

MARKETING INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

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SUMMARY

As a result of the ever-growing traffic congestion in the United States, Intelligent Transportation Systems (ITS) are being implemented to improve mobility and safety of the transportation system. ITS will create "smarter" highways, automobiles, and travelers through the application of information processing, communications, control, and electronic technologies (1). There are six components of ITS including Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), Advanced Public Transportation Systems (APTS), Advanced Vehicle Control Systems (AVCS), and Advanced Rural Transportation Systems (ARTS). The focus of this study was on ATMS and ATIS.

Public acceptance and participation is an essential part of any successful transportation program. Although programs such as ITS or, more specific to this study, ATMS and ATIS, largely benefit the public, these benefits have not yet been recognized by the general population, resulting in slow acceptance by the public. The agency or agencies implementing an ATMS program must identify its target audiences, the needs of these audiences, and refine their product so that it will be beneficial to the audiences. Once this is accomplished, the implementing agencies must illustrate that the product is advantageous.

The main objectives of this study were to discuss existing and planned ATMS and ATIS systems; explore the marketing techniques being employed by the implementing transportation agency; and from this research, develop specific recommendations for the future implementation of ATMS and ATIS systems. The recommendations were then applied to a hypothetical situation.

Several individuals involved with ITS programs were contacted to determine important aspects of a marketing plan and obtain information on existing programs. The programs discussed in this study include CHART, initiated by the Maryland State Highway Administration; FAST-TRAC by the Road Commission for Oakland County in Michigan; Guidestar by the Minnesota Department of Transportation; VENTURE by Washington State DOT; and ITS AMERICA. Minnesota Guidestar was used as a case study to determine what makes a marketing plan successful.

Marketing techniques can be used to unite all groups involved in the implementation and use of ITS. Since all systems are different, as are their users, marketing strategies will vary accordingly. The guidelines given in this report are general and the actual details must be worked out by the individual organizations. A hypothetical application of the recommendations is also given in this report. The results of this study indicate that a marketing plan can be broken into four major stages as follows:

- *Problem Recognition:* Market research should be performed in this stage to determine the problems and needs of the traveler. The program should be planned to provide solutions to the problems identified in this stage.
- *Program Planning:* Prior to and during the planning stage of project implementation, it is necessary to assign individuals who are experienced with dealing with the public to develop

a marketing campaign. If this is not a possibility, a marketing company experienced with transportation facilities should be hired or consulted. It is during this stage that objectives should be set, and target audiences be identified and involved in the project implementation.

- *Program Initiation:* Once the planning process is completed, traditional advertising can be used to announce the opening or beginning of the program. Materials such as brochures, pamphlets, billboards, radio and television ads, press conferences, technical tours, and public speeches are most appropriate in this stage.
- *Program Operations:* Once the program is underway it is necessary to continue to monitor and evaluate it. Surveys and user/needs studies should be used to verify that the audiences are being reached and are using the system appropriately.

Some key points to remember while marketing the program include:

- Consult or hire individuals who are experienced with marketing transportation systems and/or know how to relate to public audiences. Have them develop a marketing plan during the early stages of planning and keep them involved throughout program implementation.
- Remember that you cannot be all things to all people. Identify target audiences and their individual needs.
- Establish objectives early and stick to them.
- Talk and LISTEN. Listen to the suggestions made and make the appropriate changes. Be open-minded and willing to change.
- Keep in mind that you may make mistakes. Admit to them and learn from them.
- Be honest, give the good *and* the bad news.
- Monitor your program from beginning to end and after it is operating.
- Do not underestimate the power of the public-- they are extremely fickle and can make or break your program.

ITS will become nation-wide programs that help to improve the mobility and safety of the nation's transportation systems. It is necessary that all of the public groups be kept aware and educated about the systems so everyone can work together to achieve the ultimate goal of a better, safer transportation network.

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INTRODUCTION

Traffic congestion is on the rise in the United States. There is a continuously growing number of motor vehicles on a finite amount of highway miles. In response to the increasing number of traffic delays, Intelligent Transportation Systems (ITS) are being developed to improve the safety and mobility of the nation's roadways. ITS will create "smarter" highways, automobiles, and travelers through the application of information processing, communications, control, and electronic technologies (1). There are six components of ITS including Advanced Traffic Management Systems (ATMS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), Advanced Public Transportation Systems (APTS), Advanced Vehicle Control Systems (AVCS), and Advanced Rural Transportation Systems (ARTS). The focus of this study will be on ATMS and ATIS.

ATMS, the building blocks of ITS, are methods of improving the level of service and decreasing vehicle delays through computerized programs that monitor vehicle activity on roadways in order to "manage" traffic. ATMS also includes data and information gathering, and serves as a management tool to aid transportation agencies in meeting their objectives. The real-time information obtained through ATMS from freeways and arterials is relayed to the ATIS which, in turn, give the information to travelers so they can make better decisions about their travel routes, modes and times. The systems identify incidents on the freeways and arterials and alert the users to the occurrences and the delays that result. Given this information, travelers can choose to stay on their original course and wait out the delay, switch to a different roadway or transportation mode, or change their departure time.

Public acceptance and participation is an essential part of any successful transportation program. Although programs such as ITS or, more specific to this study, ATMS and ATIS, largely benefit the public, these benefits have not yet been recognized by the general population, therefore leading to slow acceptance by the general public. The agency or agencies implementing an ATMS program must identify its target audiences, the needs of these audiences, and refine their product to that it will be beneficial to the audiences. Once this is accomplished, the implementing agencies must illustrate that the product is advantageous.

The main objectives of this study are to discuss existing and planned ATMS and ATIS systems; explore the marketing techniques being employed by the implementing transportation agency; and from this research, develop specific recommendations for the future implementation of ATMS and ATIS systems. A hypothetical illustration of the applications of the findings will be given and ITS AMERICA marketing and communications efforts will also be discussed.

An advanced transportation system is only as effective as those using it allow it to be. If the organization implementing an ATMS and ATIS cannot gain the interest and support of those individuals who will be operating and/or using the system, through effective marketing techniques, the system may not work effectively. Proper use of the program is the key to its success in improving the safety and mobility of the roadway network.

JUSTIFICATION FOR THE PROJECT

The focus of this study is developing guidelines for marketing Advanced Traffic Management Systems (ATMS) and Advanced Traveler Information Systems (ATIS) and applying them to a hypothetical situation. The success of an ATMS or ATIS depends heavily upon travelers actually using the information obtained through the systems to modify departure times, travel routes and transportation modes and also upon the agencies that operate and/or are affected by the systems. Human behavior is a complicated phenomena. Individual reactions to new technology varies for many reasons. It is necessary to determine exactly who the audience is for a specific system and how to approach them when implementing innovative methods of managing traffic congestion and patterns.

ATMS and ATIS marketing can:

- improve relations between public and private sector agencies;
- improve relations within public agencies;
- improve relations among special service groups and transportation agencies;
- heighten public awareness of ATMS and ATIS technologies;
- increase public confidence in ATMS and ATIS strategies;
- prepare travelers for the implementation of ATMS and ATIS programs; and
- promote immediate use of ATMS and ATIS.

The main objective of ATMS and ATIS is improved mobility and safety for the overall transportation network. With the aid of adequate marketing techniques in the implementation of ITS it will be possible for this goal to be achieved.

BACKGROUND

Intelligent Transportation Systems (ITS) Technologies

There are six components of Intelligent Transportation Systems (ITS). These include the Advanced Vehicle Control Systems (AVCS), Advanced Traveler Information Systems (ATIS), Commercial Vehicle Operations (CVO), Advanced Public Transportation Systems (APTS), Advanced Traffic Management Systems (ATMS) and Advanced Rural Transportation Systems (ARTS). ATMS is essentially the backbone of ITS. It is the necessary component needed for implementation and operation of the other four elements of ITS. Since the focus of this study is on ATMS and ATIS programs, only those components will be discussed in this section.

Advanced Traffic Management Systems (ATMS)

ATMS are the building blocks of ITS. ATMS consists of three components as follows:(4)

- Surveillance equipment for monitoring the operational state of a roadway or roadway network;
- Real-time, traffic-responsive control systems to alter the network control systems such as traffic signals, freeway ramp meters, messages on electronic signs, etc, through feedback provided by the surveillance system; and
- System operator support systems to enable and facilitate real-time control and management of the network.

