IT Assessment

University of Alaska
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Executive Summary

JS Consulting (the consultant) was engaged by the University of Alaska System to perform an in-depth review of the UA system-wide IT budget to further explore the Strategic Pathways goal of reducing IT expenditures by 20%. The efforts to date had resulted in an insufficient savings via the consolidation of embedded IT into a single shared services organization. While work to find additional savings continues, the President's office thought it wise to consult an organization with deep experience in building efficient, high-performance, distributed IT functions.

The consultant met with a broad group of over twenty (20) leaders from all three UA campuses IT staff and administrative staff, including the three UA campus Chancellors and Vice Chancellors. In total, they participated in over thirty (30) interviews that contributed significantly to the pool of data that resulted in the recommendations herein. In total, over eighty (80) separate reports and files were scrutinized during the review process to examine IT execution.

In the course of the data collection, analysis and review, the consultant repeatedly confronted a fundamental concern with how the UA System IT departments approached IT Governance. While numerous symptoms became apparent during the discovery process that pointed toward suspect IT governance practices, the most pronounced was the UAA Faculty Senate resolution(s) regarding the performance of certain information technology services and the IT organization itself. Of particular note were the lack of well defined and efficient methods of communication between stakeholder organizations and the IT organization for each technology service provided.

This goes far beyond a trouble ticketing system, which is standard operating procedure for any IT organization. In this case, we see complaints from students and faculty regarding IT systems that are not functioning as expected and impacting curriculum delivery. That these escalations resulted in expression of such strong concerns, is reflective of the strained relationship IT has with its stakeholders.

With agreement from the office of the President, the consultant shifted the focus of the review toward governance methodologies and the organizational structure of the university's system-wide IT organization. The primary question to be answered became: Does the current approach to governance, including leadership alignment, stakeholder identification, requirements gathering, communications, training and support meet the needs of the university system? If not, is that governance approach impacting IT operating costs?

We found that IT governance was neither well defined nor practiced consistently across the IT organization. Further, the lack of these IT disciplines resulted in the delivery of system updates that often do not meet the needs nor expectations of the stakeholders. Applying more rigor and structure across the four separate IT organizations should enable a candid review of more cost-effective solutions for providing unified cross-campus services resulting in savings from the elimination of duplication.

The secondary question raised by the governance model is the organizational structure of the distributed IT function across the statewide office and the three campuses. <u>Is the current structure effective or, as some hypothesize, is it a root cause for the governance challenges and the perceived high cost of the system-wide IT organization?</u>

We found that the current reporting structure, including the technology responsibility structure, was a well-known concern across all IT organizations – each with a differing view on how best to resolve this dichotomy. We offer several options with Pro's and Con's in this report.

Introduction

This report is the culmination of a University-wide assessment of information technology that has its origins in the University of Alaska Strategic Pathways plan.

The IT Assessment is a University-sponsored, consultant facilitated project.
- The President is the recipient of the consultant's recommendations. We anticipate that the President's office will share the report with the Executive Council and others in the university community.
- The consultant met with a broad group of over twenty (20) leaders from all three UA campus IT staff and administrative staff, including the three UA campus Chancellors and Vice Chancellors.
- In total, the consultant conducted over thirty (30) interviews that contributed significantly to the pool of data that resulted in the recommendations herein.
- In total, over eighty (80) separate reports and files were scrutinized during the review process to examine IT execution.
- The consultant facilitated the analysis, provided independent, objective judgment and formulated the recommendations contained in this report. To the extent possible, the support of the Executive Council and IT leadership was sought for the overall recommendation.
- Data were collected from all areas of the University to quantify IT related personnel activities, non-personnel IT expenditures and IT service offerings.

Summary Findings

A system wide IT governance process is not defined nor is one executed consistently and uniformly. Each campus IT organization has their own form of program and project management and an approach to IT governance. However, IT governance goes beyond traditional project management; it spans leadership alignment, stakeholder identification, requirements review, communications strategy, development, test, training and concludes with support. These components, these disciplines work together to ensure every IT service is implemented to meet organizational needs and is adopted by the most users.

- Lack of a defined and well executed system-wide IT governance process is the single most significant barrier to quality execution and IT service delivery across the university system.

IT, as currently organized across the UA System, is inherently inefficient
- The goal of a shared services organization remains unimplemented. As a result, each University IT organization provides services unique to the organization - with only a few functions shared.

