



TECHNICAL ARCHITECTURE PROGRAM IMPLEMENTATION

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INTRODUCTION

The State has made various attempts at Technical Architecture (TA) over the last 20 years, with varying degrees of success. In 2005, the Department of Technology Services (DTS) was established as a consolidated Information Technology (IT) services organization within the Executive Branch of government. For the first time it became possible to develop TA within the context of a single IT organization. This offers substantial opportunities for success and synergy that were not readily available or accessible in the previous IT business model.

The State has a number of large shared services that are supported across the enterprise and the opportunity to develop many more common services. The State also has many unique services that exist in agencies that require ongoing support for agency Line of Business (LOB) activities, and e-government has become a significant business driver for enabling technology architectures that drive LOB services to citizens. The State has a relatively small base of standards, but has significant de facto architecture with varying levels of documentation.

TA Maturity

From a TA maturity perspective, the State has a long ways to go. Applying the IT Architecture Capability Maturity Model (ACMM), which consists of six levels and nine architecture characteristics, yields an estimated overall assessment between 1 and 2 on a six point scale. The State is currently somewhere between an "initial" and "under development" TA. The goal based upon the IT strategic plan is to have a "defined" and "managed" architecture, or a minimum 3 to 4 ACMM maturity assessment.

TA Problem Statement

The current TA of the State, while successful at providing many services, is complex, duplicative, and expensive to maintain. It is characterized by agency-centric systems and processes that are often difficult to scale and leverage as cross agency services.

Agility and the ability to adapt quickly to new business processes and requirements can be difficult and time consuming. The existing TA supports many current agency services effectively, but it does not adequately enable agencies to establish new patterns of doing business. Integration is most frequently accomplished with specific vendor solutions common to an agency, making cross agency sharing much more difficult. To some extent the existing TA may actually constrain new agency business patterns.

TA Benefit to the State

The true business driver behind TA from an e-government perspective is the need to improve State government's ability to deliver services to the public and decision makers. To deliver services more effectively and successfully, and address issues that transcend single agencies, agency-centric systems need to give way, or provide contributions, to integrated citizen-centric applications and processes. Common services need to be identified and managed as cross agency applications to ensure greater efficiency and effectiveness. Effective TA implementation and integration with ongoing project and operational services has the potential to reduce costs and complexity and provide improved value to stakeholders, while retaining the ability to be optimized to meet agency-centric requirements. TA is one of the best facilitators between IT and agency business to make this possible. TA implementation is based on meeting the following TA criteria:

- Simple and Easily Understood
- Accessible to IT and Aligned with Agency Business Needs
- Execution Delivers Useful, Timely, and Practical Results
- Processes and Methods are clearly Defined

MISSION AND SCOPE

TA Mission

Develop and use the Technical Architecture to improve government efficiency and effectiveness.

TA Vision

The Technical Architecture is the cornerstone for the design, development, and implementation of information resources across State government.

TA Goals

- Improve utilization of government information resources to focus on core agency missions and service delivery to Utah citizens.

- Enhance cost savings and cost avoidance through use of Technical Architecture on a statewide basis.
- Increase cross agency and intergovernmental collaboration.
- Develop and maintain the TA.
- Review, reconcile, and approve architectures for agency core Lines of Business (LOB) and common IT services.
- Establish an effective lifecycle management relationship with the DTS Project Management Office (PMO) and implementation groups within DTS.

TA Strategic Initiatives

1. Articulate the value of TA and build trust with agency partners.

- Define the TA value proposition.
- Gather and share TA best practices and case studies and enable agencies to move toward higher levels of TA maturity.
- Establish a TA repository.
- Develop and implement a TA communications strategy.

2. Evolve the TA to drive results.

- Establish and implement a TA governance framework.
- Establish and implement a governance framework for SOA.
- Align TA with agency and DTS strategic planning.
- Complete the development of TA reference models and linkages.
- Begin a Master Data Management project for the State.
- Develop initial TA Roadmaps for each TA framework component.
- Support and guide the development of enterprise security and privacy services.
- Develop a TA glossary to support semantic interoperability.

3. Evolve opportunities with agency LOBs and other collaborative opportunities.

- Support the identification of new LOB opportunities with agencies and new opportunities for shared services.
- Guide agency transition planning toward new common architectures and solutions.
- Support the alignment of e-government and agency LOB initiatives.
- Enhance the value and benefit of collaboration tools within the State.

4. Measure and assess TA value and results.

- Conduct an ongoing TA maturity assessment.
- Identify TA scorecard measurements and a method for ongoing reporting.
- Identify detailed TA performance metrics.
- Report TA results and values.

COLLABORATION PLAN—BUILDING THE TA TEAM

Most of the IT staff of the State has responsibilities other than TA. One of the key questions has to be what is an engagement strategy that will work for the State to leverage TA benefits without an undue cost burden to agencies? Figure 1 illustrates some of the available options:¹

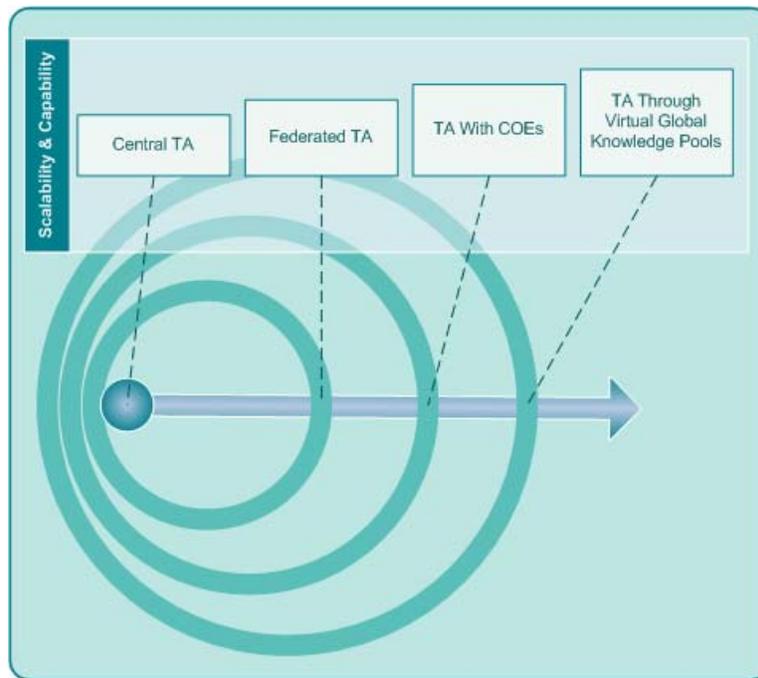


Figure 1. Possible Solutions for Increasing Scaling and Capability of an TA Group within the State of Utah

Central TA will not scale easily, and is much too expensive to implement as a stand alone TA resource. Outsourcing TA is costly and has many communication and practical issues that are difficult to overcome effectively.

¹ Vasa, Ashok, *Solutions to Increasing the Scalability and Capability of an Enterprise Architecture Group Using Federated Networks, CoEs and Virtual Teams*, WiPro, Open Group Architecture Practitioners Conference, July 23-25, 2007, Austin Texas.

