

WHAT IMPACT WILL PORTABLE VOICE RESPONSE
TRANSLATORS HAVE ON THE PATROL
SERVICES OF A LARGE URBAN AGENCY BY 2007?

A project presented to
California Commission on
Peace Officer Standards and Training

by

Lieutenant Colin Murphy
Orange County Sheriff's Department

Command College Class 32

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This Command College 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).

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CHAPTER ONE

ISSUE IDENTIFICATION AND LITERATURE SCAN

“In 112 American cities, one of every four residents is foreign-born, nationwide, 31.8 million people speak a language other than English at home.”ⁱ

Introduction

This project on the impact of portable Voice Response Translators on patrol services of a large urban police agency was completed for the State of California Commission on Peace Officer Standards and Training (POST) Command College. It explores the concept and development of automated language translators technology and their potential deployment into the law enforcement arena. Automated language translators may someday become an essential tool for law enforcement personnel to assist with language barriers and improve community relations.

The project is designed to prompt law enforcement agencies to assess the current programs that assist with the non-English speaking community. It is written to review present and future technologies and promote their uses in serving the community. This project will consider the non-English speaking population in the law enforcement service areas are increasing and the necessity for technology to assist law enforcement personnel.

The first chapter describes the rapidly changing non-English speaking population and current programs being utilized by law enforcement. The technology of language translating is discussed along with applications and advancements.

The second chapter describes the Nominal Group Technique process, used to identify trends and events that may influence the development and implementation of a language translator. These trends and events, in combination with literature review, were

used to develop potential future scenarios that describe the possible outcomes from the implementation of Voice Response Translators. The future will require that law enforcement agencies will need to implement some form of technology to assist their field personnel with language translation. Current methods are helpful, but greater collaboration is needed.

The third chapter identifies strategies for implementing a Voice Response Translating technology that serves the needs of the agency and the community. These strategies are explored in contrast to introducing a relevantly new technology to both the law enforcement environment, the user, and to the community, the end user. The strategic plan will strive to identify affected parties, develop various methods for implementation and aggressively meeting the future.

The project concludes by identifying potential obstacles and areas of support needed to implement the project.

Issue Statement

This project attempts will answer the question: What impact will portable Voice Response Translators (VRT) have on the patrol services of a large urban agency by 2007? Voice Response Translators are portable electronic computer devices that allow the user to verbally communicate with persons who do not understand their language. Patrol services are any law enforcement personnel, either sworn or civilian, who have contact with the public. A large urban agency is defined as a law enforcement agency with 250 or more sworn employees.

Literature Review

One of the most critical issues facing law enforcement agencies in America is the ability for their personnel to communicate with non-English speaking people. The 2000 United States Census for California revealed that 32 percent of the population was of Hispanic or Latino origin.ⁱⁱ On November 20, 2001, the Los Angeles Times reported that the Spanish language has become a major influence on the Southern California region. It reported that seventy four percent of the residents of the city of Santa Ana speak Spanish. Several other cities in California were ranked in the top ten percent of Spanish-speaking residents cities including Anaheim, Los Angeles and Riverside. This was according to a government's Supplemental Survey that was sent out in 2000 to 700,000 households in the nation's counties.ⁱⁱⁱ Spanish is an example of one of the many non-English languages that currently exist in the United States. With the demographic population of America urban cities drastically moving away from English speaking, the need for improvements in interpretation is vital.

Traditionally, most law enforcement agencies have attempted to deal with the language barrier issue by utilizing bilingual personnel as interpreters. Individuals who possess the ability to write, speak and understand non-English languages are designated as translators. Such classifications normally receive a financial incentive. The Orange County Sheriff's Department in California, with 3800 employees, currently has 440 employees who are recognized as bilingual translators. These bilingual employees speak twenty-two various languages. The three largest language groups are Spanish, Pilipino and Vietnamese.^{iv} Sworn bilingual employees receive a bonus pay of sixty cents an hour for the classification. This dependence on human abilities and personal interaction has

been the main interpretation source for most agencies. The benefits of translating with bilingual employees are limited due to availability of the employees. Logistically, law enforcement agencies, especially larger agencies, have employees working in various locations, with different working hours, days off and limited availability. Access to interpreters while working in the field is hindered by response time and distance. In some cases, interpreters can be contacted from the field by the use of a cellular phone.

Automation and technology for language translation, for the most part, has had minimal involvement in law enforcement. The only form of technology that has been utilized to the present is the telephone. Agencies have the option to subscribe to private telephonic translating services such as Language Line Services. It began in 1982 as a volunteer organization when a San Jose, California police officer and a Defense Language Institute instructor began providing interpretation for the growing immigrant population in the Santa Clara County area.^v The service was incorporated in 1984 and eventually purchased by AT&T. The service provides over-the-phone interpretation and document translation services in more than 140 languages. Interpreters are normally available twenty-four hours a day. The services are utilized by public safety dispatch centers and officers in the field using a telephone. According to AT&T Language Line the typical cost for a law enforcement agency is fifty dollars a month minimum subscriber fee and approximately three to five dollars a minute interpretation fee. During the year 2000, Language Line Services conducted 3,166 individual translations for the Orange County Sheriff's Department, in twenty-five different languages. The total cost for those services was approximately \$20,000 during one year.

Such services are appropriate for law enforcement agencies only when a telephone is available, time is not a factor, and the situation allows the non-English person access to the telephone. This type of scenario rarely exists. Normally personnel assigned to the field are often confronted with situations that require instant and legible translations. In some situations subjects may be injured or handcuffed and the use of a telephone is not practical.

Language services have limitations as even AT&T operators can sometimes take more than an hour to locate interpreters for certain languages. One such example of an AT&T language line connection, with the Orange County Sheriff's Department in California, was a 104 minute delay to locate and connect a Nepali-speaking translator with a police dispatcher.^{vi} Some agencies with limited budgets and operating cost have placed restrictions on using such services only for emergencies.

Universal Language Translators

The National Institute of Justice's Technology Program Advisory Council declared at a 1993 council meeting that instant language translation as one of the six "immediate" law enforcement technology priorities.^{vii}

Technology has tried for centuries to provide some means of universal translation, typically for soldiers and statesmen, with poor to miserable results. Early methods were restricted to print and paper based methods on the idea of book-based translation. The development of microelectronics and digital computers following World War II provided some hope of improving on print-based translation systems. Many technologies exist that allows text to be entered, by a keyboard, and translated to numerous languages.

Nevertheless, the process of creating a personal universal translator, based upon a voice recognition technology, has been much slower than one might think.