The cost of operating IT is difficult to ascertain from the reports available from the ERP system.
- Inconsistent cost coding impacts the ability to filter and review costs effectively across the university.
- As a result, significant manual work is required to account for true operating costs. This must be repeated every reporting period.
- The co-mingling of the University and Statewide office funds further clouds the issue. While the intention is to leverage the statewide funds for the greatest impact, the result is not optimal. UAF in particular, has difficulty in identifying staff focused on UAF vs. system wide functions.

The cross-campus relationships are often combative due to technology philosophy and execution differences. As a result, the implementation of several solutions designed to function across the campus remain unimplemented in full.

Combining the role of CITO and UAF CIO prevents the individual from simultaneously exercising visionary leadership and operational excellence. In other words, both are compromised as there is not enough time available to perform either function to its greatest service.
- As a result, there is a perceived lack of overall strategic planning and visioning.
- The CITO's leadership effectiveness is in question from numerous quarters across the University system.

Current IT Service Model

Organization	System-wide functions	Local functions
UA System-wide/UAF	•Banner HR •Banner Finance •Banner Student •Oracle Database •Housing manager software •Gmail •Security strategy •Data center •Blackboard hosting •Video conferencing •WAN management •Project management •IT policy •External relations	•Helpdesk •Desktop support •Network / Wireless Op's •Telephony OP's (+UAS) •Banner Data Report Development •Project Management •Media services •Training •Web Content Management System •Classroom instructional systems •Security Cameras •Active Directory •Telecom billing •Campus Emergency Notification
UAA	•Microsoft •Office 365 environment •Active Directory •Web Conferencing (Skype for Biz) •Survey tool (Qualtrics)	•Gmail local support •Blackboard Learn services •Security local support •Banner Data Report Development •Audio / Video Conferencing team •Helpdesk •Desktop support •Network / Wireless / Telephony Op's •Project Management •Training (non-dedicated staff) •Web Content Management System •Security Cameras •Regional Data Center •Software licensing •Media services •Telecom billing (+UAS) •Campus Emergency Notification •Classroom instructional systems

Organization	System-wide functions	Local functions
UAS	•Integration, authentication and synchronization •Banner to AD •AD to Blackboard •UA Online •other services •Student and employee account provisioning •(ELMO) Self-service •(Verifier) ID lookup •Specialized small application development	•Gmail local support •Blackboard Learn services •Security local support •Helpdesk •Desktop support •Network / Wireless / Telephony Op's •Training (non-dedicated staff) •Web Content Management system •Active Directory maintenance •Active Directory integrations •Classroom instructional systems •Media services •Web Single Sign On •Cloud service management •Regional Data Center •Software licensing •Security Cameras •Campus Emergency Notification

Root Causes

As we examine the root causes for the challenges the IT organization is facing, for the most part they fall into three categories.

- Coordinated **Operational** and **Project Governance** is not a priority
- **Accountability** to set, meet and report on system-wide operational and project goals is not a priority
- Long-term **Vision** for a UA System wide information technology organization is not a priority

Each of these are explored on the following pages.

Lack of Operational Governance

Missing effective coordinated **Operational Governance** includes:

- Every mission critical system has measurable performance criteria typically referred to as a Service Level Agreement (SLA). The SLA is reviewed, agreed to and signed-off by the delivery team and the stakeholders receiving the services.
- The SLA performance criteria are developed in conjunction with system stakeholders.
- All criteria of the SLA are *measured* at meaningful intervals.
- All criteria are *reported* against goals and SLA's at meaningful intervals.
- Help Desk *and* executive escalation paths are communicated to stakeholders for efficient reporting and escalation.
- Monthly or quarterly operations reviews are performed for all mission critical systems with the delivery team and the stakeholders in attendance.

Lack of Operational Transparency

Missing effective **Operational Transparency** include:

- Performance criteria or Service Level Agreements (SLA's) that are published for all, especially stakeholders, to see.
- Performance measures published monthly / quarterly for all to see.
- Operations review materials and work plans published for external review.
- Escalation path published for all to see
- Reviewable trouble tickets with status, communications and resolution documented.

