

# Enterprise asset management for the future of public transit

Concepts and capabilities for  
overcoming today's challenges

A large, solid red chevron graphic pointing to the right, positioned behind the text "High performance. Delivered."

**High performance. Delivered.**



# Introduction

US public transit agencies face steadily rising costs along with increasing demands from stakeholders— their customers, local governments, or the Federal Transit Administration (FTA)—with its new State of Good Repair (SGR) requirements. As agencies work to meet these demands, two key issues frequently stand in the way: a fundamental lack of transparency into their assets and data, and a lack of awareness of—and commitment to—comprehensive, integrated asset management across the entire organization.

To overcome these issues, agencies need to take a number of steps, beginning with creating a vision for a holistic and transparent transit asset management (TAM) program and moving through to an implementation plan designed to transition from the current state to the future vision.

Accenture's extensive experience in implementing these approaches allows our clients to reduce time, cost and risk. This paper will address the future of public transit as it relates to enterprise asset management (EAM) and introduce Accenture's approach to helping clients become high performers.



# High Expectations

## Systems at Risk

Public transit agencies in the US today face increasing challenges as a result of rapidly increasing costs, highly constrained funding and aging infrastructure. With budgets tight, agencies have been forced to raise rates, reduce services and defer maintenance, even as the number of riders and the demand for new services has steadily increased.

Simultaneously, the expectations for safety and performance are greater than ever, whether from the governments that fund these agencies or the riding public who use their services. As a result, pressure has risen from all sides to use existing funding as wisely as possible, achieving the highest reliability at the lowest cost. Agencies are also expected to reduce the number of incidents—i.e. any disruptions of normal operations—and quickly resolve those that occur, as well as stretch the useful life of assets before replacing them.

## A State of Good Repair

While recent federal legislation has infused much-needed dollars into transit agencies to fund asset replacement, the backlog of assets not in a condition to provide efficient, reliable and safe service, or a "state of good repair," remains alarmingly high. The US Department of Transportation most recently targeted the national transit SGR backlog at over \$80 billion and growing \$2.5 billion annually.<sup>1</sup> In fact, in a recent Accenture survey of transit asset managers, half stated that their organization could not meet even 25% of their SGR backlog at current funding levels.<sup>2</sup>

As transit agencies begin to assess the state of their operations, a sobering reality becomes evident: there is no way to "buy" an organization into SGR. No amount of funding, either from the fare box, FTA, or other local and state sources, will allow an agency to simply replace all of its deteriorating assets and satisfy all its stakeholders. Rather, agencies must make a coordinated effort from the top down to drive out inefficiencies, increase reliability, improve safety and performance and extend their assets' useful life.

For most agencies, however, two hurdles must be overcome. The first is a lack of visibility into their own assets and services, impeding their ability to work within FTA guidelines and progress to a state of good repair. The second, and equally important, is the lack of a comprehensive asset management program: one that extends across the organization and is supported by stakeholders and agency personnel alike.



# Challenges

## Visibility required

To meet FTA guidelines and begin their journey to a state of good repair, agencies must first be able to offer detailed breakdowns of their existing assets, including asset type, asset condition, useful life and similar details. Yet for most agencies, this type of information is not typically captured or easily accessible—including information that would provide the history of an asset's condition, any inspections that have taken place (such as mandatory track inspections), the asset's performance and its maintenance-work history to date.

Instead, many multimodal agencies have legacy organizational structures that have drawn strong lines between departments, making it difficult to share data, create common objectives or implement seamless asset-management strategies. It is not uncommon that methods, systems and even cultures vary between service lines inside the same agency. The bus division, for example, may have fully deployed a maintenance system for work management, while the rail division still uses manual approaches or PC-based tools.

Agencies, as a result, tend to have a patchwork of computer systems accumulated over a period of years. These systems do not integrate well or provide top-level, real-time information on the operational status of assets and the implications for customer service and schedules. And agencies are starting to take notice: while only 25% of organizations report using a comprehensive EAM system as the primary tool for their vehicle asset management, asset managers have identified having a single centralized system to manage all transit assets as their greatest TAM investment need going forward.<sup>2</sup>

An EAM system, well-integrated and with the appropriate data, would allow agencies to gain transparency, make clear an asset's full renewal or replacement cost and help prioritize and support smart funding decisions. It would also allow them to develop more customized maintenance strategies: strategies that would better balance costs against reliability.