The beginnings of the drive to an automated universal translator began in the 1950s and 1960s, with many companies such as Bell Laboratories and RCA working on identifying vowels sounds in a single digit numbers.^{viii} Success was limited mainly due to slow and inadequate computers ability to basic signal processing and storage abilities. Some companies, using highly talented linguists, attempted to mechanize their knowledge of how humans process speech into computer systems. These systems try to recognize phonemes, parcels of speech such as consonants and vowels peculiar to each language, and then assemble them into words and words into sentences using contextual analysis, much as humans do. Projects were limited to large main frames and personal devices were limited based upon background noise, miniaturization and the overall accuracy. Additional factors such as dialects, regional accents, grammar and jargon required ever-greater processing and storage capacity to. These factors combined made speech recognition a less-than-profitable technology in spite of its potential possibilities. Advancement in computers and government requirements from legislation, such as the American with Disabilities Act in the 1990s, provided a much-needed boost to this technology.

In the 1990s, a company named Integrated Wave Technologies, Inc. (IWT), made significant software advances related to speech recognition devices. John H. Hall, a pioneer in the fields of integrated circuits, microprocessors and low-power microelectronics, founded the company.^{ix} IWT's efforts have concentrated on the problems of speech recognition, translation and the design of a practical device to market.

Their most recent product was aimed at the use of actual word/pattern recognition instead of the phonemes previously utilized by mainstream systems. The result of their research was a small personal digital assistant (PDA) sized unit, low power consumption with a five-megahertz processor complete with a special microphone that is designed to minimize background noise. The device runs a speech recognition algorithm, and generates audio output for a speaker or as an attachment to a bullhorn speaker. It can also produce a digital output, such as that required to send commands to a computer or personal digital assistants (PDA). The device contains a large memory that provides plenty of room for the various words to form phrases. The system can store up to 500 phrases in each of 40 dialects. The system can be adapted to phrases appropriate for law enforcement and military, such as, “show me your license,” or “what is your name?” When the operator says the word Miranda, the device produces the message, “You have the right to remain silent...” dispensing the Miranda Warning in the appropriate foreign language.

In 1999, under a grant from the United States Marine Corps and the Department of Justice, IWT developed devices for testing with two law enforcement agencies and soldiers stationed in the Balkans.^x Law enforcement agencies in Oakland, California and Nashville, Tennessee were chosen as testing grounds for the prototypes. Initial feedback was positive. Both agencies found the immediate translation access impressive and recognized the benefits of the device. The personnel assigned to the device commented that the translation process was reasonably effortless and speedy. Department commanders commented that the technology was an excellent tool for the personnel in the field for basic translation, but did not replace the role of human interpreter.^{xi}

Marines, assigned to the 22nd Marine Expeditionary Unit in Kosovo, tested the device and were able to give basic verbal commands to the nationals in the Serbian language using the device attached to a bullhorn. IWT hopes to begin marketing the tool to agencies soon at a retail cost of approximately 1,000 dollars.

Similar forms of technology are being developed. The German Research Center for Artificial Intelligence in Saarbrecken, Germany, has demonstrated a prototype for laptops. The laptop software combined with a microphone will instantly interpret what two speakers are saying in Japanese and German. This version was developed for the traveling industry and uses terms related to traveling arrangements.^{xii} The technology can be adopted for various languages and environments.

Until recently, language translation development focused mainly on the software dedicated to the task of large vocabulary speech to text dictation on desktop computers. The technically poor performance of this software, combined with the advent of widespread Internet and high speed wireless phone services, have led some language translator companies to look at other options. Some are in development stages of large-scale recognition centers and miniaturized speech recognition for cellular phones and personal digital assistants. This would remove the translation process from a stand-alone device to a centralized center where mainframes would translate via wireless communications devices such as satellites and cellular phone.

The examples in this chapter are a small proportion of technologies seeking to fill the need for language translation. With the demographic population of America rapidly moving away from English speaking the need for advancements in interpretation is timely and vital. Hiring more bilingual employees is a solution but not a pragmatic

response. Hiring of bilingual speaking employees places additional burdens on many agencies. Law enforcement agencies are already hampered by the lack of qualified English speaking candidates. Meanwhile, law enforcement personnel in the field are in constant and immediate need for a tool or resource to do their jobs more efficiently and effectively. Law enforcement leaders must envision and promote the development of a functional technology device that will alleviate personnel in the field.

The concept of Voice Response Translators technology may be one of many solutions for the problem of law enforcement communicating with non-English speaking clientele. If language translation technology evolves to a full scale working application, what will be its impact on law enforcement personnel? The present environment and futures issues in the next chapter will provide a foundation for implementation and preparing for the impact of the technology on police services.

CHAPTER TWO

FUTURES ISSUES AND FORECASTS

On November 6, 2001, a mixed group of professionals met at the Orange County, California Sheriff's Department to identify future trends and events that could impact the issue of this project: What impact will portable voice response translators have on the patrol services of a large urban agency by 2007? The eight individuals chosen to participate are experienced in their fields and brought a unique balance to the issue. The blend of civilian and law enforcement professionals generated insightful comments and sometimes spirited debate. A former Command College graduate and medical manager assisted with the process. Participants are identified in Appendix A of this project. The participants included:

- Two sheriff lieutenants
- Captain from a local police agency
- Chief executive officer from a computer company
- Supervisor from sheriff's information services
- Attorney
- Sheriff sergeant who is an attorney
- Sergeant from a local small police agency

A Nominal Group Technique (NGT) was employed to allow participants to brainstorm and discuss the potential trends and events. Prior to the start of the exercise, participants were provided information on the Command College program, the intent of the Command College project and guidelines for the Nominal Group Technique. The issue statement was presented and members were asked to list trends that related to the

issue in a round-robin fashion. A trend is a series of events by which change is measured over a period of time. The collected trends were discussed, clarified and some combined for better understanding. A voting process was conducted to obtain consensus on the top ten trends. Thirty trends were identified in the initial discussion. The initial trends are identified in Appendix B of this project. After analysis and discussion, the trends were prioritized and those with the most significant impact were chosen.

Trends

1. Community's concern about exploitation of technology
2. Civil rights legal challenges
3. Level of technology abilities
4. Private sector adopting technology for commercial usage
5. Cost of preserving and storing data
6. Speed of technology enhancement
7. Level of instability of non-English population
8. Cost of care and maintenance of equipment
9. User apprehension of newly developed technology
10. The community's acceptance of the technology

Participants were presented a Summary Trend Table and asked to rate these significant trends against the issue question and rate their relevance to each other with a numerical score. The ratings were recorded on three categories: the trends level five years in the past, the level five years into the future and the level ten years into the future. The figure 100 was used as an arbitrary number to represent the present status of the

trend. The column labeled concern describes the participant’s rating of the trend based upon a 1-10 basis, 10 being the most and a rating of 1 being least. The NGT results were indicated in median values. The following Summary Trend Table displays all 10 trends based the prior assessment.

