A Quarterly Performance Review of the Arizona Education Learning and Accountability System: AELAS

Submitted to the Arizona Department of Education
by WestEd and CELT

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Contents

INTRODUCTION

This report documents a quarterly performance review of the Arizona Education Learning and Accountability System (AELAS) by an independent evaluator as required by *Arizona Revised Statutes* (A.R.S.) 15-249 that was conducted July 12-13, 2017. WestEd, the prime contractor, and the Center for Educational Leadership and Technology (CELT), the subcontractor, were hired by the Arizona Department of Education (ADE) to serve as that independent evaluator. This quarterly monitoring report is a follow-up to the initial performance review conducted in 2013, with a report submitted on September 9, 2013. This report follows and builds on all previous quarterly monitoring reports, updating commendations and recommendations.

This report, as did the prior report, will focus on the fiscal instability of the funding sources for the completion and ongoing support of the key components of AELAS, including the replacement of the old SAIS. Concern for AELAS funding and ongoing support has been a finding by the WestEd/CELT reports since the first report in 2013. There are other current risks to AELAS that this report will discuss, but these are relatively minor in comparison to the risks created by the fiscal instability concern.

FINDINGS

The main findings from this monitoring visit include:

1. **New CIO –** In May 2017 ADE transitioned to a new CIO, Satish Pattisapu. The former CIO, Mark Masterson, has emeritus status until Aug 1, 2017. The IT department will undergo minor organizational adjustments, but nothing substantial. The new CIO intends to maintain the momentum and vision for AELAS as did his predecessor. There appears to be no negative impact on staffing. In fact, some former staff members are returning to ADE in the wake of the transition.
2. **Fiscal Year 2018 Sustainability Funding**: The FY2018 budget request was $10.1 million for the support, maintenance, and ongoing operation of AELAS and $7.5 million for further development. The budget that was approved, with the request for an ITAC review document and a presentation of overall AELAS program status was $7.3 million, broken down as follows:
    - $5.3 million for maintenance for:
        - AzEDS Support
            - User bugs and ticket analysis and fixes to resolution
            - 2 API releases and enhancements to rules, portal, reports, tools, etc
        - AZDash
        - ADEConnect
        - Data migration and State/Federal reporting
            - Design support for applications migrating to ODS
            - Analysis support for Program area reporting to Feds
    - $1.5 million for AzEDS/ODS/OEMS new development which includes four main deliverables for FY 2018 in AzEDS
        - Single-source Agency data, and decommission legacy apps via Operational Data Store

    - LEA vendor Calendars submissions via the AzEDS API
    - ESSA requirement for Financial Transparency data collection
        - New LEA Finance/Teacher API
        - Requirements, design and prototype only
    - Self-servicing LEA user interface and Agency approval workflow for Organizational Entity Management System (OEMS)
- $0.5 million APOR/CHAR Requirements:
    - Develop high-level requirements for new payment system
    - Includes breaking down the existing APOR and CHAR (20+ processes and steps for monthly payment alone)
    - Annual payment separate process
    - Create statute-based modeling for proposed replacement
    - Automate existing manual processes
    - Decouple APOR/CHAR from legacy Enterprise

This budget amount is still in non-recurring funds. While this is much more workable for AELAS than the initial proposed budget of zero dollars, the long-term concern expressed in the April 2017 reports still exists. The concern for sustained funding for the build out and maintenance funding for AELAS has been well documented in almost all preceding reports and continues to be a serious threat to the future of the system. AELAS appears to be falling into the same pattern as its predecessor, SAIS. This pattern is:

i. The SAIS system was developed and became operational;
ii. As the system moved from development to operation, funding was reduced to include only maintenance;
iii. As budget deliberations each year became difficult, IT dollars were seen as more politically "safe" to reduce;
iv. SAIS funding was reduced over time such that the system was kept as-is, rather than continuously upgraded and enhanced to keep it current and reliable;
v. SAIS eventually fell far behind current systems designs and capabilities and became more and more difficult (and costly) to support;
vi. Support costs began to rise, but there was no increased funding to meet the support demands;
vii. Support demands went unmet, customer satisfaction suffered, system performance and reliability trended downward and data errors and reporting errors became issues and risks; and
viii. Eventually, frustration and risk associated with SAIS became such a known state-wide issue that political support was mustered to correct the problem.

