NASCIO Award Nomination
Strategic Management

Title of Nomination: IRMC's project certification, progress reporting, and quality assurance program
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1. Executive Summary

Like the majority of states, North Carolina is experiencing unprecedented times of unremitting budgetary challenges, ever-increasing citizen service demands, costly security requirements, and expanding privacy regulations. As the power of IT has expanded and its presence has become ubiquitous to state operations, government leaders and executives are realizing its criticality to successful programs and initiatives. Moreover, our constituents, vendors, and employees are demanding excellence in the management of IT. We must select the right investments; implement them on time, within budget, and with the expected benefits; operate them efficiently and effectively and with the proper security and protection of privacy; and retire and replace them when they are no longer cost-effective or risk-justified.

The effective management and control of major IT implementation projects are absolute essentials for saving taxpayers money and delivering useful and valuable services to citizens, businesses and employees. Budget overruns, schedule slippages, unmet requirements and capabilities, and additional lifetime maintenance and operation expenses create wasted and unproductive fiscal resources. The annul budget for IT in North Carolina state government is about $1 billion of the almost $15 billion annual appropriations. Excluding the universities, the current active IT project portfolio for the executive branch contains 53 major projects with total combined budgets of over $400 million. Early on, the state recognized the need for and the tremendous benefits accrued from a comprehensive and effective project management and oversight program.

Since its inception in July 1993, the project certification, progress reporting, and quality assurance program has lead governments at all levels in the oversight and conduct of major IT projects. The program has undergone constant evolution and improvement, including recent major enhancements and revisions. It is based on three foundation components: (1) IEEE Software Life Cycle Model Process; (2) IRMC's Implementation Framework for Statewide IT projects (describing 10 best practices and 35 standards for project management); and (3) detailed IRMC approved processes, procedures, and reporting formats.

Since 1995, approximately 90 independent outside quality assurance assessments have been performed, and the IRMC has conducted more than 140 initial certifications and certification reviews since early 1999. Each month, approximately managers for 30 projects prepare comprehensive status reports for the TAPCC. By their nature, major IT projects are hard and difficult endeavors, and some shortcomings and failures are unavoidable. However, this program has minimized disappointments and maximized benefits from these projects in our state. Our track record for project performance is comparable to the best in both public and private sectors.

A: **Program Description**

Purposes and Goal

The IRMC's project certification, progress reporting, and quality assurance program is intended to assist agencies, project teams, and oversight organizations in planning managing and conducting successful technology investment projects. The program's primary goal is to ensure that all major technology projects meet budget, schedule, and milestones performance and lead to quality products. This is achieved through employing the best practices and standards of recognized project management disciplines and system development methodologies and preparing for, identifying, and resolving problems and challenges as early in the process as possible

Background and History

North Carolina State government has a long and distinguished history of monitoring, accounting for and reporting major information technology projects and initiatives. This work has been accomplished under the auspices of the Information Resources Management Commission (IRMC), especially through its Technical Architecture and Project Certification Committee (TAPCC), and it has been directed and managed by the Enterprise Technology Strategies (ETS) staff of the Office of Information Technology Services (ITS) led by the State CIO.

The IRMC is the statewide coordinating body for the management of IT in state government. IT project approval and monitoring activities are extensive and comprehensive. They are directed by IRMC policies and procedures and can be found at http://irmc.state.nc.us/ under "Policies and Standards". The IRMC and TAPCC meet monthly. The TAPCC reviews and approves project certifications, monthly status reports, and quality assurance findings. Summary findings and recommendations of the TAPCC are presented to the full IRMC for its deliberation and approval. The initial processes and procedures were approved by the IRMC in July 1993. The program has been enhanced, expanded, and updated continuously since its inception.