Table 1
Summary Trend Table

Trend	-5 years	Today	+ 5 years	+10 years	Concern
1	100	100	130	190	9
2	70	100	160	125	8
3	100	100	110	120	8
4	10	100	150	140	7
5	10	100	110	170	6
6	35	100	130	140	7
7	80	100	120	130	3
8	80	100	110	120	4
9	0	100	150	100	3
10	10	100	125	100	3

1. Community’s concern about exploitation of technology

Participants believed that although the public would understand the benefits of such a system, they also would be suspicious of potential abuses. Several commented on the community’s overall opinion of government and the law enforcement as being big brother, watching over every move. Reflecting on abuses by authority experiences from past events, especially involving the police, participants described potential abuses. Examples: scanning a person’s recorded voice to discover if they are lying; using a voiceprint to gain access into security systems and editing a person’s recorded statement for their advantage.

The panel voting concluded that overall there would be an increase of abuses of the technology.

2. Civil rights legal challenges

Objections from legal groups such as the American Civil Liberties Union regarding human rights violations could have a significant impact on deployment. Participants believed that increases in civil suits would eventually restrict the benefits of Voice Response Translator.

3. Level of technology abilities

The promised advantages of a technology compared to the actual abilities were of great concern to the panel. Will the technology, which is relevantly new, live up to the promises? Will the technology be cost effective for an agency to direct funds? The panel felt that with time, the technology would become better and the operating systems would be perfected.

4. Private sector adopting technology for commercial usage

Voice Response Translator technology being adapted for use in the private sector would improve the technology and at the same time drive down the price. Examples: A company produces a civilian model for business and leisure travelers. The panel stated if the private sector would increase usage of the technology, other than law enforcement, and the technology would be perfected.

5. Cost of preserving and storing data

Participants believed that the cost of storage and the preserving the data as evidence in the court system would increase. Personnel and funds would have to be designated to oversee the tedious process of preserving evidence. Personnel would be required to become recognized court experts and possess the ability to testify in court.

6. Speed of technology enhancement

The panel believed that because the technology is recently new the hardware or supporting systems have not clearly been defined. The prototype described, for the purposes of the Nominal Group Technique, was described as a pocket-size or stand-alone device. Many members believed that such an operating system is only temporary and antiquated. Future systems would be more sophisticated and would possibly rely on satellites or high-speed wireless technology. Users in the future would transfer the statements via a communication device to a centralized location where a larger main frame would translate the data.

7. Level of instability of non-English population

This trend is defined as the amount of shifting of non-English speaking population from one language to another. Participants recognized the importance of the law enforcement responsibility to better understand and communicate with community members. The demographic make up of communities are in constant motion and it is important to be able to adapt to their needs in a timely manner. The panel forecasted an increase of the number of non-English languages.

8. Cost of care and maintenance of equipment

Several participants, especially those from law enforcement, were concerned about who would be responsible for maintenance. Associated with maintenance was high financial cost. Portable equipment, especially those used by law enforcement, would have to have an elaborate maintenance schedule and durable specifications. The panel voted that maintenance concern would increase. Some members suggested the task could be handled by privatizing the process, but the cost would still be significant.

9. User apprehension of newly developed technology

Introduction of any new technology usually is met with some apprehension by the users. Combined using a new technology with a person who speaks another language might present obstacles. There will be added pressure to police agencies to promote training, patience and cultural sensitivity. The panel felt that users would at first be apprehensive, but over time and with upgrades, it would become easier to operate.

10. The community's acceptance of the technology

The participants believed that the system is important not only to the personnel using the technology, but more importantly to the community they represent. Community leaders should be involved in the early planning stages and accented with a large scale marketing campaign. The panel forecasted an increase in the acceptance of the technology.

The panel felt very strongly about the issues of potential civil rights abuses and the overall ability of the technology. The participants believed that those trends rated eight or higher, in the column entitled concern, were the most significant in their relation to the topic. Trend one, shows that the panel felt very strongly about the importance of safeguards against any potential abuses of the technology. Their rankings showed the importance of the issue was consistently high in the past as well in the future. Trend three, shows that the panel was concerned about the ability of the technology to live up to its promises. They rated their concern as high in the past as well as high for the future.

Events

After the NGT finished with the trend discussion and analysis, participants were introduced to the guidelines and rating exercise relating to events. The group identified over twenty-one events that may occur in the next ten years. The same process was then used to select events relating to the issue. In contrast to a trend, an event is a discrete, one-time occurrence. The initial trends are identified in Appendix C. From those twenty-one events, the panel considered the following ten events is the most significant.

1. Supreme Court decision limits the use of automated language translators
2. Federal government adopts technology for their agencies
3. A technology company mass produces the device
4. Alternative to stand alone technology is available
5. Terrorist focus on cyber technology
6. Federal law makes English the required language
7. Publicized abuse of the technology
8. Global economic catastrophe
9. Borders with Mexico are opened
10. United States declares war on Iraq

The panel was asked to assign numerical values to these events in order to portray the events in relation to one another and their impact on the issue statement. The Summary Event Table charts these along five categories. The first column identifies the year probability exceeds zero. The second column identifies the estimated likelihood, expressed in a percentage that the event would occur over the next five years from today,

but less than ten years. The third column identifies the likelihood, again expressed in percentages that the event would occur within ten years from today. The fourth column expresses whether the group believed that the event would have positive or negative effect on the topic question. The final column represents the level of impact, noted in a rating of one to ten, the group expressed regarding the event occurring. Zero would represent that the panel did not think this event would have any impact.

Table 2

Summary Event Table

Event	>0	5+ years	10+ years	+ or -	Impact
1	3	23	30	-	9
2	3	50	50	+	7
3	2	25	75	+	8
4	3	50	90	+ or -	8
5	1	45	75	-	6
6	3	55	60	+	6
7	3	50	55	-	3
8	2	35	70	-	7
9	3	15	20	+	3
10	0	40	40	+ or -	4

1. Supreme Court decision limits the use of automated language translators

The Supreme Court decides in a case involving Voice Response Translators that the technology infringes on a person’s civil rights. The ruling only allows such translators in a medical life or death situation. This event would most likely be considered devastating to the intended purpose of the device. Personnel would be limited to using the technology only in a desperate situation. The panel ranked their impact as a nine stating that if the event occurred it would have major impact on the issue.

2. Federal government adopts technology for their agencies

The federal government adopts the technology and issues the devices to every federal law enforcement agencies: examples Federal Bureau of Investigations, Drug Enforcement Administration, Customs and other agencies. The panel believed this was a significant positive value. The consensus was that testing and establishment of specifications are a meticulous process. Such a process along with another larger agency conducting the Beta study would be a worthy testing ground and would eventually keep operating cost to a minimum. The federal government does the legwork and local government accepts their conclusions and recommendations.

3. A technology company mass produces the device

A technology company dominates Voice Response Translators and perfects the technology. Units are mass-produced dropping the prices and offering several models depending on the mode of application. The panel ranked the impact as high and felt the mass production would have a positive impact on the issue. It was significant because it elevates the dependability of the technology and would decrease the cost.

