**Nebraska Information Technology Commission
Strategic Initiatives**

Strategic Plan For
Enterprise Architecture for State Government

Objectives

Enterprise Architecture is a structured process for deciding what information technology is needed for the enterprise and how to provide information technology services within the organization.

The objectives of enterprise architecture include:
1. Focusing attention on the strategic use of information technology to support the functions of state government (business needs);
2. Providing quality data to those who need it (data sharing);
3. Achieving compatibility among various systems (interoperability);
4. Improving savings and value from expenditures on information technology (efficiency).

Benefits

State government is complex. Its numerous operational units provide a wide range of products and services. Its many functions require relationships with federal agencies, other state agencies, local governments, and private partners. Authority is fragmented among three branches of government, independent agencies and political subdivisions.

Optimizing investments in information technology requires solutions that transcend organizational and jurisdictional boundaries. Enterprise architecture provides disciplined procedures for incorporating enterprise-wide considerations into decisions regarding information technology.

The purpose of Enterprise Architecture is to meet business needs, enhance data sharing, insure interoperability, and improve efficiency. EA accomplishes these objectives by establishing a governance process for EA decisions, documenting business drivers affecting the enterprise, identifying the principles that should guide IT investments, developing technical standards and guidelines, establishing a means for exceptions, and providing enforcement.

Current Status

Some aspects of Enterprise Architecture are in place. In particular, the NITC has a well-established process for developing, reviewing and adopting technical standards and guidelines. The Technical Panel (http://www.nitc.state.ne.us/tp/) of the NITC has sponsored several workgroups to prepare elements of a technical architecture. This includes accessibility standards and guidelines, a draft e-government architecture document, network architecture, video standards, and security policies and standards. A copy of existing documents is available at: http://www.nitc.state.ne.us/standards/index.html.

Several efforts are also underway that promote integration of information technology systems across the enterprise. These include:
1. Network Nebraska: An initiative sponsored by the NITC for consolidating data and video communications networks across the state.
2. CJIS Advisory Committee: Established by the Nebraska Crime Commission to promote data sharing across all elements of the criminal justice system. (http://www.nol.org/home/crimecom/)
3. GIS Steering Committee: Established by the Legislature to coordinate investments in GIS technology and databases. (http://www.calmit.unl.edu/gis/)
4. Juvenile Data Sharing Study: A joint effort by the State Government Council and the CJIS Advisory Committee to identify the need and opportunity for data sharing among state and local entities providing services to juveniles.
5. Steering Committee on Child Abuse and Neglect Information Exchanges: State and local agencies are developing solutions to improve data sharing relating to child abuse and neglect investigation and prosecution.

In addition, several agencies are making progress in developing enterprise architecture to guide decisions regarding internal IT systems. HHS' NFOCUS system is the product of an enterprise architecture that now encompasses 26 programs, with linkages to several external systems. The Department of Environmental Quality developed an agency-wide view of information requirements as the foundation for future systems development. The Department of Labor recently completed a "Strategic Technology Architecture Roadmap" before embarking on major changes to its applications. The State Patrol is evaluating its applications and technology in order to achieve better integration and reduce support requirements.

Although important, the sum of these activities falls short of being an enterprise architecture for state government.

In December 2003, the State Government Council (SGC) adopted a strategy for Enterprise Architecture, Shared Services and Standardization. As part of this strategy, the State Government Council will serve as a "committee-of-the-whole" to develop the enterprise architecture. The State Government Council looked at several approaches for enterprise architecture. There was consensus to investigate the tools and resources developed by the National Association of State CIOs (NASCIO), because they were designed for state government and reflect the need for a high level perspective, rather than one that is too detailed. There is also the advantage of getting assistance from

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staff at NASCIO and working with other states that are using the NASCIO tools and resources.

Future

One of the tools available from NASCIO is a readiness self-assessment and maturity model. Based on answers to the EA Readiness Assessment, Nebraska state government has at least some of its Business and IT goals defined, and the EA Program is in the planning stages. There is some commitment to the EA process by executives, and the State Government Council (SGC) is serving as the impetus for developing an Enterprise Architecture. However, no budget exists for EA Program development.