The State has many employees with specialized capabilities as business, technical, and data architects that could effectively develop TA in a federated model. Some of these areas could ultimately move to a Center of Excellence (COE) model where COEs become primary centers for TA development in their respective domains, as well as for ongoing operational implementation. Figure 2 represents a recommended federated strategy² that leverages expertise in all DTS customer agencies. This model makes better use of knowledge pools within agencies and leverages specializations that already exist.

Collaboration with LOB personnel is also facilitated by this model. Commitment is for a defined deliverable, and is closely integrated with the actual needs of the agency. Historically, getting agency LOB input to TA has been challenging at best. This method presumes a business-centric approach that does not focus on technology per se with agency LOBs; rather, it focuses on business missions and processes and how IT can enable them.

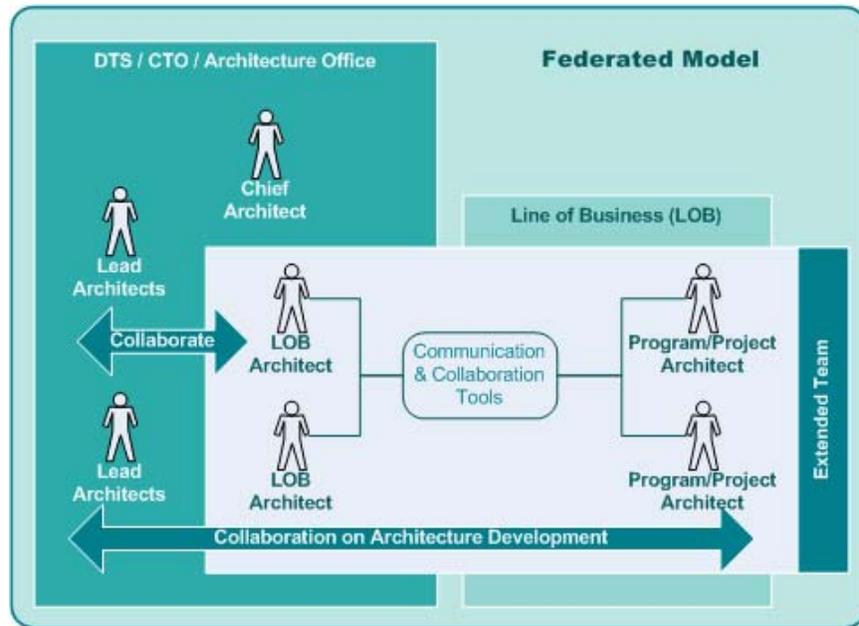


Figure 2. Federated TA Model

This federated model leverages collaboration that has already proven to be effective in some prior TA efforts within State government. TA teams are ad hoc and focused on key deliverables and ongoing review processes as needed. When a team has finished its work, it does not need to continue meeting except for required ongoing review cycles. Impact on day-to-day operational responsibilities is minimized. Collaboration among those with architecture responsibilities in DET, the agencies, the PMO, engineering, and operations is essential for this TA method to be successful.

² *Ibid.*

OPERATING MODEL—HOW TA WORKS

In 2006 DTS engaged SAIC to look at a practical implementation of Enterprise Architecture (EA) for DTS and a number of artifacts were developed that could be applied to TA implementation.^{3, 4, 5, 6} Some of the SAIC recommendations involved extensive process definitions. While process definition is important for developing a consistent and repeatable TA process, it must also be capable and not unduly complex. The processes used need to produce meaningful and useful work products. This Concept of Operations (CONOPS) approach looks at TA from the perspective of:

- effective governance, including: discipline, transparency, independence, accountability, responsibility, and fairness;
- leveraging existing organizational infrastructure and approval processes in preference to creating new ones that are specific to TA;
- ensuring that decision points are clearly defined;
- using ad hoc TA teams that focus on specific deliverables;
- engaging processes that facilitate TA involvement with planning and the PMO, where TA adds business value;
- overall engagement and TA process simplicity;
- organizational transparency;
- development of essential deliverables and documentation (do what we must);
- overall EA Framework;
- TA Governance and Management Framework;
- TA Management Roles and Responsibilities; and,
- TA Core Business Processes.

GOVERNANCE AND MANAGEMENT

Architecture governance is the practice and orientation by which enterprise architectures and others are managed and controlled at an enterprise level. Architecture governance typically does not operate in isolation, but within a hierarchy of governance structures within DTS and the State. Governance is essentially about ensuring that business is conducted properly, and is less about overt control and strict adherence to rules; it is more about guidance and effective and equitable usage of resources to ensure sustainability of DTS and State strategic objectives. TA governance includes:

³ SAIC, *The State of Utah Enterprise Architecture Governance Model*, March 2006.

⁴ Lee, David, et al, *EA Program – A Key DTS Organizational Component*, Department of Technology Services, March 20, 2006.

⁵ Woolley, Robert, David Lee, Steve Coons, and Phil Bates, *Common Requirements for the State of Utah Enterprise Architecture*, Department of Technology Services, February 15, 2006.

⁶ _____, Steve Coons, and Phil Bates, *Utah Enterprise Architecture Principles*, Department of Technology Services, February 15, 2006.

- Implementing a system of controls over the creation and monitoring of TA components and activities, to ensure the effective introduction, implementation, and evolution of architectures within the organization.
- Implementing a system to ensure compliance with internal and external standards and regulatory obligations.
- Establishing processes that support effective management of approved TA processes within agreed upon parameters.
- Developing practices that ensure accountability to clearly defined stakeholder communities, both inside and outside of the Executive Branch.

TA GOVERNANCE FRAMEWORK

TA Governance exists in the context of the overall business process illustrated in Figure 3. This process incorporates Technical architecture in context with other DTS business processes.