4. Alternative to stand-alone technology is available

The panel provided several examples regarding this event statement. First, industry leaders in this field lose interest in the technology and shift toward other applications. The manufacturing of the units becomes a specialty trade, the prices of the units escalate, and repairs are delayed. The second example was a shift in the industry toward another operating system. Stand-alone translators are phased out and translation is now done wireless by satellite. The group sees this event as both positive and negative. Negative because of the fear of higher cost and existing

equipment that becomes obsolete. Positive because the technology is improved and perfected.

5. Terrorist focus on cyber technology

International cyber terrorist groups inundate high-tech and wireless industries with devastating viruses. The electronic viruses cripple the industry and communication and technology comes to a stand still. The group recognized the potential for a non-military assault upon a country or group. This scenario was highly realistic, was rated as a negative concern, and would require additional safeguards and higher cost.

6. Federal law makes English the required language.

Federal law mandates that the English language become the official language. The law is more symbolic and the group recognized the fact that speaking a non-English language would still be prevalent. The panel voted that the event may occur but was not considered a serious threat to the development and implementation of the technology.

7. Publicized abuse of the technology

A large police agency develops a process that collects voice data and analyses it through a voice print software to determine if recorded subject is lying. A civil liberty group along with a major newspaper exposes the procedures and the agency comes under public scrutiny. Such an event with major news coverage could tarnish the positive benefits of the technology and possibly cause restrictions on the technology. The event was considered possible, likely, but not significant.

8. Global economic catastrophe

A significant economic global recession occurs which causes drastic budget and operating reductions. All non-emergency resources and funding become obsolete. The panel stated that an event of such magnitude would not occur within the next ten years. However, if such an event occurred, the negative impact would be significant.

9. Borders with Mexico are opened

An open border and trade agreement is reached with Mexico allowing unlimited access to both countries. The panel recognized the fact that the non-English speaking population would increase drastically on a national basis. The accessibility to a translator device would have significant impact.

10. United States declares war on Iraq

The United States declares war and is involved in military action in against Iraq. The country and its resources are forced into a wartime mode and there are major shifts in the industries. This event had one of the widest ranges of opinion of the events evaluated by the group. Some argued that such technology would be a benefit to help troops overseas and local law enforcement. Some argued that the event would distract the research and deployment of the devices and cause law enforcement and the industry to focus on other issues. Overall, the panel felt this event would not likely to occur within the next ten years.

Cross Impact Analysis

After completing the trend and event analysis, the panel was asked to compare both elements in relation to one another using a cross impact analysis. The purpose of a cross impact analysis is to evaluate how the occurrence of an event may impact the slope

of the trend curve. Participants rated the impact of each event on each trend using a scale of negative five to positive with five, zero indicating no impact. A statement with positive five would indicate that the panel thought the event would have the maximum positive impact on the trend, a negative five would indicate the maximum negative impact. The Cross Impact Analysis Chart shows several spaces with the number zero indicating the panel's belief that the event would not impact the trend in any significant way, although there was discussion on them.

The panel's opinion was those categories having a rating of four or above would be considered a significant positive impact. Event three, a technology company mass produces the device, would have high positive impact on the success of such a technology tool. The panel recognized that technology is constantly changing and at times can be outdated by the time it is removed from box. The panel members stated they would trust the technology if it was backed by a large high technology company.

The panel thought that if the federal government (event two) was sold on the benefits of such a technology it would have a positive impact on local government. Traditionally, federal agencies spend more time and money in the procurement and testing phase of many technologies. Rigid guidelines and specifications are followed prior to purchasing tens of thousands of units as compared to the purchase of maybe a thousand units for smaller agencies.

An event such as a global economic recession (event eight) would have the most negative impact on the trends. Government's ability to explore, expand and improve relies on the economic climate. When budgets are restricted, a program such as voice

response translators could easily be restricted. The following chart represents the results of the cross impact analysis:

Table 3
Cross Impact Table

	<u>T-1</u>	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10
<u>E-1</u>	-2	-1	-1	-3	0	0	0	-1	-2	-2
E-2	3	2	1	4	3	2	0	1	2	3
E-3	2	0	3	5	4	4	0	2	3	5
E-4	0	-1	1	4	2	3	0	0	-1	0
E-5	0	0	-3	-4	-1	1	0	0	0	0
E-6	3	0	1	3	1	0	0	0	2	3
E-7	0	1	0	-3	0	0	0	0	0	-1
E-8	0	0	-3	-4	-1	-2	0	-3	-2	-3
E-9	0	0	0	3	1	2	3	0	0	0
E-10	0	0	-1	0	-2	-3	0	-1	-1	-1

Alternate Scenarios

The information generated from the Nominal Group Technique was used to develop future scenarios. Scenarios collect input and provide realism by developing a creative futures story. Three scenarios were developed incorporating the elements of the Nominal Group Technique and their impact on voice response translators:

Pessimistic Scenario

December, 2007/article in the Mango County Register, “Investigator from the Mango County Sheriff’s Department indicted for evidence tampering. Mexican Cartel member is released from county jail.”

Investigator Mark Johnson, a 23 years veteran, has been charged with evidence tampering. The charges come after reporters from the Mango County Register uncovered that Johnson altered voice tape recordings of an alleged drug dealer Manny Lopez. In July of 2007, Lopez, while vacationing in Mango County, was detained by deputies during a minor traffic accident. Deputies conducting the traffic investigation apparently used an automated voice response translator to record and translate statements made by Lopez who is Spanish speaking. The translator system collects voice statements and can translate them into several languages. Community leaders have recently lauded the system as an important tool in community relations.

Lopez, who was allowed to leave the scene of the accident, had been under observation by federal and state drug enforcement officers for possible Mexican Cartel connections. It is alleged that Johnson later obtained Lopez’s voice data from the Sheriff’s voice data library and made a digital copy of the conversation. Later, using a

home computer, Johnson was able to lift certain key phrases from the tape and paste the sound bytes into another voice recording of Lopez. The other recording was an earlier conversation of Lopez made during a legal wiretap of his home. Johnson using the altered recording submitted the tape to a judge in August to obtain a search warrant for Lopez's home and a storage unit. Large quantities of drugs and money were found in the storage unit and Lopez has been in custody in county jail since that time. Lawyers for Lopez obtained a copy of the voice recording and audio experts were able to detect the alterations. Lopez was released Friday on a million dollars bond. Reporters have not been able to interview Lopez and federal officials stated Monday that they fear Lopez has fled the country. The Sheriff of Mango County has declined comment, but has stated that the use of voice response translators is temporarily suspended.

