Organizations", by stating ". . .how critical it is for today's organization to examine technology acquisition from a multi-disciplinary approach, looking at systems, contingency theory, human resources, and many other factors to ensure effectiveness". [11]

It is apparent from the advances in just the last few years that much can be accomplished with technology. In medical science, artificial body parts may soon replace transplants and open heart surgery seems almost routine. Automobiles routinely get gas mileage unthought of twenty years ago, while delivering excellent performance. Information technology can store data on small chips, that, in the past, required rooms to hold. There doesn't seem to be any limit to what can be done. There are, however, reasons to place limits on the use of technology.

As reported in the article, "Cyberpunks and the Constitution", it states "for four days in California's Silicon Valley, four hundred experts struggled to sort out the implications of applying late 18th century laws and legal principles to the fast-changing technologies of the later 20th century". [12] The article went on to pose the question, "How can privacy be ensured when computers record every phone call, cash withdrawal, and credit card transaction?". Another observation of the article's author was that ". . . the Supreme Court may be incapable of keeping up with the pace of technological change". This led to Harvard law professor Laurence Tribe proposing ". . .a 27th Amendment that would make the information-related freedoms guaranteed in the Bill of Rights fully applicable no matter what the technological method or medium by which that information is generated, stored or transmitted".

If police do not impose their own limits on the use of

technology, others will. The American Civil Liberties Union is an example of a group that constantly seeks to limit police activity when it senses an infringement of rights. When a local police department recently proposed setting up surveillance cameras near liquor stores and banks to help track robbery suspects, the ACLU warned that "if cameras were operated on a 24-hour basis, and photographed innocent people in addition to crime suspects, such a practice could violate privacy laws". [13] Another example of limits on technology came recently when the New Jersey State Legislature responded to citizens' complaints and banned the use of photo radar in their state.[14]

It is apparent police use of technology must be managed. Rights of citizens must be preserved, abilities of officers must not be channeled into a single dimension relying too heavily on technology, resources must be preserved so funds are available for more than just technological aids, and isolation from the community does not cause police officers to drift from their reason for being: protection and service to the people.

The Issue, and Sub-Issues, studied in the following pages are as follows:

Issue:

How Will Law Enforcement Manage the Impact of New Technology by the Year 2001?

Sub-Issues:

1. What technology will be available for law enforcement?
2. How will law enforcement officers be trained to effectively use technology?
3. What will the community expect of law enforcement, and its management of technology?

In developing the issue and sub-issues for this study, many tools were utilized. Besides the research of previously published works, interviews with police officers and managers, the author's twenty-five years of personal observations of law enforcement at two California police departments in various assignments and ranks, a Futures Wheel, and the assistance of several staff members of P.O.S.T., a continuing process was the collection of information for a Futures File.

For slightly less than two years, the author collected and filed information in a Futures File. This information was categorized using the STEEP process: Social, Technological, Economic, Environmental, and Political. The main source for the Futures File was periodicals. Several references in the endnotes of this project are a result of Futures File information. By paying particular attention to current periodicals, the information in the Futures File is usually more up-to-date than books and technical papers. Not only did this process assist in the research for this project, it also assures that information from as many sources as possible is available for the author's use.

Futures Study

This section describes the process by which the future of the issue was forecast. Several techniques were used: trends and events were developed and studied; cross-impacts of trends and events were forecast; scenarios developed; and policy formulated. The Future Study provides the basis for the effort described in the subsequent sections of this project; the Strategic Plan and the Transition Management Plan.

The study is the result of concerns about the impact of technology on delivery of law enforcement service to the community in the future. There are, as pointed out in the introduction, concerns about the ability of police departments to avoid isolating themselves from the people they serve because of the use of technology. This technological assistance may be needed because budgets may not allow departments to staff at current level. Other reasons for the increasing use of technology may be the sophistication of criminals, and the need to have technological assistance to accomplish tasks mandated by law, or from the community expectations. The study also addresses the need to adequately train and equip police officers so that technology is used wisely and legally.

METHODOLOGY

A panel of seven members was assembled to participate in a Nominal Group Technique (NGT) process. Each of the members was a management level administrator in either city government or a local police department. All had experience in directing the activities of groups of municipal employees, and with community involvement.

The members were:

Capt. C. Self	Buena Park Police Dept.
Capt. G. Hicken	Buena Park Police Dept.
Capt. G. Hernandez	Orange Police Dept.
Lt. R. Ciampa	Buena Park Police Dept.
Lt. T. Lucenti	Buena Park Police Dept.
Lt. A. Burks	Fullerton Police Dept.
Psychologist D. Truchon	City of Buena Park, Employee Assistance Prog. Director

During the NGT process, the NGT group developed trends and events applicable to the Issue and Sub-issues. Following the NGT, the participants made forecasts of each trend and event. Then a "Cross Impact Analysis" was made wherein the impact of the forecasted events, on other trends and events, was analyzed.

As a result of the above actions, information was available that allowed for the development of three alternative futures. A scenario was then written depicting each one of them. One of these futures was then selected, to which policy decisions were made and applied. This step focused on management of the issue: the reason for the project.

PHASE I

Selecting the Issue Question

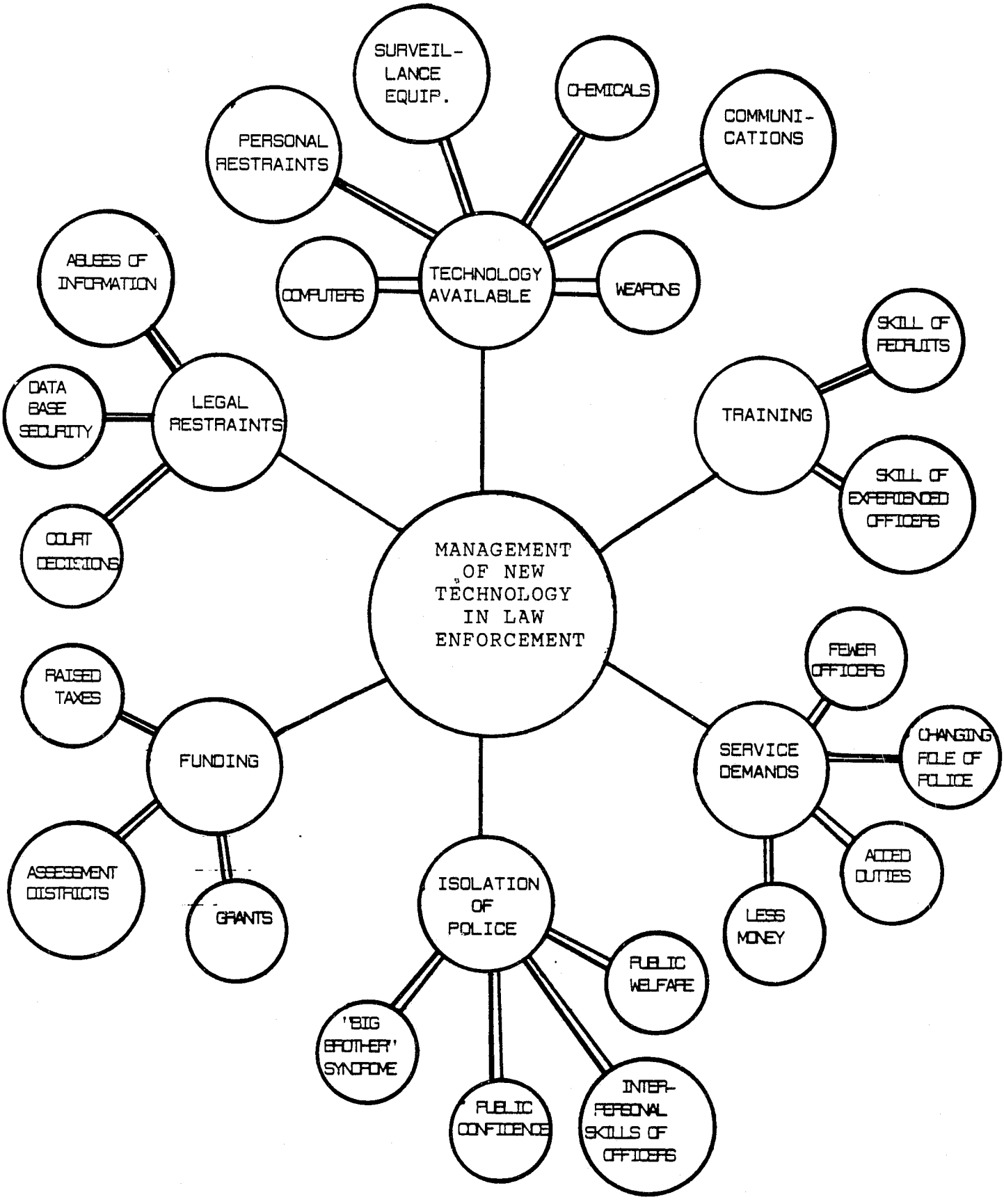
This particular Issue was selected because of an interest, and because of genuine concerns over possible consequences if attention is not given to the subject. There are, of course, many issues which might be interesting to study and discuss. This one was chosen because it reasonably appeared to be an issue which will have an impact upon municipal police departments, it could be influenced by external events and forces, and, most importantly, it could be affected by management.

Consultation with twenty police managers from agencies across the State helped shape the issues and sub-issues. A "futures wheel" was also employed in developing possible sub-issues. The futures wheel is shown on page 11. Finally, after further deliberation and consideration, the definitive statement of the "issue as a question", and the sub-issues were formulated as shown in the Introduction.

The Issue is, "How will law enforcement manage the impact of new technology by the year 2001?"

The three Sub-Issues are: (1) "What technology will be available for law enforcement?", (2) "How will law enforcement officers be trained to effectively use technology?", and (3) "What will be the community expectation of law enforcement?"

FUTURES WHEEL



Questionnaire

To gain expert opinions about the kind of new technology that might be available in 2001, a questionnaire was constructed and sent to ten people involved in the development of electronics technology. Hughes Electronics was selected because it is a company that is actively converting from defense to consumer products. General Motors owns Hughes which means that much of their capability will be devoted towards automotive adaption, and there is a large Hughes facility near the author. This would make it accessible for personal contact with the experts.

One point of contact was selected for the questionnaire, a Senior Engineer known to the author. That person distributed the questionnaire to the respondents. The package each respondent received contained the Issue and Sub-issues of this project, as well as basic ground rules governing their response. Personal information was requested, and then three new items of technology were asked to be described by the respondent.

Shortly after the questionnarie was distributed, a group of engineers in a section charged with transitioning from Navy products to consumer products, offered to exhibit and demonstrate some of their wares. The author, and two law enforcement executives met with the group for several hours. The tour and exhibit were interesting and informative. At the conclusion, a combined response to the questionnaire was received. This did not serve the purposes of the

questionnaire, but the forecasts of the new types of technology did pertain to the future, and could be used by police. No attempt was made to have the questionnarie re-done as the group response would contaminate any individual response made subsequently. See Appendix A for questionnaire package.

The questionnaire response, is shown below.

"What New Technology will be Available for California Police and Sheriff's by the Year 2001?"

1. New integrated Command and Control Systems.

   A standard will be set by all U.S. police agencies by which to communicate with each other as will a standard in dispatch/command and control. These systems will enable dispatch to have full command and control of its friendly forces throughout the city, county and state. Hughes' large screen displays, with tracks representing patrol cars, motorcycles, and other emergency vehicles, will be moving in "real-time" motion within a grid map of the city. Consolidated consoles will provide man machine interfaces for the different users, in house and in the field. Such consoles will have abilities such as remote minicams with Hughes night vision which will give a live feed of video back to dispatch when selected by the watch commander/field officer.

2. New high-tech design for police cars.

   General Motors may provide a cruiser from the factory with features tailored to the officer. Police officers in the field will have field tactical work stations available within the dash board. Such work stations will enable the officer to quickly get vehicle navigation presentatons which highlight the best route to use when responding to an emergency. This subsystem will be capable of communication, VLS, and minicam capabilities to an advanced multi-mission display work station in the PSAP (E911) which also

interfaces with the standard system described in Item #1. All reports and forms will be available on the dash display as well as a remote notebook. Pre-set forms within the database can then be filled in by the field officer when required via a flip out keyboard or the remote notebook.

3. New comprehensive data bases.

This system depends on data extrapolated from the two systems described in Items #1 and #2. Administrative officials can view items with discretion and maintain a day-to-day follow up system for all field work and case loads. Data from the field officer is directly relayed to the data base with a paper report available upon demand. From such data, reports, charts, and other statistical information can be obtained. Crime analysis can be performed routinely by categorically selecting options to view (example: Gang related crimes display will provide dots on the city map providing location of such crimes). Deductive manipulation can then be used to isolate troubled areas within the city and provide support as necessary.

Training for officers will be defined in the academy, although cadets will be more computer literate as grammar and high schools continue to progress with modern computing practices. Data bases from the system will be able to be replayed from history files for use in training students for practical use in the field.

Developing Trends and Events

The NGT Group assembled at the appointed time and location. The invitation letter is contained in Appendix B. A short overview of the process was given and the issue and sub-issues were presented. A flip chart, containing the issue and sub-issues, was posted so that the subject would be available to the group at all times. Group members were instructed to consider the issue and sub-issue as a "package". In keeping with that concept, reference herein to the issue is to be considered as including the sub-issues also.

First step in the process was to have each member individually list trends thought to impact the issue, now or in the future. These individual lists were then combined into one and written on a flip chart. The overall list was then discussed to assure that all members were clear about the meaning of the trends. Also, steps were taken to assure that all trends were expressed non-directionally.

The development of events was conducted in the same manner as for trends. A certain amount of learning was gained in the "trend" identification as evidenced by the added distinction between events as originally listed. Less combination of events was thought necessary by the group.

