



Office of Information Technology Services

North Carolina NASCIO Application – Enterprise IT Management Initiatives

NASCIO 2007 Nomination

Nomination Category: Enterprise IT Management Initiatives

Project Title: North Carolina's Operational Excellence Program

Executive Summary

Information Technology is an indispensable tool in government's primary function - delivering services to the citizens of North Carolina. North Carolina's Office of Information Technology Services (ITS) provides technology services to NC agencies in a shared services environment. The Operational Excellence Program (OEP) is a continuous service improvement program for IT Service Management based on ITIL, the Information Technology Infrastructure Library – a non-proprietary, best practice framework developed by Great Britain. ITIL has been recognized and adopted worldwide as an IT industry standard for IT Service Management.

The Operational Excellence Program (also referred to as the Program) focuses on four central objectives:

- Measurably improve the efficiency and effectiveness of IT infrastructure services
- Better align IT service delivery with business needs of state government
- Improve service transparency via clear commitments, clear costs, clear results
- Establish ITS as the "State Center of Excellence" for IT Service Management

The OEP formally launched in December 2004 and it is being implemented in three phases. Phase I was completed in 2006. It began in December 2005 and consisted of Change Management, Incident Management, Problem Management and Service Level Management. Phase II began in November 2006 and consisted of Configuration Management, Release Management and an upgrade to ITS' Service Desk formal working procedures. Change, Configuration and Release Management are essential processes for IT organizations to meet their key goals of enduring high availability for applications, consistent delivery of business services and the ability to meet regulatory compliance requirements. Phase II is scheduled to be completed in November 2007. Phase III is scheduled to begin in December 2007 and includes Availability Management and Capacity Management. The Program is scheduled to be completed in late 2008.

By the end of 2006, measurable improvements demonstrated the success of the OEP. Highlights include:

- Incident Resolution within Service Levels improved from 38% (Sept. 2005) to 90% (Dec. 2006)
- ITS' overall average Mean Time To Resolve Incidents has been reduced from 43 hours to 16 hours
- Planned Changes improved from 14% (Oct. 2005) to 70% (Dec. 2006)
- Successful Changes improved from 47% to 99%
- During 2006, the volume of formal Request For Change records doubled, demonstrating widespread process adoption and compliance.

Reducing Mean Time to Resolve Incidents has enabled more ITS staff to focus on planned, customer-focused, project based work. A recent independent benchmark study showed that Service Desk productivity improved 30%, with no increase in staff. This study also showed that overall ITS service productivity improved 20%.



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Project Description

North Carolina's Office of Information Technology Services (ITS) provides technology services to NC agencies in a shared services environment. One of ITS' prime objectives is to deliver high quality service at competitive rates. In an effort to improve IT operations and services to state agencies, ITS decided to concentrate on ITIL and the OEP to remain competitive and improve on delivering quality services rather than face potential recommendations to outsource the state's IT operations. The OEP Program Sponsor, the Deputy State CIO, determined that for the Program to successfully achieve its strategic objectives, to sustain momentum, and to effect meaningful change in the organization's focus from technology to customers, would require ongoing, full-time senior leadership. ITS' Chief Operating Officer was assigned to lead the Program exclusively and serve as Program Director. A Steering Committee was formed, consisting of the Directors of each ITS Operating Division. Each ITIL Process was assigned a Process Owner (a Division Director) and each of the six process design teams was assigned a Process Coordinator who served as team leader. A full-time Project Manager was assigned to the Program. The Program Director, Project Manager, Process Owners and Process Coordinators meet regularly to facilitate cross-process communication, integration and touch points.

The Program began by obtaining an independent benchmarking study of all key statewide operational services it provides to agencies, such as computing on all platforms, data and voice networking, storage management and customer support. This study provided a baseline of how well it performed those services in comparison with other technology providers. OEP also obtained an independent ITIL process maturity assessment to establish a baseline for improvement and to identify priorities for improvement. Both studies provided recommendations for improvement that guided process design project planning.

Each Operating Division Director coordinated with their management team to contribute the best qualified staff resources from their respective functional areas to form the process design teams. Members included staff from Telecommunications Services, Computing Services, Information Security Office, the Service Desk, Business Relationship Management, and Enterprise Solutions.

Each process design team identified tool requirements to support the newly developed process. Tool modifications were considered and made where appropriate. Furthermore, additional process-based tool requirements were retained for purposes of continuous improvement and strategic planning.

All six process design teams developed and delivered their own process and tool training. This training was targeted based on stakeholder mapping (i.e., specific training geared to the Service Desk, to managers, to Change managers, to service owners, to staff, etc.) The Program Sponsor regards this as one of the implementation's critical successes because he saw this as a sign that a core segment of ITS staff had taken a sense of ownership of the processes and had fully invested themselves in the Program.