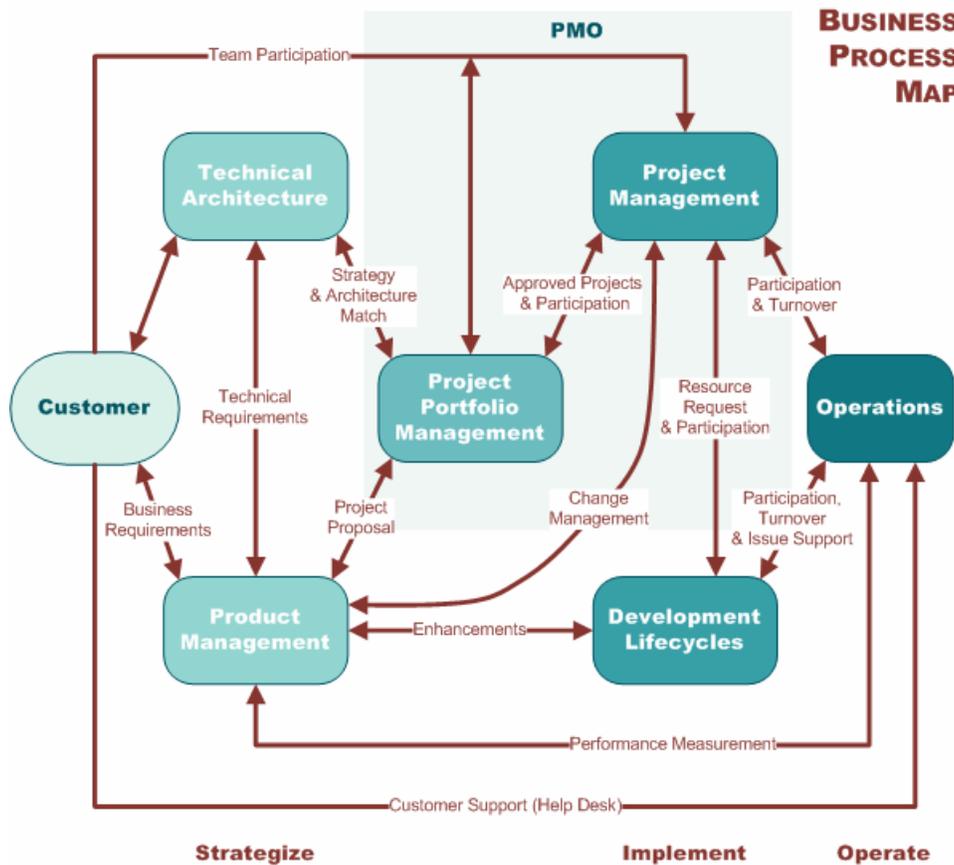


Figure 3. TA in the DTS Business Process Context

Conceptually, architecture governance is an approach, a series of processes, a cultural orientation, and a set of owned responsibilities that ensure the integrity and effectiveness of the organization's architectures. TA implementation presumes some fundamental changes in how DTS does business as illustrated in Figure 4.

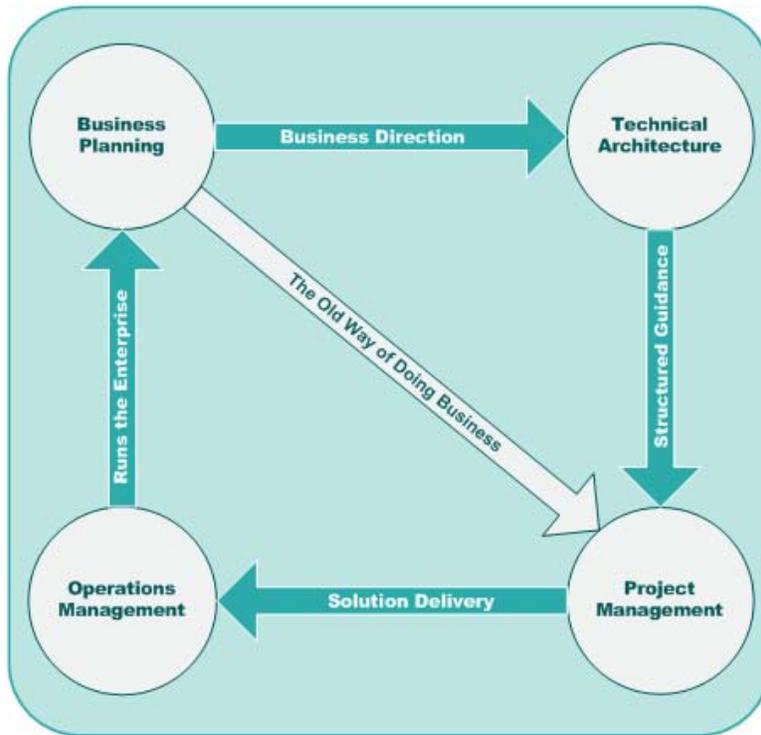


Figure 4. Coordinating the Frameworks: TA Business Impact

The split of process, content, and context are fundamental to the support of the architecture governance initiative, by allowing the introduction of new governance material (legal, regulatory, standards-based, or legislative) without unduly impacting the processes.

This content-agnostic approach ensures that the framework is flexible. The processes are typically independent of the content and implement a proven best practice approach to active governance. Figure 5 illustrates a conceptual structure of the architecture governance framework that illustrates the separation of process, content, and context.

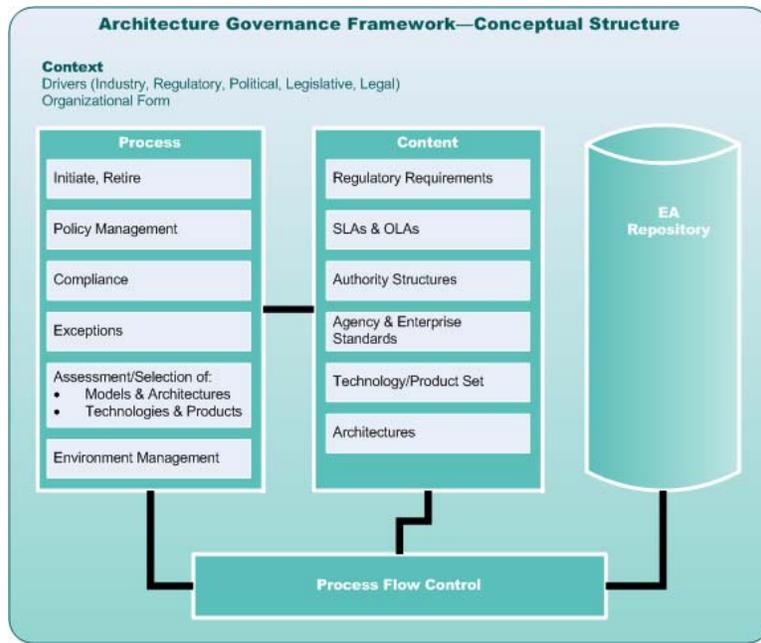


Figure 5. Architecture Governance Framework—Conceptual Structure

The Architecture Governance Framework manages content relevant both to the architecture itself and to architecture governance processes. Governance processes are required to identify, manage, audit, and disseminate all information related to architecture management, contracts, and implementation. These governance processes will be used to ensure that all architecture artifacts and contracts, principles, and operational-level agreements are monitored on an ongoing basis with a clear audit trail.

Architecture governance is the practice and orientation by which enterprise architectures and other architectures are managed and controlled. To ensure that this control is effective within the organization, it is necessary to have organizational structures established to support all governance activities. The architecture organization illustrated in Figure 5 highlights major structural elements required for TA governance.

Figure 6 identifies three key areas of architecture management: Develop, Implement, and Deploy. These components align with common IT lifecycle frameworks such as those illustrated in Figure 7. Each of these is the responsibility of one or more groups within DTS. The Enterprise Continuum is shown to support all activities and artifacts associated with the governance of the architectures throughout their lifecycle.

