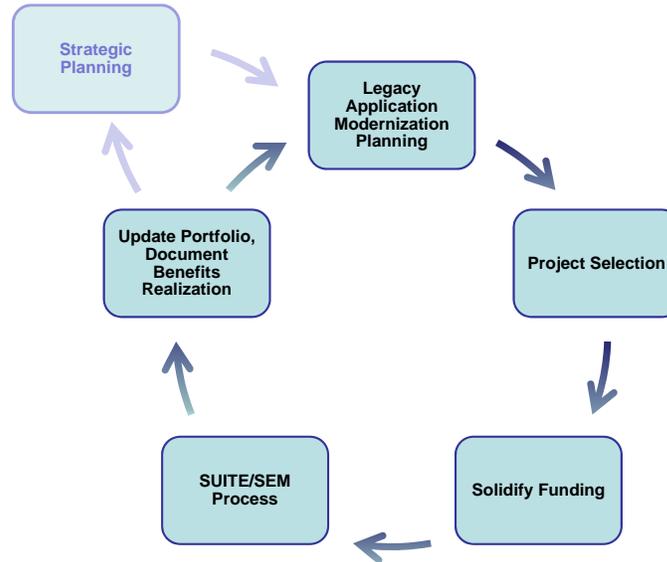


**2012 Michigan NASCIO Award Nomination DRAFT  
MiLAMP Battles Debt Threat**



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**Category:**

Fast Track Solutions

**Previous NASCIO Nomination:**

None

**Previous Recognition:**

Presented at 2012 American Association of State Highway & Transportation  
Officials (AASHTO) IS Conference, May 14-17, 2012

## **2. EXECUTIVE SUMMARY: MiLAMP BATTLES DEBT THREAT**

Aging applications are the source of a \$500 billion global IT debt that is predicted to balloon to \$1 trillion by 2015. MiLAMP provides a powerful weapon for attacking one of the CIO's most expensive, but often-underdeveloped and problematic areas: legacy application modernization.

Changing environments, deferred maintenance, or hidden coding defects quickly cause older applications to spend more of the budget each year. Eventually, costly replacement, or re-writing, becomes the only sensible option. This looming expense and its threatening liability, termed IT debt, are "the cost of clearing the backlog of maintenance that would be required to bring the corporate applications portfolio to a fully supported current release state." Because of the fiscal impact, with efficiency and performance implications, NASCIO has chosen legacy modernization as a key issue.

Although Michigan policy puts a high priority on accountability, asset management, and technology which emphasizes innovation, creativity, and efficiency; budgetary constraints and lack of a cohesive approach meant that Michigan, like many states, could not adequately service its IT debt. An excessively large legacy portfolio, including around 400 of Michigan's 2,164 applications with an estimated value of nearly \$1 billion, was damaging the State's 17 major agencies. While causing continuous headaches for support personnel, these systems were impacting the budget, operation, and quality of service to Michigan's 9.5 million residents. Immediate fast-track action was required!

To confront these problems, the Michigan Department of Technology, Management and Budget (DTMB) formed a rapid-response customer service improvement team who created the Michigan Legacy Application Modernization Plan (MiLAMP) Roadmap in less than 6 months. MiLAMP is an enterprise portfolio management methodology comprised of tools, templates and processes to address all phases of legacy modernization with an online toolset that makes innovative use of existing technology and is available to all stakeholders within DTMB and the agencies. The result is a standard state-wide means to modernize aging applications, leverage new technologies, consolidate, collaborate, and prioritize while providing better service to citizens and local government agencies at significant savings.

A recent comprehensive baseline quantitative and qualitative Gartner study of Michigan's IT environment, noted that the State's aging application portfolio presents opportunities to save millions of dollars in software, hardware, and support costs. The study's roadmap described the legacy project priority cluster as a key enabler, pivotal to the success of many of the other 22 initiatives cited within the study.

Impressive monetary benefits are expected as MiLAMP reduces or eliminates project cost overruns, producing significant savings through rework reduction. We estimate that as much as 40 percent can be saved on individual projects. Modernization will also help lower the current spend of \$143.4 million for applications sustainment and reduce the cost of approximately 800 full-time staff members now performing development and maintenance—41% of whom are higher-priced contractor specialists required by the state's 15 operating systems and 55 programming languages (far more than peer averages). Industry modernization benchmarks show expected benefits including:

- Operating cost reduction by 30% to 60%
- Maintenance cost reduction by 50% to 60%
- Development cost reduction by 30% to 50%
- A typical ROI of only 18 months.