PHASE II

Selection of Trends and Events

The development of the top events list was completed after a first vote, group discussion and event combination, then a second vote. All nineteen original events are as follows:

1. City mandates response to in-progress or suspect on-scene calls only.
2. National recession signalled by 10% reduction in GNP.
3. Video monitors approved for traffic citations.
4. State mandates house arrest for misdemeanors.
5. POST mandates computer fluency for all officers.
6. State mandates electronic monitoring of all police contacts.
7. Local police agency hires civilian C.E.O. to replace police chief.
8. Supreme court outlaws asset forfeiture for police.
9. Local police agency eliminates mid-managers.
10. Voice activated, fuzzy logic, laptop computer marketed at under $5,000.
11. Legislation passed prohibiting any arrest without a warrant.
12. State police mandated as replacement for local agencies.
13. Local agency contracts for private service to operate jail, enforce parking, and to respond to burglar alarms.
14. POST mandates executive level computer literacy.
15. City goes bankrupt.
16. National Health Insurance instituted.
17. All county services billed to cities.
18. All schools privatized.

19. College degrees required to be re-certified yearly.

All twenty-nine original trends are as follows:

1. Reduced non-threatening contacts by officers.
2. Community involvement with police programs.
3. Community oriented policing programs.
4. Changes in technology.
5. Increasing crime rate and opportunities.
6. Changes in funding sources.
7. Changes in community expectations of police.
8. Legislative restraints.
9. Changes in criminal opportunities.
10. Impact of special interest groups.
11. Legislative mandates force reliance on technology.
12. Changing demographics.
13. Economy changes.
14. Increased job duties.
15. Change in educational requirements for police hiring.
16. Impact of foot beats.
17. Civilianization in police departments.
18. Cultural diversity in workplace and community.
19. Females in law enforcement.
20. Privatization of services.
21. Security of data base.
22. Impact of regionalization on police services.
23. Computer proliferation.
24. Court capacity and judicial dysfunction.

25. Changes in skills and qualifications to be a police officer.

26. Reduced State and Federal funds.

27. Impact of artificial intelligence.

28. Increased reliance on technology.

29. Infections/diseases.

Five events and trends were chosen for consideration in this study because of a natural "fall off" in the quantity of votes after five. This indicated that the panel would be considering the most significant events and trends with that quantity.

Individual voting then took place to rank the top trends. During the voting process, some trends were combined with others. This combination was the result of group members discussing and clarifying the trends, then concluding that similarities existed. At the conclusion of the voting process, the highest ranked trends were identified. These five were used in this study.

Twenty-nine individual trends were originally set forth by the group. The top five trends and events are as follows:

Events

(1) Nationwide recession signalled by a 10% reduction in Gross National Product.

The group understood this event to mean that the Gross National Product (GNP), which is the sum total of all goods and services produced in the United States, as measured by the U.S. Department of Commerce, would decline over a one-year period by 10%.

(2) Police response limited to "in-progress" or "suspect present" calls only.

This event is defined as essentially limiting police response to emergency calls, those where there is likelihood of injury or death from a crime being committed. All other calls would be handled by the citizen coming to the station or calling on the phone to report crimes to civilian personnel. Evidence gathering would be performed by civilian lab personnel.

(3) Computer fluency mandated by POST for all officers.

This means that all officers, including sergeants, would be required to be proficient enough in computer operation that all law enforcement teletype systems could be accessed, record checks on persons and vehicles could be successfully conducted, reports could be written on the word processing function, and that terminal-to-terminal commuinication could be conducted. The level of proficiency would be the same as for a police records clerk.

(4) Voice activated, fuzzy logic, laptop computer, marketed at under $5,000.

There are voice activated computers available now, and there are laptop computers now. Fuzzy logic is just being developed to allow computers to "think in shades of gray", to avoid so-called "black and white" decision making. When these technologies are joined, this event will occur.

(5) State mandated electronic monitoring of all police contacts.

For this event to take place, the State legislature will

have to pass a law mandating that all officers be equipped with an audio recording device that is in operation any time the officer talks to a person not employed in law enforcement.

Trends:

(1) Changes in technology.

This trend will happen as faster, smaller, more efficient technology is developed and introduced to the market place. The technology could be all new, or it could be refinement of existing technology, but it must be available for law enforcement.

(2) Changes in funding sources.

This trend means that funding sources will change, not necessarily get better, or that more money will be available, only that existing sources may not be what law enforcement uses in the future.

(3) Changes in community expectations of police.

The groups understood this trend to mean that more duties and different duties will be expected of law enforcement by the community as laws are passed, other government services are curtailed, people become more conscious of environmental polluters, and as evolving social structures change how people live and interact with each other. Increases in crime and the court's ability to handle offenders will also impact this issue.

(4) Impact of regionalization.

Combining separate agencies will cause this trend to occur. The group saw this trend as one resulting from reduced

funding causing local, state and federal agencies with similar missions to combine, at least partially.

(5) Changes in skills and qualifications to be a police officer.

This means that people will be needed who possess technical or specialized skills in law enforcement.

As technology changes, and society changes, the group expected that there will be a trend toward hiring people with education in the areas of technology, language, and social skills.

PHASE III

Trend Forecasting

A ratio scale was used by the members of the NGT Group to forecast the selected trends. A value of 100 was assigned to "today". Then estimates were made for what the trend was considered to be five years ago, relative to "today's" value. The same method was used to forecast the trend for five years from the present, and for ten years from now. Numerical values assigned to each of the forecasts use the 100 level of today as a baseline. The forecasts, then, represent each member's estimate of the level of change from the present. Results of the panel's efforts are shown on Table 1, "TREND EVALUATION", which presents the medians of the group's forecasts.

Forecasts for the five-year and ten-year points in the future were broken into two figures, nominal and normative. These are shown on Table 1, "TREND EVALUATION", as figures above and below the diagonal line respectively.

In making the nominal forecast, the panel was instructed to ask the question, "What do you think the trend level will be?". For the normative forecast, the instruction was, "What do you think the trend level should be?".

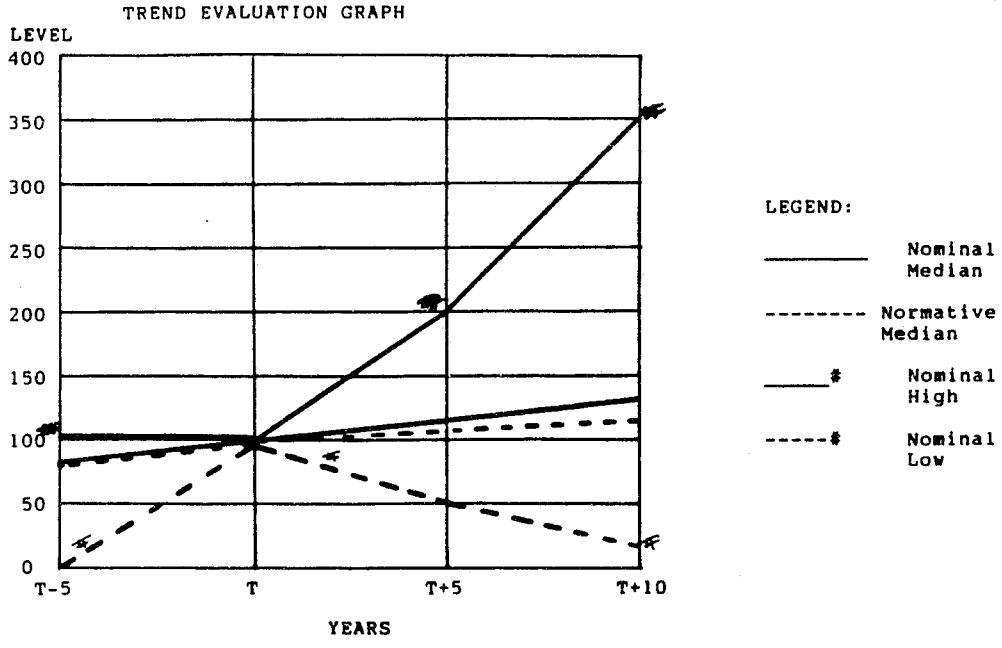
TABLE 1

TREND EVALUATION

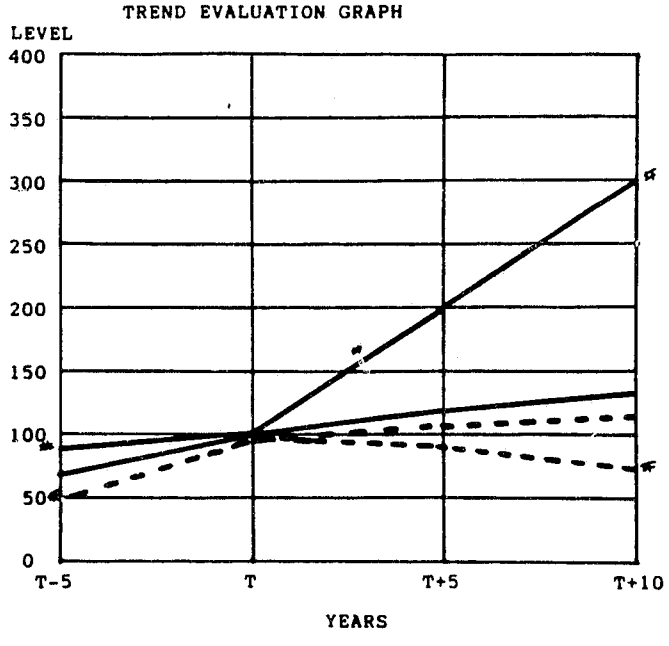
Trend No.	TREND STATEMENT (synopsized)	5 yrs ago	LEVEL OF THE TREND TODAY	5 yrs from now	10 yrs from now
1	Changes in technology	80	100	110 / 105	130 / 120
2	Changes in funding sources	70	100	120 / 110	130 / 120
3	Changes in community expectations of police	80	100	110 / 100	120 / 110
4	Impact of regionalization	60	100	130 / 110	150 / 120
5	Changes in skills & qualifications to be pol. off.	80	100	120 / 110	140 / 120

* N=7, panel medians

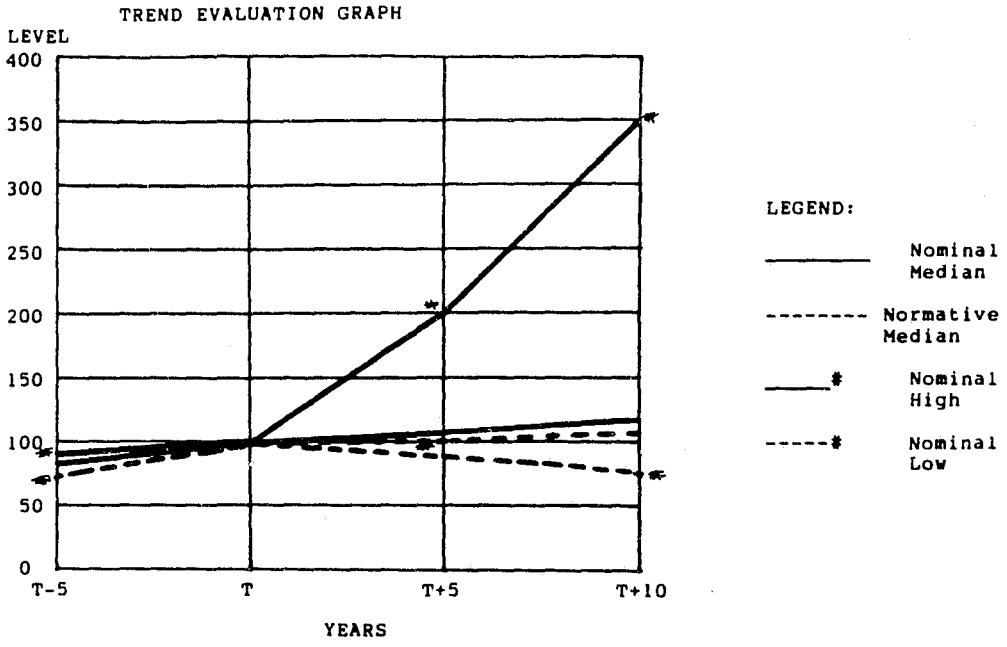
Graphs showing detail of the forecast of trends are on are on pages 24 through 26, following this section. Displays are included for the nominal high, low, and median, as well as the normative median for each of the trends shown above.



