

**ENHANCING ADOPTION OF TRANSPORTATION SYSTEMS  
MANAGEMENT & OPERATIONS (TSM&O): TOWARDS A  
STRATEGIC MARKETING AND COMMUNICATIONS APPROACH**

**~A MARKETING PLAN~**

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## **I. INTRODUCTION**

Over the past fifteen or so years, the Department of Transportation has undertaken an important initiative in bringing the transportation industry into the modern age, while also addressing increasingly complex issues of growth, congestion, safety and a multitude of other problems. This initiative, originally called Intelligent Transportation Systems (ITS) and now known as Transportation Systems Management and Operations (TSM&O), has been difficult to implement at the many diverse levels of the transportation industry. In response to the stated need for a more strategic approach by the National Transportation Operations Coalition, a series of research activities was performed to provide sufficient information upon which to base a comprehensive, strategic marketing plan designed to stimulate greater adoption of TSM&O. The underlying objective of the plan is to bring a strategic marketing orientation and planning perspective to the TSM&O products and services that respond to the diverse needs of its users and constituents in the transportation industry.

Spanning a nine month period, Illumination LLC conducted research projects that included focus groups, individual interviews and a national survey, all designed to understand the needs and challenges of national, regional, and local participants involved at various stages of the TSM&O adoption process. Thirteen (13) focus groups were conducted with stakeholders from the National Association of Regional Councils (NARC), Institute of Transportation Engineers (ITE), National Conference of State Legislators (NCSL), American Association of State Highway and Transportation Officials (AASHTO), Public Technology Institute (PTI), and Intelligent Transportation Society of America (ITSA). Forty-six (46) one on one interviews were conducted with individuals within each of these target groups, in addition to eight (8) interviews of agencies or organizations engaged at various levels of TSM&O initiatives. These agencies included NARC, AASHTO, International City/County Management Association (ICMA), America Association of Railways (AAR), Association of Metropolitan Planning Organizations (AMPO), National Association of Developmental Organizations (NADO), National Association of Counties (NACo) and ITS America. Finally, last fall an online survey was conducted nationally to assess needs and challenges of on the ground

participants and users. The analysis and results enabled Illumination to better understand the nature of the task facing those charged with fostering adoption of TSM&O systems. The findings also provided a richer understanding of the adoption process of system users, and the diverse needs of different segments within the marketplace.

The findings are briefly summarized below, with more detail in appendices that include write ups of each stage of the research. They make it clear that, despite an abundance of marketing resources and effort devoted to enhancing the adoption of products and services of TSM&O, major challenges remain. Investments in Operations at the state and municipal level continue to lag expectations. While the reasons for this lag can be traced to a variety of sources, a key factor concerns inadequacies in current approaches to market and communicate the potential of these systems to potential adopters. Existing efforts tend to reflect an undifferentiated, shotgun communications approach, with little evidence of relative effectiveness. While there is growing awareness of TSM&O systems among major stakeholders, the ability to reach into the decision making process with the right communications directed at the right stakeholders at the right time is limited. The market for TSM&O systems is large and complex, reflecting the characteristics of a varied mix of stakeholders and decision-makers. However, the research indicates that there are distinct commonalities and needs between certain groups or market segments of the industry.

In the pages that follow, a set of objectives is proposed together with a series of strategies and tactics for changing this state of affairs, and bringing a more strategic approach to marketing and communication efforts. Specifically, approaches are proposed for market positioning, market segmentation, overall communication strategy, a menu-based approach to key market segments, a communication portfolio perspective, proactive versus passive communications approaches, push versus pull marketing efforts, how communication efforts must become more personal as adopters move through the adoptions process, and driving key stakeholders to the website. In addition, proposals are made for a champions program, a model users program, and peer-to-peer exchanges. This is followed by recommendations on ways to ‘connect the dots among the DOT and

NTOC role players. Following the discussion of these strategies and tactics, we introduce a possible implementation and management approach to coordinating these efforts, together with suggestions for tracking and control.

## **II. OVERVIEW OF THE CURRENT SITUATION**

An assessment of the current situation in the TSM&O industry provides a framework for creating a forward looking strategy to enhance the adoption of TSM&O. The TSM&O industry is comprised of constituents, users, funders, and promoters at all levels of the transportation industry, both public and private. As a sub-industry within the larger transportation industry, TSM&O is a major initiative that has received substantial investment from the federal government and holds ongoing promise for adding value to many areas of the national economy. This includes smart growth economic development initiatives, traveler safety, relief of congestion in major metro areas, energy conservation, homeland security, and environmental protection, among other benefits. For these reasons, enhanced adoption of TSM&O represents a strategic priority for the U.S. Department of Transportation, and is the focus of this marketing plan.

**Key Players.** The Federal Highways Division (FHWA) of the Department of Transportation plays a critical lead role in the development as well as the adoption and implementation of TSM&O. The Joint Program Office now leads the ITS initiative in research and in bridging the relationships between government and users of ITS. Beyond this, lead organizations in the effort to support TSM&O and ITS initiatives are ITS America, NTOC and the members of its National Associations Working Group, the respective State Departments of Transportation, and the America Association of State Highways and Transportation Officials (AASHTO). Many other diverse groups, organizations, individuals and companies play both key roles and lesser roles in the day to day adoption and implementation of TSM&O.

**Perceptions.** Since its inception in 1991 via the Intermodal Surface Transportation Efficiency Act, Intelligent Transportation Systems (ITS) has gone through several transformations. Since the end of 2005, when the Federal government ended the official

deployment of the ITS program and continued ITS funding via an annual research budget, there have been infrastructure changes as well as different terminologies that have created some confusion in the marketplace about ITS. Other phrases have been introduced by various segments of the industry, including Transportation Systems Management and Operations (TSM & O), currently used by NTOC and its constituents. The ITS moniker is still used to refer to technology advancements in the industry by the JPO and on the DOT website. The broader term 'Transportation Operations' is generally understood to be the management and optimization of existing infrastructure, which includes day to day administration of people and projects, safety improvements, keeping the traffic flow, utilizing and improving existing transportation system with ITS (additional salaries, additional costs). Overall, there is broad awareness of the term Transportation Operations, however, the depth of understanding regarding this term differs from region to region, from one decision maker or champion to another, and based on user context [e.g., crisis vs. planning]. For instance, legislation and elected officials tend to link operations and management together [see them as one], while appointed officials see operations more as a part of maintenance budget, not maintenance itself.

A series of research activities designed to capture information from a broad cross section of the constituents and stakeholders in the ITS and TSM&O sectors revealed trends and general conclusions about the historical implementation of ITS and where it is now. Thirteen (13) focus groups were conducted with stakeholders from the National Association of Regional Councils (NARC), Institute of Transportation Engineers (ITE), National Conference of State Legislators (NCSL), American Association of State Highway and Transportation Officials (AASHTO), Public Technology Institute (PTI), and Intelligent Transportation Society of America (ITSA). Forty-six (46) one on one interviews were conducted with individuals within each of these target groups, in addition to eight (8) interviews of agencies or organizations engaged at various levels of TSM&O initiatives. These agencies included NARC, AASHTO, International City/County Management Association (ICMA), America Association of Railways (AAR), Association of Metropolitan Planning Organizations (AMPO), National Association of Developmental Organizations (NADO), National Association of Counties

(NACo) and ITS America. Finally, last fall an online survey was conducted nationally to assess needs and challenges of a broader group of on the ground participants and users. The findings provided valuable insight and direction, and are summarized in the reports found in Appendix A, B, C, and D.

The findings indicate that the relative importance of transportation is tied to the rate of economic development in a given region or area, and that such areas are challenged to balance the cost of growth with the cost of maintenance in the transportation area. All groups and individuals have at least some familiarity with TSM&O, with local officials having less awareness than other groups (i.e., elected officials, engineers, regional or metro level personnel). In general, the interviews and focus groups characterized TSM&O as complex, expensive, valuable, and on a somewhat lesser scale, difficult to implement. A substantial number thought that TSM&O was “somewhat” politically controversial, risky, and relevant more for the future than the present. The adjective most people used to describe TSM&O across the board was “expensive”.

In terms of distinguishing between operations, maintenance and construction, there is a clear delineation between construction versus both operations and maintenance. The distinction between operations and maintenance was less clear, however, with diverse interpretations of what constitutes operations. Some view operations as systems maintenance and others defined it as activities such as snow removal and directing traffic. The clearest delineation was between creating the asset (construction), maintaining the asset (maintenance), and performance of the asset (operations). There was some agreement that both maintenance and operations are long term efforts requiring strategic budgetary support, mostly at the local level, and that it was easier to get funding for construction than for either maintenance or operations.

Following are additional findings from the various research activities undertaken, excerpted from the comprehensive reports of the focus groups, interviews and survey contained in the Appendices. Over half of participants in the various research studies

reported strong familiarity with four of systems. TSM&O areas with which stakeholders were most familiar included:

- Arterial management systems
- Freeway management systems
- Transit management systems
- Incident management systems
- Emergency management systems

The following were identified as the most widely used TSM&O services or products:

- Incident management
- Arterial management
- Traffic management
- Traveler information
- Freeway management

In a similar vein, the systems below were perceived as having the greatest opportunities for adoption of TSM&O programs over the next three years:

- Emergency/Incident management
- Traveler Information
- Freeway/arterial management
- Toll systems

Given limited resources, the following TSM&O programs were identified that should receive the greatest emphasis in efforts by NTOC in order to increase adoption levels around the country:

- Arterial management
- Incident Management
- Freeway Management
- Traveler Information
- Crash prevention and safety

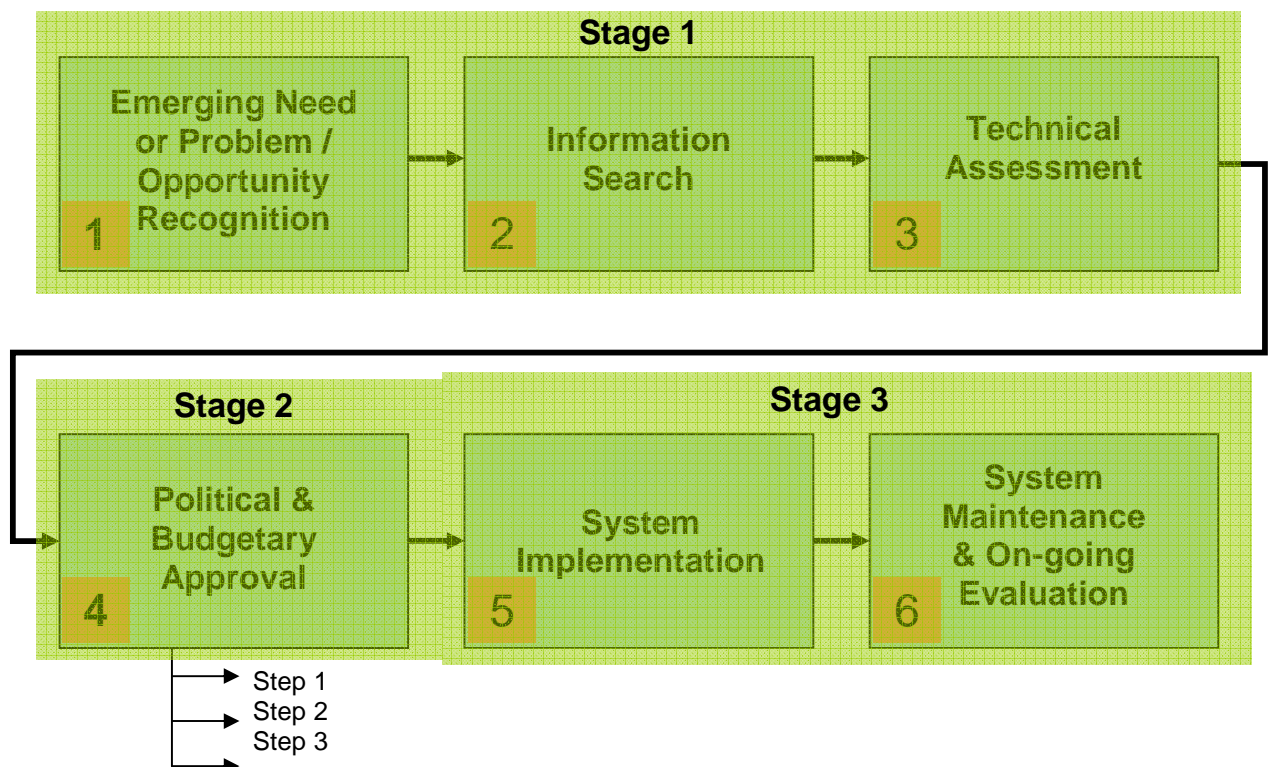
There are clearly perceived leaders (cities, states) in TSM&O adoption, and these were identified. These leaders could be more engaged in marketing/communication efforts. The following user areas were identified as having the greatest potential/familiarity for adoption of TSM&O services and products:

- Metro/urban
- State
- Congested areas
- Regions

- Counties
- Rapidly growing areas

**Buyer Behavior and the Adoption Process.** Significant obstacles to adoption of TSM&O exist, primarily funding, but also maintenance costs once installed, need for political support, presence of a champion, general resistance to change, and interoperability between systems. The manner in which states and localities adopt TSM&O systems tends to be piecemeal and reactive, in spite of regular efforts devoted to transportation system planning. While relative few in number, key differences were identified in terms of familiarity levels, perceptions, perceived obstacles, participation in adoption process, info needs, and relevant info messages, especially based on the level (fed, state, major metro, mid metro, small town/rural) of respondent.