Some examples of ATMS components are loop detectors, ice detection systems, electronic toll collection (ETC) equipment, weigh-in motion (WIM) systems, and variable message signs (VMS). The roadway equipment is linked to a traffic operations center (TOC) or centers. (4) "Traffic operation centers collect information from emergency services, signal systems, and construction sites, and other sources" through ATMS, "and can provide information to providers of emergency services. They also monitor major arteries with cameras or via electronic sensing and can adjust automatic on-ramp operations."(5)

Advanced Traveler Information Systems (ATIS)

ATIS are the bases for the transmission of traffic information between the transportation (i.e. highways, buses, trains, ferries) monitoring system and the general traveler. ATIS assist travelers at home, while traveling, or at work. The information obtained through ATIS allows travelers to decide when to leave, by which mode or which roadways. ATIS is composed of several components. These include tools to improve information for the end-user products such as:

- Optimization models: Models were developed to optimize network routing and usage(2); and

- Quantification of driver behavior: This includes developing models that simulate driver behavior in their route selection, mode selection and reactions to highway incidents(1,2);

as well as the actual end-user products:

- In-vehicle guidance systems: Audio-visual aids such as electronic maps and highway advisory radios which allow the driver to select the best route(2);
- Personal/portable systems: These systems are similar in size and appearance to hand-held computer games. They will provide information on restaurants, hotels, filling stations, shopping areas, and parking availability, as well as information on special events. The systems can also provide information on walking and bicycle routes, transit choices, and driving routes(3); and
- Home/Office/Public traveler systems: These are fixed ATIS. They provide travelers with pre-trip information.(3)

The main objective of ATIS is to inform travelers of travel information. Other goals of ATIS are to optimize the flow and safety of travel over the entire transportation network, influence travelers to better utilize the entire transportation system, relieve traffic congestion, and improve air quality. To reach these goals it will be necessary to alert drivers and public transit riders of incidents (accidents, delays, etc.), educate travelers on the use of all modes of transportation, promote ride sharing, and provide information on local events and their predictive effect on traffic and public transit schedules. (3)

Some examples of advanced traveler information system features that are currently available or will be in the near future include: (3)

- Map display systems: These systems provide in-vehicle on-screen street map that highlights the drivers location and provides information on the operation of the surrounding network. Some systems are connected to a centralized information center which will provide the driver with information on incidents and delays. This allows for the driver to make route changes if necessary. In addition, systems will include representation of all types of rail lines, ferry lines and bus routes.
- Route planning systems: Route planning systems equip the traveler with an automatically calculated optimum route to his/her destination. The route can include more than one mode of transportation depending upon traveler preference.
- Route guidance systems: Once the route is chosen, this system describes each maneuver of the chosen route to the traveler. The directions can be printed or in displayed form, a simple graphic display of the overall route, a display of each maneuver, and/or synthesized voice commands for each maneuver.
- Real-time transportation network information: This is the source of up-to-the-minute information on traffic movement and congestion, bottlenecks, and public transportation delays or schedule changes.

Marketing Audiences

An important step towards a successful ATMS or ATIS program is gaining the interest and support of those groups who will contribute to its activities. However, these groups or audiences must first be identified. The primary public sector audiences include the agencies that operate and maintain the systems, the agencies that are affected by the systems (i.e. enforcement agencies, emergency services, and agencies operating adjacent facilities), elected officials, the general public-- the users of the systems, and the media. Once the target audiences are identified and their roles in the program are established, a marketing plan can be devised. It is usually necessary to involve the audiences in different phases according to their individual needs, however once an audience becomes involved, monitoring and open communications should be maintained throughout the remainder of program implementation.

Operating Agencies

The importance of obtaining the support of operating agencies, such as governmental agencies that operate and maintain ITS, is due to the heavy reliance on infrastructure by the systems. If these agencies do not support the advanced traffic management systems, they can not be operated efficiently and therefore will not be useful to the overall transportation network. It is necessary for decision-makers within the agencies to be aware of the costs and benefits of implementing ATMS and ATIS. They are primarily concerned with how these systems will fit into their future goals. When attempting to gain the trust and acceptance of the operating agencies in implementing ITS within their jurisdiction it is necessary to provide the complete costs of implementing, operating and maintaining the proposed system. (6)

Affected Agencies

Affected agencies include those organizations responsible for enforcement, operating adjacent facilities, and those using the transportation network (i.e. emergency services). Although they are also quite concerned with the costs and benefits of operating an advanced traffic management system, they are ultimately concerned with how the systems will affect their operations. In particular, enforcement agencies require information indicating whether the system will require them to provide additional enforcement, to reduce enforcement or if the system will not affect their operation. Emergency service agencies are concerned with the ease of traveling through the network, if there will be any need to enhance their efforts, or if the new systems will create barriers to their access, and improving the efficiency of their operations. Agencies, which operate adjacent facilities, are mostly concerned with any effects there may be on their system due to implementation of ITS. (6)

Elected Officials

Elected officials play an important role in the public acceptance of any transportation system. If an official reacts negatively to an intelligent transportation system, s/he has the power to convince the general public that it is not desirable to implement such a system. On the other hand, if an official supports the implementation of ITS in her/his jurisdiction the public will be more likely to support the systems as well. Elected officials are interested in the cost and benefits and how they will effect the goals of the their jurisdiction or district, the effects on the

environment, privacy and land use as a result of implementing such systems, and the perception by the people of the ITS. Information supplied to this group should be concise and easily understood but not too simple.(6)

General Public and System Users

The users of the system are possibly the most important group to the successful operation of ATMS and ATIS. Programs will be successful if the users can identify advantages that outweigh the disadvantages of a system. "The ultimate customer for ATMS are people who travel in the system."(6) The participation of the general public is particularly important for ATIS because unlike ATMS, the decision to purchase a system can be made by a single individual or company.(7) Public education and information is a key marketing technique for this group of individuals.

The Media

The media also plays a role in both ATMS and ATIS implementation. They have the power to sway the opinions of the general public and elected officials either negatively or positively. When implementing an ITS program, or any new technology, it is necessary to determine how the media can affect the strategic plan. The message that is desired should be pre-determined in order to keep the media from forming their own opinions which may ultimately become public opinion. Media relations should be kept as open and honest as possible throughout program implementation.

EXISTING INTELLIGENT TRANSPORTATION SYSTEMS

There are many Advanced Traffic Management (ATMS) and Advanced Traveler Information Systems (ATIS) programs throughout the United States that have or are in the process of being implemented. Most have included marketing techniques as part of their implementation process. The systems and marketing techniques vary according to geographical location, type of program being implemented and the available funding. Several existing and planned systems and marketing strategies will be discussed in this section of the report. There is a vast number of ATMS and ATIS programs that are in the process of being implemented, however due to time and space restrictions only a small sampling will be discussed here.

Maryland State Highway Administration (MSHA)

The Maryland State Highway Administration (MSHA) has developed a state-wide ITS program called CHART (Chesapeake Highway Advisories Routing Traffic). The program was initiated in 1990 in response to the heavy beach traffic approaching the eastern shore of the state. Originally entitled "Reach-the-beach", the program includes Travelers Advisory Radio (TAR), Variable Message Signs (VMS), emergency traffic patrols, emergency response units, and freeway incident traffic management routes. Partners in the CHART program are the Maryland State Police (MSP), Maryland Transportation Authority (MdTA), Mass Transit Administration (MTA), FHWA, county governments, academia, and private industry (8).

CHART covers 400 miles of freeway and 400 miles of major arterial roadway in eight major corridors in the state of Maryland. The system includes 44 on-line signal systems (400 individual signals) which are in operation or under construction. There are 25 permanent TAR transmitters, 30 permanent and several portable VMS. The emergency traffic patrol monitors major roadways to assist motorists in trouble. Emergency response units are equipped with incident management tools, such as arrow boards, to set-up traffic control at incident scenes and to re-open roadways. The program also includes pre-planned detour routes for incident management. Traffic Operation Centers control the activities of CHART (8).

The agencies that operate and are affected by CHART are participants as well as financial partners in the continued development and decision making process of the program. Several committees, consisting of individuals from the various groups, have been established to address the current and future needs of the systems and any problems that develop.

With regard to marketing, MSHA has not done much to get the media or the general public involved. No public surveys were conducted and public reaction was determined "by feel". According to Stephen Kuciemba, Section Chief of the Advanced Systems Development Section of the MSHA, the public seems to accept the program although it is likely that they do not fully understand the operational aspects of it. Most of the public reaction that has been received is through newspaper commentaries and the Administration makes phone calls or writes letters to those who show concern. They are however, developing brochures for the media and have internal documents that can be viewed by visiting Departments of Transportation.(9)

Road Commission for Oakland County, Michigan (RCOC)

The Road Commission for Oakland County (RCOC) is undertaking a project to implement ATMS and ATIS in Troy, Michigan. FAST-TRAC, Faster And Safer Travel-Traffic Routing & Advanced Controls, is an ITS program that integrates both ATMS and ATIS to improve roadway safety and mobility, and to address pedestrian safety (10).

