



New York State Information Technology Strategic Plan

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Governor**

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Dear Friends:

Historically each state agency in New York has architected and operated its own IT environment. This included all aspects of information technology, such as agency-specific standards, processes for personnel recruitment, procurement of hardware, application development and security. There was virtually no coordination across the enterprise regarding standards, brands or approaches to technology. Many fundamental, strategic decisions in agencies were made by educated guesses alone.

Today, in great testament to the success of the NYS CIO Council, things are changing. Across agencies and down to local governments there is real collaboration. The level of discussion has increased ten-fold as we all realize we cannot achieve our goals alone. Maintaining an enterprisewide view of IT, even while developing agency-specific applications is crucial.

The New York State Enterprise had many accomplishments this past year. New York published its first Enterprise Architecture Principles, establishing a common framework for all agencies to build on. New York established enterprise e-learning initiatives in support of the State's Enterprise Architecture Principles. New York piloted an aggregated IT purchase leveraging the State's purchasing power to realize savings without sacrificing value. New York security agencies collaborated to identify opportunities to further harden IT systems and critical infrastructure. New York created a peer review checklist to help monitor the IT enterprise and for agencies to use as a project management tool. New York published the Enterprise Newsletter to increase communication and the sharing of best practices.

As we look forward, our goal remains to promote a collaborative environment where ideas and innovations abound. Citizens, businesses, and governments depend daily on high-quality services provided by every state agency. Staying customer-focused is paramount. Increased information sharing and information security are always priorities. Improving IT governance among key stakeholders will help leverage scarce resources and optimize technology investments. Adopting the Enterprise Architecture Principles will lead to greater system efficiencies and a standard approach to IT project development.

Vital to this strategic plan was the collaboration among key interagency and intergovernmental representatives. Technical minds alone could not produce a strategic vision for New York. Without representatives from budget, procurement, human resources, security, and local governments the vision would be shortsighted at best.

Following this road map and through continued collaboration and consensus, I believe New York will build a world-class IT environment, that is customer-focused and that strives to achieve Governor Pataki's vision for a "government without walls."

Sincerely,



James T. Dillon

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MISSION AND VISION

The Office of the CIO is committed to providing the leadership needed to realize the information technology mission and vision of New York State.

The Mission

The Office of the CIO serves as the voice for the information technology needs of New York State, develops methodologies for investment prioritization and implements standards to enable greater coordination of information technology across state government entities and with local and federal government partners.

The Vision

The CIO's Office creates a culture whereby investments and information sharing are maximized through coordinated, standardized processes, resulting in enhanced service to New York State constituents.

STRATEGIC PLAN OVERVIEW

The New York State Chief Information Officer (CIO) is accountable for recommending the effective and efficient investment in the acquisition of the state's information technology. Last year's strategic plan was designed to establish the three components needed to promote the creation of a formal investment governance structure that will facilitate consensus-building in the decision-making process.

Three foundational components were initiated in the 2003/04 New York State Information Technology Strategic Plan:

1) Governance structure for informed decision-making.

The creation of the CIO Council has provided a forum to validate and renew the strategic direction proposed by the CIO. The strategic direction documented in this plan ensures that budget appropriations position New York for future growth and fiscally sound expenditures. The CIO Council is positioned to provide ongoing advice and counsel to the CIO which will be used to establish investment priorities.

2) Structures and standards upon which consistent investment decisions are made.

The establishment of statewide architectural principles sets the information technology baseline and future direction of IT in New York State. These principles will be used during the investment decision making process to validate that expenditures are consistent with the direction set forth in the IT vision which was established to ensure New York State's continued record of successful cost effective and efficient governance.

3) Facilitation of the procurement policy and process. The creation and implementation of the annual technology plans (ATP), peer reviews, and structured RFP and business case templates will provide a common basis for documenting the value for all IT investments regardless of the source. The consistency these processes provide will enable the enterprise to accurately evaluate the value of IT investments in the context of New York's strategic direction while balancing against its underlying architectural principles.

The deployment of these methodologies and processes provides a strong foundation for prioritizing IT investments. In 2004, the OCIO is taking additional steps to formalize the IT investment prioritization process through the creation of an Information Technology Investment Board; ensuring New York State coordinates IT investments during the annual budget cycle and measures the success of these investment throughout the fiscal year.

INFORMATION TECHNOLOGY INVESTMENT BOARD

Creation of an Information Technology Investment Board will foster a more efficient and effective statewide information technology system. Through the establishment of this Board, New York State will begin to implement the principles reflected in the Information Technology Strategic Plan. This is essential to achieving systemwide benefits. Similar to the private sector, New York will reap financial savings and operational efficiencies through the use of standardized products and processes, including security measures and uniform skill requirements.

As currently envisioned, the Board will encompass the following Executive agencies that are currently charged with oversight roles and investment decision making:

- OCIO (Chair)
- Division of Budget
- Office for Technology
- Office of General Services
- Department of Civil Service
- Office of Cyber Security and Critical Infrastructure Coordination

The Board will be charged with reviewing strategic IT procurements and related resource allocations from an enterprise context to ensure consistency with the New York State Information Technology Strategic Plan. The Board will also identify collaborative opportunities and assist agencies in utilizing their resources in the most efficient manner. The Board will have the authority to halt IT procurements or practices that are not consistent with the New York State Information Technology Strategic Plan.

