How Will Automation Impact the Taking of Field Crime Reports in a Large Police Agency by the Year 2000?

An Independent Study

by

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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 possible 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 this Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).

Abstract

HOW WILL AUTOMATION TECHNOLOGY IMPACT THE TAKING OF FIELD CRIME REPORTS IN A LARGE POLICE AGENCY BY THE YEAR 2000?

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Abstract

The study consists of three sections: a futures study of the impact of automation technology on the taking of crime reports by the year 2000; a model strategic plan using the fictitious city of San Angeles; and a transition management plan. Seven trends will increase in ten years: public funding, crime analysis programs, quality of police service, police officer availability, volume of police calls for service, use of computer-aided dispatch systems, and the quality of police reports. High probability events that would impact law enforcement are: a legal challenge to the use of automated reports, a major recession, and computer technology eliminates the need for computer literacy. Policy recommendations emphasize audits and controls to prevent abuse, and a phased in implementation process. The model strategic plan includes generic concepts and implementation systems. The transition management plan presents a feasible management structure and supporting technologies. Survey data, and non-extrapolative forecasting results; graphics in text; with additional data and instruments in the appendixes; references and bibliography.

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Executive Summary
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SECTION ONE - A FUTURES STUDY

This research paper examined the concept of how automation technology will impact the taking of in-field crime reports by the year 2000?

Studies conducted by various police agencies revealed that between 20 to 50 percent of field police officers' time is devoted to the taking, writing, and processing crime reports. During the past several years, some police agencies have implemented automated systems to help reduce that loss of officer time. The automation falls into one of two categories: Either it is a "live" entry (officers call a computer operator who enters the information directly into a computer) or it is through use of laptop portable computers. In the later case, the reports are generally stored in the computers and later uploaded into a printer and a hardcopy generated and distributed.

The research included a literature review, use of a survey questionnaire, and selected personal interviews. That process provided a perspective of status of automated systems of today, and trends and events that could impact the technology of tomorrow.

Based upon that evaluation, a modified conventional delphi was conducted using 13 panel members. The panel projected seven trends: 1) Public Funding; 2) Crime Analysis Programs; 3) Quality of Police Service; 4) Police Officer Availability; 5) Volume of Calls for Service; 6) Use of Computer- aided Dispatch Systems ; and 7) Quality of Police Reports. The seven events evaluated were: 1) ACLU challenges the legality of automated reports; 2) Computer technology eliminates need for computer literacy; 3) Major recession occurs; 4) Cost of labor exceeds cost of automation; 5) U.S. involved in a war in the Middle East; 6) Affordable high-tech computers; and 7) U.S. Department of Justice supports automated reporting.

Three scenarios were developed from the forecast data; a normative, exploratory and hypothetical scenario.

Section Two - Strategic Management

A strategic management plan was then developed around the hypothetical scenario using the fictitious City of San Angeles. A situational analysis was conducted of the environment and the internal strengths and weaknesses of the San Angeles Police Department. A list of identifiable stakeholders was also developed and a modified policy delphi conducted to identify policies which could prevent or mitigate the hypothetical scenario.

Section Three - Transition Management

A transition management plan was presented which outlined the change management from the present state to the future state of automated reporting. That plan included identification of the critical mass and the commitment level of those critical mass members.

Finally, a transition management structure consisting of a transition management team, headed by a high ranking member of the police department, and members of the major constituencies, was recommended. Examples of implementation technologies - responsibility charting, communication of the vision, and milestone recognition - were also offered as possible tools to help manage the change process.

Based upon the data developed during the study, it appears that the technology regarding automated reporting for the next ten years will most probably involve integration of portable computers into a computer aided-dispatch system. The study also identified three areas that may be valuable topics for future study. They were: 1) the serious financial situation facing California government; 2) the issue of stylus computer technology and its future use in law enforcement, and 3) the progress toward reliable voice activated computer technology.

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INTRODUCTION

Law enforcement administrators are faced with the never ending challenge of managing limited resources while trying to provide a high level of service to their communities. This is not an easy task. Most agencies are confronted with an ever increasing demand for police services which is much greater than the corresponding increase in personnel or police budgets. It does not appear that this trend will change. Law enforcement administrators must continue to seek ways to optimize efficiency to offset increasing service demands.

One area that accounts for an inordinate amount of street police officers' time is report writing. A study conducted by the St. Louis County Police Department in Missouri determined that approximately 20 percent of its police officers' time was spent writing reports.[1] Other publications have indicated that, depending on the department, the time spent writing reports could be as high as 50 percent.[2] In some cases, those estimates included the time required to take reports to the police station and the report approval process; in other estimates that time was not included. Either way, report writing has a significant impact on the availability of police officers to handle calls for service.

This research study analyzes how emerging technology can be applied toward taking in-field crime reports. The issue examined was:

How will automation technology impact the taking of field crime reports by a large metropolitan police agency by the year 2000?

While this issue question deals with a large police agency, the concepts and research provided can serve to assist a medium sized agency as well.

Definitions

For a clear understanding of the research conducted in this study, it is important to identify and operationally define the following key concepts:

Crime Report - A document which memorializes a report by a citizen who was the victim of a crime. The reports are used by law enforcement agencies to:

- Investigate crimes.
- Gather information for mandated statistical reports.
- Capture information for crime analysis programs.
- Analyze work load for deployment purposes.

Field Crime Report - A crime report which is completed by a police employee and the completion of which is not originated or accomplished at a police facility, telephonically, or by mail. Field crime report and in-field crime report are interchangeable terms.

Large Metropolitan Police Department - A law enforcement agency which has over 350 sworn personnel and which provides patrol services to an urban area.

Automation Technology - Computer or communications software and/or hardware designed for or which can be adapted to the taking of field crime reports.

Law Enforcement Agency - For purposes of this study, a law enforcement agency is any federal, state, county, municipal, or special district agency which is comprised of officers who possess peace officer status (as defined by the California State Penal Code); and which provides police services to a given population. The terms police department, police agency, and law enforcement agency all mean the same and are used interchangeably throughout this study.

Background

Decades ago, when the police radio first came on the scene, it was considered a major technological breakthrough for law enforcement. For years, improvements in technology were focused on improving voice communication both for distance of transmission and clarity. Radios became more powerful and more compact. Digital radio transmission technology developed and, in the 1970's, law enforcement agencies started implementing computer-aided dispatch (CAD) systems. CAD systems have gained in popularity, and as the air traffic on radio

frequencies has increased, CAD systems have become a necessity. Computers talk much faster than people. A radio frequency can handle 5 to 10 times more traffic with digital communication than it can with voice transmission. Most CAD systems have dealt exclusively with the dispatch of radio calls and interface with informational systems such as want and warrant systems and Department of Motor Vehicle systems. They usually depend on a mainframe computer which dispatches messages to mobile data terminals (MDT's). In most cases, MDT's were not designed to be word processors or intelligent computer terminals. More recently, however, there has been a trend to use laptop personal computers as terminals in police cars.

A review of literature coupled with a series of interviews was conducted to find the status of automated field reporting systems in today's environment. There are many different reporting systems in place around the Nation. Most agencies still rely on handwritten reports. Others have implemented dictaphone or other "live" entry systems. Some of those systems have been successful; others have proven too labor intensive and have developed delays in the processing of reports. The research also revealed that a number of police agencies are entering the era of automated report writing. For the most part, these agencies are medium sized departments; and most are in the very neophyte stage of use or development of their programs. For that reason, it is felt that this research study would be of significant interest to law enforcement agencies. A few innovative automated reporting systems have been synopsized below.

St. Louis County Police Department - Computer-Assisted Report Entry (CARE)

CARE is a "live" entry reporting system. Field police officers call in reports to a CARE computer operator. The CARE operator leads the officer through a series of preformatted screens and questions, and records the responses. Usually, the calls are made from the residence or location of the victim, allowing for immediate interaction and input from the victim. Once the call is completed, the CARE system electronically distributes the

report. There is no need for the officer to go to the station or lose time taking a handwritten report. If additional facts are ascertained later, the officer can simply call back the CARE operator and update the entry.

St. Petersburg Police Department (Florida) - Laptop Computer Program

Starting in about 1984, the St. Petersburg Police Department implemented a laptop computer program. Field officers were issued Tandy Model 100 laptop portable computers (PC's) to take field crime reports. Programs were installed in the PC's which contained preformatted reports and forced-choice questions. The result was legible, uniform police reports. The reports are stored in the laptops and uploaded into a printer at the station or at designated printer locations throughout the city. Hard copy reports are submitted to supervisors for approval and then distributed through the normal records system. The software programs in the laptops includes word processing and spell-check. Errors are corrected or additional information can be added to reports with just a few keystrokes. The use of the PC's had a significant impact on the availability of the patrol officers.

Morgan Hill Police Department (California) - Portable Computer Technology

Many police departments have taken the model of St. Petersburg and adopted it to their use. Morgan Hill Police Department has taken that technology one step further. Morgan Hill has worked with computer hardware companies to develop a small, practical PC for use in police vehicles. The result is a prototype system that has a small display screen (which can be mounted directly to a dashboard), a down-sized central processing unit (which can be placed behind the seat or in the vehicle trunk), and a small, durable keyboard. This system has the full capability of a PC, yet takes up very little room in the police vehicle.

Just as automated systems can be a great asset, many police administrators have also found they can be a bane. Quick talking salespersons have sold more than one law enforcement agency an automated records management or CAD system that is antiquated, too small, and does not allow for future integration for additional uses. Thus, money has been wasted. By looking to the future and evaluating the potential needs of an agency, coupled with the projected development in technology, law enforcement administrators can plan for an automated reporting system which will meet the long range needs of their organizations.

Format of this study

For ease of reading, the body of this report will be limited to a meaningful overview. For the most part, research data, charts, and graphs have been placed in the Appendix. Readers who wish to view that data may do so by turning to the specific appendix cited in the report or by referring to the listing of Appendixes.

Section 1

DEFINING THE FUTURE :

HOW WILL AUTOMATION TECHNOLOGY IMPACT THE SYSTEM FOR TAKING FIELD CRIME REPORTS BY A LARGE METROPOLITAN POLICE AGENCY BY THE YEAR 2000?

The thrust of this research report is to conduct a futures study. The design and purpose of futures research is to scan the environment of today to help plan for the future of tomorrow. On the surface, that appears to be a questionable task. There is no crystal ball which can accurately predict the future. The only thing

which can be predicted is that there will be change. While no one can accurately state what that change will be, the use of futures forecasting techniques can provide scenarios - glimpses of possible futures - upon which planning can proceed. Scenarios are based upon forecasts of trends and events which bear on the issue being studied. Decisions can then be put in place today to mitigate a possible negative future, to achieve a desired future, or to prepare for a projected future.

In this research project, the issue question is: How will automation technology impact the system for taking field crime reports in a large metropolitan police agency by the year 2000? That issue is extremely broad and would be difficult to completely study. Therefore, to give focus to the project, the study was further defined by use of the following three sub-issues:

* How will automation of crime reports impact field officer availability?

* How will automation technology impact the level of service provided to citizens?

* What is the emerging technology which can or should support automation of field crime reports?

The Scanning Process

The environmental scanning process consisted of three phases: A literature review, a survey questionnaire, and selected personal interviews. That process supplied much of the data discussed in the introduction. For those who wish to review the specific information, a bibliography of literature reviewed is contained in Appendix A; a list of locations where interviews were conducted is contained as Appendix B; and a copy of the survey questionnaire is contained in Appendix C.

Survey questionnaire

As part of the research study, a questionnaire (refer to Appendix C) was sent to over 50 law enforcement agencies throughout the United States. The purpose of the questionnaire was to assess the level of interest in automated reporting systems, to determine the status of such systems today, to determine the potential perceived benefits of automated reporting systems, and to determine the factors which would impact an agency's decision to increase automation. As part of the survey, the respondents were also asked to provide data, both as to today and 10 years ago, on the number of sworn personnel, the number of civilian personnel, the number of crime reports taken by the agency, and the population of the area served by the agency. A total of 38 questionnaires (76%) were returned by the agencies. Some agencies were not able to provide all the requested data. Thus, the number of responses (N) to the various questions varied.

* Thirty-six (94.7%) of the respondents expressed an interest in automated field reporting.

* Two respondents (5.3%) currently had automated field reporting systems; 8 (21.1%) were in the process of planning a system or had a pilot program; 28 (73.7%) had no system and were not currently planning a system.

* Thirty-two (84.2%) of the respondents provided data on crime reports. Twenty-six (68.4%) experienced an increase in crime reports (today versus 10 years ago). The average increase, using the mean, was 40.8%.

The respondents were also asked to rate the benefit automated in-field reporting would be to law enforcement. The respondents were provided a scale of 1 (significant benefit) to 9 (no benefit). Table 1 reflects a breakdown of the responses.

Table 1
Perceived Benefit of an Automated Reporting System

Scale	Definition	Number of Respondents
1	Significant Benefit	18
2	Significant to Good Benefit	6
3	Good Benefit	8
4	Good to Some Benefit	2
5	Some Benefit	4
6-9	Little to No Benefit	0
	Total	38

The respondents were also asked what effect an in-field system had (or should have) on their departments. Table 2 is a summary of the responses, giving both the effects as perceived by the respondents and the number of respondents that identified each effect.

Table 2
Perceived Effects of An Automated In-Field Reporting System

Perceived Effect	Number of Respondents*
Increased Police Officer Availability	22
Faster Processing and Access to Crime Reports	17
Better Quality/Readability	14
Salary Savings on Clerical Functions	9
More Accurate Reports	9
More Accurate Data/Fewer Lost Reports	9
More Standardized Reports	6
Improved Morale/Professionalism	5

* More than one response from respondents

The respondents were also asked to rank eight factors (1 being the most important, 8 the least important) as to their impact on the decision to use or increase automation. Table 3 depicts the factors and the averages using the median and mode. Not all respondents answered the entire question, thus the number of respondents is also provided.

Table 3
Factors Impacting the Decision To Automate

Factor	N	Mode	Median
Funding	37	1	2
Effect on Records Units/ Processing and Storage	35	2	3
Effect on Police Officer Availability	36	3	3
Support from Command Staff	35	4	4
Support of the Rank and File	36	4	4
Support from the Community	35	7	7
Support from Politicians	36	8	6
State or Local Laws	36	8	7

This study is the culmination of over a year of research effort. As part of that research, a Nominal Group Panel (NGT), comprised of six members was held on October 13, 1989. That panel developed candidate lists of 22 events and 29 trends (refer to Appendixes D and E). That panel ultimately distilled those lists down to six events and five trends that bear significantly on the study issue. The recent scanning process determined those trends and events remained relevant to the issue question and also resulted in the identification of three additional events and four additional trends which had not been identified by the NGT panel. These trends and events were determined to be very significant to the study issue, and were added to the distilled list of trends and events from the NGT panel. The combined list containing nine trends and nine events was carried over for use in a modified conventional delphi.*

The trends and events, along with their definitions, are listed below. The use of ** identifies those trends or events selected by the NGT panel; use of *** denotes those identified during the scanning process.

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* As the futures forecasting process evolved, it was determined that two trends and two events were not worthy of further examination and were dropped from the study. The remainder of this research paper will only address the seven trends and events which were retained for study.

Identification and Definition of Trends

Trend 1 - Public Funding**
Funding for police departments comes from tax generated revenues. This trend involves the amount of general fund revenues for city governments.

Trend 2 - Crime Analysis Programs***
This is defined as the use or development of timely crime analysis programs by police departments.

Trend 3 - Quality of Police Service**
This trend is the overall community perception of the quality of service rendered by local law enforcement.

Trend 4 - Police Officer Availability **
This is defined as the time police officers are available in the field to respond to calls for service.

Trend 5 - Volume of Calls for Service**
This is the number of calls of police service per year generated by citizens.