**Exhibit 1: 6-Step Adoption Process**



The research suggested that the adoption process for TSM&O generally is relatively long, involves a wide range of players, and is instrumentally affected by both technical and

political champions. A distinct adoption process was identifiable, and it involves six key stages or steps. In the diagram below, these stages are identified and grouped into three broader stages for the purposes of the communication model to be introduced later: Opportunity Identification or Need Recognition, Information Gathering and Technical Assessment (Stage 1); Political and Budgetary Approval (Stage 2); and System Implementation, Maintenance and Ongoing Evaluation (Stage 3). The stages indicate strategic points where communications can be aggregated to make the most impact.

The Table below maps various agencies and their respective roles in the 6-Step Adoption Process. The significance of the players is weighted based on agencies resources, mission statement, member pool, prior work, events, research, publications, the results of focus groups, interviews, and surveys, and other. The significance is from top to bottom, top being the most significant.

**Exhibit 2: Stages in Adoption Process**

<i>Involvement</i>	<i>Emerging Need or Problem/Opportunity Recognition</i>	<i>Information Search</i>	<i>Technical Assistance</i>	<i>Political &amp; Budgetary Approval</i>	<i>System Implementation</i>	<i>System Maintenance &amp; On-Going Evaluation</i>
<i>Most Significant</i>	ITS America	ITS Joint Program Office, AASHTO		FHWA		IACP
	ITE, AASHTO	ITE, ITS America		ITS America	ITE	ITE
	AMPO IACP	AMPO, NARC, PTI	ITS America	ICMA, ITS Joint Program Office, NACE, NARC		ITS Joint Program Office
	APWA (Act through NARC) ICMA	APWA	ITE		ITS Joint Program Office	
	ATSSA	ICMA, NACE	ITS Joint Program Office, PTI	PTI		
	ITS Joint Program Office	FHWA,	AASHTO (Technology Implementation Group) IMSA	AMPO ICMA	ITS America	
	NCSL	ATSSA	FTA	APWA		
	NACE, NACo	FTA, IMSA, NACo	ICMA	FTA, NADO (if used accurately could be very significant)	NACE	AASHTO
<i>Significant</i>	FHWA	ACT, NADO, NCSL	APWA (Engineering and Technology)	AASHTO Regs Report, NCSL		
			NACE	AAR, NACo	AASHTO	NADO
	ACT				FTA	
	Association of American Railroads	Railinc (AAR)	ATSSA ICMA	NGA (if used accurately could be very significant)		
		NGA Newsletter				
<i>Least Significant</i>						

The chart below provides a roadmap or guideline for where the various constituencies find the most help in the various stages of adoption of an ITS or TSM&O product or service. By identifying the agencies and organizations that are utilized for various communication and information needs, it will be possible to strategically focus on the points of information and resource centers that will facilitate the adoption process. This also aids constituents in terms of where to get information along the adoption process that will assist in the specific steps involved along the way. Finally, it is anticipated that this process will enable agencies and organizations to better understand their inter-relationships in terms of communication resources, enhancing collaboration and knowledge/resources sharing.

**Exhibit 3: TSM&O Adoption as a Process**

<b>Goal</b>	<b>Considerations</b>	<b>Decisions</b>	<b>Barriers</b>
<b>Need recognition</b>	<ul style="list-style-type: none"> <li>•Building awareness</li> <li>•Specification of needs</li> <li>•Real cost</li> <li>•Benefits to be derived</li> </ul>	<ul style="list-style-type: none"> <li>•Priorities</li> <li>•Sponsors</li> <li>•Is timing right?</li> </ul>	<ul style="list-style-type: none"> <li>•Right info to right person at right time</li> <li>•Preoccupied with immediate crises</li> </ul>
<b>Preference and Adoption</b>	<ul style="list-style-type: none"> <li>•Fit with needs</li> <li>•Viability</li> <li>•Public perception</li> <li>•Champion identification</li> <li>•Public attention</li> <li>•Media attention</li> <li>•Job creation</li> <li>•Political tradeoffs</li> <li>•Champions</li> </ul>	<ul style="list-style-type: none"> <li>•Technical assessment</li> <li>•Funding sources</li> <li>•Funding commitment</li> <li>•Consensus building</li> <li>•Roles &amp; responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>•Competing priorities</li> <li>•Funding</li> <li>•Life cycle costs</li> <li>•Rate of tech change</li> <li>•Conflicting Interests</li> <li>•Funding</li> <li>•Staffing</li> <li>•Lack of champions</li> <li>•Political will</li> </ul>
<b>Implementation and Management</b>	<ul style="list-style-type: none"> <li>•System compatibility</li> <li>•Overcoming bugs</li> <li>•Ongoing upgrades required</li> </ul>	<ul style="list-style-type: none"> <li>•Extent of implementation</li> <li>•Ongoing commitment levels</li> </ul>	<ul style="list-style-type: none"> <li>•Separate funding</li> <li>•Ability to determine effectiveness</li> <li>•Ability to maintain system</li> </ul>

**Marketing Resources.** The research revealed key findings regarding perceptions of marketing materials available on TSM&O and ITS. Many thought there was an overabundance of information that was redundant, dated, contradictory and generally negatively perceived. Many desired basic information and did not find the current

methods of communication helpful. Information needs of stakeholders center on cost-benefit evidence, best practices, case studies, successful peer-to-peer reviews, and funding sources. In general, information accessibility is not the big issue, but priority is on personal information sources, published articles, and objective system evaluations

An inventory and sampling of marketing materials on TSM&O showed that extensive paper and online marketing resources exist (see Resource List in Appendix F), validating the perception that there is an abundance of information and material in existence. However, there is substantial repetition and redundancy among the material, and much of it is more than two years old. For example, there is a potentially very informative Benefits Database website (<http://www.itsbenefits.its.dot.gov/>) that is broken down into the various transportation systems and products. Three of the areas identified as high priority areas by people in the focus groups, interviews and survey were analyzed: Arterial Management Systems, Freeway Management Systems, and Transit Management Systems. There were 182 total materials available in the form of reports, case studies, etc. Within this total, many of the materials were posted redundantly and reused in the various sections. Of the 182 items, 59 items were repeated (32% repetition of the material – some of the same material was repeated within the same section). A total of 82 items were repeated, e.g. *“Telematics Applications Programme - Transport Areas' Results (4th Funding Programme) by Cordis Transport Sector of the Telematics Applications Programme, 4th Framework Programme for RTD&D 1994-1998,”* was reused seven (7) times within these three sections.

An analysis of the material included in these three sections showed the following breakdown:

- 83% are research reports
- Average age of the material is more than 7.6 years old, ranging from 29 years to 2 years
- 71% focused on urban regions
- All material contained data statistics

- 32% are case studies and, approximately, 25% are statistical analyses, while 15% are both case studies and statistical analyses. 14% are surveys.
- 77% are not fully accessible (only an executive summary was presented or links were not functional)
- The accessible material is user friendly and clear

While this is only one example, it indicates the need to update and maintain marketing information to meet current needs, to give updated and reliable statistics, as well as to create the perception of up to date information and value creation.

The research suggested general distinctions between various user groups in terms of how they use marketing materials. Planners, including RPOs, MPOs, Planning Commissions and similar groups of individuals, utilize research produced by experts in the community and the professional organizations such as AASHTO. Public officials, including Council members, directors, both elected and appointed, desire summarized information that can be used as tools to resolve issues, along with supporting data. Materials for this group necessarily need to be up to date, easy to read and in non technical language. Engineers as a group tend to use web pages and online resources more frequently for advertising and to obtain up to date information. Finally, the contractors which mostly include private sector companies mostly desired newsletters that offered links, accessibility to information and searchability of the various websites. They prefer a summary article rather than a 60 page document filled with information and data.

In general, the marketing materials desired by the various constituent groups reflect respective professional objectives in terms of usage of the materials. Those whose objectives were centered around awareness building needed to know benefits, costs, specifications. Those who were generally concerned with adoption wanted information on funding, champions, consensus building and roles and responsibilities. Implementers generally want information on budgets, resources and complexities of projects from other examples.

### III. SWOT ANALYSIS

The following represents an assessment of the inter-agency efforts to facilitate adoption of TSM&O products and services. Exhibit 4 is a summary of these points. The internal strengths/weaknesses and the external opportunities/threats faced within the agencies are assessed as a whole. Strengths and Weaknesses are areas that users/proponents/producers of TSM&O products/services/programs have complete or partial control over. Opportunities and Threats are external elements that users/proponents/producers of TSM&O products/services/programs do not have control over.

#### STRENGTHS

**Resource Investment.** A substantial amount of resources has been invested in the development of Transportation Systems Management Operations products and services, resulting in a large, state of the art inventory for the industry. In addition, an abundance of informational resources exist, from deep websites with data and marketing materials, to published resource books with facts and information, to marketing brochures or pamphlets. These resources are available to anyone in the industry, without regard to implementation and operation of these products or services. To date, while the TSM&O products and services have had the support of the government at its highest levels, the marketing and promotional efforts have been broad and unfocused, drowning the decision-makers and end-users in a sea of brochures, pamphlets, and online databases with untargeted information. This presents the opportunity for developing both a push and pull marketing strategy, as discussed in the “Communications and Promotions” section.

**Awareness.** In general, most people within the transportation industry have awareness at some level of TSM&O, and awareness levels of core TSM&O products are relatively high. Individual interviews and focus groups conducted with transportation officials and key industry personnel indicated a fairly strong knowledge base regarding core TSM&O products and capabilities, as did focus groups with other levels of transportation providers.

**Positive Perception and Evidence of Impact.** Regardless of actual adoption behavior, relevant stakeholders generally have a positive perception of TSM&O products. There has been clear recognition of benefits of various products in different usage situations, regions, states and localities. The technical capabilities of these systems are appreciated. Extensive literature and other documentation is available to support these benefits. Further, there exists a sizeable base of satisfied users of these systems, and this user base is an under-utilized resource.

#### **WEAKNESSES**

**Cost and Complexity.** TSM&O systems are generally viewed as expensive, even while they are seen as valuable. Further, the technical nature of the TSM&O products and services creates a complexity challenge, with many stakeholders finding the systems difficult to understand or comprehend. This complexity, whether real or perceived, was highlighted in feedback received from a range of stakeholders at federal, state, and local levels. This complexity is reflected in the limited effectiveness of promotional and informational materials offered in support of TSM&O. Benefits and related information regarding the products and services are not communicated to the non-technical provider in lay terms that are easy to understand.