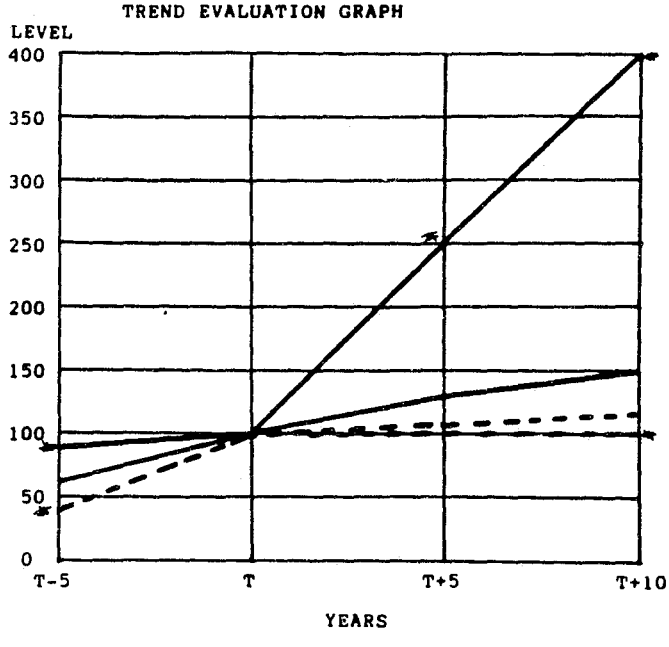
TREND 1-CHANGES IN TECHNOLOGY



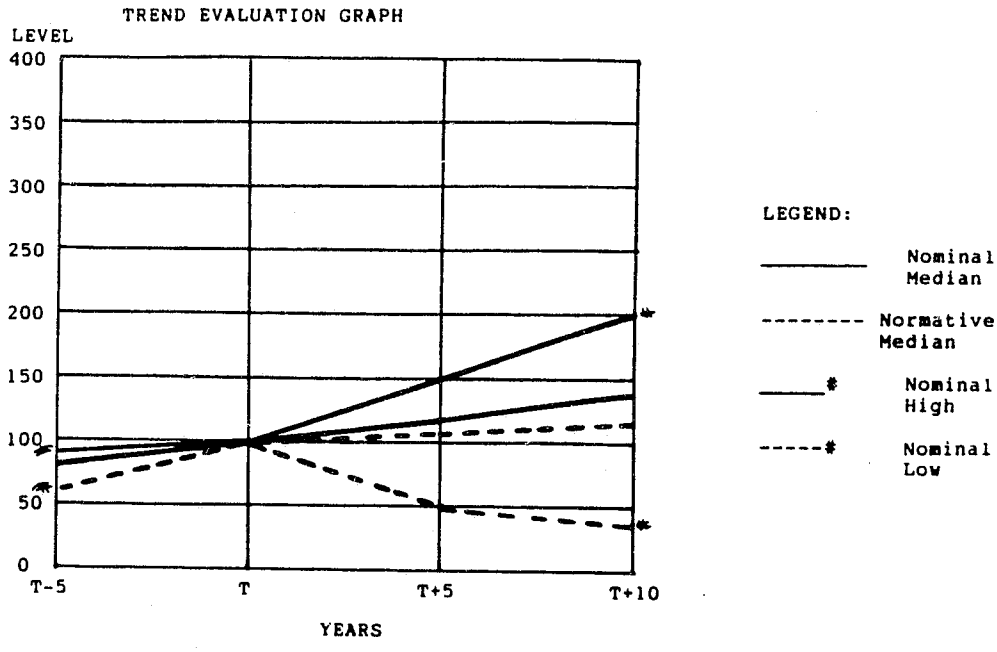
TREND 2-CHANGES IN FUNDING SOURCES



TREND 3-CHANGES IN COMMUNITY EXPECTATIONS OF POLICE



TREND 4-IMPACT OF REGIONALIZATION



TREND 5-CHANGES IN SKILLS
AND QUALIFICATIONS
TO BE POLICE OFFICER

The group analyzed what they believed were the reasons for their forecasts. Starting with the trend having the least amount of spread between nominal high and low; Trend 5, "Changes in Skills and Qualifications to be a Police Officer". The members were satisfied that they understood the Trend and agreed it is an area not expected to rapidly change because of the interaction of schools, courts and affirmative action programs, the inability to control pay and other factors necessary to attract a "new breed" of candidates, and the expectations of society. This led to discussion of Trend 3, "Changes in Community Expectations of Police". There is a significant variation herein between the nominal high and low. The group's consensus was that the trend is impacted greatly by the possibility of major changes in demographics, social values, and community needs. Each panelist saw these factors quite differently from other panel members.

Overall, Trend 1, "Changes in Technology", had the widest range between nominal high and low. Adding to this is the fact that it was also the trend with the biggest divergence in the estimates of what level the trend was five years ago. Those members of the panel who felt that the trend was very low in the past based this upon their feeling that tremendous technological changes have occurred recently. These members also felt that the changes to be expected in the next ten years will be volatile, to say the least. Trends 2 and 4, dealing with changes in the economy and

regionalization, respectively, appear similar as to their estimates five years ago. The trends are dissimilar in the future, however, with group members expecting an increase in regionalization, ranging as high as 4 times what is seen now. The economy, as it may impact Trend 2, caused a range of forecasts from a downturn to an upturn. Changes in federal and state funding also significantly affected the forecasts for this trend.

Event Forecasting

The group was instructed to consider the five (5) Events previously identified, and forecast the future of each. The members were told to identify the number of years, or portions of years (expressed in decimals), that it would take for each event to have a probability more than 0. Following that, the panelists were instructed to forecast the probability for each event occurring five years from now, and ten years from now. The forecast is expressed as a percentage with 0% being a forecast that the event probably would not happen, and 100% that the event would take place.

In addition to the probability forecast, each group member was required to estimate the impact of the event on the issue, both positively and negatively. Using a scale of 1 to 10, each individual forecast the positive and negative impact of each event, 1 being the lowest impact, 10 being highest. The results of the group's efforts are shown in Table 2, "EVENT EVALUATION". The figures shown represent the median of the group's estimations.

TABLE 2

EVENT EVALUATION

Event No.	Event Statement (synopsized)	Years until probability first exceeds zero	Probability 0-100% 5 yrs from now	Probability 0-100% 10 yrs from now	Impact on issue if the event occurred 0-10 scale + POS	Impact on issue if the event occurred 0-10 scale - NEG
1	Nat'l. Recession signalled by 10% reduction in GNP	2	60	50	2	9
2	Respond to "in-progress" only	4	50	75	3	6
3	POST mandated computer fluency for all officers	4	20	75	9	2
4	Voice activated, fuzzy logic computer under $5,000	4	30	60	9	4
5	State mandated elec.monitoring of all pol.contents	3	40	70	7	7

Panel **Medians**, N = 7

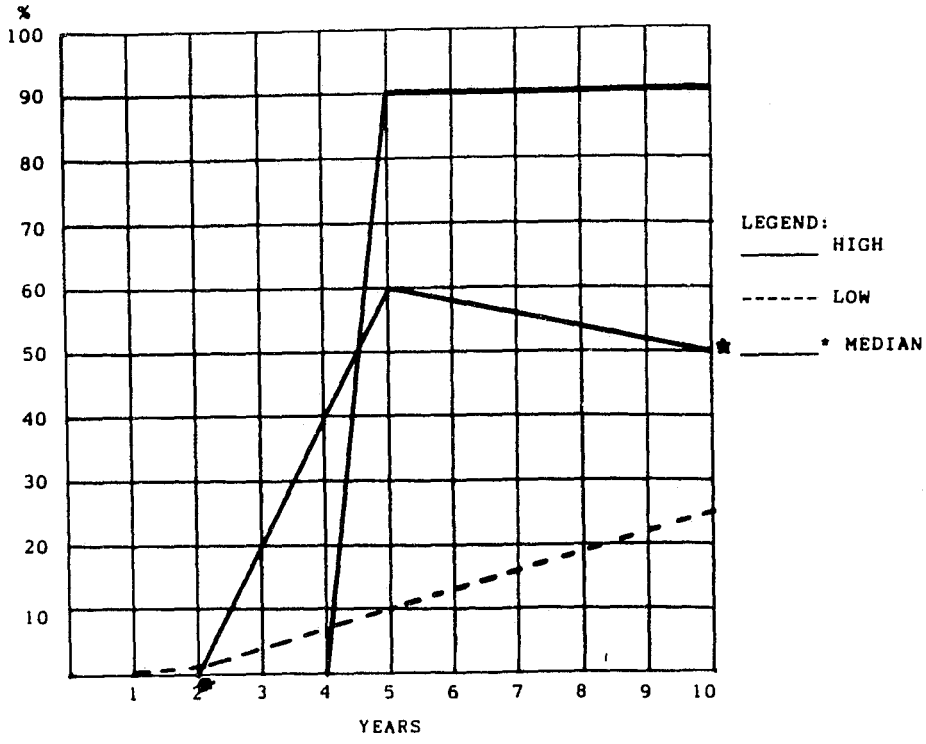
After the figures for Table 2 were developed, the group discussed their forecasts, particularly those where there was a wide range. The "National Recession Signalled by a 10% Reduction in GNP", Event No. 1, presented some difficult decisions to panelists. As one member stated, "We know we're in a recession, we know we're going to stay in one, but how bad is it going to be and how significantly will it affect the issue?".

Examining the results for Event 2, "Police Response Limited To 'In Progress' or 'Suspect Present' Calls Only", shows that most panelists forecast close to the median. Looking at the graph for this event, shown on page 31, it would appear that there was significant disagreement within the group, but the high and low represent only two panelists out of seven.

The panel agreed on the forecast for Event 3, "Computer Fluency Mandated by POST for All Officers", but had diverse opinions regarding Event 4, "Voice Activated, Fuzzy Logic, Lap-Top Computer Marketed at under $5,000". Range of the forecast reflects the panelists' opinions as to when this technology would appear, and be affordable.

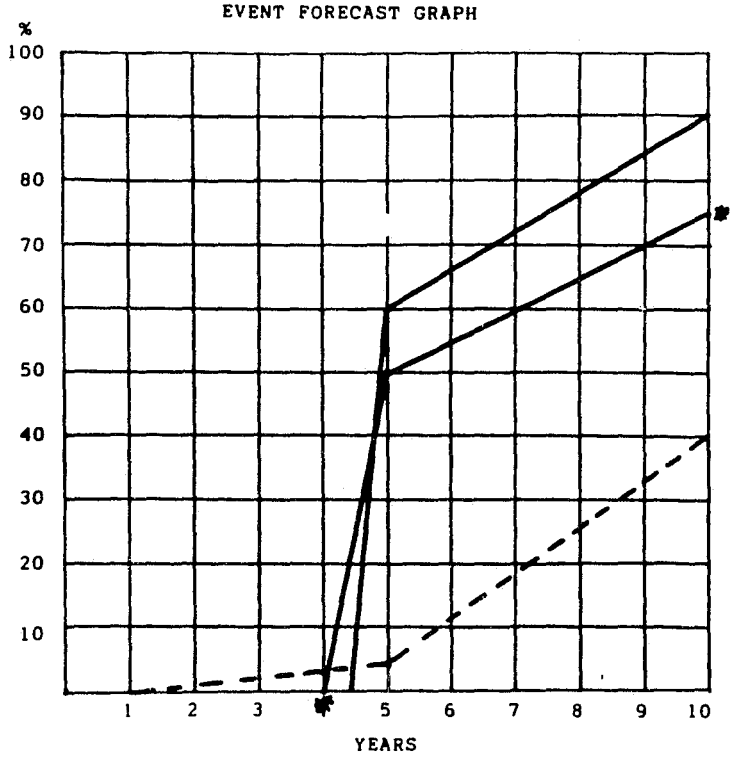
Forecasts for Event 5, "State Mandated Electronic Monitoring of All Police Contacts"; range from 50 to 90 at the ten-year mark, indicating that the panel felt there was a high probability of this event taking place at the end of our study time frame. Graphs of the Event Forecasts follow on pages 31 through 33.