Trend 6 - Use of Computer-Aided Dispatch Systems ***
This is the level of use of computer-aided radio call dispatch systems by law enforcement agencies.

Trend 7 - Quality of Police Reports***
This is defined as the quality of reports completed by field police officers. Quality refers to their value in providing uniform crime analysis information, their use in solving crimes, and their completeness for court proceedings.

Identification and Definition of Events

Event 1 - ACLU Challenges Legality of Computerized Police Reports**
This event is a constitutional challenge by the American Civil Liberties Union on the legality of automated (computer-generated) police reports based on the "best records" rule of evidence and the possibility that computer stored reports could be undetectably altered.

Event 2 - Computer Technology Eliminates the Need for Computer Literacy**
This is the development of computer technology that is so user friendly that it requires very little or no training to use.

Event 3 - Major Recession Occurs**
This is a major worldwide or national major recession. Such an event would have fiscal consequences as well as an increase in report calls and calls for service.

Event 4 - Cost of Labor Exceeds the Cost of Automation**
This is the point where hand labor costs associated with taking field crime reports exceeds the expense of installing and operating an automated system.

Event 5 - U.S. Becomes Involved in a War in the Middle East***
This is the outbreak of military hostilities between the United States and a country in the Middle East. Although the war may be an economic problem, military research would provide advancements in automated technology.

Event 6 - Affordable High-Tech Computers***
This is the development of computers with twice the speed and twice the capacity of today, at about one-half the cost.

Event 7 - U.S. Department of Justice (USDOJ) Supports Automated Reporting***
This is initiation of a program by the USDOJ which advocates and supports (through grants or other funding) the development and use of automated field reporting systems by law enforcement.

Modified Conventional Delphi Panel

The judgemental forecasting of the trends and events was accomplished through use of a Modified Conventional Delphi (MCD) panel. The MCD was comprised of the following 13 participants (all were from California):

1. A police manager from an agency in Orange County .
2. A police manager from an agency in Ventura County.
3. A police manager from an agency in Alameda County.
4. A police manager from a South Bay agency in Los Angeles County.
5. A consultant from the RAND Corporation.
6. A judge from the Los Angeles County Municipal Court.
7. A law enforcement director of computer systems.
8. A member from SEARCH Group, Inc. - A consortium for justice information and statistics.
9. A member from a communications consultant company.
10. A police manager from a planning and research unit.
11. A police supervisor from a planning and research unit.
12. A police executive from a large metropolitan police agency.
13. An analyst from the city administrative officer's office from a large metropolitan city.

The MCD process consisted of two rounds (refer to Appendixes F and G). In Round One, each panel member was sent a questionnaire containing the above trends and events. The definitions were supplied so that each panel member clearly understood what was being forecasted. Panel members were asked to make estimates, using their own expertise and opinions, on the trend levels and probability that the selected events would occur. The responses were examined and high, low, and median values extracted. That information was then mailed to the MCD panel as Round Two. In Round Two, the participants were able to examine the results of the first round, evaluate their original responses, and make changes to their original responses in light of the first round results. The results of Round Two were then evaluated and the median values obtained for use in an cross-impact analysis.

Trends

The MCD panel used a ratio scale to forecast the trends. Today's value (the present) was equal to 100. An estimate equal to today would be 100, less than today would be less than 100, and greater than today would be more than 100. The forecast included past estimates (5 years ago), and both nominal and normative estimates for the future (5 and 10 years from now).

Table 4 depicts the results of the MCD panel's trend forecast (using panel median values). A table of respondent ranges and graphs of the trend levels are contained as Appendixes H and I.

TABLE 4

Trend Evaluation

Trend #	TREND STATEMENT (Abbreviated)	LEVEL OF THE TREND ** (Today = 100)			
		5 Years Ago	Today	* Five years from now	* Ten years from now
1	PUBLIC FUNDING	85	100	115/140	140/200
2	CRIME ANALYSIS PROGRAMS	80	100	125/150	175/300
3	QUALITY OF POLICE SERVICE	95	100	110/150	150/200
4	POLICE OFFICER AVAILABILITY	90	100	110/140	130/160
5	VOLUME OF CALLS FOR SERVICE	70	100	150/150	200/150
6	USE OF COMPUTER AIDED DISPATCH SYSTEMS	70	100	150/180	200/200
7	QUALITY OF POLICE REPORTS	90	100	110/150	120/200

** Modified Delphi Medians

* Five years from now "will be" / "should be"

* Ten years from now "will be" / "should be"

The following is a brief analysis of the MCD evaluation of the trends. Since the MCD process does not allow for round table discussion, the analysis focuses on the response data.

Trend 1 - Public Funding

Clearly, the amount of funding available to public entities has a major impact on operational decisions. Managers must evaluate the economic balance between new programs or automated systems against the perceived benefits and the impact on their budgets. This MCD panel developed an interesting range of estimates for this trend. Most of the respondents thought that the funding 5 years ago was less than today - the median value being 85. The median estimate for 5 years from now showed a slight increase, and the 10 year estimate was 140. However, the ranges of the responses indicated that some members felt the level of funding would decrease. It was interesting to note that the low range level for

the 10 year estimate (85) was lower than the 5 year estimate (95). In general, the MCD panel believed that the level of funding "will be" far less that it "should be."

Trend 2 - Crime Analysis Programs

Crime analysis programs are methodically applied sets of criteria for analyzing crime information. Depending on the department, that data can be used to solve crimes, forecast criminal behavior, deploy field resources, and alert the community to crimes trends. For such a program to be successful, the data must be timely and accurate. Most MCD respondents projected that law enforcement agencies will increasingly employ crime analysis programs. Some of the respondents felt that trend would slightly increase; others forecasted the trend as a foregone conclusion. Thus, all the innercortile ranges (range between the low and the high responses) were far greater than all the other trends. The MCD respondents also believed that the trend will not be as high as it "should be."

Trend 3 - Quality of Police Service

Law enforcement administrators and the public are both concerned about the quality of police service provided to their communities. Programs or technological changes in an organization must correlate in some way to maintaining or improving that quality of service.

The MCD respondents gave a wide range of responses to this trend. The range for 5 years ago was from 70-200; the median being 95. Six of the respondents opined that the quality of service 5 years ago was equal to or greater than today; the rest believed that the quality was less than today. The median scores for 5 years from now and 10 years from now indicate that the respondents believe that the quality of service will increase. However, as with Trends 1 and 2, the "will be" was less than the "should be." It was interesting to note that the ranges for the "will be" forecasts included projected decreases in quality.

Trend 4 - Police Officer Availability

The ability to rapidly respond is predicated upon how many police officers are deployed and the availability of those officers. Programs that are implemented must be carefully evaluated to ensure they do not detract from police officer availability.

The MCD respondents gave a wide variety of responses to this trend. The range of responses was from 75-175 for estimates of 5 years ago. Those who were involved with the police profession generally felt that officers were more available 5 years ago than today; non-police participants tended to rank availability as less than today.

The 5 and 10 year from now "will be" forecasts had ranges of 80-175 and 70-250, respectively. It was apparent that some respondents felt that availability would decrease. As with the 5 year ago estimate, there was a definite split between police and non-police respondents. Interestingly, the non-police respondents generally opined that availability would decrease or show very little increase. The police respondents generally believed that availability will increase. Both the medians and the ranges reflected that the "will be" availability will be less than the "should be" forecasts.

Trend 5 - Volume of Calls For Service

One of the basic responsibilities of a police agency is to respond to citizen calls for service. Police administrators budget resources and deploy personnel based on calls for service. Factors which can influence calls for service are population, urbanization, the economy, demographic makeup of the community, and expectations for police services by the community.

All respondents believed that the level of calls for service 5 years ago was less than today. The range of those responses was 50-90, the median being 70. All but one of the respondents estimated that the level of calls for service will increase by 5 years from now. The remaining respondent felt the level would remain the same as today. All respondents forecasted an increase by 10 years

from now; the range was 120-400. The median estimates for the "will be" and "should be" 5 years from now were both 150. Interestingly, the medians for 10 years from now reflected a higher estimate in the "will be" (200) than the "should be" (150).

Trend 6 - Use of Computer Aided Dispatch (CAD) Systems

As indicated earlier in this study, radio frequencies can handle a much greater volume of traffic using digital communication rather than voice transmission. The MCD panel provided median estimates which support that CAD systems will become more common in the future. The "will be" ranges at the 5 years and 10 years from now were 100-250 and 110-500, respectively; the "should be" ranges were 100-200 and 110-400.

Trend 7 - Quality of Police Reports

With the exception of the few law enforcement agencies which have implemented some form of automated reporting system, most agencies still write reports by hand (or in some cases type reports). As a result, terminology varies, statistical data is often inconsistent, and the quality of reports often results in the rejection of cases by prosecutors and/or becomes a focus of the defense in criminal proceedings. The recent passage of California's Proposition 115 (The Crime Victims' Justice Reform Act), which allows hearsay testimony based upon police reports, intensifies the need to ensure reports are accurate, factual, and professional.

Generally, the MCD respondents believed that the quality of reports 5 years ago was less than today. The range of estimates was from 50-120, the median being 90. Only 3 of those estimates were 100 or above; all 3 were provided by respondents who were in the police profession.

The "will be" forecasts for 5 and 10 years from now had ranges of 90-250 and 80-500, respectively. The values for the 5 years from now had 4 estimates that were equal to or less than today; the 10 years from now had 3 such estimates.

Clearly, the MCD panel members were split in their opinions as to this trend. The median values for the "will be" reflect a 10 percent increase in 5 years and a 20 percent increase (over today) in 10 years. The "should be" median estimates for the 5 years (150) and 10 years (200) were much greater. The respondents believed that the quality of reports will not increase at the rate they should.

Events

The MCD panel also forecasted the seven events. The forecast included the number of years until the probability of each event first exceeds zero, the probability of occurrence of each event 5 years from now, and the probability of occurrence 10 years from now. The probability scale was zero (event will not happen by the established time limit) to 100 (event will happen by the established time limit). Additionally, the MCD panel evaluated the impact on the issue, both positive and negative, on a zero to 10 scale. Table 5 depicts the results, using the MCD panel medians, of the events forecasted. A table of the respondents' ranges and graphs of the event data are contained in Appendixes J and K.

TABLE 5

Event Evaluation

Event #	EVENT STATEMENT	* YEARS UNTIL PROBABILITY FIRST EXCEEDS ZERO	* PROBABILITY		IMPACT ON THE ISSUE AREA IF THE EVENT OCCURRED	
			Five Years From Now (0-100 %)	Ten Years From Now (0-100%)	* POSITIVE (0-10 scale)	* NEGATIVE (0-10 scale)
1	ACLU CHALLENGES THE LEGALITY OF COMPUTERIZED POLICE REPORTS	1.5	65	95	0	5
2	COMPUTER TECHNOLOGY ELIMINATES NEED FOR COMPUTER LITERACY	3	50	85	9	0
3	MAJOR RECESSION OCCURS	1	50	75	1	7
4	COST OF LABOR EXCEEDS COST OF AUTOMATION	3	60	90	6	5
5	U.S. BECOME INVOLVED IN A WAR IN THE MIDDLE EAST	0.5	70	60	2	5
6	AFFORDABLE HIGH-TECH COMPUTERS	2	70	95	10	0
7	U.S. DEPARTMENT OF JUSTICE SUPPORTS AUTOMATED REPORTING	2	65	90	9	0

* Modified Delphi Medians

The following is an analysis of the MCD evaluation of the events:

Event 1 - ACLU Challenges the Legality of Computerized Police Reports

The passage of California's Proposition 115 in June of 1990 has added a new dimension to the criminal justice system. Some of those changes are in the areas of hearsay testimony, defense discovery to the prosecution, and timely criminal proceedings. In addition, as computerized reports become more common, it is expected that the criminal defenses will start focusing in the "best records" rule of evidence as a defense strategy. Many of these types of issues are commonly brought into the judicial process by the ACLU. A ruling, either supporting or rejecting the validity of computerized reports, would have a dramatic impact on the issue question.

The MCD panel members felt that such a challenge by the ACLU was possible in about 1.5 years. The panel felt there was a 65 percent probability within 5 years, and a 95 percent probability within 10 years. The overall impact of such a challenge was viewed as being a negative 5.

Event 2 - Computer Technology Eliminates Need For Computer Literacy

A major concern with any new program or system is the amount of training which will be needed for implementation. This is particularly true with automated systems. Systems which are not "user friendly" or which require a high level of sophisticated skills may not be more productive and will decrease the employee pool which can use them. As systems become more "user friendly", employee fear and resistance to computers will be decreased.

The MCD panel forecast that computers and software which will require little or no training will be available by 1993. They believed there is a 50 percent probability that will occur by 1995, and an 85 percent probability by 2000. The impact on the issue question would be a positive 9.

Event 3 - Major Recession Occurs

The picture for the United States economy is a valuable tool for any future planning. If the economy is stable or in an upsurge, employment is generally high and there is a broad tax base. On the other hand, a downturn in the economy can have some very dramatic effects; spending slows down, demands for social programs increase, and tax base revenues become uncertain.

The MCD panel opined that a recession could occur in 1991. The range of probabilities by 5 years from now was from 25 to 99 percent; the median being 50 percent. The range for 10 years from now was 0-100 percent; with a median value of 75 percent. The zero percent figure was made by only one respondent; the remaining respondents gave a range from 50 to 100 percent.

Event 4 - Cost of Labor Exceeds Cost of Automation

An identifiable trend in the field of automated technology is that computers and software are becoming more powerful and less expensive. At the same time, the costs associated with the hiring, training, and retaining qualified law enforcement employees has escalated. Although automated systems are still expensive, there will be a point when the paths of the above two trends will cross and the labor costs of manually completing field crime reports will exceed the expense of installing and operating an automated system.

The MCD panel forecast that the first time the probability of such an event occurring will be in 1993; with a 60 percent probability by 1995 and a 90 percent probability by the year 2000. The ranges of the forecasts, both for 5 and 10 years from now, indicated that most respondents gave this event a very real chance of occurring.

Event 5 - U.S. Becomes Involved In A War in the Middle East

Many of the communications and automated systems advances in the United States have been the result of military contracts or through the defense industry. A war or potential war by the United States would stimulate military design and

spending on new or more technologically advanced systems. As both the older and newer systems become unclassified, those new technologies become available for public and private use. On the downside, a war could result in a protracted commitment of U.S. resources and could alter or delay the implementation of many federal, sate, or local programs. The MCD panel estimated a war could occur within 6 months. The panel's estimates for 5 years and 10 years for now were 70 percent and 60 percent, respectively. The range of responses for both periods was 0-100 percent. The data suggests that if such a war does not occur within a year, then the probability will decrease with the passage of time.

Event 6 - Affordable High-Tech Computers

Affordable high-speed, large capacity computers were forecasted to be available by 1992, with a 70 percent probability by 1995 and a 95 percent probability by the year 2000. The development of such computers would have a positive 10 impact on the issue area.

Event 7 - U.S. Department of Justice (USDOJ) Supports Automated Reporting

If the USDOJ took an active role in supporting automated reporting, that would equate to increased funding for grants, awards, and development of automated systems. Such a positive stand by the federal government would also stimulate computer companies to further focus on the development of hardware and software systems designed to meet the specific needs of law enforcement.

It was forecast by the MCD panel that such a position by the USDOJ would first occur in 1992. The panel forecast a 65 percent (median) probability by the year 1995 (the range of the estimates was from a low of 20 percent to a high of 100 percent) and a 90 percent probability by the year 2000 (the range was from 40 to 100 percent).

