



MICHIGAN

OFFICE OF THE AUDITOR GENERAL

AUDIT REPORT



THOMAS H. McTAVISH, C.P.A.
AUDITOR GENERAL

The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

– Article IV, Section 53 of the Michigan Constitution

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Michigan
Office of the Auditor General
REPORT SUMMARY

Performance Audit

*State Unified Information Technology
Environment (SUITE) Project Management and
System Development Controls
Department of Technology, Management & Budget*

Report Number:
084-0507-10

Released:
August 2011

In fiscal years 2003-04 through 2008-09, the State invested \$2.84 billion in information technology services for computer system development, operations, maintenance, and infrastructure. The Department of Technology, Management & Budget (DTMB) initiated the SUITE project in 2004 to standardize methodologies, procedures, training, and tools for project management and system development throughout the executive branch of State government.

Audit Objective:

To assess the effectiveness of DTMB's efforts to monitor, manage, and implement SUITE.

Audit Conclusion:

DTMB's efforts to monitor, manage, and implement SUITE were moderately effective. We noted three reportable conditions (Findings 1 through 3).

Reportable Conditions:

DTMB did not fully commit resources to monitor, manage, and implement SUITE (Finding 1).

DTMB had not fully identified and communicated to Enterprise Portfolio Management Office and Program Management Office staff the information it requires to effectively manage and monitor SUITE (Finding 2).

DTMB had not fully established an organizational training plan regarding its project management and system development processes (Finding 3).

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Audit Objective:

To assess the effectiveness of DTMB's efforts to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations.

Audit Conclusion:

DTMB's efforts to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations were moderately effective. We noted one reportable condition (Finding 4).

Reportable Condition:

DTMB had not established specific, measurable, time-based objectives for achieving its enterprise-level goal of delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations (Finding 4).

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Agency Response:

Our audit report includes 4 findings and 4 corresponding recommendations. DTMB's preliminary response indicates that it agrees with all of the recommendations and has complied or will comply with the recommendations.

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A copy of the full report can be obtained by calling 517.334.8050 or by visiting our Web site at: <http://audgen.michigan.gov>



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August 18, 2011

John E. Nixon, C.P.A., Director
Department of Technology, Management & Budget
George W. Romney Building
Lansing, Michigan

Dear Mr. Nixon:

This is our report on the performance audit of State Unified Information Technology Environment (SUITE) Project Management and System Development Controls, Department of Technology, Management & Budget.

This report contains our report summary; description of agency; audit objectives, scope, and methodology and agency responses; comments, findings, recommendations, and agency preliminary responses; three exhibits, presented as supplemental information; and a glossary of acronyms and terms.

The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a plan to address the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

We appreciate the courtesy and cooperation extended to us during this audit.

AUDITOR GENERAL

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Description of Agency

In fiscal years 2003-04 through 2008-09, the State invested \$2.84 billion in information technology* (IT) services for computer system development, operations, maintenance, and infrastructure.

The Michigan Department of Information Technology (MDIT) was created in October 2001 by Executive Order No. 2001-3. Executive Order No. 2009-55 renamed the Department of Management and Budget (DMB) as the Department of Technology, Management & Budget (DTMB), effective March 21, 2010. It also transferred all of the authority, powers, duties, functions, responsibilities, records, personnel, property, equipment, and appropriations of MDIT to DTMB by a Type III transfer and abolished MDIT. Executive Order No. 2009-55 charges DTMB with responsibilities such as:

- To coordinate a strategic IT plan, identify best practices, and to replicate those best practices and standards throughout the executive branch of State government.
- To oversee the use and implementation of project management principles.
- To develop standards for application development including, but not limited to, a standard methodology and cost-benefit analysis*.

MDIT initiated the State Unified Information Technology Environment (SUITE) project in 2004 to standardize methodologies, procedures, training, and tools for project management and system development throughout the executive branch of State government (see Exhibit 1, presented as supplemental information, for a time line of major activities conducted during the implementation of SUITE).

DTMB's goals for SUITE are:

- To integrate project management*, systems engineering*, process management*, and supporting processes* into a single unified environment.
- To deliver on-time, on-budget, quality systems that meet customer expectations.

* See glossary at end of report for definition.

SUITE is DTMB's mechanism for implementing Capability Maturity Model Integration* (CMMI). CMMI was developed by a group of experts from industry, government, and the Software Engineering Institute at Carnegie Mellon University. CMMI is a process improvement model for the development of products and services. It consists of best practices that address system development and maintenance activities from conception through implementation and maintenance. DTMB has adopted CMMI to help achieve well-defined and repeatable project management and system development processes. CMMI consists of five maturity levels (see Exhibit 2, presented as supplemental information). DTMB has established a goal of achieving CMMI maturity level 3 by 2013.