**Budgets.** There is an overarching challenge in terms of limited budgets at the user level when it comes to funding TSM&O services and products. Aside from the competition with traditional construction projects, elected officials often do not promote TSM&O because of the lower profile that TSM&O generates in relationship to new, traditional construction projects. Many regional and local officials simply do not have the budgets to implement or deploy new TSM&O solutions, and expect greater assistance federal government aid for these services and projects. These regional and local officials view TSM&O solutions as having both interest and benefits on a higher level than strictly for their own regional or local concerns. In addition, there is a consistent failure to budget sufficient funds to cover the ongoing maintenance of the TSM&O. Many stakeholders

underestimate the importance of such ongoing maintenance budgets, and how much really needs to be budgeted.

**Communication Issues.** There is limited understanding and a large amount of confusion as to what TSM&O actually is, and what it covers. While substantial investment has been made in marketing materials and the ITS website, many stakeholders do not understand how or where to access specific information that they may find helpful. Many have never been on the website. An abundance of published information is available as well. However, it is clear that the publications often do not reach those who may find such information most valuable. So there is a major challenge in terms of not getting the right kind of information to the various constituents in the chain of command at the right time. In spite of the abundance of literature and promotional material, the general communication approach can best be labeled a ‘shotgun approach’. This appears to be due to inconsistent messages that users and interested parties within the transportation industry receive from various levels ranging from the federal government to national membership organizations to regional and local organizations or agencies. Further, multiple “influencer” segments create multiple needs, which often are in conflict with each other. Therefore, the promotional materials are, again, confused in their targets and less than effective in supporting adoption of TSM&O products and services.

The recent change in ‘branding’ has added to the confusion. When ITS (intelligent transportation systems) was changed to TSM&O, a much less recognized acronym, the communication challenge grew. ITS remains a commonly-used term, with most people assuming this is what TSM&O is concerned with. Communication of the notion of a ‘total operations concept’ has not been aided by this confusion.

Another communication issue concerns the trust factor when it comes to federal information. Some stakeholders believed that the TSM&O data, information, and collateral support material were designed as public relations materials rather than reliable, factually valid support materials.

## **OPPORTUNITIES**

**Direct Impact on Transportation across the Nation.** Clearly, the most important opportunity for TSM&O is the ability to improve safety, efficiency and costs of the transportation industry in the near and long term future. Transportation has become an increasingly high profile issue due to increasing urban congestion, increasing urban sprawl, more cars on the road, more commuters, all contributing to the need for ongoing improvements to the existing transportation infrastructure.

**Economic Development Advantages.** Economic growth increases the demand and need for transportation improvements, particularly in an integrated level with other economic development needs such as new housing, new commercial centers, etc. In budget constrained environments, which are the case in most local and regional economies, TSM&O provides viable alternatives to costly construction projects to do such things as widening roads, building new freeways. TSM&O can provide less costly projects with greater cost efficiency over time. This information, therefore, promotes the wide adoption of TSM&O products and services with cost benefits made plain.

**Advances in Technology.** Major strides continue to be made in the capabilities of TSM&O solutions, enhancing the value proposition. The transportation industry has historically not been considered 'hi tech'. However, given the evolution of technology and its widespread use, that is changing. People rising in the ranks of the transportation industry are increasing their use, familiarity and comfort level with technology-related programs.

**Energy Conservation/Environmental Sensitivity.** A new landscape is emerging in terms of public (and political) awareness and sensitivity to issues surrounding energy conservation and care for the environment. These developments represent an important opportunity for TSM&O solutions. Properly positioned, TSM&O can be uniquely poised as a cost-effective alternative in terms of fossil fuel conservation, reduction in carbon dioxide emissions, and limiting environmental degradation.

**Building on the Networks.** There is a growing network of users of various TSM&O systems across the country. Similarly, the NTOC network of professionals is extensive. Both of these networks represent impressive assets that could be much more extensively utilized in marketing efforts.

## **THREATS**

**Who's On First?.** The greatest threat to TSM&O marketing efforts is the fact that we are attempting to sell a wide range of 'products' to a 'customer' that is actually a complex mix of decision-makers and role players, involved in a 'buying decision' that evolves over many months and even years. As such, there is no definable customer for a definable product at a definable time. This poses unique challenges to the ability to establish measurable performance objectives and design effective communications strategies.

**Competition for Funding.** As has been the case in the past, TSM&O services and products will continue to face competition for funding with other projects in construction, maintenance of existing infrastructure, and overall economic development. With increasingly tight budgets, demonstrating the value and potential of TSM&O will be critical to funding the implementation as well as maintenance of these systems. TSM&O projects are often not the kind of high profile or glamorous projects that attract voter attention, and are therefore get less support from officials. It has also been difficult to show results that are as dramatic as construction projects, which are easily understood by the general public.

**Inadequate Funding of TSM&O Projects.** Once TSM&O products or services are funded for deployment and implementation, proper usage and support of most TSM&O services and products requires an adequate annual maintenance budget. Often state, regional and local decision-makers are not aware of the ongoing costs and do not provide for this in their budgets. When a proper maintenance budget has not been put into place,

it can negatively impact the efficacy, results, and ultimately the sustainability, of TSM&O.

**Need for Continued Funding and Support.** Without demonstrated returns on investment, efficacy and widespread use by the industry, TSM&O may face reduced funding and support by the federal government. Eventually such funding and support may be decreased to the point that the TSM&O products and services developed to date may not be utilized or maintained effectively. Not only would this be a loss in terms of the resources invested to date, it would also waste the potentially positive results that can be obtained by use of TSM&O services and products.

**Industry Fragmentation.** A wide range of players are involved in various facets of facilitating TSM&O adoption. These players have differing and sometimes competing missions and objectives. They operate with differing budgets and levels of marketing capability. And they interface with different elements within the user/adopter environment. Their efforts are not well-coordinated or integrated.

**Market Fragmentation.** The users of adopters of these systems operate at multiple levels of different organizations and agencies, with a range of individuals playing diverse roles affecting progress through the adoption process at different points in time. Further, the nature of TSM&O services and products often requires cooperation between agencies and organizations either geographically or on an internal hierarchy in order to effectively implement any given service or product. Often the deployment of a TSM&O product or service crosses both geographic boundaries and inter-agency responsibilities. This multi-layer dependency requires relationship building among groups that generally do not communicate or work together.

**Technical Challenges.** There may be some incentive to put off adoption because the technology behind TSM&O is a moving target. Why not wait until the capabilities become even greater or perhaps the costs of a given capability go down. A different

technical challenge is the concern that new systems may not be compatible with existing legacy systems being used by a given locale.

**People Issues.** The systems in question have numerous political implications. The ‘best’ solution is not always the politically acceptable solution, and political realities represent an ongoing threat to TSM&O adoption. A related human issue is the importance of both political and technical champions for TSM&O systems---and the challenge of these individuals continually turning over (e.g., moving to new positions, retiring). .

**EXHIBIT 4: SWOT SUMMARY TABLE**

<p><b><u>Strengths</u></b></p> <ul style="list-style-type: none"> <li>- Resource Investment</li> <li>- Awareness of products</li> <li>- Positive perception</li> <li>- Satisfied users</li> <li>- Impact / results</li> <li>- Technical capabilities of systems</li> <li>- Extensive research</li> <li>- Reports and materials</li> <li>- Website</li> </ul>	<p><b><u>Weaknesses</u></b></p> <ul style="list-style-type: none"> <li>- Perceived complexity</li> <li>- Perceived costs of systems</li> <li>- Communications approach not strategic</li> <li>- Approach is not proactive</li> <li>- Shotgun marketing</li> <li>- TSM&amp;O brand unknown</li> <li>- Right info to right person at right time</li> <li>- No overall marketing coordinator</li> <li>- Limited marketing budget</li> </ul>
<p><b><u>Opportunities</u></b></p> <ul style="list-style-type: none"> <li>- Accidents and congestion</li> <li>- Operations is more flexible solution than construction</li> <li>- Technology advances</li> <li>- Construction limits</li> <li>- Energy conservation pressures</li> <li>- Economic development</li> <li>- Segmentation and targeting</li> <li>- User network</li> <li>- NTOC network</li> </ul>	<p><b><u>Threats</u></b></p> <ul style="list-style-type: none"> <li>- No definable customer for a definable product at a definable time</li> <li>- Competition for funding in terms of local needs</li> <li>- Inadequate funding</li> <li>- Industry fragmentation</li> <li>- Market complexity</li> <li>- No sense of urgency</li> <li>- Perceived cost of system maintenance once implemented</li> <li>- Turnover of key players</li> <li>- Political nuances</li> <li>- Cooperation between cities/counties, municipalities</li> <li>- Legacy systems---inter-operability</li> </ul>

## **CONCLUSIONS OF SWOT ANALYSIS FROM A MARKETING STANDPOINT**

The analysis makes it clear that application of a more strategic marketing approach to the facilitation of TSM&O adoption is a vexing challenge. In effect, unlike similar challenges in a private sector company, there is no one organization with a marketing VP and a clearly defined product and market, with a specific budget to affect adoptions. Further, the marketing effort involves a wide range of stakeholders. In effect, there are hundreds of voices, mostly off-key. Yet, the challenge is to influence adoption behavior in a context that can be characterized in terms multi-leveled and multi-faceted adoption and usage patterns. Further, compared to the way in which people buy cars or computers or sofas, there is less of a discrete time horizon over which a purchase is made. An examination of current marketing efforts suggests they are spread too thin---representing a de facto shotgun approach. Moreover, absence any real metrics, measurement, or objectives, there is no clear sense of what success would be. In the final analysis, the one point of agreement is that there exists a clear need to achieve greater adoption of TSM&O.

## **IV. MARKETING GOALS AND OBJECTIVES**

The overall goal is to achieve greater adoption of TSM&O services and products by making information more accessible, and leading a more focused and targeted marketing campaign. This overarching goal can be broken down into a number of individual goals and objectives.

### **A. Marketing Mindset of Leadership and Stakeholders**

1. Change the approach of NTOC leadership and stakeholders to a more strategic and integrated marketing approach to TSM&O adoption
2. Utilize a more focused (rifle) approach for the disparate set of resources available
3. Create a clearer sense of the current status quo, what direction to move in and what needs to happen in order to get there
4. Create a system of accountability with relevant milestones

## **B. Marketing Objectives**

1. Increase the adoption rates of TSM&O products and services in five top markets within each segment over the next five years, targeting an average increase of 5% per year
2. Increase the relative spending on Transportation Operations systems in five of the top markets within each segment over the next five years
3. Increase the deployment rates of high priority TSM&O products or services that are under 50% according to the DOT ITS deployment surveys (see Appendix E) and increase usage to 50% over the next three years
4. Raise awareness of the Total Operations Concept
5. Establish a consistent and visible system for model users and increase the number of model users across the nation
6. Establish awareness of and consistent use of demo sites
7. Increase the number of contacts to FHWA Resource Centers for Transportation Operations by 100% over the next five years
8. Enhance and increase the number of peer-to-peer exchanges
9. Increase the number of hits and time spent on websites by category of decision maker
10. Enhance the roles of Champions and increase the number of Champions
11. Create open, cross communications between those city, county, regional and state participants whose geographic boundaries overlap in the early stages of the adoption process throughout implementation and maintenance
12. Address the distinct needs of various categories of stakeholders and participants, i.e. decision makers versus implementers versus influencers
13. Create a streamlined, coordinated system of communications that provide convenient, 24/7 access to up-to-date marketing materials, data, information, case studies and phone or email support

## **V. MARKET SEGMENTATION AND TARGETING STRATEGY**

The current “one size fits all” approach to the market is neither effective nor efficient. The users, participants and stakeholders in the ‘marketplace’ represent a broad, diverse

cross section of people ranging from engineers and technical experts to elected and appointed officials. In addition to the diverse needs and objectives of these individuals, there exists a clear disparity between geographic regional needs based on, size, location of the city and/or area, economic growth, ITS usage, and overarching transportation problems. These realities make it clear that progress in terms of TSM&O adoption can be accelerated if the market is segmented, and priorities are established in terms of target segments. Segmentation seeks to identify sub-groups with relatively homogeneous needs and behaviors. The goal is to identify elements of the marketplace that are more likely to respond to tailored communication approaches.