Process Design Deliverables: Each process design team had the responsibility to develop six core documents: a High Level Process Model that contained the high level process flow, high level activities, touchpoints to other processes and some high level Critical Success Factors and Key Performance Indicators (KPIs); a Policy document, Detail Level Process Flow and Procedures, Roles and Responsibilities, Management Information Requirements, and Tool Requirements. The delivery of these documents was driven by a project plan for each process.

The OEP provides updates to and receives guidance from the Technology Planning Group (TPG), a committee of the Department CIOs from ITS' eight largest customers, which meets biweekly. The purpose



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of the TPG is to advise the State CIO, the Deputy State CIO and their key staff on designated strategic initiatives, including the OEP.

OEP Training Program

To make certain all ITS employees understood the Program, ITS initiated ITIL Foundation Training for its employees. In addition, non-technical staff who support IT Service Management were encouraged to attend ITIL Foundation Training. Examples include the agency Personnel Director, the Personnel Classifications Analyst, the CFO, and Fiscal Services staff who work directly with IT services to coordinate chargebacks. Management commitment to this agency-wide training initiative was significant enough that the cost of this training did not detract from any other staff training during the year. The OEP Training Program also sponsored ITIL Foundation Training for customers, including state agencies as well as local governments. During Phase I, the OEP Training Program provided ITIL Foundation Training to 698 staff, including 352 out of approximately 400 ITS staff, and 328 staff from 18 customer agencies and local governments. The overall pass rate for OEP ITIL Foundation Certification is 96%, significantly higher than the worldwide average pass rate for ITIL Foundation Certification of 89% (source: EXIN).

In addition, all process design teams were given Practitioner Training to facilitate process design, process implementation, and for those members who would take on permanent process roles, the ongoing continuous improvement of the process. Practitioner Training classes also served as great team-building experiences for these process design teams. The OEP Training Program provided ITIL Practitioner Training to a total of 94 staff in 2006. The Program Director and the Director of the Business Relationship Management Division also obtained ITIL Service Manager Certification.

Also, as each process was developed, the respective Process Design Teams developed their own process training material. Team members trained agency staff. This was roles-based training, so more than one set of training materials was developed and delivered for each process.

Significance to the Improvement of the Operation of Government

ITS has an annual budget of approximately \$180M – with no funds appropriated by the General Assembly. Income is derived by receipts from state agencies that use ITS services. The OEP is helping ITS delivery quality services; thereby, enabling more of the state’s IT dollars to be spent on technology that directly benefits the public.

Within the first nine months of launching ITS’ Incident Management process, ITS had improved its ability to resolve Incidents within Service Levels by 49%. The overall Mean Time to Resolve Incident hours have been reduced by 130%. This is a measurable improvement in normal service operations in reducing business disruption in agencies that use ITS services.

OEP PROCESS IMPLEMENTATION RESULTS			
KEY PERFORMANCE INDICATOR	INCEPTION	CURRENT	IMPROVEMENT
Average Cost to Resolve an Incident	\$1,339	\$609	55%
Mean Time to Resolve Incidents within Service Levels	41%	90%	49%
Planned Changes	23%	70%	47%
Successful Changes	47%	99%	52%

The Program identified select, available measurements during the planning for Phase I in September of 2005 and began tracking and publicizing them. These metrics included Incident Resolution within target



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timeframe and Request Resolution within target timeframe. The Program Director also worked with the respective Operating Division Directors, Managers, and the newly formed process teams to target achievable quick wins that would not jeopardize the overall project scope. These included tactical improvements to Incident ticket assignment as well as the development of an interim Emergency Change Procedure that was implemented in February 2005.

The OEP also implemented three categories of metrics based on an independent industry benchmarking study of all core services during the planning phase of the OEP. For each category, three benchmarks were provided and are used for continuous improvement measurement.

- comparison to workload peers (organizations with IT environments of similar size and complexity)
- government peers
- top quartile (the top 25% or best in class, representing best practice)

The metrics the Program established and continues to measure are:

- utilization
- productivity
- cost

Utilization measures usage of systems automation technology that can improve efficiency and effectiveness. Productivity measures staffing ratios per domain. Cost measures resources and workload to provide services. During Phase I, the Program Director worked with ITS' CFO, Program Sponsor and Deputy State Budget Director to establish formal reporting to the Office of State Budget using these metrics. Also, the Program Director incorporated the results of the benchmarking study into awareness campaign briefings with agency CIOs, Office of State Budget and Management and other key stakeholders during Phase I. These metrics were reviewed with the respective Operating Division Directors for trend analysis and to prioritize areas for improvement.

Service Level Agreement Structure: ITS offers Application Services, Professional Services, Hosting, Network, Desktop Services, Collaboration and Communication Services, and Security to state agencies. Service Levels should be appropriate to business needs and program obligations, so that quality and costs are matched to requirements and payment for services. The Service Level Management (SLM) team adopted and developed a SLA structure based on a multi-level SLA approach, using the ITS Service Catalog as default global service levels for all services. There are three components to this structure: (a) global service levels (service characteristics common to all services), (b) service-specific characteristics and (c) customer-specific SLA addendums.

