

Texas Department of Transportation: Organizational Structure Considerations

Addendum to the Independent Assessment Reports

July 20, 2007

Foreword

The Texas Department of Transportation (TxDOT or “Agency”) contracted for five independent assessments of its management and business operations to prepare for the 2009 Sunset Review process. The auditable units assessed included Transportation Funding, Contracting and Project Delivery, Consumer Services, Management and Support Functions, and Field Operations. TxDOT retained Deloitte Consulting LLP (“Deloitte Consulting”) to conduct the independent assessment of TxDOT operations related to Auditable Unit D — Management and Support Functions. The objectives of this project were to assess high-risk areas of TxDOT’s management and support functions to improve the quality of the statewide transportation services, identify opportunities for enhancing revenue to maximize financial resources available, develop strategies to remove operational barriers and improve the efficiency and effectiveness of operations, highlight exemplary and innovative practices, and recommend opportunities for reducing risks and improving operations at TxDOT’s headquarters.

This addendum is being submitted with the Management and Support Functions assessment as a response to a preliminary review of the independent assessment reports and subsequent questions about TxDOT’s overall organizational structure. Since the information provided in this report is outside the scope of the assessment workplan, it is being submitted as an addendum rather than as part of the independent assessment.

Based on the data in the assessments and the observations made during the assessment project period and leveraging our experience with other organizations of this complexity, this paper provides the following sections:

- Executive Summary: A high-level summary of this report’s findings, conclusions, and recommendations.
- Organizational Structures: Description of the six common organizational structures and identification of TxDOT’s structure
- Organizational Design Considerations: Identification of organizational design principles
- When to Redesign: Review of five criteria used to evaluate appropriate timing of redesign efforts
- Conclusion: Discussion of the conclusions based on report analysis
- Recommendations: Recommendations for potential next steps

Contents

- Section 1 – Executive Summary 1
- Section 2 – Organizational Structures..... 2
- Section 3 – Organizational Design Considerations 4
- Section 4 – When to Redesign 5
- Section 5 – Conclusion 6
- Section 6 – Recommendations..... 7

Section 1 – Executive Summary

TxDOT is a hybrid organizational structure, combining two different types of structures to accomplish its organizational objectives. For TxDOT, the strengths of this type of model include the Division-level functional groups, such as HR and Finance, becoming very adept in their disciplines. At the District levels, the District engineers have the autonomy that allows them to plan for and react to District-specific circumstances. Weaknesses at all levels include minimal opportunity for standardization, efficiency, and cross-functional solutions.

Management can decide to reorganize for a number of reasons. Common factors include external market factors, internal changes to the process or value chain, or whether the strategy has changed. At TxDOT, the level of uncertainty is increasing as new ways of doing business are taking shape. The level of activity concerning the new categories of solutions, such as Regional Mobility Authorities, Toll Roads, Pass-Through Toll Financing, State Infrastructure Bank Loans, and CDAs, is uncertain; however, currently, the vast majority of the work TxDOT performs remains within the District Offices. The expected shortages in finances and labor supply also contribute to this level of uncertainty.

There are some risks in the overall organizational structure due to the new business solutions, resource supply and demand, and the level of uncertainty, but the existing organizational structure does not represent a high level of risk to the mission or objectives of TxDOT at this time. However, the risk level will increase as the following occur:

- Senate Bill 792 expires. Currently, this moratorium prohibits TxDOT from entering into new agreements for two years, but once this bill expires, it is expected that CDA activity will increase.
- The supply and demand of resources align with forecasted estimates. Both labor and financial shortages are expected. TxDOT has a strategy to mitigate the financial shortfall through new types of funding solutions; however, it is yet to be seen how the labor shortage will impact TxDOT and whether a strategy for addressing this labor supply issue will be put into place.

TxDOT needs to gain clarity on its strategy, objectives, and organizational needs in relation to organizational capability and the aggregate skills and abilities of its workforce. The first step toward strategic organizational redesign is to understand the gap between where TxDOT's organizational capability is today and where it needs to be to fulfill its strategy and objectives. An organizational gap analysis details both the current and to-be design as well as identifies activities to close the most critical capability gaps.