Based on our analysis, the market for TSM&O systems can be segmented based on at least ten relevant variables (see Exhibit 5, below). In addition, the use of U.S. Census data and related transportation statistics helps to further define the target segments in terms of size, growth rates, and other key criteria.

While the analysis makes clear that there are many ways to break down the market, based on the research findings, we believe that three market segments should be prioritized in TSM&O marketing efforts. It is our contention that concentrating efforts on them will not only yield the greatest return on marketing investment, but it will facilitate subsequent penetration of other components of the marketplace. The segments we are proposing be prioritized can be labeled:

Segment 1: Major Metro

Segment 2: Model States

Segment 3: Dynamic Medium Metro

Each is elaborated upon below.

### Exhibit 5: Breaking Down the TSM&O Market

Segmentation Variables									
General Sector	Government Level	Region	Geographical Level	Economic Growth Rate	Unique Transportation Issues	Relative Role of Operations	Techn. Adoption	Decision Process	Decision Process Drivers
Private	Federal	NE	Small Town/Rural	High Growth	High Congestion	Construction Focused	Heavy ITS User	Planned	Fed Agency
Public	State	MW	Mid-Metro	Moderate Growth	High Accident Rate	Balanced	Limited ITS User	Reactive	State DOT
Non-Profit	Region	SE	Regional/Major Metro	Low Growth	Adverse Weather Conditions	Operation Focused	Non-ITS User	Opportunistic / Adaptive	MPOs / RPOs / Transpo Boards
	County	SW	State	None/Decline	Commerce				State & Local Politicians
	City	West							Local Engineers
									Local Transit Auth.
									1st Responders
									Public

- Segment 1: Major Metro  
 Medium to high growth; high congestion, operations focused, high users of ITS; among 20 largest metropolitan areas in the country with a population of 2.5 million or more. *Examples:*
  - Atlanta, GA
  - Chicago, IL
  - Los Angeles – Riverside – Orange County, CA
  - Houston – Galveston - Brazoria, TX
  - New York – NJ– Long Island - Connecticut – PA
  - Phoenix – Mesa, AZ
  - Seattle – Tacoma – Bremerton, WA
- Segment 2: Model States

Medium to high growth, high congestion, high interstate commerce, proactive state with high usage of ITS; Shared statewide problems and initiatives; total population exceeds 4 million. *Examples:*

- *California*
- *Florida*
- *Georgia*
- *Maryland*
- *Minnesota*
- *Texas*
- *Washington State*

- **Segment 3: Dynamic Medium Metro**

High growth (minimum 3% per year for 10 years), between 500,000 and 2.5 million in population, high congestion. *Examples:*

- *Austin – St. Marcos, TX*
- *Charlotte – Gastonia – Rock Hill, NC*
- *Las Vegas, NV*
- *Orlando, FL*
- *Raleigh – Durham – Chapel Hill, NC*
- *Sacramento, CA*

These three major market segments have potential to produce the greatest increase in adoption rates over the next three to five years based on the nature of the problems they face (e.g., economic growth, congestion, dynamic population patterns, etc.), their ability to pay, and their receptivity to novel solutions and approaches. By targeting the major market segments, a network of adopters can be established by category, creating a greater opportunity for further adoption within the market segments. A segmented approach will better enable the ability to benchmark and track adoption levels by target group. Increased adoption achieved in the major market segments will provide larger and more comprehensive cases and peer to peer examples. These areas create the largest need for TSM&O services and products and are likely to have greater resources to deploy and maintain them. Eventually, it is anticipated that smaller market segments will follow the lead of the major market segments.

## **VI. POSITIONING STRATEGY**

Positioning refers to how we want TSM&O systems to be perceived by key stakeholders in the market (i.e., role players in the adoption process). Such positioning can be relative to key attributes and benefits (relative expense, ability to increase road safety or traffic flows) and/or relative to alternative solutions (construction, maintenance, mass transit). Importantly, a clear positioning strategy brings focus and direction to marketing efforts.

It is our contention that individual TSM&O systems should not be the focus of positioning efforts. Based on the research to date, positioning should convey the usefulness of TSM&O as a whole, through what has been termed a “total operations concept”. This concept can be defined as the use of various transportation management tools, products and services in an integrated system on an ongoing basis, for the purposes of enabling more efficient and effective operation of road systems for travelers. The objectives of total operations concept are to provide alternatives to costly new construction of roads, safer roads, less congestion and better communication to travelers, in a cost efficient way. The total operations concept is delivered via new product technologies, new ways to coordinate and manage existing transportation services and improved coordination between travelers and service providers.

In short, this means conveying the following:

- a) Operations is not a particular ITS system;
- b) The total operations concept is a way of thinking and acting—it is a philosophy of strategic transportation system management, where a state or locality considers where it wants to go in terms of an integrated set of TSM&O systems that address its needs over a reasonable planning horizon;
- c) Total operations seeks to achieve centralized management capabilities over what is happening on the road system in a given locality;
- c) Operations is a flexible set of tools for making roads safer, smarter, less congested; and
- d) There is a relevant suite of ITS solutions for each major market segment (a flexible suite of solutions).

In effect, we recommend a menu-based approach, where the total operations concept is stressed, but individuals are encouraged to consider a menu of options, identifying those that best fit their needs. The menu approach brings some order and structure both to the marketing process and to the adoption decision process. The issue is one of getting planning processes built around the total operations concept, with elements of the menu of options phased in over a decade or more.

Two related issues come into play in the area of positioning. One of these concerns whether we should be trying to build a TSM&O brand, and ITS brand, or any kind of brand. Clearly, ITS is well-known, TSM&O is not. Differences between ITS and TSM&O are unclear to the marketplace. If anything, it would seem more appropriate to build the brand identity associated with the total operations concept.

The second issue involves the development of a unique selling proposition for TSM&O systems. This is the single message that we most wish to associate with TSM&O on an ongoing basis. An example is the emphasis by Avis on ‘we try harder’, or by Fedx on ‘when is absolutely, positively must be there on time’, or even BMW’s ‘ultimate driving machine’.

The following are examples of ways to describe the benefits, and thus to position the TSM&O services and products broadly:

- *“Safer, smarter, more affordable roads”*
- *“Operations: Making your roads work for you”*
- *“Operations: The flexible alternative”*
- *“Enhancing the value of your roads”*

## **VII. COMMUNICATION AND PROMOTION STRATEGIES**

To achieve the overarching goal of increasing adoption rates of TSM&O products and services, and to meet the objectives supporting this goal, it will be important to transform the way Transportation Operations is marketed and promoted. A number of

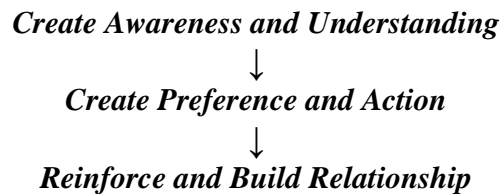
communications and promotional strategies are presented here to illustrate ways to begin to change the mindset of stakeholders and constituents in order to achieve the marketing objectives. The key is to implement a complementary set of strategies and accompanying tactics over the next several years.

<b>Exhibit 6: Key Building Blocks in Developing a TSM&amp;O Communications Strategy</b>					
<b>Proactive</b>	<b>Integrated blend of tools</b>	<b>Push</b>	<b>TSM&amp;O integrated</b>	<b>Customer centric</b>	<b>Personal communication</b>
<b>Passive/ Reactive</b>	<b>Discrete tools</b>	<b>Pull</b>	<b>Product specific</b>	<b>Product centric</b>	<b>Impersonal communication</b>

We begin by providing our assessment of the key decision variables that underlie a more strategic approach to communications. These are summarized in Exhibit 6, below. In essence, we believe it is important to design communications strategies based on the extent to which they are proactive or more passive, integrated or discrete, part of a push or a pull effort, focused on total operations or individual TSM&O systems, customer versus product centric, and based more on personal versus impersonal forms of communication. Our recommendations regarding these decision variables are woven through the ten communications strategies summarized in the next few pages.

The overall approach to communication must be customer-centric, not TSM&O-centric. This means we begin with a focus on three key market segments (see earlier discussion), which allows us to prioritize key problems and make those problems the central thrust of our approach. So, if the major metro segment is, more than anything else, concerned with congestion relief, then that is the central emphasis of the approach to that segment. The issue of congestion relief becomes the theme of the kinds of materials, reports, conference sessions, etc. that are targeted at that segment

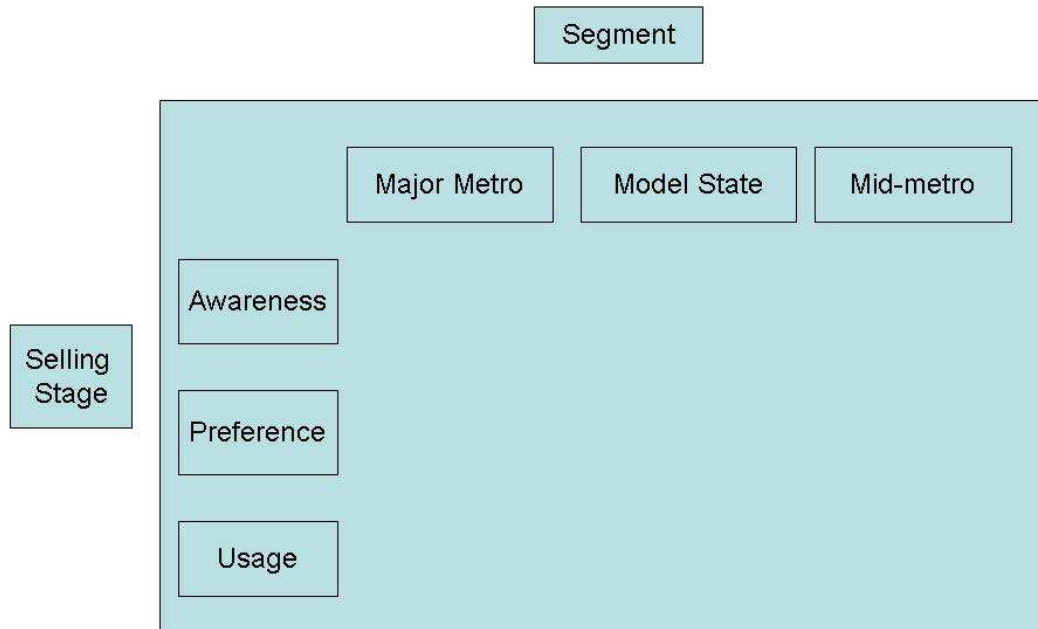
Another dimension of a customer-centric approach to communication finds us designing a selling or communication process that mimics the customer adoption process. The latter was presented earlier in Exhibit 1. Toward this end, communication strategies should be designed around three selling stages:



The argument here is that the kinds of communication efforts that are effective at creating awareness of TSM&O systems differ from those that will move a state or locality to select and implement any of these systems, and also differ from efforts that will reinforce the adoption decision after the fact. Designing marketing efforts based on where those involved in adoption decisions are in the process at a point in time represents a consistent, user friendly roadmap that can be applied uniquely to each of the targeted market segments. Such a “three-stage marketing” concept that focuses on the major segments will provide the most strategic and targeted way to impact communications. Exhibit 7 includes a grid that outlines the linking of this communications framework to the major market segments being prioritized in our approach.

Our proposed communication approach is predicated on three key assumptions. First, we assume that there are limited resources available in terms of human resources and funding. Secondly, we assume that, given that there are so many people and players involved in TSM&O on many levels with diverse interests, we assume that it is important to maintain a level of simplicity in marketing approaches. Thirdly, we assume that, while there is significant diversity among the stakeholders and users, there is also commonality, especially at a segment level. The latter will be the key component that will drive successful achievement of the strategies.