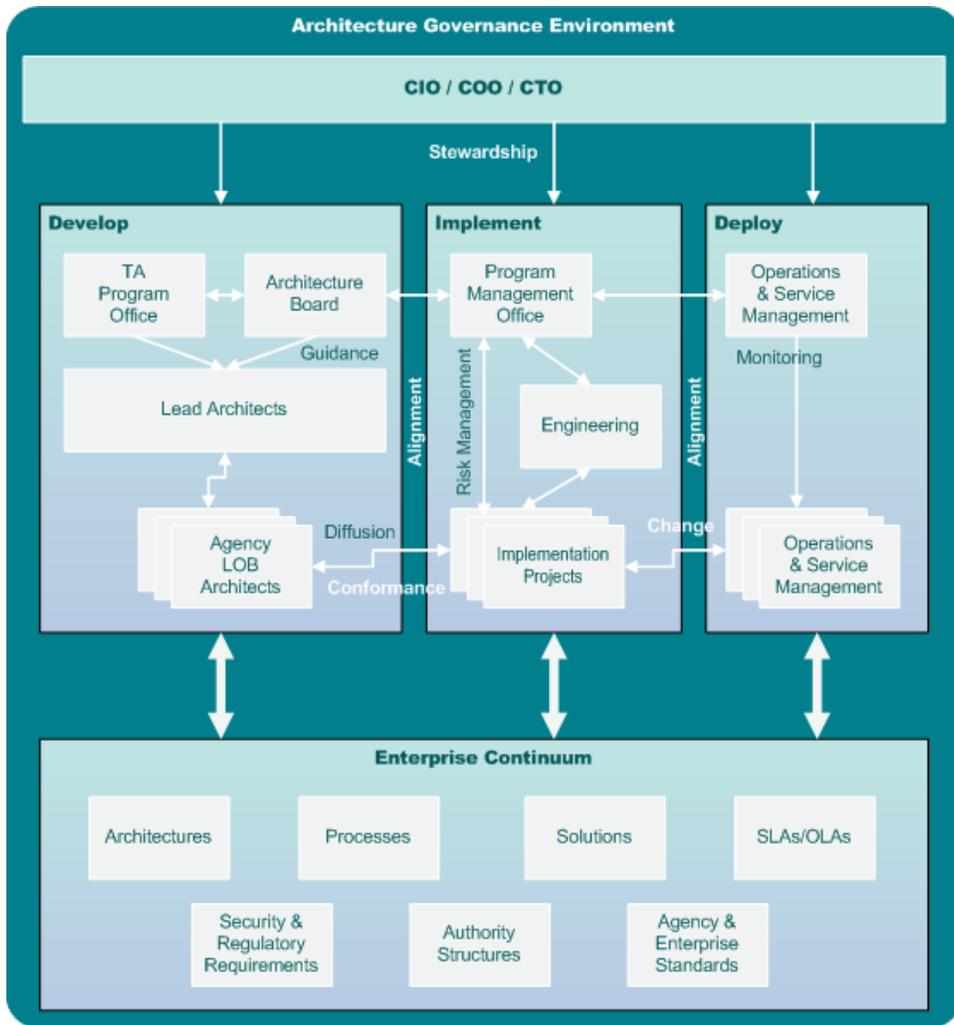


Figure 6. Architecture Governance Framework—Organizational Structure

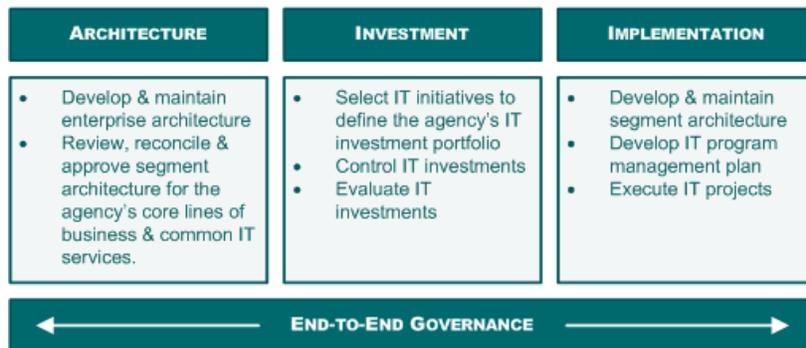


Figure 7. IT Lifecycle Framework

The IT Lifecycle Framework applies government and private sector best practices in enterprise architecture, IT investment management, systems engineering, and program management. TA is generally a prerequisite for IT investment and is leveraged across the framework to align IT investments with lines of business and services.

Each phase of the IT Lifecycle Framework is comprised of multiple lifecycle processes. Processes are integrated and combine to transform an agency's strategic goals and agency specific system needs into a logical series of IT products and services. The IT Lifecycle Framework provides a foundation for sound IT management practices, end-to-end governance of IT investments, and the alignment of IT investments with the goals of the agency. It is anticipated that this model, or a variation of it, will form the basis for the integration suggested in Figure 6.

EA Framework

The proposed EA framework and related TA components are illustrated in Figure 8.

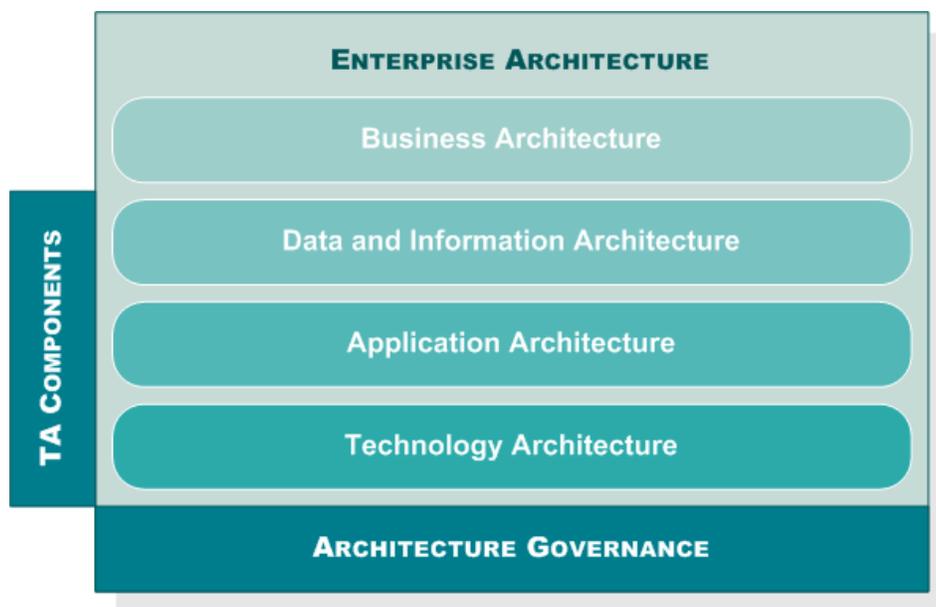


Figure 8. EA Framework and TA Components

Each architecture illustrated in Figure 8 has detailed component architecture and associated reference models. The TA is tied together by effective governance and management processes.

From a TA development perspective, the TOGAF ADM illustrated in Figure 9 will be utilized, with adaptations, from other frameworks such as FEA and NASCIO, where applicable.

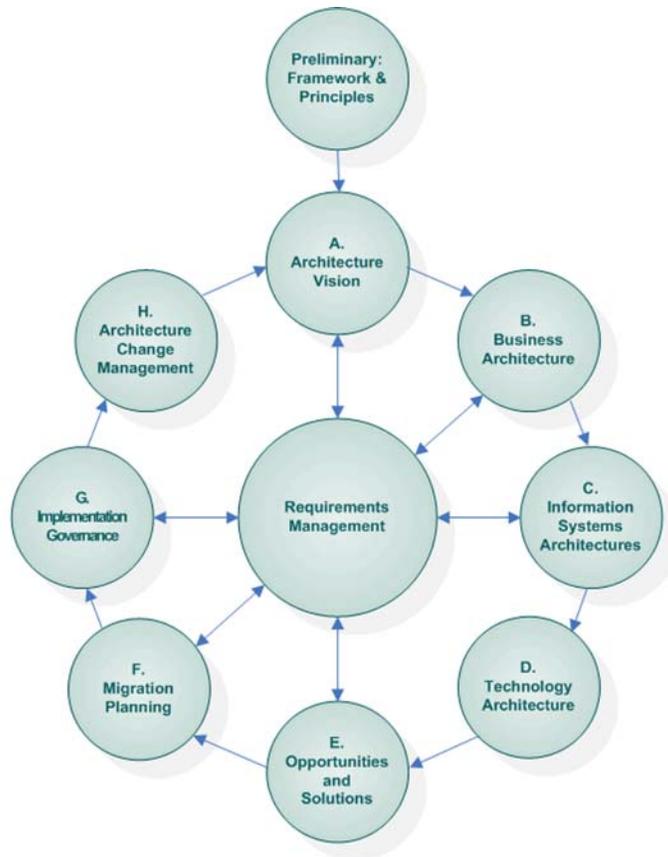


Figure 9. TA Framework Architecture Development Method (ADM)

