



0-6803: New Technology Task Force: Phase II

Background

Texas' 83rd Legislature charged the Texas Department of Transportation (TxDOT) with examining and evaluating innovative transportation technologies for purposes of reducing costs, reducing traffic congestion, enhancing safety, and increasing economic productivity. As a result, the Texas Transportation Task Force (TTTF) was formed, encompassing a group of experts who discussed four areas of emerging transportation technologies: connected vehicles, autonomous vehicles, electric systems, and cloud computing/crowdsourcing technologies.

Phase I of the project ended in August 2013 with a set of recommendations from the TTTF for moving forward in pursuit of the vision of emerging transportation technologies in Texas. Phase II aimed to complete initial background work for a strategic technology business plan and establish a work plan for completing the strategic plan in later phases. Once completed, the strategic plan will serve as a guide to bringing together the public and private sectors in the creation of an economic roadmap to diversify and strengthen the state economy and transportation system through transformative emerging technology adoption. The plan will analyze the state's transportation, information, and communication technology industries; establish state goals and objectives; develop an action plan for implementation; and articulate investment priorities and funding sources.

What the Researchers Did

Preliminary work completed for the strategic business plan in Phase II includes the following topics:

- Review of other technology development plans from the federal government, other states, and industry.

- Development of a work plan for the completion of a strategic business plan.
- Internal and external environmental scan.
- Texas economic strengths, weaknesses, opportunities, and threats (SWOT) analysis.
- Vision and strategy development.

What They Found

Review of Other Technology Development Plans from the Federal Government, Other States, and Industry

National, state, and industry plans are quickly changing to meet the growing interest in emerging transportation technology developments. Consequently, new test bed arrangements are being made. State and federal officials are demonstrating support for further research and testing to make new technologies implementable. New industry products and partnerships are being formed for further development.

Development of a Work Plan for the Completion of a Strategic Business Plan

The work plan for the completion of the strategic plan includes three major research stages: background research, strategy development, and roadmap and execution plan. Each phase consists of several subtasks to produce the corresponding sections. In total, eight major subtasks were identified.

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Project Completed:

12-31-2013

Internal and External Environmental Scan

An environmental scan was completed to serve as an inventory of resources within TxDOT, within Texas, and nationwide that can be leveraged for support in future work and partnerships in transportation technology. As an extension to the initial SWOT analysis, a detailed scan of the available resources internally and externally can lead to a comprehensive understanding of the opportunities and challenges for technology development in Texas. The environmental scan was divided into the in-state internal resource scan and the out-of-state external resource identification.

Texas Economic SWOT Analysis

The preliminary SWOT analysis for Texas transportation technology development focused on general social needs and the economic, policy, legislative, and funding aspects. The task force attempted to identify the unique characteristics that differentiate Texas from other states. The insights of the general SWOT analysis will be helpful for a more detailed technology-specific SWOT analysis to be conducted in the next phase of the project.

Identified strengths include the state's population growth, technology industry presence, and governmental agency organization and priorities. Identified weaknesses included decreased transportation revenue, autocentric development, and resource limitations. Potential opportunities include government support for innovative technologies, innovative solutions motivated by increasing traffic congestion, stakeholder support, and others. Finally,

identified threats include competition from other states in the forefront of technology development and innovation, and legislative barriers at both the state and national level.

Vision and Strategy Development

The TTTF established a vision for emerging technologies in Texas in Phase I that was restated in Phase II. Based on the vision, criteria for assessing success were proposed to guide work toward technology development. The task force considered the success of the transportation technology development program from several different perspectives, such as potential economic gain, advancements in the state of the knowledge and practice, stakeholder engagement, and cooperation and collaborations.

What This Means

The research outcome of Phase II includes a work plan and some preliminary background research and preparation for the strategic business plan. In Phase II of the project, the task force focused mainly on the background research with respect to the SWOT analysis, environmental scan, and vision and strategy development. To complete a workable business plan, a great deal of research and strategic planning must be completed, especially in the areas of economic impact and industrial impact assessment, technology-specific policy, and business development strategies. The original work plan provides the guidelines for the completion and implementation of the strategic business plan in future phases.

For More Information

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Keyword: Research