Surprise Free Scenario

Deputy Smith was working the late night beat, in the summer of the year 2007, in the downtown section of the busy city. His uneventful evening was suddenly shattered by the appearance of a man, of Asian appearance, running toward his car waving his arms frantically in the air. The bright glare of his cruiser's headlights revealed that the subject was in trouble. Smith radioed in his location and stepped out of the vehicle asking the subject what was happening. The subject was hysterical, crying and talking rapidly in a language that Smith could not understand. Smith kept asking, "what is the problem, do you speak English?" The subject looked confused and kept talking wildly. A crowd was forming and Smith noticed that several individuals appeared to be of an Asian background. He solicited the assistance of the crowd to interpret for him. Several

individuals approached the man and questioned him in their own languages, but with no success. Finally, a man who spoke Chinese stated that he believed the man was speaking Korean. Deputy Smith radioed his dispatch center and asked if there were any Korean speaking personnel in the field or at the station. Dispatch responded that only one Korean-speaking officer was on duty but he was busy at a traffic accident on the west end of town, 15 miles away. Meanwhile, Smith requested dispatch call their contracted Language Line Service and request a Korean-speaking operator. Fifteen minutes passed until the Language Line service was able to find a translator and have them telephone Deputy Smith, on his personally cellular phone. Deputy Smith handed his cellular phone to the subject and the interpreter asked various questions. The subject handed the phone back to Smith and he learned that the subject's four year old son was missing with a description. After several minutes of translating, Smith relayed the description over the radio and soon the streets of downtown were bustling with police vehicles and airships. Forty long minutes went by until a traffic officer drove up, he had found the youngster in a local food court. The father and son embraced and Deputy Smith was happy for the reunion but frustrated by the delays.

Optimistic Scenario

July 2007, Television Broadcast Anchor person: Macrohard, the world's largest communications company announced the acquisition of local company Translate Incorporation. Translate Inc. is the maker of HELP, a voice response translator used by local police agency. Back in July of 2001, our very own Mango County Sheriff's Department was the first large urban law enforcement agency to issue voice response

translators to their personnel. The department, with a service area of 200,000 people, had identified seven non-English speaking groups (a group meaning over a five thousand.) The department entered a trial exercise with Translate Inc. to supply 250 pocket sized language translators. The device allows deputies to say simple English trigger phrases that key responses from the compressed server's native speaker voice files. Using a unique software program, microchip and microphone, it is able to translate basic phrases from the user to another language. The year old project has had good success and a variety of ethnic groups praised the project. Critics of the program have criticized the high operating cost, slow translation speeds and limited vocabulary.

Macrohard announced the company would be closing the local Translate Tech. campus and transferring some employees to their Dallas based subsidiary Direct Com. Direct Com is the world's largest digital satellite and communications company. They have announced plans to replace the current stand alone HELP units with a high speed wireless system that would direct translations to a satellite which will relay the information to a land based operation system. The proposed system will translate statements instantly with a complete translation. The company is planning to release the first prototypes in three years.

The Mango County Sheriff's Department is excited about the new technology but are upset that the present HELP system will be ended. Sheriff Bob Robertson stated that the program has been an excellent tool in closing cultural gaps and improving police relations. "Sure there are limitations to the technology," he stated, "but the good outweighs the bad." The agency has invested a large amount of money and personnel into the project. Their concern is that their investment will not pay off in the end.

Robertson stated if the program is discontinued, the agency might have to rely on other, less effective, sources until the new technology is developed.

Scenarios are an imaginary way of providing a span to bridge the gap between present and the future. They offer an agency insight into defining and handling dramatic changes and events. The rapidly changing demographic makeup of services areas are a warning for the law enforcement community to prepare for change. The successful police agencies will be those with the foresight and flexibility to change and adapt to the makeup of their community. If not, the residents may become resentful and lose faith in their law enforcement leaders. Low morale among personnel and an increase in personnel complaints are predictable outcomes. The deployment of a language translation device could be a solution to assist personnel in the field. Such an action would involve a major commitment from the community leaders and the entire law enforcement department. These three scenarios offer insight into the strategic planning process.

The next chapter explores strategic planning and the opportunities for implementing voice responsive translators.

CHAPTER THREE

STRATEGIC PLANNING

Introduction

The following chapter of this project develops a strategic plan within the framework of the issue statement. The concept of Voice Response Translators is unique primarily because it is a ground floor technology, new to the industry and particularly unheard of in law enforcement. This project has the unique opportunity, both from an internal and external perspective, to evaluate the impact of translation technology on law enforcement over the next five years.

The strategic plan focuses on the benefits and advantages that could be obtained with the implementation of voice response translators while avoiding, or at least minimizing, the negative aspects which were identified within the scenarios. It is the intention of this strategic plan to manage the Optimistic Scenario in such a manner as to drive it toward a more desirable one. The intent is to develop a plan that will avoid the previous mentioned potential abuses and concentrate on the benefits of such a system on the organization and the community it serves.

The vision anticipated for this project is the recognition of Voice Response Translators technology as an important tool for law enforcement personnel. The benefits of the project and the support of the personnel in the agencies are vital from the onset. Because the project deals with a technology, a process must be established to identify the scope of the subject, establishing specifications, selecting the appropriate operating system and establishing a testing procedure.

Organization Analysis

Strategic Planning is a technique designed to improve the quality of an organization by introducing a structured approach of bringing anticipation of the future into today's decisions. It can be used in changing policy or procedure, department restructuring or the introduction of new technology or tools.

The plan to implement Voice Response Translators will use the Optimistic Scenario. The scenario recognizes the introduction of language translator technology to the law enforcement arena and the benefits of the technology. The scenario is forthright concerning the limitations of the newly introduced technology and recognizes that expanded versions or new formats are probable. This strategic plan can act as a formula or map for agencies that wish to engage in similar technology.

In this project, the internal strengths and weaknesses of the organization and their impact need to be identified, as well as collateral opportunities for the agency and the threats that may engender negative outcomes. A WOTS UP (Weaknesses, Opportunities, Threats, Strengths Underlying Planning) analysis model was employed to discover these factors. Several attributes relevant to implementation have been identified based on a literature search and career experiences working with technology in a large-size agency.