In the ever-evolving world of IT, it is imperative that the Board work in a coordinated manner to eliminate potential contradictory guidance and ambiguities by the State's central control agencies. The Board is not designed to preempt the statutory or administrative prerogatives of the member organizations. Rather, its focus will be on general policy direction, goal setting, and information sharing

KEY RESULT AREAS

The accomplishments achieved by the New York State IT community in 2003/04 have allowed us to refine and update our key result areas.

ENTERPRISE IT INVESTMENTS

The Office of the CIO in partnership with the key stakeholders will optimize technology investments and value through improved coordination of enterprise IT procurements.

Provide a common direction for optimizing enterprise IT investments

- ❖ Establish an Information Technology Investment Board composed of the key stakeholders responsible for prioritizing technology investments.
- ❖ Provide the Investment Board with recommendations on IT investment priorities.
- ❖ Have the Investment Board establish, publish, and monitor IT priorities in conformance with the Administration's strategic objectives.
- ❖ Identify "best value" IT procurement processes.
- ❖ Distribute CIO approved RFP templates to New York State government entities for developing IT proposals to ensure consistent contracting processes statewide.
- ❖ Mandate the use of the peer review process that incorporates enterprise architecture principles and documentation of aggregate purchasing opportunities.

ENTERPRISE ARCHITECTURE

To achieve greater system efficiency and effectiveness, and create common framework for standardization, the Office of the CIO will direct the development and deployment of a statewide architecture methodology designed to guide investments, information sharing, and disaster recovery.

Investments

Identify and optimize technology investments that conform to the established enterprise architectural principles.

- ❖ Establish timeframes for filing annual technology plans (ATPs) to ensure incorporation into the annual budget process.
- ❖ Establish a process for the CIO, with support from the Office for Technology, to review ATPs and provide technology investment recommendations to the Information Technology Investment Board.

Ensure that future technology implementations comply with New York State architectural principles.

- ❖ Require each department and authority to document its architecture structures to ensure progress toward compliance with the state's architectural principles.
- ❖ Establish a process to review individual department architecture designs and provide recommendations for improvements.

Information Sharing

Ensure that information sharing is conducted in a secure, reliable and sustainable environment in compliance with New York State policies.

Eliminate technical barriers to information sharing.

- ❖ Establish technology standards for information sharing as part of the State's enterprise architecture principles.
- ❖ Develop a standard process for identifying, documenting and evaluating the rationale and legal authority to share data across departments and jurisdictions.

Make interactions with New York State more efficient.

- ❖ Encourage agency technical architecture plans to leverage opportunities for increased information sharing and reduce redundant information required from citizens, businesses, and local governments.

- ❖ Utilize annual technology plans to identify opportunities to expand constituent self-service capabilities and make recommendations to the OCIO.

Security

Ensure that technology systems and infrastructure are secure and compliant with New York State Policies.

- ❖ Develop guidelines to harden critical components of the State's technology environment with initial emphasis on firewalls and targeted servers.

Ensure adequate preparations are in place for timely recovery of all New York State IT services in the event of a disaster.

- ❖ Assess the current state of business continuity and disaster recovery planning efforts of individual agencies, authorities, and local government entities; identify gaps; and recommend corrective actions.

INTEGRATED GOVERNMENT

Develop policies and strategies that advance a culture within New York State that both recognizes information as a public asset and promotes coordinated cross-jurisdictional service delivery to constituents.

Eliminate process and project barriers to integrating government service delivery.

- ❖ Establish a governance model supportive of universal access to public information to increase its value and provide more consistent services to appropriate constituencies.
- ❖ Implement CIO-approved recommendations on intergovernmental integration to build awareness and involvement of all stakeholders.
- ❖ Provide to the Governor's counsel any statewide information sharing recommendations made by the CIO Council for the purpose of determining legal and/or legislative actions.

WORKFORCE MANAGEMENT

The Office of the CIO will work with the Department of Civil Service, the Division of the Budget, and the Governor's Office of Employee Relations to ensure that a skilled technology workforce is available, trained, and effectively employed to efficiently achieve statewide objectives.

Conduct an evaluation of existing resource skills and develop a plan to acquire the skills needed to implement agency enterprise architecture.

- ❖ Develop a survey for the collection of existing IT skills. Require agencies to complete the survey and provide assessments of both current and future needs in the context of the State's enterprise architecture principles and individual agency strategic plans.
- ❖ Review agency enterprise architecture strategies and assess the results of the skill survey to assist the Department of Civil Service and Governor's Office of Employee Relations in developing and implementing a long-term workforce plan that periodically evaluates IT title structures, compensation models, and recruitment and retention requirements.

Ensure that the IT workforce has the skills required to meet New York State's IT needs.