An applied approach to the ADM cycle is illustrated in Figure 10. Fundamentally, this approach to TA implements six steps that incorporate all of the more detailed ADM components:

1. **Analyze the “As Is” Environment**—Understand current capabilities.
2. **Develop the “To-Be” Architecture**—Define the future business operating environment.
3. **Develop Transition Plan**—Provide a roadmap to transition from the “As Is” to the “To-Be” state.
4. **Drive Transformation**—Redirects programs to implement solutions that realize strategic objectives.
5. **Drive Compliance**—Maintain integrity of the evolving architecture.
6. **Maintain Technical Architecture:** Manage ongoing change.

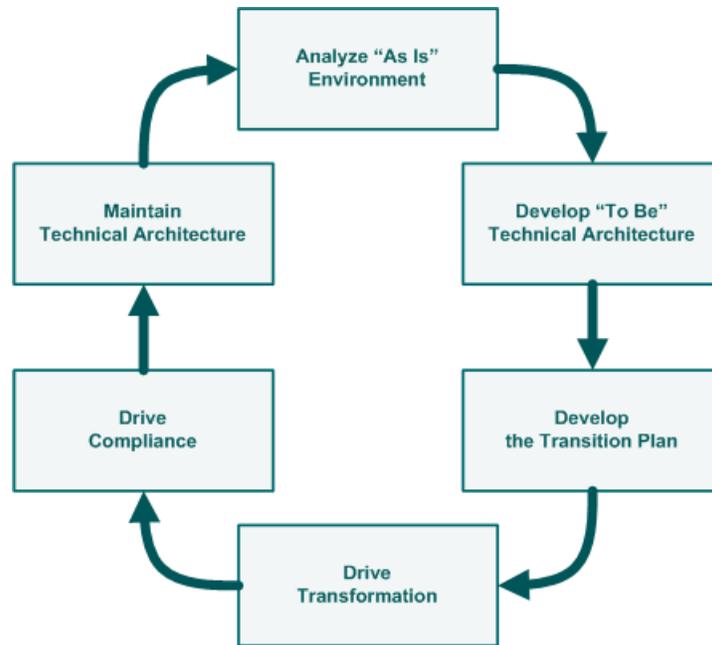


Figure 10. Applied ADM Cycle

TA ROLES AND RESPONSIBILITIES

This section is a preliminary assessment of TA roles and responsibilities necessary for effective governance and management control.

Chief Information Officer (CIO)

The CIO has overall responsibility for the Technical Architecture governance model execution. His primary roles include:

- Sponsorship of the TA program and primary advocate.
- Promotes understanding and buy-in of technical architecture benefits throughout the State.
- Leads annual technology business strategy updates with the Governor and State executives.
- Provides general oversight of TA Program structure and performance and development of a TA blueprint.
- Approves EA Framework changes.
- Approves TA project initiatives.
- Approves Information Technology policies, standards, and guidelines.
- Approves annual TA roadmap submission.
- Monitors TA program compliance and performance.

Chief Operating Officer (COO)

The COO is one of the most important customers for TA from planning and tactical perspectives. The ability of the TA to engage the operational side of DTS and enable change and planning activities that ultimately improve services and reduce costs is dependent upon the COO and his management teams as drivers for TA guidance and support. Ultimate decisions on products and deployments for overall TA consistency reside in this management area.

TA Program Office

The TA program office, including the Chief Technology Officer (CTO) and Chief Technical Architect, is responsible for management and reporting of the overall EA program. They also assist the CIO and COO in promoting buy-in and marketing of the practical benefits of TA. Their primary roles include:

- day-to-day management and execution of the State of Utah Enterprise Architecture program and associated activities and initiatives;
- providing Solution Architecture and Engineering Validation for development and infrastructure projects as required;
- oversight of the EA framework, including TA deliverable structure, methodology, and tools;
- the initiation and oversight of TA projects chartered to develop or update EA content;
- directing TA changes through the change management process;
- developing an annual TA roadmap submission to the DTS investment management groups the Architecture Review Board;
- directing a review of IT initiatives for TA requirements focus;
- directing TA exceptions for IT initiatives through an exceptions management process;
- providing recommendations on approval of Information Technology policies, standards, and guidelines to the CIO and Change Management process;
- providing TA performance reporting information to the CIO and Senior Management Boards; and,
- Provides research services for ongoing IT projects and initiatives.

Architecture Review Board

The Architecture Review Board (ARB) is a permanent group that provides broad agency participation and review of the State of Utah Technical Architecture program and associated activities and initiatives. The Board as be composed of the CIO, COO, CTO, DET and Engineering Directors, and the lead TA Program Office Architect acting as a resource to the Board. Their primary roles include:

- Review and approve change recommendations to TA management processes and EA frameworks.
- Establish and approve priorities for TA development.
- Review TA projects.
- Review and approve change recommendations to TA content.
- Review and approve change recommendations to technology policies, standards, and guidelines.
- Review overall TA program compliance and performance.
- Review initiatives for TA impact.
- Review and approve recommendations for TA exceptions.
- Develop recommendations on architecture related conflicts, as necessary.

DTAC and IT Directors

These groups will provide counsel and advice on specific recommendations of the Architecture Review Board, and make recommendations for areas of priority and emphasis for the TA Program Office.

TA Development Teams

These teams may be chartered with a defined architectural focus within the TA program. They will be responsible for analysis and development of future-state recommendations. They will be primarily composed of teams from business and technical staff with State agencies and the Department of Technology Services. They will research and come to a consensus on TA content updates, technology or infrastructure standards, and best practices and policies. They will be focused as Technology Business Improvement teams. Their primary roles will be to:

- update the TA on an on-going basis;
- represent the interests and requirements of the agencies and the Department of Technology Services;
- conduct reviews of the current-state environment;
- develop and evaluate solution and technology options; and,
- make recommendations regarding products, methodologies, industry standards, and solutions based on the State mission and strategy.

Technology Business Improvement Teams should:

- focus on specific business areas within the State agencies for process and automation improvement;
- be composed of business representatives from the agencies and solutions architects or subject matter experts; and,

- develop and update the business area architectures for those areas involving the business, information, and solutions architectures with regard to models and document content.

Infrastructure Optimization Teams

Optimization teams are chartered by the COO through existing DTS approval processes. These teams focus on implementation and migration strategies for TA recommendations. Other TA staff and teams work closely to support optimization team activities. These teams:

- are focused on specific solution patterns and technology domains;
- emphasize tactical implementation of TA solutions;
- are composed of subject matter experts with hands-on expertise working with specific technology areas; and,
- are charged to develop and update the Technology Architecture with regard to future-state, standards, models, and document content in cooperation with the EA program office and its resources.