3. **APOR/CHAR**: The ADE received the WestEd[1] report on the APOR/CHAR legislative requirements review on June 1, 2017. This work was well received by School Finance. A

[1] Note that this report was conducted by a separate program within WestEd, and not by the monitoring staff to ensure complete autonomy and objectivity to the review of the fiscal policies.

revision to the report to incorporate feedback is due the first week in September 2017. Currently it is unknown whether this rules review will affect the funding that schools receive. The review did find some legislation that has not been used for many years that might be obsolete. More work remains to be done to take these legislative requirements and document business rules accurately. The plan is to get a full set of business rules by end of this fiscal year. There is a need to engage school business leaders as stakeholders as well as other key stakeholders (i.e., JLBC). Coding doesn't begin until funding is received in FY 19.

4. **SIS Opt-in**: The legislative stipulation that prohibits ADE from using funds to actively market the SIS Opt-in option has contributed to the lack of new districts coming onboard with this strategy. This, together with the low margins for small districts creates a funding imbalance such that the program is nearing the point where it is no longer self-sustaining. But finances have leveled off such that ADE may be able to sustain the program for a longer period of time. This is a different situation than during the April 2017 visit. The ADE IT team agrees with the recommendations from the April report, but the needs of the districts should be considered before making a decision to discontinue the program. The SIS Opt-in is a good program, especially for smaller districts, and one that other states have successfully applied. The ADE IT team needs a decision and a clear path forward for this program.
5. **Data Governance**: As of the April 2017 report, ADE was placing a renewed emphasis on data governance after a period of inactivity in this area. Data stewards had not met for about a year, and were not actively collaborating to solve data issues, develop and populate a data dictionary, and consolidate data collection/reporting.

   The new Data Governance support person left shortly after the April 2017 visit. The new CIO (Satish) anticipates helping to name the new data governance person. It is important that new staff become informed about the past history and the needed infrastructure to effectively deal with data privacy and data governance.

   Data privacy has become an increasingly important area for the department to safeguard, and data governance provides the structure for this by getting data stewards actively involved in assigning access rights to data. Past reports have highlighted the need for ADE to focus efforts in this area. Additionally, the Data Governance Commission is a legislated entity with responsibility to approve how ADE uses funds and what data they collect. This commission has not met under the current administration because they are short a quorum from unappointed positions. The department has a draft data governance policy, but it has not been fully vetted and adopted.

6. **Legacy Applications:** Converting the legacy applications from SAIS is an important remaining step for the AELAS project. This conversion is to occur in two phases – first to point the legacy applications to data marts created from the ODS instead of SAIS enterprise and then to look at collapsing and combining these applications. The work to create the data marts is underway. The overall intent is to create as few data marts as practical and maintain read-only access by the legacy apps. The ADE IT team is working on a generic data mart now to point the remaining apps to a standard data mart for the data they need. They have most of the domains that are needed for this data mart already designed. The team's goal is to enable all apps to point to data marts off of the ODS instead of enterprise by the end of this fiscal year.

7. **ESSA Financial Requirements**: ESSA financials to track per-pupil spending at the school level is a project that is on the roadmap but the specifications/requirements have not been worked out. This is an excellent project that can be done with/through the Ed-Fi APIs. This is also a project that can be developed jointly with other Ed-Fi states and possibly as part of a grant effort.

RECOMMENDATIONS

The WestEd/CELT team recommends the following:

1. **New CIO recommendations include:**
    - The new CIO is committed to the previous vision for AELAS. However, the implementation of the foundational components of this vision is nearing completion. An updated vision for the new CIO that leverages the capabilities of real-time data transfers and accurate data should be developed to get the next level of return on investment from this ground-breaking work.
    - The CIO has begun to engage program leadership. Having their support for and recognition of the importance AELAS can play is importance to the effective functioning of the system within the department. The CIO should continue to nurture and sustain these important relationships.