- ❖ Identify alternate learning sources for the enhancement of existing resources' technical and managerial skills.
- ❖ Collaborate with SUNY/CUNY by providing them with information on the skills that will be needed to support New York's architecture strategies. Work with higher educational institutions to develop appropriate curriculums and recruiting strategies.
- ❖ Align investments in learning offerings with approved enterprise architecture principles.
- ❖ Work with appropriate control agencies to develop recommendations enabling government entities to provide succession plans for critical technology resources to support business continuity.

APPENDICES

GLOSSARY OF TERMS

Enterprise

For the purposes of this document, enterprise is defined as all state government entities in New York. In some instances, enterprise expands beyond the State to include federal and local government partners in an effort to leverage resources across jurisdictions and expand information sharing capabilities.

Enterprise Architecture (EA)

Enterprise Architecture is a top-down, business strategic-driven process that coordinates the parallel, internally consistent development of enterprise business, information, and technology architectures, as well as the enterprise application portfolio. It represents the encompassing expression of the enterprise's key program, information, application, and technology strategies and their impact on program functions and processes. Conducted within an appropriate, collaborative organization/governance context, EA artifacts consist of a common requirements vision (CRV) and conceptual architecture (CA), as well as current- and future-state models of four key components:

- ❖ Enterprise Business Architecture (EBA), a business vision-driven, disciplined process that decomposes the enterprise's program strategies, the assets and processes required to execute them, as well as their impact on program functions.
- ❖ Enterprise Information Architecture (EIA), a business driven process that details the enterprise's information strategies, its extended information value chain, and the impact on technical architecture.
- ❖ Enterprise Technical Architecture (ETA), an Enterprise Business Architecture (EBA), and/or Enterprise Information Architecture (EIA)-driven, structured process that details the enterprise's technology strategies, its extended technology linkages, and their impact on program/project initiatives.
- ❖ Enterprise Application Portfolio (EAP) a collection of integrated application systems required to satisfy program information needs, including the existing and planned inventory of applications and components, complete with relationships to supported information and business processes, and engineered linkages to the enterprise technical architecture and infrastructure services.

* *NYS uses a federated architecture model (see Federated Architecture definition)*

Federated Architecture

A cornerstone of informed and consistent technology investments requires the implementation of a federated architecture. A federated model allows individual agency decision-making while leveraging shared services where appropriate. This ensures interoperability and provides shared services which will maximize the use of agencies resources. Smaller agencies with limited resources are provided an IT infrastructure which ensures the integrity of the entire system and delivery of consistent high-quality services to all constituents. *Federated Architecture* is the structured expression of the State's key business, information, application, and technology strategies and their resulting impact on business functions and processes. To be successful in the development of a *Technical Architecture*, an organization must understand and account for the larger Federated Architecture context. Federated Architecture typically consists of current and future State models of four key components: Enterprise Business Architecture (EBA), Enterprise Information Architecture (EIA), Enterprise Application Portfolio (EAP), and Enterprise Technical Architecture (ETA). The technical architecture was developed in 2003. Shared domains, which are supported and maintained by OFT or a lead agency, provide functionality for agencies without the overhead of maintaining the requisite infrastructure for the on-going operation, support, and maintenance of these applications. Using a federated architecture approach enables agencies to maintain diversity and uniqueness, while enabling process integration and information sharing, providing interoperability and driving down costs.

TECHNOLOGY TRENDS

In establishing the strategic initiatives and architectural principles, the CIO is preparing for the following technology trends ensuring State government entities are positioned for future growth and fiscally sound operations.

Collaborative Planning - Creation of formal governance structures will increase to drive accountability for IT investments.

- Portfolio models
- Documented business measures
- Increased participation (Commissioners, CFOs, policymakers and CIOs.)

IT/Policy Alignment - Public policy will be the primary determinant of the value of IT investments.

- Delivering consistent, effective and efficient services
- Leveraging existing investments
- Prioritizing future investments

Pervasive Connectivity - Always connected, yet mobile constituents through remote and mobile computer technologies in a multitude of form factors, e.g., handheld, cellular, pager, information appliances.

- Transport of data gets less expensive
- Geographic centers of excellence
- Temporal, virtual employees, partners and the demise of traditional workday.

Information On Demand - The expectation of continual access to information anytime, anywhere, in a more personalized context.

- Self-service
- Remote 24x7 management
- Accelerated distributed decision-making
- Enhanced decision-making through enterprise analytics and reporting

Standards Convergence - The integration of applications and infrastructures utilizing expanded bandwidth and increased storage capacity.

- Enhancing business workflow models
- Emphasis on middleware and enterprise application integration
- Collaborative tools (Instant Messaging, Teamware, etc.)

Human Capital Risk - People will continue to represent a significant risk as the economy rebounds and an increasing percentage of the public sector workforce becomes eligible for retirement and flexible work arrangements

- Focus on skills-set assessments and risks to help define future needs
- Sourcing strategies
- E-employee initiatives
- Enterprise architecture decisions

Workforce Virtualization - An increasingly digitally connected workforce having access to information anywhere, anytime.

- Balancing work, family, and play
- Core competency strategies
- Organizational structures, policies, governance, and architecture

* Identified through industry research conducted by Meta Group, Inc.