FAST-TRAC's mission is to integrate ATMS and ATIS technologies to improve the safety and mobility of the Oakland County roadway network. The ATMS technology used in FAST-TRAC are the Sydney Coordinated Adaptive Traffic System (SCATS) which monitors traffic flow and adjusts signal timing accordingly; and the Autoscope video imaging processing system which transmits information to the SCATS, identifies traffic incidents and performs speed and vehicle classification studies (10). The ATIS technology employed by FAST-TRAC is the Siemens Ali-Scout technology which consists of roadside infrared beacons, specially equipped vehicles with on-board computer systems, and a central computer that contains route guidance and traveler information (10). Information is exchanged between the Traffic Operations Center (TOC) and the traveler through the roadside infrared beacons when the driver requests travel information through the in-vehicle equipment.

Representatives from several sectors including federal, county, city and local government, international agencies, academia, and private industry are participants in the implementation of FAST-TRAC. Part of the mission of FAST-TRAC is to illustrate "how multiple jurisdictions can work together, in the coordination of county and state projects, with the private sector, as partners, to improve traffic safety and mobility (10)." With a list of 22 participants, including the United States Congress, RCOC, County of Oakland and various other private and public organizations, FAST-TRAC is well on its way to meeting this goal.

The RCOC involves the media and the public through demonstrations of their system. According to John Joy of the RCOC, an important part of marketing to the public and the media is having something to show them. If they can see how it works and that it is useful to them they will more easily accept the new system. Brochures and pamphlets have also been developed for distribution since RCOC has recognized that public education is an important element of program implementation. FAST-TRAC has proven to be a successful program at this point in time (11).

Minnesota Department of Transportation (Mn/DOT)

Minnesota Guidestar, the Minnesota Department of Transportation's intelligent transportation system (ITS) (Mn/DOT's term for ITS in Minnesota), was initiated in 1991 to reach the ultimate goal of better state-wide transportation. The Guidestar program consists of four major components which include research, demonstration, deployment, and coordination. The program's marketing plan identifies the major audiences as the public, the private sector, and academia. Minnesota Guidestar's plan for better transportation includes increased accessibility, greater productivity, enhanced safety, reduced environmental impacts and broader private sector investments (12).

There are several projects, which have been undertaken by the Mn/DOT, in the areas of Advanced Traveler Information Systems and Advanced Traffic Management Systems. The ATIS projects include traffic data management for advanced driver information systems, multimedia information presentation in smart cars and on highways, and portable and in-vehicle computer systems. ATMS projects include enhancements of computer simulation packages and databases for geometric design planning, operations and traffic management in freeway networks and corridors, traffic flow models and implementation in parallel processing, on-line integrated control strategies for optimal ramp metering, incident management and driver guidance in freeway networks, and on-line strategies for optimal intersection control (13).

The marketing plan developed by staff within Mn/DOT is quite extensive and includes three phases. Phase one began in 1991 and targeted opinion leaders and decision makers at the national and international levels. The main objectives of this phase were to build image (i.e. high tech, futuristic, sophisticated, friendly) and visibility; attract participants and resources from the federal government and the public sector (local and regional units of government in the Twin Cities metro area) and the private sector; focus on the strengths of Minnesota (i.e. ATIS, ATMS); and to institutionalize ITS at Mn/DOT and in Minnesota. A list of specific target groups for Phase one includes ITS America, FHWA, private industry, metro-based local and regional governmental units and Minnesota Guidestar partners and committee members (14).

Phase two continues the efforts begun in Phase one and expands the marketing audience. The audiences targeted in this phase are internal to Minnesota such as Minnesota based ITS opinion leaders and decision makers and customers directly impacted by their operational tests (14). In other words, the affected agencies and a select group of the general public. During this phase, begun in 1994, the communication strategies to be used in the Minnesota Guidestar Education and Outreach program will be developed (14).

Minnesota's ITS Education and Outreach program is designed to support the Guidestar's strategic plan. The main objectives of the program are: to substantially increase public awareness, acceptance and support of the existence, development and benefits of Minnesota Guidestar specifically and ITS as a whole; to establish alliances with organizations representing actual and potential stakeholders in Minnesota Guidestar and ITS; to recruit and involve in Minnesota Guidestar those in political, civic, business and leadership positions; to identify and reach out to interested organizations who are potential adversaries of ITS in Minnesota Guidestar, and to understand and respond to their concerns; to support Minnesota Guidestar/Mn/DOT's efforts to remain a leader in national ITS efforts and a player in international initiatives; to "grow" an ITS industry in Minnesota and the United States; to involve "end-users" by helping them to help us develop, design, test and evaluate Minnesota Guidestar concepts and projects; and to "institutionalize" ITS at Mn/DOT - and then throughout Minnesota (14).

The third Phase expands the target audience to include the general traveling public. Emphasis will be placed on those traveling within Minnesota. The proposed start date is 1995 but since this part of the project is running slightly behind schedule the beginning of Phase 3 may be postponed a year or two (14).

Minnesota Guidestar has successfully established 24 partnerships with all levels of government, 19 separate research and development projects with the University of Minnesota's

Center for Transportation Studies ITS Institute, partnerships with 13 private companies, and conducted four user-needs studies (14). These partnership illustrates their ability to market their program to the operating and affected agencies, and elected officials and their concern with the needs of the general public and the system users. The results of the user-needs studies have been applied to modify the program according to the concerns of the users of the system. According to Mike Sobolewski, marketing director for Minnesota Guidestar, the key to marketing is to determine the critical target audiences and determine their specific needs (15).

Washington State Department of Transportation (WSDOT)

Traffic Surveillance, Control and Driver Information (SC&DI) facilities are currently in operation along I-405, I-90, I-5, and State Road (SR) 520 in Seattle, Washington. The Traffic Management System is currently being expanded and updated to include 67 miles on I-5, 31 miles on I-405, 13 miles on SR 167, and 13 miles on SR 520. The components of the TMS include: field devices for monitoring traffic, collecting data, and providing driver information; communication enhancements for higher capacity and more efficient transmission; remote monitoring, control and communication facilities at the Traffic Systems Management Center (TSMC), and centralized computer control via Traffic Management System (TMS) software. Some of the devices used as part of the TMS include: arterial signal systems, motorist aid telephones, highway advisory radio, traffic reports by telephone, ramp metering, freeway closed circuit television, freeway traffic displays, variable message signs, and reversible roadway operations (17).

The TMS activities taking place in the Seattle area are part of a state-wide ITS program called VENTURE Washington. A strategic plan has been developed by the Washington State Department of Transportation that will incorporate advanced traffic management systems, freight mobility, public transportation, and traveler information systems. WSDOT recognizes the varying needs of the different geographical areas across the state and is planning accordingly.(18) Since this study focuses on ATMS and ATIS, only the activities in the traffic management and traveler information areas will be discussed in this report. TABLE 1 displays the types of systems in operation or under construction throughout the state with the specific areas for each system and a description of the system listed.

Washington State DOT has recognized that there are several audiences that must be involved in the implementation of an ITS program. In their strategic plan, WSDOT has identified specific audiences and what should be done for the purposes of marketing their system to these groups. The audiences identified include state & local legislators, federal government, and the private sector. For each of these groups a specific technique was developed and proposed to properly market their products to them. TABLE 2 lists the strategies and target organizations and indicates the importance of each.

In addition to marketing strategies to target state and local legislators, the federal government, and private sector organizations, WSDOT has developed a plan for public information. WSDOT has further divided the public audience or users into groups according to geographical area, specific technology and the effects on the users. The first objective of the program is to gain the acceptance and raise the awareness level of the audience/users. As specific

demonstrations and technologies are introduced into a community, public information about these projects can be easily disseminated to the appropriate audience if they have been pre-defined. (19)

The WSDOT public information plan is to be implemented in three phases. Phase 1, entitled Preparation, is already underway in the early phases of the ITS program development. Considerable effort is being given to the establishment of a program identity and the transfer of that identity to the target groups. WSDOT has already established the VENTURE Washington identity and logo and have developed a brochure which explains the program. Dedicating a knowledgeable WSDOT person to coordinate the effort, the message will be transmitted to the key interest groups through slides, videos, or other media devices (19).