Lack of Project Governance

More effective **Project Governance** would include:

- Roadmap for mission critical systems with material enhancements documents
- Each roadmap developed in cooperation with system stakeholders
- Plan for enhancements / defect resolution vetted with stakeholders
- Standard release rhythm created and published - appropriate for each system
- Stakeholders recruited for user acceptance testing (UAT) before go-live
- A project RASCI* matrix utilized daily to maintain project team alignment
- Project manager aligns cross-functional team to deliver features on-time
- Team meeting minutes with actions are published for all to review
- Team members held accountable for committed deliverables
- A project manager responsible for the above process

Lack of Project Transparency

Effective **Project Transparency** would include:

- Roadmap of features is published for stakeholder review
- List of enhancements / defect fixes published for stakeholder review
- Project team meeting minutes published for stakeholder review
- Stakeholders actively involved in, and feedback solicited during User Acceptance Testing (UAT)

Lack of Change Governance

More effective **Change Governance** would include:

- Every IT project should require a change plan
- Minimal to robust, the change plan scope is commensurate with the stakeholder impact
- At a minimum, the change plan has six components:
    - **Executive Sponsorship** – The executive accountable who actively promotes the change value.
    - **Leadership Alignment** – Every leader impacted by the system has reviewed and openly supports the plan.
    - **Stakeholder Analysis** – Identify impacted individuals (stakeholders), understand the unique impact to each.
    - **Communications** – How stakeholders will be updated, how often and how they can provide feedback.
    - **Training** – How stakeholders will be trained with an approach that meets their unique needs.
    - **Support** – How stakeholders are supported via the help desk via phone, online, chat and other solutions.
- The Project Plan and Change Plan can be 1 or 2 documents as appropriate to project complexity.
- The Project Manager and Change Manager can be 1 or 2 people as appropriate to the project complexity.

Accountability

Service oriented IT organizations demonstrate **accountability**

- IT Leadership should be accountable to diverse stakeholders
  - Directly to supervisor
  - Across organizations: UAA – UAF – UAS
  - Across teams: The operations team that operates the systems day-to-day, the project teams that bring new systems or features to the users as two examples.
  - Across functions: Help desk, engineering, project management, etc…
- Expectations for IT accountability are elevated in a University environment
  - Service delivery is mission critical, every day or students and faculty can perform.
  - Competitors set a high bar for curriculum delivery via technology.
  - Student perception of technology is important, invasion of technology in everyday lives sets unique expectations of the university only IT can deliver.
  - Faculty expectations of IT services has raised as well, leaving them accountable to the students when the technology fails.
- Technology converts student expectations into demands. Students expect:
  - High system availability – 99% uptime
  - Mobile ready – the ability to access needed systems, classes via mobile devices
  - Time shifted – The ability to take a class "on-demand" instead of live when it occurs
  - Alternative delivery – Attend a class one-time from a remote location if they are sick or unable to attend live.
  - Flawless execution – Technology will work the first time and every time. No reloading, retrying or rebooting required; "It just works".
- Ensure broad support by demonstrating transparency
  - Report technology performance scorecards on a published schedule, offer feedback opportunities to stakeholders.
- Hold regular town hall meetings and on-line forums to solicit involvement from stakeholders.
  - Earn the respect and the right to push back when needed.
- Requires for new investment in IT must be accompanied by a measurable ROI
  - Must quantify and then measure and report on that investment as part of the operations review.

Vision

When thinking about the future Information Technology needs for the University system two questions arise from the staff:

- What is IT doing differently today in response to Strategic Pathways?
- What will the University need from IT five (5) years from now?

Strategic Pathways provides important vision for the IT Organization. What is IT doing differently in response to Strategic Pathways?

- All but one IT person interviewed responded with, "nothing different here".
  - Why not? Why are we not seeing new or changing priorities?
- By several accounts the IT response has been to push through preexisting initiatives that had been stalled:
  - Unified email system
  - Transitioning embedded IT staff into each university's IT department
  - Implementing lean process improvements
  - Seeking economies of scale
  - Outsourcing
  - Cloud Services
- The outcome? Too soon to measure, however, we don't anticipate the needed savings resulting from these initiatives.

What will the University need from IT five (5) years from now?

- If UA is not offering an on-line education that's competitive with out-of-state universities today, what are we doing today to ensure we are competitive tomorrow?
  - Needed: A vision for Information Technology developed in concert with Academic and Student Affairs that creates a next generation delivery strategy.

Recommendations

Before any of the following recommendations are implemented, fundamental questions must be answered:

- What IT organization reporting structure would most effectively operate the university today while planning the future IT service needs?
- Who will provide operational leadership for the University IT services in this structure?
- Who will plan for the University's future IT service's needs?
- How will state-wide and University budgets be configured to support the above decisions?

To explore this, refer to the Decision Matrix that follows on the next two pages.

