NASCIO
Enterprise Architecture Maturity Model
Version 3.1
Self-Assessment

Draft
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A. Categories

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.

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.

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.

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.

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.

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.

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.

Enterprise Architecture is an overall plan for designing, implementing, and maintaining the infrastructure to support the business functions, networks and systems of the enterprise.

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.

B. Maturity Levels

EA LEVEL 0 - NO PROGRAM
There is not a documented architectural framework in place at this level of maturity. While solutions are developed and implemented, this is done with no recognized standards or base practices. The organization is completely reliant on the knowledge of independent contributors.

EA LEVEL 1 - INFORMAL PROGRAM
The base architecture framework and standards have been defined and are typically performed informally. There is general consensus that these steps should be performed, however they may not be tracked and followed. Organizations with an Enterprise Architecture framework at this level are still dependant on the knowledge of individual contributors.

EA LEVEL 2 - REPEATABLE PROGRAM
The base architecture and standards have been identified and are being tracked and verified. At this point in the program processes are repeatable and reusable templates are starting to be developed. The need for product and compliance components to conform to the standards and requirements has been agreed upon, and metrics are used to track process area performance.

EA LEVEL 3 - WELL-DEFINED PROGRAM
The enterprise architecture framework is well defined; using approved standard and/or customized versions of the templates. Processes are documented across the organization. Performance metrics are being tracked and monitored in relationship to other general practices and process areas.

EA LEVEL 4 - MANAGED PROGRAM
At this point performance metrics are collected, analyzed and acted upon. The metrics are used to predict performance and provide better understanding of the processes and capabilities.

EA LEVEL 5 - CONTINUOUSLY IMPROVING VITAL PROGRAM
The processes are mature; targets have been set for effectiveness and efficiency based on business and technical goals. There are ongoing refinements and improvements based on the understanding of the impact changes have to these processes.

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C. Maturity Levels by Category

ADMINISTRATION

Level 0
- No Architecture Governance is in place

Level 1
- The need for committees to define the standards and processes has been identified

Level 2
- A need for Architecture Governance has been identified
- EA Program has begun to develop clear roles and responsibilities
- Governance committees are starting to form

Level 3
- Architecture Governance committees are defined, and have defined roles and responsibilities
- Authority of the governance committees is aligned to work together smoothly

Level 4
- Governance roles and responsibilities are reviewed and updated to incorporate changes to the EA Framework

Level 5
- Governance committees proactively review their activities and institute changes to improve their processes
- The organization works with other states to share ideas for improvements to their EA Administration.

COMMENTS:
Some aspects of EA Administration are in place. In particular, the NITC has a well-established process for developing, reviewing and adopting technical standards and guidelines. In addition, The State Government Council has identified the need for undertaking an EA initiative, and the NITC has included EA as one of its strategic initiatives in the 2004 Statewide Technology Plan.

Many gaps still exist in the area of administration and governance. Benchmarks in the NASCIO EA Readiness Assessment Preview indicate that work is needed in the following areas:

1. There is no business plan that defines business goals and objectives for the enterprise. In the absence of such a business plan, the EA document will have to develop a set of business goals and objectives based on agency plans, gubernatorial directives, and other sources.
2. The EA document must identify IT goals and objectives and link them to the enterprise business goals.
3. The NASCIO EA Readiness Assessment Preview (Question 2.5) refers to the "Enterprise's IT Plan". We need a better understanding of what constitutes an Enterprise IT Plan and whether any elements are missing.
4. When the EA Program is better defined, we need to explain the project to policy makers.
5. No budget for the EA Program exists. How detrimental is this?
6. There is no EA organization chart or EA roles assigned.

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The NASCIO Toolkit 2.0 discusses several steps for developing architecture governance. These include determining "existing and future Enterprise Elements", "Governance Roles", "Governance Structure", and "Architecture Lifecycle Processes."

Other literature on IT governance emphasizes the need for clearly articulated goals, adequate participation, and transparency.

PLANNING

Level 0
- No plans for developing Enterprise Architecture are in place

Level 1
- Need for Enterprise Architecture has been identified
- EA activities are informal and unstructured

Level 2
- The organization has begun to develop a vision for Enterprise Architecture
- Organization has begun to identify EA tasks, and resource requirements.
- Organization has decided on a methodology and begun to develop a plan for their EA Program

Level 3
- EA Program plans are well-defined, including governance roles & responsibilities, a structured framework and timeline for developing the EA, and financial & staffing resource requirements
- EA activities are carried out according to the defined plan

Level 4
- EA plans are reviewed and changes are incorporated to improve the EA Program
- The organization captures metrics to measure the progress against the established EA plans
- Goals are being set for the future of the EA Program Plan

Level 5
- Action plans are proactively implemented to increase the effectiveness of the EA Program based on captured metrics.
- Organization works with other states to share ideas with focus on improvements to the planning process for the future EA Program.