## Awareness and commitment

Adding to these transparency issues is a shortage of established transit experts with a deep understanding of asset management, either on agency staff or among the contract workforce. As the baby boom generation ages, many established experts who grew up with the expansion of transit systems in the 1950s, '60s and '70s are retiring; in fact, Accenture predicts a shortage of strong transit asset managers across the industry over the next several years.

Making matters worse, very few transit agencies make the best use of knowledge-sharing tools and innovative training approaches to share best practices, instead relying on more informal approaches such as on-the-job training and the passing on of so-called "tribal knowledge," the riskiest and most inefficient way to share information.

Current transit asset managers see this issue as critical, listing TAM comprehension by the agency as one of their three greatest concerns. More than half state that most employees do not understand their agency's vision and program for asset management.<sup>2</sup>

Overcoming this lack of comprehension requires a commitment from the organization—typically driven from the executive level—to instill a permanent culture of strong asset management, apply it across all units and departments and support it with appropriate resources to thrive. This is proving quite challenging for most agencies: transit operators report spending about one penny on TAM tools and technology for every \$10 in total budget.<sup>2</sup>

# Creating Operations Transparency

## Finding OT

Transit agencies must begin by identifying new ways to infuse transparency into their data, their processes and their programs. This will mean creating clear communications around the status of each asset and its useful life, primarily through the use of appropriate technologies—whether systems, processes or tools. It will also require thorough data collection, data analytics and the development of predictive models, all working within one harmonious operating organization.

Succeeding in such an effort can be complex and time-consuming. However, Accenture clients have found great success through "Operations Transparency," or OT,

our framework for improving asset visibility and planning. OT helps agencies integrate all critical systems, data, processes and personnel, creating an operating model that gives agencies real-time, contextual visibility across their service planning, asset management and resource planning systems (Exhibit 1).

Laying the foundation for OT is a four-step process designed to align the organization's data, technology, processes and people with an overall vision for seamless and transparent transit operations. The result is a well-designed transit data model and open environment providing integrated, real-time information for better decision making. Accenture clients have successfully translated this visibility into significant

improvements in system reliability and work efficiency, coupled with significant decreases in capital and maintenance backlogs.

One US transportation agency wanted to create operations visibility to improve its decision making and increase management control. Implementing OT principles helped the agency integrate its financial- and materials-management capabilities and develop a single, integrated EAM toolset that increased visibility around maintenance events – helping the agency make smarter decisions. Simultaneously, the agency was able to improve its on-time performance and fleet utilization, while achieving improved compliance with FRA inspections.



Exhibit 1: Operations Transparency throughout the organization



# The Journey to Enterprise Asset Management

## Three phases

To create a robust TAM program, agencies must be willing to undertake a whole-enterprise journey, as it requires executive vision and collaboration across multiple departments. Such collaboration will allow agencies to establish standard processes and mold them into a single framework, letting them make full use of their data.

We believe there is a three-phase progression toward EAM maturity (Exhibit 2):

- 1. Strategize:** Agencies should begin with an assessment phase wherein existing tools, processes and capabilities are mapped against a future-state vision for the TAM program. Developing a business case and roadmap for the program will not only save time and money by organizing next steps, but also help secure critical internal stakeholder buy-in.
- 2. Build:** With a roadmap in place, agencies can begin to meet the agency's basic needs for asset visibility and FTA compliance. Key steps include completing asset registries and condition assessments, installing or upgrading the integrated EAM system,

incorporating strong asset- and work-management practices and developing TAM plans and investment prioritization for FTA reporting.

- 3. Optimize:** Once a working solution is in place, agencies should consider strategic investments, with the goals of enhancing system safety and reliability, improving the business and reducing the SGR backlog. Advanced maintenance programs, end-to-end lifecycle-management processes, analytics- and performance-management systems, and field-force and spatial capabilities all come into play at this juncture.