Phase 2, or the introduction phase, involves developing a dialogue between the interest groups to collaborate an agreement on a course of action. During this phase meetings will be conducted with affected agencies and private organizations to raise the general awareness of the ITS program and its benefits. Employer newsletters, transportation fairs, and civic organization meetings will be used. Presentations to the target audiences will be developed and conducted by a trained individual from WSDOT to disseminate information and obtain public feedback.(19)

Table 1. ITS Projects in Washington State (19).

| Project/Program | ITS Project Description | Type* | Date** | Location |
|--|--|-------|--------|---|
| Traffic Management | | | | |
| Freeway and Arterial Management Effort (FAME) | Multiphase research and implementation program consisting of: -Ramp Metering -HOV Treatments -Incident Response -Freeway Arterial Coordination | P,R | O | Statewide |
| Surveillance, Control and Driver Information (SC&DI) | The SC&DI system provides data stations, communications, CCTV cameras, Variable Message Signs, Highway Advisory Radio, and ramp metering along major freeway corridors in Seattle. | P | O | Seattle |
| Traffic Systems Management Center (TSMC) | Seattle region (WSDOT District 1) has state-of-the-art TSMC to control SC&DI system and coordinate data for traveler information. | P | O | Seattle |
| Integrated Freeway/Arterial Control System | A control algorithm is being developed that will modify arterial signal timings on Aurora Avenue North (SR 99) and Bothell Way (SR 522). The findings are a function of the freeway conditions. Algorithms to modify freeway metering strategies based on arterial conditions have also been developed. | R | 1993 | North King/South Snohomish County |
| North Seattle ATMS | This project will explore methods of adjacent systems to share loop and operational data to improve operations across boundaries and between adjacent systems. Many times political and jurisdictional issues prevent coordinating adjacent systems. These issues will be worked out over the course of the project. | P | O | Seattle King & Snohomish Counties |
| Arterial Signal Coordination | These projects explore methods for adjacent signed systems to share signal data and improve inter-jurisdictional signal timings. Current efforts are along I-5/SR 99 in North King, South Snohomish County and in the Green River Valley. | P | O | N. King S. Snohomish Counties, Green River Valley |

| Project/Program | ITS Project Description | Type* | Date** | Location |
|--|--|-------|--------|--------------------|
| Traffic Management (continued) | | | | |
| Improved Congestion Prediction Algorithm | This project will search for an improved ramp control algorithm based on predictive techniques. The project objectives are to: (1) evaluate the existing data and the performance of the predictive ramp control algorithm used to operate the WSDOT traffic systems computer in Seattle, (2) develop improvements to the existing predictive ramp control algorithm by looking at upstream volumes and lane occupancies and (3) find ways to improve pattern recognition, testing the new algorithms on more than one section of freeway. | R | 1995 | Seattle |
| Forecasting Freeway and Ramp Data for Improved Real-Time Control and Data Analysis | The objectives of this project were to (1) investigate and test methods of accurately predicting short term traffic data, and (2) replace data in the freeway management computer from failed detectors with predicted data (for ramp control purposes). | R | 1993 | Seattle |
| Communication System for Remote Monitoring Locations | This project will test communication systems that will provide cost-effective communication for remote data collection, surveillance, or control sites. These communication systems will be used for locations that are not planned to be on the fiber-optic network and for locations that will eventually be on the network but must be linked with central system before the fiber-optic network is in place. | R | 1995 | Western Washington |
| Improved Estimates of Travel time from Real-Time Inductance Loop Sensors | This project seeks to improve speed estimates from loop data by comparing up to 33 pairs of data stations using cross-correlation techniques to obtain speeds and then will develop an empirical relationship to estimate speeds from that data. | R | 1993 | Seattle |
| Improved Error Detection (Two Projects) | Two projects seeks to improve the accuracy in detection of traffic volumes and speeds. One project examines ways to identify faulty detector data and uses video imaging as an independent accuracy check and data collection device. The second project seeks to improve error detection for inductive loop sensors on freeways. | R | 1994 | Seattle |

| Project/Program | ITS Project Description | Type* | Date** | Location |
|---|--|-------|--------|-------------------------|
| Traveler Information | | | | |
| Seattle to Portland ITS and Communications Plan | This project will develop the basis for a statewide traffic management communication network plan. Phase 1 will identify specific ITS projects within the Seattle to Portland corridor. Phase 2 will be the communication network needed in this corridor. | R | 1995 | I-5 Seattle to Portland |
| FLOW System Map | The FLOW map provides congestion information of the Seattle area's primary freeway routes. Currently, the system operates at most traffic reporting services, the University of Washington, and cable TV provider, and an office/retail building. | P | O | Seattle |
| Traffic Reporter | This project provides color graphic speed and travel time data for freeway segments and allows interactive queries from users. Several enhancements are being made to the "Traffic Reporter" information system, including expanding coverage of the display to include all freeways in the Seattle area, and including separate information on the HOV lanes. | P,R | O | Seattle |
| Real-Time Motorist Information | The primary objectives of this project are to develop a PC-based front-end of an advanced traveler information system (ATIS) capable of (1) receiving existing real-time traffic data; (2) converting that data into information designed to impact commuter choice or route, mode, and time of commute; and (3) displaying that information through a user interface designed to meet the needs of drivers. This work lead to Traffic Reporter. | R | O | Seattle |
| Bellevue Smart Traveler | This project will produce, implement, and test a prototype Traveler Information Center designed to increase the use of transit and para-transit (carpools and vanpools) by downtown Bellevue office workers. The goal is to locate in a downtown Bellevue office complex a prototype computer-based interactive Traveler Information Center that provides office workers with greater access to flexible, reliable, safe, and time efficient alternatives to single occupancy vehicle commuting. | R | 1994 | Bellevue |
| SCOTTE Traveler Information System | Kitsap Transit will provide PC owners with information on ferry and transit services. Initial tests will be on Bainbridge Island. | P | 1994 | Kitsap County |

| Project/Program | ITS Project Description | Type* | Date** | Location |
|--|---|-------|--------|--------------------|
| Traveler Information (continued) | | | | |
| TRAVELAID: In-Vehicle Signing & Variable Speed Limit Demonstration | The TRAVELAID project's objective is the enhancement of motorists safety on rural freeway facilities through the display of variable speed limits and other safety messages based on traffic and roadway conditions. The system is to be installed on a forty-mile section of I-90 east of Seattle at Snoqualmie Pass. the displays are presented using variable message signs and in-vehicle equipment. the proposed project includes the implementation of a variable speed limit and motorist alerting system featuring the use of low cost in-vehicle radio receivers with alphanumeric displays. | P | 1995 | Snoqualmie Pass |
| Investigation of GIS and GPS for Travelers Information | This project will investigate the feasibility of combining advanced technologies in both vehicle location an digital Geographic Information Systems (GIS) to produce a better tool for real-time traffic monitoring. A test system will be constructed and evaluated using a Global Positioning System (GPS) and communications in a vehicle, and an office-located GIS system that plots the vehicle's position on a highly detailed digital map in real-time. | R | 1995 | Western Washington |

* P = Project, R = Research

** Date of Completion, O = Ongoing

Table 2. Importance of Marketing Strategies for Targeted Groups (19).

| STRATEGIES | ORGANIZATIONS | | |
|---|---------------------------|--------------------|----------------|
| | State & Local Legislators | Federal Government | Private Sector |
| ITS Technology Demonstrations and Site Visits | 2 | 2 | 3 |
| Focus Groups | N/A | N/A | 2 |
| Issues Forum | 1 | N/A | 3 |
| Brochure - Private Sector Benefits | 1 | 0 | 2 |
| Informational Brochure Legislators | 3 | 2 | N/A |
| Newsletters | 0 | 0 | 2 |
| Individual ITS Technology Example Fact Sheets | 2 | 1 | 3 |
| Business Round Table | 2 | 1 | 3 |
| Media Campaign | 3 | 3 | 2 |

Ranked on a scale of 0-3 with 3 being the most important.

Another part of phase 2 is to establish media relations. The media will be used to provide regional perspective and also to give the public a richer understanding of ITS. WSDOT will employ a broad presentation of messages using radio, and outdoor and newspaper advertising. The stories about their "successful programs" such as Travelaid and Bellevue Smart Traveler will be developed for the media since it is important to convey the desired message through the media (19).

The third phase of the public information program is the Implementation stage. This phase is intended to establish a "broad constituency of public support for VENTURE Washington (19)." Emphasis will be given to maintaining a continuous community outreach program with an effective speaker's bureau and media relations. Self-activating visual displays (i.e., slides, videos) will be developed for general consumption by the public. "Success stories" from other ITS programs, will be used in this phase (19).

Attitude and user surveys will be conducted during Phase 3 to gather information on how the public feels about the programs being implemented. The surveys will provide feedback and suggestions to improve the systems and also serve as tools to determine the awareness level of the general population. Opinions about traffic congestion and delays and environmental and safety concerns related to traffic can be assessed through the surveys as well (19). User needs can identified to improve the program and give the public what they need. TABLE 3 is a summary of the WSDOT public information program.