As of September 2010, DTMB had not performed a Standard CMMI Appraisal Method for Process Improvement* (SCAMPI)-A appraisal to determine its CMMI maturity level.

** See glossary at end of report for definition.*

Audit Objectives, Scope, and Methodology and Agency Responses

Audit Objectives

Our performance audit* of State Unified Information Technology Environment (SUITE) Project Management and System Development Controls, Department of Technology, Management & Budget (DTMB), had the following objectives:

1. To assess the effectiveness* of DTMB's efforts to monitor, manage, and implement SUITE.
2. To assess the effectiveness of DTMB's efforts to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations.

Audit Scope

Our audit scope was to examine the information processing and other records related to the State Unified Information Technology Environment's project management and system development controls. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit procedures, conducted from July through September 2010, generally covered the period October 1, 2004 through September 30, 2010.

Supplemental information is presented in Exhibits 1 through 3. Our audit was not directed toward expressing a conclusion on this information and, accordingly, we express no conclusion on it.

Audit Methodology

We conducted a preliminary review to obtain an understanding of DTMB's project management and system development and maintenance processes. We reviewed

* See glossary at end of report for definition.

industry best practices for project management and system development and maintenance. This included Carnegie Mellon Software Engineering Institute's Capability Maturity Model Integration (CMMI), Control Objectives for Information and Related Technology* (COBIT), and other information technology project management best practices. We used the results of our preliminary review to determine the extent of our detailed analysis and testing.

To accomplish our first objective, we interviewed DTMB management to gain an understanding of the information and processes utilized to monitor, manage, and implement SUITE. We reviewed policies, procedures, and manuals related to DTMB's Project Management Methodology* (PMM) and Systems Engineering Methodology* (SEM). We reviewed documents to gain an understanding of the Process and Product Quality Assurance* (PPQA) process. We reviewed the 2009 Standard CMMI Appraisal Method for Process Improvement (SCAMPI)-C appraisal performed by a third party to obtain an understanding of the CMMI maturity for the State's project management and system development and maintenance processes. We interviewed DTMB management to gain an understanding of DTMB's training efforts related to project management and system development and maintenance.

To accomplish our second objective, we interviewed DTMB management and reviewed information to gain an understanding of DTMB's efforts to establish objectives for delivering on-time, within budget, quality systems that meet customer expectations.

When selecting activities or programs for audit, we use an approach based on assessment of risk and opportunity for improvement. Accordingly, we focus our audit efforts on activities or programs having the greatest probability for needing improvement as identified through a preliminary review. Our limited audit resources are used, by design, to identify where and how improvements can be made. Consequently, we prepare our performance audit reports on an exception basis.

** See glossary at end of report for definition.*

Agency Responses

Our audit report includes 4 findings and 4 corresponding recommendations. DTMB's preliminary response indicates that it agrees with all of the recommendations and has complied or will comply with the recommendations.

The agency preliminary response that follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100) require DTMB to develop a plan to address the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

COMMENTS, FINDINGS, RECOMMENDATIONS,
AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS OF EFFORTS TO MONITOR, MANAGE, AND IMPLEMENT THE STATE UNIFIED INFORMATION TECHNOLOGY ENVIRONMENT (SUITE)

COMMENT

Background: The Department of Technology, Management & Budget (DTMB) has taken several steps to monitor, manage, and implement SUITE. Since 2004, DTMB has created approximately 15 teams to assist in the implementation of SUITE. The teams worked on and developed resources such as the Project Management Methodology (PMM) Manual, the Systems Engineering Methodology (SEM) Manual, the Process and Product Quality Assurance (PPQA) Process Manual, the Structured Walkthrough Process Guide, the Stage Exit Process Guide, and the Software Engineering Process Group Guidebook as well as various express manuals, forms, and templates. Also, these teams have created and implemented the SUITE Internet and Intranet sites.

In 2007, DTMB began offering training in topics such as project management, time management, project quality assessments, and SUITE overview training.

Also in 2007, SUITE's project managers began submitting monthly project status reports to DTMB management to monitor the SUITE project. These reports documented the current activity status of the various project teams, significant accomplishments for the reporting period, planned activities for the next reporting period, technical status and issues, action items, and project risk updates.

Audit Objective: To assess the effectiveness of DTMB's efforts to monitor, manage, and implement SUITE.

Audit Conclusion: **DTMB's efforts to monitor, manage, and implement SUITE were moderately effective.** Our assessment disclosed three reportable conditions* related to resources, management oversight, and organizational training (Findings 1 through 3).