Based on the NASCIO self-assessment and maturity model, Nebraska must undertake substantial work in eight categories. There are five levels in the maturity model. Only those steps necessary to achieve Level 3 in each category are reported here.

Administration – Governance Roles & Responsibilities. The purpose of architecture governance is to direct or guide architecture initiatives, ensure that organizational performance aligns with the strategic intent of the business, ensure IT resources are used responsibly and Technology Architecture-related risks are managed appropriately.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Administration is Level 2 – Repeatable Program. At Level 2, a need for Architecture "Governance" has been identified. The EA Program has begun to develop clear roles and responsibilities. Governance committees are starting to form.

Next Level Summary – The next level is Level 3 – Well-defined Program. At Level 3, Architecture "Governance" committees are established, and have well-defined roles and responsibilities.   Authority of the governance committees is also aligned to work together smoothly.

Steps for Progressing to Level 3
- Formalize EA Administration roles and responsibilities
- Formally follow EA deliverables through processes to ensure committees are aligned and working smoothly together
- Verify that all responsibilities, aligned to an individual or group, are being done.
- Develop and conduct educational sessions for the EA Blueprint development teams (Domain committees)

Planning – EA program road map and implementation plan. Architecture Planning ensures the program is managed to assure the goals for implementation are realistic and achievable and the program is kept within scope.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA

Planning is Level 2 – Repeatable Program. At Level 2, the organization has begun to develop a vision for Enterprise Architecture (EA) and has begun to identify EA tasks and resource requirements. The organization has also decided upon a methodology and begun to develop a plan for their EA Program.

Next Level Summary – The next level is Level 3 - Well-defined Program. At Level 3, EA Program plans are well defined and documented, including governance roles & responsibilities, the architecture lifecycle processes, a structured framework and timeline for developing the EA, and financial & staffing resource requirements. EA activities are also carried out according to the defined plan.

Steps for Progressing to Level 3:
- Create EA Program Plan
- Execute EA activities based on defined EA Program Plan
- Update plans based on changes to any of the plan criteria previously mentioned

Framework – processes and templates used for Enterprise Architecture. Architecture Framework consists of the processes, templates and forms used by those documenting the operations and standards of the organization.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Framework is Level 1 – Informal program. At Level 1, the organization is beginning to understand the need to create processes and templates to capture business drivers and technical standards. However, processes are ad hoc and informal, processes followed may not be consistent.   There is no unified architecture process across technologies and lines of business.

Next Level Summary – The next level is Level 2 - Repeatable Program. At Level 2, the basic EA Program is documented. Processes are planned and tracked. The organization is beginning to reuse methods for capturing critical EA information.

Steps for Progressing to Level 3:
- Document the basic EA Program processes and templates
- Begin to track EA Program plan processes
- Track EA processes, actuals against planned
- Encourage reuse of basic EA Program templates
- Formally document Architecture Lifecycle Processes.
- Formally document EA Program Tools (Architecture Lifecycle Templates, Migration Strategy Templates, Classification Criteria Decision Tools)
- Produce Education Materials for the Architecture Lifecycle Processes and Tools
- Conduct Education Sessions for the Architecture Lifecycle Processes and Tools

Blueprint – collection of the actual standards and specifications. Architecture Blueprint refers to the completed documents that are prepared using the Architecture Framework processes, templates and forms. The Blueprint refers to the documented products and standards, together with their detail, classifications, impact statements, and migration strategies.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Blueprint is Level 0 – No Program. At Level 0, Business functionality is not documented and IT technology standards are not documented.

Next Level Summary – The next level is Level 1 - Informal Program. At Level 1, documentation of business drivers, technical standards, etc. is beginning to happen.