Weaknesses – Internal to the Organization

- Many officers are uncomfortable with non-English speaking individuals and may not devote as much attention to their needs
- Many individuals are apprehensive with electronic technology and tend to blame errors on the technology rather than the operator
- Some agencies may not have the funding to support a new technology
- The technology is relatively new in concept and lacks application or field-testing
- Many officers would rather depend on human translators than rely on technology
- The technology is labor intensive and costly in regards to equipment and data maintenance

- The technology is only a tool and does not solve dependence on human interpreters
- Officer safety concern over using a hand held device
- Lack of interest by some members of staff
- Potential abuses of the technology

Opportunities – External Influence

- Agencies that identify with the need to expand to non-English speaker clients
- Agencies with the demographic makeup to support the technology
- Agencies improving public relations and building trust with the community
- Agencies providing a more responsive service, freeing up officers in the field
- The technology is seen as a positive public relations tool for the department

Threats – External Influence

- Funding Sources
- Maintenance and data storage concerns
- Technology limitations and problems
- Unions or employee association concern that technology is taking money from their bilingual employees
- Some agencies may not have the demographic need for the technology
- The technology is still evolving and has not established the most optimal operating system

Strengths – Internal to the Organization

- Personnel are concerned and want to help the community
- Faster service time frees the officer for prevention and patrol
- Solving crimes faster and saving lives
- Less personnel complaints are initiated

Stakeholder Analysis

The following section identifies the people or groups of people who make up the stakeholders and who are thought to have a strong interest in how Voice Response Translators will affect law enforcement operations. It is important to understand that stakeholders can be supportive, possess conflicting interests on the issue, create

opposition and at times can be very unpredictable. Critical for the development and successful implementation of a strategic plan is the identification, evaluation, and mapping of individual stakeholder's positions. Any strategic plan must acknowledge those people or groups who will have an impact on the development of the plan. The following groups may have an impact on the implementation and success of Voice Response Translators.

Community Members

This includes the members of the community who will have direct involvement with the device and are impacted by the department's deployment of the device

- The community expects quality and impartial service
- The community demands cost effective public services
- Special interest groups have influence on elected officials and government

City Council or Board of Supervisors

These entities govern and provide funds for public safety

- They expect efficient and effective services
- Cautious on spending taxpayers funds on relatively new technology
- Take pride in the services that are offered to the community
- Listen to community members and special interest groups
- Have political interest in the positive outcome of new technology

Sheriff or Chief

Is responsible for leading the agency and is responsible for the overall final performance

- Is elected or selected by voters or a government body
- Strives for better performance from the agencies
- Expects that the program will benefit the community and the employees
- Concern that the community sees this project as a service and benefit

Executives, Managers and Supervisors

These groups are responsible for implementing programs. They should be educated on basis fundamentals of the program and prepared for any problems

- Must have an understanding of the basic functions of the project
- Must be positive and supportive
- Are impacted by any problems and be prepared to offer solutions

Department Personnel or Users

Those staff members who will be directly affected by the project. Could be sworn or civilian staff

- Are naturally apprehensive to new technology
- Have a vested interest in being part of an excellent organization
- Must be provided training and trouble shooting techniques
- Should be supportive and positive about the project
- Must be presented and sold on the benefits of the technology
- The department's technical support team must be recognized
- Officers will adopt equipment only if it has one-button operation

The Court System

The technology will be a constant factor in court cases based upon the evidence factor. Results and case decisions will affect operating guidelines

- Courts will require storage and security of evidence data
- Will require that data is clean, untouched and not tainted
- Require experts for testifying purposes

Board of Supervisors City and County Counsel

They represent government interest and handling any civil or criminal case brought upon the government.

- Demand strict policies and procedures from the law enforcement agencies.
- Avoid costly and damaging civil and criminal cases

Lawyer Groups

This would include the legal representation of both the department and the defendant.

- Represent criminal defendants and have interest in proper evidence collection
- Are aware of police procedures and practices
- Looking for mistakes or loopholes

Media

Media provides information on what occurs in law enforcement. They have a strong influence on the public's perspective.

- They can be used as a positive public relations campaign
- They can report on negative issues
- Are interested in the benefits and threats of the program
- Have influence on government and the community

Snail darters

Although the strategic planning process identifies significant stakeholders, it also can identify potential snail darters. Snail darters are those individuals or groups who may surprise the process with resistance or opposition. The Court System is identified as the major snail darter. Legal opinion established by the court or opposition in the form of legal action may derail the implementation of the project. A civil liberty group, such as the American Civil Liberties Union, may find concern that technology and government could infringe on persons civil rights. Legal action or enacted limitations set by the court may restrict the benefits to the use of voice translator. Such actions may be diverted by having the legal opinion and guidelines established early in the planning stages. Establishing guidelines for confidentiality, accessibility, along with the appropriate firewalls is important, especially dealing with data that may be admissible in court.

Strategy Alternatives

The Nominal Group Technique revealed the impacts of trends and events that could play a role in implementing a Voice Response Translator project. From those processes, two strategies were developed pertinent to an agency implementing a translator program.

Strategy One

A department head recognizing the need for better communications methods with non-English speaking subjects proposes purchasing a technology device and submits a budget request to purchase a translator system. The Chief, recognizing the importance of community outreach and service, approves the system and approaches the city council to

allocate a large amount of funding. The Sheriff delegates a department head to lead up the program. The manager researches trade magazines, company web sites, and discovers several products. Department managers are surveyed regarding the specifications of the technology and input is encouraged. Department procurement guidelines are established and an open bidding process is introduced to the public. Two companies solicit for the project and one company is accepted based upon years of technology experience and being the lowest bidder. Two hundred devices of an existing model are purchased and they are delivered to officers in the field. Each officer receives a training manual, and a videotape from the vendor is reviewed explaining the technology and the various functions.

Strengths

- A department head demonstrates initiative and proposes the program
- Managers are solicited for input
- The appropriate procurement process is followed per department procedures

Weaknesses

- Process followed traditional financial procurement policies. A product is obtained but to the lowest bidder.
- A technology specialist is not included in the process
- Fails to involve line staff or the users
- Management is not the best person to ask for input
- A civilian is assigned as the task manager and fails to involve the users who are sworn
- The users are hesitant to buy into the project because their input was not requested
- Buying existing technology, risking that it could be outdated or antiquated

Strategy Two

A translator technology task force is developed by the Sheriff's Department.

Members include personnel assigned to the patrol division, jails, technology personnel

and a few community members who represent a non-English speaking group. A sworn project manager is selected and the first duty of the group is to research the present and future demographic makeup of the agency's service areas. Research and surveys are conducted on the various translator technologies and the agencies currently using them. Agencies lawyers and the courts are asked for an opinion on the technology. Guidelines and safeguards are formulated. Various models and formats are obtained and a testing project is established for several months with task force members completing written reviews. Format and specifications are established and the task force attempts to negotiate a Beta test over an extended time. The various entities, including the Sheriff are regularly updated on the progress of the task force. The Sheriff will assign department personnel to begin searching for funding sources. If a product is selected and recommended by the task force a time line and implementation process is developed including training and maintenance.

Strengths

- The development stage involves users and the potential end users
- A testing period is involved using various models and designs
- The governing body is involved in the project early
- Finding funding is started early
- Alternative funding sources are reviewed, leasing could be an option.
- Community members are involved
- Impacts and limitations are explored early
- Leasing allows frequent upgrades to newer technology

Weaknesses

- The testing period is lengthy
- Substantial cost involved for a leased product
- Substantial cost may prevail if extended over three years

Selecting the Strategy

Both strategies involve obtaining a complex technological system and spending a substantial amount of money. Strategy One would be more appropriate for obtaining a typical departmental purchase of an established item such as fleet vehicles or office supplies. It would be sufficient perhaps for a smaller quantity purchase of an existing proven product. Agencies through their established procurement policy can submit and acquire the adequate technology in a timely manner. Cost savings can be obtained by purchasing products that already exist and with basic warranties. A benefit is that certain products can be obtained and put into service rather quickly.