* See glossary at end of report for definition.

FINDING

1. Resources

DTMB did not fully commit resources to monitor, manage, and implement SUITE. As a result, DTMB may not have sufficient capabilities and resources to implement well-defined project management and system development processes that result in successful development of systems that are delivered on time and within budget.

According to Control Objectives for Information and Related Technology (COBIT), to provide the information that an enterprise requires to achieve its objectives, the enterprise needs to invest in, manage, and control information technology (IT) resources using a structured set of processes to provide the services that deliver the required enterprise information.

Our review disclosed:

- a. DTMB did not allocate any of its appropriated financial resources to the SUITE project and, therefore, SUITE was an unfunded initiative. Without adequate resources, DTMB may not achieve its goal of implementing Capability Maturity Model Integration (CMMI) maturity level 3 processes by its 2013 target date.
- b. DTMB had not established coding in the Data Collection and Distribution System* (DCDS) to track SUITE project costs. DTMB charged SUITE project costs to a variety of sources, such as a generic enterprise-wide code for managers. Also, staff who worked on the SUITE project, when time permitted, charged their time to other system development and maintenance projects. Without tracking project costs, DTMB is unable to effectively monitor and manage project resources, such as the amount of time individuals are working on SUITE activities and the cost of SUITE implementation.
- c. DTMB had not yet formally adopted the roles and responsibilities of the Enterprise Portfolio Management Office* (EPMO) and the Program Management Offices* (PMOs). Also, DTMB had not fully implemented and staffed the EPMO and PMOs under all information officers. The EPMO focuses on defining and maintaining the standards and processes related to portfolio and project management within an organization, whereas a PMO focuses on carrying out and making sure those standards and processes are

* See glossary at end of report for definition.

met. As a result, DTMB cannot ensure that it is collecting consistent and comparable information on an enterprise-wide level to ensure that projects are developed and managed according to State standards.

- d. DTMB did not formally assign staff and allocate time to PPQA teams to perform quality assurance reviews. PPQA teams ensure that EPMO and DTMB management receive independent verification of compliance with SUITE methodologies. However, DTMB indicated within the SUITE project status reports that PPQA activities were taking longer to complete than planned because of team member attrition and conflicting priorities. Without formally dedicating staff and allocating time to perform their duties, PPQA reviews may not be completed in a timely manner to provide management with information to effectively evaluate compliance with SUITE methodologies.
- e. DTMB did not maintain a central repository listing of system development and maintenance projects in progress. As a result, systems may not be selected for a PPQA review and, therefore, may not be developed and implemented according to DTMB's system development standards.

RECOMMENDATION

We recommend that DTMB fully commit resources to monitor, manage, and implement SUITE.

AGENCY PRELIMINARY RESPONSE

DTMB agrees with the recommendation and informed us that it has taken corrective actions since the conclusion of the audit fieldwork in September 2010.

With regard to part a., DTMB informed us that, effective October 1, 2010, SUITE transitioned from project to organizational mode and is now housed within the EPMO with dedicated staff. Prior to the transition to organizational mode, the SUITE project made significant progress by relying on the expertise of part-time, temporary staff throughout DTMB. During times of limited funding, DTMB determined that this approach for staffing the SUITE initiative was most prudent.

With regard to part b., DTMB informed us that, effective January 1, 2011, DTMB established DCDS activity codes for members of the Software Engineering Process Group and PPQA team to record time devoted to these activities.

With regard to part c., DTMB informed us that it has formally adopted an organizational structure that includes a PMO reporting to each information officer, a PMO reporting to the Infrastructure Services director, as well as an EPMO. DTMB informed us that the Civil Service Commission has approved this organizational structure and its related position descriptions. DTMB has not yet fully staffed all PMOs. Assuming funding is available for PMO staff, DTMB anticipates full implementation by the end of fiscal year 2011-12.

With regard to part d., DTMB informed us that the PPQA team, staffed by part-time reviewers, has made significant progress since its inception in 2009. Dedicated staff housed in the EPMO function as the PPQA team leader. Until additional funding is available, PPQA teams will continue to conduct reviews using part-time staff, with guidance from a dedicated team leader.

With regard to part e., DTMB informed us that it implemented an enterprise project and portfolio management tool in December 2010 that provides a central repository for all applications supported by DTMB. DTMB also informed us that PMOs began using the tool in February 2011 to report status on high priority projects selected by DTMB executives and their client agencies.

FINDING

2. Management Oversight

DTMB had not fully identified and communicated to EPMO and PMO staff the information it requires to effectively manage and monitor SUITE. As a result, DTMB management may lack the information necessary to make informed business decisions and take corrective actions in a timely manner to ensure that projects are delivered on time, are within budget, and meet customer expectations.