Steps for Progressing to Level 3:
- Research how other organizations capture business drivers and technology standards.
- Informally begin to document Business Drivers
- Informally begin to document Technology Standards
- Identify documented Business Drivers and strategic information
- Identify documented Technology Standards
- Determine ways to capture the various pieces of EA information in a consistent format and storage medium
- Consistently document Technology Standards and Guidelines using the EA Program Tools provided

Communication –education and distribution of EA and Blueprint detail. Communication is the element that ensures standards and processes are established and readily available to team members for reference and use. As an organization changes and programs evolve the continued communication ensures the EA program remains vital and operates optimally.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Communication is Level 0 – No Program. At Level 0, Senior Management and agencies are not aware of what enterprise architecture is, or the benefits.

Next Level Summary – The next level is Level 1 - Informal Program. At Level 1, the need to create greater awareness about EA has been identified.

Steps for Progressing to Level 3:
- Begin to talk to Senior Management groups regarding the benefits of Enterprise Architecture
- Create Enterprise Architecture Marketing Materials
- Conduct an Enterprise Architecture Marketing Campaign to Senior Management and Legislators
- Prepare and conduct workshops on sharing ideas, standards, and technology configuration specifications
- Share EA Blueprint information captured in reusable formats
- Develop a formal Communication process to ensure the EA Program is communicated and known throughout the organization
- Conduct EA Senior EA presentation showing actual results from EA Program
- Develop and conduct training sessions to educate committee members on the EA roles and responsibilities, processes and templates
- EA Blueprint is available to all stakeholders for analysis and review
- EA Variances are communicated out to all stakeholders

Compliance – adherence to published standards, processes and other EA elements, and the processes to document and track variances from those standards. Compliance must be reviewed periodically to be sure the business and IT programs and services are operating effectively.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Compliance is Level 0 – No Program. At Level 0, no compliance process exists within the organization.

Next Level Summary – The next level is Level 1 - Informal Program. At Level 1, the need for compliance to standards has been identified.

Steps for Progressing to Level 3:
- On a "target action" list, identify the need to comply with the developed guidelines, standards and legislation
- Identify the various ways that compliance is currently accomplished within your organization and document them.
- Document a consistent compliance process to ensure that changes in the enterprise are in line with the documented guidelines, standards, and legislation.
- Choose a pilot project to take through the compliance process. Ensure that the compliance process takes into account all of the steps required to ensure compliance and brings benefit to the team seeking information from the EA Program
- Observe the development of a business case to seek a variance from the guidelines, standards, and legislation.
- Document issues that came up regarding the development process and/or difficulties encountered
- Fully integrate the EA compliance process with the other EA Program Architecture Lifecycle Processes to ensure interoperability of the EA Program overall
- To keep the EA Blueprint vital, ensure that the various help requests and variances are tracked and feed into the Architecture Vitality processes
- Use the information documented during the observation of the Business Case development process to further define and improve the process
- Provide a business case template to aid in the development of consistent business cases across the enterprise

Integration – touch-points of management processes to the EA. Integration addresses the ability of the various entities (internal or external to the organization) to coordinate their efforts to the greatest benefit of the organization. This is a key factor, as great efficiencies are gained by identifying similar functions or operations, both inside and outside of an organization.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Integration is Level 1 – Informal program. At Level 1, the need for integration to the EA Program Framework (Architecture Lifecycle Processes) has been identified. The various

touch-points between the Management Processes and the EA Program Framework have been mapped, however, no details exists to how the integration will work. Projects and purchases may be costly because they are done in isolation.

Next Level Summary – The next level is Level 2 - Repeatable Program. At Level 2, the organization has begun to identify common Business and system functions, which allows touch-points to be identified earlier in the project development life cycle.

Steps for Progressing to Level 3:
- Determine the benefits that the EA Program can bring to the other Management Processes
- Meet with the owners/stakeholders of other Management Processes. Talk to them about the benefits that can be received by integrating various processes
- Brainstorm various options for integrating their Management Processes with the EA Program Framework
- Determine next steps to help the integration to move forward
- Document the EA Program integration points:
- The documented integration points should be completed for all of the following Management Processes that exist in your organization, including strategic planning, capital planning, project management, change management, procurement, and budgeting.
- Make Architecture Compliance Review part of the project methodology

Involvement – support of the EA Program throughout the organization. Involvement must be part of an EA Program. Without the support of managers and employees who are expected to utilize and follow the defined process, the program is sure to fail.