Strategy Two may be a more practical process for obtaining a relatively new high tech product, especially dealing with larger numbers of personnel. Support from the users and training are major issues and must be included early in the process. Because the device is not recognized as an officer safety item, but rather an item of convenience, financial resistance is more prevalent. Those individuals who make budgetary decisions must be sold on the benefits and long-term impact of the program.

Users, supervisors and managers must be included in the initial decision making steps. The needs of the community and of the officers and available options must be identified from the start. The decision to go forward with the project must be accompanied by support and enthusiasm from the end user. The thoroughness of the process utilized by Strategy Two can be time consuming, and lengthy in development. These elements are crucial for a potentially costly program and especially for relevant new technology.

Implementation Plan

If Voice Response Translators technology is incorporated into the future of law enforcement a comprehensive implementation plan must be developed. In order to get to the future, a systematic plan with a time line must be designed to facilitate the process.

Project Manager Appointed

- Manager will report directly to the agencies Sheriff
- Selects members of Task Force

Task Force is Formed and meets (Completion four months)

- Determine language groups of agency, present and future
- Look at the current policies and programs
- Committee members should include Managers, Supervisors, Users, Community Members represent non-English speaking group. Technical and Training personnel. Should include a member of the officers bargaining unit
- Determine deployment of the device. Will all officers have the technology or selected members

Technology Research (Completion six months)

- Compile specifications and data on the various technologies
- Survey other agencies asking what technologies they are using
- Obtain demonstration units
- Establish testing groups. Panels will test various models in the field. Report findings, select product and format
- Determine technical specifications of the project. Size, components, operating system.
- Determine site storage, battery charging site, inventory control
- Determine officer safety factors. Specifications to include easy use, one button or hands free technology

Policy Research (Completion two months)

- Request County Counsel, Courts, District Attorney, and Public Defenders to meet and confer on the subject. Request guidelines
- Sheriff meets with CEO and advises of intention of the program

Funding Process (Completion six months to one year)

- Find funding sources for project, submit budget request
- Submit Grant Proposals
- Consider leasing the equipment for one year, with an option to lease additional years
- Consider a joint project with a technical college or high-tech company. Have a technology company cover the cost of the program in exchange for the agencies name association
- Funding package should include maintenance, replacement cost and technical support
- Consider contracting a service contract with a private company

Final Product (Completion six months)

- Establish a testing phase in the field with a limited number of units
- Establish training protocol and timeline
- Establish a start date for main deployment
- Evaluation process

Final phase

- Provide public relations and marketing
- Publish success of program in the appropriate forums. Examples: Journal or Trade Paper
- Recognize members of the Task Force and the Project Manager
- Summary report after one year to the CEO or City Manager.

It is important that the vision paints a clear picture of the present and explains the many benefits associated with implementing Voice Response Translators. The implementation plan will assist the organization by establishing guidelines and discovering potential barriers earlier in the process.

Cost Analysis

Several cost factors must be considered when implementing and operating a Voice Response Translator system. Because the mentioned technology does not currently exist, exact cost is questionable. A system such as the one proposed by Integrated Wave Technologies has projected that the cost of each unit could eventually come to down to a \$1,000 price per unit.^{xiii} Deployment cost would depend on if an agency decides to issue an individual unit to each person, as their own personal unit, such as a weapon would be issued. Another option would be to distribute to personnel, each shift, prior to their deployment into the field. A major factor would be if the devices were issued to each officer in the field or assigned to just certain members, such as an area team leader or a supervisor.

Other cost factors to consider would be a daily maintenance program and occasional system upgrades. Such actions could be contracted to a private contractor or handled by a department's systems technician. The latter would incur related personnel cost such as salaries, benefits, and other related cost. If the deployment involved collecting and preserving the data for court procedures, the cost would be substantially higher. Such a process would involve voice data collection, documenting, court presentation along with the appropriate personnel and work space necessary to handle the task.

The ideas and concepts in this chapter involved the strategic planning process. The technique is designed to improve the quality of the organization by introducing a structured approach of bring anticipation of the future on today's decision. The project's

intention is to develop a plan that will avoid barriers and concentrate on the benefits of Voice Response Translators for law enforcement and the community it serves.

CHAPTER FOUR

TRANSITION MANAGEMENT

This chapter of the project provides the components of the transition management plan, which is essential to implementing the selected strategy for using Voice Response Translators in a large urban agency. Change efforts often fail in an organization. One of reasons is failure to prepare adequately for change. Transition management is a tool for organizational change. A transitional plan can make the experience smooth and implementation successful.

Identification of Critical Mass

In any complex change process, there is a critical mass of individuals or groups who, if they actively support the changes, will likely ensure the desired change will take place. If change is opposed, the plan will most likely fail. Members of the critical mass may include those stakeholders mentioned in the strategic planning section, but not all stakeholders are necessarily part of the critical mass. For purposes of this project, the agency will be a county government and the appropriate titles for county entities will be used. The following people and groups are identified as the critical mass group:

- Sheriff
- Chief Executive Officer
- Board of Supervisors
- County Counsel
- Association of Deputy Sheriff's
- District Attorney
- Courts
- Community Groups

Commitment Planning

Commitment planning is a methodology to identify key people or groups who will play a significant part in change. It is a strategy that is devised to secure the support of those groups or individuals who are vital to the change effort. Not all stakeholders identified in the strategic planning process of this paper act as a part of the critical mass. This comes from the need to establish a critical mass that is supportive of change.

The following chart describes those individuals or groups who are identified as the critical mass. It is designed to illustrate the current level of commitment of those who are represented as well as where the views may need to change in order to gain success. The commitment of the members of the critical mass may be defined as either, No Commitment, Let It Happen, Help it Happen, Make it Happen.

Table 4

Commitment Planning Chart

Critical Mass Members	Block Change	Let Change Happen	Help Change Happen	Make Change Happen
Sheriff		X		O
CAO		X		O
Board of Supervisors		X		O
County Counsel	X	O		
Deputies Association		X		O
Users	X			O
District Attorney		X	O	
Courts	X	O		
Community Groups		X	O	

X = Current Position O = Desired Position

The commitment chart above lists members in the critical mass, their current commitment level (X) and their desired commitment level (O), which will be necessary to make the change successful. After identifying the critical mass and their commitment level, the next step is to develop intervention strategies needed to influence their movement to the desired commitment level.

The Sheriff must be a focal figure; his support and commitment to the project will be a key element. That position is crucial to obtaining support from other county governmental offices and making it happen.