According to COBIT, for successful delivery of IT services to support the enterprise's strategy, there should be clear ownership and direction of the requirements and a clear understanding of what needs to be delivered and how.

Our review disclosed:

- a. DTMB had not fully established and communicated to PPQA teams and PMO staff the key data that management needs collected during the review of system development and maintenance projects.

- b. DTMB management had not established and communicated to EPMO and PMO staff clear expectations for the types and number of system development and maintenance projects to be selected annually for PPQA.
- c. DTMB management had not established a target implementation date for PPQA teams to begin assessing the quality of project documentation. DTMB is implementing PPQA in two phases, starting with reviews that initially focus on the existence and completeness of project documentation and moving to reviews that focus on the quality of project documentation.
- d. DTMB management had not communicated its plan, including target dates, for remediating the deficiencies identified during the May 2009 Standard CMMI Appraisal Method for Process Improvement (SCAMPI)-C appraisal performed by a third party. These deficiencies included such items as the lack of a data repository, a quality assurance process, adequate resources, measurement and analysis, and organizational training. The purpose of the SCAMPI-C appraisal was to provide DTMB with a quick and independent analysis of its processes relative to CMMI maturity and to determine the organization's readiness for a SCAMPI-A appraisal (see Exhibit 3, presented as supplemental information).

RECOMMENDATION

We recommend that DTMB fully identify and communicate to EPMO and PMO staff the information it requires to effectively manage and monitor SUITE.

AGENCY PRELIMINARY RESPONSE

DTMB agrees with the recommendation. DTMB informed us that management will establish and communicate its expectations to the PPQA team and the PMOs regarding project quality reviews, including key data to be collected, the number and type of projects selected for reviews, and the target date for reviews. DTMB also informed us that management will communicate these expectations no later than December 31, 2011.

In addition, DTMB informed us that management will develop a CMMI appraisal strategy that includes a second SCAMPI-C appraisal to verify that deficiencies identified during the SCAMPI-C appraisal conducted in 2009 have been addressed.

The appraisal strategy will also address the feasibility of a SCAMPI-B or SCAMPI-A appraisal. The appraisal strategy will be developed no later than March 31, 2012.

FINDING

3. Organizational Training

DTMB had not fully established an organizational training plan regarding its project management and system development processes. Without a fully established organizational training plan, DTMB cannot ensure that project management and system development methodologies are consistently applied for all systems being developed and DTMB cannot achieve CMMI maturity level 3 compliance.

According to the Carnegie Mellon Software Engineering Institute, to achieve CMMI maturity level 3 compliance, organizations must have organizational training that includes a managed training development program, documented training plans, and mechanisms for measuring the effectiveness of the training program.

Our review disclosed:

- a. DTMB had not fully established an organizational training plan. An organizational training plan identifies organizational training needs, topics, schedules, methods, materials, tasks, roles and responsibilities, and resources such as tools, facilities, and environments.
- b. DTMB had not developed methods for measuring the effectiveness of training, such as collecting data to determine if there is a link between projects with high success rates to the number of individuals trained in SUITE methodologies.
- c. DTMB had not identified training curriculums based on the skills that are required for project managers and system developers.

RECOMMENDATION

We recommend that DTMB fully establish an organizational training plan regarding its project management and system development processes.

AGENCY PRELIMINARY RESPONSE

DTMB agrees with the recommendation. DTMB informed us that its Employee and Administrative Services Division is actively engaged in development of an organizational training plan that incorporates SUITE project management and systems engineering processes. Development of a comprehensive organizational training plan is a large and complex effort with completion of some components extending until the end of fiscal year 2011-12.

EFFECTIVENESS OF EFFORTS TO ESTABLISH OBJECTIVES FOR DELIVERING SYSTEM DEVELOPMENT AND MAINTENANCE PROJECTS

COMMENT

Background: DTMB has taken steps to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations. In 2009, DTMB began the process to create, and later in June 2010 revised, the project metrics collection template (SEM-0188) to capture a few project-based metrics, such as actual versus budgeted costs and the number of defects found during each stage of system development. Also in 2009, DTMB began offering training in the metrics collection process. In addition, DTMB informed us that in mid-2010 it began the process to establish and implement PMOs under each of DTMB's chief information officers and that the PMOs will be an initial data collection point for metrics.

Audit Objective: To assess the effectiveness of DTMB's efforts to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations.

Audit Conclusion: **DTMB's efforts to establish objectives for delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations were moderately effective.** Our assessment disclosed one reportable condition related to objectives (Finding 4).