Table 3. WSDOT ITS Public Information Program Summary (19).

| Plan Element | Activity Discussion |
|--|---|
| 1.0 Preparation | |
| 1.1 Program Identity & Logo | VENTURE has been established as the program identity and logo. |
| 1.2 Groups | Identify agencies, TMA's, major employers, commercial transportation providers, community action groups. |
| 1.3 Brochures | Enhance the visibility of the program with fact sheets and brochures. |
| 1.4 Slide Show/Video | Used to educate audiences. Slide Shows can be updated and edited easily. |
| 1.5 Contact Person | Establish knowledgeable and available contact person within WSDOT. |
| 2.0 Introduction | |
| 2.2 Meetings with agency boards, citizen advisory committees, and operating staff | Meetings should discuss "who's doing what and how it relates to WSDOT-ITS programs." |
| 2.3 Meetings with City Council members, public works departments, and transportation advisory committees | Raise general awareness level and provide information about specific projects in the region. |
| 2.4 Meetings with community groups, professional organizations, high schools, college groups, employers | Well prepared WSDOT speaker. Coordinate with these groups to be on regular meeting dates. |
| 2.5 Media Relations | Establish media contact within WSDOT; develop media packets, media releases with regional and human interest angle. |
| 2.6 Editorial Board | Editorial Board Briefings about ITS projects |
| 3.0 Implementation | |
| 3.1 Surveys | Attitude and use surveys to obtain information on issues. |
| 3.2 Displays with self activating slide show or video | Information for malls, libraries, schools, and community centers. |
| 3.3 Site Visits | Media Bus Tour of ITS projects. |
| 3.4 Continuous community outreach program | Develop programs to consistently follow-up on successful projects. |

ITS AMERICA

"ITS AMERICA is the institutional home of the U.S. and international ITS communities. Its mission is to foster a public-private partnership to increase the safety, effectiveness, and environmental sensitivity of surface transportation through development and deployment of advanced transportation systems. Membership in ITS AMERICA is open to public and private organizations in the United States and in other countries. Members include corporations and companies, public and private sector associations, universities and research organizations, and government agencies at all levels" (20).

ITS AMERICA is then subdivided into committees that focus on specific issues pertinent to real concerns faced by agencies implementing ITS programs. The Communications and Outreach Task Force is presently examining the marketing aspect of ITS. Their main objective is to establish a national communication strategy.

ITS AMERICA Communications and Outreach Task Force

The ITS AMERICA subcommittee for communications and outreach met on March 28, 1994 to discuss what is the first step towards a national communication strategy. It was agreed upon that a clear, national message was required for building a communication strategy. On June 15, 1994 a smaller group met to develop a first draft of a communications plan. During this session a slogan, definition, and storyline was developed. The first draft of a communications plan was developed beginning with the ITS AMERICA Mission Statement:(21)

"Coordinate and foster a public/private partnership to make the U.S. surface transportation system safer and more effective by accelerating the identification, development, integration, and deployment of advanced technology."

A model of the ITS AMERICA Message/Communication Strategy was drafted at the June 15 meeting of the Communications and Outreach Task Force. The following are some of the aspects that were discussed.

- The *goals* of the Communication and Outreach Task Force which were established are to develop a national communications strategy that can benefit the entire ITS industry and to craft a coherent, unified message as the first step in developing the strategy (21).
- *Motivating factors* for the Committee include the facts that ITS is moving toward implementation; the media is beginning to notice the advancements being made; ITS AMERICA is being looked upon to develop a uniform message; and U.S. Congress is continually examining the components of ITS funding and will be looking at the reauthorization of the Intermodal Surface Transportation Efficiency Act (21).
- The *communication objective* is to increase the awareness and acceptance of Intelligent Transportation Systems (21).

- *Target audiences* identified by the Committee include transportation professionals, ITS AMERICA members, government officials, the media, and the general public.(21)
- The *current condition of the ITS environment* is that the public is unaware of the extent of the ITS industry; industry products, services, and benefits of the program are not well defined--a clear message does not exist; there is an inadequate amount of public funding; elected officials are not focusing on ITS; ITS sounds expensive; and ITS AMERICA exists to provide a national industry voice.(21)
- The *strategic direction* entails conveying what ITS is and what it isn't, with actual examples; promoting the use of information and technology to make travel easier and more efficient; promoting that ITS is a key component for the competitive future of the United States; promoting safety; and promoting that ITS is good for the environment (21).
- The *slogan* which was developed is:(21)
"ITS
....Moving Transportation into the Information Age."
- A *definition* of ITS was established by the committee to clarify exactly what ITS is. "ITS is the use of information technology to improve travel and manage traffic on America's highways and transit systems. The goal of this national movement is safer, quicker travel. Indirect benefits are improved productivity, a cleaner environment, and new business opportunities for America.(21)"
- Specific *messages* were identified for each of the target groups. The messages are what is desired for the audience to think about ITS. MEDIA: ITS is a major consumer oriented development in the information age. TRANSPORTATION ENGINEERS: Information technology is driving us to reengineer our transportation future. GOVERNMENT OFFICIALS: ITS spells JOBS. The marriage of transportation and information is creating new opportunities for all. GENERAL PUBLIC: ITS gets you there quicker, safer, cleaner--and it's here now (21).
- The Committee also identified *tools for communicating the messages*. These tools include: ITS AMERICA Communications and Outreach Task Force, Multimedia Resource Center, Speaker's Bureau, member advertising, technical committees, member services, and local chapters; Industry-wide outreach programs (conferences, meetings, forums, education, training); media relations programs; statements by public officials; congressional testimony and legislative liaison activities; National ITS Information Clearinghouse; Industry-wide publications; materials; industry spokespersons, including members of the ITS AMERICA Board, Coordination Council and Communications and Outreach Task Force; Regional organizations; and public events (exhibits, tours) (21).

THINGS TO REMEMBER WHEN DEVELOPING A MARKETING PLAN

The data collection for this study consisted of a telephone survey of individuals in the transportation field that are directly involved in the implementation of an ITS program. When asked about marketing strategies and techniques several important points were made and noted. The following is a list of some of these points and things to remember when implementing an ITS program and developing a marketing campaign.

- Involving operating and affected agencies in a necessary part of the pre-design stage of a project, however, be careful about involving the public too early. Very early involvement can lead to high expectations and a lot of people demanding to know "when is it going to happen?".
- Identify the target audiences in the beginning stages of program design. Make sure that you explore the possible reactions of these groups and how you would like them to react. Determine the message you want to send the audiences. Identifying the transportation problems of the target audiences is also an essential during the pre-planning stage. This can be accomplished through market research.
- Five important questions to ask about your program are: "(1) Is it what your customers want?, (2) If it's what they want, can they afford it?, (3) If it's what they want and affordable, is it where it needs to be at the right time?, (4) If it's what they want, affordable and in the right place at the right time, are those affected involved in developing it?, and (5) If it's what they want, affordable and in the right place at the right time, and those affected were involved in developing it, do your customers know about it?(22)". A product that does not meet the needs of the customer or is not a good product will not be successful even with the most proven marketing techniques.
- A good marketing plan will support the strategic plan for the project implementation. The marketing plan should support the goals and expectations of the project and clearly convey them to the target groups.
- Do not overexaggerate the difference your program will make in the transportation system. Encouraging high expectations may lead to disappointment and the immediate loss of public trust. Moderate goals are most appropriate when implementing new technologies such as ITS. Do not let the public believe that the system will solve all of the transportation problems.
- Keep communications as open and honest as possible throughout program implementation. If something goes wrong let the public know what happened in terms they can relate to. Chances are the public will appreciate the explanation and understand the circumstances, they will also be more likely to give you the benefit of the doubt if it occurs again.
- If you do not have the qualified staff to develop a marketing plan, hire an outside firm who is familiar with transportation projects to help out. Human behavior is an unpredictable

phenomena. It may be beneficial to consult with individuals who are experienced with dealing with the public.

- When promoting your product, whether verbally, visually or in written form, use terms which are understandable to the general population. For example, indicate that the system will reduce accidents instead of increasing in travel speed. Be careful about the wording that is used to make sure that it is direct and will not be easily misinterpreted.
- Have something to show. A tangible product is easier to relate to. The public will be able to see how it works, that it is simple to use and what the benefits are. They want to see it, not hear about it.
- Throughout program implementation surveys/user needs studies should be performed in order to realize the needs of the system users and adjust the program accordingly. This will help monitor the progress of the program and remove any kinks that may exist. This type of monitoring should be continued even after the program is implemented to ensure that it is working as planned.

Open relations with the media is very important. They have the ability to make or break your program given the opportunity. Several tips were given by Douglas Starr, Professor of Journalism at Texas A&M University, at the 1994 Summer TexITE meeting held in College Station, Tx(23). The following is a list of these suggestions.