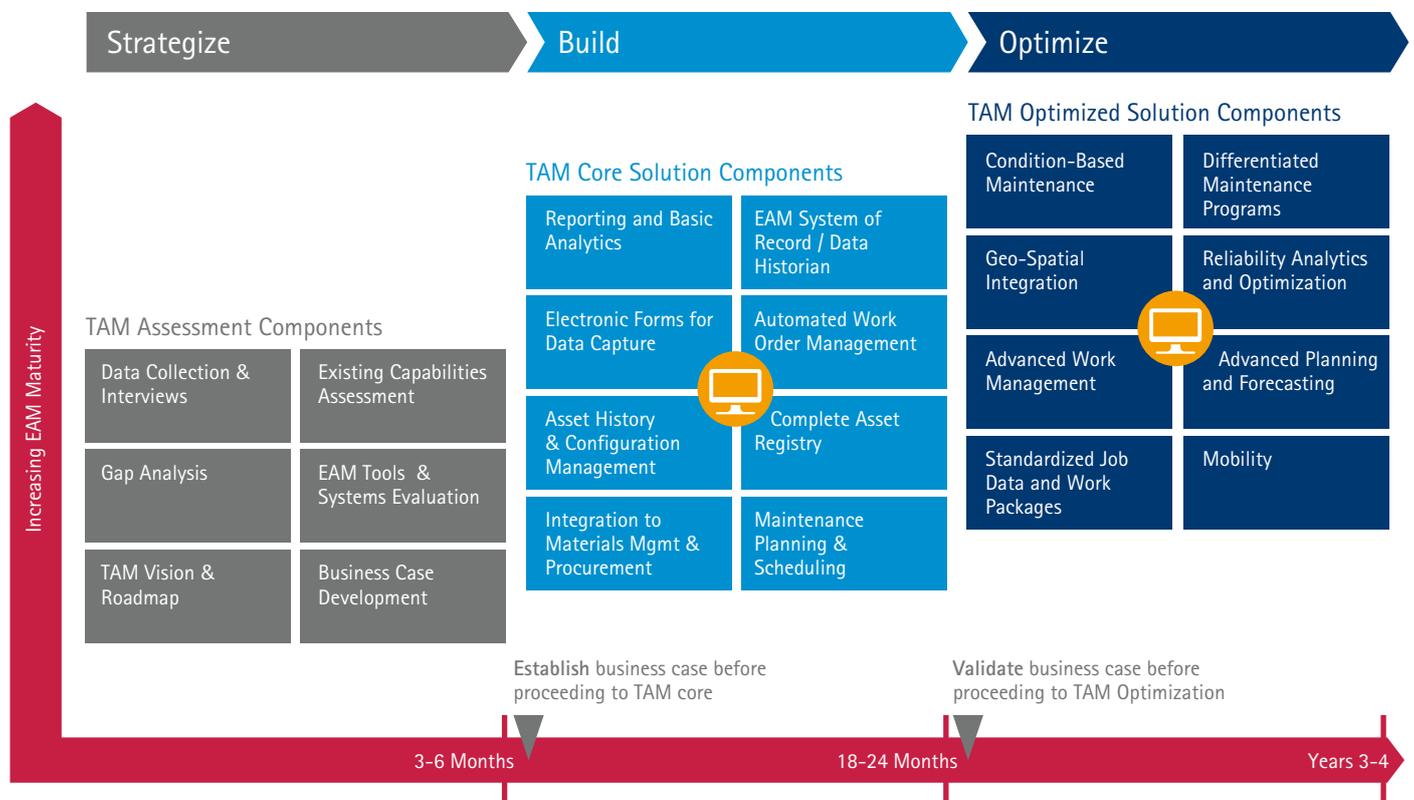


Exhibit 2: Accenture's 3-phase approach to EAM maturity

## Gaining commitment

To be truly successful, agencies must continuously monitor and renew their TAM program, keeping it in alignment with the organization's goals and mission, incorporating evolving tools and recommended practices and ingraining it into the agency's culture. As the saying goes, infrastructure is every executive's second-favorite priority—a nod to the fact that investing to maintain the existing system is rarely as alluring as expanding the system or taking on new initiatives.

To combat this challenge and keep commitment to the TAM program strong, agencies must maintain a clear strategy, broad communications and a detailed business case populated by quick wins in the short term and significant gains in the long term. As the program matures and benefits are realized, OT and TAM evolve from an interim program to "just the way we do business."

