

---

# ARCHITECTURE REVIEW BOARD (ARB) IMPLEMENTATION

Enterprise IT Management Initiatives

State of Utah

---

## ARCHITECTURE REVIEW BOARD (ARB) IMPLEMENTATION

---

### B. EXECUTIVE SUMMARY

The Utah Technical Architecture and Architecture Review Board (ARB) implementation is based on the premise of empowering agency business personnel and technical staff to achieve needed results with Information Technology services and resources. Empowerment within scope is a fundamental building block of the ARB review processes. The ARB implementation is based on the following principles:

- Identify the highest priority architectural requirements;
- Identify and execute with the least amount of effort to achieve requirements and their associated results;
- Keep the architecture decision set as small as possible, while ensuring that technical staff are able to meet key priorities;
- Clearly define the scope of architecture decisions, and defer to lower levels of decision making whenever practicable.
- Recognize that some architectural decisions may only impact small user groups and may not matter on an enterprise level. Pay attention to scope of decisions;
- Use architecture to empower more than to control;
- Avoid confusing copious architecture documentation with results, always consider practical issues and outcomes;
- Avoid expensive and permanent standing architecture teams. Use adhoc architecture teams that are focused on a specific set of results and deliverables;
- Engage the vendor community in architecture review processes;
- Openly publish architecture studies and standards and encourage comments from IT and business staff using Web based collaboration tools;
- Leverage new technology patterns to enhance speed and agility and reduce costs, and be pragmatic about defining and adapting defacto architectures;
- Review commercial and open source alternatives as part of the product selection process;
- Set clearly attainable architectural targets, so the organization has no question on key technical architecture directions;
- Avoid burdening architecture staff with unnecessary migration details. Empower operational staff to do migration planning in cooperation with architects, and;
- Measure and evaluate architecture business alignment, stakeholder and technology impacts, and tangible results.

The Utah Technical Architecture process has achieved a track record of success with these principles and has done so at minimal cost to the State. In the first full year of ARB implementation, savings in excess of 5.9 million dollars were identified, and are in varying stages of implementation. Of the architecture review areas identified by the ARB, 81.25% were reviewed at appropriate decision making levels; 87.5% had useful tangible results; and 43.75% were fully implemented. This was done with less than 2 FTE equivalent staff at the ARB level.

## C. DESCRIPTION OF THE BUSINESS PROBLEM

Technical architecture implementations have historically been hindered by the following: expensive to implement, emphasis on tight architectural controls, and slow to demonstrate demonstrable results. Business alignment has often been weak, and too much emphasis has been placed on technology issues. Communication and documentation methodologies have historically been cumbersome and hard to maintain. State government has historically been most easily characterized as “most of class” rather than “best of class” technology environments, making architecture complex and difficult to manage. Utah does not have large budgetary resources for architecture programs, the focus has to be on demonstrable results to the State at minimal cost. The Department of Technology Services (DTS) is vested with architecture responsibility and standard and policy making authority by statute. Legislative stakeholders expect DTS to lead and set directions for the technical architecture of the State. The primary objectives of the legislature are to reduce complexity and costs.

A method had to be established that enabled DTS to meet its obligations for technology architecture leadership and governance that could be executed within available resource constraints.

### Solution Description

DTS staff began by establishing a framework and foundational documentation for implementing an effective architecture review and governance process; The following documents were produced as the foundation of this effort:

- *EA Framework Research and Analysis*, August 8, 2007.  
<http://dts.utah.gov/techresearch/techarchitecture/resources/eaframeworkrs081307.pdf>
- *Technical Architecture Quick Guide*, October 29, 2007.  
<http://dts.utah.gov/techresearch/techreports/resources/techbrief4.pdf>
- *Technical Architecture Program Implementation*, October 19, 2007.  
<http://dts.utah.gov/techresearch/techarchitecture/resources/taProgImp071019.pdf>
- *Technical Architecture (TA) Review Process*, October 17, 2007.  
<http://dts.utah.gov/techresearch/techarchitecture/reviews/resources/taRevProces071017.pdf>

Specific objectives and working patterns were established and approved by the ARB. The objectives of the Utah ARB review process are based on the premise of empowering agency business personnel and technical staff to achieve needed results with Information Technology services and resources. Empowerment within scope is a

fundamental building block of the ARB review processes. The ARB implementation is based on the following principles:

- Identify and clarify the highest priority architectural requirements;
- Identify and execute with the least amount of effort to achieve requirements and their associated results;
- Keep the architecture decision set as small as possible, while ensuring that technical staff are able to meet key priorities;
- Clearly define the scope of architecture decisions, and defer to lower levels of decision making whenever practicable.
- Recognize that some architectural decisions may only impact small user groups and may not matter on an enterprise level. Pay attention to scope of decisions;
- Use architecture to empower more than to control;
- Avoid confusing copious architecture documentation with results, always consider practical issues and outcomes;
- Avoid expensive and permanent standing architecture teams. Use adhoc architecture teams that are focused on a specific set of results and deliverables;
- Engage the vendor community in architecture review processes;
- Openly publish architecture studies and standards and encourage comments from IT and business staff using Web based collaboration tools. This was accomplished using a Wiki (<http://www.utahta.wikispaces.net>), Twitter, Blogs, Email, and by leveraging existing IT management meetings;
- Leverage new technology patterns to enhance speed and agility and reduce costs, and be pragmatic about defining and adapting defacto architectures;
- Review commercial and open source alternatives as part of the product selection process;
- Set clearly attainable architectural targets, so the organization has no question on key technical architecture directions;
- Avoid burdening architecture staff with unnecessary migration details. Empower operational staff to do migration planning in cooperation with architects, and;
- Measure and evaluate architecture business alignment, stakeholder and technology impacts, and tangible results.

The ARB was established with the Chief Information Officer (CIO); Chief Operating Officer (COO); Chief Technology Officer (CTO) as the voting members and with the Chief Technical Architect, Chief Information Security Officer (CISO); and Directors of Solutions and Infrastructure as additional members. Communication with stakeholders and IT staff used established meeting structures for vetting ARB recommendations and setting priorities.

ARB infrastructure uses a SaaS Wiki environment with a local document repository. The ARB and associated tools is managed and maintained by State employees. The ARB Wiki site was given a complete security review and analysis prior to deployment. All ARB tools services are based on open source resources.

## Length of Time in Operation

The Utah Technical Architecture ARB process began in October 2007, and completed its first full year of operation as of December 31, 2008.

---

## D. SIGNIFICANCE TO THE IMPROVEMENT OF THE OPERATION OF GOVERNMENT

Instead of having an undefined architecture review and approval process, and no clear repository for standards and associated documentation, the State now has a well defined communication and decision making methodology and has established easy and multi-channel methods for engagement (See *TA Quick Guide* <http://dts.utah.gov/techresearch/techreports/resources/techbrief4.pdf>). IT Staff and agency business personnel may make requests of the ARB via email, phone, instant messaging, and personal interactions. Inquiries are tracked, scoped, and given a formal disposition.

Architecture standards and documentation now reside in a single location that is the source of truth for Utah Technical Architecture, and makes the deliverables as transparent and available. (See Utah TA Wiki <http://www.utahta.wikispaces.net>).

This has resulted in the development of 41 TA document deliverables which have resulted in the establishment of 22 enterprise standards and an additional 23 security standards with enterprise impact. The ARB is currently reviewing and approving an average of three (3) enterprise standards per month, and vetting these documents with the IT and business community as needed for feedback and comments.

The technical architecture of the State has been defined and associated standards for architecture domains are documented on the Utah TA Wiki, as they are identified and as the architecture domains themselves evolve.

The Utah Technical Architecture process has achieved a track record of success with these principles and has done so at minimal cost to the State. In the first full year of ARB implementation, savings in excess of 5.9 million dollars were identified, and are in varying stages of implementation. Of the architecture review areas identified by the ARB, 81.25% were reviewed at appropriate decision making levels; 87.5% had useful tangible results; and 43.75% were fully implemented. This was done with less than 2 FTE equivalent staff at the ARB level.

---

## E. BENEFIT OF THE PROJECT

The ARB process is resulting in both potential and actual realization of substantial ongoing savings for the State. With a minimal number of staff the ARB is able to have

substantial impact on TA direction, which results in a reduction of complexity in the State's IT infrastructure. First full year savings recommendations were in excess of 5.9 million dollars against a staff cost of less than \$200,000 per year.

Avoiding costly standing committees has a large financial impact since the best people in the State can be assembled for focused architecture efforts. When they are finished, they are through with that effort, and can more easily support architecture without undue impact on assigned responsibilities.

Using technology resources such as the Wiki, blogs, Twitter, and Email as primary collaboration vehicles, and in the case of the Wiki, as the primary architecture repository, enables outreach and alignment with technical and business constituencies.

At the current rate of review and development, the State will have established standards for architectures that have enterprise scope for all of the major architectures of the State within a two to three year period. Doing this effectively will allow the State to simplify architecture and increase cost savings through standardization and procurement efficiencies. The ARB process is highly cost effective and has a strong return on investment based on the results of the first full year of operation.