- Do not argue with the press.
- A public relations representative from within the agency should meet with the local media to explain the program, give handouts and provide information so the press can get to know you.
- Give plant tours and open houses to display your product and how it works.
- Publicize good *and bad news*.
- Have the public affairs office keep a list of key people in the company and news media. (phone numbers, titles, deadlines, etc.)
- Never ask a reporter to "kill" a story.
- Broadcasters will usually tell you the questions they will ask ahead of time. So be prepared.
- Never tell a reporter anything you do not want published-- they may forget what you do and do not want publicized.
- Do not call a news conference unless you absolutely have to.
- Never consider a reporter a friend.

Positive relations with the public is important. John German, Director of Public Works, City of San Antonio, indicated several key points at the TexITE 1994 Summer meeting(24). The following is a list of suggestions for promoting positive relations with the public.

- Mutual respect and honesty is important. Have a "win-win" attitude.
- Remember that people are voters. Government officials will usually do what their voters want them to in an election year.
- Be accessible and willing to meet with anyone about your project.
- Be honest, open and respectful of the public's opinion.
- Express your position, then *listen* and consider changes.
- Try not to be a "gatekeeper".
- Be willing to change your timing, approach, etc.
- Be willing to add to your program.
- Be willing to accept the ideas of others.
- Redefine the problem *with* people.
- Tell them what you are going to do before you do it.
- Seek public input early.
- Give both the good *and the bad* news--let the people who do not agree with you get involved.
- Follow-up on what you agree to do.
- Pay attention to the little things as much as the big ones.
- Improve and sustain communications.
- Good customer service is important for credibility.
- If you make a mistake be humble and apologize, "it will go away sooner".
- Be prepared--plan the message otherwise the media will send a message for you and it may not be favorable.
- Remember the basics, the reasons why. (i.e. improving safety and mobility)

Three major points that were expressed by Randall Dillard, District Public Information Officer, Texas Department of Transportation, also at the TexITE 1994 Summer Meeting on "Talking about the Popular and Not So Popular Projects" were as follows(25).

- Be prepared. Plan the message otherwise someone else may do it for you.
- Be aggressive in getting the message out. Prepare your message and repeat it. Look for opportunities to convey your message without going through the press.
- Be realistic and learn from your mistakes. Everything cannot be perfect.

WHAT REALLY WORKS: A CASE STUDY

Although many agencies and associations may be aware of what should be done to market their systems, there may be some uncertainty over what actually works. To determine what makes a program successful, a case study was performed. Minnesota Guidestar was selected for this exercise. Most of the conclusions determined originated from the literature obtained from Minnesota Guidestar concerning the program, and from telephone conversations with Mike Sobolewski, Marketing Director for Minnesota Guidestar(26).

Advanced Traffic Management was first employed by the Minnesota Department of Transportation (Mn/DOT) in 1969 when portable ramp metering technology was implemented at several freeway entrance ramps. A Traffic Management System was implemented in 1971 and in 1989 Mn/DOT, the Center for Transportation Studies at the University of Minnesota, and the Federal Highway Administration began to discuss and propose an ITS project that would include all types of organizations from government to the private sector to the general public in the state of Minnesota. As of 1994, Mn/DOT ATMS technologies include computer simulation packages, traffic flow models, ramp metering, and real-time intersection optimization control. ATIS technologies include advanced driver information systems and portable and in-vehicle systems.

The Minnesota Guidestar department of Mn/DOT was initiated in 1991 to reach the ultimate goal of better state-wide transportation. An advertising agency was hired by Mn/DOT to test out proposed names for the program and it was determined that Guidestar was easy to remember and projects a positive image. A marketing staff was then hired, which included individuals experienced with the public, to work with the engineers and planners within Mn/DOT on the strategic plan.

As previously discussed in the Existing ITS Programs section of this report, the Guidestar marketing plan consists of three phases. With each phase the marketing audience is expanded and the role of the public increases. The components of the Minnesota Guidestar program which have made it successful are as follows:

- *Experienced marketing staff:* The Guidestar marketing staff is a group of individuals experienced with public relations hired specifically to work with engineers and planners to market the program.
- *"Flat" organizational structure:* Although the department is technically organized in levels of management and staff, all individuals act as a group of peers working toward a common goal.
- *The marketing plan supports the strategic plan:* The marketing staff works closely with the engineers and planners so both the marketing and strategic plans will complement each other. Implementation of the stages of each plan should coincide with the other. (i.e. Advertising for program initiation should not take place until it is ready to be initiated.)
- *Positive attitude:* A positive attitude is maintained by the Guidestar staff and is projected to others.

- *Willingness to share ideas and experiences:* Ideas and experiences, both good and bad, are openly shared with other agencies and organizations that are interested in implementing an ITS program.
- *Guidestar staff is encouraged to try new things:* Those individuals in authority have been open-minded and encourage ideas that are new and innovative. Guidestar has the support of those managers and people who have the power to get things done.
- *Work with many organizations:* The Guidestar staff meets often with many different organizations from Minnesota and around the country to "brainstorm" and obtain different perspectives. Ideas and perspectives from other companies have helped to improve the program.
- *The focus is on what the customer wants:* Target groups have been identified and market research is continually performed to determine what they want and need to alleviate transportation problems. The program is adjusted on a regular basis to meet those needs expressed by the customers.
- *Guidestar has vision:* The ultimate goal of Guidestar is improved mobility, safety and environment for Minnesota and the nation's transportation network.
- *Guidestar has a very definite, focused strategic plan:* The strategic plan defines the goals, objectives, and actions to be taken in all areas including funding, institutional issues, program coordination and facilitation, education and outreach and the private sector. The plan is brief, yet concise, realistic and achievable. All possible risk and barriers have been identified in the strategic plan.
- *Guidestar does not try to be everything to everyone:* Guidestar staff have realized that there are several groups involved in the effective operation of an ITS program. Each group has its own needs and desires, that are addressed in the strategic and marketing plans.

RECOMMENDATIONS AND GUIDELINES

Since every ITS program varies according to funding, geographical location, extent of traffic and safety problems, and feasibility for implementation, the marketing plan will also be different for each system. However, general guidelines can be followed when implementing an ITS program. The following is a list of guidelines and recommendations for marketing Intelligent Transportation Systems, or more specifically Advanced Traffic Management and Advanced Traveler Information Systems. As discussed in the Conclusions section of this report, a marketing plan can be broken into four stages. These stages can be broken down further into individual steps and measures.

Problem Recognition

- *Identify the problems and needs of the customer*
 - This is the stage in which the problems and needs of the customers, the travelers, must be identified and recognized. Before a program can be planned it is necessary to determine what problems it should be attempting to alleviate.

Program Planning

- *Establish a marketing group*
 - Hire individuals experienced with public relations to work closely with the planning and engineering staff to develop a strategic plan and marketing campaign that are complementary.
- *Market Research*
 - Performed early in the planning stage, market research activities can be used to determine the social and political atmosphere that will surround the program. Throughout the planning process surveys and groups discussions can be used to determine the attitudes of the public, evaluate marketing techniques and identify the major concerns and expectations of the target groups. (20)
 - TABLE 4 identifies data gathering techniques that can be used to obtain desired outcomes such as setting goals, generating new ideas, building support, etc. For each technique listed (literature search, surveys, focus groups, executive interviews) the amount of potential for achieving each outcome is indicated.