EVENT FORECAST GRAPH

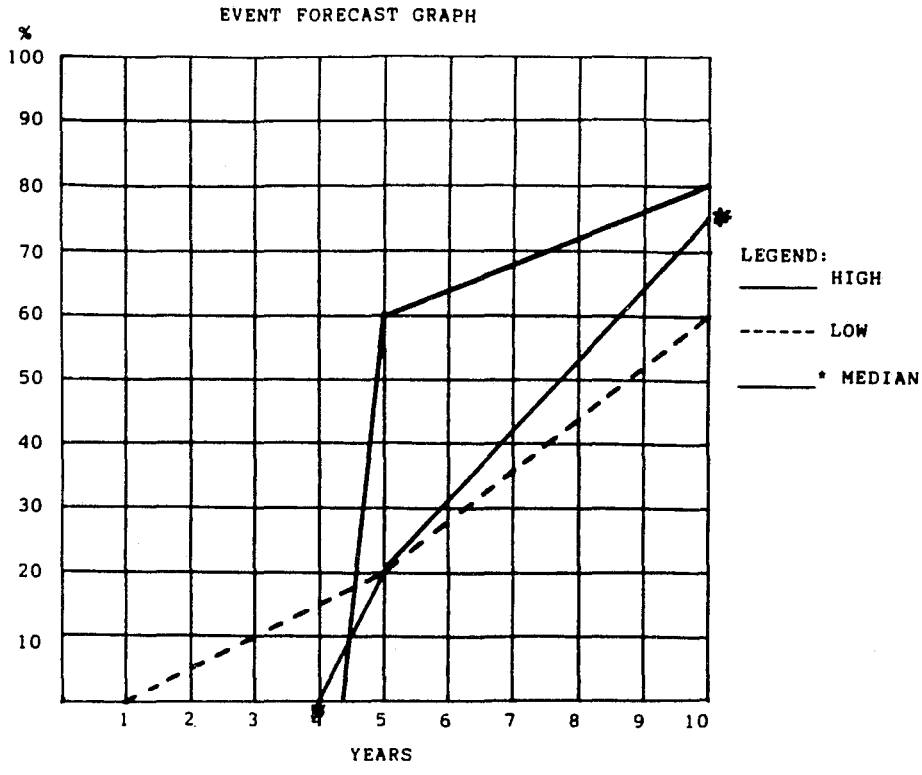


EVENT 1-NATIONWIDE RECESSION
SIGNALLED BY 10%
REDUCTION IN GNP

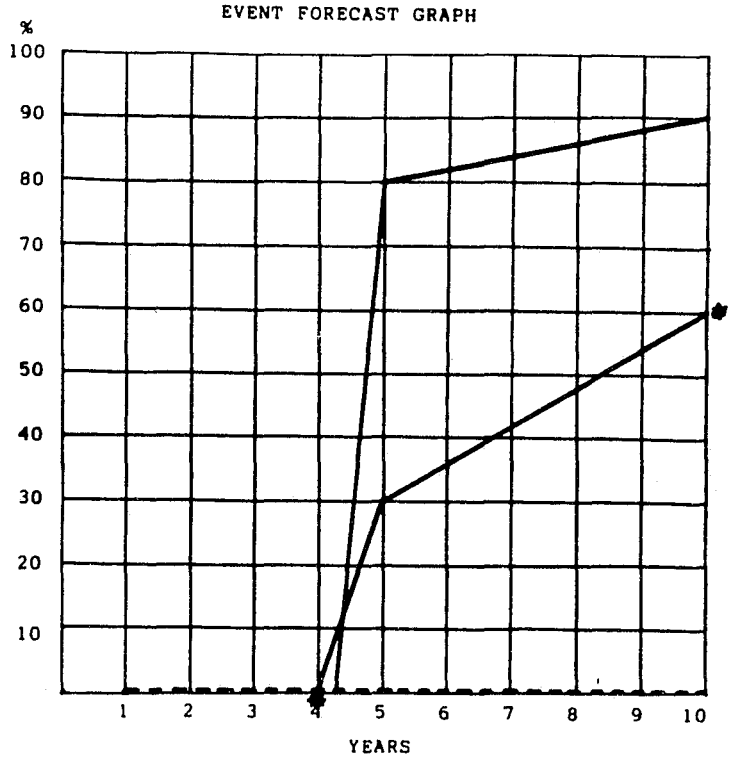
EVENT FORECAST GRAPH



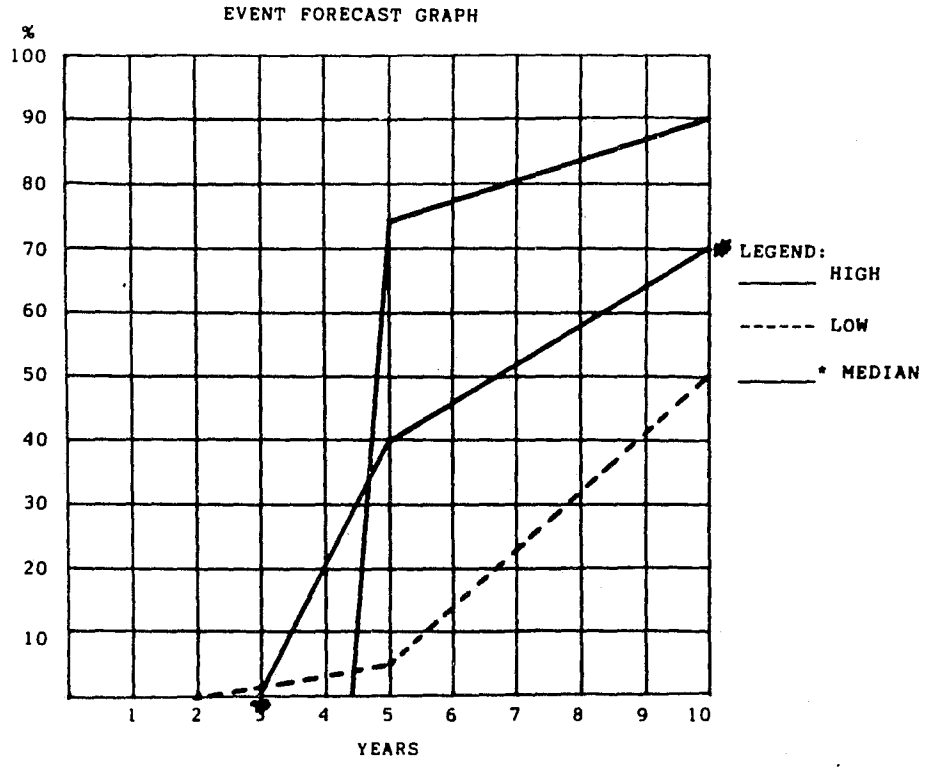
EVENT 2-POLICE RESPONSE LIMITED
TO "IN PROGRESS" OR
"SUSPECT PRESENT" CALLS



EVENT 3-COMPUTER FLUENCY
MANDATED BY POST
FOR ALL OFFICERS



EVENT 4-VOICE ACTIVATED, FUZZY
LOGIC, LAPTOP COMPUTER
MARKETED AT UNDER $5000



EVENT 5-STATE MANDATED
ELECTRONIC
MONITORING OF ALL
POLICE CONTACTS

PHASE IV

Cross-Impact Analysis

A short time after the efforts described in the previous section, three members of the panel (C. Self, R. Ciampa, and T. Lucenti) reconvened to conduct a cross-impact analysis. This process evaluates the impact that events have upon each other and upon trends, should they actually take place. Using the original forecasts, the cross-impact group estimates the change from the original, expressed as a percentage. A second set of forecasts is made to estimate the number of years until the maximum impact of each event would be felt, if the event were to occur. Results of the cross-impact analysis are shown on Table 3. Figures represent medians of the individual forecasts from members of the group. These forecasts are based upon the ten-year normal forecast done previously.

At the far right of Table 3 is a column entitled "IMPACT" TOTALS. Numbers in that column show the impact that each event has upon other events and trends. The highest number denotes the event that has the most impact.

A row at the bottom of the display of numbers in Table 3, is entitled, "IMPACTED" TOTALS. Figures in this row represent the events or trends that are affected the most by forecasted events.

Review of Table 3 shows that the most significant "actor" event is E1, "National Recession". The event most "acted upon" is E5, "State mandates electronic monitoring of

all police contacts". Three Trends, T1, T3, and T5, were all affected to the same degree. Impacts ranged from 4 to 8, showing that the events will affect each other, and the trends, significantly. Impacted events and trends varied from 1 to 4, showing that the affects will not be felt evenly by all.

TABLE 3

CROSS IMPACT EVALUATION
MATRIX

Panel Medians	Maximum impact (% change +or-) Years to MAXIMUM									"IMPACT" TOTALS
**	E1	E2	E3	E4	E5	T1	T2	T3	T4	T5	
E1	0	+20 2	-10 4	0	+10 3	-20 3	+30 2	+20 3	+50 2	+10 4	8
E2	+30 2	0	0	0	+20 3	0	+20 2	+10 2	0	0	4
E3	0	0	0	+10 2	+20 3	+10 3	0	0	0	+40 2	4
E4	0	0	+20 5	0	+20 5	+10 5	+20 2	+10 3	0	+60 5	6
E5	0	0	+10 3	+10 4	0	+20 3	0	+30 2	0	+10 2	5
"IMPACTED" TOTALS"											
	E1	E2	E3	E4	E5	T1	T2	T3	T4	T5	
	1	1	3	2	4	4	3	4	1	4	

** LEGEND

E1 - Nationwide recession signalled by 10% reduction in GNP
E2 - Police response limited to " in-progress" or "suspect present" calls
E3 - POST mandates computer fluency for all officers
E4 - Voice activated, fuzzy logic, laptop computer marketed at under $5,000.
E5 - State mandates electronic monitoring of all police contacts

T1 - Changes in technology
T2 - Changes in funding sources
T3 - Changes in community expectations of police
T4 - Impact of regionalization
T5 - Changes in skills and qualifications to be police officer

PHASE V

Scenario Development

All of the efforts described in the preceding pages led to the development of three scenarios, depicting three possible futures. If nothing occurs to alter the present course of the issue, one may see what is described in the "Nominal Scenario". If action is taken to manage the issue, one may see the "Normative Scenario", which could be a desirable future. The "Hypothetical Scenario" is that which could occur if the worst case events took place.

All of the scenarios reflect the experiences over the next ten years of a police manager (Captain), in a medium-sized municipal police department in southern California. The scenarios are constructed as if it is the year 2001.

"Nominal Scenario"

> The national recession has lasted for five years. Even though its effects are declining, this has caused hiring freezes and layoffs. As a result, the workforce level in the police department is the same as it was in the early 1990's. Funds now are sought in various ways, including user fees and grants from private institutions such as major corporations.
>
> Police departments make extensive use of technology to save manpower and to continue to at

least report crime, even if they are unable to suppress it. Unfortunatey, even though citizens get a response when they call, officers with personal laptop computers taking a report seem to serve only the insurance companies. The fuzzy logic in these computers that was supposed to assist in apprehension of the criminals is seldom used because the officer is so busy just taking reports.

Many of the officers are more skilled in technology than in "person-to-person" skills and are reluctant to deal with criminals on the street, particularly since all contacts are mandated by the state to be recorded.

Technology does have its advantages, however. New techniques for gathering evidence, link analysis, and suspect identification are tools that allow officers to solve many crimes. When the officers have time, they hunt for the suspect. When these cases to go court, they usually result in conviction. However, because of the inability to finance needed prisons, most criminals don't serve time. They are allowed to stay at home with electronic monitors. A joint powers authority was recently formed that combines duties of police, sheriffs, and corrections officers. Thus, when a prisoner's

electronic monitor indicates he has violated the terms of his imprisonment, the police are sent to locate the offender. This further restricts the ability of local police to serve their community.

Citizen groups have formed to present their demands to the city council for more people-to-people contact by the police. Street crime continues to be a problem, but one of the more exasperating issues is the isolation of the police from the community. An example of this is that all persons requesting to file a residential burglary report, must first fax their loss information to a dispatcher so it can be determined if the police department policy allows for sending an evidence technician to the scene of the crime. Workload is too high to send people to crimes where the suspect is not present, or no crime is in progress.

"Normative Scenario"

Even though the impacts of the national recession have continued for five years, funds have been garnered from user fees, subscriptions by local residents and businesses, and expanded use of asset forfeiture. While the temptation to buy flashy cars and computers is always present, the local department has only invested in

technology that helps officers on foot or in cars. Officers are typically equipped with cellular phones, audio recording devices mandated to be activated during all citizen contacts, small electro-mechanical restraint systems, and voice activated laptop computers utilizing fuzzy logic.

As officers have retired, most replacements have come from the ranks of minorities and women because of concerted efforts by the department to recruit them from the local community. Many of these new officers were identified as candidates when they were teenagers, and the department prompted them to stay in school, take job-related courses, achieve computer fluency, and to participate in police-sponsored youth groups. Once hired as officers, these young people have been successful in developing trust and confidence within the community. No major civil disturbances, or officer assaults have taken place in the city for over five years. This has taken place even with the shared responsibility for policing resulting from a joint powers agreement with the sheriff's department, highway patrol, and two other adjoining police departments.

Over the last ten years, policies have been

developed, with the aid of citizen groups, that allow for prioritizing calls for service to keep the officers serving the community. Citizens volunteer their time to take numerous types of reports not requiring follow-up investigation. This provides increases in citizen involvement with the police and with each other, as well as freeing up the officers to respond to emergency calls where a crime is in-progress or the suspect is present.

The community recently approved a bond issue to give a pay raise to the officers, but it also included specific requirements as to the level of service expected from the police. As the leader of one civic group supporting the measure said, "We don't mind approving a pay raise because our officers work hard and protect us."

"Hypothetical Scenario"

Because of the recession, and the failure of the city council to seek new funding sources, the department lacks enough officers to respond to all calls for service. There is, therefore, a policy of sending officers only to those calls where violence is involved and the suspect is still present. Paramedics only are sent if the crime is over. Police some times are able to

talk to the victim at the hospital on the same day as the crime. Violent crime has increased each year for last five years. Because of the lack of manpower in the police department, the chances of getting caught are not very high, and the subsequent chances of going to jail are even less. Several attempts have been made to combine agencies but political considerations as to "who gets to be in charge" have interferred with these moves.

Major commitment to "high-tech" devices was made a few years ago by the police department. Officers now patrol in van-type vehicles equipped with voice activated, fuzzy-logic laptop computers, modems, fax's, phones, multi-channel radios and video screens. Reports are taken and electronically filed without ever being put on paper. This is a highly efficient system, but when asked if the officers spend much time walking around in their beat, the chief said, "We can't have our cops parking a million dollar vehicle unattended in the kind of neighborhoods we have in this city!"

Officers are generally recruited from vocational schools where they have developed computer fluency with regard to word processing and information query. Most have had very little

chance to deal with people one-on-one and many of them admit the idea frightens them somewhat, particularly since all contacts are required by law to be electronically recorded.

Citizen groups have formed to call for change in police involvement in the community. Officers are called before citizen review committees to review the citizen contacts. Tapes of the contacts are available to anyone who asks. The three citizen review boards have recommended discipline for 150 officers in the past six months, 20 of whom were fired. Three major civil disturbances occurred during that six-month period, and twelve officer-involved shootings took place.

PHASE VI

Policy Statements

In order to achieve a desired future, there must be action taken to move toward that future and also to mitigate the effect of an undesired future. Before developing statements of policy, one scenario must be selected so that an assessment can later be made as to the impact of the policies. Since it is advantageous to have the desired future, the Normative Scenario (which allows for the desired future) is the one chosen for which policy statements are to be written.

Policy 1 Community Oriented Policing

To provide for continued citizen involvement in law enforcement, establish the program formally, develop it in partnership with the community. Incorporate the program into the department Mission Statement. Assign officers to neighborhoods for extended periods of time, establish dedicated areas where foot patrols are permanent.

Policy 2 Recruitment, Retention, Training

To assure the workforce does not become so technically oriented that the officers isolate themselves from the community, establish psychological profiles to enable selection of officers with a high degree of interpersonal skills. Select officers based upon the profile. Establish local groups for purposes of encouraging

education and social interaction among young people in the community to promote interest in police careers.

Policy 3 Equipment

Purchase technology that can be adapted to foot beats. Form citizen/supplier committee to promote the design of equipment for foot beat officers, and to suggest ways of financing it by community support. Establish liaison with courts and citizen groups to assure legality of data base and security of information therein.

Strategic Plan

The task here is to prepare a strategic plan, and to prepare for its implementation, in order to move the organization toward the future. The Nominal Scenario will be used as that represents the future of the issue that is most desirable. To apply this scenario to as realistic a setting as possible, the Buena Park Police Department is selected. This allows for dealing with an actual organization, with real problems, real possibilities for solving problems, and a real community being served. The researcher is a member of the management team of the Buena Park Police Department.

The mission statement for this police department is shown below. It is a Macro Mission Statement for this study that originated with the actual Mission Statement of the department.