A Service Level Agreement (SLA) is signed with each agency containing the service description, hours of availability, customer responsibilities, and charges. Service Level Reviews with customers are conducted at a minimum on a quarterly basis or as needed. Metrics and reports are discussed at the Service Level Reviews for Incidents and problems within and outside of the SLA. These discussions have proved very helpful in developing better relationships with our clients and promoting their understanding of services and associated costs.

The processes and best practices implemented in the Program are being made available to ITS' clients. The Program Director has conducted workshops for several customers who are now adopting the ITIL processes developed and implemented via the Program. These workshops have included the Department of Transportation, New Hanover County Government and the City of Raleigh. These workshops included recommending tangible, focused 'quick wins' based on clients' pain points as well as an implementation overview. The Program has made available to these organizations all of its process models, detail process designs, process policies, process roles and other key material to help with their implementation. The Department of Transportation, with an IT staff of 500, recently began adopting all of the Phase One



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processes. The Department of Revenue is now launching a similar initiative. Adoption of Phase I processes in additional agencies has been requested by several respective department CIOs and is expected in 2007.

Implementation and Continuous Improvement

As each process went live, it entered an implementation phase for a minimum of 90 days. The Program Director, Process Owner, Project Manager and Process Coordinator met weekly during the implementation phase to monitor status and issues. These meetings used the high level process design as a guide for a 'vital signs check' to ask "Is the process working as designed?" In addition, the issues log was reviewed.

Change and Incident Management have since transitioned to continuous improvement mode, and a separate project plan was established for managing the activities and tasks for ongoing process improvement. In addition, transition to production documentation captured the transition from the process design teams to the process roles, providing a 'punch list' of tasks as well as a status of issues and risks being transitioned from the Program to the respective organizational roles.

As part of the transition to production, a continuous process improvement governance model was established. This ensures appropriate management oversight and participation from key process roles. It also provides for strategic planning when considering process integration issues.

Public Value of the Project

Realized Return on Investment

One of ITS' prime objectives is to deliver high quality service at competitive rates. ITS contracted with a leading information technology advisory company to conduct an independent assessment of ITS' relative cost efficiency for all core services. The report also provided trending from prior assessments as well as a comparison to external organizations who share size and environmental characteristics with NC ITS. This study also compared ITS' costs and productivity with best-in-class organizations (25th percentile in the benchmark data base) as well as with other government organizations.

The independent Benchmark Study Report shows:

- Agency productivity has improved 20%
- Service Desk productivity improved 30% with no increase in staff
- At the beginning of OEP, ITS' costs were 17% below their workload peers and 3% higher than the 25th quartile (best in class); as of the end of 2006, ITS' costs are 22% below their workload peers and 3% below the 25th quartile

The average internal cost to resolve an Incident has been reduced by 55% (a combination of reduced Mean Time to Resolve Incidents, increased resolution by Tier 1 staff instead of Tier 2 staff, and the reduced number of Tier 2 staff needed to resolve escalated Incidents). In the first nine months alone, a cost avoidance of \$1.5M was achieved.

Using the benchmark and process performance results, the organization overall had a 22% productivity increase, an 11.1% increase in workload, and a 2.8% increase in efficiency. Since benchmarking in 2004, NC ITS incorporates data collection into their operational processes where relevant.



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Cultural Change

One of the most significant benefits of the OEP Training Program has been the change in the organizational culture at ITS. The style, content and energy level of hallway conversations are noticeably improved. There have been instances where resisters have been openly challenged by their peers. There is an improved awareness of how service issues affect customers, of the need for more effective communication between teams and of the benefits of cross-functional collaboration.

Where appropriate, ITS has even added IT Service Management objectives to employee performance monitoring. Two sets of Performance Expectations were added to Performance Management Plans. One measures performance against any assigned deliverables in support of the OEP development and implementation; the other measures performance against process metrics and KPIs for live processes.

The OEP asked the Technology Planning Group (TPG) to sponsor a Customer Focus Group consisting of agency staff who manage the respective processes being implemented in Phase I. The Customer Focus Group met regularly to review and provide feedback on project milestones (detail process design, roles/responsibilities and policies, KPIs, rollout strategies.) The Customer Focus Group members also assisted in the awareness campaign within their respective agencies.

The TPG and the Customer Focus Group provided feedback to the Program Director, respective Process Owners and the respective process design teams on key milestones and deliverables. These include high level and detailed process design, process policies, process roles and responsibilities, process metrics and reporting as well as implementation strategy, planning and communication.

The initiative presented in this document focuses on continuous process and service improvements. It builds upon past progress to implement fully a comprehensive IT Service Management framework and complete a structure of people, processes and physical assets required to manage IT effectively and efficiently. The OEP is responsive to the state's compelling program and business challenges, its economic realities, and its absolute dependence on IT.