TA CORE BUSINESS PROCESSES

Process definitions in this section are adapted from the SAIC engagement in 2006. Figure 11 illustrates the core functions of TA within State government. To carry out these functions, TA involvement from both DTS and agency LOB personnel is required.

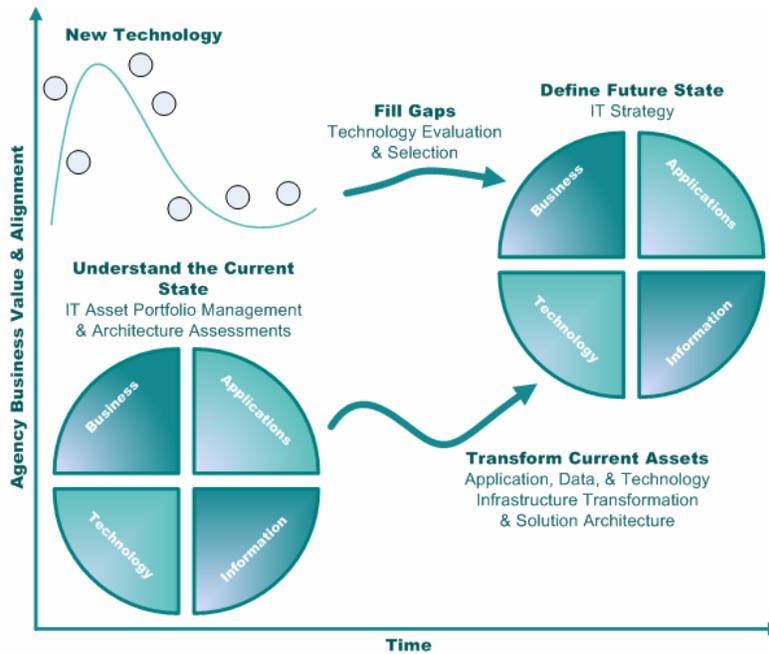


Figure 11. Core TA Functions

Process 1: TA Governance Involvement Matrix

Table 1 illustrates an involvement matrix for most of the core TA processes and the roles DTS and agency staff perform in TA development activities.

Table1. TA Governance Involvement and Decision Matrix

	CIO	COO	TA Program Office	Architecture Review Board	PMO	DTAC	IT Directors	Optimization Teams	TA Development Teams	DTS Employees	Agency Management
TA Change Management	A	A	L	A	C	I	I		R		
TA Common Requirements	L	A	S	A		C	C			C	C
TA Communication			L	R	C	C	C			I	C
TA Compliance	R	R	L	A	R	R	R				
TA Documentation			P	A		I			P		
TA Exceptions	A	A	R	A	C	C	C	C	C	I	C
TA Framework Management			P	A		I	I				
TA Operational Management			P	A		I	I				
TA Principles			S	A		C	C				C
TA Project Initiation			L	A	P	I	I		P		
TA Reporting			P	I	I	I	I	I	I	I	I
TA Roadmaps			P	A		C	C	C	C	C	C
TA Standards Development	A	A	P	A	C	C	C	L	L	I	I
TA Training			L	A		I	I	I	I	I	
Application Architecture Development		L	P	A		C	C	C	P	C	C
Business Architecture Development	L	C	P	A		C	C	C	P	I	C
Data & Information Architecture Development		L	P	A		C	C	C	P	C	C
Technology Architecture Development		L	P	A		C	C	C	P	C	C

A=Approve C=Collaborate
 I=Inform L=Lead
 P=Perform R=Review
 S=Support

Process 2: EA Framework Management Process

This process should make changes to the EA framework which consists of guidance on TA process and methodology, the structure of the architectures (business, information, application, and technology), domains, and artifacts. The TA program office and sub-teams are charged to develop and manage this framework. The Architecture Review Board is responsible for periodically reviewing the framework and suggesting changes as necessary. The CIO reviews and approves the EA framework. All revisions will be published.

Process 3: Common Requirements Vision

The Common Requirements Vision is a process and associated document owned by the CIO. An update to the Common Requirements Vision should occur annually, or as prescribed by the CIO. This key strategic interaction between agency executive management and other key stakeholders provides the substance for this vision. The CIO has a lead role. He recommends the level of involvement of the Governor and agency executive management.

Process 4: TA Project Review Process

This process provides an official review of projects for TA consistency and for the purpose of revising portions of the Enterprise Architecture. The TA program office has lead responsibility to facilitate these reviews, while the Architecture Review Board, or designees, reviews these projects and changes to the TA. The TA program office also has responsibility to provide tracking and performance reporting. The TA Review Process is illustrated in Figure 12.

TA reviews are conducted based upon requests from:

- Senior Management
- Project Management Office (PMO)
- Solutions Delivery Management
- Service Delivery Management
- IT Directors
- Infrastructure and Engineering Teams
- Agency Business Management
- Changepoint ARB Profile Notification (based on selected project criteria)

Projects flagged by Changepoint are candidates for architectural reviews, but the reviews will primarily be conducted based upon recommendations from IT Directors and the ARB, and only if such a review adds value. Projects that are still in initial planning stages are primary candidates for review.