FINDING

4. Objectives

DTMB had not established specific, measurable, time-based objectives for achieving its enterprise-level goal of delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations. DTMB did collect project specific data at the project level using the project metrics collection template (SEM-0188), such as actual versus budgeted costs and the number of project defects. However, without establishing specific, measurable, time-based objectives, DTMB will be unable to measure its progress toward its goal.

COBIT states that management should define and communicate specific, measurable, actionable, realistic, results-oriented, and timely objectives for the effective execution of an IT process and ensure that they tie to the business goals and are supported by suitable measurement metrics. For example a specific, measurable, and time-based objective that DTMB could establish would be to complete 50% of all system development and maintenance projects within 10% of their actual budget estimate by the fourth quarter of 2011.

RECOMMENDATION

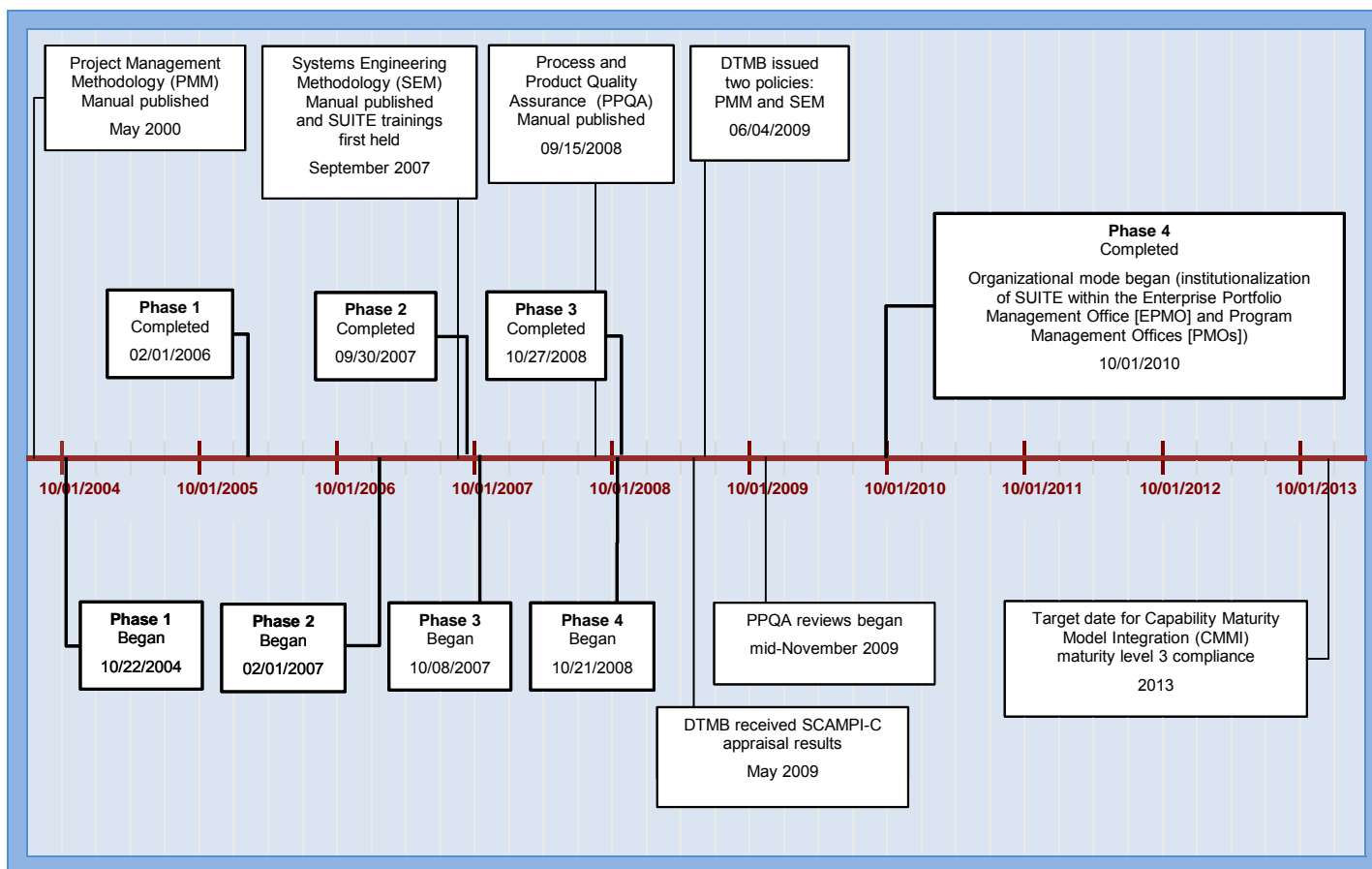
We recommend that DTMB establish specific, measurable, time-based objectives for achieving its enterprise-level goal of delivering system development and maintenance projects that are on time, are within budget, and meet customer expectations.