Following that are four recommendations in weighted order. To be clear, any of these four recommendations can be successful. The UA system needs to determine which priorities are most important when selecting the appropriate structure.

Organizational Decision Matrix A

Topic	Choice	Pro	Con
University CIO's direct / indirect reporting structure	1. Report direct to CITO, indirect to Chancellors.	Drives consistent IT delivery across all campuses.	Concern that local university needs will be secondary.
	2. Report indirect to CITO, direct to Chancellors.	Local university needs are met first, system-wide second.	Concern that the needs of other campuses will be delayed or ignored.
IT services operational leadership	1. Operational leadership is driven by the IT organization with greatest skill & capacity.	Supports centers of excellence in all locations.	Concern that the needs of other campuses will be delayed or ignored.
	2. Operational leadership is driven by system wide CITO.	Single view of all operational services enables resource leveling across the entire system.	Reduces CITO strategic and visionary time needed to support future UA. Concern that local university needs will be secondary.
Strategic and visionary support for UA of future	1. CITO focus' primarily on strategy and vision while overseeing the CIOs operational leadership.	Enables the CITO with the CISO and architect to plan for future UA needs.	Decentralized operations leads to concern that needs of others will be ignored.
	2. CITO focused primarily on operations and part-time on strategy and vision.	Single view of all operational services enables resource leveling across the entire system.	Without a priority on building and executing the UA future IT plan, it will remain in the past.

Organizational Decision Matrix B

Topic	Choice	Pro	Con
Reporting structure of IT staff	1. Push all available IT budget from statewide to universities. Staff report up to Local CIO's.	Enables local employment of staff to deliver IT services.	Future budget cuts could put IT staff and service levels at risk.
	2. Hire needed people with statewide budget and assign them to universities. Staff report up to Local CIO's.	Doesn't affect statewide or university budgets. Existing staff remain in place.	Minor annual review and reporting issues resolvable through HR.
	3. Move all available IT budget from universities to statewide. Staff report up to CITO.	Consolidate the delivery team into a single organization with a single manager.	Grows the size of the statewide IT budget by having a significantly larger staff. Probable change to some existing staff.
	4. Leave all existing staff in University IT budget. Staff report up to CITO.	Doesn't grow statewide budget. Existing staff remain in place.	Potential inefficiencies with management separate from employees in *all* locations.

Recommendation A
CITO Directs
CIOs Operate

Topic	Choice	Pro	Con
University CIOs direct / indirect reporting structure	**Report direct to CITO, indirect to Chancellors**	Drives consistent IT delivery across all campuses	Concern that local university needs will be secondary
IT services operational leadership	**Operational leadership is driven by the IT organization with greatest skill & capacity**	Supports centers of excellence in all locations	Concern that needs of others will be ignored
Strategic and visionary support for UA of future	**CITO focus' primarily on strategy and vision while overseeing the CIOs operational leadership.**	Enables the CITO with the CISO and architect to plan for future UA needs	Decentralized operations leads to concern that needs of others will be ignored
Reporting structure of IT staff	**Push all available IT budget from statewide to universities. Staff report up to Local CIO's.**	Enables local employment of staff to deliver IT services.	Future budget cuts could put IT staff and service levels at risk.

Recommendation B
CITO Indirect
CIOs Operate

Topic	Choice	Pro	Con
University CIOs direct / indirect reporting structure	**Report indirect to CITO, direct to Chancellors**	Local university needs are met first, system-wide secondarily	Concern that the needs of other campuses will be delayed or ignored
IT services operational leadership	**Operational leadership is driven by the IT organization with greatest skill & capacity**	Supports centers of excellence in all locations	Concern that needs of others will be ignored
Strategic and visionary support for UA of future	**CITO focus' primarily on strategy and vision while overseeing the CIOs operational leadership.**	Enables the CITO with the CISO and architect to plan for future UA needs	Decentralized operations leads to concern that needs of others will be ignored
Reporting structure of IT staff	**Push all available IT budget from statewide to universities. Staff report up to Local CIO's.**	Enables local employment of staff to deliver IT services.	Future budget cuts could put IT staff and service levels at risk.