### Exhibit 7: Communications Framework



#### **Strategy 1: Sell a menu-based approach to key segments**

There are too many TSM&O systems to effectively promote all of them individually, especially given limited resources. Consistent with the total operations concept, a manageable approach would be to identify TSM&O products that share relevance to a particular market segment and to create “bundles” of services or products for that segment. The bundle would capture the priority needs and requirements of the segment, and the communication approach for this bundle can then be tailored to reflect the requirements of the segment.

#### **Tactical Recommendations**

- Categorize each product and service by the advantage it provides (i.e., relieves congestion) and assign each one to groupings that provide similar advantages or resolutions to identifiable transportation problems

- Separate and identify each grouping by “function” or “benefit”
- Assign the groupings to various market segments that need the specified function or benefit provided, and the several groupings would be promoted as bundles of products and services appropriate for a particular market segment:
  - For example, Major Metro markets are highly congested areas which might require high occupancy vehicle, traffic light synchronization, and surveillance and detection products that could be promoted together as a systems approach to TSM&O

A suite or bundle could include the following:

- Identification of the applicable Major Market Segment and specific problems and needs (i.e., congestion)
- Each TSM&O Product or Service that would meet particular needs or resolve problems
- Types of communications appropriate for the various stages for each product or service
- List of Marketing Materials and sources

**Strategy 2: Think in terms of a communications portfolio**

A plethora of marketing materials, reports, and related resources exists (see Mapping of Marketing and Communications Materials in Appendix F). If we think of these as a mix of communication tools, the various types of available tools differ in their effectiveness at accomplishing distinct communications tasks (e.g., creating awareness, closing the sale, building the relationship). Accordingly, it is appropriate to think of a communications portfolio where the various communication tools are catalogued based on what they are most capable to accomplishing. Exhibit 8 provides a synopsis of some of the major tools that might be included in the portfolio. One then constructs a blend of communication tools that effectively walks a given state or locality through their adoption process. Stated differently, various elements of the portfolio are emphasized depending on both on the market segment being targeted, and the stage of the adoption process.

**Exhibit 8: A Communications Portfolio**

<b>Case studies/ successes and failures</b>	<b>Surveys, Nat'l data on Usage</b>	<b>Brochures and print promotional material</b>	<b>Web Site</b>	<b>Expert Community/ Ask the expert</b>	<b>Webinars</b>
<b>Peer-to-Peer</b>	<b>Pilot Sites</b>	<b>Model Users</b>	<b>Conferences &amp; Trade Shows</b>	<b>Champions network</b>	<b>Product Reviews</b>
<b>Feasibility Studies</b>	<b>Cost-Benefit Studies including life time analyses</b>	<b>Field Studies</b>	<b>Resource centers</b>	<b>Technical Descriptions</b>	<b>Formal advertising</b>

**Tactical Recommendations**

Organize and catalog existing communication tools and marketing materials based on the form and content of communication. Criteria for classifying materials include a) personal/impersonal form of communication; b) objective/subjective source of information; c) ability to capture audience attention; d) pass along readership; e) timeliness; f) flexibility; g) cost per person reached; h) technical/non-technical presentation; and i) communication task(s) the tool best accomplishes. Communication is clearly a creative task, such that the portfolio of communication tools should be subject to continual expansion.

Rather than being viewed as individual components, these existing communication tools should be bundled together based on market segments and the stage in the communication process. For instance, in selling to the mid-metro segment, it may be that a combination of sessions at conferences, direct mailing of brochures, and website materials are effective at creating awareness of the relevant TSM&O bundle. However, feasibility studies, cost-benefit reports, and both model users and pilot sites become

critical in creating preference and conviction on the part of the adopting agency. Interaction with a user group, and benchmarked studies could be more effective in reinforcing the adoption and building the relationship.

Alternatively, to market products and services for congestion being targeted to Major Metro market segments, a portfolio of communications that would logically reach these users might include:

- Survey (pull - problem recognition)
- Printed media (solution assessment)
- Brochures (solution awareness)
- Conferences & Trade shows (solution assessment)
- Feasibility studies (push - initial assessment stage)
- Cost-benefit studies (push - initial assessment stage)
- Model sites (planning and development stage)
- Product reviews (planning and development stage)
- Expert community (final review stage)
- Technical Specifications (final review stage)

### **Strategy 3: Combine Proactive, Active and Passive Approaches**

It would appear that the available marketing approaches can be categorized as being proactive, active and passive. For example, websites alone are *passive* forms of communication. Efforts to drive people to the website or to attend a conference are *active*. Direct targeting of tailored communications to key players from a particular segment and at a particular stage in the adoption process is *proactive*. We would propose that the three primary market segments receive proactive approaches, while the lower priority elements of the marketplace receive more passive efforts. Examples of passive, active, and proactive approaches are given below in the tactical recommendations, along with examples of how to use and combine them to effectively maximize marketing impact.

## **Tactical Recommendations**

1. Review marketing and communications activities and label them as passive, active or proactive. Design communications programs that apply more proactive and active efforts for the major segments being targeted over the next 2-3 years.
2. For example, an integrated communications strategy would include the following:
  - Passive communications: materials on websites, printed brochures, case studies.
  - Active communications: Invitations or fliers to the ITSA annual meeting or a conference to discuss specific transportation operations products or services; emails to invite people to participate in a webinar.
  - Proactive communications: Targeting one of the key market segments with a coordinated mix of communication tools that are tailored to the three stages of the selling process, and reflect the unique transportation requirements, budgeting issues, and political realities of the segment.

### ***Other Examples of Passive Communication:***

Printed materials and publications. A simple card or foldover brochure could be created for any agency or individual working with TSM&O that has the positioning statement and a central website listed, in addition to other sources of information. This standard print piece should be widely distributed and used by all involved in TSM&O. Publications on case studies and peer to peer studies should be sent only to those market segments who would utilize that specific information, in order to save costs and market more effectively. Those resources that include budgetary and other types of information should be inventoried and updated no less than every other year. Copies of all printed materials by any agency on TSM&O should be sent to a central person or committee that has representation from the major stakeholder organizations. This will enable easier inventorying of print materials on all TSM&O, which can be put into a library or scanned for reference.

***Other Examples of Active Communication:***

Establish a booth or presence for TSM&O at each annual conference of the major stakeholder groups, as well as the ITSA conference. Select a TSM&O product bundle that is applicable to the conference attendees and present a panel, host a roundtable, and find ways to bring together those with expertise and experience in TSM&O together with novices in the area. Produce giveaways with the TSM&O positioning statement and the central website to distribute at all of these annual conferences.

Press Releases. Federal and state DOTs should be responsible for issuing a monthly press release on some aspect of TSM&O that is of interest to key publics. A standard tag line about the TSM&O positioning statement should be used at the end of each and every press release that goes out regarding any TSM&O story. In addition, the central web page must be listed.

***Other Examples of Proactive Communication:***

Surveys to determine changing constituent needs for a specific market segment, followed by design of a selling approach and production of communication materials that target the market segments utilizing the survey results. Demo sites and peer-to-peer exchanges are then developed with this segment in mind. This sort of targeting is tied to specific measurable outcomes.

**Strategy 4: Distinguish ‘push’ versus ‘pull’ initiatives**

Communications approaches can be distinguished based on whether they represent ‘push strategies’ or ‘pull strategies’. Push communications are those that target “intermediaries” (regional DOT, state DOT, private firms) to influence them to ‘push’ designated TSM&O systems and/or incentives on the final decision-maker. In effect, communications, materials, marketing resources, and incentives are directed at these intermediaries. Push communications:

- Identify existing products in relation to customer demands/needs
- Identify and cultivate chain of product promoters to build partnerships
- Establish direct route through promoters to end-users/decision-makers

- Solidify relationships

Alternatively, pull strategies involve marketing efforts that *create a demand* from the end user. “Pull” communications and promotions are directed at end users (and the general public) in order to convince the ultimate consumers that operational systems/solutions are effective. This strategy is meant to build user demand and thus influence decision-maker endorsements. Targeting the end user or the public anticipates an organic, grassroots approach to increasing consumer awareness of and desire for TSM&O. The public’s interest in TSM&O adoption will create a “pull” marketing strategy. Pull communications:

- Identify end-user/decision-maker need/demand
- Create solution demand through heavy TSM&O promotion
- Create brand recognition through user demand and decision-maker endorsements (they recognize value)
- Drive users and decision-makers to TSM&O websites for immediate information about solution
- Require high investments in advertising and promotional material to drive end-users’ actions

To obtain the most impact from marketing strategies a combination of both push and pull strategies should be concurrently deployed. Due to the limited audience and need for awareness, as well as a limited budget, it is recommended that more emphasis is placed on push efforts over pull efforts (65% push/35% pull). TSM&O advocates need to be aware of and distinguish the promotional and communication tools that are effective in push versus pull contexts.

Operationally, push efforts would include:

- Offering incentives for adoption such as tax credits, incentive pricing from vendors, matching/increased funds, low interest loans/bonds, and other incentives from the DOT, federal government, and private sector.
- Providing marketing support to these intermediaries in the form of websites, publications, videos, special reports, and other kinds of value added items.

- Assisting in the identification of technical and political champions of whom these intermediaries should be aware.
- Providing personal contact and relationship building with these intermediaries, creating positive attitudes and reinforcement.
- Providing support for intermediaries to organize conferences, sessions at conferences, and special seminars regarding aspects of total operations.
- Regularly monitoring what these intermediaries are currently doing to support TSM&O, identifying the gaps, and assisting in filling them.

The implementation of pull tactics might include:

- Direct mail of brochures and materials to stakeholders involved in various facets of adoption at the decision-making level.
- General advertising placed in trade publications that reach these stakeholders.
- Establishment of certain pages on the centralized website (using an existing or new URL) and an e-newsletter based upon user-defined criteria for various stakeholders at the community or local level. The web page would be similar to Google, Yahoo, Wall Street Journal's portal service wherein a user would define his/her interests for future viewing at each log in. This would provide each user with instantaneous access to transportation operations relevant to his/her own needs. RSS feeds (similar to those available on existing websites) could be used to provide breaking, updated operations updates, as needed.
- Coordination of public relations and publicity campaigns regarding TSM&O directed at the general public.
- Email blasts to drive traffic to the website regarding specific "hot issues of the day". The public relations campaign would be created and coordinated by the TSM&O Director, and would be customizable to different market segments.
- Create public forums and town meetings on TSM&O, providing websites and other information.
- Promote TSM&O adoption incentives, in terms of discounts or refunds to end-users, inclusion in special study groups and forums, recognition announcements in newspapers, trade journals, newsletters, etc.

### **Strategy 5: Make the communication process more personal and proactive as it evolves for a given target audience**

In business-to-business marketing contexts, personal communication becomes more critical as the selling process moves to an actual buy or close of the sale. That is, communication efforts that are used to create awareness may be more impersonal (e.g., printed brochures), but the deeper into the decision process we go, the more important becomes one-to-one communication (e.g., sales call or peer-to-peer exchange). This principal should also apply to TSM&O marketing efforts. As the buying or adoption process of TSM&O moves towards an actual decision, there is greater opportunity to influence a positive decision through one-on-one communications and personal interaction. With large dollar expenditures and potential professional risk, more “confidence building” and reassurance is required and the best way to do this is via personal interaction. The current approach relies heavily on impersonal communication mechanisms, i.e. websites, case studies, technical publications, et al. There is a need to creatively employ one-to-one interactions, peer contact, and other personal mechanisms as the adoption process gets into stage II (Creating Preference and Action). The creation of model sites and resource center sites (or the broader utilization of existing resource centers) will greatly enhance the ability to provide personalized marketing.

### **Tactical Recommendations**

First stages of creating awareness and understanding

TSM&O organizations, advocates, including vendors, and champions create TSM&O awareness and understanding. These individuals, organizations, and/or companies provide education to the market segments about TSM&O solutions through both reactive and passive communications. Awareness and understanding can be created through:

1. Common terminology (TSM&O, TOC, ITS definition/resolution)
2. Websites
3. Printed media
4. Surveys
5. Conferences and trade shows

## 6. Webinars

### Second stages of creating preferences and action

Market segments have to be approached through more proactive communications in order to compare different solutions, create preference and action and contextually experience solutions. Examples of more proactive tools include:

1. Champions
2. Cost-benefit studies
3. Product reviews
4. Technical specifications
5. Model sites
6. Peer-to-peer exchanges
7. Expert communities

### Third stages of reinforcing and building relationships

Market segments are moving towards implementation and require active communications, which reinforces the solution decision. Active communications create and build relationships with market segments and provide forums for continuous evaluation of the solutions chosen.