Summary Description of Processing

The three foundations for the IRMC's project certification, progress reporting and quality assurance program are the IEEE Software Life Cycle Model Process; IRMC's Implementation Framework for Statewide IT projects (describing 10 best practices and 35 standards for project management); and detailed IRMC approved processes, procedures, and reporting formats. The program is risk-based and performance-driven. It is comprised of three major activities: project certification, monthly project progress reporting, and independent outside quality assurance reviews.

The graphic below highlights the foundations and activities of the program.

Key Components of IRMC's Project Review and Oversight Process
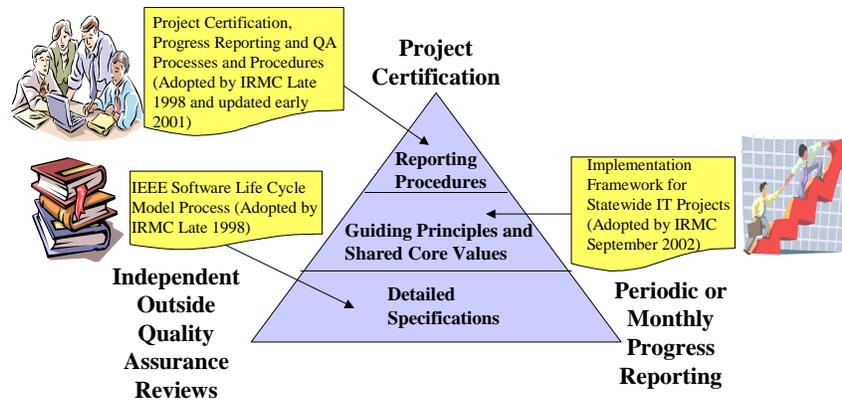
Each of the three major activities of the program is summarized below.

Project Certification

The objectives of the project certification activity are to:

- Ensure the proposed use of technology is appropriate for the business/program challenge or opportunity being addressed.
- Assess the project is positioned for success from management, budgetary, schedule, and technical perspectives.
- Determine that agency executive management and project leadership accept responsibilities and accountabilities; including the identification, assessment, and management of risks and the achievement of expected results, benefits, and values.

Project certification involves the preparation and submission by the project team of specific documentation to the ITS/ETS staff, an extensive review and evaluation by ITS/ETS staff, and a presentation by the project team to the TAPCC. Projects expected to cost more than $250,000, extending more than one year, displaying high risks, or with statewide implications must be certified.

Three key documents are required for evaluation for project certifications and certification reviews. The Project Charter is similar to an abbreviated business case, providing description, goals and objectives, costs, benefits or value, organizational structure, summary work plan, and risk management strategy. A formal business case and/or additional financial analysis and other pertinent documentation may be required as appropriate. The Risk Profile Assessment is a list of 37 typical risk factors, with low- and high-risk examples. The project team classifies each as low, medium, or high through a numerical scoring system. The Project Manager's Review List requires a brief explanation of how the project team will address each of the ten best practices described in the Implementation Framework. The project manager must also certify that each of the 35 standards will be handled appropriately, depending on its degree of importance and significance to the project's outcome. Specific approval signoffs are required from oversight bodies and agencies for budget availability; financial management; technical architecture; security; procurement and contracting; and project approach, management, and risk assessment.

<u>Monthly Progress Reporting</u>

The objectives of the project progress reporting activity are to:

- Provide a consistent and reliable process and basis to monitor project milestone status and measure actual performance compared to budget, schedule, and quality expectations.
- Collect and review/approve contract, technical architecture, security, and other key information at appropriate points in the project certification and reporting process.
- Verify and validate the ability of projects to achieve governmental, business, and technical objectives within approved budgets and timetables.
- Identify potential managerial, technical, fiscal, or other problems early so they can be addressed and rectified in a timely manner.

Project progress reporting is a formal process involving the preparation and submission of structured reports by the project team to the ITS/ETS staff. The ITS/ETS staff performs reviews and analyzes each report. Findings, questions, and recommendations are documented and presented to the TAPCC at its monthly meetings. If a project appears to be experiencing problems, ITS/ETS staff may visit it to perform a more thorough fact finding exercise and offer advice and assistance. Project teams for at risk or high profile endeavors are required to make monthly presentations to the TAPCC.