Recommendation C
CITO Directs & Operates
CIOs Local Only

Topic	Choice	Pro	Con
University CIOs direct / indirect reporting structure	**Report direct to CITO, indirect to Chancellors**	Drives consistent IT delivery across all campuses	Concern that local university needs will be secondary
IT services operational leadership	**Operational leadership is driven by system wide CITO**	Single view of all operational services enables resource leveling across the entire system	Reduces CITO time for strategic and visionary work needed to support UA of the future
Strategic and visionary support for UA of future	**CITO focused primarily on operational role and only part-time on strategy and vision**	Single view of all operational services enables resource leveling across the entire system	Without a priority on building and executing the UA future IT plan, it will remain in the past
Reporting structure of IT staff	**Leave all existing staff in University IT budget. Staff report up to CITO.**	Doesn't grow statewide budget. Existing staff remain in place.	Potential inefficiencies with management separate from employees in *all* locations.

Recommendation D
CITO Indirect and Operates
CIOs Local Only

Topic	Choice	Pro	Con
University CIOs direct / indirect reporting structure	**Report indirect to CITO, direct to Chancellors**	Local university needs are met first, system-wide secondarily	Concern that the needs of other campus will be delayed or ignored
IT services operational leadership	**Operational leadership is driven by system wide CITO**	Single view of all operational services enables resource leveling across the entire system	Reduces CITO time for strategic and visionary work needed to support UA of the future
Strategic and visionary support for UA of future	**CITO focused primarily on operational role and only part-time on strategy and vision**	Single view of all operational services enables resource leveling across the entire system	Without a priority on building and executing the UA future IT plan, it will remain in the past
Reporting structure of IT staff	**Leave all existing staff in University IT budget. Staff report up to CITO.**	Doesn't grow statewide budget. Existing staff remain in place.	Potential inefficiencies with management separate from employees in *all* locations.

Organizational Options

The organizational options listed above are summarized here:

- Recommendation A - Provides a balance between the statewide CITO driving the vision and operational standards while the University CIOs execute the operations.

- Recommendation B – Similar to A with the exception that the CIOs do not report to the CITO.

- Recommendation C – Shifts all university-wide staff leadership and operations to the CITO and leaves only local needs with the university CIO's.

- Recommendation D – Similar to C with the exception that the CIOs do not report to the CITO.

Summary Recommendations
CITO

CITO should drive:

- An IT Governance model applied to all IT services
- Every IT service to commit, measure and report SLA
- UA-wide technology and security architecture
- A rolling, 5-year technology roadmap
- Partnership with university CIOs,
- Exploration of outside IT relationship such as Alaska state CIO, public/private partnerships and the community organizations at large

Recommendations
Governance

To improve the effectiveness of the IT organization and better serve the needs of the University, IT should:

- Define stakeholder groups, detail needs; revisit annually
- Define core IT services, document stakeholder requirements
- Select IT organization best equipped to deliver each core IT service
- Engage stakeholders in IT governance technology committee
- Define performance criteria for core IT services in an SLA
- Review SLA performance in monthly/quarterly operations review and publish the results for stakeholder transparency
- Revisit core services definition and stakeholder alignment annually to ensure continued relevance

To oversee the implementation of these changes and provide on-going, proactive management of IT at UA, the University should implement a revised IT governance model. Key aspects include:

- Designate the CITO, CISO and the three University CIOs as the primary body for IT technology recommendations
- Appoint an IT Council comprised of representative vice chancellors and senior IT leaders to approve strategic directions, approve IT policies, designate common IT services and prioritize the most significant IT investments
- Empower the IT Council to review and provide input into the CITOs strategic IT plan
- Appoint domain specific governance committees comprised of faculty, staff and IT providers to identify emerging needs, recommend priorities, recommend standards, and sponsor university-wide improvement initiatives

Recommendations
State-wide Funding

- The current perception of co-mingling of UAF and statewide funding and IT staff should be clarified and replaced with a transparent structure designed with input from university and Statewide leaders
  - The CITO will ensure that all statewide IT funding is provided in alignment with the priorities designated in the strategic IT plan, which in turn is aligned with UA's strategic plan
  - This change should be implemented and fully operational for the next annual budgeting cycle
  - Strategic application of the statewide IT funding should be reviewed and approved every budget cycle by the IT Council

Recommendations
Embedded IT

With regard to the integration of embedded IT staff into the IT organization, we recommend:

- Those embedded IT staff already identified and planned for transition should be completed as agreed with university leadership (typically the vice chancellor).
- Further transition of embedded IT staff be deferred until the IT organization, governance, financial and communications structure are aligned in accordance with this plan.
- Once the IT organization is delivering services to the university system consistently in compliance with SLAs and the IT organization has earned the right to provide services currently provided by embedded IT, then this should be reevaluated and examined anew.