THE MACRO MISSION STATEMENT

> The Buena Park Police Department is committed to serving the members of our community in a manner responsive to their needs, while protecting and preserving available resources. We will be accessible to community members, open in communication, and effective in our action. Our personnel will be trained and equipped in the most efficient and up-to-date manner possible and affordable, so that service will be delivered quickly, competently, and without favor.

THE MICRO MISSION STATEMENT

> The people we serve, and the people in our department will always represent the reason the Buena Park Police Department exists. Skills, techniques, and resources will always be directed towards the needs of the people.

These statements provide the basis for the work reported in this document. Effort described herein leads to the selection of strategies to accomplish the mission, and plans for the implementation of that strategy through analysis of stakeholders, the environment, and the negotiation necessary to gain support for the strategy in the organization.

SITUATIONAL ANALYSIS

Using the trends and events from the first phase of this project, an assessment was made of the threats and opportunities in the various enviroments surrounding the police department.

Social Environment

Threats: demands for increased service, and more sophisticated crime/criminals, will occur in the face of reduced funding. Rapidly changing demographics will cause the Department

to lag in responding to the differing community needs.

Opportunities: efforts by the Department to increase responsiveness will be met favorably, even if extra cost may be involved. It is also likely that the future labor pool will more closely mirror the community as second generation citizens become interested in joining the police service.

Political Environment

Threats: legislation to restrict police activity frustrates police and citizens alike. Examples of restrictions are: no arrests without warrants, pursuits of all criminals forbidden, and additional limits on use of force.

Legislation will also give additional tasks to local police without attendant funds. Self-serving politicians and self-appointed "community leaders" will cause various groups to polarize, thereby causing conflicts along racial, religious, or economic lines. This will drain police resources and break down community spirit.

Opportunities: Proposition 13 declared unconstitutional thereby increasing opportunities for funding. Also, state mandated training results in people in the job pool having high level of skill in advanced technology and computers.

Technological Environment

Threats: the cost of technology could prevent local police departments from acquiring it. Of great importance to the overall issue is that officers become too dependent on technological aids and lose, or avoid, the skills and ability necessary to deal effectively with people on a personal basis.

Criminals could also become adept at computer use and access law enforcement's data base. Officers may also incorrectly apply computerized data.

Opportunities: Continual advances in technology will make it more affordable and applicable to police work. Technology will ease and assist our jobs, and the workforce we expect to hire from in the future will probably be skilled in using computers and other advanced devices.

Economic Environment

Threats: less funds available for law enforcement in the face of an overall decline in the economy. There will also be more attention paid to what law enforcement is spending money on and many citizens will be critical of so-called "luxury" items such as computers for cops.

Opportunities: we will learn that the cost of technology will be less than the cost of working without it. This will help us justify acquiring it judiciously. Law enforcement will become the major market for advanced technology, replacing the military, thereby giving us a bigger say in cost, applications, and design.

Organization Capability

This agency is staffed by approximately 100 sworn officers, and about half that number of civilian personnel. The community is made up of 70,000 residents and many more who come to the area daily because of tourism and commerce. Training within the agency is a high priority. There is a full time Training Bureau, and the entire department is subject to formal training on seven to nine full days a year. This is obviously a strength, with a

commitment to training from the "top down" in the organization.

Management and supervision emphasize service to people more than they insist upon adherence to arbitrary rules. All officers are expected to act independently and decisively. They are not "over supervised". This is another strength and has resulted in officers of this agency acting professionally.

There is a high level of experience among field officers. This can be a strong point in that the officers understand their jobs well, but could be a drawback because they may be resistant to changes resulting from new technology. Fortunately, there are also many less experienced officers who are adept at using electronic technology and who will not resist its introduction. Unfortunately, these officers may not be as proficient at person-to-person skills as the more senior officers.

There is negligible fear present in the organization. People working there trust each other and supervisors enough to try new ideas, suggest new ways of doing things, and to make honest mistakes. Discipline is fair and is meted out on a progressive basis. There are no conflicts with the community at present and the community is not represented by activist groups.

This is an organization prepared to change. The chief has only been with the agency for two years, many of the managers have been in their positions less than five years, and new ideas abound. Much of the change has been the result of suggestions from the rank and file.

If there are weaknesses within the organization, they stem from budget concerns and the potential for conflict with other city departments.

As with any government agency, funds are critical. It will not be feasible to expect much growth in budget for the next few years. Use of funds for technology will require that a value trade off be demonstrated. New equipment and techniques will be allowed if it can be shown that the technology will result in cost savings, or at least an avoidance of future cost increases.

Since the law allows for use of asset forfeiture funds to increase and enhance law enforcement resources, it is reasonable to expect a major portion of funding for new law enforcement technology will come from such funds. Asset forfeiture funds, however, are threatened by state lawmakers who see this as a great source of revenue available to them with a change in the law. Should drug money forfeitures be diverted in the future, acquisition of technology may be affected.

STAKEHOLDER ANALYSIS

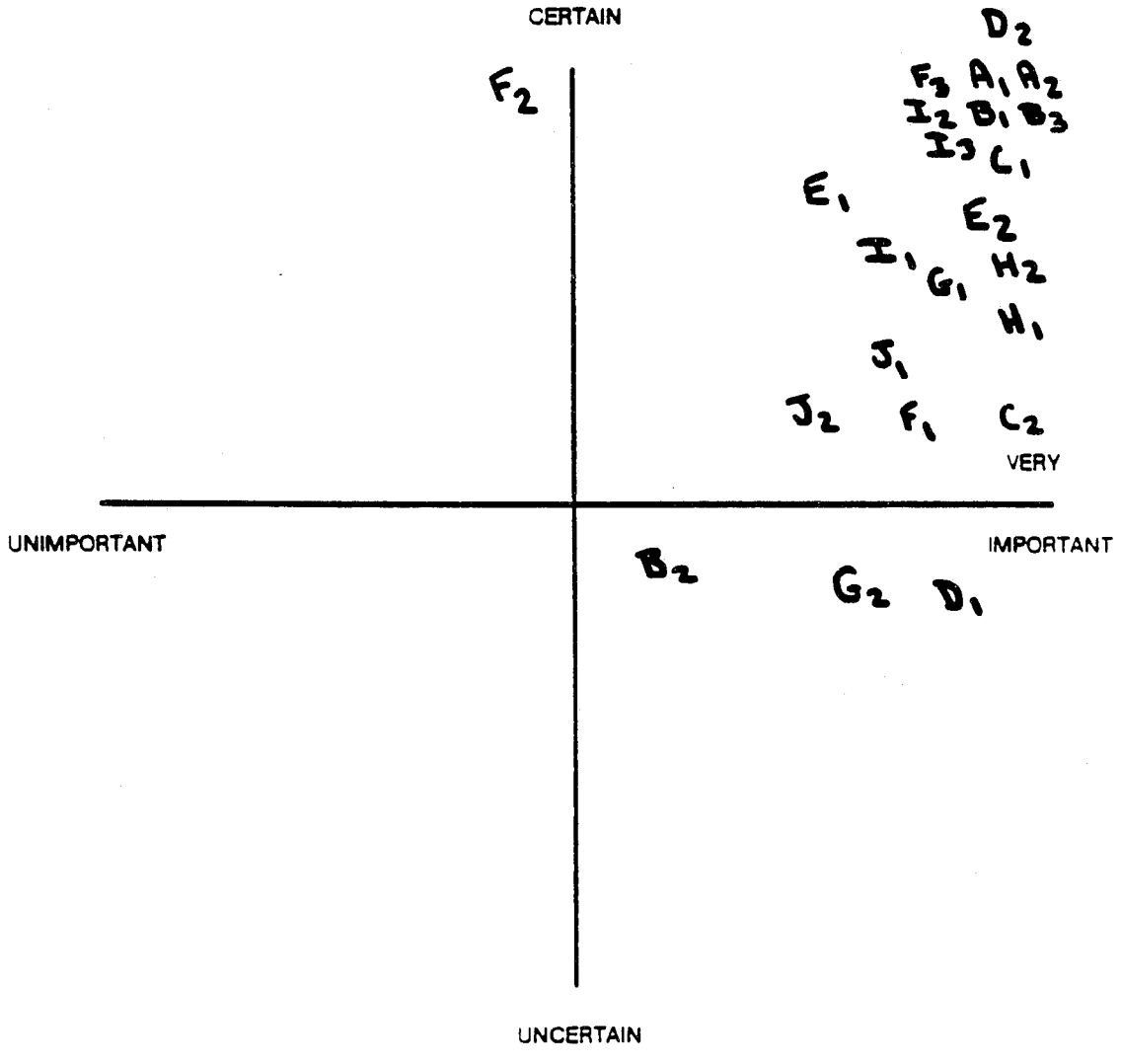
Stakeholder	Assumptions
A. Police Managers	1. Much of the available technology is not necessary for police work. 2. Officers must be trained to avoid over-reliance on technology.
B. American Civil Liberties Union (ACLU)	1. Will monitor police closely for abuse of data available in advanced technology. 2. Will support technology that increases humane treatment of arrestees and others subject to physical contact by police. 3. Will object to "Big Brother" type of technology.
C. Patrol Officers	1. Will be in favor of having much of the latest technological assistance in their jobs. 2. Rely on technology rather than personal skills in doing their job.
D. Local Citizens	1. Believe that their officers should have the latest and most effective tools to serve the community. 2. Don't want tax increase to fund new technology.
E. City Council	1. Doesn't understand why police always need the newest "toys". 2. Won't want to fund unless thoroughly convinced the technology is essential.
F. City Manager	1. Technology adds unnecessarily to the cost of police operations. 2. Other city departments resent extra funding for police "toys". 3. Will support a policy to manage technology.

Stakeholder	Assumptions
G. State Legislature	1. Will enact laws to safeguard and restrict many technological devices in police hands. 2. Fund research and acquisition of technology for police.
H. Courts	1. Will monitor cases for use and abuse of technological devices to assure no conflict with citizen rights. 2. Will rule on limits of police use of technology.
I. Chief of Police	1. Support acquisition of technology if it's proved necessary and effective. 2. If it's implemented, it must be used correctly or eliminated. 3. Policy to manage technology is necessary.
J. City Computer Programmers. (snaildarter)	1. Will want to control purchase and acquisition of police department computers. 2. Police department interfering in our assigned jobs.

Assumption map of all the above stakeholders, and each assumption, is included as Table 4.

TABLE 4

STRATEGIC ASSUMPTION SURFACING TECHNIQUE
(SAST)



Legend

A.	Police Managers	F.	City Manager
B.	Am. Civil Liberties Union	G.	State Legislature
C.	Patrol Officers	H.	Courts
D.	Local Citizens	I.	Chief of Police
E.	City Council	J.	City Computer Programmers

Stakeholders plotted according to their importance to the issue, and degree of certainty attached to assumptions about each.

DEVELOPING ALTERNATIVE STRATEGIES

Seven experienced police managers came together in a Modified Policy Delphi process. As a result, eight alternative strategies were developed. That list, and the panel members' names, are shown as follows:

1. Develop a policy to establish criteria for technology acquisition consistent with mission statement.
2. Develop program to familiarize employees with value of futuristic technology and how it facilitates the job.
3. Reaffirm that the employee is the most valuable component in the workplace, and is not to be replaced by technology.
4. Interface with industry to provide steering and input on technological needs of law enforcement.
5. Seek public and private funding and equipment sources.
6. Establish standardized skill levels for current and future employees.
7. Establish city-wide technological improvement committee.
8. Develop on-going training program.

Modified Policy Delphi Panel Members

Capt. Gene Hernandez
Lt. Al Burks
Lt. R. Ciampa
Lt. Bob Harrison
Lt. Dennis Hegwood
Lt. Tony Kelly
Lt. Pat Rodgers

The following is a synopsis of the panel members' discussion of each strategy:

Strategy 1-

"Develop a policy to establish criteria for technology acquisition consistent with the mission statement."

A formal policy provides a needed guideline for the future.

All employees can see where the department is headed. Long term budgets can be made, as well as future training plans. A drawback to this policy is that if the policy is made too restrictive, or lacks flexibility for the future, there could be a problem if a very desirable technology becomes available and the policy prevents the department from acquiring it.

A benefit is that stakeholders would perceive this strategy as offering them a chance to know what's planned for the future, and they would want to be involved in the formulation of the policy. As described in Technology Management in Organizations, "the cultural approach also requires a look at the social comparison process and workers' subsequent acceptance or resistance towards technology acquisition in the workplace". [15]

Strategy 2-

"Develop program to familiarize employees with value of futuristic technology and how it facilitates the job."

By bringing new devices into the workplace for familiarization, the employees are involved. This is particularly valuable for those employees who are inexperienced with technology, or reluctant to use it. If the devices are eventually incorporated into the department, this strategy should help to avoid the feeling of some employees that things are forced on them by management.

Strategy 3-

"Formally reaffirm that the employee is the most valuable component in the workplace, and is not to be replaced by

technology."

This strategy directly confronts the fears of some employees that they will be replaced by technology, or that people with higher skill level will take their jobs. It also formalizes the department's commitment to the employee. A negative aspect is that this strategy could cause problems by bringing up a subject not previously thought of by many. Some police department personnel are alienated from technology by the lack of ability to use it, or by their preference for other skills in accomplishing the job. Overall, however, it is believed that this strategy would be seen by the stakeholders as honest, direct, and reinforcing the credibility of management. In his book, Technology Management in Organizations, Urs E. Gattiker expressed thoughts similar to this strategy in stating, ". . .the need for a treatment of technological innovation from a human resource perspective by giving priority to contingency, cultural, and social rather than technical aspects of the subject". [16]

Strategy 4-

"Interface with industry to provide steering and input on technological needs of law enforcement."