2. **Fiscal Year 2018 Sustainability Funding recommendations include:**
    - From the April 2017 Report: Consider options that ensure AELAS does not follow the same historical track as SAIS. These include:
        i. Charge districts a per student fee for AELAS;
        ii. Vigorously pursue the sale of AELAS components and maintenance services to other education agencies;
        iii. Vigorously pursue the sale of AELAS components to a software/services company; and
        iv. Put out an RFP for the ongoing support and development of AELAS. As part of the RFP, offer co-ownership of the AELAS software, such that the winning firm can develop, market and generate revenue from the AELAS software.

      These options are further explored in the Appendix.

    - The Portfolio Manager for ADE IT has a very sophisticated set of planning spreadsheets that capture project assignments, project costs by deliverable and projections for future project costs. This spreadsheet is a good way to be more transparent and demonstrate to a detailed level where past, present and future expenditures are occurring. This is a good resource for answering legislative, JLBC and ITAC questions about where the money goes. The need for such reporting was noted in the initial report from 2013:

      "The AELAS, SAIS, and SLDS project costs, actual spend to date, funding sources and future costs are not well understood by the key stakeholders, governing bodies and legislature. This is a complex project, and the costs and funding structures are difficult to convey and to comprehend. This lack of understanding will make it more challenging over time to advocate for continuing expenditures."

WestEd/CELT recommends that the tool be aligned with budget reports and demonstrated to key stakeholders and made available to the offices of key stakeholders for their staff's review.

- This AELAS budget amount for 2018 is all still in non-recurring funds. The ongoing maintenance and operation portion of the budget for AELAS should be placed in recurring funding accounts. This is essential to the future stability and functioning of the system.

3. **APOR/CHAR recommendations include:**
   - The APOR/CHAR project is in the requirements/design phase for FY 2018. The coding phase is currently estimated to cost $5.0 million for FY 19 and $3.75 million for FY 20. This funding needs to be included in the requisite budget year, otherwise requirements and modeling work which will take until end of FY 18 will not be used and a path forward for getting off of the obsolete servers/infrastructure will not be in place.
   - With the thorough legislative review documentation and the work on the business rules, there is an opportunity to engage school business leaders, key legislators, committees (ITAC, JLBC) and business leaders as stakeholders in this process to shape a future vision of funding for Arizona education. Such a vision could take advantage of the timely and accurate data that passes into AzEDS to promote and perhaps reward specific programs or progress (i.e. graduation rate, attendance). This is a way to build support for long-term AELAS support and help ensure funding for APOR/CHAR.

4. **SIS Opt-in recommendations include**:
   - The WestEd/CELT team feels that this type of program is beneficial to smaller districts and a valid service that other states have successfully offered. The ADE IT team needs a decision and a clear path forward for this program. WestEd/CELT recommends that during the next site visit, we conduct a focus group discussion with key stakeholders from the district to discuss the pros and cons of the SIS opt-in approach and discern their preferred approach for the long term for this program.

5. **Data Governance recommendations include**:
   - The new CIO should help to select and mentor the new data governance person. Such a person needs to have both policy and data experience and credibility, and be able to lead/influence the work of others (i.e. data owners and stewards) that are not in their direct line of supervision. It is important that the recommendations from the April 2017 report be pursued by the new data governance person. These included:
      a. Re-engage the data stewards to continue work to solve known data issues, develop and populate a data dictionary, and consolidate data collection/reporting;
      b. Most importantly, use the data stewards to review and authorize data access to strengthen the data privacy practices of the department;

c. Work with the Governor's office to get the Data Governance Commission appointments made and the group to begin meeting again in support of ADE data initiatives; and
d. Finalize and publish the data governance policy.

6. **Legacy Applications recommendation include:**
   - This report has no specific recommendations in this area, except to encourage the continuance of this work.