The County Executive Officer working in conjunction with the Sheriff would be responsible for the sale of the project to the Board of Supervisors. This office is another key liaison position with other county and governmental departments.

The Board of Supervisors approves funding for the department and they must let change happen. The county must recognize the need for improved public services and support the agency.

County Counsel needs to let the project happen. County Counsel, while not actually able to completely stop the project, could recommend strongly against it. Their recommendation could have a domino effect on other county agencies, such as the Board of Supervisors. They are a crucial entity in the early planning stages.

The Deputies Association needs to let change happen so that progress can occur. Any resentment could taint the enthusiasm of the deputies assigned to the project.

The End Users are one of the major players to the success of the program. Any aversion from this group and the project could be finished. They must be fully involved from the early stages to final operations stage.

The District Attorney's office needs to let change happen. This office would work in cooperation with other stakeholders and critical mass members such as lawyer groups and the courts. If this group were resistant to change, it would not stop the process, but may influence other groups.

The courts have a strong influence in the process. Any major aversion from this group would have serious impact on the benefits of the program.

Community groups are considered one of the main beneficiaries in the process and need to help change happen. Their involvement and support of the program has strong implications on all the other groups.

Responsibility Charting

This technique is used as a means to ensure that role relationships are clear and to eliminate duplication of effort during the implementation. It also will reduce the ambiguity of the assignment by ensuring that the responsibilities of key personnel are well identified and known to each of the members. The individuals who will be responsible for various actions are the actors and include key members of the project teams as well as those identified as critical mass. Each decision that is required is charted and the person or group who is assigned the task is identified. The chart serves as a reference map and allows members to see where they fit in. The following table represents the responsibility chart for implementing Voice Response Translators into an agency.

Table 5
Responsibility Chart

<u>Decisions</u>							
	CEO of county	Board Super.	Sheriff	Users	Managers Super.	Project Manager	Com-munity
1. Initiate Project	S	A	A	S	S	S	S
2. Select Project Leader	S	I	R	S	S	I	S
3. Select Project Team	I	I	A	S	S	R	S
4. Research and Test	S	S	S	A	S	S	S
5. Select Format	S	S	S	R	S	A	S
6. Purchase Units	S	A	R	I	S	A	S
7. Select and Train users	S	S	S	S	S	R	S
8. Enlighten Managers and Supervisors	S	S	S	S	A	R	S
9. Trial period, measure results	S	S	I	R	S	I	I

R = Responsibility A = Approval S = Support I = Inform

The responsibility chart serves as a reference map for the task force and the Project Manager by allowing those critical to the transition to be aware of each other's responsibilities.

CHAPTER FIVE

CONCLUSION

Project Summary

A review of the literature, an awareness of the community's needs and the advancement of language translator technology clearly indicate that some form of automated Voice Response Technology is necessary for law enforcement in the future. Agencies for years have attempted to supplement the growing language barriers with language interpreters and telephone language services. Unfortunately, while these tools have provided some relief, the necessity for improved services still exist. The availability of new technologies may be the tool to fill the void.

The need for improved police relations and the growing number of non-English speaking groups have forced law enforcement agencies to focus on other methods. Non-English speaking residents are entitled to the same responsiveness and level of service that is afforded to English speaking people. Law enforcement personnel are entitled to the best and most expeditious equipment to complement their mission. Language barriers overwhelm an already overburdened system, and in some cases, a delay could mean life or death.

Voice Response Translators technology is relevantly new and still in the development phases. Once the technology is perfected and an efficient operating format is developed, it will have a significant impact on law enforcement agencies. Improvements in miniaturization and lower cost could find law enforcement agencies issuing devices to every personnel in the field. Simple everyday conversations could be a common scenario in the future. Obviously, such technology should only be viewed as a

supplemental resource to assist with basic law enforcement tasks. The device will not replace the role of a human interpreter and the need for one on one personal conversation. Such devices would not only assist officers in their daily duties but also improve law enforcement relations with the non-English speaking community.

Conclusions

The issues and ideas discussed in this project strongly encourage the development and deployment of automated language translators for law enforcement agencies. If effective Community Oriented Policing and the desire for a stronger customer service level is the goal of an agency, then a language translator is a vital tool. Law enforcement and community leaders have the opportunity to enact the appropriate responses. Unfortunately, the process cannot be handled alone by one agency. The process must be a joint effort involving local, state and federal governments working together with the private sector in funding and development. Language translators are not only a necessary resource but also a positive public relations tool. Imagine the public perception of the local police agency that deploys such a device?

What impact will portable voice response translators have on the patrol services of a large urban agency by 2007? Although the development and implementation of such a program would be enormous and expensive, the results would be rewarding. The overall impact would be positive, resulting in law enforcement personnel being better equipped with a tool to make their daily task easier. The results will also improve police and community relations by building upon an important issue, the ability to communicate. It is vital that law enforcement agencies acquire some format of language

translator technology and implement the program within the agencies with the next five years. Portable voice response translator will have a decisive and essential impact on law enforcement agencies of the future.

APPENDIX A

Nominal Group Technique Participants

Brian Demsey
Chief Executive Officer
Remote Net Computer Inc.

JoAnn Galisky, Lieutenant
Orange County Sheriff's Department

Mike McHenry, Technology Sergeant
Orange County Sheriff's Department

Tim Board, Sergeant
Orange County Sheriff's Department

Danna Cook
Attorney
Law Firm of King, Purtich, Holmes, Paterno & Berliner

Dean Zanone, Sergeant
Seal Beach Police Department

Orville King, Captain
Seal Beach Police Department

John Davis, Lieutenant
Orange County Sheriff's Department

APPENDIX B

Initial Trend List

- Immigration
- Technology limitations
- Personal freedom
- Interfacing with other technologies
- Cost of system
- Civil liability to agency
- Reluctance to adopt new technology
- Civil liberties
- Care and maintenance
- Accuracy and certification
- Training
- Trends in languages, slang words
- Downturn in economy
- Labor unions reaction
- Privacy concerns
- Admissibility
- Law enforcement hiring policies
- Community outreach
- Evidence preservation
- Federal mandates
- Competing technologies
- Personal Freedoms
- Culture differences customs
- High speed wireless
- Youth crime
- ADA requirements
- Legal challenges
- Data maintenance
- Collateral benefits
- Other law enforcement uses

APPENDIX C

Initial Event List

- Electromagnetic pulse impacts the system
- Case decision
- Cyber terrorism
- Borders open
- International guidelines
- New legislation
- Technology is developed to counteract technology
- Medical impact on the user
- Anti-Trust event
- Bilingual officers strike
- Terrorist Event
- Constitutional crisis
- Booming economy
- Invasion
- Internet collapse
- Technology limitations
- Federal adoption of technology
- Immigration law changed
- Bad press
- War or Invasion
- Economic catastrophe

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