Section 2 – Organizational Structures

An organizational structure defines the way in which interrelated groups are constructed and interact to get work done. Each agency's particular situation and need will determine the specific definition of organization. An organization can refer to a whole agency or just one part of it. It can comprise tens of thousands of people or just a few dozen.

While each organizational design is somewhat unique, there are a small number of fundamental configurations that describe most organizational forms. These configurations can serve as models for most organizational design work. Management should consider each structure and its inherent strengths and weaknesses in light of how it enables individuals to contribute to organizational objectives and strategy. These structures are described in Table 1.

Table 1: Organizational Structures

Type of Structure	Description	Strengths	Weaknesses
Geography/Customer	Organization structured around location or customer types.	Single point of contact, high market awareness, easier for customers to interface and interact.	Less sharing/higher costs, more product or service variability.
Functional	Organization structured by professional disciplines such as marketing, finance, and information technology	Easier to maintain functional expertise, staff tends to be more loyal to profession, usually has lower cost at the unit level.	Tends not to have end-to-end customer view, functional priorities sometime are conflicting, more difficult to change processes due to segregation of functions.
Team Based	Organization working in a project-oriented business with skills and activity overlaps among teams.	Highly collaborative work units, integrated functions, and backup skills.	Some redundancy of functions, lower sense of functional accountability.
Process	Organization structured around its core business processes, and manages processes continuously.	Easier coordination, focused on the customer, more flexible, minimal segregation, flatter, staff gain broader knowledge of the business.	Difficult to implement and sustain, requires cross-functional expertise, long-term management commitment.
Product/Services	Organization structured largely by product groups or service areas.	Centralized accountability, higher quality, faster decision making, focused on the customer of each product/service group.	Lower sharing of functional skills, slightly higher costs, narrower careers, conflicts of product priorities versus enterprise priorities.
Matrix	Organization structured by multiple dimensions such as customer segments (public sector, industrial, health care, etc.) with supporting service area or product horizontals.	Flexible resource planning, high functional expertise exposed to variety, forced cooperation service areas.	Multiple bosses, competition for valuable resources, play managers against one another.

Hybrid organizations are when two or more traditional forms of organizational design are combined. Hybrid organizations are common when the entity is large or geographically dispersed or dealing with complex processes. Strengths of using a hybrid model include the ability to leverage the strengths and weaknesses of each of the models being combined. Weaknesses of the model include some duplication across the organization, as well as a more complex managerial structure. This complexity affects managerial control and coordination of activities across the organization.

Like most organizations the size and complexity of TxDOT, its structure reflects the characteristics of more than one type of structure. Therefore, it is necessary to consider both structure types and the strengths and weaknesses of each to determine the effect of the structure on the objectives and mission of the Agency.

A functional organization is apparent at the Division level as can be seen by the specific departments organized by discipline, such as Finance or HR. While the Division structure was not assessed in areas outside those specified in the assessment report, the following are typical characteristics of this type of structure and anecdotally appear to be currently the case at TxDOT.

Table 2: Division Structure Assessment

TxDOT Division Structure	
Strengths	Weaknesses
Ideal when specialized resources are required.	Difficult for individuals to take quick action or make decisions if they require input from more than one functional area.
Collaboration and quality is probably high within each function.	Lack of adaptability to a changing environment may occur within each functional area.
Supervision within the function is less complex than with other models.	Cost reduction and organizational efficiency may be a challenge.

At the District level, however, a geographic organization exists. This model allows District management the necessary autonomy to react to local project-related events and relate the environmental issues to projects and maintenance and the discretion to make business decisions based on this knowledge. However, there is little opportunity for the Districts to share successes or to standardize processes in order to leverage economies of scale for mission support functions. The table below outlines specific strengths and weaknesses.

Table 3: District Structure Assessment

TxDOT District Structure	
Strengths	Weaknesses
TxDOT District and Area management have a deep understanding of the political landscape.	Common problems are not typically shared across Districts; very little communication concerning innovative and effective solutions.
District employees, particularly engineers and specialists, know the geography and how it affects projects.	Structure does not facilitate efficiency and process consistency, which means the duplication of processes and high overhead cost.
District Engineers have a level of autonomy that allows them to plan and react to specific District goals and challenges.	Standardization of policy and programs is difficult to achieve. The result is that overall business strategy is more difficult to implement, and functional areas are more difficult to coordinate across geographies.