AGENCY PRELIMINARY RESPONSE

DTMB agrees with the recommendation. DTMB informed us that it addressed this finding with the implementation of an enterprise project and portfolio management tool in late 2010. Monthly project status reporting is based on standard "stoplight" (green, yellow, and red) criteria for schedule, budget, and scope. Reports highlight issues for management attention and include corrective action plans when appropriate. DTMB also informed us that it plans to expand project status reporting from only the highest priority projects to all projects by the end of fiscal year 2011-12.

SUPPLEMENTAL INFORMATION

STATE UNIFIED INFORMATION TECHNOLOGY ENVIRONMENT (SUITE)
PROJECT MANAGEMENT AND SYSTEM DEVELOPMENT CONTROLS
Department of Technology, Management & Budget (DTMB)
SUITE Time Line



Main Activities Within Each SUITE Phase

Phase 1

Design of the Michigan Integrated Life Cycle (MILC) model; selection and initial development of the Systems Engineering Methodology (SEM); mapping of the organization's development activities to the Capability Maturity Model Integration (CMMI); and development of base curriculum to inform and educate staff, vendors, and clients on the content and purpose of SUITE.

Phase 2

Formation of SUITE project team structures, including a core team for governance; publication of the SEM; creation of SEM awareness training and delivery to staff; and publication of a Program Management Office (PMO) Guidebook.

Phase 3

Closer alignment of SUITE process with CMMI, CMMI training for SUITE co-project managers, delivery of introductory course in CMMI to selected SUITE team members, establishment of various SUITE teams, publication of initial version of the Process and Product Quality Assurance (PPQA) and Measurement Analysis (MA) process manuals, and revision of various SUITE processes and templates.