7. **ESSA Financial Requirements recommendation include:**
   - Look for an opportunity to jointly pursue with other states/organizations an effort to secure grant dollars to leverage Ed-Fi as a central component to meet the financial data gathering requirements of ESSA reporting. WestEd/CELT may be a resource for facilitating such discussions with other states and organizations.

COMMENDATIONS

Commendations pertain to activities that ADE is doing especially well and are highlighted as examples of superlative performance. The WestEd/CELT team has noted the following commendations from observations during the April 2017 site visit:

1. **End-of-Year Rollover for AzEDS**: The April 2017 report expressed concern for the end of year rollover for AzEDS for 2017 since this was the first year that AzEDS has been fully operational and the process for rollover had not at that time been fully documented and tested. The rollover went well with no major issues or problems. The process has been documented for next year. The system is accepting 2018 data now, however as of the July 12-13 visit no district had sent any data. Last year some districts started sending data on July 1.
2. **End of Year Closeout:** Closing out FY 2017 occurred on July 14, 2017. AzEDS FY17 year-end process was completed successfully around midnight. Every job that runs post year-end closeout was also completed successfully. This is the first time that ADE has closed a year overnight. This process used to take several weeks during which the system would be unavailable for data receipts or any other processes.
3. **AzEDS Award:** AzEDS won *Network Product Guide's* Gold Award Winner in the 12th Annual 2017 IT World Awards® in the category of Best IT Products and Services for Education. (See http://www.azed.gov/communications/2017/06/23/ade-it-wins-gold-at-2017-it-world-awards/).
4. **Use of Standard Data Model and APIs**: The ADE has taken steps to remain in line with the Ed-Fi data standards and API. The API for Ed-Fi version 2.1 has been deployed in production.

This promotes adoption of these standards by other agencies and vendors and lowers the costs in the long run for maintaining the APIs. It also helps with vendor certification/compliance and sharing of Ed-Fi based code across states.

5. **Old SAIS Server Security**: IT Production Services continues to work with ADOA to implement better security controls. Of the 16 security controls provided by ADOA, ADE has adopted 12. The 4 yet to implement include controls such as:
   1. Active directory tool to back it up and do restore points – not implemented by ADOA yet;
   2. File integrity monitor – ADOA still deciding on tool – ADE currently has such a tool that was developed in-house;
   3. Multifactor authentication (based on smartphone or key fob); and
   4. Server hardening – not ready by ADOA.

   IT Production Services is moving the older SAIS servers to Azure to ensure better operational support. This has gone well; the servers were more compatible than expected. Some were able to be virtualized; some were moved to a newer SharePoint. But most are not able to change operating systems. ADE will not move the older SQL 2000 boxes to Azure but ultimately will move them to the IO data center with ADOA (August of 2018) because of costs and the option for more nuanced support. They are also planning an IP VLAN installation to better control the server access.
6. **Tools for Schools and School Districts**: ADE IT is putting in place tools to make processing of the AzEDS data easier for schools and districts. These include:
   a. Work-flow tool for a better 915 process. The tool provides district control to the student level that was not in place before. This is 30 to 40% complete. Requirements gathering revealed a new piece of scope – changing the data push from ACE into SFS (school finance system). Can select what schools are pushed. Looking at an early October completion date.
   b. Student analysis tool – deployed – allows district to see all student information in one view – draws from AzEDS, not ODS.
   c. Split tool – deployed and in use (with some bugs being corrected) – complex tool – where two students have same number and have to split records.
   d. Merge tool (duplicate records) in production.

   These tools are appreciated by districts. Fixes the data in AzEDS – but district still has to correct data in SIS.
7. **Help Desk:** A finding in a previous report (October 2016) was that the ADE help desk services did not reflect the commonly accepted best practices and use of metrics as recommended by such frameworks as ITIL or COBIT. This had resulted in a backlog of tickets and long average resolution times. The ADE has focused on this issue. This has resulted in an improved help desk service and a better focus on KPIs for help desk operations (see Appendix). As of July 1, all of IT was reported to be using a common help desk tracking tool (Service Manager). Also, the <u>help desk team is now on the front line for UAT and has approval on the change management board, a best practice for call centers/help desks.</u>