Projects are rated monthly as green (satisfactory), yellow (needs agency attention), or red (recommend stopping of the effort and suspension of funding). Potentially troubled projects are given one month to respond to questions from ITS/ETS staff. If the response is satisfactory, they remain green. If not, they are coded yellow and given an additional month to respond to the questions at the monthly TAPCC meeting. If satisfactory, they return to green. If not, they are coded red, and a documented exceptional project reporting process is followed.

Project status reports contain current month and project-to-date schedule and budget data, project status summary, milestone or deliverable status, accomplishments this period, plans for next period, major issues, major risks and mitigation strategies, and status of resolution of questions raised by the ITS/ETS staff and/or issues identified on previous quality assurance reviews.

<u>Independent Outside Quality Assurance Reviews</u>

The primary objectives of independent outside project quality assurance reviews are to:

- Provide confidence that the processes and products of projects meet performance requirements for management, financial condition, technical specifications, schedule adherence, and governmental/business results.
- Determine probability of success against plans, budgets, and benefit/value expectations.
- Identify actual and/or potential problems and provide recommendations for improvements in management processes and/or quality of products.

Following the program's risk-based and performance-driven concept, the selection and conduct of independent outside quality assurance reviews are performed in accordance with these guidelines:

- Conduct reviews when required by indications of potential problems in project status and/or indications of inadequate project management.

- Conduct cost-effective assessments of project status by focusing on specific areas of interest or potential at risk or problem situations.

As required by type and size of project and risk profile, ITS/ETS staff spends time with project teams to validate and verify that appropriate system implementation and project management methodologies and approaches are in place and being followed. In addition, if projects experience problems or are in danger of becoming at risk, the ITS/ETS staff performs more in-depth reviews and evaluations to prepare recommendations and assist in alleviating difficulties.

Post implementation project closeout reviews are required on all projects to:

- Measure planned performance of project versus actual accomplishments in terms of costs, deliverables, timeliness, and quality.

- Validate estimated costs and benefits – reassess business case.

- Determine whether continuation of project or modification of investment is necessary to meet governmental/business objectives and/or technical/user requirements.

- Evaluate agency capability to operate and maintain investment efficiently and effectively over its lifespan.

- Identify effective management practices and document lessons learned.

B: Program Significance to Government Operations

The program is an integral part of the management of IT in North Carolina state government. Since 1995, approximately 90 quality assurance assessments have been performed. The IRMC has conducted more than 140 initial certifications and certification reviews since early 1999. Each month, approximately 30 projects prepare comprehensive status reports for the TAPCC. More important, since 1999, two statewide projects with great citizen impact were saved from cancellation and returned to satisfactory performance by the process of the quality assurance component of the program.

C: Benefits

The program has been instrumental in the continuous improvement of project management and performance by: (a) identifying strengths and weaknesses, (b) codifying them as lessons learned and best practices and principles in the Framework document, and (c) incorporating them in our processes and procedures. The first project above was resuscitated so that it won a "*Best of Breed"* award presented by the Center for Digital Government in the fall 2002. The second project recently received a favorable audit by the Office of the State Auditor. The Department of Transportation just completed successfully a $68 million SAP implementation. It credits the independent outside quality assurance reviews as key contributors to the project performance.

D: Return on Investment

For projects started from February 1999, through today, the state has a portfolio of 103 major projects. Of that inventory, 11 were cancelled, 31 are completed, 53 are in process, and 5 are suspended or on-hold. The 11 cancellations (failures) incurred total, combined actual expenditures of $9 million. The 31 completions incurred final total combined actual costs of $83 million, yielding a failure cost of 11% of completions. While notable and regrettable, this percent is far better than the general experiences in the public in private sectors for projects of the size, budgets, and complexity represented by the state portfolio.