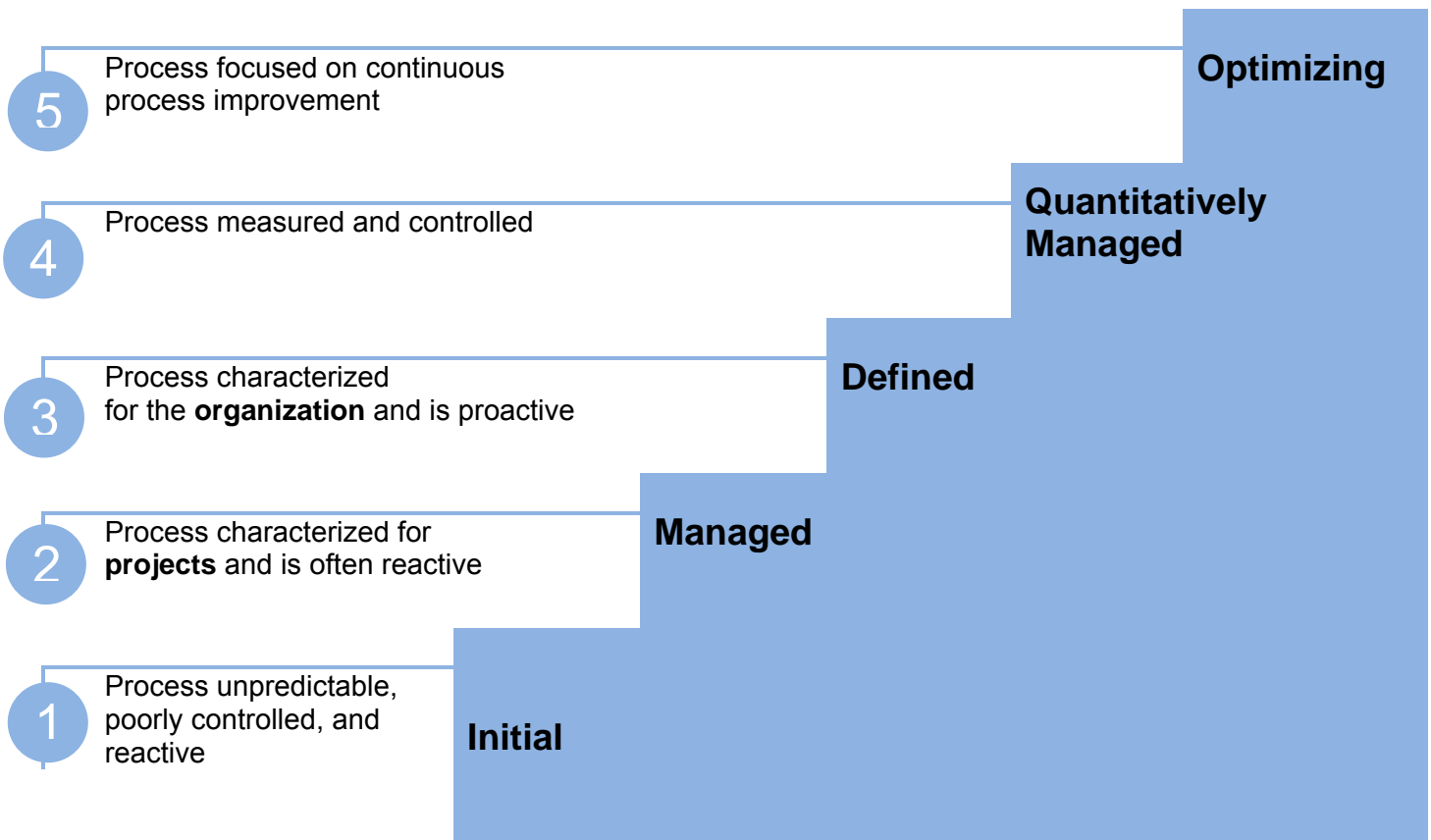
Phase 4

Continuation of CMMI understanding through more CMMI introductory courses offered to more SUITE team members, continued focus on SUITE implementation through creation of additional SUITE teams, establishment of CMMI Process Development Team to analyze gaps between SUITE processes and CMMI model, performance of a Standard CMMI Appraisal Method for Process Improvement (SCAMPI)-C appraisal, ongoing revision and improvement to several SUITE templates and process guides, and implementation of PPQA process.

Source: Auditor prepared from various sources.

STATE UNIFIED INFORMATION TECHNOLOGY ENVIRONMENT (SUITE)
PROJECT MANAGEMENT AND SYSTEM DEVELOPMENT CONTROLS
Department of Technology, Management & Budget
Capability Maturity Model Integration (CMMI) Maturity Levels

CMMI was developed by a group of experts from industry, government, and the Software Engineering Institute at Carnegie Mellon University. There are five maturity levels, each level building on the previous level, for ongoing process improvement. An organization will start at level 1 and, as it matures its processes, the organization will move up through the model to level 5 as depicted below:



Maturity Level 1: Initial

At maturity level 1, processes are usually ad hoc. The organization usually does not provide a stable environment to support the processes.

Maturity Level 2: Managed

At maturity level 2, processes are planned and executed in accordance with policy. The projects employ skilled people who have adequate resources to produce controlled outputs; involve relevant stakeholders; are monitored, controlled, and reviewed; and are evaluated for adherence to their process descriptions.

Maturity Level 3: Defined

At maturity level 3, processes are well characterized and understood and are described in standards, procedures, tools, and methods. The organization's set of standard processes, which is the basis for maturity level 3, is established and improved over time. These standard processes are used to establish consistency across the organization.

Maturity Level 4: Quantitatively Managed

At maturity level 4, the organization and projects establish quantitative objectives for quality and process performance and use them as criteria in managing processes. Quantitative objectives are based on the needs of the customer, end users, organization, and process implementers. Quality and process performance is understood in statistical terms and is managed throughout the life of the processes.

Maturity Level 5: Optimizing

At maturity level 5, an organization continually improves its processes based on a quantitative understanding of the common causes of variation inherent in processes. Maturity level 5 focuses on continually improving process performance through incremental and innovative process and technological improvements. Quantitative process improvement objectives for the organization are established, continually revised to reflect changing business objectives, and used as criteria in managing process improvement.

Source: <http://www.tutorialspoint.com/cmmi/cmmi-maturity-levels.htm>

STATE UNIFIED INFORMATION TECHNOLOGY ENVIRONMENT (SUITE)
PROJECT MANAGEMENT AND SYSTEM DEVELOPMENT CONTROLS

Department of Technology, Management & Budget

SCAMPI Appraisals

SCAMPI Appraisal Methods

A Standard CMMI Appraisal Method for Process Improvement (SCAMPI) appraisal is an objective evaluation of an organization's software or system development capability. There are three Capability Maturity Model Integration (CMMI) appraisal methods:

- SCAMPI-A Appraisal

A SCAMPI-A appraisal is typically conducted when an organization has implemented a number of significant process improvements and needs to formally benchmark its process relative to CMMI. A SCAMPI-A appraisal is the only appraisal method that provides official CMMI maturity level ratings.