Section 3 – Organizational Design Considerations

Effective organizational design should be a function of both market conditions and management's strategy and goals. The design should reflect both the business environment and management's strategy and goals — these are more than boxes and lines. The aim is to balance the formal, such as structures and performance measures, and the informal, such as workgroup dynamics. Further, the activities concerning producing a design are not always democratic. Although employee participation is key to the building, rollout, and implementation of a new design, some difficult decisions need to be made by senior executives in order to realize the design's benefits.

There should be a balance of the supply and demand of resources for every organizational unit and individual. The supply of resources is determined by the level of control over resources as well as the level of support that an organizational unit or individual has. The demand of resources is based on the accountability assigned to organizational units and the degree of influence an organizational unit or individual has to exercise to meet its goals. Effective organizational design also balances the tension between "differentiation" and "integration." There is a need for differentiation to allow for both economies of scale and specialization while providing adequate integration to allow for coordinated work and realization of interdependent goals.

The design should help process information most efficiently. It should build the capacity of the organization to process information in keeping with the level of uncertainty faced by the organization. Higher levels of uncertainty require higher information processing capacity in the form of reporting structure or integrating mechanisms.

There is no perfect design — each design poses its own challenges that need to be addressed by the design elements.

Section 4 – When to Redesign

Several criteria are used to consider when change is appropriate. These factors include external market factors, internal changes to the process or value chain, or whether the strategy has changed. Using the six common criteria below, it is clear that the impact of CDAs on the organization could have a significant impact on the Agency; however, the District Offices and the traditional work of TxDOT are not at risk unless significant resources are drawn away from this traditional work to the point of impacting the Districts' operations. While TxDOT is currently operating under a moratorium that restricts new CDAs, several existing CDAs are moving forward. For that reason, it is not advisable to disregard the impact these agreements will have on TxDOT's ability to fulfill its mission and objectives.

Table 4: Redesign Criteria

Criteria	TxDOT Environment	Applicable
The organization is starting up a new company or division.	The process of dealing with CDAs includes Mobility Initiative Offices, which are run separately from the District Offices. District employees supply the personnel for the office, and Division resources are used on an ad hoc basis.	<input checked="" type="checkbox"/>
The organization is planning to grow.	Based on TxDOT's findings, Texas will experience a 64 percent increase in the population and a 214 percent increase in the use of roads over the next 25 years. ¹	<input checked="" type="checkbox"/>
The organizational strategy has changed.	TxDOT is supporting five new categories of transportation solutions to address the increasing demands for TxDOT services. These categories include Regional Mobility Authorities, Toll Roads, Pass-Through Toll Financing, State Infrastructure Bank Loans, and CDAs. ²	<input checked="" type="checkbox"/>
The organization of the business has changed as a result of a merger, acquisition, or divestiture.	Not applicable	<input type="checkbox"/>
There has been a major change in the external environment.	The demand for TxDOT services is outpacing the funding for these services. The new categories of solutions increase the number and types of stakeholders TxDOT will be working with to address transportation solutions.	<input checked="" type="checkbox"/>
The organization is not delivering the performance expected.	Not applicable	<input type="checkbox"/>

¹ *Texas Transportation Challenge*, http://www.txdot.gov/services/government_and_public_affairs/challenge.htm.

² *TxDOT Open for Business: A Guide to Acceleration of Transportation Projects*

Based on the analysis above, TxDOT is experiencing a change in the way it does business. The level of uncertainty is increasing as new ways of doing business are taking shape. It also remains to be seen what the level of activity concerning the new categories of solutions will be; however, currently, the vast majority of the work TxDOT performs remains within the District Offices.

The degree of organizational change required to address emerging changes in environment or strategies varies depending on the amount of change needed to accomplish the organizational objectives. Changes in environment or strategic objectives can be accomplished by redesign across an entire organization or focused on a particular organizational unit.