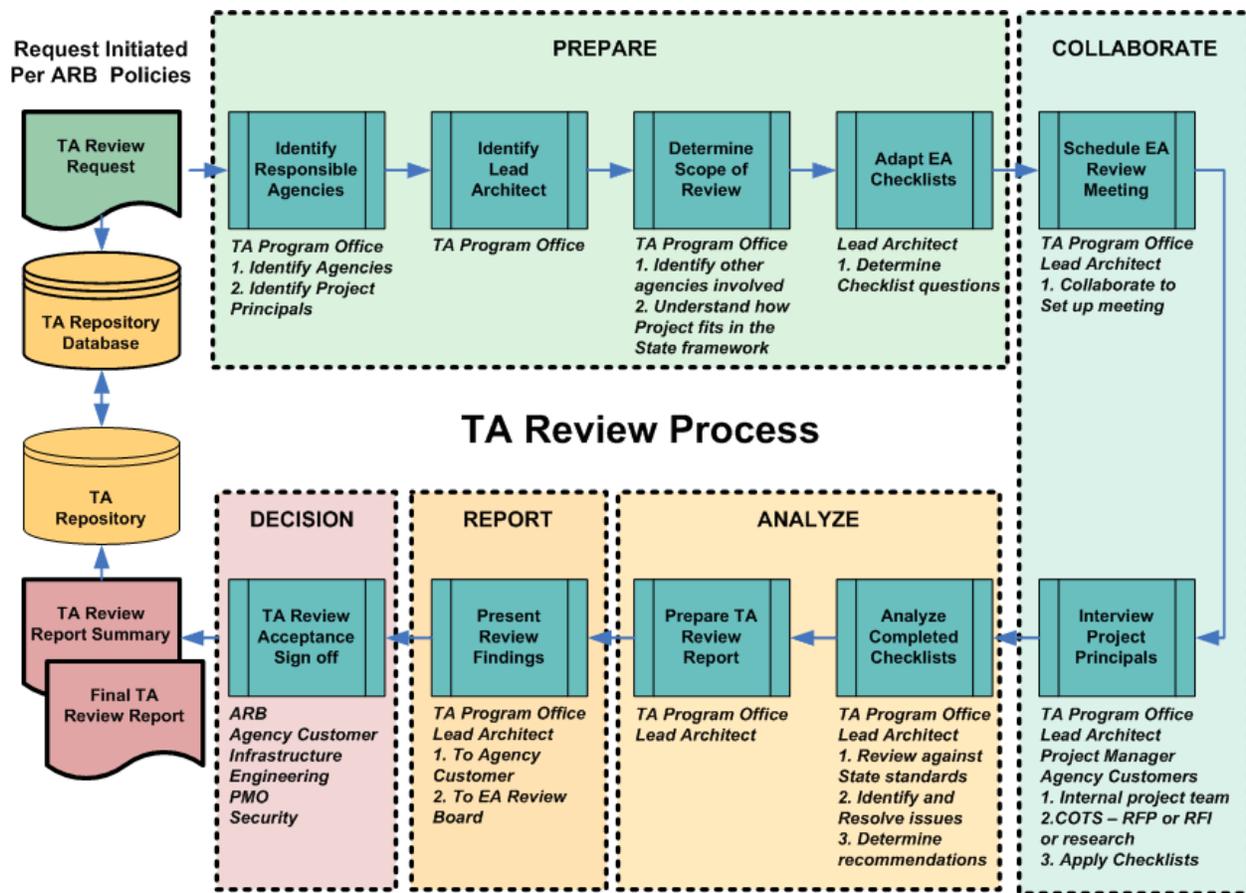


Figure 12. TA Review Process

Process 5: Technology Business Architecture Development Process

This process develops or revises business, information, technology, and solutions architecture artifacts and models for defined business areas. The goals include process and automation improvement and enterprise integration for the purpose of reusing solutions and sharing solutions as an enterprise. Technology Business Improvement projects perform the work within a project setting. Participation on these project teams comes from business representatives and solution architects or subject matter experts. The TA Program Office will provide guidance and consultation throughout this process. All output will go through TA Change Management.

Process 6: Technology Standards Development Process

This process develops or revises the Technology Architecture and standards (reference models and document content) within defined focus areas (specific solution patterns or domains/sub domains). The goals of this process include standardization, simplification, enterprise integration (reuse and sharing), and infrastructure improvement projects. This process also performs the work within a project setting. It is composed of subject matter

experts with hands-on expertise working with specific technology areas. The scope of this process includes a gap analysis with current-state and roadmap plans for this area of technology. The TA Program Office provides guidance and consultation throughout the project, and changes go through the TA Change Management process.

Process 7: Enterprise Architecture Change Management Process

The focus of this process is the review, approval, and release of changes to the State Enterprise Architecture. This process is facilitated by the TA Program Office. The Architecture Review Board and CIO review changes to the Technology Architecture. As a general practice, changes will be applied to Technology Architecture according to an implementation plan and a graded approach based on the impact of the change. A revision history of TA will be maintained by the TA Program Office. All new releases will include formal publishing and communications regarding updates to the Technology Architecture plan.

Process 8: TA Roadmap Submission Process

This process delivers information from TA Roadmap components and is submitted to the IT Investment Management function on an annual basis for inclusion in the annual IT investment portfolio. The function of an IT Investment Management Board is held by the CIO and his designees.

Process 9: Initiatives Review Process

The process will be performed by the Initiatives Review Team. This team will review initiatives for enterprise impact and convey issues to the TA Program Office and/or the Architecture Review Board.

Process 10: Project Exceptions Review Process

This process provides the mechanism for project exceptions or exemptions to TA requirements or constraints. The exceptions are requested by the project team, and reviewed by the Initiatives Review Team working with the TA Program Office. Exceptions will be approved by the Architecture Review Board.

Process 11: TA Performance Reporting Process

This process, performed by the TA Program Office, will measure TA effectiveness and program performance. The information will be updated regularly. The CIO and Architecture Review Board are recipients of this information.

Process 12: Communications and Training Process

This process will assist the CIO and Program Office in forwarding the role of Technical Architecture. A Communications Plan and a Training Plan are maintained for key stakeholders and DTS staff. The TA Program Office performs this function.

TA GOALS AND METRICS

The goals in this section are designed to move the TA for the State to a maturity level where TA is a managed process that adds value to the needs of agencies and the enterprise as a whole. The goals for year one are more detailed than for years two and three. Year one activities, as well as those in subsequent years, will be impacted by TA development priorities from senior DTS management.

First 90-180 Days

- Goal 1: Establish the ongoing infrastructure for TA collaboration and communication.
1. Establish TA content on the DTS Web site.
 2. Establish a Utah TA wiki.
 3. Establish a TA RSS feed.
 4. Establish a TA document repository.
 5. Establish a TA Custom Search Engine (CSE).
 6. Establish an upgradeable TA component database to capture assessment data from the IT and Security Assessment projects.
- Goal 2: Ratify the selection of the TOGAF EA Framework.
- Goal 3: Approve a collaborative version of TA Principles.
- Goal 4: Define TA development priorities for the Technical Architecture, and identify initial areas for development of standards.
- Goal 5: Develop and establish a TA Operating model with appropriate levels of documentation.
1. Establish the elements of the TA Governance Framework.
 2. Establish PMO coordination touch points.
 3. Establish TA engagement options for development of solution architectures for projects (work plans and TA contracts).
 4. Establish TA research engagement strategies.
 5. Establish standards development guidelines that use the existing policy process.

6. Establish training processes for TA and for certification of architects using TOGAF as the framework.
7. Establish TA metrics.

Next 6-9 Months—Implementation of Priorities

- Goal 6: Begin TA work plans and contracts for TA priorities as specified by the Architecture Review Board and other advisory bodies.
- Goal 7: Work with the COT group to finish the Network and Communication Architecture.
1. Develop the migration plan from the baseline to the “To Be” state.
 2. Identify standards development opportunities.
- Goal 8: Develop a draft of the existing Business Architecture.
1. Establish a preliminary Business Reference Model.
- Goal 9: Develop a To-Be State Draft for the Information Architecture (IA).
1. Establish a preliminary IA Reference Model.
 2. Develop an IA Roadmap.
- Goal 10: Develop a To-Be State draft for the Application Architecture.
1. Establish a preliminary Application Architecture Reference Model.
 2. Develop an Application Architecture Roadmap.
- Goal 11: Develop a To-Be State draft for the Technology Architecture.
1. Establish a preliminary Technical Reference Model.
 2. Develop a Technology Architecture Roadmap.

Year 2

- Goal 12: Validate and finalize the Business, Application, Information, and Technology Architectures and associated Roadmaps.
1. Develop TA Migration Plans.
- Goal 13: Implement effective and well defined TA review processes within the DTS development lifecycles.
- Goal 14: Implement a TA maturity assessment at the end of the year.

Year 3

Goal 15: Complete TA process integration with ongoing PMO and strategic planning and operational processes and structures.

1. Establish and implement repeatable TA management processes and procedures.
2. Establish Key Process Indicators (KPIs) for ongoing TA detailed measurement.

Goal 16: Establish ongoing and effective collaborative relationships with agency business leadership for continuous TA development.

1. Establish regular TA collaboration patterns with agency leadership.
2. Communicate and develop TA case studies and success stories with agency participation.