### **3. BUSINESS PROBLEM AND SOLUTION DESCRIPTION**

**Urgent Problem – Fast-Track Required:** In 2011, Michigan's newly appointed Chief Information Officer began meeting with departments to identify service opportunities. All 17 agencies expressed an urgent need to update their legacy systems. This urgent need was highlighted in the recently completed Gartner assessment of Michigan's IT environment. Because DTMB did not have an enterprise approach to assess, prioritize, and implement solutions for their legacy challenges; these critical systems were experiencing significant outages, were very expensive to maintain and did not furnish agencies with appropriate support functions to provide quality customer service to Michigan residents and local government agencies.

Several of the systems were decades old, degraded, and unsupported by their creators. Some were written in outdated programming languages, making basic enhancements and modernization both complex and expensive. For example, several key financial systems handling millions of dollars daily were 17, 25, or even 30 years old. Without an enterprise approach to the legacy issue, the State was not tracking, evaluating, and replacing its antiquated technology. *Demands for citizen, local government, and business-facing applications to provide greater access through capabilities such as self-service and mobile availability, were unmet.*

Investing in separate systems to address similar business challenges caused support issues and significantly increased costs. Although DTMB was formed by executive order in 2003 to centralize IT functions and support throughout the state, barriers were posed by the way DTMB was structured within the agencies. Despite the consolidation there were still conflicting applications, duplicated systems, and disparate technology needs across the enterprise. A silo-style federated funding model left each agency in charge of its own IT budgeting and able to determine how, when, and even if technology updates would be made. The size of the State's legacy portfolio (around 400 of the state's 2,164 applications with an estimated value of nearly \$1 billion) made it difficult to determine where to begin. A fair and standardized means of prioritization and oversight was desperately needed. *Fast-tracking a solution was imperative!*

**Modernization Solution:** In November of 2011 DTMB chartered a rapid-response customer service improvement team of operational managers, project managers, infrastructure experts, and application specialists who created the MiLAMP Roadmap.

Rolled out on May 11, 2012, MiLAMP is an innovative, customized modernization methodology using formal yet flexible project management practices along with standardized tools, templates, and processes to address the State's legacy challenges. The MiLAMP enterprise legacy portfolio management approach encompasses all phases of the legacy modernization lifecycle. The online toolset, available to all key project stakeholders within DTMB and the agencies, makes innovative use of existing technology to ensure the repeatable and predictable success of IT projects. This process promotes the completion of IT modernization projects on time, within budget, and of exceptional quality. The methodology also ensures alignment with state and agency policies, enabling informed prioritization and collaboration to maximize overall benefits and savings.

#### **Project Description:**

##### **Project Objectives:**

1. Creates a standardized process/workflow for developing a modernization program.

2. Developed a toolset that includes criteria for selection of applications to modernize. The toolset is accessible via an intranet clickable model to facilitate the selection of projects.
3. Provides a marketing plan template to Information Officers and Client Service Directors to explain the concept to agencies.

Phase 1: Provides a methodology for use by Agencies to identify/prioritize applications that need to be modernized in order to develop an Agency plan and timetable for a legacy application modernization program. This project provides the framework, tools and processes to enable all DTMB/agencies to create and maintain a legacy application modernization program.

Phase 2: Provides tools and processes for agencies to measure and monitor the progress of their modernization program.

**Project Outcomes:** The effort to develop a rapid triage method to address the state's urgent legacy application issues revealed a need for more planning information, substance, structure, and standardization. The team devised an objective method based on industry best-practices merged with time-tested planning activities used for highway construction operations in Michigan. The new process was also developed to allow enterprise executives easier comparison of projects for prioritization and funding.

The process relies on a modular format employing carefully crafted form and spreadsheet elements. An iterative approach and accelerated pilots improved the process to the current step-by-step system and detailed components. The process includes extensive integrated instructions and checklists designed to ensure accurate understanding and maximum utility of the methodology's tools and techniques. These tools literally walk each agency through the planned project's early analysis, funding, construction, testing, implementation, and benefits realization tracking.