Cross-Impact Analysis

The next step of the futures research process was a cross-impact analysis of

the seven trends and seven events. The purpose of a cross-impact analysis is to assess how each forecasted event, if it occurred, would impact the other events and the seven trends. The results are helpful in selecting trends and events to develop scenarios of the future. During this process, the impact is recorded as the percentage change (plus or minus) over the original MCD forecast, and represents the maximum impact upon the event or trend.

Rather than having this complex process completed by the MCD, a small group of three persons was utilized. The group included the researcher, a police manager from an administrative assignment, and a police manager from a small agency. The police managers had been members of the MCD panel. The cross-impact analysis was conducted using a matrix. The seven events were listed vertically on the matrix, and the seven events and seven trends were plotted horizontally on the matrix. Any percent change in a matrix box was considered a "hit"; that is it had an impact on the trend or event. Mean scores, rounded to the nearest five percent were used for the matrix (refer to Appendix L).

The cross-impact analysis identified three actor events, that is, events which had the greatest impact upon the other events and the seven trends. Actor events should be the focus of policy action. By evaluating how each actor event affected the other events and trends, policies can be directed with the objective of making the event more likely or less likely to occur. The actor events were:

1. Event 4 - Major Recession Occurs (10 Hits)

A recession by its very definition means a downturn in the economy. Depending on the depth of that downturn, the effects could be mild to very grave. This event had the impact of reducing the probability of four of the other events and three of the trends.

Historically, recessions result in increased unemployment, inflation, and uncertain tax revenue bases (negatively affecting Trend 1 - Public Funding). Decreased sales would result in a cut back in research and design by computer companies (negatively impacting the probability of Event 2 - Technology

Eliminates Need for Computer Literacy; and Event 6 - Affordable High-Tech Computers).

Recessions also have an impact on law enforcement agencies. As unemployment rises, one would expect to see a corresponding rise in the calls for police service (positively impacting Trend 5 - Volume of Calls For Service, which could negatively impact police operations). Decreases in sales and property tax revenues will result in budget cutbacks or personnel freezes by governmental agencies. That will severely impact the ability to hire, train, and maintain a fully staffed police department. Police officer availability will decrease (negatively impacting Trend 4 - Police Officer Availability), causing an increase in the response time to citizens' calls for service. As the demand for police services continues to rise, quality of service will suffer (negatively impacting Trend 3 - Quality of Police Service). Budget priorities of law enforcement agencies will focus on maintaining staffing levels; automation items will become "nice to have" and the first items cut from the budget (increasing the possibility of Event 4 - Cost of Labor Exceeds Automation, and decreasing the probability of Event 7 - USDOJ Supports Automated Reporting).

2. Event 3 - Computer Technology Eliminates Need for Computer Literacy (9 Hits)

This was a positive event. If this event were to occur, it would have a positive impact on three events and six trends. The perceived complexity associated with the use of computers tends to scare people. Additionally, the more complex the program or the software, the greater the learning curve and training costs. As the technology becomes more "user friendly," it decreases anxiety and increases the pool of employees who can and will use automated systems. As training costs decrease, the expenses associated with implementing a system will decrease. This reduces the total cost of an automated system and makes it more affordable (increasing the probability of Event 4 - Cost of Labor Exceeds Cost of Automation, and positively impacting Trend 1 - Public Funding). This resulting increase in demand in the computer market will stimulate

production of less-expensive, larger, faster hardware and software (increasing the probability of Event 6 - Affordable High-Tech Computers and the probability of Event 8 - USDOJ Support for Automated Reporting).

The elimination of the need for computer literacy will also stimulate increased use of computer systems by police departments. The development of user friendly systems will increase Trend 2 - Crime Analysis Programs, because the ease of input and access will result in the capture of timely crime related information. The more user friendly the system, the less time it will take to complete tasks (positively impacting Trend 4 - Police Officer Availability). This should equate to more time to provide a higher level of service (Trend 3 - Quality of Police Service). CAD systems will become much less expensive and easier to implement (Trend 6 - Use of CAD Systems), and ease of automation reports will result in more standardized, higher quality police reports (Trend 8 - Quality of Police Reports). .

3. Event 1 - ACLU Challenges the Legality of Computerized Police Reports (7 Hits)

This event had a negative impact on one event and six of the trends. A legal challenge could put automated reporting systems in limbo until the court case is decided. Any current planning efforts to implement an automated reporting system would have to be put on hold, causing a major setback in terms of lost time and possible increased costs. Law enforcement provides a significant market to systems design firms, computer companies and software designers. The loss of that market could stall sales, adding to the conditions for a recession (increasing the probability of Event 3 - Major Recession). If the legal issues are unsettled, there is very little possibility that USDOJ will take a position to support expanding or funding new automated reporting systems (reducing the probability of Event 7- USDOJ Supports Automated Reporting). Policy makers will be hesitant to provide funds for automation (Trend 1 - Public Funding), and there will be a marked impact on the ability of law enforcement agencies to provide the best

possible service. Crime analysis programs will suffer (Trend 2), and operations efforts will have to rely on expensive labor intensive systems, negatively impacting Trend 3 (Quality of Police Service), Trend 4 (Availability of Police Officers), and Trend 7 (Quality of Police Reports). This lack of ability to automate reporting systems will most assuredly result in the occurrence of Event 2 (Cost of Labor Exceeds Cost of Automation). It would be important to planners to try to mitigate the probability of the occurrence of this event.

Reactor events and trends were those most impacted by the events. There were five reactors. They are listed below with a review of the number of impacted events and the perceived direction of their impact.

* Trend 1 - (Public Funding) led with seven hits.
  - Negatively impacted by: Event 1 (ACLU Challenge) and Event 5 (War in Middle East).
  - Positively impacted by: All five of the remaining events.

* Event 5 - (Cost of Labor Exceeds Cost of Automation) five hits.
  - Negatively impacted by: None
  - Positively impacted by: All events except Event 7 (USDOJ Support).

* Event 7 - (USDOJ supports Automated Reporting) five hits.
  - Negatively impacted by: Events 1 (ACLU Challenge) and 3 (Recession).
  - Positively impacted by: Event 2 (Technology Eliminates Need For Computer Literacy); Event 4 (Cost of Labor Exceeds Automation): and Event 6 (Affordable High-Tech Computers).

* Trend 2 - (Crime Analysis Programs) five hits.
  - Negatively impacted by: Event 1 (Public Funding).
  - Positively impacted by: Event 2 (Computer Literacy), Event (Recession), Event 6 (Affordable High-Tech Computers), and Event 7 (USDOJ Support).

* Trend 4 - (Police Officer Availability) five hits.
  - Negatively impacted by: Event 1 (ACLU Challenge), Event 3 (Recession), and Event 4 (Cost of Labor Exceeds Automation).
  - Positively impacted by: Event 2 (Technology Eliminates Need Fro Computer Literacy), and Event 7 (USDOJ Support).

Scenarios

The final phase of this chapter is the development of scenarios - glimpses of possible futures - which are developed based upon the previous study of the trends and events. Scenarios are imaginative pictures of what could be. The purpose of the scenarios is to provide planners and policy makers of today with some windows of what the future may hold.

The city upon which the scenarios in this study are based is the fictional City of San Angeles. San Angeles is a large metropolitan city in Southern California. A more complete description of the City will be presented in the Section 2 of this research study.

Three modes of scenario forecasting will be presented: The Exploratory (Nominal) - "Surprise Free"; the Hypothetical - "What If"; and the Normative - "Desired and Attainable."

Exploratory Scenario

"San Angeles Police Department Automates In-Field Crime Reporting"

The rising street gang warfare of the early 1990's in the City of San Angeles reached epidemic proportions in 1997. Calls for police service have increased by 25 percent, which has dramatically affected the response time of police officers. Public fear of street violence resulted in the demand for more police officers for street patrol. The General Fund of the City has not recovered from the major depression of 1993, and the City cannot afford to hire additional officers. In an effort to increase officer availability, the San Angeles Police

Department recently used salary savings from a hiring and promotional freeze to install computers in its radio cars. The computers are completely user friendly and require little training. Field police officers are dispatched radio calls via the computers, all crimes reports are completed in the field by use of the word processing software in the computers, and the computers automatically process and transmit the reports to the station via radio frequency. Crime data is immediately filed in data banks and provides up to the minute crime analysis reports.

The technology for in-field automated radio transmitted reporting systems was perfected in 1992. The technology was developed by the military in preparation for the war with Iraq. That technology was released for public use in 1993, but the systems were not cost effective. That changed in 1994, when affordable high-tech super computers hit the public market.

The American Civil Liberties Union challenged the legality of automated crime reports in 1994. The challenge put such systems in limbo until the landmark 1996 ruling by the United States Supreme Court held that computer-generated reports had sufficient safeguards against tampering and met the "best records" test.

The in-field system has increased the productivity of the San Angeles Police Department and increased field officer availability to handle calls for service.

Hypothetical Scenario

"U.S. Supreme Court Rules Against Computerized Crime Reports

The year 1993 was marked by the onset on a major depression. The economy took a major downturn which resulted in mass layoffs and a rapid rise in unemployment. The development of computer technology had reached the stage where users needed little or no training to use them. When the depression hit, the costs of systems plummeted and systems designers were pushing low cost

systems to law enforcement. The City of San Angeles, faced with a decreasing tax base, hurriedly implemented an automated reporting system in 1995. The cost of the system proved to be less than hiring new police officers, and productivity increased.

That success turned to disaster in 1999. The United States Supreme Court ruled that computer stored and generated crime reports are not admissible in court. The issue was brought before the Court by the American Civil Liberties Union using the system implemented by the San Angeles Police Department as the basis for appeal. Poor planning on the part of San Angeles resulted in an automated system which had not been thoroughly evaluated. It was not a secure data base and reports or stored data could be altered without detection. The Court ruled such reports were unreliable and did not meet the "best records" standard.

Based upon the ruling, the police department had to reinstitute a manual system. It resulted in a significant labor intensive effort. The time it took field officers to complete crime reports increased significantly. As field officer availability decreased, the length of delays to citizens' calls for service increased. Public polls reflect extreme dissatisfaction with the quality of service rendered by the police. The City Council has let it be known that funding for any future automated systems will receive a very cold reception.

Normative Scenario

"San Angeles Police Automated Reporting System: Planning Made It Happen"

By the year 2000, the San Angeles Police Department had completely automated the process of taking field crime reports. The technological advances of the 1990's led to durable small computers capable of handling and digitally transmitting large volumes of information. The public and private sectors rely

heavily on paperless reporting systems. The hardware and software advances have made the systems completely user friendly. Thus, they require little training to use and are far more cost effective than manual hand labor. Technological safeguards ensure the confidentiality of information and prevent stored data from being altered. Based on those advances, the United States Supreme Court upheld the legality of computer generated crime and arrest reports.

Strategic planning by the San Angeles Police Department in the early 1990's resulted in a policy which ensured all computerized systems were part of a master plan. Thus, as records management and informational systems were developed, they were part of a larger overall system. This saved the City millions of dollars on separate system designs and hardware. The threatened recession of the 1990's occurred in 1993, but strategic planning efforts by the San Angeles Police Department had forecast that event and the budget was prioritized to keep the automated program on line. Funding was tight, but the reduced costs of automated systems, coupled with a reasonable and consistent master plan, allowed the planning effort to succeed.

Public surveys indicate a high level of satisfaction with the quality of service provided by the police department. Police officer availability has increased by 20 percent, and the average response time to emergency calls for service has improved by over a minute.

Section 2

STRATEGIC MANAGEMENT:

A STRATEGIC PLAN FOR DEVELOPING AUTOMATED FIELD CRIME REPORTING IN A LARGE METROPOLITAN POLICE AGENCY IN CALIFORNIA

The process of strategic planning is defined as:

> **A structured approach, sometimes rational and other times not, of bringing anticipations of an unknown future environment to bear on today's decisions.**[3]

This portion of the paper outlines the structure and how anticipations bear on today's decisions. The identification of trends and events in Section 1 and some of the techniques used in this portion of the paper are the "anticipations" of the unknown future. The function of putting these things together is the process of strategic management. The strategic management plan will be based upon the hypothetical scenario "U.S. Supreme Court Rules Against Computerized Crime Reports" from Section 1. That scenario painted a possible bleak future for an automated reporting system in the City of San Angeles. Thus, it stands to reason that the strategic management objective will be to prevent that scenario from coming true.

Subject of Strategic Management Plan

The subject of this strategic management plan with be the San Angeles Police Department (SAPD) as it operates within the larger city government of San Angeles. The SAPD is comprised of 8,000 sworn officers and 1200 civilian personnel. It serves the City of San Angeles, which boasts an ethnically and culturally diverse population of three million.

The Department is headed by a five member citizen commission, appointed by the mayor. The chief of police serves under Civil Service protection and is the General Manager of SAPD. The Department is organized into three separate branches: Operations, Administration, and Special Services. The City is served by 18 geographic police precincts; each of which houses patrol, investigation, and community relations functions. In general, the SAPD is known as an innovative department, and prides itself on providing a high quality of service to the citizens of San Angeles. Over the past several years, calls for police service have dramatically increased, taxing the ability of SAPD to field sufficient personnel to meet the demand. SAPD has a CAD system, but has no automated system for taking reports. It is estimated that 30-40 percent of a SAPD patrol officer's time is consumed by the current report process.

San Angeles is a Charter City and configured in a strong council, weak mayor style of government. The 15 City Council members are elected by districts; the mayor is elected by popular vote. The City Administrative Officer only recommends actions to the City Council. Most of the City Council's work is done through the committee process. Depending on the subject under review, the matter may be reviewed and considered from one to several committees before the proposal ever reaches the full City Council. The 15 different standing committees can approve, recommend amendment, alter, or disapprove matters under their jurisdiction.

Services are supplied to the City through 31 different departments, each headed by a general manager. Some of the departments provide direct services to the citizens of San Angeles, other supply support to other departments.

Mission Statement

A mission statement is a formalized expression of the broad purpose and mission of an organization. Such statements are "macro" mission statements.

The "macro" mission statement of the San Angeles Police Department is:

> **To protect the rights and privileges of all within its jurisdiction to be free from criminal attack, to be secure in their possessions, and to live in peace. It is incumbent upon the Department to be responsive to the needs of the people by performing the law enforcement function in an effective and professional manner.**

Mission statements which define a specific organizational unit, activity , or program are "micro" mission statements. The "micro" mission statement related to the issue question of this study is:

> **To maximize service to the citizens by providing automated reporting services which make the most efficient use of resources, while providing the necessary information to deter crime, to arrest perpetrators of crimes, and to provide the criminal justice system with factual information.**

Situational Analysis

Any strategic plan must include a through situational analysis. The situational analysis in this paper involved two processes: A WOTS-UP (Weaknesses, Opportunities, Threats, Strengths Underlying Planning) model and a Strategic Assumption Surfacing Technique (SAST). A group comprised of five police department employees (analysis panel) was used to conduct the situational analysis.

WOTS-UP Analysis

The WOTS-UP analysis involved two separate assessments. The first assessment involved the trends and events which were developed during the futures research. The trends and events were used to scan for external environmental factors that could have impact on SAPD's ability to respond to the strategic issue. The analysis was done in terms of threats and opportunities. The second assessment was a capability analysis of SAPD's internal strengths and weaknesses.

Public Funding.

This trend must be viewed as a threat. There is little likelihood that tax base revenues are going to increase beyond inflationary rates. The public sent a very strong message to California government when the voters overwhelmingly approved California's Proposition 13 in the late 1970's. As tax revenues decreased, government agencies turned to tax override bond measures to fund expensive programs. That met with success, but as California voters began to realize the tax liability effects of those bonds, a movement has begun to defeat those measures. That was clearly pointed out in the November 1990 statewide election. Almost every bond measure failed to pass.

Developing trends also indicate that state, county, and local government budgets are headed for major shortfalls. The next few years will probably be marked by cost cutting measures. Any new programs will have to be focused on reducing costs and increasing productivity.