Section 5 – Conclusion

There is some level of risk anytime an organization develops new ways of doing business, as is the case with TxDOT and the development of CDAs and other new categories of solutions. The effect of these solutions on the organization is yet to be fully realized. One risk is supporting new business to the detriment of older, existing lines of business. Given that resources have constraints, using more resources on new business solutions will decrease the resources available for the traditional lines of business. There is always a trade-off between resources and the capability of a business unit to reach its objectives. Resources in this context could be financial or human capital, such as the use of highly-specialized skills. Additionally, within TxDOT's business environment, increasing levels of uncertainty are present due to growing demands for TxDOT's services, the legislative environment, and the expected shortages in both finances and labor supply.

While there are some risks in the overall organizational structure due to the new business solutions, resource supply and demand, and the level of uncertainty, the organizational structure does not represent a high level of risk to the mission or objectives of TxDOT at this time.

The risk level will increase as the following occur:

- The Toll Road moratorium (Senate Bill 792) expires. Currently, this moratorium prohibits TxDOT from entering into new agreements for two years; however, selected existing CDAs will move forward. The current process and skill risks concerning these projects could become more significant as TxDOT increases the number of transportation projects being managed in this manner. According to the independent assessments, there are some processes, technology, and knowledge management issues that will need to be resolved in order to manage the CDAs effectively.
- The supply and demand of resources align with forecasted estimates. Currently, TxDOT is facing a budget shortfall. In addition to this shortfall, a labor shortage is forecast to occur in the near future. These forecasted resource shortages will affect the ability of TxDOT to reach its objectives.

Section 6 – Recommendations

As TxDOT's new business solutions mature and the impacts are realized, TxDOT will need to revisit and update its strategy, objectives, and operational needs to reflect those solutions and the business environment. TxDOT needs to gain clarity on its strategy, objectives, and organizational needs in relation to organizational capability and the aggregate skills and abilities of its workforce. The first step toward strategic organizational redesign is to understand the gap between where TxDOT's organizational capability is today and where it needs to be to fulfill its strategy and objectives. An organizational gap analysis details both the current and to-be design as well as identifies activities to close the most critical capability gaps. This analysis could be performed for the Agency as a whole or on specific areas that represent significant risks or areas of significant business improvement opportunity. This analysis is the foundation for identifying the activities that will close the gap between the current and targeted capabilities.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu, a Swiss Verein, its member firms, and their respective subsidiaries and affiliates. Deloitte Touche Tohmatsu is an organization of member firms around the world devoted to excellence in providing professional services and advice, focused on client service through a global strategy executed locally in nearly 140 countries. With access to the deep intellectual capital of approximately 150,000 people worldwide, Deloitte delivers services in four professional areas — audit, tax, consulting, and financial advisory services — and serves more than 80 percent of the world's largest companies, as well as large national enterprises, public institutions, locally important clients, and successful, fast-growing global companies. Services are not provided by the Deloitte Touche Tohmatsu Verein, and, for regulatory and other reasons, certain member firms do not provide services in all four professional areas.

As a Swiss Verein (association), neither Deloitte Touche Tohmatsu nor any of its member firms has any liability for each other's acts or omissions. Each of the member firms is a separate and independent legal entity operating under the names "Deloitte," "Deloitte & Touche," "Deloitte Touche Tohmatsu," or other related names.

In the United States, Deloitte & Touche USA LLP is the U.S. member firm of Deloitte Touche Tohmatsu and services are provided by the subsidiaries of Deloitte & Touche USA LLP (Deloitte & Touche LLP, Deloitte Consulting LLP, Deloitte Financial Advisory Services LLP, Deloitte Tax LLP, and their subsidiaries), and not by Deloitte & Touche USA LLP. The subsidiaries of the U.S. member firm are among the nation's leading professional services firms, providing audit, tax, consulting, and financial advisory services through nearly 40,000 people in more than 90 cities. Known as employers of choice for innovative human resources programs, they are dedicated to helping their clients and their people excel. For more information, please visit the U.S. member firm's Web site at www.deloitte.com