By becoming involved early in the product cycle, law enforcement can influence the design, application, cost, and packaging of new devices so that new technology is aimed at its end user, the officer. Unless this happens, industry may miss the mark, law enforcement won't have the most efficient new devices possible, and technology will be a burden instead of

an asset.

Strategy 5-

"Seek public and private funding and equipment sources."

Through the use of innovative funding and equipment sources, law enforcement can accomplish its goal without adding to the taxpayer's burden. User fees for specific services, subscription fees from local residents, similar to those that paramedics now have, and cost recovery from those responsible for law enforcement emergency response are examples of funding sources. Equipment is often available from industry and the Federal Government, and is expected to be even more so in the future as defense surpluses result from down-sizing the military.

Strategy 6-

"Establish standarized skill levels for current and future employees."

In the future, it will not be possible to assume that employees know how to use word processors, computers, sophisticated weaponry, electronic surveillance gear, and other advanced technology just because they have graduated from school and the police academy. It will be necessary to establish skill and proficiency levels for all employees so that the expensive devices that law enforcement must use will be used properly and efficiently.

Strategy 7-

"Establish a city-wide technological improvement committee."

This alternative spreads responsibility for deciding on future technology for the police department. The advantage is that it uses the knowledge and expertise of people from various backgrounds to help make informed decisions. The disadvantage is that the people who are the most expert in the application of the technology may be out voted or over ruled. Most of the stakeholders would like this alternative, unless they were the stakeholders in the police department. This alternative would be very appealing to the snaildarters, the separate city computer programming department.

Strategy 8-

"Develop on-going training program."

As with most law enforcement skills and techniques, the proper use of technology depends on training, and regular review of updates and changes. Without it, the skills become rusty if not used daily, and new methods are not learned about. The training in technology and people skills to assure law enforcement is effective in the future, must be constant and frequent.

The members of the panel felt that it was very important to concentrate on strategies that reinforced the value of people to the organization. This emphasis is reflected in Gattiker's statement in Technology Management in Organizations, that "there is a real urgency not to turn back to the basic properties of human resource management and technology acquisition in conjunction with organizational adaption so that our understanding of these issues will truly improve". [17]

IMPLEMENTATION PLAN

Before any steps are taken to actually draft policies or to implement programs, research should be done within the existing rules and regulations, administrative rules, city ordinances and personnel rules, to learn of any barriers. Obviously if there are certain procedures to follow, the implementation plan should address those first. For purposes of this project, the assumption is made that the strategies can be formulated within the police department, and implementation only depends upon approval by the chief, the city manager, and the city council.

Surrounding oneself with brains is an appropriate first step in implementation. Forming a group or committee made up of end-users of technology, technological experts, clients of the service, and those responsible for correct application of policy should be the first step. Patrol officers, supervisors, managers, citizens, and representatives from the city management information systems department should be brought together on a volunteer basis. Having volunteers usually assures that the level of interest is high, rather than just having people working on an assignment. The chief must empower the committee and its leader to conduct their work.

It is important that the committee establish tentative timelines. Scheduling could be flexible but there should be attention paid to a calendar of events.

Research at other similar-sized police departments will

provide a wealth of information regarding their technology, policy for use, successes and failures, and what they might recommend to others such as ourselves.

Much of the committee's work should be done in open forum, and notice should be given to all department employees of the progress the committee is making. People having an interest in the issue should be invited to speak before the group, and representatives from stakeholder's groups should be asked to participate in open discussion. This will also help verify that the assumptions about the stakeholders are still valid.

As work continues, drafts of tentative policies and programs should be circulated throughout the department. Constructive criticism must be solicited actively. Once feedback is received, the committee should evaluate and make necessary modifications.

During the first few months of the implementation, effort should be concentrated on acquainting all personnel within the department about the strategies. This should be done at patrol briefings, bureau meetings, staff meetings, and in newsletters. The more the plan is announced and discussed, the more chances there are for involvement and feedback.

Implementing Strategy 1, develop a policy to establish criteria for technology acquisition consistent with the mission statement, should begin first because this policy will guide the department into the future. Representatives

from every level and assignment of the department must be involved, and the policy needs to be established as a working document, capable of being revised as conditions and needs change. A standing committee will be required to monitor the policy and recommend change to the chief.

Developing a program to familiarize employees with the value of futuristic technology and how it facilitates the job, Strategy 2, sounds at first as though it would be a single event. Because of changes in technology, changes in peoples' jobs and assignments within the department, and the need for reinforcement of this concept, this program should be conducted no less than once a year. As we continue into the future, it might not be reasonable to expect that all of us will learn of the latest technology through media and periodicals, or learn enough about it through those sources.

The same might be said for Strategy 3 as was said above about Strategy 2. Re-affirming that the employee is the most valuable component in the workplace, and is not to be replaced by technology, should be repeated often. However, this message does not lend itself to a formal program. The thread of the idea that technology must not replace the employee must be woven into every other strategy proposed. The message must also be genuine and sincere. This is a strategy that should be practiced on a daily basis on into the future.

Interfacing with industry to provide steering and input on technological needs of law enforcement, Strategy 4, should

be started as soon as possible. Not only should there be representative groups of industry and department employees that meet regularly, there must also be encouragement of all employees to present any information they learn about new technology, or sources, to department management. Good ideas are present in many sources and none should be discounted. This strategy will be dynamic. As it becomes well known that the police department is talking with one supplier, other suppliers will want to join in. The same thing will happen with other police departments. Eventually there will be interface committees on a regional basis. There is the possibility that one person within the department may be assigned to this interface responsibility on a full-time basis. The amount of suppliers and new technology may grow so much that there needs to be a department representative keeping track of new technology.

Strategy 5, seeking public and private funding and equipment sources, will require as much innovation and imagination as keeping track of new technology. Some departments now charge fees for certain services. In the next ten years, these fees, combined with tax revenue as we know it, may not be enough. It may be necessary to approach members of the community and solicit private donations, charge every prisoner a booking and lodging fee, sell crime lab services to private interests to allow for drug screening and fingerprinting of their employees without criminal sanctions, and have larger departments sell some of their

services to smaller departments. Besides this, there will be opportunities to acquire surplus government equipment as the military downsizes or renders it obsolete. These opportunities will grow in the future and the department should be aggressive in pursuing opportunities.

In establishing standarized skill levels for current and future employees, Strategy 6, there will have to be cooperation between the city personnel department and the police department. The requirement for skills level must be job related, and must be fair, particularly for those employees already on the force. As years progress, however, these skill levels will need to be reviewed and probably raised owing to the progression of abilities of the workforce that we test and train.

Strategy 7, establish city-wide technological improvement committee, is intended to involve people from all city departments. Not only will this give the police department the benefit of many other viewpoints, but it will allow for teamwork among all of the employees, many of whom are of vital importance to the police.

Develop on-going training program, Strategy 8, may well be the most important and all encompassing strategy of all. Not only must officers be trained in the use of technology, there must be a balance in their skills so that technology use doesn't dominate job performance. There must be a continual monitoring of actual skills, both technologically and personally, and assessments made as to what new training

must be given. As experience shows the need for improved techniques, the training program must be adapted to provide for new methods of using existing technology. A great deal of civil litigation involves the failure to adequately train so the program established also has to do with preseving resources, namely money subject to loss in civil suits.

NEGOTIATING ACCEPTANCE

Critical Stakeholders' Positions

Non-Negotiable:

Patrol officers will be in favor of having a forum to introduce and discuss technological aids. Many view technology as making their jobs easier and most like to be up to date when compared with other police departments. The officers will continue to demand that the department "keep up with the times" as concerns technological aids to their job.

Negotiable:

Many officers will have mixed feelings about statements formalizing interpersonal skills over technology because it may be hard for them to understand in advance how those skills will be measured by supervisors. Standing committees will not be a major issue for them, although most will avoid wanting to serve on it because of a reluctance to take on additional duties, especially volunteer duties.

Police Managers

Non-Negotiable:

They will generally be in favor of a policy. It will provide guidance for their subordinates' actions, and will

assist them in planning and budgeting their bureaus or sections. Managers such as lieutenants often receive complaints from citizens referring to officers' "attitudes" and stressing interpersonal skills will address these attitudes.

Negotiable:

Some managers may have problems with the policy believing that the person in charge of the acquisition committee wields a disproportionate amount of power within the department. Once this subject is covered, most managers will probably be in favor of the policy.

ACLU

Non-Negotiable:

Members of the American Civil Liberties Union will generally be in favor of the policy. They usually favor any limitation on police power and this should appear to them as a welcome restriction on the use of police information banks. While it may or may not be that, the most favorable aspect of the policy to the ACLU is that it's a written statement. ACLU representatives are in favor of written directives for police departments because it provides them reference material for investigations of police actions.

Negotiable:

They will definitely be in favor of an expression of support for interpersonal skills feeling this will lead to more community oriented policing, but the actual details of implementation should not be important to the ACLU.

Chief of Police

Non-Negotiable:

The chief of police will be in favor of the direction in the policy giving the chief the final approval.

Negotiable:

There will be less emphasis by the chief on the importance of having the strategy apply to all new technology, such as record and information systems, but this should not be an obstacle to the strategy.

City Computer Programmers

Non-Negotiable:

Our snaildarter, the city computer programmers, are important because of the structure of this particular city. All computer equipment is mainframed in their building, all terminals are set up and maintained by them, and all requests for new programs and equipment go through them. There is a tendency to have generic programs for use by all city departments, rather than unique to the police department. This makes the computers mediocre and most police employees wish for PC's. The strategy will cause some grief and the programmers will insist upon being strongly represented in the policy committee, and the acquisition committee.

Negotiable:

It is not expected that there will be much input from them when the acquisition committee is considering technology not related to computers.

NEGOTIATING STRATEGY

A variety of individuals with different personalities and backgrounds must be sold on this strategy. Blunt force, or a power approach, is not feasible. Concentrating on a "Win-Win" technique should hold the key to gaining acceptance. Effort must be made to define the interests of each party, [18] and to fully explore the options available in each set of negotiations. Patience will be required because there are numerous stakeholders. It will be important to get the parties involved as soon as possible so that there is a "buy-in" as the policy evolves. This process is meant to be civilized.

There will be ample opportunity to give and receive signals during these negotiations. Body language and verbal statements will provide clues as to the appropriateness of action, or when to change course. A rational approach is best. There will be a need to propose, discuss, re-state, explore options, and exchange. It is likely that there will be "if-then" negotiation periods: "if I do this, then you do that". This is often productive and can lead to settlement and closure.

The temptation to invoke power will have to be resisted. When the police manager in charge of the strategy finds obstacles in dealing with subordinate personnel, it may seem easy to ram a settlement through. This is counterproductive because the strategy calls for setting up a continuing relationship with many groups over a long period into the

future.

In dealing with police managers it will be important to use logic and deal on a person-to-person basis. Since this negotiation will be among peers, it may become necessary to bring in an outside neutral party, one with no attachment to the issue who could function as a quasi-referee.

For the ACLU, it will be necessary to be rational but look for opportunities to use psychological influence. Of all the mistakes to make, taking an "us versus them" attitude will spell doom for an agreement.

Patrol officers must feel that the information is credible, that they are being treated with respect for their intelligence, and that their opinion is valuable. Dealing with a small group is best, so they should be represented by spokepersons. This group will also respond to psychgological influence, and as stated above, power should be avoided.

Local citizens will respond to the rational approach. Most will be delighted to feel they are being taken into the confidence of the police. Many citizens have ideas about what they feel police officers should be doing, but the police either ignore them or don't take the time to involve them. The citizens will be influenced psychologically by the step of bringing them into the process.

City councils are a delicate blend of egos and personalities. It is unlikely there will be much negotiation with them if they feel strongly against the policy. Power politics is played in this arena, however, the council is the

group using the power. In this case, however, it is not expected that there will be an objection to the strategy, particularly if the chief and city manager are in favor of it.

The city manager is expected to favor this strategy because it establishes guidelines for purchases and actions of officers. City managers are loathe to let police departments create community problems for them and therefore it will be in the manager's best interest to have as many formal policies as possible at the police department. Negotiations with the city manager should concentrate on merely avoiding personality conflicts and being as open and candid as possible.

Limited negotiations will occur with the state legislature. However, if they do happen, it will probably be after the policy is implemented and will be for the purpose of explaining why it is needed, why it is important, and why is should not be affected by state law. There also may be the opportunity to request funding for technology at the state level. Any contact of this nature should be on an interests level and rational.

Negotiations with the courts seldom happen. Judges make rules and hand them down. The only chance for negotiations would be in the hands of district attorneys before a matter comes to trial. It would benefit the police department to be aware of problems stemming from technology, and to quickly approach local judges informally for help in interpreting the

policy as it applies to recent case law.

It is expected the chief of police will support the strategy. A major issue with the chief will be to receive empowerment to set up the committee to implement the plan. Towards that end, there shoud be discussion of the needs, rationally and with attention to the issue. As the work of the committee progresses, it will be a must to keep the chief informed at all times.

The city computer programmers must be handled carefully. Their technical knowledge makes it important that we deal with them rationally, but there is room for the psychological approach. Care must be taken to make them know that their opinions are important, that there is no attempt to undermine their operation, or to eliminate their responsibilities and jobs. This is a group that could suddenly turn against the entire strategy and cause major problems in its implementation.

By planning the implementation, and preparing for the negotiations with the various stakeholders, it is expected the strategy should be acceptable to all and that we will have a policy for the future management of the issue.

When implemented, the strategies will also address the sub-issues identified in this study. The interface with industry, the city-wide technological improvement committee, and the efforts to seek public and private funding and equipment sources, will allow for identification of the new technology available for law enforcement. Training of

officers to effectively use technology will be accomplished by the on-going training program, establishing standardized skill levels for current and future employees, and by developing a program to faimilarize employees with the value of futuristic technology and how it facilitates the job. Community expectations of law enforcement will be a concern of those dealing with the policy establishing criteria for technology acquisition consistent with the mission statement as this involves community members as well as law enforcement people.