- SCAMPI-B Appraisal

A SCAMPI-B appraisal is called for when an organization needs to assess its progress toward a target CMMI maturity level. SCAMPI-B appraisals provide detailed findings and indicate the likelihood that the evaluated practices would be rated as satisfactorily implemented in a SCAMPI-A appraisal.

- SCAMPI-C Appraisal

A SCAMPI-C appraisal is shorter and more flexible than SCAMPI-A and SCAMPI-B appraisals and is conducted to address a variety of special needs, from a quick gap analysis to determining an organization's readiness for a SCAMPI-A appraisal.

SCAMPI Appraisal Characteristics

Each SCAMPI appraisal is distinguished by the degree of rigor associated with the appraisal. A is the most rigorous, B is slightly less rigorous, and C is the least rigorous.

The following table identifies high-level characteristic differences between the methods in each appraisal:

Characteristics	SCAMPI-A	SCAMPI-B	SCAMPI-C
Amount of objective evidence gathered	High	Medium	Low
Rating generated	Yes	No	No
Resource needs	High	Medium	Low
Team size	Large	Medium	Small
Data sources (instruments, interviews, and documents)	Requires all three data sources	Requires only two data sources (one must be interviews)	Requires only one data source
Appraisal team leader requirement	Authorized lead appraiser	Authorized lead appraiser or person trained and experienced	Person trained and experienced

Source: <http://www.tutorialspoint.com/cmmi/cmmi-appraisals.htm>

GLOSSARY

Glossary of Acronyms and Terms

Capability Maturity Model Integration (CMMI)	A process improvement model for the system development of products and services consisting of best practices for development and maintenance activities.
Control Objectives for Information and Related Technology (COBIT)	A framework, control objectives, and audit guidelines published by the IT Governance Institute as a generally applicable and accepted standard for good practices for controls over information technology.
cost-benefit analysis	Information to make a balanced decision about the cost and benefits, or value, of various economic choices about various alternatives within the project.
Data Collection and Distribution System (DCDS)	The State's client/server system that records, allocates, and distributes payroll costs within the accounting system.
DTMB	Department of Technology, Management & Budget.
effectiveness	Program success in achieving mission and goals.
Enterprise Portfolio Management Office (EPMO)	The service organization within DTMB created to support DTMB's IT program and to improve the management of the IT portfolio.
information technology (IT)	Any equipment or interconnected system that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. It commonly includes hardware, software, procedures, services, and related resources.
MDIT	Michigan Department of Information Technology.

performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve program operations, to facilitate decision making by parties responsible for overseeing or initiating corrective action, and to improve public accountability.
Process and Product Quality Assurance (PPQA)	A process area that objectively evaluates performed processes, work products, and services against applicable SUITE processes, standards, and procedures; identifies noncompliance issues; provides feedback to project staff and managers; and ensures that noncompliance issues are addressed.
process management	A component of SUITE that consists of organizational process focus, organizational process definitions, and organizational training.
Program Management Office (PMO)	A group within DTMB responsible for the centralized coordination of SUITE to achieve SUITE's strategic objectives and benefits.
project management	The application of knowledge, skills, tools, and techniques to project activities in order to meet project requirements.
Project Management Methodology (PMM)	A component of SUITE that provides standard methods and guidelines to ensure that projects are conducted in a disciplined, well-managed, and consistent manner that promotes the delivery of quality products that meet the customer's needs and results in projects that are completed on time and within budget.
reportable condition	A matter that, in the auditor's judgment, falls within any of the following categories: an opportunity for improvement within the context of the audit objectives; a deficiency in internal

control that is significant within the context of the objectives of the audit; all instances of fraud; illegal acts unless they are inconsequential within the context of the audit objectives; significant violations of provisions of contracts or grant agreements; and significant abuse that has occurred or is likely to have occurred.

Standard CMMI Appraisal Method for Process Improvement (SCAMPI)

The official Software Engineering Institute method to provide benchmark-quality ratings relative to CMMI models. SCAMPI appraisals are used to identify strengths and weaknesses of current processes, reveal development/acquisition risks, and determine capability and maturity level ratings. (See Exhibit 3, presented as supplemental information, for discussion of various SCAMPI appraisal methods.)

State Unified Information Technology Environment (SUITE)

A DTMB initiative to standardize methodologies, procedures, training, and tools for project management and system development throughout the executive branch of State government.

supporting processes

A component of SUITE that consists of the Process and Product Quality Assurance process, measurement and analysis, configuration management, and decision analysis and resolution.

systems engineering

A component of SUITE that provides guidance for information systems engineering related project management activities and quality assurance practices and procedures.

Systems Engineering Methodology (SEM)

The DTMB methodology that identifies the processes, activities, tasks, management responsibilities, and work products that are required for each system development and maintenance project.