Crime Analysis Programs.

San Angeles is a large urban city. As such, it is experiencing the societal problems associated with today's large urban environments. Population is increasing at a rapid rate, most of which is comprised of immigrants from throughout the world. Crime is on the increase, and street gangs are a way of life in some areas of the City. The resources of the police department have been unable to keep pace with the ever increasing demands for police service. The county jail system is overcrowded, and the court systems have a back log of cases. SAPD can no longer rely on random patrol and must prioritize resources to demonstrated crime problems. Crime analysis programs provide that focus. The window of opportunity is there for SAPD to take advantage of the new technology which can provide timely, accurate crime analysis information. Careful planning can integrate an automated reporting system as part of a crime analysis program.

Volume of Calls for Service.

The number of calls for service has been increasing faster than the corresponding resources of SAPD. It does not appear that trend will change. The call load demand will reduce the ability of SAPD provide timely police response. Such a situation presents a threat. Demands for higher productivity, without additional support and or operational resources, will result in officers taking "shortcuts" which decrease the quality of police service.

On the other hand, the situation is not without its opportunities. The increase in calls for service can be utilized to justify new or innovative systems to increase productivity.

Use of CAD Systems.

This is viewed as an opportunity. As alluded to earlier in this study, radio frequencies can handle five to ten times the traffic using digital rather than voice transmission. The lack of available radio frequencies and the increase in radio traffic resulting from the complexities of street police work are making CAD systems a necessity. SAPD has a CAD system, but it is reaching the stage where it is obsolete and in need of replacement. A well planned CAD system can complement or be expanded to an automated reporting system. The SAPD was recently was successful in obtaining 50 new radio frequencies from the Federal Communications Commission (FCC). Those frequencies will meet the future needs of the SAPD. If, however, the frequencies are not in use in five years, they will be reassigned by the FCC.

Quality of Police Reports.

This trend is mixed, but overall, it must be viewed as a threat. The passage of Proposition 115 in June of 1990, brought some much needed reform to the California criminal justice system. At the same time, many of those changes imposed a greater requirement for complete, accurate police reports. For example, the ability to testify to hearsay evidence could be hampered by

incomplete witness statements in police reports. Additionally, the mandated time schedule for court hearings and discovery procedures have placed a burden on police agencies to improve the overall quality of reports. Failure to meet that requirement can result in dismissal of criminal cases, the imposition of judicial sanctions on individual officers or prosecutors, or provide the basis for which legal challenges to Proposition 115 can be made.

Event Analysis

ACLU Challenge.

As previously indicated in Section 1 of this study, a challenge by the ACLU would be a negative event, and therefore must be considered a threat. The ACLU has taken a strong position on intelligence gathering by police agencies. It is concerned with "Big Brother" government and an abuse of the private rights of individuals. Since an automated reporting system would contain the ability to capture a variety of computerized information and will be used to prepare documents for court proceedings, it is anticipated the ACLU will file legal objections to the system or use of automated reports.

Computer Technology Eliminates Need for Computer Literacy.

This event is an opportunity. Reducing the amount of training needed to operate computers will alleviate the expensive training costs associated with implementing an automated system. As automated systems become easier to use, the labor pool that can and will use such systems increases. Computer companies are working to achieve this ideal. For example, GRID Systems has developed a notebook-size fully operational personal computer called the GRID Pad. Input is made through use of a stylus, eliminating the need for a separate keyboard and complex entry commands. Voice technology is also being developed. Such technology has the potential of eliminating time consuming manual input/output.

Major Recession Occurs.

Clearly, this event represents a threat. As the analysis in Section 1 pointed out, a sluggish economy results in a decreased tax base. Technology research and development will be reduced in favor of selling existing proven products. Economists support that a recession is a very real possibility. The last half of 1990 has been peppered with signals that a recession is here now. It is unknown how deep that recession will turn. Care must be taken to not rush into an automated system design for fear that funding will diminish. SAPD will be faced with real decisions regarding personnel cutbacks and budget priorities. If planning through a recession focuses only on the today, it will be a major set back to planning and preparing for the tomorrow.

Cost of Labor Exceeds the Cost of Automation.

This event has a very real probability of occurring and should be considered an opportunity. The budgetary environment in government is such that new programs must be evaluated based upon the increase in productivity and potential for cost savings. Sworn police officers are an expensive personnel item. Salaries and pension costs for sworn officers and clerical personnel increase with inflation. At the same time, the capabilities of automated systems are increasing and costs decreasing. At a point in time, these two trends will cross, making automated systems cost effective.

U.S. Becomes Involved in a War in the Middle East.

This is a mixed event; it poses both opportunities and threats. In all probability, a war in the Middle East would be a drawn out affair. Public sentiment might be positive at first, but could soon be the focus of antiwar protests and possible attacks of internal terrorism. Such events will require extensive police resources. Additionally, as law enforcement personnel who are military reservists are called to action, it will have a dramatic impact on police

staffing levels. Military personnel needs will also affect the pool of available police recruit candidates.

On the opportunity side, the defense industry will spend money and effort on the development of new and innovative communication and automation systems. Those research efforts will have a splash over into the private sector. Additionally, as newer technologies are developed, other military systems will become unclassified and available for public use.

Affordable High-Tech Computers.

This event is an opportunity, but could also be a threat. The opportunity lies in the availability of faster, less expensive, higher capacity computers. Generally, although more powerful, these computers are smaller, requiring less room.

At the same time, however, rapid technological developments can render previous expensive automated systems obsolete. Care must be taken to ensure automated systems are planned with expansion and future integration in mind.

USDOJ Supports Automated Reporting.

This event is an opportunity. Support of the USDOJ would stimulate additional interest on system designs by computer companies. Additionally, USDOJ support equates to possible grants, awards, and assistance in financing automated systems. Given the financial climate, and the competing priorities for the budget dollar, USDOJ support could open avenues for funding an automated reporting system.

Capability Analysis

This portion of the WOTS-UP analysis is an assessment of the internal organizational capabilities of SAPD.

Internal Strengths.

SAPD has a reputation as a proactive, innovative law enforcement agency. It enjoys an excellent reputation with the citizens of San Angeles, and has been receiving considerable community support calling for increased staffing of the Department. The SAPD recently experienced the addition of 400 new sworn officers, and met that recruitment and hiring challenge within one year. SAPD has its own training academy and has an effective in-service training program. Employees are kept up to date on major issues or receive timely training through weekly videotape programs. As a result, the police officer and supervisory ranks possess a high level of skill and competence. The hiring emphasis of the 1960's is now resulting in a significant number of service retirements. That turnover has created outstanding promotional opportunities in most of the Civil Service ranks.

With 8,000 sworn employees, SAPD is able to conduct task force operations or dedicate employees to major projects with minimal impact on field resources. This ability allows projects to retain continuity in the personnel who are assigned to the task.

The management of the Department is comprised of well educated highly dedicated administrators. The assignments offered by a large agency has provided each administrator with a variety of skills and experiences. There is a commitment by the management staff to provide high quality, professional police service to the community. On the whole, the relationship between the Department and the individual City Council members is on the positive side.

Internal Weaknesses.

The SAPD is organized in the traditional police model. While the model has clear lines of authority and strict chains of commands, it also results in very complicated communications channels. The process of gaining approval for an idea or program which affects multiple entities is cumbersome and time consuming. Additionally, some staff officers have been in their respective assignments for a considerable period of time and have developed a very narrow management focus.

Their opinions are often limited to what benefits their individual commands, thus losing the "big picture" as to what is best for the organization as a whole. The pressures of responding to the day to day operations of the Department take a majority of management emphasis. Long range planning needs receive minimal emphasis, and usually focus on one or two year time frames.

The budget of the City is extremely complicated. Individual general managers are not allowed flexibility and accountability to control their own budgets. Monies are allocated in set accounts, and any non-budgeted movement of funds over $25,000 requires approval of the City Council. The approval process is quite lengthy and adds to the administrative work load of SAPD and the City. Current projections indicated the City is headed for a major revenue shortfall, and all City departments may be asked to make across the board cuts in their budgets. The SAPD management views the CAO as less than supportive to the Department's needs.

As would be expected in any large city, the structure and administration of the City of San Angeles is extremely bureaucratic. The implementation of a new automated system by the SAPD requires the review and approval of several other City departments. That review and approval falls within the work load priorities of those departments, often setting planning efforts behind schedule. The management time commitment needed to shepherd projects through the City process is extensive, but is an absolute necessity.

There is a lukewarm relationship between SAPD and the Police Officers' Association (POA). The POA has broadly interpreted the term "change in working conditions" and tends to block change. Opposing views between management and the POA are quite frequently the subject of arbitration or law suits.

Adaptability to Change.

A capability chart was used to evaluate SAPD's ability to adapt to change, specifically in the area of automated reporting (refer to Appendix M). That analysis revealed that SAPD management and line personnel seek change which is

familiar or related. Change which is novel is avoided. In general, the SAPD adapts well to minor change. The only area in which change is viewed as rejected is in the area of resources. That is due to the complex organization of SAPD and the logistical difficulty in obtaining and controlling precious resources.

Strategic Assumption Surfacing Technique (SAST)

The SAST is the final phase of the situational analysis, and it complements the WOTS-UP analysis. In the SAST, the stakeholders related to the issue question are identified. Stakeholders are individuals, groups, or organizations who: 1) are impacted by the implementation of an automated reporting system; 2) are able to impact SAPD concerning the implementation of an automated reporting system; or 3) are concerned about automated reporting and/or the SAPD. Each stakeholder has a "stake" in the success or failure of SAPD's automated reporting program. Most stakeholders can be identified and their positions on the topic analyzed. Others, called snaildarters (named for a small fish that became an issue and unforeseeably halted the Tennessee Valley Authority Dam project) are not so easily identified or their positions known. They can suddenly present themselves during the planning process and cause the strategy to be modified or abandoned. A list of stakeholders, including possible snaildarters, was compiled by the analysis panel (refer to Appendix N). The list was then analyzed to reduce it to those stakeholders who would be most critical to the issue question. That process resulted in the identification of 14 key stakeholders.

Assumptions are made as to the projected position of each key stakeholder in relation to the issue question. Assumptions are defined as "a basic, deep-rooted, often unstated values and beliefs that individuals or groups have about the world."[4] The importance of the assumptions can not be over stressed. Sound assumptions are like sextants that guide a strategy to success.[5] The following is a list of the key stakeholders, and the assumptions which were generated for each. Appendix O is a graph which depicts the importance of the

stakeholders as they relate to the issue question, and the level of projected certainty in the assumptions assigned to the stakeholders.

1. Chief of Police - Supportive
   A. Will want to ensure the police department controls the project.
   B. Will be opposed to giving up sworn police officer positions to fund the program.

2. Assistant Chief, Operations - Supportive
   A. Will require that the automated reporting system be "user friendly."
   B. Will insist that the time it takes to train and operate the system can not detract from the availability of police officers.

3. Assistant Chief, Administrative Services - Supportive
   A. Will want to ensure the system does not complicate the duties of police dispatchers.
   B. Will be adamant that the system must be capable of future expansion and compatible with other Department automated systems.

4. ACLU - Opposed (Snaildarter)
   A. Will be opposed to an automated system that captures statistics on people.
   B. May view the system as intelligence gathering, and an invasion of privacy.
   C. Will be concerned how the information is used, stored, and protected from alteration.
   D. Will be looking for options to challenge the legality of California Proposition 115. Automated reporting may become a focus of that effort.

5. Citizens of San Angeles - Mixed
   A. Wants quality police service at the lowest possible cost.
   B. Will favor programs which increase police officer availability. However,

the program must be productive and cost efficient.

C. Are evenly split on the need to raise taxes for communications and automated systems.

D. Are more willing to fund programs that have a direct impact on their safety.

6. City Administrative Officer (CAO) - Mixed

A. The system must result in considerable cost savings to the City.

B. Will expect the system to result in a reduction in sworn and civilian positions within the police department.

7. City Council - Mixed

A. Faced with a major budget shortfall and are looking for ways to save money.

B. Recognize the need for automated systems development and do not want to see the City fall behind in automation.

C. Due to the public pressure for more police protection, they want to appear supportive of the police department.

D. Will want the public to vote on the funding for the system through a bond measure on the ballot.

8. Clerical Employees - Mixed

A. Supports technological advances, but not at the risk of losing jobs and promotional opportunities.

9. Clerical Employees Union - Opposed (Snaildarter)

A. Will see the automated system as reducing clerical positions.

B. Will see the loss of clerical positions as a threat to the power of the union .

10. Information Services Department (ISD), City of San Angeles - Mixed (Snaildarter)

A. Will be supportive as long as funding is included to staff positions in their

department.

B. Will want control over the standards and the final design of the automated reporting system.

11. Criminal Justice System - Supportive

(This group includes judges, the City Attorney, and the District Attorney)

A. Will see the system as a way to meet the time mandates of California Proposition 115.

B. Wants more legible, accurate police reports.

C. Will want some input into the design of the reports to ensure they meet their needs.

D. Will want to be kept up to date on the implementation of the automated system so that they can train their employees on the new forms and formats.

E. Will want the system to have safeguards to prevent alteration of reports.

12. Police Officers' Association - Mixed (Snaildarter)

A. Will see the automated system as a change in working conditions.

B. May take a position that the skills required of an automated system should result in higher pay or a bonus.

C. Will want input on the Department's disciplinary actions to prevent loss, damage, or misuse of the automated reporting equipment or system.

13. Surrounding Law Enforcement Agencies - Supportive

A. Will see it as an opportunity to evaluate the feasibility of an automated reporting system.

B. Will be concerned with how the system will effect development of County-wide standardized reports.

14. Police Managers and Supervisors - Supportive

A. Will see it as a tool to increase productivity.

B. Will want to be involved in development of standards for management information reports generated by the automated reporting system reports.

C. Will want to be included in the training loop when the system is on line.

Three snaildarters were identified in the stakeholder group: The ACLU, the Clerical Employee's Union, and the Police Officers' Association. Although assumptions were assigned to those stakeholders, one or more of them could raise unforeseen issues. As can be noted in the SAST Map in Appendix O, most of the assumption assigned to them fell in the "least certain" category.

Modified Policy Delphi

A Modified Policy Dephi (MPD) panel was used to generate, analyze, and select strategic policy alternatives to mitigate or prevent the negative future described in the hypothetical scenario "U.S. Supreme Court Rules Against Computerized Crime Reports" and put SAPD on a glidepath to a more desirable future. The MPD panel consisted of seven members; five were from the field of law enforcement, one was from the staff of a city administrative officers' office, and one was a communications expert.

The MPD consisted of two rounds. In the first round, the panel members were provided with the hypothetical scenario and asked to draft polices which would prevent or mitigate that future (refer to Appendix P). The responses from the panel were complied into 18 alternative policies. In Round 2 of the MPD, the panel members were asked to provide pros and cons to the policies and to rate each policy in terms of feasibility and desirability (refer to Appendix Q). Scores from 0 to 3 were affixed to both the desirability and the feasibility, the combination of which had the highest possible score of six. Given that there was seven panel members, the total possible combined score for a strategy was 42. The policy alternatives were then rank ordered using the total score. The MPD

process culminated with the selection of the following policy alternatives.

1. Development of Written Policy (42 points)

SAPD should develop a formal written policy governing authorized use of automated systems and records. Strict guidelines should be developed and enforced which are designed to protect the rights of citizens against an invasion of privacy and to protect the integrity of the information and automated systems.

Pros:

- This would ensure the mission of automated systems is clearly understood by all members of SAPD.
- Sends a strong message to the public that SAPD is committed to protecting their rights.
- May dispel some concerns of the ACLU.
- Good common sense business practice.
- Will ensure compliance with state law.