TABLE 4. Public Involvement Techniques and Outcomes

Key

- Strong Potential
- ✓ Some Potential
- ✗ Limited Potential

| <i>Technique</i> | Set Goals | Generate New Ideas | Build Support | Explain Complex Issues | Resolve Conflict | Broad Public Exposure | Specific Public Exposure | Broad Public Input | Specific Public Input | Minimum Funds | Minimum Time | Minimum Staff Effort | Appropriate to Urban Areas | Appropriate to Rural Areas | Political Acceptability |
|---|-----------|--------------------|---------------|------------------------|------------------|-----------------------|--------------------------|--------------------|-----------------------|---------------|--------------|----------------------|----------------------------|----------------------------|-------------------------|
| Data Gathering | | | | | | | | | | | | | | | |
| Literature Search | ✓ | ○ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Surveys | ✗ | ✓ | ✗ | ✗ | ✗ | ○ | ○ | ○ | ○ | ✓ | ○ | ○ | ○ | ○ | ○ |
| Focus Groups | ✓ | ○ | ✓ | ○ | ✗ | ✗ | ○ | ✗ | ○ | ✓ | ○ | ○ | ○ | ○ | ○ |
| Executive Interviews | ✓ | ○ | ○ | ○ | ✓ | ✗ | ✓ | ✗ | ○ | ✓ | ✓ | ○ | ○ | ○ | ○ |
| Public and Private Communication | | | | | | | | | | | | | | | |
| Kick-off Briefing | ✓ | ✓ | ○ | ○ | ✓ | ✓ | ✓ | ✓ | ○ | ✓ | ✓ | ✗ | ○ | ○ | ○ |
| Community Briefings | ○ | ○ | ○ | ○ | ○ | ✓ | ○ | ✓ | ○ | ✓ | ✓ | ✓ | ○ | ○ | ○ |
| Jurisdictional Briefings | ○ | ✓ | ✓ | ○ | ✗ | ○ | ✗ | ✗ | ✗ | ✓ | ✓ | ✗ | ○ | ○ | ○ |
| Elected Official Briefings | ○ | ✓ | ○ | ○ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ✓ | ✗ | ○ | ○ | ○ |
| Public Meetings | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ○ | ✓ | ✓ | ✗ | ✓ | ○ | ○ | ○ |
| Workshops | ○ | ○ | ○ | ○ | ○ | ✗ | ○ | ✗ | ○ | ✓ | ✗ | ✗ | ○ | ○ | ○ |
| Open Houses | ✗ | ✓ | ○ | ○ | ✓ | ✓ | ✓ | ○ | ○ | ✓ | ✗ | ✓ | ○ | ○ | ○ |
| Public Hearings | ✗ | ✓ | ✗ | ✓ | ✗ | ✓ | ✓ | ○ | ○ | ✓ | ✗ | ✗ | ○ | ○ | ○ |
| Heightening General and Targeted Awareness | | | | | | | | | | | | | | | |
| Media Relations | ✗ | ✗ | ✓ | ✗ | ✗ | ○ | ✗ | ✗ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ |
| News Conf./Editorial Bd. Bfgs. | ✗ | ✗ | ○ | ✓ | ✗ | ○ | ✗ | ✗ | ○ | ○ | ○ | ○ | ○ | ○ | ✓ |
| Newsletters | ✗ | ✗ | ✓ | ○ | ✗ | ✓ | ○ | ✗ | ✗ | ✓ | ✓ | ✓ | ○ | ○ | ○ |
| Tabloids/Newspaper Inserts | ✗ | ✗ | ○ | ○ | ✗ | ○ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ○ | ○ | ○ |
| Brochures | ✗ | ✗ | ✓ | ○ | ✗ | ✓ | ○ | ✗ | ✗ | ✓ | ✓ | ✓ | ○ | ○ | ○ |
| Advertising | ✗ | ✗ | ○ | ✗ | ✗ | ○ | ✗ | ✗ | ✗ | ✗ | ○ | ○ | ○ | ○ | ○ |
| Special Events/Ceremonies | ✗ | ✗ | ○ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ○ | ✓ |
| Information Centers | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ○ | ✗ | ○ |
| Cable TV | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | ○ | ✓ | ✓ | ✗ | ○ |
| Video | ✗ | ✗ | ○ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ○ | ✓ | ✓ |
| Slide Presentations | ✗ | ✗ | ○ | ✓ | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ○ | ✓ | ✓ |
| Direct Mail | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ○ | ✗ | ○ | ✓ | ✓ | ✓ | ✓ | ○ | ○ |

Source: Pacific Rim Resources, Washington, 1994.

- *Build Constituencies*

- This step includes identifying target audiences. Partnerships with operating and affected agencies must be established. Other partnerships can include those with organizations that can provide financial support, or services such as printing, advertising, materials, staff hours etc. Constituencies also include the public, political figures and the media. The education and opinions of these groups are important to the successful implementation and operation of the program. (27)
- Hold meetings with the target groups and give presentations. Use visuals (slides, videos), brochures, hand-outs-- keep it simple but not too simple. Send your message and repeat it using a slogan or name that sounds positive and futuristic and will be easily remembered. (i.e. VENTURE, Guidestar) After you have had your say, sit down and LISTEN carefully to the suggestions being made. The second section of TABLE 4 titled Public and Private Communication illustrates the potential for obtaining the desired outcomes using public and private communications techniques. During this stage the solutions to the problems identified in the first stage should be recognized.
- Be careful of the wording you use and do not exaggerate the benefits of the program. You do not want to create high expectations that can lead to disappointment and lack of trust.

- *Refine the product*

- The design and program details should be evaluated and changed if necessary. Determine if the program is feasible and if it is meeting needs of the customers. Call meetings and have discussions with those individuals whose opinions can make a difference in the success of your program. When you think the design is ready, go back and consult your target audiences. Is it what they need and want right now? Talk and Listen!

Program Initiation

- *Develop a Marketing Plan*

- This is the point at which it should be determined what types of marketing materials will be used to advertise the initiation of the program. Materials can include brochures, pamphlets, newsletters, flyers, print ads, posters, radio and television spots, roadside signs, billboards, and premiums such as bumperstickers, post-it notes, mugs and other paraphernalia. For systems such as in-vehicle set-ups, displays can be set up at local shopping areas. Section 3, Heightening General and Targeted Awareness, of TABLE 4 illustrates the potential for obtaining the desired outcomes through general and targeted awareness techniques. TABLE 5 indicates the types of materials that can be used the, content of these materials, and the target audiences for each.
- It is during this stage that the customers will decide whether they want to act as an individual, or even as part of a group, and participate in ATMS and ATIS programs. Participation can include calling traffic information phone lines, sponsoring a presentation,

or even purchase ATIS portable or in-vehicle systems. It is important to illustrate the benefits of the program so that individuals and groups will participate.

Program Operation

- *Monitor the program*
 - Perform surveys and user needs studies to evaluate your system and see that it is meeting the needs of the public and user groups. It is never too late to make adjustments. Make changes if you need to.
 - As in all stages of implementation, let the public know what went wrong when something does. Explain the problem in terms the average person can understand. Apologize for your mistakes.

Table 5. Content and Target Audiences for Marketing Materials (27).

| Marketing Materials | Content | Target Audience |
|--|--|---|
| Brochures and Pamphlets | How ITS works Locations of systems (maps) Common Qs and As Program benefits | Area residents Area businesses Community groups Media representatives Potential buyers (ATIS) |
| Newsletters | Location of systems (maps) Survey findings Common Qs and As Construction information Legislative information Performance data Program benefits | Corridor/Area residents Corridor businesses Corridor drivers Community groups Media |
| Flyers | Location of systems (maps) Construction information Program benefits Implementation schedule Opening Ceremonies | Corridor/area residents corridor businesses community groups corridor drivers |
| Print Ads | Program benefits Slogans Key phone numbers Implementation schedule | Corridor/area residents Potential buyers (ATIS) |
| Posters | Slogans Key phone numbers | CBD businesses Potential buyers (ATIS) |
| Radio and Television Spots | Program benefits Implementation schedule | Auto drivers/passengers Potential buyers (ATIS) Corridor/Area residents |
| Roadside Signs | Start-up dates Requirements (if any) Jingles Key phone numbers Slogans | Corridor users Potential buyers (ATIS) |
| Billboards | Start-up dates Requirements Jingles Slogans Key phone numbers | Corridor users Potential buyers (ATIS) |
| Premiums -Bumperstickers -Post-it notes -Mugs | Slogans Logos Key phone numbers | Business employees Potential buyers (ATIS) |
| Tours and Displays | Actual systems | Area residents Potential buyers (ATIS) Media Political leaders |

APPLICATION OF FINDINGS

To better illustrate the recommendations provided in this study, a hypothetical example was developed. The recommendations were applied to a fictitious state in the United States with a population of approximately ten million. FIGURE 1 indicates the location of Utopia, USA. The Utopia Department of Transportation (UDOT) is the lead agency in the development of a state-wide ITS program and is strongly supported by the Mayor, Governor and Commissioner. The following is a list of the steps taken by UDOT, and future steps, in the development of a marketing plan.

1. **Hired a marketing staff:** An experienced marketing staff was employed to work with UDOT engineers and planners. The staff began with one program manager, five marketing consultants and two administrative assistants and will be expanded as needed.
2. **Determined problems and target audiences:** The first task performed by the marketing staff was to use the data gathering techniques indicated in TABLE 4 to identify the needs of the general traveling public, set an over-all goal, and develop a name and slogan for the program. It was determined that travelers wanted to be informed of delays and incidents prior to leaving home or the office, and did not want to wait for extended periods of time at toll plazas. A program name and slogan was adopted: "ENDEAVOR...Moving you forward--safer and faster." The ultimate vision for the program is to create a transportation network in Utopia that has improved mobility, enhanced safety, and is environmentally friendly.
3. **Identified Solutions:** After the problems were identified possible solutions were proposed and a strategic plan developed. The solutions proposed include ATMS technologies such as changeable message signs and electronic toll collection and ATIS technologies such as telephone hotlines and portable and in-vehicle route guidance systems.
4. **Formation of partnerships:** UDOT is presently beginning the formation of partnerships with operating and affected agencies. To achieve this goal the techniques indicated in TABLE 4 for public and private communication are to be employed. Presently, the organizations already taking part in the program include departments internal to UDOT (i.e. operations, maintenance); Federal Highway Administration; United States Congress; ITS America; Utopia County; Utopia State Police Department; Utopia Fire Department; CBS Engineers, Inc., New York; Shear Stress Unlimited, Utopia; and The Home Office, Sioux City, Iowa.
5. **Promotion of media relations:** UDOT has also begun to hold conferences with the media to promote open relations with the press and get the news of the program out to the public through newspapers and television spots.