DTMB's MiLAMP provides a process for systematic success by standardizing and streamlining the IT modernization project proposal and approval process through a tight yet adaptable submission and decision structure. This procedure provides evaluation of projects before they enter the planning and production phases. Effort expended at the beginning pays big dividends later, offering unique advantages to both decision-makers and project proponents. The toolset is designed as a key component feeding an overall State Uniform IT Environment (SUITE) providing the framework for Systems Engineering Methodology (SEM) and Project Management Methodology (PMM) used for other non-legacy application IT projects as well. The DTMB MiLAMP methodology and toolset incorporate the following steps, each designed to produce specific benefits:

**1. *Assessment and planning:*** Begins the modernization effort by documenting the agency application portfolio and creating a prioritized LAMP Roadmap. This section walks through the planning process, determines scope, and defines objectives and deliverable in clear terms upon which consensus and approval can be based. Obtaining executive commitment and establishing a project charter are key components.

Producing consistent estimates of both costs and benefits is an important achievement of the system. The MiLAMP methodology has established common hourly rates for internal and external employees in simplified group categories.

In addition to the cost estimate, the scoping and estimating tasks produce initial plans for staffing, training, communication, risk management, and benefits realization, to name a few. Generating these tools early not only fosters communication opportunities

but also encourages critical consideration during the crucial beginning stages. These tools are available for subsequent steps as well.

**2. Project selection:** Includes LAMP projects with the annual enterprise Call for IT Projects process. Integrated review and approval steps are built into the flow to provide opportunities for strategic alignment, enhanced communication, oversight, decision-making, financing, consolidation, resource allocation, and cost avoidance.

The system allows simultaneous evaluation of multiple proposals giving leaders the ability to prioritize based on limited budget and previously identified goals. Existing applications are identified and compared with core business needs to focus efforts.

**3. Funding:** Confirms funding sources for upcoming legacy application modernization projects.

**4. Suite system engineering methodology:** Executes legacy application modernization projects using SUITE/SEM to develop and deploy new applications using proven CMMI/PMM standards and methods.

**5. Update portfolio, document benefits realization:** After deployment, documents cost savings and business process efficiencies created by the new system.

The MiLAMP toolset:

- Uses SharePoint as the portal; with secure team room access for agencies to store their documents and deliverables.
- Uses easily adaptable Word documents and Excel spreadsheets as the tools. Everyone has access to these, easing adoption by other agencies or states.
- Leverages existing Enterprise Architecture Technology roadmaps to make the initial determination of "legacy".
- Leverages enterprise solutions to enhance purchasing power.
- Uses DTMB-wide portfolio and project management system to maintain the application portfolio and to track legacy modernization projects.

#### **4. SIGNIFICANCE OF THE PROJECT**

**State Priority:** Michigan's Governor, in keeping with his pledge to "reinvent Michigan," has asked the state legislature for a special \$50 million appropriation from the General Fund to be used across all agencies for qualified projects to support modernization. MiLAMP will be a fundamental part of managing any appropriation to ensure maximum benefit for taxpayers. Thus, the project targets the very heart of the state's strategic priorities.

**National Priority:** Listed as number 2 in the ranking of NASCIO's Priority Technologies for 2012, "legacy application modernization/renovation" was deemed an important focus for state CIOs nationwide. MiLAMP offers a convenient and powerful means for others across the country to address their own legacy portfolios.

**Roadmap Priority:** According to a baseline quantitative and qualitative Gartner study recently performed, for the first time in 10 years, the past decade of budget cuts has left Michigan's application portfolio with a backlog of deferred liability including delayed maintenance, postponed application retirements, and stop-gap fixes, which can be looked upon as debt. This 'IT debt' is a hidden and growing risk for most organizations. Many are unaware or avoiding the problem and lack any plan to address it. MiLAMP enables Michigan not only to face, but also to evaluate, prioritize, and begin to actively address this issue. Out of 23 clusters of project priorities suggested by Gartner's

roadmap, MiLAMP represents a critical enabler. By addressing the State's aging application portfolio MiLAMP carries opportunities to save millions of dollars in software, hardware, and support costs, according to the study. The roadmap also described the legacy application cluster as pivotal to the success of many of the other 22 initiatives.

**Government Transformation:** The primary goal of the MiLAMP team was to produce standardized, repeatable processes for prioritizing and planning the modernization effort. In completing that mission, the MiLAMP project has transformed the way state government approaches legacy application modernization, by providing a coherent, documented, ordered, logical, and systematic methodology.

**Innovation and Transferability:** Although it has a strong heritage, innovation and originality have been demonstrated by the fast-track development of the DTMB MiLAMP methodology. While the MiLAMP process itself makes use of fundamentally simple tools, it is a driving force for the widespread integration of IT advances across a broad spectrum of business practices. Using existing technologies and borrowing from existing resources were critical to producing workable deliverables in the shortest possible time.