Con:

- Can be used against the Department in possible future law suit.

2. Establish a Computer Skills Training Program (39 points)

The SAPD should introduce a course, both in-service and for new recruits, aimed at developing computer literacy and familiarizing employees on the laws which regulated automated records systems.

Pros:

- Reduces fear of computers and automated systems.
- Computers are the future. The training will prepare officers for that environment.
- Will increase the labor pool that can and will use automated systems.
- May reduce liability to the City.

Cons:

- Training is expensive.
- May be putting the cart before the horse. Training can not be specific until a system is installed.
- The benefits of devoting time to a class must be weighed against the reduction of available time for other training needs.

3. Formal Audit System (37 points)

SAPD should develop, implement, and maintain a formal audit system for any automated system. The audit should not only check the audit trail for unauthorized activity, but also for the integrity of the system.

Pros:

- Good solid management practice.
- Increases public support for the systems.
- Maintains integrity in the automated systems.
- Prevents misuse of system and alteration of data.

Cons:

- Will add costs to the implementation of the system.
- Will require investment for personnel costs to:
    * Conduct the audits
    * Conducts investigations into misuse or abuse.

4. City Steering Committee (37 points)

The SAPD should lobby the mayor to form a steering committee comprised of affected general managers. The purpose of the committee will be to ensure inter-City department cooperation and a full spectrum review of the project.

Pros:

- Positive first step in the planning process.
- Will set the tone for the entire project.

- Insures key stakeholders are involved *"as part of a team."*
- Eliminates surprises down the road.

Cons:

- Takes time to implement and keep on line.
- Requires considerable time commitment by committee members.
- Committee approach may slow planning down.
- Members may not possess the technological competence to understand the intricacies of an automated system.
- May be hidden agendas by committee members.

5. Phased Implementation

The SAPD should adopt a policy to use a phased approach to implementation of an automated reporting system. This will allow for the testing of each automated segment of the system prior to elimination of manual systems.

Pros:

- Gives the system time to work out the bugs.
- Allows incremental training.
- Provides backup in case the automated system is purposely or accidentally taken off line.
- Good solid planning, does not send the organization in system shock.

Cons:

- May not be feasible, both in terms of systems design and time it takes to implement the total system.
- Could be more expensive.
- Requires several rounds of training. It may prove logistically difficult to schedule all personnel in a reasonable amount of time.

Recommended Policies

It is important to keep in mind that this section of the study does not focus on the entire process of strategic planning as it relates to automated reporting. What it does is take one piece of the very complex puzzle and describes the process that should evolve. The "piece" this study focused on was the prevention or mitigation the hypothetical scenario. Thus, the policies recommended by the MPD are targeted toward that scenario. In the full spectrum approach, all three scenarios would be analyzed and polices developed for each. Then an analysis would be conducted to evaluate all policy ramifications.

The implementation of an automated reporting system in a manner consistent with mitigation or prevention of the hypothetical scenario is not a simple one task process. No one policy listed above would be sufficient by itself to provide focus to the project. For that reason, the recommended strategy included several of the policies. The thrust of the recommended strategy was targeted toward mission statement: *To maximize service to the citizens by providing automated reporting services which make the most efficient use of resources, while providing the necessary information to deter crime, to arrest perpetrators of crimes, and to provide the criminal justice system with factual information.*

The recommended strategy includes the following policies:

1. Development of a Written Policy.

Good, solid management dictates that employees must know what behavior is expected of them. This policy will provide that direction and will ensure the Department's position melds with the public's concerns and the mandates of law. It will also serve to reduce fears or suspicions that automated systems will be used for unscrupulous reasons.

2. City Steering Committee

It is obvious that an automated reporting system for SAPD is going to require an extensive amount of input and expertise. The shear number of City departments that will have an impact on the design makes coordination extremely difficult. The committee will provide that forum. As designed, the steering committee must be comprised of individuals who can make policy decisions. They will be the management oversight team, not the hands on day to day coordinators of the project. Their mission will be to control the overall thrust of the planning efforts and ensure overall coordination of effort.

3. Formal Audit System

Concerns of the public, and past abuses on the part of governmental and private companies, has resulted in the passage of laws which regulate unauthorized access and release of sensitive information. The liability attached to violations can be both criminal and civil. The implementation of an internal audit system will ensure integrity of the system, serve to prevent abuse, and is a check and balance tool to instill public confidence. System integrity will be a valuable tool in preventing a challenge of the system based on the "best records" concept.

4. Phased Implementation.

One of the traps for large system change is failure to resist the temptation to get through the planning process and get right to the "action" stage.[6] By planning a phased in implementation, some of that temptation is suppressed. Additionally, in a large scale implementation, it is better to bring up parts of the system for a user test, rather than shock the organization with a single massive change. In the case of SAPD, the manual systems will stay in place until the automated system works out all of its glitches. Even then, the ability to provide a manual system will be retained in case of an emergency.

Phased implementation will also assist in the acceptance to the system. As

employees become familiar with automated systems, it reduces their anxiety and provides for a better learning atmosphere.

Action Steps and Timeline Projections

The transition management plan for SAPD will be described in more detail in Section 3 of this study. However, in order to get to that point, it is important to look at some of the action steps, resource requirements, and timelines which are part of the implementation of the overall strategy. The action steps and timelines described below are very general. The specific steps needed to implement the change would more appropriately be identified by a working group which is assigned to the project. The complexities of planning and implementing such a system in a large police agency also make it difficult to apply specific timelines.

The chief of police has overall responsibility and accountability for the planning and implementation of the automated reporting system He must make a commitment to lead the project, and be willing to commit the resources for the planning of the system. At some point, the costs for the implementation team will be included in the funding package the system, but initially they will have to be borne out of existing resources. Additional logistical resources which will be needed include; workplace accommodations for the team, supplies, and vehicles.

Phase 1 - Evaluating the Need For Change

Timeline - 6 months to 1 year

This phase includes:

* An internal assessment of the current state of SAPD's CAD, report writing, and report processing systems.
* Making a recommendation as to the type of system will meet the needs of SAPD.
* Approval by management of preliminary recommendation for a system.

* Obtaining the support of the CAO and Mayor for formation of a City Steering Committee.

Phase 2 - Preparing for Change

Timeline - 2 to 3 years

This phase involves several steps:

* Selection of a management structure.
  - It will be recommended that the structure be an ad hoc task force which reports directly to the chief of police.
* Choice of an intervention technology
  - This will be a pilot program using laptop computers.
* Advise Department employees' of the need for change, and prepare them for automated reporting.
  - Through the intervention technology and publicity of the advantages of the change.
* Obtain funding for the project.
  - Given the massive scale of the project, funding may be through a tax override bond measure or incremental yearly budgets.
* Selection of a systems design firm.
* An ongoing proactive awareness program for the stakeholders (public, courts, SAPD employees, etc.).
* Coordination of the project .
  - Maintaining liaison and oversight.
  - Preparing training programs.
  - Includes programing the system, including an internal audit function.

Phase 3 - Implementation Phase

Timeline - 1 1/2 to 3 years

This is the phase where the program reaches fruition. It includes:

* Phased in implementation of the on-line system.
  - The first phase will be the CAD, the second the automated report writing, and finally integration of the systems for automated processing of reports.
* System evaluation and modification.
  - All new systems have some inherent problems. A plan will be needed to coordinate resources to work on "bugs" in the system.
  - Operator difficulties must also be identified and appropriate training developed to address those needs.

Section 3

TRANSITION MANAGEMENT PLAN:

A DESCRIPTION OF THE CRITICAL MASS AND TRANSITION MANAGEMENT STRUCTURE FOR IMPLEMENTATION OF AN AUTOMATED FIELD REPORTING SYSTEM

This part of the study focuses on a transition management plan for SAPD. In their book Organizational Transitions, Richard Beckhard and Rueben T. Harris use the term "Getting From Here To There" to describe the function of transition management.[6] In the case of SAPD, that is the process of going from manual report system (the here - the present) to an automated field crime report system (the there - the desired state). The success or failure of the change process depends on the management of the transition state - the state in between the current and the desired states: The state where the actual change process takes place. It is

during this phase that a commitment plan is developed, action plans are implemented, and a structure to manage the change selected. No one plan or management structure will work for every change process or every organization. It must be developed around the unique environment of the organization and should "create the least tension with the ongoing system and the most opportunity to facilitate and develop the new system." The need for good communication and feed back loops during this phase cannot be over emphasized. The unknown or rumors cause people to think there is a "monster in the closet." Those monsters take on different sizes, shapes, and can result in needless resistance to change.

Commitment Strategy

The first phase of a transition management plan is to develop a commitment strategy. Such a strategy involves a series of action steps to secure support of key stakeholders who are critical to the change effort. From that group of stakeholders, it is necessary to identify the critical mass - that is, the minimum number of people who, if they support the change, it is likely to be successful; and who, if they are against the change, it is likely to fail. When that definition was applied to the recommended strategy of implementing an automated reporting system in the SAPD, the following seven critical mass actors were identified:

* The Chief of Police
* The City Administrative Officer
* The Clerical Union
* The ACLU
* The Police Officers' Association
* The City Council
* General Manager - Information Services Department

Commitment Charting

Table 6 is a chart which depicts the actors in the critical mass, an assessment of each actor's current level of commitment toward implementing an automated reporting system, and a projection of the actual minimum level of commitment needed from each actor to make the change successful. Table 6 is followed by a

short summary of each actor and the possible intervention strategies which can be employed to gain the needed commitment for success of the transition plan. The summaries are based on assumptions from the SAST process and an assessment of the critical mass members' readiness and capability to participate in the planning process (refer to Appendix S).

Table 6
CRITICAL MASS COMMITMENT CHART

Actors in Critical Mass	Block Change	Let Change Happen	Help Change Happen	Make Change Happen
1. Chief of Police			X →	→ O
2. City Administrative Officer		X →	→ O	
3. City Council		X →	→ O	
4. ACLU	X →	→ O		
5. POA	X →	→	→ O	
6. Clerical Union	X →	→ O		
7. Information Services Dept.		X →	→ O	

X = PRESENT COMMITMENT O = NEEDED COMMITMENT

Chief of Police - The Chief of Police supports the need to implement an automated reporting system. He is willing to assist wherever possible to bring about the system. His present level of commitment is in the "help things happen" category. He must be convinced to be very proactive and must be moved to the "make things happen" category. He has considerable influence with members of the

City Council and can be vital in pushing the program through the City's bureaucratic process. He must also be the Department spokesperson who educates the media and the external stakeholders as to the goals and safeguards of the system.

The Chief of Police is also resistant to giving up sworn police officer positions to fund the system, or as a result of the system. In order to get the support of the City Administrative Officer, the Chief of Police will need to be negotiable on that issue.

City Administrative Officer - The CAO has overall responsibility for evaluating the budget for the entire City. His current level of commitment is in the "let things happen" category. He understands the need for the automated system and supports it in concept. However, he views it as just another in a long list of potential budget items. He will have to be convinced the system is worthwhile and will result in overall cost savings to the City. The Chief of Police can use his influence with the City Council to override the CAO's concerns, but that will only lead to resentment and lack of any future active participation by the CAO.

The CAO needs to be moved to the "help things happen" category. This can best be done by a pilot program which will assess the potential benefits of an automated system. The pilot program funding can be obtained through a grant or other external funds, thus eliminating the need to put the CAO in the difficult position of finding funds or disapproving the pilot. The CAO may also be more likely to help change if the automated reporting system is financed through a bond measure.

City Council - The City Council recognizes the need for automated systems. It has also been under considerable pressure from the public to put more police officers on the street. Because of that pressure, the Council recently added 400 new police officers. On the other side, however, that increase was financed by

eliminating almost all of the requested items in SAPD's support budget.

The City Council's current level of commitment is in the "let change happen" category. It needs to move to a position of "help things happen." That can best be accomplished by the Chief of Police supporting the financing of the system through a bond fund measure, and giving public praise and recognition for the support of the City Council.

ACLU - The assumptions assigned to the ACLU place it in the "block change" category. It can to be moved to the "let change happen" category by SAPD establishing a well founded mission statement, adopting a policy to prevent abuse of the automated systems, and including regular audits of the system as part of the design. Suspicion of the system by the ACLU can also be avoided by keeping the ACLU informed as to the progress of the implementation and any changes in the system design.

Clerical Union - The Clerical Union will be opposed to the automated reporting system and will attempt to block the change. While it sees the need for automation, it also sees that automation could result in the reduction of clerical positions. The loss of those employees will be seen as a threat to the base of power for the union. Steps will need to be taken to address the concerns of the union, to allow the union to keep face with the City, and to move the union to the "let it happen" category. This can be achieved by letting the union "win" negotiations relating to the potential loss of jobs. The union can "win" the right that any position cuts will be accomplished by attrition.

General Manager, Information Services Department (ISD) - The General Manager of ISD is responsible for the overall program design and control of automated systems for the City. He supports automated systems and sees them as "his turf." The position by the Chief of Police that he wants to control the project will be seen as a conflict of responsibilities and will be resisted by the General

Manager of ISD. Thus, he would "let change happen," but would not take proactive steps to "help change happen."

In order for the change process to proceed as efficiently and smoothly as possible, he will need to help the change. He should be included in the planning and implementation process so that he is "part of the family." This can be accomplished by placing him on the City Steering Committee and having SAPD funding include staffing for an ISD employee on the working transition team. This consensus approach can prevent turf wars which could detract from or delay the project.

Transition Management Structure

It is extremely difficult for a stable organization to use existing structures to change itself. The management structure employed during the transition phase must be uniquely suited to the task. It should be temporary, and focus specifically on the transition process.

As the critical mass analysis points out, the Chief of Police will need to be very involved in the change process. However, the demands and responsibilities of his position will not allow him to devote the necessary time to manage it himself. He will sit as a member on the City Steering Committee, but will need to appoint a high ranking officer to head the working transition management team. The transition team manager will possess the authority to make decisions and cross organizational barriers. Great skill will go into the selection. The individual must have outstanding interpersonal skills, and the respect of the internal and involved external stakeholders. The team manager will in essence take on the "executive" role, and will report to the Chief of Police and the City Steering Committee.

Given the complexities of coordinating a transition team, the team will also be comprised of representatives of the various Department and City constituencies who can effectively address fiscal, personnel, and legal issues. The transition management team will have the "clout" to mobilize resources and keep the

transition process on line with the time table established by the City Steering Committee.

Implementation Technologies

Transition management plans must addresses the technologies and methods which can be employed to support implementation. Resistance to change is a natural phenomenon. For change to be successful, efforts must be aimed at managing anxiety and uncertainty. It can be expected that strong resistance will come from those who have the most to gain from the status quo; and there will only be lukewarm support from those who have the most to gain from the change. Care must be taken to ensure that plans are consistent, that there is a good flow of communication, and that adequate time is allowed for adaptation to changes.

Three technologies have been selected for inclusion in the transition management plan, they are discussed below.

Responsibility Charting

Responsibility charting is an effective technique for clarifying behavior which is needed to bring about change tasks, actions, or decisions. It also assists in reducing ambiguity, saves energy, and reduces interpersonal reactions of people involved in the change process. Appendix R is a responsibility chart that outlines some of the action steps that will need to be taken by the City Technology Committee. Based upon the factors identified in the chart, some of the actions the Chief of Police has the responsibility for are: The mission statement, preparing the scope for a pilot program, establishing a budget and preparing a training video tape for City employees. The General Manager of ISD has responsibility for preparing the computer programs for crime reports, and has approval rights on several of the other action items. By using the chart to clearly spell out roles and relationships, confusion and possible "turf wars" can be prevented.