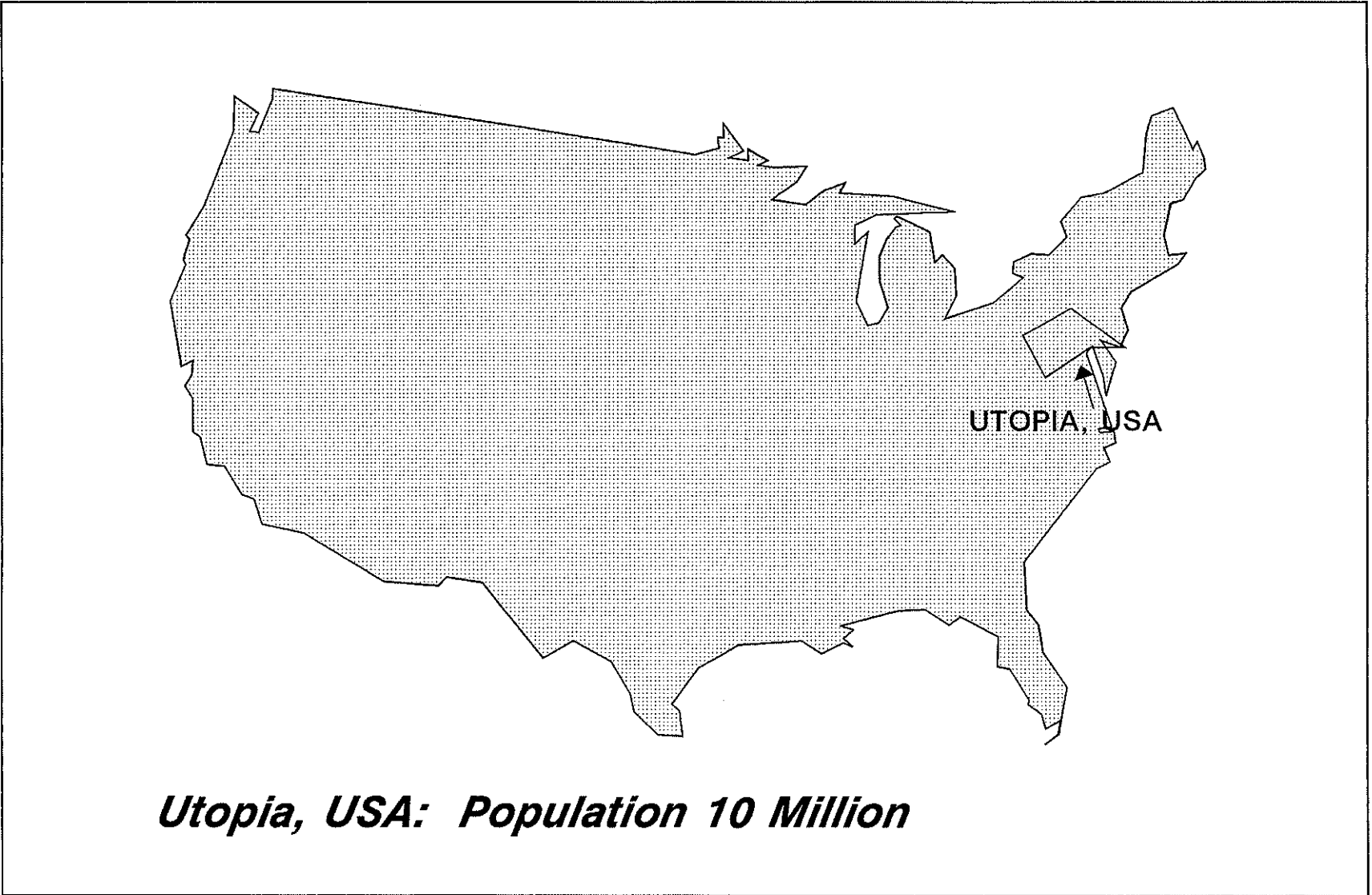


FIGURE 1. Location of Utopia, USA

6. **Program initiation activities:** Promotional activities and literature are being developed to inform the public of the initiation of the program. A sample preliminary brochure is illustrated in APPENDIX A of this report. The brochure contains the name of the lead agency, program name and slogan, a brief description of the systems available, phone numbers to obtain additional information and a listing of the agencies involved in the program. Also to be included are program details, such as date operation is to begin and locations of systems. Other techniques to be employed include those listed in TABLES 4 and 5.

7. **Program operation activities:** After program operation has begun, UDOT will monitor the operation of the program and make changes as needed. Monitoring will consist of surveys to determine if the needs of the traveling public are being met and if any additional problems have developed. Program expansion will also be explored at this stage.

CONCLUSIONS

Intelligent Transportation Systems will become nation-wide programs that help to improve the mobility and safety of the nation's freeways and roadway systems. ITS uses advanced technology to achieve these goals and will continue to change according to the technological advancements that will occur in the future. It is necessary that all of the public groups be kept aware and educated about the systems and advancements that are available to them. By working together, the government, private and public sector agencies, the media, and the general public can achieve the ultimate goal of a better, safer transportation network.

Marketing techniques can be used to unite all groups involved in the implementation and use of ITS. Since all systems are different, as are their users, marketing strategies will vary accordingly. The guidelines given in this report are general and the actual details must be worked out by the individual organizations. A hypothetical application of the recommendations is given in this report as well. A marketing plan can be broken into four major stages:(27)

- *Problem Recognition:* Market research should be performed in this stage to determine the problems and needs of the traveler. The program should be planned to provide solutions to the problems identified in this stage.
- *Program Planning:* Prior to and during the planning stage of project implementation, it is necessary to assign individuals who are experienced with dealing with the public to develop a marketing campaign. If this is not a possibility, a marketing company experienced with transportation facilities should be hired or consulted. It is during this stage that objectives should be set, and target audiences be identified and involved in the project implementation.
- *Program Initiation:* Once the planning process is completed, traditional advertising can be used to announce the opening or beginning of the program. Materials such as brochures, pamphlets, billboards, radio and television ads, press conferences, technical tours, and public speeches are most appropriate in this stage.
- *Program Operations:* Once the program is underway it is necessary to continue to monitor and evaluate it. Surveys and user/needs studies should be used to verify that the audiences are being reached and are using the system appropriately.

Some key points to remember while marketing the program include:

- Consult or hire individuals who are experienced with marketing transportation systems and/or know how to relate to public audiences. Have them develop a marketing plan during the early stages of planning and keep them involved throughout program implementation.
- Remember that you cannot be all things to all people. Identify target audiences and their individual needs.
- Establish objectives early and stick to them.

- Talk and LISTEN. Listen to the suggestions made and make the appropriate changes. Be open-minded and willing to change.
- Keep in mind that you may make mistakes. Admit to them and learn from them.
- Be honest, give the good *and* the bad news.
- Monitor your program from beginning to end and after it is operating.
- Do not underestimate the power of the public-- they are extremely fickle and can make or break your program.

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| | |
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APPENDIX A

Utopia Marketing Material

***The Utopia
Department of
Transportation
Presents:***

ENDEAVOR

***...Moving you
forward--safer and
faster.***



Traffic Information Hotline

1-900-666-IVHS

To get up-to-the-minute transportation information before you leave home or the office call 1-900-666-IVHS. The hotline operates twenty-four hours a day, seven days a week and can provide you with the latest information on delays, accidents and tie-ups on your highway, bus or train route.

Faster Toll Collection

You can now get through those toll booths without waiting an unnecessary amount of time to pay the toll. Electronic Toll Collection devices are now available and can be purchased at a reasonable price. Just purchase the transponder and smart card devices, install them in your car and experience less delay at any Utopia toll plaza. Reduced toll rates are available with purchase of an electronic toll collection system. For information on where to purchase these devices in your area and prices please call: 1-800-764-0569.

In Association With:

UDOT

FHWA

U.S. Congress

IVHS AMERICA

Utopia County

Utopia Police Department

Utopia Fire Department

**CBS Engineers, Inc.,
New York**

**Shear Stress Unlimited,
Utopia**

**The Home Office, Sioux
City, Iowa**

If you have additional questions or comments please call: 1-800-486-0989 or write to: ENDEAVOR; 2638 239th Street S.W.; Brier, Utopia 98036.

FIGURE A-1. Promotional Brochure