Adaptability is a key strength. The foundation for MiLAMP is an amalgam of the Project Management Institute's Project Management Body of Knowledge (PMBOK), Carnegie Mellon's Capability Maturity Model Integration (CMMI), and solid program management best practices gleaned from transportation's history of conducting successful construction projects. Together these produced a novel hybrid methodology with substantial adaptability, utility, and effectiveness. Built-in cycles of review and analysis provide an adjustment mechanism to accommodate changing needs and technologies. Ubiquitous existing tools (e.g. Microsoft products) facilitate transferability, demonstrated by the quick synthesis of core MiLAMP components.

**Strategic Significance:** A significant advantage is the uniformity and repeatability with which resources are directed toward the highest organizational priorities, yielding consistent production of high quality projects precisely aimed at strategic targets. Standardized cost and benefit estimates identify the expected ROI in the concept stage, providing better information for decision-making. Later, productivity gains typically yield additional "soft-dollar" savings. Fairness is another reward. All proposals are evaluated through the same criteria and measured against the same clear prioritization established with the Call for IT Projects. This built-in equality allows easier comparisons, and ensures that all projects are initiated with impartial expectations.

## **5. BENEFIT OF THE PROJECT**

MiLAMP provides a cascading series of benefits to agencies, customers, and others:

**Monetary Benefits:** The MiLAMP process reduces project cost overruns because project scope and budgets are determined early, producing significant savings through rework reduction. We estimate that as much as 40 percent can be saved on individual projects. In addition, modernization will help lower the current spend of \$143.4 million for applications sustainment and reduce the cost of approximately 800 full-time staff members now performing development and maintenance—41% of whom are higher-priced contractor specialists required by the state's 15 operating systems and 55 programming languages.

Because this fast-track project was implemented only recently, data gathering is just beginning. Industry modernization benchmarks show expected benefits including:

- Operating cost reduction by 30% to 60%
- Maintenance cost reduction by 50% to 60%

- Development cost reduction by 30% to 50%
- A typical ROI of only 18 months.

**Business Benefits:** The predicted benefits are expected to reflect those documented from a similar transportation initiative:

- Creates and tracks measurable objectives for the success of each agency's modernization efforts
- Frees up to 40% of funding for innovation and new business projects, according to the transportation example. MDOT has realized over \$3M annual reduction in IT maintenance expense since 2007.
- Enables success and reduces risk in an era of tight budgets
- Promotes more accurate budget planning and overall resource planning
- Increases responsiveness to business priorities and changing demands by eliminating the complexity inherent to legacy systems and server sprawl
- Improves employee productivity and reduces maintenance costs by streamlining complex legacy systems to more modern, efficient technologies

**Supports Agency Fact-Based Management:** Early in its implementation, MiLAMP is earning approval from executives who value the methodology's contributions to fact-based management, improving the ease and quality of decisions by providing:

- Analysis information as decision-making fodder
- Clearly defined steps and tasks
- Clarity of proposal goals, needs, predictions
- Explicitly stated goal metrics, tactical measures, and strategic impacts
- Well-documented consensus-generating expectations
- Baselines for later evaluation of time, cost, and quality

**Agency Portfolio Priority Documentation Tool:**

- Provides tools and methods to consistently document agency portfolio priorities
- Aligns IT modernization with state and agency strategic direction, eliminating non-essential projects and reducing tactical firefighting projects
- Provides agencies inputs that can be used in the Enterprise Call for Projects process
- Exposes opportunities to leverage enterprise shared solutions and tools.
- Provides a consistent method to communicate IT needs

**Customer Benefits:** MiLAMP contributes to the advancement and leveraging of technology by the modernization projects it facilitates, producing strong user satisfaction by the skillful integration of emerging technologies to meet the needs of Michigan's 9.5 million residents, 17 state agencies, and around 2000 local government entities. Impacted services include accounting, tax systems, health records, corrections management, workers compensation, and liquor control, to name just a few. Michigan's highly-adaptable methodology is also available to any other interested states or local government entities. As successes spread, they will disperse MiLAMP solutions to ever-wider audiences eager for improvements in the way they plan and select IT modernization projects. In the future, the application of these methods to more projects will continue to reduce IT debt while enhancing public image and helping state agencies respond to the service requirements of constituents in the most cost-effective way.

**Lessons:** Innovation is making connections. Fast track solutions should borrow and synthesize wherever possible. *"Water which is too pure has no fish."* --Ts'ai Ken T'an