Communication of the Vision

If people are going to support change, they must know where the change is going. The Chief of Police will be the catalyst for communicating the vision. Because of his position of authority and his visibility, the Chief of Police can set the tone for the change in the Department. He will accomplish this task through discussions at staff meeting, appearances at roll calls, through video tapes training films, and by "talking it up" to the press. Communicating the vision includes providing details as to the plans and the subsequent progress. This is not a one time task; it is an ongoing process that serves to keep the vision in peoples' minds.

Milestone Recognition

Milestones in the transition plan (implementation date and dates of significant events) will be formally celebrated and announced. It will start with a large press conference with the City Council and the Mayor. Subsequent milestones (such as start up of the working transition team, the start of the pilot program, etc.) will be formally announced an celebrated. This will allow employees and the public to see that progress is occurring and that the plan is moving forward. With the passing of keystone events, some change will have occurred. The recognition of that change will assist employees to detach from the past and or prepare for the future.

CONCLUSIONS

The conclusion will be broken down into three separate sections: An answer to the issue question and sub-issues; an overview of why the study was conducted; and lastly, subjects for further study.

Issue Question

This paper dealt with the issue question: How will automation technology impact the taking of field crime reports by a large metropolitan police agency by the year 2000? To give focus to the project, the study was further defined by use of the following three sub-issues:

* What is the emerging technology which can or should support automation of field crime reports?

* How will automation of crime reports impact field officer availability?

* How will automation technology impact the level of service provided to citizens?

One of the trends identified in this study was the use of CAD systems. Police officers have come to rely on radio communication as a mandatory tool of the job. The increased use of radios has put a strain on the capacity of radio frequencies. Radio frequencies can handle 5 to 10 times more with digital communication than they can with voice transmission. As a result, police agencies are finding that CAD systems are becoming a necessity. The newer CAD systems use fully interactive portable computers as terminals in the police cars. Since those computers can be programed with word processing software, it seems to be a logical step to use them for automated field report writing. Recent innovations in the size of computer central processing units by the Intell Corporation will lead to much smaller portable computers. The Grid Corporation has also developed a fully interactive personal computer called the Grid Pad. It is the size of a notebook and input/output is accomplished by use of a stylus. Voice technology is starting to appear on the market, but it is an expensive, unproven product. Some departments may retain "live input" automated systems, but as the cost of automation continues to fall, manual labor costs will soon outstrip the cost of automation..

The analysis also concluded that automated reporting systems should increase

the availability of police officers. Forced-choice crime reports are much faster than handwritten reports. Additionally, automated reporting will eliminate the massive amount of time lost when officers hand carry reports to the police station.

The study also touched on the level of service provided by officers. Police work is really the process of evaluating information. Automated reporting will not only free up officers so they can provide a better level of service, it will provide instant access to crime information. The better the crime information, the better chance officers have to take proactive measures to protect the community.

Why the Study Was Conducted

The second area to be covered is the why behind this study. Automated report writing is truly in its infancy. The survey results indicated 94% of the respondents were interested in automated reporting. It is hoped that some of the issues covered in this paper can be of use in helping an agency evaluate or plan for automated reporting.

One area of major concern that was identified in this study was the current and future financial situation of governments. The modified delphi panel forecasted a major recession, and all signs appear to point to that same conclusion. As pointed out in study, budgets during hard times focus on people, not support systems. It is unknown how the current budget shortfalls and projected losses of revenue are going to impact the ability to provide services to citizens.

Subjects for Further Study

Finally, there were three issues that arose out of this study which are worthy of further examination. Each could be a potential project for a command college student. The first area was mentioned above - the serious financial situation facing government. It is a topic begging to be researched and forecasted.

The second issue was the Grid Pad technology. It is a novel piece of computer technology and its future in law enforcement is worthy of exploration.

The final issue was voice activated computer technology. The current state of the art does not make it practical for today's use. Perhaps a study in one or two years might prove more fruitful.

Appendix A

BIBLIOGRAPHY

Beckhard, Richard and Harris, Reuben T. Organizational Transitions. 2d ed. Reading: Addison-Wesley OD Series. 1987.

Birchler, Mark R. "The Future of Law Enforcement: Laptop Computers." The Police Chief 55(5) (May 1988): pp .28-30.

Bocklet, Richard. "Computer Enriched Policing." Law and Order. 36(1) (January 1988): pp. 205-208.

Clede, Bill. "Automated Telecommunications." Law and Order. 37(2) (February 1989) : pp. 18-19.

Clede, Bill. "Lakeland's Near-Paper-less Reporting." Law and Order 35(10) (October 1987): pp 87-89.

Clede, Bill. "Micro Computers on Patrol." Law and Order 34(9) (September 1986) : pp. 36-42.

Echelberry, Norman. "Move Over, Crockett and Tubbs; Miami has a New Crime Fighting Weapon." The Police Chief 56(1) (January 1989) : pp. 20-25.

Fremont Police Department. "Police Department Laptop Computer Program and Dispatch Upgrade." June 8, 1990.

George, Dennis. "Computer-Assisted Report Entry: Toward a Paperless Police Department." The Police Chief 57(3) (March 1990): pp. 46-48.

George, Dennis and Kleinknecht, G. H. "Care: Computer Assisted Report Entry." FBI Law Enforcement Bulletin. 54(5) (May 1985): pp .2-7.

Layne, Karen. "Unanticipated Consequences Provision of Info: LVMD." Journal of Police Science and Administration. 17(1) (March 1990): pp20-31.

Lecse, Tony. "Lap Computers Aid Report Writing." Law and Order 35(2) (February 1987): pp.18-22.

Los Angeles Police Department. "Automated Reporting Task Force: A Proposal." December 1988.

Mason, Richard and Mitroff, Ian. "Assumptions of Majestic Metals: Strategy through Dialetics." California Management Review. 1979: pp. 80-85

McLean, Herbert E. "Time in their Laps." Law and Order. 37(2) (February 1989): pp. 22-24.

Roen, Sara. "Putting the Byte on Crime." Police: The Law Officer's Magazine. 14(6) (June 1990) : pp. 66-69.

Stone, Brewer. "High-tech Beat in St. Pete." The Police Chief 55(5) (May 1988): pp. 23-24.

Westminister (Colorado) Police Department. "Computer Aided Field Reporting System" Internal Report. August 1990.

Appendix B
LOCATIONS INTERVIEWED

1. Fremont Police Department, Fremont California
2. Morgan Hill Police Department, Morgan Hill California.
3. Los Angeles Police Department, Los Angeles, California.
4. Westminister Police Department, Westminister, Colorado.
5. Colorado Springs Poiice Department, Colorado Springs, Colorado.
6. St. Petersburg Police Department, St. Petersburg, Florida.
7. GRID Systems Corporation, Fremont, California.

APPENDIX C

AUTOMATION OF FIELD POLICE REPORTS

1) Name of Person Completing Survey:_____

Business Phone Number:_____

Department Name:_____

A) Department Size:

Today	Sworn:	Civilian:
10 years ago	Sworn:	Civilian:

B) Number of crime reports per year:
Today:
10 years ago:

C) City/Service Area Population:
Today:_____
10 years ago:_____

D) Average number of field units currently deployed per shift/watch:
_____Days
_____Evenings
_____Graveyards

2) Does your Department currently have an automated in-field police report writing system?
A) Yes
B) No - (if no, go to question #5)
C) In the process of developing an in-field system.

3) What type of in-field system do you have or are you developing? Describe briefly how it works.

a) Equipment (type and number of units, etc.)

b) Software (off-shelf-customize, etc.)

c) Who does the inputting? (Reporting ofcr, clerk, etc.)

d) What happens to a report from creation to filing? (When, if ever, is it printed out?)

4) How long have you had your in-field system or how long have you been developing it?

5) What effect has your in-field system has on your Department or what effect do you anticipate the in-field system will have in your Department?

6) How much of benefit do you think an automated in-field police report writing system would be to law enforcement?

Significant Benefit		Good Benefit		Some Benefit		Very Little Benefit		No Benefit
1	2	3	4	5	6	7	8	9

Briefly describe the benefit you envision:

7) Rate the factors in the order of importance of their impact on your Department's decision to use computers or to increase automation. (1 is the most important)

_____ Funding

_____ Support from rank and file

_____ Effect on field officer availability

_____ Support from command staff

_____ Effect on record units/processing & storage

_____ Support from community

_____ Support from politicians

_____ State or local laws

8) Do you want a copy of the command college report?
Yes_____ No_____
If yes, please provide the following information:

Name_____

Department_____

Address_____

City_____State_____Zip_____

Please return the questionnaire to the address below or preferably fax it to (213) 485-8596 ATTN: Captain Zimmon. If you have any questions, I can be contacted at (213) 485-2636.

Thank you for your assistance.

Captain Garrett W. Zimmon
Planning and Research Division
207 S. Broadway
Suite 200
Los Angeles, CA 90030

APPENDIX D
Events Identified by Nominal Group Panel

Laptop Computers Issued to Patrol Officers

ACLU Challenges Legality of Computer Reports

League Objects to Computer Efficiency for Police Officer Ratings

Computer Technology Eliminates Need for Computer Literacy

Drastic Property Crime Increase in City

Public Demands More Efficient Police Service

Automation Increases Officers Time in Field

Expense of Hand Labor Exceeds Expense of Automation

Cost of Training Police Officers in Use of Computers is Prohibitive

U.S. Supreme Court finds Against Computer Reports

Voice Input Technology Perfected

Smaller Agency Pioneers Paperless Reporting

U.S. Embargo on Pacific Rim Computer Software and Hardware

Computer Literacy Becomes A Job Requirement

Commission Mandates "Specific" Computer

Computer Virus Attacks Police Data Base

Chief Supports Paperless Reporting

Major Earthquake Disrupts Automated Systems

Major Recession Occurs

Technology Produces Secure Mass Storage

Resistance by Police Officers to Paperless Reporting

Automation Becomes a Meet and Confer Item

APPENDIX E
Trends Identified by the Nominal Group Panel

Population Size

Security of Police Reports

High Density Traffic Areas

Computer Literacy of Population

Cost of Voice Input/Output Technology

Public Funding

Officer Productivity

Public Access to Crime Reports

Portability of Computer Equipment

Availability of Computer Technology

Reliability of Voice Input/Output Technology

Volume of Calls for Service

Statistical Recaps

Legality of Computer Generated Documents

Cellular Technology

Computer Literacy of Police Officers

Legality of Computer Storage Complexity of Delivery of Safety Services

Selection Requirements for Police Officers

Automated Command Decision Making

Academy Achievement of Police Officer Recruits

Modem Transmission of Data

Acceptance of Paperless Reporting Systems

Computers in the Workplace

Density of Computer Networks

Quality of Police Service

Crime

Cost of Police Personnel

Appendix F

Modified Delphi

Thank you for agreeing to assist me with my Command College project on futures research. The topic for my project is " How will automation technology impact the system for the taking of field crime reports by a large metropolitan police agency by the year 2000?" The definition of a field crime report is: A crime report which is completed by a police employee and which the completion is not originated or accomplished at a police facility, telephonically, or by mail. I realize on the surface that appears to be a very broad topic. For that reason, I have given focus to the research by limiting it to the following three sub-issues:

* How will automation of field crime reports impact field officer availability?
* How will automation technology impact the level of service provided to citizens?
* What is the emerging technology which can or should support automation of field crime reports?

The vehicle for my futures forecast is the Modified Delphi. The enclosed documents are the first of two Modified Delphi rounds. **Please complete the forms as quickly as possible and either mail them back to me or (preferably) Fax them to me at (213) 485-8596.** I will tabulate the data and sent you the results. That will be the second round of the Modified Delphi. You will be asked to examine the data and determine if you wish to modify your original response.

In this current round, please evaluate the lists of trends and events using your knowledge, background, and opinions. Keep in mind that the analysis should be in relation to my project issue and sub-issues. Please make every effort to return the data to me within a few days. If you have questions or needed clarification, please call me a (213) 485-2636. Definitions of the trend and event statements have been provided to help you understand what is being forecast.

TREND EVALUATION

In futures research, a trend is a series of events. It is ongoing, and and the way the statement is presented is non-directional (that is, it does not imply increases, decreases, or a set opinion). The enclosed trend evaluation form contains nine trends. The trend evaluation form calls for you to make estimates on each trend, using the base of 100 for today. The estimates asked for are five years ago, five years from now and ten years from now. Additionally, on the five and ten years from now assessments, a diagonal line is given. The upper part of

the diagonal is for your forecast on what the trend will be/ the bottom half is for your forecast on what you think it should be.

An example is as follows:

Trend	5 years ago	Today	5 years from now	10 years from now
Cost of Housing	80	100	130/120	190/150

In the case of this trend, the forecast was that five years ago costs were 80% of today's cost. In the 5 years from now the forecast is that prices will increase by 30% (will be), and 20% (should be). The ten years from now forecast is an increase of 90% over today (will be), and 50% over today (should be).

Trend Definitions

Trend 1 - Voice Input/Output Technology
This is defined as the trend of the emerging technology of voice activated computer input and output.

Trend 2 - Public Funding
Funding for police departments comes from tax generated revenues. This trend involves the amount of general fund revenues for city governments.

Trend 3 - Crime Analysis Programs
This is defined as the use or development of timely crime analysis programs by police departments.

Trend 4 - Quality of Police Service
This trend is the overall community demand for and perception of the quality of service rendered by local law enforcement.

Trend 5 - Police Officer Availability
This is defined as the time police officers are available in the field to respond to calls for service.

Trend 6 - Volume of Calls for Service
This is the number of calls of police service per year generated by citizens.

Trend 7 - Use of Computer-Aided Dispatch Systems
This is the level of use of computer-aided radio call dispatch systems by law enforcement agencies.

Trend 8 - Quality of Police Reports
This is defined as the quality of reports completed by field police officers. Quality refers to their value in providing uniform crime analysis information, their use in solving crimes, and their completeness for court proceedings.

Trend 9 - Tax Override Bond Measures
Many expensive city and state programs can not be funded through their normal yearly budgets. A recent alternative has been the use of tax override measures which ask for voter approval to sell bonds to finance specific programs. This trend is the publics willingness to vote for such tax override measures.

EVENT EVALUATION

The second evaluation asked of you, is an evaluation of events. Unlike trends, which are a series of ongoing events, events are things that can or have happened. They are incidents which can be said to have occurred at a certain place or time. For example, the pattern of earthquakes in California is a trend. The Upland earthquake of 1990 is an event.

The enclosed Event Evaluation sheet contains a list of nine events related to my study issue. For each event you are asked to forecast three things:

* Years until the probability first exceeds zero.
  This is your opinion as to when, in years, the probability the event could occur first exceeds zero. Fractions of years are acceptable.
* Probability-Five years from now and ten years from now.
  This is your forecast as to the probability the event will occur within five years from now and ten years from now. The probability is based on a percentage. Thus, 50 means it is as likely to occur as not to occur, 90 means it has a very good possibility of occurring, etc.
* Impact on the issue area if the event occurred.
  This is your opinion as to the impact on the issue studied if the event occurred. Positive and negative impacts may or may not be linked. Consider them separately and rank them on a 0 to 10 (ten being the greatest impact) scale.

An example is as follows:

Event	Years until Probability Exceeds Zero	Probability		Impact	
		5 years	10 years	Pos	Neg
Car mileage reaches 100mpg	2.5	15	55	7	

In the above example, the participant believed the event was not even possible until 2.5 years from today. He felt there was only a 15% probability it would occur in five years, and a 55% probability in ten years. He also felt it would be a significant positive impact on the study issue if it occurred.

Event Definitions

Event 1 - ACLU challenges legality of computerized police reports
This event is a constitutional challenge by the American Civil Liberties Union on the legality of automated (computer-generated) police reports based on the "best records" rule of evidence and the possibility that computer stored reports could be undetectably altered.