Current Level Summary – Based on the responses provided in the EA Assessment, the EA maturity level that most closely identifies your organization's current state for EA Involvement is Level 0 – No Program. At Level 0, there is no program in place for Enterprise Architecture awareness. Several independent groups or individuals will be typically working to solve a single issue.

Next Level Summary – The next level is Level 1 - Informal Program. At Level 1 the organization has identified a need to make staff throughout the enterprise aware of the benefits and concepts of Enterprise Architecture.

Steps for Progressing to Level 3:
- Document the advantages of having Enterprise Architecture that are specific to your organization. If you have EA benefit statements or charters already developed, these can help in documenting the advantages.
- In the document, discuss the concept that all organizations have an architecture, however, having a successful, Enterprise Architecture is a matter of having the details of that Architecture explicitly defined and documented, rather than implicitly done based on everyone's Agencyal inclinations or understanding
- Speak to various management groups throughout the organization about the concepts of EA.
- Set-up web site to increase understanding of EA and solicit involvement
- As EA roles and responsibilities are identified, solicit volunteers and choose individuals to assist in the EA Program.

- Continue to provide the EA Blueprint information to the various organizational groups within your enterprise. Communicate to the members of these groups the benefits of having the EA Blueprint information for the critical decision-making process
- Continue to involve additional organizational individuals/groups in the EA roles and responsibilities. As people get involved they become proponents of the program

Recommended Actions

(NOTE: These recommendations are still subject to change, pending additional advice from those entities that are participating in this strategic initiative.)

The NASCIO methodology recognizes that developing Enterprise Architecture is a gradual, iterative process. Each version of the Enterprise Architecture builds on previous work. This section sets forth the detailed work plan for the next 6 months. Timeframes reflect high-level estimates without perfect knowledge of the tasks to be accomplished or the resources that will be available.

Actions Include:

1. Governance and Planning
    a. Lead Entity: CIO
    b. Tasks and Timeframes:
        i. Prepare draft roles and responsibilities for EA (September 16, 2004)
        ii. Prepare draft EA Program Plan (September 16, 2004)
        iii. Prepare draft changes to SGC Charter, if necessary (October 2004)
        iv. Publish version 1.0 of the EA (January 31, 2004)
    c. Funding: No funding required for this task

2. Compliance Plan
    a. Lead Entity: CIO
    b. Tasks and Timeframes:
        i. Document current compliance process (September 16, 2004)
        ii. Prepare draft of proposed changes to compliance process (October 2004)
        iii. Prepare draft of process and criteria for justifying a variance to the EA (October 31, 2004)
    c. Funding: No funding required for this task

3. Integration Plan
    a. Lead Entity: CIO
    b. Tasks and Timeframes
        i. Prepare draft documentation of relationship of EA to project management (November 30, 2004)
        ii. Prepare draft documentation of relationship of EA to strategic planning and budgeting (December 31, 2004)

c. Funding: No funding required for this task

4. Technical Architecture Framework
   a. Lead Entity: CIO
   b. Tasks and Timeframes:
      i. Document EA program process and templates (December 31, 2004)
      ii. Document Architecture Lifecycle Process (December 31, 2004)
   c. Funding: No funding required for this task

5. Technical Architecture Blueprint
   a. Lead Entity: CIO
   b. Tasks and Timeframes:
      i. Research and document business drivers (December 31, 2004)
      ii. Research and document existing technical standards (target date?)
   c. Funding: No funding required for this task

6. Enterprise licensing
   a. Lead Entity: Tom Conroy
   b. Tasks and Timeframes:
      i. Solicit enterprise pricing for anti-virus software (August 31, 2004)
      ii. Prepare strategy, work plan, and timetable for enterprise licensing (September 31, 2004)
   c. Funding: No funding required for this task

7. Shared services
   a. Lead Entity: TBD
   b. Tasks and Timeframes:
      i. Research opportunities for shared services, including criteria for deciding whether a service should be centralized or distributed (target date?)
      ii. Prepare an inventory of existing shared services (target date?)
   c. Funding: No funding required for this task