COMMENTS:
Benchmarks in the NASCIO EA Readiness Assessment Preview indicate that a well-defined EA Program Plan requires the following:
- Goals are set for the future of the EA Program
- There is a structured framework and timeline for development of the EA
- EA Tasks have been identified
- EA financial resources and staffing requirements are identified

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FRAMEWORK
Level 0
- Architecture processes and templates are not documented
Level 1
- Processes are ad hoc and informal, processes followed may not be consistent
- There is no unified architecture process across technologies and lines of business
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
Level 3
- The lifecycle architecture processes have been defined and documented
- Generic architecture processes are being customized for uses by agencies, departments, etc.
- Process models have been prepared
- Templates are used to ensure the capturing of information is consistent
Level 4
- The organization captures metrics to measure the effectiveness of the EA processes and templates
- Corrective action plans are put in place when deficiencies in templates and/or procedures are identified
- Meetings are held regularly to review modifications to the EA Framework
Level 5
- The lifecycle processes are being followed and have become second-nature to the organization
- Captured metrics are used to identify inefficiencies in EA processes and templates prior to notification of issues
- Organization works with other states to share ideas for improvements to EA processes and templates.

COMMENTS:
The Framework refers to the processes and templates that are used to develop and maintain the Enterprise Architecture.

COMMENT: 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.   The process for adopting technical standards and guidelines includes review by the Technical Panel, a 30-day opportunity for public comment by affected entities, and then further action by the Technical Panel to recommend the standard to the NITC for adoption. A template exists for documenting standards and guidelines. A copy of existing documents is available at: http://www.nitc.state.ne.us/standards/index.html.

BLUEPRINT
Level 0
- IT technology standards are not documented

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Level 1

- Documentation of business drivers, technology standards, etc. are informal and inconsistent

Level 2

- Business Drivers, and strategic information have been identified
- The need for an EA repository for storage and dissemination of the captured EA information has been identified

Level 3

- Classification of existing technology standards is consistent
- Documentation of business drivers, and strategic information is consistent

Level 4

- Documentation of business drivers and strategic information has become a standard practice
- Documentation and classification of products and compliances has become a standard practice
- The organization captures metrics from the Compliance process to identify the need for updates to Blueprint information and/or classifications

Level 5

- Captured business and technology information is reviewed in conjunction with the monitoring of new technology and business trends to proactively identify technology that will improve business
- The organization works with other states to share information regarding business and technology trends

COMMENTS:

Enterprise level: no documentation of IT standards exists.
Multi-agency collaboration:
> Discuss Criminal Justice Information Systems (CJIS) standards
> Discuss GIS Steering Committee standards

Agency level: Some agencies may be at different levels in terms of documenting technology standards that are followed internally.

COMMUNICATION
Level 0

- Senior Management and agencies are not aware of what enterprise architecture is or the benefits

Level 1

- The need to create greater awareness about EA has been identified
- Little communication exists about the EA process or possible process improvements

Level 2

- The need for Enterprise Architecture is being communicated to Senior Management
- EA awareness activities are beginning to emerge or be developed

Level 3

- The architecture is well defined and communicated

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- Training is provided for Senior management and agencies regarding architecture and its benefits
- Training is provided for members of the EA committees

Level 4
- A formal Communication process is in place and being followed
- The communication process is reviewed and changes are incorporated to improve the communication of architecture activity and detail.
- EA awareness training is incorporated into new employee orientation
- The organization captures metrics to measure the effectiveness of the EA Communication process

Level 5
- Metrics are used to proactively identify opportunities for improved communication avenues
- The organization works with other states to share ideas for improvements to the communications processes

COMMENTS:

COMPLIANCE
Level 0
- No compliance process exists within the organization.