   There are additional metrics that ADE IT can develop for use in driving continuous process improvement for all IT areas (not just the help desk) through this type of data. This includes:
   a. Capturing and analyzing calls by application and operations area. This can be trended over time with the goal of reducing the calls by area. Spikes in call volume for an area can be analyzed to determine root cause (i.e. new release rollout, time-of-year related process such as report cards or scheduling of students, etc.). Teams can use this information to improve the processes for the future to minimize impact on customers.

   b. Capturing and analyzing customer satisfaction and time to resolve for tier 2 and 3 tickets by application or operations area. This feedback can also be used to create constructive tension for process improvement at the tier 2 and 3 level.

   There is still some remaining work to be done to establish the help desk best practices across the whole IT department, but significant progress has been made to reduce average ticket backlog and resolution time. Appendix B shows evidence of the performance of help desk services.

8. **Team Productivity/Communication**: While onsite at ADE this visit the WestEd/CELT team observed (uninvited and unobtrusively) a standup team meeting to review progress on their project. This is a practice used by many of the ADE IT teams on a daily basis to ensure good team communications, proper progress toward team objectives/deliverables and productivity (team and individual). This is a good practice for ensuring that resources are being effectively used.
9. **Programmatic Relationships**: The new CIO is nurturing essential relationships with program staff throughout ADE, creating knowledge of AELAS and providing an important foundation for the continued important of having the data available the data available from the system.

APPENDIX A: ENSURING AELAS SUSTAINABILITY FUNDING

In addition to moving AELAS funding into the recurring fund category, which still is at risk of future budget cuts, this report recommends further effort be expended to ensure the long-term sustainability of AELAS. This is important in order to prevent the AELAS system from going down the same funding strangulation path as SAIS before it.

Four potential options are suggested in the body of this report:

1. Charge districts a per student fee for AELAS.
2. Vigorously pursue the sale of AELAS components and maintenance services to other education agencies. This option will fall under the SB 1438 (Chapter 317: software; computer system; sale; lease) and as such, 60% of the realized revenue will go into the general fund and 40 percent into the AELAS support fund.
3. Vigorously pursue the sale and co-ownership of AELAS components to a software/services company (public/private venture). The company can in turn market AELAS components to other education agencies. Such an option might include terms that either generate revenue immediately from the sale or over time in the form of profit sharing, or both. This option also falls under SB 1438.
4. Release an RFP for the ongoing support and development of AELAS (privatize AELAS support). As part of the RFP, offer co-ownership of the AELAS software, such that the winning firm can develop, market and generate revenue from the AELAS software. This revenue would either be shared directly with ADE (and also come under the SB 1438) or used indirectly to reduce the ongoing support and development costs for ADE.

Each option is intended to leverage the $38 million invested to date in AELAS development in order to help cover future AELAS support and maintenance costs.

The pros and cons of each are outlined in the table below:

Pros	Cons
Charge districts a per student fee for AELAS	
Requires no major expenditures to enact this approach.	This is a politically sensitive arrangement and will be unpopular with the districts.
Does not require ADE to market the AELAS product.	Districts will likely seek ways to get out of the arrangement over time, jeopardizing AELAS sustainability funding.
Sell AELAS to other education agencies	
Generates revenues that come to Arizona directly and are not shared with other (private) entities.	ADE is not allowed to use funds to market IT products per SB 1438
	ADE is not positioned or funded to create a version of AELAS that is usable by other education entities.
	ADE does not have the staff and processes necessary to go into the product and services business.