TRANSITION MANAGEMENT PLAN

In preceding sections, the Issue, and related Sub-Issues, were studied and developed through the Nominal Group Technique (NGT). Resultant forecasts provided a basis for constructing scenarios and policy statements. Following that work, a Strategic Plan was developed for the Issue and Sub-Issues. A Modified Policy Delphi process was used during the composition of the Strategic Plan. The Plan included steps to implement several strategies, including negotiating acceptance with critical stakeholders. In this section, the "Transition Management Plan" will be detailed.

The "Strategic Management Plan" identified eight strategies for dealing with the Issue and Sub-Issues. They are:

1. Develop a policy to establish criteria for technology acquisition consistent with the mission statement.
2. Develop a program to familiarize employees with the

value of futuristic technology and how it facilitates the job.

3. Re-affairm that the employee is the most valuable component in the workplace, and is not to be replaced by technology.
4. Interface with industry to provide steering and input on technological needs of law enforcment.
5. Seek public and private funding and equipment sources.
6. Establish standardized skill levels for current and future employees.
7. Establish city-wiude technological improvement committee.
8. Develop on-going training program.

The "Transition Management Plan" that follows will show how these strategies will be implemented, what individuals or groups are necessary for the success of this plan, and what methods and techniques will be used to support the transition from where the Buena Park Police Department is now, to the desired future. Finally, there needs to be a feedback and measurement technique to gauge the success or failure of the Plan. That will also be described.

DEVELOPMENT OF COMMITMENT STRAGEGY

CRITICAL MASS

During the development of the Strategic Plan for this Issue, a list of stakeholders was prepared. From this list of individuals and groups who impact, are impacted, or are

concerned with the issue, "key players" have been selected. These are the "critical mass" in this Transition Management Plan. Persons or groups in the "critical mass" are the minimum number of people who can make the change occur if they support it, or can prevent the change from taking place if they oppose it.

Following are "key players", identified by the Modified Policy Delphi Panel, as the "critical mass":

* Chief of Police
* Operations Captain
* Police Patrol Officers
* City Computer Programmers
* City Manager

COMMITMENT CHARTING

In the Commitment Chart below, is portrayed the Modified Policy Delphi Panel's assessment of each "key player's" current position with respect to the issue, and what position is necessary from them to support and insure successful implementation of the plan.

Table 5

COMMITMENT CHART

CRITICAL MASS / KEY PLAYERS	COMMITMENT LEVEL: BLOCK CHANGE	LET CHANGE HAPPEN	HELP CHANGE HAPPEN	MAKE CHANGE HAPPEN
CHIEF			O ← X	
CAPTAIN			X → O	
PATROL OFFS.		X → O		
COMPUTER PROGRAMMERS	X → O			
CITY MANAGER		X → O		

X = CURRENT LEVEL O = DESIRED LEVEL

INDIVIDUAL ANALYSIS AND STRATEGY

Police Chief

The Chief is a change oriented leader. He has been with the Buena Park Police Department for about two years. He came up through the ranks at a nearby police department, eventually serving there as Chief. He is a Command College graduate and is active in many projects statewide.

When the Chief assumed command at Buena Park, he instituted many needed changes. Much of the change was in response to suggestions from rank and file officers, who now criticize the way the changes were made. Some officers perceive that their suggestions were mis-interpreted, and that the end result is "management's" idea of improvement, not theirs. This attitude is not prevalent among all patrol officers, nor does it pertain to all of the changes that the Chief has instituted. It could, however, offer a problem if officers thought that a change was being "pushed through" by the Chief, whether the change was needed or not.

The Police Association has a cordial relationship with the Chief. Not only does he attend their Board meetings each month for a short time, but there has been no clash over discipline or working conditions. Having served as a POA president in the past, probably contributes to the Chief's ability to relate to the POA, and work with them.

Should he wish, the Chief could plan, develop, and institute the changes necessary to implement this policy. That is a credit to his energy and management skills. There

are those, though, who would delay or possibly obstruct, the operation of the policy because of the past perception of "ramming through" of other ideas. As mentioned earlier, the Chief is a change-oriented leader who would certainly support this new policy. As much as we need his support in this matter, it is necessary that we have him help and support the effort, not make it happen.

Convincing the Chief to allow others to make this change happen should not be difficult. He will still have final authority and veto power as to its acceptability in the department and he will closely monitor progress of the change effort. Chief Tefank has displayed confidence in his managment staff in the past, and he has worked closely with many of the other members of the department on other tasks. The role of "helping change happen" is not a new one to him, nor does it indicate that he will lose control. The Chief is aware of some of the above-described perceptions concerning pushing ideas through, and he is more concerned with the success of a plan than with individual credit.

Operations Captain

This Captain is the junior of two captains. It is expected he will be with the department for some years to come, while the other captain retires. Implementing this policy will require a command level officer, with a commitment to change, and an expectation of several more years at the department.

His experience at the command level is not extensive,

but his sincerity and energy is. The Captain has gained considerable knowledge about technology and its application to police departments. He also has a background in Internal Affairs Investigations, so he has knowledge of restrictions on use of information.

Having the confidence of the officers will be important in this project. His demeanor and personal life are professional. He is not necessarily well known by the current rank and file officers, but he has a good reputation with them.

The Captain's commitment to implementing a policy for the future is high. He sees his future at this department, and would recognize that this policy would provide for orderly change as new technology was developed and became available. Moving this Captain from a position of Helping Change Happen, to Making Change Happen, would not be difficult. He has spearheaded many such projects in the past, and is a willing manager. His leadership is vital to this issue. He would recognize that, and respond.

Patrol Officers

Technology seems most attractive to the rank and file officers, particularly those on patrol. The impact of television and movies that glorify cops and their advanced "toys" should not be taken lightly. Not only are the newest gadgets trendy, many of them are effective, time saving, and cost efficient. What is needed, and what this entire issue

addresses, is to discern the difference between what is necessary, and what are just "toys", and then apply technology appropriately. Since much of the demand for, and most of the use of, modern technology will involve street cops, they must be included as an integral part of this plan.

Not only can the patrol officers identify and present many of the latest technological devices for consideration, they are the ones responsible for correct use. Used as intended, the technology that the police department incorporates can assist in serving the community. Used incorrectly, lawsuits can be incurred, problems created within the community, and the job made much harder to accomplish. It is vital that the end user, the patrol officer, feel that he or she was involved in the decision making process from the beginning.

Patrol officers presently are in the position of "Letting Change Happen" and this works for the type of technology existing in the past. In the future, however, it is expected the department will be dealing with much more advanced innovations than semi-automatic pistols instead of revolvers, more channels on the portable radios, and uniform changes. When it comes to dealing with sophisticated mobile computers, electronic filing of reports, and even mechanized restraint systems for assisting in arrests, patrol officers need to be moved into the "Help Change Happen" category.

Getting more involvement from enthusiastic patrol officers is usually not a problem. Keeping them involved can

be. Not only do the officers become bored, but their assignments change, they have conflicts with their shift, and worst of all, they feel that they are not being listened to. In order to keep the patrol officers in the "Help" category, There must be sincerity about involving them. Not only must their ideas be listened to, they must be involved in the effort at all levels. As long as this continues, they will continue to help. When it fails, the officers could well move down the chart, even as far as blocking the change.

Involving patrol officers requires cooperation from senior officers who often influence newer officers with their enthusiasm, or lack of it. Regular meetings with patrol officers, the Captain, and the Chief should provide the message that the patrol officers are vital to the success of the mission. A cross section of patrol officers, including police association officers, must be recruited and kept active in developing the policy.

Frequent internal communication must occur. Whether this is formal or informal is not important. What <u>is</u> important is that <u>all</u> patrol officers must hear frequently from their peers, their supervisors, and department management, of the changes being considered, progress being made, and the process involved. Newsletters, roll-call discussion, and "open-door" meetings with management are effective communication methods for this type of information.

City Computer Programmers

The structure of the city places responsibility for all computers within a Management Information Systems Department. There are numerous computer terminals in all of the various city departments, but they are connected to a mainframe computer in the MIS office. It is the responsibility of MIS to place these terminals, maintain them, and create programs for the other city departments. There are very few PC's in the city and those were placed for very specific purposes, not for general use such as report writing, record keeping, etc. MIS has objected strongly to any PC's being installed.

Not only is a mainframe computer archaic in light of current PC technology, it also reflects the city's organizational philosophy of having all computer utilization controlled by a central department. Whether this decision was made for financial reasons, or so that all information would be processed through one point, is unknown. What is known is that in the past the computer programmers have resisted any attempts to decentralize the computer function. This could dilute their authority over programming decisions, terminal placement, and could even lead to loss of jobs. These are all valid concerns, especially the loss of jobs, and must be dealt with sensitively.

It is necessary to move the computer programmers from their historical position, where they would "Block Change" to the "Help Change" category. Where before they might cause

problems and possibly keep the plan from being successful, their help is necessary. Technical expertise will validate the strategies and allow implementation of guidelines that make sense in the long run.

To get cooperation from the computer programmers, they must be informed and involved as soon as possible. It will be important not to attack or try to change the current mainframe computer system at this time. The technology that policy statements may encompass could well include the mainframe computers at some time in the future, but such decisions should be put off until the computer programmers have more confidence in their future, and that the police department needs them.

It will be appropriate to bring the computer programmers into meetings with all levels of police personnel, have them ride often in patrol cars, solicit their suggestions for types of available technology, and generally have their expertise applied "hands on" to Patrol Operations. Not only will this lessen the chances of this group blocking the police department's technological advances, it should also enhance the police department's knowledge of what technology is available.

This involvement of the computer programmers needs to be done with all of the people in the Management Information Systems Department, from the department head to the newest technician. Everyone in that department needs to be included and kept in communication.

City Manager

To accomplish the goal of establishing a policy to guide future technology acquisition, it is vital that the agency has the blessing and wholehearted cooperation of the City Manager. When the policy is being formulated, and when it is in place, there will be constant interface between the police department, the computer programmers, the purchasing department and the finance department. The city manager can make this interface smooth. Without his help, each department would be free to create roadblocks all along the way. Even though the City of Buena Park is not a massive entity, it is obvious from experience that no government agency is too small for a bureauacracy.

The City Manager is a forward-thinking city manager. He recently formed a "Vision 2010" committee of community volunteers and city employees to explore the possibilities for the City by the year 2010. He will be in favor of a proactive policy to deal with technology at the police department. Because of his attitude, it is obvious that he is currently in the "Let Change Happen" category. It should not be difficult to move him into the role of making the change happen. Not only is he a forward thinker, he undoubtedly would sense the opportunity for political gain by being a leader in this issue.

Keeping the City Manager involved and "up to speed" can be best accomplished by the Chief, or in his absence, the head of the policy group. Occasional attendance by the City

Manager at the policy group meetings will be acceptable, but he shouldn't be there for every meeting. This group is a functional task force and having the city manager in attendance could chill the heat necessary to move the work forward.

TRANSITION MANAGEMENT STRUCTURE

Nothing in the current organization is structured to formally deal with a policy change such as we propose. Changes to existing rules and regulations are handled as they become necessary, but standing groups or committees do not exist. It is important that the organization establish a group to deal with formulating the policy, and continue on to monitor and modify that policy as needed. The Chief of Police could assume command of the policy group, but that would likely be counterproductive. As mentioned earlier, some apprehension exists on the part of rank and file personnel about management "ramming through" changes. The Operations Captain is the most logical choice for the head of the policy group. He has the respect of the members of the department, a base of authority very close to the chief, and the energy and ability to deal with the matters likely to be considered by the policy committee.

As for the other members of the group, a diagonal slice of the city staff would be recommended. Not only is it necessary that various levels of the police department be included, but it will be important to have representatives from the computer programmers' group. It would not be

necessary to have representatives from the purchasing and finance groups as members of the committee, although they should be periodically briefed, preferably with the City Manager present. His presence should serve to allay their fears of losing functions and authority, and would indicate his endorsement of decisions by the policy committee.

Internally, the diagonal slice would allow representatives of supervision, patrol officers, the police association, clerical, dispatch, and detectives to participate in the formation of the policy. As the policy is developed, there will be occasions when other critical mass individuals will participate, but only at the invitation of the members of the committee. Upon completion of the policy formulation, it would be recommended that the group stay together for monitoring the implementation of the actual policy.

Monitoring the implementation of the strategies must be planned for immediately. This monitoring, and resultant feedback, will continue for the life of the issue. Ten years from now we must be assured that the management of new technology is actually taking place.

A baseline must be established showing the department's current level of performance in several critical areas. These are:

* crime levels
* case clearances
* available patrol time of officers

(that time when they are not actually assigned on calls)

* type and frequency of training
* technological skill level of officers
* allocation of expenditures for technology
* extensive job description of officers' actual duties
* definition of current technology employed by patrol officers
* community survey of their expectation of law enforcement
* level of citizen complaints, including number and type of complaints (excessive force, attitude, failure to take action, etc.), and their disposition

Having the above information will provide the means by which the department can measure their performance in the future, determine if the Issue and Sub-Issues presented herein are being addressed, and whether or not changes are needed in the implementation of the strategies.

IMPLEMENTATION TECHNOLOGIES AND METHODS

Putting together a group to establish a policy and implement strategies that deals with a subject so important to the future as technology, requires all members contribute to the end result. Some of the members will be introduced to new concepts for the first time, others may just have to be

re-acquainted with techniques not used recently, and others may be "up to speed" as soon as the group effort commences. It is important that there is an immediate assessment of the background and experience of each member. There may be a period of training required for the committee before tackling the actual work of forming the policies, and implementing strategies. What follows are the recommended techniques and tools to allow the transition team to accomplish its goals as smoothly and quickly as possible.