## Stay flexible

The potential value of a full EAM transformation such as OT is increasingly recognized across industries. Businesses today understand that it boosts revenues, cuts operating expenses, optimizes the use of both fixed and working capital and reduces the liabilities that operators face from poor or inconsistent service.

Nonetheless, we recognize that not all clients are ready for the dramatic nature of a comprehensive EAM journey. The path to EAM will be different for every agency, and organizations often find that various parts of the agency are at different phases of the journey. As a result, a better approach for a specific client may comprise targeted investments in specific new TAM capabilities.

## Accenture Tools and Capabilities for Transit Asset Management

Accenture's broad skills set us apart in the industry and give our clients a teaming partner who can share with them a comprehensive approach to TAM.

We help agencies assess and map out their vision and journey, guiding them as they put together a solution that exploits their newfound asset transparency, helps to improve decision making and provides easy integration with FTA requirements.

We provide program management, executive governance and the change initiatives necessary for a truly transformational EAM program, including:

- Program Management
- Gap Analyses
- Strategy & Roadmap
- FTA Metrics and Reports
- Performance Management
- TAM Business Process Models
- Organization & Change Management
- Maintenance & Asset Optimization Tools
- Investment Plans & Reporting
- Mobile and Field Force Services
- Predictive Monitoring
- EAM System Integration
- Transit Data Models
- Service Oriented Architecture

To support our clients quickly, we have developed a full suite of flexible solutions designed to help them become high-performing transit asset managers no matter their stage on the TAM journey.

**EAM diagnostic and assessment toolkits:** A toolset that enables us to quickly evaluate a client's current asset management capabilities and recommend areas of improvement

**EAM delivery methods:** An EAM-specific integrated suite of methods for helping with end-to-end implementation, including templates for program, project and change management and reusable samples from multiple EAM implementations

**High-performance business-process model (BPM) for rail and transit:** An integrated EAM model based on industry standards and available in major BPM tools from IBM and Oracle as well as in Visio

**Maintenance supply-chain transformation offering:** A suite of tools to help with efficiency and productivity improvement efforts, design of strategic maintenance programs and integrated supply and demand planning

**On-premise and cloud-based implementation for transit EAM systems:** On-site and hosted instances of major EAM applications (IBM Maximo, Oracle, Infor, SAP EAM) for which we have modeled standard asset and work management scenarios and developed transit-specific templates to accelerate implementation.

# Summary

To optimize transit operations within today's budget constraints and meet the demands of the FTA's SGR mandate—effectively doing more with less—will require fundamentally new models and approaches to asset management.

When done properly, the potential benefits are significant.

For one large rail client, Accenture created a strategic asset-management program that transformed components of its operations, finance and materials management across the enterprise. The program resulted in increased fleet utilization, a reduced maintenance backlog (through increased productivity), reduced inventory, improved on-time performance, greater visibility into maintenance events (allowing smarter decision-making) and \$5 million in reimbursable work done for others.

As we have for many of our clients, we can help you start and navigate what will be a transformative journey. Accenture has a global EAM practice of over 1,000 resources focused on management and technology consulting, supporting 1,600 industry professionals worldwide that form our Transportation and Travel Services practice. This vast network makes us unique in the industry, one of the few teaming partners who can provide transit agencies with true end-to-end services. We have broad experience in implementing EAM and OT and providing transparency across the enterprise while lessening the impact of current—and future—resource constraints.



Current conditions leave transit agencies with a narrow road to follow if they are to balance budgets and customer service against aging assets. But with a clear vision and strategic investment in the right TAM tools and services, agencies can gain the efficiencies and transparency they need, allowing them to focus on what really matters: delivering safe and reliable service to their customers.



## References

1. 2013 Status of the Nation's Highways, Bridges and Transit: Conditions and Performance, US DOT, 2014
2. Enterprise Asset Management for Public Transportation Survey, Coleman Parkes Research on behalf of Accenture, 2013

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## About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 281,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$28.6 billion for the fiscal year ended Aug. 31, 2013. Its home page is [www.accenture.com](http://www.accenture.com).