Pros	Cons
	Developing and supporting software for use by external entities is a risk to ADE – money will need to be spent to position ADE for this type of business and there is no guarantee that any sales will occur.
Sell AELAS to a software/services company (public/private venture)	
Does not require extensive marketing, which is not allowed under SB 1483.	Revenues that are generated must be shared with other (private) entities.
May generate revenue for the state from the $38 million investment to develop AELAS.	ADE IT must still maintain staff and expertise to support AELAS for Arizona.
ADE does not need to create a version of AELAS that is usable by other education entities.	
ADE does not have to develop the staff and processes necessary to go into the product and services business.	
Presents a low risk option for generation of revenues that can be applied to the support of AELAS.	
Retains co-ownership of AELAS components, which reduces future risks associated with vendor performance.	
Can be pursued in the near term.	
Privatize the AELAS software support and maintenance	
May generate revenue (or reduced support costs) from the $38 million investment to develop AELAS.	Revenues that are generated must be shared with other (private) entities.
Requires no further investment in AELAS to pursue this approach.	Creates future risks associated with vendor performance and dependence.
Does not require ADE to market the AELAS product.	Will be difficult to bring the support back in house in the event that the vendor underperforms.
The vendor selected to support AELAS carries the risks associated with sales and support to other education agencies.	Loss of control over a critical state process (school financing).
Can be pursued in the near term.	
ADE IT does not have to maintain staff and expertise to support AELAS for Arizona. These staff can be moved to the vendor.	
Helps to prevent (by contract) legislated cuts in AELAS future support.	

This report recommends a more in-depth review of the benefits and risks associated with Option 3 (sale to private software company) and Option 4 (privatization) for sustaining the ongoing support and maintenance of the AELAS system. This review might include a request for information (RFI) to determine interest in such public private ventures.

Outsourcing and Privatization Risks

Privatization in the context of government operations refers to strategies that governments employ to take advantage of services and capabilities available from the private sector in order to provide better value (e.g., lower costs, better service, etc.) for taxpayers. Many states have studied privatization, and information on their findings is readily available (e.g., New Jersey, Illinois, Texas, Florida, to name a few).

In 2010, Governor Christie created the New Jersey Privatization Task Force. This Task Force concluded that, "through sensible planning and implementation, privatization offers a variety of benefits to governments and taxpayers, including lower costs, improvements in the quality of public services and access to private sector capital and professional expertise". An example offered by the study included a Florida effort begun in 2002 which was a $350 million privatization contract to "consolidate and automate human resource, payroll administration, staffing and benefits functions". This effort was reported to save the state "$12 million from staff reductions and $80 million by avoiding the cost of rebuilding its own system, in addition to other efficiencies gained through the elimination of duplicative services".

IT privatization (or outsourcing) by state governments is known to have risks and less than stellar performance[1]. A study performed in 2010[2] on the Florida HR outsourcing contract mentioned above outlined the aspects of this effort that created less-than perfect results. Texas cut short its seven-year contract with IBM to provide data center and disaster recovery services for 27 state agencies. Virginia's contract with Northrop Grumman to run the state's computers, e-mail systems and help desk has been an example of cost overruns and poor performance.

Such risks can be mitigated by thorough understanding of the costs and benefits, careful planning, proper service level agreements, strong oversight and well-designed contract terms. It is the recommendation of this report that this diligence be applied to any effort to privatize AELAS.

Note 1: Management and Labor - The Pros and Cons of Privatizing Government Functions, by Russell Nichols, December 2010

Note 2: Florida's HR Reforms: Service First, Service Worst, or Something in Between? Elsie B Crowell; Mary E Guy; Public Personnel Management; Spring 2010; 39, 1; ABI/INFORM Global pg. 15

APPENDIX B: HELP DESK AGGREGATE SCORECARD

The following data provided by ADE attests to the performance of the Help Desk Services.

June 2017 - TEAM Support

Performance Metric	Metric Weighting	Performance Range		Actual Performance	Metric Score	Balance Score
		Worst Case	Best Case			
Cost per contact	15%	$9.22	$6.29	$7.96	43%	6.5%
Customer Satisfaction	25%	72%	95%	89%	74%	18.5%
Agent Utilization	15%	3%	65%	31%	45%	6.8%
FCR	20%	18%	20%	19%	50%	10.0%
Contact Quality	10%	27%	80%	57%	56.2%	5.6%
SLA	10%	58%	72%	80%	157%	15.7%
Schedule Adherence	5%	22%	61%	30%	21%	1%
Total	**100%**	**NA**	**NA**	**NA**	**NA**	**64.1%**