In chronological order, it is evisioned the first efforts will be applied towards forming the policy to establish criteria for technology acquisition consistent with the mission statement (Strategy 1). This will give a foundation for much of the other work to follow.

Team Building -

Whether resources are committed to hold an "off site" TBW, such as many management teams are able to do, or if they are only able to meet for a limited time locally, it would be wise to set the team apart from its regular work routine, bring in a facilitator, structure a mission, and discuss goals. This will help the team clearly define its purpose, where it wants to go, and maybe even how it wants to get there. It also serves to formally recognize the team and its members, as well as breaking down some barriers that might currently exist.

Communicating the Vision-

Even though this is often thought of as part of the Team Building Workshop function, it is too important to assume that it is done. Thorough and complete understanding of the vision is mandatory to start the group's efforts. As the work progresses, the Operations Captain will make sure the policy group reviews the vision often, discusses it, and always keeps it in mind. It will be helpful to have the vision statement published and given to all committee members.

Responsibility Charting-

Following the TBW meeting, responsibility charting for members of the team should be done. It is important to clearly define roles and responsibilities as soon as possible, and graphically display them. This will be especially valuable for those members of the team not regularly assigned to supervision or lead functions. Responsibility charting should also provide a reference in the event of conflict so that problem resolution can be worked out as quickly as possible.

Policy group members should participate, agree to, and buy into the responsibility charting. The head of the policy group shall have the assignment of coordinating this effort.

Event Scheduling and Recognition-

An overall plan should be established and communicated to everyone. Milestones should be established and adhered to. As significant events occur, the committee should reward

those most responsible for the event, and take time to savor the accomplishment.

This activity should occur in the same manner as the responsibility charting. Having individual input from team members, with the guidance of the policy group leader, should allow reasonable schedules to be developed, and should assure that the timetable is met.

Once the policy is established, attention can be devoted to implementing the other strategies, and eventually setting up a feedback and measurement device. A city-wide technological improvement committee can be put together that will have a basis for recommending change (Strategy 7). Steps must be taken immediately to open dialogue with as many industry representatives as possible to begin the interface to provide steering and input on technological needs of law enforcment (Strategy 4). There is no reason to expect this will be difficult, especially based on the immediate and enthusiastic response the researcher found when doing the questionnaire for this probject.

The on-going training program (Strategy 8) must be started as soon as possible. In order to assess the training needs, a standardized skill level for current and future employees must be set (Strategy 6). This will involve the city personnel department working with the police department to survey and assess the levels needed, validate them as to "job-relatedness", and re-write the necessary job descriptions and recruiting documents. Once accomplished,

the training can address particular deficiencies. On an annual basis, the training program, and the skill levels, must be evaluated and re-set if the benchmarks change. Familiarizing employees with the value of futuristic technology, and how it facilitates the job (Strategy 2), can be accomplished at roll-call training, or in combination with other training sessions. Managers should be assigned to research and maintain their own "Futures File" and to present this research to all employees, with the emphasis on what benefits the technology offers to employees. Combining this introduction of technology with a re-affirmation that the employee is the most valuable component in the workplace, and is not to be replaced by technology (Strategy 3), seems logical and should be an approprite time for that discussion.

A most important effort is the search for public and private funding sources (Strategy 5). The most innovative and informed management people will be needed to track down new sources of government funds, and open up avenues for private fees, donations, and subscriptions. Federal and state grant funds may be scarce but whenever that type of funding is available, experienced grant writers within the department must act immediately. The City Council must be kept apprised of what new sources for taxation and fees are available and being implemented by other jurisdictions, and private industry must be contacted to solicit surplus equipment applicable to law enforcement. Accepting anything from private donors is sensitive to law enforcement so this

strategy must also deal with explicit disclaimers of favoritism, and must be done openly. Those working on this stategy must also realize that regional approaches to funding could present favorable opportunities to law enforcement. Political considerations should not be allowed to overwhelm the flow of new funds and equipment from alternative sources, as this may represent law enforcement's survival in the future.

FEEDBACK AND MONITORING

As the work progresses, it will be necessary to know if it is accomplishing what is expected. Towards that end, the baseline information described on pages 84 and 85 will be referred to periodically. Measuring the current state of the technology, its application, and the performance of the police department will provide answers to the question posed by the issue, "how will law enforcement manage the impact of new technology by the year 2001?" Only an objective measurement is called for, and that can best be provided by formally assessing each year's performance by comparing it to the baseline.

In some cases the comparison will be shown by the numbers. In others, however, it may be more abstract because it will rely on community assessments of what is expected of law enforcement, and how they are doing against that expectation. Regardless, the measurements must be taken and reviewed. The department's management team is the group that

must take the measurement, assess the performance, and publish the results to all other department members. There must be a specific time set aside to do this, preferably in the early part of each year. Following the measurement, there must be an assessment of the need for change.

Once the measurement of performance has been accomplished, there will be successes and failure. For each of these, the groups performing the work must review the effort to date. Obviously, those experiencing success won't have as must adjusting to do as those who have recorded failure, or results below expectations. Successes can, however, include results less than expected, or slight failures overhwhelmed by great success. Even success must be analyzed for change.

Assessment of the need for change can best be accomplished by including as many of those responsible for the effort as possible. Finger pointing and blaming may occur, but cannot be allowed to continue. There is more to learn from failure than from success so the experience should be treated as a valuable one. Because of that, there should be an annual repetition of the Team Building Workshop, Communicating the Vision, Responsibility Charting, and Event Scheduling and Recognition. These will serve as the feedback and measurement devices to keep the department moving towards the future, making the necessary adjustment, and accomplishing the goal of managing technology.

CONCLUSION

The Issue and Sub-Issues have been conceived, stated, and explored. A Strategic Plan for the Issue has been developed, and now a Transition Management Plan for the Issue has been described. Besides the carefully thought-out plans discussed in this document, the enthusiastic and energetic work of numerous individuals will be required to accomplish the stated goals. With the knowledge of the people and the organization, there is every expectation this project would be accomplished, and there would be a significant and favorable impact on the future operation of the Buena Park Police Department.

APPENDIX A

September 8, 1992

All Respondents,

Thank you for taking a few minutes to fill out this questionnaire, which elicits your expert opinion on technology that may be available in the future. Your responses will be used in a research project dealing with the Issue and Sub-Issues stated on the next page.

Please return the completed questionnaire as soon as possible, preferably by September 25, 1992. A return-addressed, stamped envelope is provided.

Thank you for your assistance.

Tony Kelly
Lieutenant
Buena Park
Police Department

Enclosures

THE ISSUE

How Will Law Enforcement Manage the Impact of New Technology by the Year 2001?

SUB-ISSUES

1. What technology will be available for law enforcement by the year 2001?

2. By 2001, how will law enforcement officers be trained to effectively use technology?

3. What will the community expect of law enforcement, and its management of technology, by 2001?

GROUND RULES

1. "New" means that it doesn't exist today. Enhancements and improvements to existing technology should not be considered as new for purposes of this project, unless the changes dramatically alter the use or effect of the technology. For example, changing the propulsion system of a police vehicle from gas to electricity does not make it new. However, a change that allows the vehicle to be guided from call to call by the police dispatcher, would be new.

2. The new technology you are asked to forecast is that which would be utilized by local police and county sheriffs. Duties of these agencies include patrol, arrests of criminals, report writing, handling domestic disputes, record keeping, jail operations, management of civil disturbances, traffic control, surveillance, detective investigations, testifying in court, and numerous other duties related to public safety. Besides the duties described above, which are duties we now perform, it would be useful to be aware that every year the state and federal governments add new responsibilities to local police departments. It is conceivable that in future years, police departments may be handling more environmental matters, housing issues, and possibly mediating matters that are thought of as civil disputes today.

3. While it is encouraged that your imagination be your guide, please consider the cost of new technology. R&D of technology is most often done by the military or industry. Local government cannot often support the cost of developing new devices, but must acquire technology as it "trickles" down. In forecasting new technology, consider that the item will be most likely developed and used by the military and private industry for some time before it gets in the hands of local police.

RESPONDENT INFORMATION

NAME _____

COMPANY _____

PHONE _____

POSITION AND GENERAL DESCRIPTION OF ASSIGNMENT

_____

_____

_____

YEARS OF EXPERIENCE IN THIS FIELD _____

THE QUESTION

"What new technology will be available for California police and sheriffs by the year 2001?"

In the space provided below, please describe three new items of technology that may be available by the year 2001. Also, please include a short description of the function and/or use of the technology.

1. ITEM _____

   FUNCTION/USE _____

   _____

   _____

   _____

2. ITEM _____

   FUNCTION/USE _____

   _____

   _____

   _____

3. ITEM _____

   FUNCTION/USE _____

   _____

   _____

   _____

RESPONDENT INFORMATION

NAME CHRISTOPHER T. TEAL

COMPANY HUGHES AIRCRAFT COMPANY

PHONE (714) 732-8275

POSITION AND GENERAL DESCRIPTION OF ASSIGNMENT:

SYSTEMS SUPPORT ENGINEER - TROUBLESHOOTER, TECHNICAL SUPPORT OF MILITARY COMMAND AND CONTROL EQUIPMENT.

YEARS OF EXPERIENCE IN THIS FIELD 12

"What new technology will be available for California police and sheriffs by the year 2001?"

1. New integrated Command Control Systems

A standard will be set by all U.S. police agencies by which to communicate with each other as will a standard in dispatch/command and control. these systems will enable dispatch to have full command and control of its friendly forces throughout the city, county and state. Hughes large screen displays with tracks representing patrol cars, motorcycles, andother emergency vehicles will be moving in "real-time" motion within a grid map of the city. Consolidated consoles will provide man machine interfaces for the different users, in house and in the field. Such consoles will have abilities such as remote minicams with Hughes night vision which will give a live feed of video back to dispatch when selected by the watch commander/field officer.

2. New high tech design for polilce cars.

General Motors may provide a cruiser from the factory with features tailored to the officer. Police officers in the field will have field tactical workstations available within the dash board. Such workstations will enable the officer to quickly get vehicle navigation presentations which highlight the best route to use when responding to an emergency. This sybsystem will be capable of communication, VLS, and minicam capabilities to an advanced multi-mission display workstation in the PSAP (E911) which also interfaces with the standard system described in Item 1. All reports and forms will be available on the dash display as well as a remote notebook. Pre-set forms within the database can then be filled in by the field officer when required via a flip out keyboard or the remote notebook.

3. New comprehensive data bases.

This system depends on data extrapolated from the two systems described in Items 2 and 2. Administrative officials can view items with discretion and maintain a day-to-day follow up system for all field work and case loads. Data from the field officer is directly relayed to the data base with a paper report available upon demand. From such data, reports, charts, and other statistical informatin can be obtained. Crime analysis can be performed routinely by categorically selecting options to view (example: Gang-related crimes display will provide dots on the city map providing location of such crimes). Deductive manipulation can then be used to isolate troubled areas within the city and provide support as necessary.

Training for officers will be defined in the academy, although cadets will be more computer literate as grammar and high schools continue to progress with modern computing practices. Datas bases from the system will be able to be replayed from history files for use in training students for practical use in the field.

APPENDIX B

November 8, 1991

All Nominal Group Participants,

Thank you for agreeing to participate in this process. Your help will be extremely valuable to me and to the project. We will met in the Conference room of the Buena Park Police Department, 6650 Beach Blvd., on Thusday, 11-14-91, at 1300 hours. Refreshments will be served. The meeting should last approximately two hours, possibly a little more.

The purpose of the Nominal Group Technique (NGT) is to expand upon, and forecast, trends and events that relate to the subject area of my project. The subject is as follows:

"How will law enforcement manage the impact of new technology by the year 2001?"

Please be thinking about this subject and reflecting upon trends and events that could affect, alter, change, or in any way impact this subject area. NGT makes use of everyone's ideas so all your input will be valuable. The exact process is fairly simple and we will explain it at the meeting.

Sub-Issues to the above subject have been developed. I have included these as Attachment A.

Thanks again.

Tony Kelly

Attachment

ATTACHMENT A

11-8-91

Sub-Issues

1. "What technology will be available for law enforcement by the year 2001?"

2. "By 2001, how will law enforcement officers be trained to effectively use technology?"

3. "What will the community expect of law enforcement and its management of new technology by 2001?"

Possible technology to consider:

Restraint systems, sensors for drugs, personal phones, walk-around computers, modems, and FAX, infra-red vision enhancer, laser weapons, non-lethal sidearms, wold-wide radio and TV senders, electronic data base available to all officers from all nations, tracking systems to monitor all persons, vehicles equipped to provide personal sub-stations, instant electronic language translators, verbal and written.

ENDNOTES

1. David Boddy, and David A. Buchanan, Managing New Technology, Oxford Press, 1986, page 4.

2. Stewart L. Stokes, Jr., Controlling the Future, QED Information Sciences, Inc., 1991, page 85.

3. Boddy and Buchanan, Managing New Technology, page 4.

4. Boddy and Buchanan, Managing New Technology, page 4.

5. "Deja Vu: Issues Facing Law Enforcement", Pacesetter Newsletter, State of California Commissio on POST, Vol. 9, No. 2, April 1992, page 5.

6. Stokes, Controlling the Future, page 85.

7. Kent W. Colton, Police Computer Technology, Lexington Books, 1978, page 274.

8. Boddy and Buchanan, Managing New Technology, page 3.

9. Liora Salter and David Wolfe, Managing Technology: Social Science Perspectives, Garamond Press, Toronto, 1990, page 179.

10. Boddy and Buchanan, Managing New Technology, page 3.

11. Urs E. Gattiker, Technology Management in Organizations, Sage Publications, 1990, page 284.

12. Philip Elmer-DeWitt, "Cyberpunks and the Constitution", Time Magazine, April 8, 1991, page 81.

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