Event 2 - U.S. Embargo on Pacific Rim computer hardware and software.
This is defined as the placement of a U.S. Embargo or tariff on the import of Pacific Rim computer hardware and software. Such an event would be in response to the pressure of domestic companies to protect against economic disaster.

Event 3 - Computer technology eliminates the need for computer literacy.
This is the development of computer technology that is so user friendly that it requires very little or no training to use.

Event 4 - Major recession occurs
This is a major worldwide or National major recession. Such an event would have fiscal consequences as well as an increase in report calls and calls for service.

Event 5 - Cost of labor exceeds the cost of automation.
This is the point where hand labor costs associated with taking field crime reports exceeds the expense of installing and operating an automated system.

Event 6 - U.S. Becomes involved in a war in the Middle East
This is the outbreak of military hostilities between the United States and a country in the Middle East. Although the war may be an economic problem, military research would provide advancements in automated technology.

Event 7 - Voice Technology perfected
This is the point where voice input/output technology has developed to where it is fast, reliable and accurate.

Event 8 - Affordable High-tech computers
This is the development of low cost, high speed, high capacity computers.

Event 9 - U.S. Department of Justice supports automated reporting.
This is initiation of a program by the Department of Justice which advocates and supports (through grants or other funding) the development and use of automated field reporting systems by law enforcement.

Good Luck and Happy Forecasting!!

Appendix G

Modified Delphi - Round 2

(Final Round)

Thank you very much for completing the first round of my Modified Delphi evaluation. I have taken the data from all the respondents and prepared two charts each on the events evaluations and the trends evaluations. One chart contains the median estimates as determined from the responses. The second chart reflects the range of responses of the participants.

This is the second (and final) phase of the Modified Delphi. In this round, you are asked to review the data charts and compare them to your original responses. If, after reviewing the responses of the group, you wish to change your original opinion, you may do so. It is not a requirement that you alter your original evaluations, it is an option.

For simplicity, I have enclosed a copies of your original responses and the definitions of the trends and events. If you wish to change a response, please enter the new information on the appropriate location on the blank forms. Please try to have the forms returned to me by October 24, 1990 (if at all possible by the 23rd). They can either be mailed or delivered by FAX (213) 485-8596. Sorry for the tight turn around, but I'm trying to keep on schedule to complete the project by the due date.

Thank you again for taking time out of your busy schedule to help me with my research project. Your insight has been a valuable contribution to my futures research.

Sincerely,

Garrett W. Zimmon
Los Angeles Police Department
207 S. Broadway Suite 200
Los Angeles, Calif. 91701
(213) 485-2636

Trend Evaluation Ranges

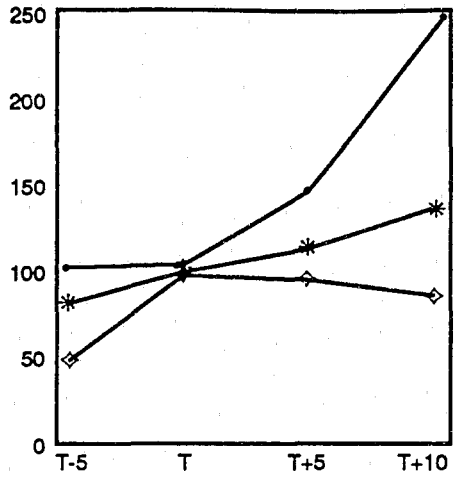
Trend #	TREND STATEMENT (Abbreviated)	LEVEL OF THE TREND ** (Today = 100)			
		5 Years Ago	Today	* Five years from now	* Ten years from now
1	PUBLIC FUNDING	50-105	100	95-150 /105-200	85-250 /120-500
2	CRIME ANALYSIS PROGRAMS	10-100	100	100-300 /110-500	110-700 /130-1000
3	QUALITY OF POLICE SERVICE	70-200	100	85-150 /105-300	75-250 /110-300
4	POLICE OFFICER AVAILABILITY	75-175	100	80-175 /100-250	70-250 /100-300
5	VOLUME OF CALLS FOR SERVICE	50-90	100	100-200 /80-200	120-400 /80-400
6	USE OF COMPUTER AIDED DISPATCH SYSTEMS	50-100	100	100-250 /100-200	110-500 /110-400
7	QUALITY OF POLICE REPORTS	50-120	100	90-250 /110-250	80-500 /120-500

** Modified Delphi Forecasts (Low - High)

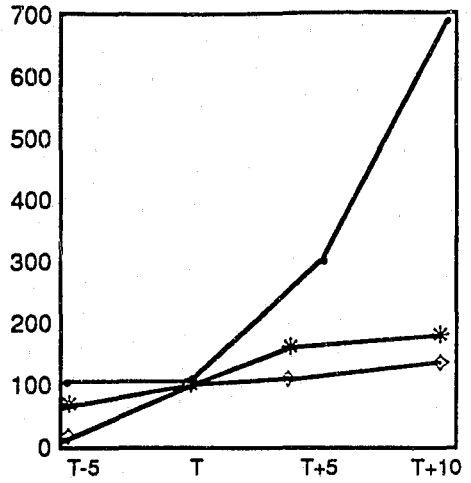
* Five years from now "will be" / "should be"

* Ten years from now "will be" / "should be"

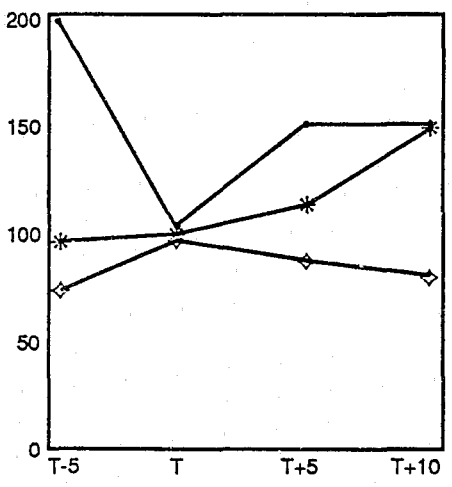
APPENDIX I
TREND EVALUATION GRAPHS



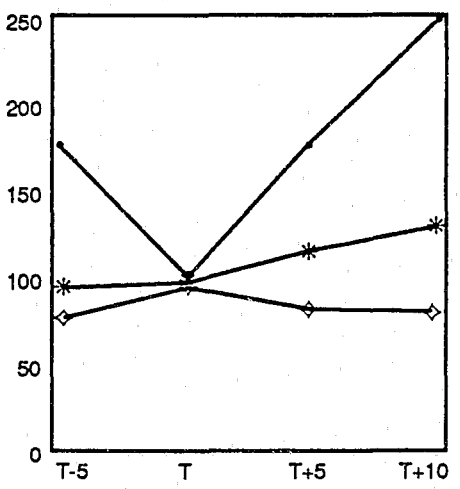
T1 PUBLIC FUNDING



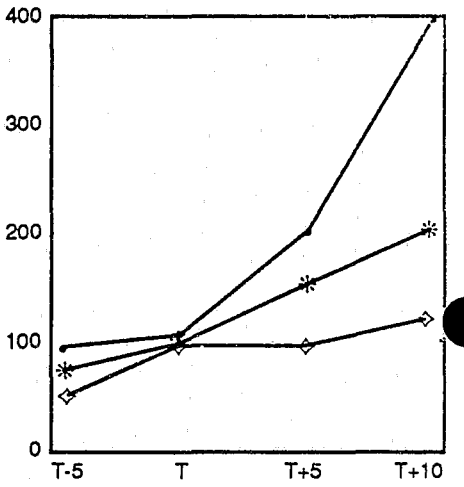
T2 CRIME ANALYSIS PROGRAMS



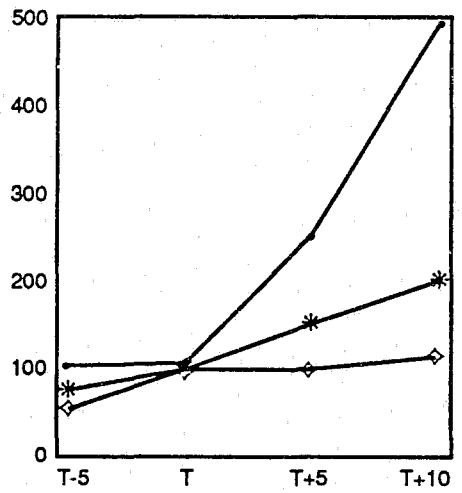
T3 QUALITY OF POLICE SERVICE



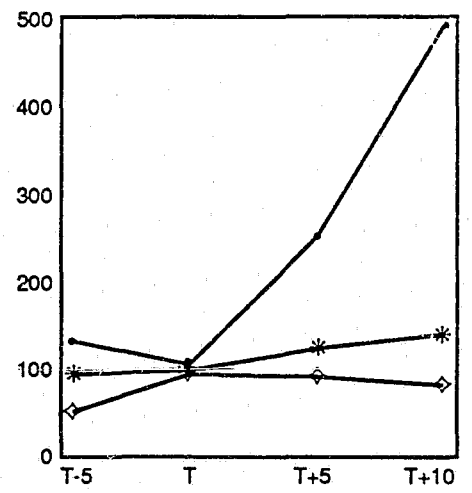
T4 POLICE OFFICER AVAILABILITY



T5 VOLUME OF CALLS FOR SERVICE



T6 USE OF COMPUTER AIDED DISPATCH SYSTEMS



T7 QUALITY OF POLICE REPORTS

HIGH —•— MEDIAN —*— LOW —◇—

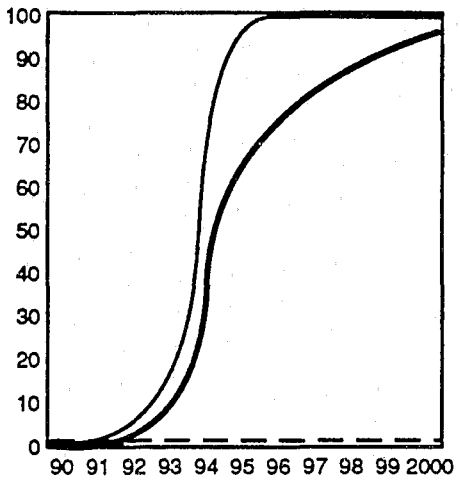
Event Evaluation Ranges

Event #	EVENT STATEMENT	* YEARS UNTIL PROBABILITY FIRST EXCEEDS ZERO	* PROBABILITY		IMPACT ON THE ISSUE AREA IF THE EVENT OCCURRED	
			Five Years From Now (0-100 %)	Ten Years From Now (0-100%)	* POSITIVE (0-10 scale)	* NEGATIVE (0-10 scale)
1	ACLU CHALLENGES THE LEGALITY OF COMPUTERIZED POLICE REPORTS	0-4	0-100	0-100	0-9	2-8
2	COMPUTER TECHNOLOGY ELIMINATES NEED FOR COMPUTER LITERACY	0-10	0-85	0-100	1-10	0-9
3	MAJOR RECESSION OCCURS	0-3	25-99	0-100	0-7	0-10
4	COST OF LABOR EXCEEDS COST OF AUTOMATION	0-5	30-100	50-100	3-10	0-10
5	U.S. BECOME INVOLVED IN A WAR IN THE MIDDLE EAST	0-2	0-100	0-100	0-7	0-8
6	AFFORDABLE HIGH-TECH COMPUTERS	0-5	20-100	60-100	7-10	0-3
7	U.S. DEPARTMENT OF JUSTICE SUPPORTS AUTOMATED REPORTING	0-5	20-100	40-100	5-10	0-6

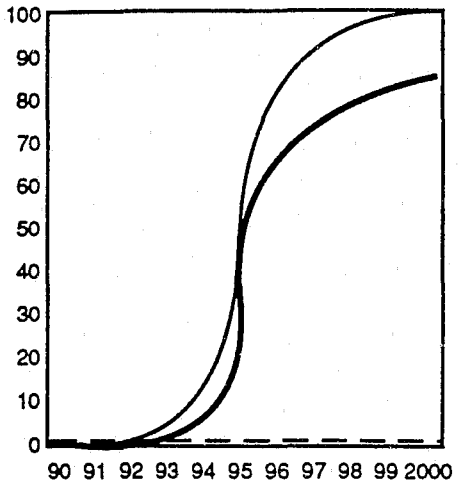
* Modified Delphi Forecasts (Low - High)

APPENDIX K

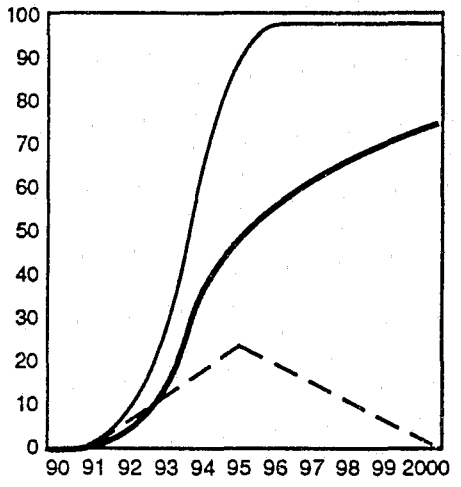
EVENT EVALUATION GRAPHS



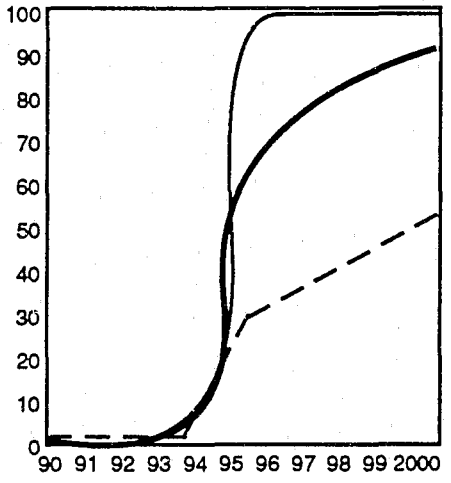
E1 ACLU CHALLENGES COMPUTERIZED REPORTS



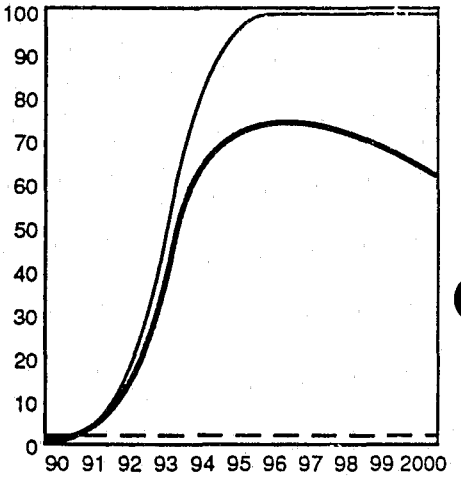
E2 TECHNOLOGY ELIMINATES NEED FOR COMPUTER LITERACY



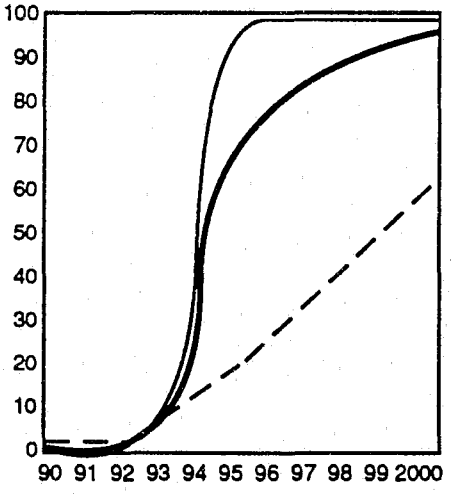
E3 MAJOR RECESSION



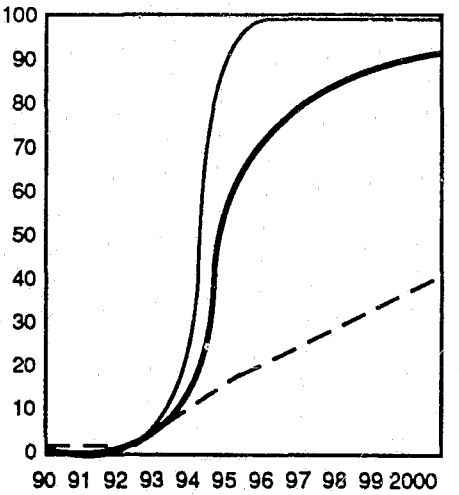
E4 COST OF LABOR EXCEEDS AUTOMATION



E5 WAR IN MIDDLE EAST



E6 AFFORDABLE HIGH-TECH COMPUTERS



E7 DOJ SUPPORTS AUTOMATED REPORTING

HIGH ——— MEDIUM ——— LOW — — — -

CROSS-IMPACT MATRIX

MATRIX (Panel Means*)