TA METRICS

Measuring the progress, performance, and overall effectiveness of the various TA strategic initiatives in this plan is important. The TA office will institute a performance measurement system that provides feedback on its performance against a number of key metrics, such as:

- improved TA maturity assessment scores;
- increased utilization of TA collaboration infrastructure and tools;
- increased number of TA collaboration projects with agency LOBs and IT staffs;
- improved integration and cooperation with PMO, engineering, and operational groups for effective TA implementation projects;
- new cross agency and enterprise common service opportunities, identified, analyzed, assessed and recommended for implementation;
- improved TA practice and skill set development within the DTS TA community;
- completion of targeted TA goals and related deliverables; and,
- case studies that document TA value and benefits on agency and enterprise levels that demonstrate measurable results.

COMMUNICATION PLAN

Communicating TA engagement methods, and demonstrating TA value, are essential components of an ongoing TA implementation strategy. Communication in the context of this TA plan includes promoting TA engagement strategies; TA workshops and training; TA repository and Web resources; explicit TA communication strategies within DTS and to agencies; and, ongoing TA reporting.

TA Engagement Strategies

TA provides opportunities for initiating TA support initiatives across the DTS organization and directly from agency LOBs. A common example of a TA contribution strategy is illustrated in Figure 13, which demonstrates how TA can interact with the ongoing development lifecycle as a neutral third party and the need for a defined engagement process. TA clients need to understand clearly how services are requested and what costs are associated with providing the services.

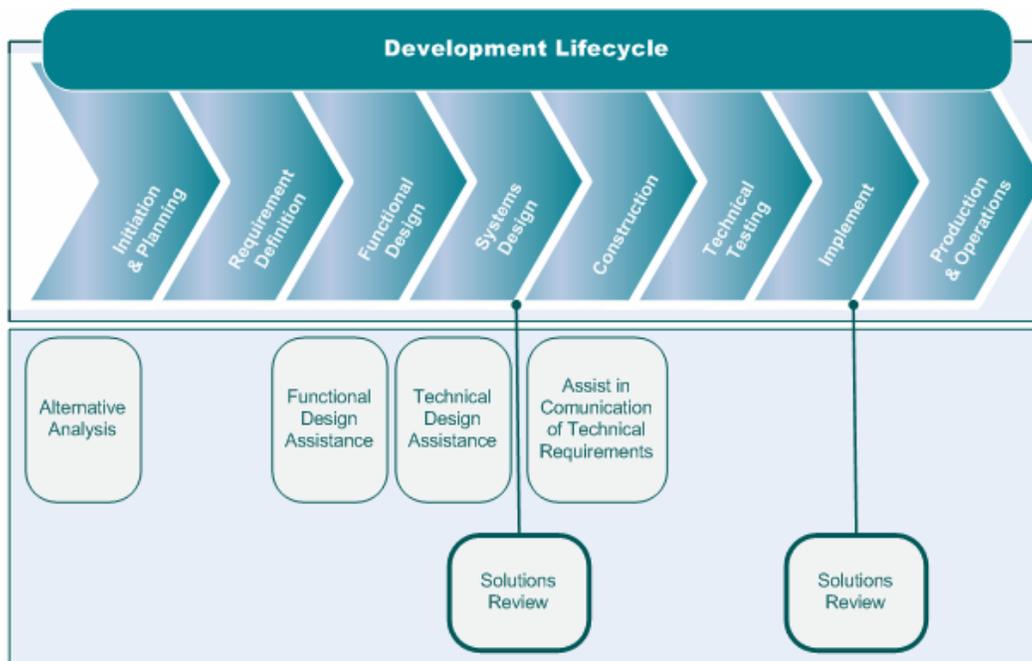


Figure 13. TA Contributions to the Development Lifecycle

TA Workshops and Training

TA training will consist of adhoc workshops that are focused on teaching the TOGAF ADM method to agency LOB architects and specific TA activities identified by the Architecture Review Board in direct support of ongoing optimization and planning.

TOGAF TA certification training paths and learning materials will also be provided, communicated, and supported for DTS personnel with a desire to complete formal TA certification.

Specific agency LOB teaching and orientation activities will be provided as needed as part of the overall development of the Business Architecture.

TA Repository and Web Resources

The overall TA Web repository and associated communication services proposes the use of Novell *Teaming + Conferencing*[®], a product currently available under the State MLA with Novell. This solution provides a comprehensive resource for managing and facilitating State-wide TA communication and document management, eliminating many formerly manual activities. Product features include provisioning for:

- document management and sharing;
- team calendars and shared task lists;
- discussion forums;
- wikis, blogs, and RSS feeds;
- workflow management;
- knowledge management, with quick search capabilities;
- Web and voice conferencing;
- team instant messaging;
- online surveys;
- application sharing and white boarding; and,
- dashboards.

These resources would be delivered utilizing the JetSpeed 2 portal product already recommended for two other project solution architectures, and implementation of a Google Custom Search Engine (CSE) for State of Utah TA information. All documents produced will be fully indexed by both the CSE and knowledge management quick search functionality.

Additional database functionality will be provided by integrating prior assessment data regarding TA technology and business components (e.g., information systems, network resources, security, Coop, Skill inventories, etc.) into a single common updatable data resource for TA. This database will enable agency users to see (e.g., what databases are used in other agencies and for what kinds of systems). This resource will capture a

wide range of TA relevant survey and assessment data with a common user interface and reporting component that uses existing enterprise data and reporting services. As a common source of TA information on a detailed level, this database will be a powerful tool for building, maintaining, and communicating TA baseline data.

TA Communication within DTS and to Agencies

TA has to add value to ongoing DTS business and to improving understanding of agency business needs and alignment of IT services. Effective TA communication must begin with the Architecture Review Board members and needs to permeate the thinking of managers within DET and agency IT offices. This requires a consistent effort and documented success stories that demonstrate tangible and practical value to agency business and IT customers. TA needs to be firmly established as a business enabler and not as some other kind of bureaucratic blocking process.

Ongoing Reporting

TA needs to provide a consistent reporting mechanism that reports on progress for each of the goals identified in this plan. Reporting should be based on data sources where practicable, and use automated reporting methods. The dashboard functionality of *Teaming + Conferencing* is a partial solution to making TA activities transparent and open.

The TA Web site and related resources will be implemented to provide optimal visibility and transparency into TA processes, activities, meetings, databases, and work products.

SUMMARY AND CONCLUSIONS

One of the advantages of working with TA on a statewide level in the past is that a number of useful lessons have been learned. Understanding that agency-centric implementations represent their own form of optimization is an important concept to understand when enterprise solutions are anticipated.

The State has a rich resource of technology-focused individuals that can and will contribute enthusiastically to the development of TA. Agencies have a strong resource of LOB experts that can help develop and articulate the Business Architecture of the State. A great deal can be accomplished with TA with the federated approach suggested in this plan, without burdening the State with heavy TA development costs.

TA is not just about saving money and reducing complexity, it is about enabling results on an enterprise level that produce useful and accepted agency implementations. It is about leveraging technology in such a way that IT services are effectively aligned with agency business needs. It is about clearly identifying those areas that have common characteristics and reusing technology patterns to meet business needs effectively and efficiently.

There is an opportunity to apply those lessons and move TA forward in ways that have the potential of adding significant value for a modest investment in time and effort. Effective EA hinges on communication and the provision of tangible results to the State in terms that are easily understood. TA provides strong alignment with the Governor's goals of efficiency and effectiveness within State government.

Comments

Please direct comments and suggestions on this document to Robert Woolley, Chief Technologist and Strategic Planner at bwoolley@utah.gov.

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