Potential active communication services include:

1. Field studies
2. Reviews
3. Peer-to-peer (customer is advocate)
4. Awards
5. Personal assistance (technical expertise)
6. Conferences/panel discussions

### **Strategy 6: Drive people to the “master” website**

A centralized website for Total Operations must be agreed upon by the stakeholders, whether it is the DOT/ITS site, the NTOC site or another Operations website. For the purposes of illustration, we can consider the DOT/ITS website as the primary Transportation Operations marketing resource which provides a logical focal point for a coordinated marketing campaign. The master website should be considered ground zero

in terms of ongoing communication efforts. Essentially, it is recommended that this website be considered and designated as a “master” website, even if it is mainly a portal to other resource websites. This will create a consistent, strong, central branding element that is easy to remember for the purpose of promoting the total operations concept and market segments.

However, the website is currently designed as a passive resource and in order to have greater impact it should be redesigned to be part of a blended communication strategy as discussed in Strategy 2 above. Traffic and users need to be driven to the website through other means of communications that include marketing print materials, press releases, email newsletters, agency newsletters, etc. There must be a much higher visibility attached to the site, given the enormous information and resources invested in it. In addition, the site must be recreated as a user friendly, dynamic, interactive site that changes daily if not weekly with updates and interesting information. This creates repeat traffic and word of mouth marketing.

Other sites must be linked and highlighted as resources to the master website. These will include:

- [www.ntoctalks.com](http://www.ntoctalks.com)
- AASHTO
- ITSA
- Specific agencies, such as AMPO, ITE, ITMA

### **Tactical Recommendations**

Align both push and pull strategies on the site for different user bases:

- Create linked, searchable menu of solutions’ categories for users (push-focus) on homepage. Link existing material content to the master website. For example, create user categories that include:
  - Travel advisory systems
  - Traffic light synchronization
  - Freeway on ramp management systems, etc.

- Pull elements could include:

Create linked, searchable menu of total operations concept benefits (pull focus), cross-referenced to solutions' categories, to homepage. This can be done by linking other provider content to [www.ntoctalks.com](http://www.ntoctalks.com) site, eg. FHWA, AASHTO, ITSA, et al. Example of benefits include:

- Commute time savings
- Gas savings
- Environmental benefits
- Case studies
- Best practices
- Actual metrics from existing projects
- Public/non-expert articles or discussions of operations-focused solutions and applications.
- Frequently Asked Questions (FAQs) concerning total operations.
- Simple examples of how total operations solutions can decrease maintenance costs, lower taxes, etc.

Aggressively increase the visibility of the master website using a variety of promotions:

- Adoption of a unified name for TSM&O/ITS/TOC
- Consistent inclusion of the website URL by all partners/advocates
- Use of search engine optimization techniques, frequent updates of content, et al
- Refine key word searches based on total operations concepts' keywords/phrases, e.g.
  - Transportation
  - Traffic congestion
  - ITS
  - Intelligent Transportation Systems
  - Travel advisory systems
  - Arterial management, etc.

Find ways to keep users interested enough to visit the website on a weekly basis:

- Update content often, including news, services, seminars, conferences, case studies, feasibility studies, cost-benefit studies, et al (see communications/promotional vehicles identified in Strategy II).
- Content needs to be updated frequently (homepage, at least once per month) and consistently (updates across the board)
- Create multi-user homepage content that is updated weekly
  - Technical, currently used under “News” section
  - Non-technical, e.g. best practices featured
  - Create separate homepage space for events, e.g. Webinars, conferences open to all
    - and technical/member-based only, e.g. ITSA conference, AASHTO meetings, State DOT meetings, etc.
- Create a BLOG that enables knowledge sharing within and between the different market segments and all of the TSM&O participants on an ongoing, 24/7 basis at minimal cost.
  - Segment the blog into topics that enable efficient identification and usage:  
Peer to Peer Sharing; Funding and Resources; Technical Issues and Best Practices
  - Assign management responsibilities for each of the BLOG topics to relevant agencies and organizations. Suggested assignments would be as follows:
    - Peer to Peer Sharing: AASHTO
    - Funding and Resources: JPO DOT
    - Technical Issues: ITE
    - Best Practices: AASHTO
  - Find ways to post documents and templates for various issues that people have used successfully
  - A designated webmaster or blogger would respond to questions and issues if others on the BLOG are unable to respond within 24 hours. This will ensure that resources are found to address issues and questions that arise in any of these specific topic areas

- Each member organization of NTOC will share marketing responsibilities for creating awareness of the BLOG by doing the following:
  - Establishing a link on their websites to the main BLOG page
  - Placing ads in newsletters, magazines and other publications advertising the link to the BLOG
  - Highlighting items of interest and value from the BLOG in newsletters, magazines and publications
  - Create a reward system for contributing to the BLOG

The TSM&O master website needs to increase stickiness. Stickiness refers to the ability to keep viewers in the website for longer periods of time.

Bring a search engine feature to homepage, which allows

- native question searches
- key word searches

This, in turn, will allow user access to

- simple solutions
- templates
- training resources
- consultants

The site must be brought alive in terms of utilizing effective web design management best practices and inclusion of an effective webmaster/designer for regular updates/upgrades. For example:

- Standardize page layout, e.g.
  - Menus, links in same places on each page
  - Use web-written text with brief descriptions and links to additional information resources, including different member websites, e.g. “Arterial Management,” etc.
- A homepage that allows customized user-friendly searches, by keyword and market segment terms

- Radio buttons that allow users to define areas to search based on segmentation, e.g. metro and high congestion and high interstate commerce.
- Add multimedia and/or interactive content to NTOC site, including homepage
- Pre and post video clips (flash diagrams) of effective traffic management solutions, e.g. highway onramp systems, travel advisory systems in use, etc.
- Flash diagrams of effective arterial management solutions
- Visual updates of new total operations concept solutions underway
- Feature “real people” solutions, e.g. commute time reductions
- Provide email/contact information for each subcategory
- Consumer/General Info
- Direct User – Vendor, Technical Assistance

Use the websites to push the marketing positions of Transportation Operations consistently by having each TSM&O constituent website utilize the positioning statement of TSM&O.

### **Strategy 7: Build a champions program**

TSM&O champions are a critical part of the adoption process. Champions provide the human interface that is critical in all programs/projects; however, real champions are those “go to” individuals that usually are the busiest and do not have significant amounts of free time. The need for a champions program was recently highlighted in the ITS JPO newsletter regarding the need to develop project champion succession plans in order to avoid “orphaned” projects (“Great Lakes” ITS project management experiences). The objectives in building a TSM&O champion program are to:

1. Identify TSM&O champions, including both technical and political champions
2. Use TSM&O champions effectively
3. Support and reward these champions
4. Encourage other individuals to become TSM&O champions

### **Tactical recommendations**

1. Identify TSM&O champions through NTOC member organizations

2. Create a special database for communications targeted at TSM&O champions
3. Provide opportunities for champions to share stories of success, challenge and failure
4. Publish these stories on the web, in newsletters and in media releases
5. Provide opportunities for champions to serve as TSM&O experts nationally
6. Include them on an “Ask the Expert” list on the Model Sites web page or add them to the Resource Center technical expert volunteer team.
7. Invest in champions
  - a. invite them to lead educational sessions or roundtables for annual agency conferences
  - b. subsidize travel costs
8. Give annual national awards for the best TSM&O projects in the country, and recognize the champion
9. At any membership organization’s annual meeting, sponsor a special “Champions’ Dinner” in recognition of TSM&O champions and their accomplishments
10. At the AASHTO Annual Meeting, start a “50 States Champions Award”, where each state selects a TSM&O Champion of the Year who is recognized and invited to a special dinner
11. Utilize the Webinar to broadcast an “Ask the Champions” series once a week
12. Each week feature a product or service and bring together all of the champions who have lead projects with those interested in learning
13. Target others in the same segment or those contemplating same TSM&O product or service
14. Webinar-based, “Ask the Expert” series will be scheduled in advance and publicized by NTOC member associations to their membership
15. Include a list of champions, organized by market segments and by TSM&O products/services on the Model Sites web page, or the FHWA Resource Center Operations web page
16. Ask existing champions to identify future champions

### **Strategy 8: Create a model users program**

A model users program will enable peer to peer communications, studies information sharing and ease of identifying those agencies, states, counties and people who have implemented a given TSM&O service or product successfully.

### **Tactical Recommendations**

Compile a database of the cities, regions and states that have implemented selected TSM&O products or services successfully. Each site will list a lead person (or champion) in the following four categories: Champion, Budget, Technical assistance, Funding.

These individuals will be tapped to provide support to others via: peer-to-peer exchanges, examples, case studies and personal support by email, coaching and mentoring. Development of an awards program highlighting “Best Use of Signal Synchronization Systems,” “Best Use of 511,” etc. to showcase both the cities and TSM&O initiatives/systems.

Other tactical recommendations for creating a model users program include:

- Use FHWA Resource Centers Operations Team as first line contacts for online, email and phone support
- Providing operations team technical experts in six (6) strategic locations
  - San Francisco
  - Baltimore
  - Atlanta
  - Olympia Fields (Chicago)
  - St. Paul MN
  - Lakewood CO (Denver)
- Currently provide technical support line, email support, project support by request
- Covers broad range of ITS product and service areas
- Main customers are FHWA offices
- Can include the listing of model users and champions as resources for additional contact and expertise

- Adapt Resource Centers Operations Team to support marketing and communications of its technical experts on TSM&O
- Rename the Transportation Team page with a duplicate domain name for ease of use: ITSTechSupport.com
- Drive traffic to the site by publicity and marketing: brochures, postcards, press releases contain information and accessible web page
- Coordinate with NTOC member organizations for distribution of materials
- Coordinate a list of champions as field experts, who can mentor and provide technical assistance on specific TSM&O products/services
- Issue news releases regularly targeted at market segments; send them to member organizations, RPOs, MPOs, other agencies.
- Link to the Resource Center Operations Team from all other ITS websites, and Resource Center will link to the main ITS informational sites
- Put a link for “Technical Support for ITS” on all ITS Stakeholder websites with a link to the Resource Center Operations web page
- Make sure the model sites page links to other TSM&O websites

### **Strategy 9: Create systematic peer-to-peer exchanges**

In the overall marketing strategy, given the diverse user groups and stakeholders as well as the complex and large number of Transportation Operations services and products, there is a need for an efficient system that directly connects users and decision-makers with their peers in similar contexts. The TSM&O network needs to provide a model for the network and create real-time databases. A peer-to-peer exchange model might include direct communications, on-line forums, conference connections, instant messaging, file sharing, all facilitated by a centralized coordinator.

### **Tactical Recommendations**

Individual TSM&O advocates are encouraged (either in-person or virtually) to create and conduct dialogs about TSM&O topics, which become Personal Exchanges that create “ownership”.