Maximum Impact (%change±) / Years to Maximum

**	E1	E2	E3	E4	E5	E6	E7	T1	T2	T3	T4	T5	T6	T7	"IMPACT TOTALS"
E1	X	0	+10	+20	0	0	-20	-15	-30	-20	-40	0	0	-25	E1 8
E2	0	X	0	+50	0	+30	+40	+15	+20	+15	+15	0	+20	+25	E2 9
E3	0	-10	X	-25	+20	-10	-20	-30	+10	-10	-20	+10	0	0	E3 10
E4	0	+10	0	X	0	+15	+20	+20	0	0	-20	0	+25	0	E4 6
E5	0	+25	+10	+20	X	+20	0	-15	0	0	0	+10	0	0	E5 6
E6	0	+15	0	+20	0	X	+20	+10	+15	0	0	0	+10	0	E6 6
E7	+15	0	0	0	0	0	X	+15	+10	+15	+10	0	0	+15	E7 6

"IMPACTED" TOTALS

E1	E2	E3	E4	E5	E6	E7	T1	T2	T3	T4	T5	T6	T7
1	4	2	5	1	4	5	7	5	4	5	2	3	3

* Means are rounded off to the nearest five percent

E1 ACLU CHALLENGES LEGALITY OF COMPUTERIZED REPORTS
E2 COMPUTER TECHNOLOGY ELIMINATES NEED FOR COMPUTER LITERACY
E3 MAJOR RECESSION OCCURS
E4 COST OF LABOR EXCEEDS AUTOMATION
E5 U.S. INVOLVED IN A WAR IN MIDDLE EAST
E6 AFFORDABLE HIGH-TECH COMPUTERS
E7 USDOJ SUPPORTS AUTOMATED REPORTING
T1 PUBLIC FUNDING
T2 CRIME ANALYSIS PROGRAMS
T3 QUALITY OF POLICE SERVICE
T4 P/O AVAILABILITY
T5 CALLS FOR SERVICE
T6 USE OF CAD SYSTEMS
T7 QUALITY OF POLICE REPORTS

APPENDIX M

STRATEGIC NEED AREA: Automated Reporting

CAPABILITY ANALYSIS

Instructions:

Evaluate each item for your agency as to what type of activity it encourages:

I. Custodial - Rejects Change
II. Production - Adapts to Minor Changes
III. Marketing - Seeks Familiar Change
IV. Strategic - Seeks Related Change
V. Flexible - Seeks Novel Change

Categories:	I	II	III	IV	V
TOP MANAGERS:					
Mentality/Personality			X		
Skills/Talents		X			
Knowledge/Education			X		
ORGANIZATION CLIMATE:					
Culture/Norms		X			
Rewards/Incentives				X	
Power Structure			X		
ORGANIZATION COMPETENCE:					
Structure		X			
Resources	X				
Middle Management				X	
Line Personnel				X	

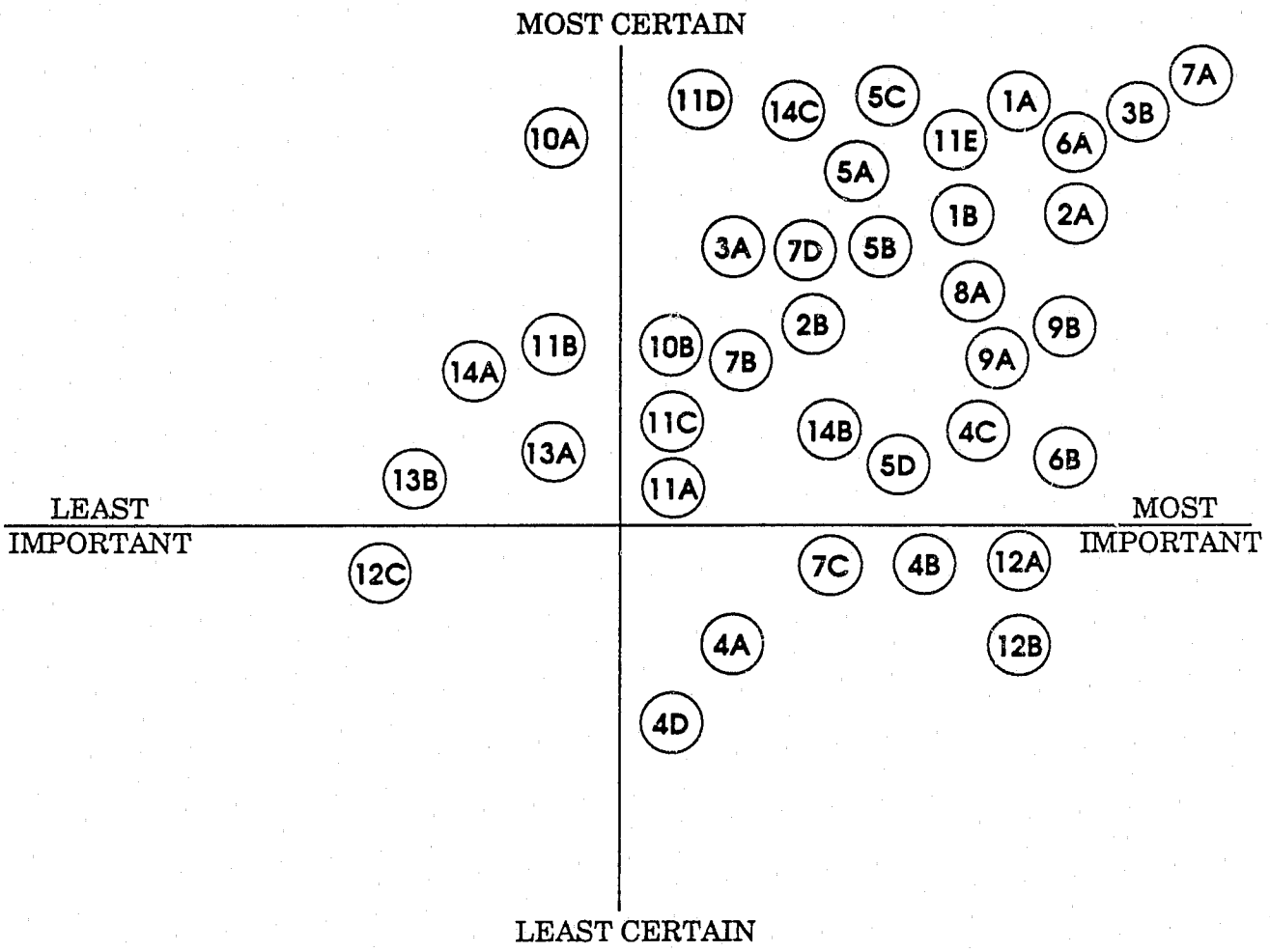
Appendix N

Stakeholder Identification

ACLU
Assistant Chief, Operations-SAPD
Assistant Chief, Administrative Services-SAPD
Chief of Police
Citizens of San Angeles
City Administrative Officer
City Architect
City Attorneys
City Council
City Purchasing Agent
Clerial Employees' Union
Clerical Employees- SAPD
Communications Division- SAPD
Computer Systems Designers
Courts
Crime Victims
Defense Attorneys
Department of General Services- City of San Angeles
District Attorney
Information Resources Division- SAPD
Information Services Department- City of San Angeles
Insurance Companies
Mayor
Media
Motor Transport Division-SAPD
Personnel Department- City of San Angeles
Personnel Division- SAPD
Police Captains
Police Commission
Police Officer's Association
Police Officers
Police Service Representatives
Surrounding Law Enforcement Agencies
Telephone Company
Training Division Staff

APPENDIX O

Strategic Assumption Surfacing Map



Stakeholders

1. Chief of Police
2. Assistant Chief, Operations
3. Assistant Chief, Administrative Services
4. ACLU
5. Citizens of San Angeles
6. City Administrative Officer
7. City Council
8. Clerical Employees
9. Clerical Employees Union
10. Information Services Department
11. Criminal Justice System
12. Police Officers Association
13. Surrounding Law Enforcement Agencies
14. Police Managers and Supervisors

Appendix P

Modified Policy Delphi

As part of my Command College research project, I am conducting a Modified Conventional Delphi (MCD). The purpose of the MCD is to ensure that the research in my paper has a wide range of insights, and is not the focus of preconceived ideas. The study I am conducting is a futures research on the following issue question:

" How will automation technology impact the system for the taking of field crime reports by a large metropolitan police agency by the year 2000?"

The definition of a field crime report is: A crime report which is completed by a police employee and which the completion is not originated or accomplished at a police facility, telephonically, or by mail. I realize on the surface that appears to be a very broad topic. For that reason, I have given focus to the research by limiting it to the following three sub-issues:

* How will automation of field crime reports impact field officer availability?
* How will automation technology impact the level of service provided to citizens?
* What is the emerging technology which can or should support automation of field crime reports?

As a part of that study, trends and events were identified which were projected out for use in a scenario. A scenario is an imaginative picture of what the future could be. The scenario below is included in my research paper. It is called a hypothetical scenario and is a "feared but possible" outcome. The setting of the scenario is a fictitious city called San Angeles. Based upon such a scenario, planners of today can develop policies which can or could be implemented today to: assist in achieving a desirable future; mitigate a possible negative future; or prepare for a projected future.

I would appreciate it if you would take a few moments of your time to read to the scenario and them make a list of **five** recommended policies which would mitigate the scenario. Please keep in mind that these are polices which can be implemented by San Angeles. For example; a policy might be: Enactment of an automation policy review board to ensure consistency, allow for future growth, and ensure systems meet legal requirements. The policies should also relate to the broad topic of the issue question and sub-issues.

I realize this is short notice, but I would really appreciate your comments by the morning of _____ Between trying to complete my paper and meeting several major commitments with my job, I am trying to keep on schedule for meeting the due date on my paper. After I receive the policies, I will compile a list and send them out as the final round of this MCD. In that round you will be asked to give some pros and/or cons to each policy, and to numerically rate each policy by use of a very simple scale. Hopefully it will only require 10-15 more minutes of your valuable time.

Again, thanks for your help!!!!!!!

Attachments

Hypothetical Scenario

"U.S. Supreme Court Rules Against Computerized Crime Reports"

The year 1993 was marked by the onset on a major depression. The economy took a major downturn which resulted in mass layoffs and a rapid rise in unemployment. The development of computer technology had reached the stage where users needed little or no training to use them. When the depression hit, the costs of systems plummeted and system designed were pushing low cost systems to law enforcement. The City of San Angeles, faced with a decreasing tax base, hurriedly implemented an automated reporting system in 1995. The cost of the system proved to be less than hiring new police officers, and productivity increased.

That success turned to disaster in 1999. The United States Supreme Court ruled that computer stored and generated crime reports are not admissible in court. The issue was brought before the court by the American Civil Liberties Union using the system implemented by the San Angeles Police Department as the basis for appeal. Poor planning on the part of San Angeles resulted in an automated system which had not been thoroughly evaluated. It was not a secure data base and reports or stored data could be altered without detection. The Court ruled such reports were unreliable and did not meet the "best records" standard.

Based upon the ruling, the police department had to reinstitute a manual system. It resulted in a significant labor intensive effort. The time it took field officers to complete crime reports increased significantly. As field officer availability decreased, the length of delays to citizens' calls for service increased. Pubiic polls reflect extreme dissatisfaction with the quality of

service rendered by the police. The City Council has let it be known that funding for any future automated systems will receive a very cold reception.

Recommended Policies: San Angeles Scenario

Your Name: _____

1.

2.

3.

4.

5.

(If you feel there is more than 5 possible policies, please feel free to list them below)

Appendix Q
Modified Policy Delphi
(Final Round)

Thank you for participating in the Modified Policy Delphi (MPD) for my Command College project. This is the second and final round of that MPD process.

In the first round, the MPD participants were asked to review a scenario involving a possible future for the fictional San Angeles Police Department. That scenario was a "worst case" scenario. The policies that were recommended were to prevent or mitigate such a scenario from occurring. The attached list reflects the policies from the first round. Where possible, I have combined similar responses into a single policy.

In this round you are asked to review the policies and provide your insights as to the pros and cons of the policy. Those comments only need to be a **brief**, probably just a few words or a sentence. Please keep in mind how the policy impacts the scenario and the issue question I am studying:

" How will automation technology impact the system for the taking of field crime reports by a large metropolitan police agency by the year 2000?"

Finally, you are asked to rate each policy using the attached rating sheet. The scale for the rating is contained on the rating sheet.

*I realize this is short notice, but I would really appreciate your comments by the morning of*_____.

If possible, please return you responses by FAX to (213) 485-8596.

If you have any question, please call me a (213) 485-2636.

Garrett Zimmon
Los Angeles Police Department
207 S. Broadway Suite 200
Los Angeles, Calif 90012

Appendix R

Responsibility Chart

Factor Draft	#1 COP	GM - ISD	GM - General Services	Press Relations	City CAO Purchasing agent
Mission Statement	R	S	S	I	A
Prepare Scope for Pilot Program	R	A	A	I	A
Seek Funding for Pilot	R	S	S	I	A
Prepare Report Programming	A	R	S	I	S
Progress Reports to Mayor	S	S	S	I	R
Establish Budget	R	S	S	I	S
Prepare Training Tape	R	A	S	S	A
Schedule Press Conference	S	S	S	R	S
Develop Transition Management Team	R	A	A	I	S
Select Pilot Hardware	R	A	S	I	A

R = Responsibility (Not Necessary Authority)
A = Approval (Right to Veto)
S = Support (Commit Resources Toward)
I = Inform (To Be Consulted)

READINESS/CAPABILITY CHART

Fill in the following chart as it applies to your situation. In the left-hand column, list the individuals or groups who are critical to your own change effort. Then rank each (high, medium, or low) according to their readiness and capability with respect to the change.

	Readiness			Capability		
	High	Medium	Low	High	Medium	Low
1. CHIEF OF POLICE	X			X		
2. CITY ADMIN OFFICER			X	X		
3. CITY COUNCIL		X		X		
4. ACLU			X			X
5. POA			X		X	
6. CLERICAL UNION			X		X	
7. GM ISD		X		X		

ENDNOTES

1. George, Dennis and Kleinknecht, G. H. "Care: Computer Assisted Report Entry." FBI Law Enforcement Bulletin. 54(5) (May 1985): p 2.

2. Lecse, Tony. "Lap Computers Aid Report Writing." Law and Order 35(2) (February 1987): p.18.; AND Los Angeles Police Department. "Automated Reporting Task Force: A Proposal." December 1988.

3. Esensten, Thomas. POST Command College

4. Ibid.

5. Mason, Richard and Mitroff, Ian. "Assumptions of Majestic Metals: Strategy through Dialetics." California Management Review. 1979: p. 80

6. Beckhard, Richard and Harris, Reuben T. Organizational Transitions. 2d ed. Reading: Addison-Wesley OD Series. 1987: p. 97