Level 1
- The need for compliance to standards has been identified
- Compliance is informal and unstructured
- Compliance cannot be measured effectively, because processes and procedures are not consistent across areas and/or projects

Level 2
- The organization has begun to develop a compliance process to ensure that projects and enhancements are consistent with EA standards

Level 3
- A formal EA compliance process is well-defined and is an integral part of the EA lifecycle processes
- The EA Compliance process is followed consistently throughout the enterprise •
- A Business Case is required for variance from the EA standards

Level 4
- Compliance to the EA standards has become common practice throughout the enterprise
- Quality metrics associated with the business cases are captured
- The compliance process is reviewed and updated when deficiencies or enhancements to the process are identified

Level 5
- Information gathered during the compliance process is used to proactively identify updates to the EA standards and/or framework
- Architecture metrics are used to drive continuous process improvements in the Business Cases

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- The organization works with other states to share ideas for improvements to the compliance process

COMMENTS:

Enterprise:

1. The NITC has the statutory authority to "adopt minimum technical standards, guidelines, and architectures upon recommendation by the technical panel." (Section 86-516) The same statute requires "Governmental entities, state agencies, and political subdivisions (to) submit projects which directly utilize state-appropriated funds for information technology purposes to the process established by section 86-512 to 86-524." Currently the project review process is limited to the biennial budget request and projects funded from the Information Technology Collaboration Fund.
2. Division of Communications: Section 81-1120.17 gives DOC broad authority over the "purchase, lease, and use of communications services equipment and facilities for state government."
3. Information Management Services Division: Section 81-1117 gives IMServices the authority "to provide "system review, system design, feasibility studies, and machine reviews." IMServices also can "review operations of information management installations in any agency." In addition:
    a. "No state agency shall hire, purchase, lease, or rent any information management item (as defined in subsection 1) without the written approval of the information management services administrator."
    b. "All new computer programs developed or acquired for use with information management equipment of any state agency shall be documented according to standards developed or approved by the information management services administrator."
    c. "He or she shall provide definitions of standards and common data elements, coordinate the collection of data, consolidate data files or data banks, and review and approve or disapprove the establishment of separate data banks."

    IMServices uses the "1099" Form (http://www.ims.state.ne.us/forms/1909intro.htm) to carryout its responsibilities under section 81-1117.

Agency Responsibilities:

INTEGRATION

Level 0
- No program in place for integration across the enterprise

Level 1
- The need to document common functions that integrate with an EA Program has been identified
- Projects and purchases are typically done in isolation, resulting in costly purchases and redundant development and training requirements

Level 2
- 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 exist as to how the integration will work)

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Level 3
- EA Program is integrated with strategic planning and budgeting processes
- Touch-points of management processes to the EA are well-defined

Level 4
- Enterprise Architecture is used to guide development and acquisition
- The organization captures metrics to measure the savings in resources, including time and money
- Costs and benefits, including benefits across agency boundaries, are considered in identifying projects
- Integration procedures are reviewed and the process is updated when problems or new functionality is identified

Level 5
- The Enterprise Architecture process drives continual reinvention throughout the enterprise
- Business influences Technology and Technology influences Business
- Captured metrics are used to proactively identify improvements to the EA framework or blueprint information and/or integration processes.
- Organization works with other states to share ideas for improved integration, including procurement and project management practices

COMMENTS:
Several efforts are underway that promote integration of information technology system 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. Other ad hoc efforts.

INVOLVEMENT
Level 0
- There is no program in place for Enterprise Architecture awareness
- Several independent groups or individuals typically work to solve a single issue

Level 1
- The organization has identified a need to make staff throughout the enterprise aware of the benefits and concepts of Enterprise Architecture
- EA awareness efforts are informal and inconsistent
- Some groups are unsupportive of the efforts and may cause unrest in the organization

Level 2
- The organization has begun to develop plans for EA educational sessions and materials to increase the awareness and understanding of the EA concepts and processes
- EA concepts are beginning to be introduced and more consistently discussed in normal day-to-day Meetings

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Level 3
- The organization begins to operate as a team, using the defined architecture program and standards
- Senior Management participate in various EA committees
- Business and technical staff participate in EA committees

Level 4
- Personnel throughout the organization have a good understanding of the architecture principals and participate in the EA processes as members of committees or as their projects, etc. have touch points with the architecture
- The organization captures metrics to measure the awareness, participation, acceptance and satisfaction with the EA Program

Level 5
- Agencies and departments work together as contributors to the architecture and its processes
- The organization uses the captured metrics to proactively create action plans for improvement in the EA marketing and educational programs
- The organization works with other states to share ideas for creating an atmosphere for active involvement and participation in EA Program and activities across the enterprise
- The EA Maturity Model and the EA Assessment survey, together make up the EA Readiness/Maturity Assessment tool. The survey will help an organization assess their current Enterprise Architecture situation. When used with this model and the *Enterprise Architecture Development Tool-Kit,* a roadmap can be put in place to move the organization toward the goal of architecture vitality.

<u>COMMENTS:</u>
No EA awareness program exists, but the NITC process for developing and adopting standards and guidelines provides opportunity for involvement by affected agencies.

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