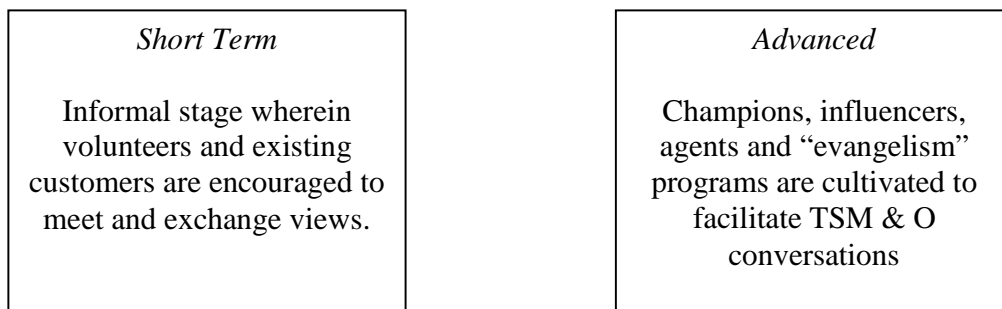
- Agency Word-of-Mouth Marketing

- Build TSM&O brand
- Direct information sharing through personalized messages (brochures, mailings, emails, links to websites, special events)
- Knowledge sharing between agencies and users
- Viral marketing
- Peer-to-Peer Communications
  - Instant messaging
  - File sharing

A peer-to-peer exchange can be developed utilizing a number of the existing vehicles and organizations in the TSM&O community:

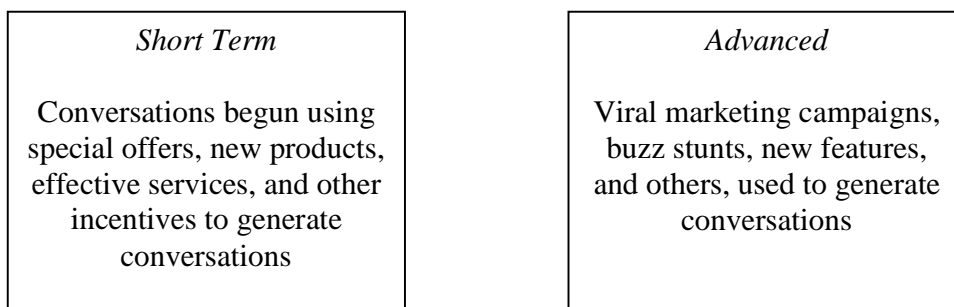
**Step I**

TSM&O “talkers” – individual TSM&O advocates



**Step II**

TSM&O topics become the launch pad for champions, panel discussion, synchronous and asynchronous TSM&O conversations



### Step III

Formalized TSM&O communications tools/vehicles are used to generate conversations

<i>Short Term</i>
<ul style="list-style-type: none"><li>• “Tell-a-colleague” program</li><li>• Forwardable email conversations</li><li>• List serve groups</li></ul>

<i>Advanced</i>
<ul style="list-style-type: none"><li>• Blogs</li><li>• Online TSM &amp; O Communities</li><li>• Message billboards</li></ul>

### Step IV

Interactive agency participation to generate conversations

<i>Short Term</i>
Agency representatives participate in or host blogs and message board conversations

<i>Advanced</i>
Interagency outreach teams, public relations campaigns to enhance awareness and facility pull marketing, enhanced customer service to promote value and ease of TSM&O programs/systems

### Step V

Centralized tracking/measurements to define areas of interest and generate target market-specific conversations

<i>Short Term</i>
Commonly available, generalized tools, e.g., Blogpulse, Feedster, Technorati and Google

<i>Advanced</i>
Advanced metrics programs and trend analyses to define future conversations from both formal and informal TSM&O resources, individuals, agencies and businesses

### **Strategy 10: Connect the dots between NTOC agencies and efforts to foster TSM&O**

The number of TSM&O agencies and organizations working independently to communicate information about TSM&O results in significant confusion, a lack of focus (e.g. terminology), overlap and duplication of effort, and gaps in the information or follow up. Clear roles can be assigned and centralized coordination should be cultivated. Coordination requires facilitating collaboration from the various TSM&O constituents around key target market segments. Acute awareness of who is doing what to promote TSM&O needs to be fostered and efforts to key players needs to be openly noted.

#### **Tactical Recommendations**

- Create a new position or reassign an existing person to serve as the national TSM&O marketing director, who will be the coordinator for all centralized national marketing efforts in TSM&O. Empower that person to coordinate all agencies and high level efforts to increase adoption via strategic communications efforts. This will require a full time effort.
- Request each agency or organization to designate one point person to manage TSM&O information, and that person will participate in various communications activities and attend TSM&O related functions. The participating organizations will include the members of the NTOC Transportation Operations committee and any others that logically should be included.
- An advisory committee can be created comprised of each of these TSM&O designees from each of the agencies and organizational stakeholders.
- Create monthly call-ins for discussion on a specific topic of interest
- Empower agencies and organizations to assist in the identification of funds, grant applications and to facilitate ways to get federal funding for TSM&O.

Create general templates for coordination and interaction between stakeholders to help achieve marketing objectives:

- To maintain segmentation focus, lead role players will be those that interface with the targeted market segments
- Organizations continue to perform core functions

- Cross marketing and leveraging of resources must be committed to by all stakeholders

An example of a major metro market segment template might include:

- AMPO and AASHTO as the lead role players
- Constant players for each market segment would be FHWA, DOT, NTOC as umbrella organizations with designated roles of marketing support to be determined/agreed:
  - FHWA and DOT provide marketing materials
  - NTOC to coordinate all other marketing materials and to interface with direct line agencies AMPO and AASHTO
  - AMPO and AASHTO to provide distribution of information on key TSM&O products used by the major metro segment via websites, emails, newsletters, mailings, conferences and workshops
  - ITSA vendors would provide product support and technical expertise
  - FHWA Resource Centers Operations Teams would provide in person technical expertise for products/services used by segment

Web based and online Promotions:

- Major TSM&O sites maintained by DOT, FHWA, NTOC, AASHTO
- Secondary sites target membership and constituents maintained by NTOC member organizations: AMPO, ITMA, NACo, etc.
- Websites must be prioritized by functionality and segments
- Listing of all TSM&O related websites should be created in one marketing document by function or content
- NTOC member groups to be front line distribution of all online documents and resources to its members and constituents

Print Materials, Case Studies, Peer2Peer and Publications:

- DOT and Volpe Center create and update major research, statistics, studies on ITS

- Marketing of print materials must be coordinated between DOT, Volpe Center, NTOC and other NTOC member groups
- NTOC member groups to be front line distribution of materials to its members and constituents

**In Person Support:**

- FHWA Resource Center Operations Team
- Email, phone and in person project support
- Broad technical expertise, focused on most commonly used ITS: arterial, traffic systems, incident management
- Add staffing expertise over time in specific ITS
- Rely on Member organizations for marketing and outreach

**ITS Vendor Support:**

- Input on blogs
- newsletters
- conferences.

According to research results, many ITS vendors provide significant input on locating and writing grants to sponsor capital purchases of hardware and software. Using vendors' inputs for existing and future communications vehicles will provide a better-informed, user-interested base of TSM&O influencers and decision-makers.

Additionally, increasing overall attendance from the various TSM&O constituents at the vendor-based ITS America convention, along with upgrading TSM&O educational content (impartial seminars, including best practices) and breakout discussion and networking sessions at the ITS America will incrementally increase the TSM&O focus among all constituents.

**VIII. IMPLEMENTATION AND MANAGEMENT APPROACH**

The successful implementation of a national strategic marketing initiative for Transportation Operations will be dependent upon the ability of the key stakeholders to

reach agreement on the roles that each will play going forward. In addition, there needs to be a strong, ongoing commitment to stay with the basic plan and strategies in order to reach the overarching goals and objectives. There will need to be clear accountability in addition to the discouragement of stakeholders working independently without collaborative efforts.

Efforts should be made to ensure that all stakeholders are actively engaged and committed to the plan with involvement at the highest levels of all of the agencies and organizations that play key roles in Transportation Operations. The logical players would be those who comprise the National Associations Working Group (NAWG). Currently, NAWG is a designated committee within NTOC for communications and outreach under the auspices of NTOC. A possible way to make this transition would be to transform the NAWG working group into an official Transportation Operations Advisory Board to coordinate the national marketing and communications activities centrally. A designated Transportation Operations Marketing Director would work integrally with the Board and would be supported by the Advisory Board to achieve agreed upon marketing objectives; however, the lead role for the oversight of the Marketing Plan would rest with the Director.

The current members of NAWG are the following organizations:

- American Association of State Highway and Transportation Officials (AASHTO)
- Association of American Railroads (AAR)
- American Planning Association (APA)
- American Public Transportation Association (APTA)
- American Public Works Association (APWA)
- Association for Commuter Transportation (ACT)
- Association of Metropolitan Planning Organizations (AMPO)
- I-95 Corridor Coalition
- International Association of Chief's of Police (IACP)
- International City/County Management Association (ICMA)
- International Municipal Signal Association (IMSA)

- Institute of Transportation Engineers (ITE)
- Intelligent Transportation Society of America (ITSA)
- National Association of Counties (NACo)
- National Association of County Engineers (NACE)
- National Association of Development Organizations (NADO)
- National Association of Regional Councils (NARC)
- National Conference of State Legislatures (NCSL)
- National Governors' Association (NGA)
- National League of Cities (NLC)
- Public Technology Institute (PTI)
- Transportation Research Board (TRB)

### **Role Players**

The following highlights potential roles that the key agencies involved with TSM&O constituents could play within a centrally coordinated TSM&O framework to create a comprehensive integrated system of email, print, media, and other resources. All of these efforts should be coordinated with the Marketing Director. Following the lead agencies are guidelines to assist state and regional offices can participate actively in the marketing initiatives:

- **FHWA**
  - Provide main coordination, support and resources for the Marketing Director, the Advisory Board and centralized marketing efforts
  - Lead general national marketing efforts at high levels for branding TSM&O, advertising, print materials and other general communications
  - Maintain responsibility for overseeing the master website in coordination with JPO, which will implement and provide ongoing updates for the site
  - Spearhead "Total Operations Concept" branding
  - Coordinate national public relations campaign by issuing press releases about the total operations concept, and monthly releases about specific advances or achievements in various TSM&O products and services
  - Support the Advisory Board efforts in the implementation of the marketing and communications strategies

- **ITS JPO**
  - Provide primary source of research, information and statistics on ITS, and publications on the same in coordination with the Marketing Director.
  - Revamp and then continue to maintain DOT ITS/Transportation Operations website on an ongoing basis, in coordination with the Advisory Board and the Marketing Director. For example, create and upload a searchable, cross-referenced database that draws upon all of the informational/marketing resources accumulated. This “Master” search engine would then be updated, groomed for content and relevancy under the terms of the operations flow chart ultimately adapted, based upon the template shown in the Appendix. The objective is to maintain one all-inclusive, updated database for operations related information sources. Keyword and subject searches would provide access to all identified, credible resources at one time. Update the content of the database, at least annually.
  - Conduct national webinars for targeted market segments, so as to obtain feedback from specific market segments. Create email notifications to the Advisory Board and NTOC members regarding webinars and report on results obtained.
  - Publish case studies and peer to peer studies by market segment. Publicize these studies and examples to market segments and their respective member organizations.
  - Create a branding campaign for the total operations concept by using it in each and every communications document or website that has anything to do with TSM&O.
  - Distribute clear and concise definitions for “operations” and TSM&O that are understandable across the board regardless of technical expertise
  - Solicit speakers at national conference from a minimum of four of the major players
  - Develops interagency/player awareness of ITS/TSM&O issues and solutions
  - Creates awareness of needs/challenges at various constituency levels
  - Designate 2-3 members to take responsibility for coordinating attendance at ITS America national conferences by Transportation Operations stakeholders

- Designates will establish goals for attendance increases at the conference and
- Direct contact with each ITS America conference designate at each of major role players
- Designate 3-4 individuals within organization to coordinate and classify ITSJPO case studies based within the following major demand areas:
  - Traffic Incident Management
  - Road Weather Management
  - High-Occupancy Vehicle Facilities
  - Arterial Operations and Traffic Control Systems
  - Highway-Rail Intersections
  - Freeway Management and Operations
  - Traveler Information
  - Intermodal Freight
  - Commercial Vehicle Operations
  - ITS Architecture Conformity
  - Vehicle Infrastructure Integration
  - Emergency Management and Public Safety
  - Intelligent Vehicle Initiative
  - Cooperative Intersection Collision Avoidance Systems
- Designated individuals would be responsible for coordinating with FHWA and NARC counterparts to create a master list of case studies from FHWA, ITSJPO, and NARC.
- Designated individuals would be responsible for updating the case studies on an annual basis and soliciting new case studies.
- **AASHTO**
  - Provide key leadership and support for State DOTs to participate actively in marketing roles of TSM&O and ITS
  - Maintain a blog and promote the blog to AASHTO constituents
  - Communicate the news/new findings from Technology Implementation Group to segments by usage of blog and create a blog section for Technology Implementation Group to communicate with influencers and implementers of

TSM&O in order to share knowledge and experience as well as encourage communication and cooperation.

- Channel the total operations concept positioning statement throughout its committees and subcommittees
- Add sections on TSM&O in annual meetings to foster the branding of total operations concept
- Brand total operations concept on legislative level by convey the total operations concept positioning statement in transportation meetings and briefings
- **Key Constituent Agencies: NARC, APWA, AMPO, NACo, ITMA, ITE**
  - Provide leadership between key constituents, DOT and marketing initiatives
  - Create a link between the bloggers (influencers segment on the blog) and the specific constituent leadership. For example, NARC would reach out to link up MPOs and the Hill, by addressing issues to the MPOs and the Hill, such as sharing their success/bad stories, experiences, current issues.
  - Brand total operations concept by conveying positioning statement in all marketing materials, newsletters, emails.
  - Monthly or quarterly, identify a constituent champion of a specific TSM&O and publish his/her story (if possible provide his/her contact information so others can contact this individual) an article similar to “In The Spotlight”
  - Coordinate with JPO to identify and classify relevant case studies based within the following major demand areas:
    - Traffic Incident Management
    - Road Weather Management
    - High-Occupancy Vehicle Facilities
    - Arterial Operations and Traffic Control Systems
    - Highway-Rail Intersections
    - Freeway Management and Operations
    - Traveler Information
    - Intermodal Freight
    - Commercial Vehicle Operations
    - ITS Architecture Conformity

Vehicle Infrastructure Integration

Emergency Management and Public Safety

Intelligent Vehicle Initiative

Cooperative Intersection Collision Avoidance Systems

- Designated individuals would be responsible for coordinating with FHWA and ITSJPO counterparts to create a master list of case studies
- Designated individuals would be responsible for updating the case studies on an annual basis and soliciting new case studies and then updating the NTOC website.
- Maximize the awareness of funding opportunities for constituents by actively participating in the blog and sharing its materials
- Designate TSM&O experts to represent agency at meetings or regional and federal conferences
- Educate constituents on an ongoing basis about TSM&O by providing them with FHWA's press releases and other public publishing (see FHWA above).
- Advertise the blog in publications and newsletters and encourage its members to participate, these public safety members are crucial in blog participation due to their daily experience on the roads
- Print clear TSM&O definitions on the last page of every ITMA Journal in order to facilitate uniform adoption.
- Create an annual recognition award for members who had the most innovative and efficient implementation of TSM & O
- **ITS America**
  - Provide key leadership between industry and constituents and users of ITS for the improvement of TOC branding and adoption.
  - Create a link to the TSM & O blog on their webpage as well as on members involved in TSM & O
  - Distribute the total operations concept positioning statement to each manager/president of their member companies, agencies and institutions via email, announcing the total operations concept
  - Make the same announcements to the U.S. Congress thorough the ITS Roundtable

- Channel the TSM&O definitions to its members via ITS America News and Forums
- **PTI**
  - Raise awareness of valuable information and activities relating to TSM&O
  - Encourage its members to actively participate in the blog and share the knowledge
  - Create annual marketing survey instrument to measure public awareness of TSM&O initiatives and needs
  - Publish on NTOC website to create more awareness of publications and information access
  - Compile and analyze data to assess public awareness
  - Create news release for newspapers, radios, and television publication of survey results and potential solutions to most frequently mentioned TSM&O issues (developing and assessing pull strategy success)
- **FHWA regional offices**
  - Make resource and technical team call in numbers and support information available to regional, metro and city TSM & O users by marketing through NTOC members
  - Field technical as well as budget questions at various levels, and make sure that there are experts that can respond to all questions from different market segments
  - Fund (direct or in-kind support) coordinator to oversee centralization
  - Each FHWA staff member would be responsible for bringing one ITE member to the ITS America national conference.
  - National TSM&O conference would be better attended
  - Facilitation of partnership and alliance between public and private operations-focused professionals
  - Provide specific, non-technical and technical examples of TSM&O assistance provided by regional help teams
  - Publish regional help team availability (with examples) on all TSM&O newsletters
  - Designate 3-4 individuals within organization to coordinate and classify NARC case studies based within the following major demand areas:

Traffic Incident Management  
Road Weather Management  
High-Occupancy Vehicle Facilities  
Arterial Operations and Traffic Control Systems  
Highway-Rail Intersections  
Freeway Management and Operations  
Traveler Information  
Intermodal Freight  
Commercial Vehicle Operations  
ITS Architecture Conformity  
Vehicle Infrastructure Integration  
Emergency Management and Public Safety  
Intelligent Vehicle Initiative  
Cooperative Intersection Collision Avoidance Systems

- Designated individuals would be responsible for coordinating with ITS/JPO and NARC counterparts to create a master list of case studies from FHWA, NARC, and ITS/JPO and then posting to NTOC website.
- Designated individuals would be responsible for updating the case studies on an annual basis and soliciting new case studies and then updating the NTOC website.
- **Regional Planning Commissions and State DOTs**
  - Create statewide public relations campaigns to brand TSM&O/ITS/TOC to the public and their city, metro and regional players in TSM&O. Create press releases for new products and services being implemented. Use examples of success stories from other states or from regions and cities within the state to educate the public and the implementers of the benefits of TSM&O and the specific TSM&O products and services.
  - Create a funding road map for city, metro and regional entities that will assist them in finding opportunities to get state funding for TSM&O. Publicize the funding road map through AASHTO, AMPO, NACo website links, or through the ITS JPO website.

- Maximize the links in current State DOT websites to link up cities and regions in implementing TSM&O
- Include seminars and workshops at any State or regional transportation meetings on TSM&O, in order to position TOC and to create cross communications between cities, metro areas and regions
- Distribute clear and concise definitions for “operations” and Total Operations Concept that are understandable across the board regardless of technical expertise.
- Coordinate with NCSL in order to identify needs of elected state officials, e.g. cost benefits, constituent demands.
- Find ways to facilitate partnerships and alliances between operations-focused state and county professionals, providing opportunities at conferences to network and share information.

## **IX. TRACKING AND CONTROL**

The achievement of the strategic marketing goals and objectives is contingent on successful implementation as well as measurement of milestones. The data collection and generation of statistical information to the TSM&O users must be updated on a more frequent basis than in the past, in order to keep everything current.

At minimum, TSM&O surveys on marketing perceptions and communications, usage rates of websites, etc., should be conducted on an annual basis to monitor the progress of the marketing and communications initiatives being implemented. Benchmarks must be measured in order to ascertain the successful increase in TSM&O usage. This will include monitoring measure such as number of inquiries, information usage rates by various agencies, percentage of budgets spent on operations, percentage of budgets spent on ongoing operations maintenance and usage rates of the TSM&O systems once installed.

In addition, using the baseline adoption rates for the key TSM&O services and products gathered in the most recent DOT survey (see Appendix E), rates of adoption should be measured on an annual basis if at all possible and specifically in relation to the objectives

agreed upon. Once that data is compiled and understood, ongoing adjustments can be made to the communications strategy and other aspects that may facilitate the adoption rates.

A sample Flow Chart is included in Appendix G, suggesting a process for coordinating the tasks of intake, support and tracking that will enhance the implementation of marketing and communications coordination. The Flow Chart revolves around an Advisory Board comprised of the organizational stakeholders and a Transportation Operations Marketing Director (for either a newly created organization or within an existing organization structure). The Advisory Board's main role will be in supporting implementation of the plan and the achievement of the plan's objectives through the management of the overall plan's progress, tracking, coordination and other areas of the outreach and communications efforts. The Board will also agree upon the various roles to be assumed by the stakeholders.

In order to help track information from the large numbers of stakeholders and constituents, the following is a starting point for a schedule to implement and track the recommended marketing and communications action plan. Timing and monitoring can be adjusted to reflect potential variances in the abilities and needs of NTOC and its membership base in accomplishing marketing strategies and action plans.

#### ***June to August 2007***

- Select a national TSM&O marketing coordinator or director
- Select and convene the TSM&O Advisory board for the purposes of marketing and communications
- Make early decisions on certain initiatives including positioning statement to be utilized nationally
- Agree on target segments to be prioritized and general plan on how to implement a segmented marketing approach
- Share and discuss marketing plan and communications objectives with NTOC members to obtain buy-in and membership support.

- Develop NTOC member consensus on the strategies and action plans to better define the specific action plan/communications tactics that NTOC members are able to implement.
- Develop a 36-month plan of steps required to put budget into place
- Reach agreement between NTOC members on a centralized “master” website for Transportation Operations and assign webmaster/designer to redesign and update website, based on plan recommendations, in order to drive people to the “master” website and increase optimize the site for search engines. Viewer tracking should be included in design.
- Each NTOC member agency/organization should designate one internal point person to manage TSM&O information for updating and centralizing “master” website.

#### *September to December 2007*

- As a short term solution for creating an interactive website, create a central or main TSM&O BLOG and assign management responsibilities for each of the BLOG topics.
- Initiate work on the new updated “master” website with email newsletter campaign to all NTOC members and interested parties, including elected officials (federal, state, county, and local).
- Develop and launch the “champions” program.
- Develop and launch model users program.
- Plan and implement surveys to update annual information on marketing perceptions, information usage, etc.
- Continuous updating of master website content and BLOG reviews.

#### *January 2008*

- Review unique website (and redundant website) usage.
  - An objective of increasing unique visits by 5% from redesigned launch through December 2007 should be considered the key result.
- Solicit user feedback, testimonials, suggestions, et al.

- Continuous updating of master website content and BLOG reviews.
- Review additional action initiatives to implement.

***January 2008 through July 2008***

- Annual national award for the best TSM&O projects in the country, along with formal recognition of the selected champion.
- First “50 States Champions Award presented.”
- Summary of the last 12-month progress as a special edition newsletter.
  - Website usage/gains
  - Key gains, e.g. adoption/standardization of TSM&O terminology, testimonials on revitalized TSM&O efforts, et al.
- Review feedback and website use, making adjustments as deemed necessary.
- Continuous updating of master website content and BLOG reviews.
- Review and implement additional action initiatives, e.g. new best practices, additional case studies, more cost-benefit analysis, expand technical resource volunteers, et al.

***August 2008 through July 2009***

- Monitor Results: Increase TSM&O adoption in Segment 1 (Major Metro) by 5%; Increase TSM&O adoption in Segment 2 (Model States) by 10%.; Increase TSM&O adoption in Segment 3 (Dynamic Medium Metro) by 8%.
- Annual national award for the best TSM&O projects in the country, and recognize the champion.
- Continue programs, i.e., “50 States Champions Award”
- Summary of the January 2008 through July 2008 progress as a special edition newsletter.
- Conduct a national online survey to measure the overall impact of the marketing plan.
- Continuous updating of master website content and BLOG reviews.
- Review and implement additional action initiatives.

***August 2009 through July 2010***

- Monitor Results: Increase TSM&O adoption in Segment 1 by 5% from July 2009; Increase TSM&O adoption in Segment 2 by 10% from July 2009; Increase TSM&O adoption in Segment 3 by 8% from July 2009.
- Continuous updating of master website content and BLOG reviews.
- Review and implement additional action initiatives.
- Revise marketing plan

Below is a sample visual template for charting activities, milestones, and goals.

<b>Action Item</b>	<i>0-30 days</i>	<i>31-60 days</i>	<i>61-90 days</i>	<i>91-120 days</i>	<i>121-181 days</i>	<i>Over 181 days and Ongoing</i>
Share/discuss marketing plan, communications, and action plan objectives with NTOC members to narrow the specific communications recommendations that it will/can implement and solicit buy-in/approval.						
Develop a realistic budget, identify resources that can be applied to action plan recommendations						
Develop 30 to 60 day plan for necessary steps to implement existing budget plan in alignment with adopted marketing strategies						