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

Submitted to the Arizona Department of Education and the Arizona Department of Administration by WestEd and CELT

Date: January 31, 2014

CELT
Center for Educational Leadership and Technology

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INTRODUCTION

This report documents a quarterly performance review of the Arizona Education Learning and Assessment System (AELAS) by an independent evaluator as required by *Arizona Revised Statutes* (ARS) 15-249. WestEd and CELT were hired by the Arizona Department of Education (ADE) to serve as that independent evaluator. The quarterly monitoring is a follow-up to the performance review conducted in 2013, with a report submitted in September 2013. The agreed upon scope of the quarterly monitoring is to:

1. Provide feedback on the degree to which the recommendations in the September WestEd/CELT report are being appropriately addressed;
2. Provide feedback on issues or good practices relative to the currently funded projects for AELAS; and
3. Provide a gap analysis between the functionality that is currently funded (baseline) and the full vision of AELAS. This analysis is not provided in this report, but is intended to be in the next quarterly report. It will focus on the functionality to be delivered.

As a part of this first quarterly review of AELAS, WestEd and CELT reviewed and analyzed recent documentation related to AELAS, interviewed team leaders and ADE leadership, and attended a Portfolio Review meeting. Also, the WestEd/CELT team used as a guide an interview protocol based on the set of recommendations documented in the September 2013 report to determine the progress being made by ADE. In response, the WestEd/CELT team paid particular attention to the work plan, staffing, budget, and timeline to assess the amount of progress that has been made since the team's data collection in the summer of 2013.

This quarterly report describes the progress made on each of the recommendations from the September 2013 report, provides a prioritization scheme that can help ADE determine the workflow process, and provides possible solutions.

Ultimately, the objective of the report is to provide ADE with formative and constructive information about AELAS, its implementation and functioning, and to help guide ADE's own progress monitoring plans. The report is also intended to provide to ADE actionable steps through the progress noted on the series of recommendations. The report, therefore, can be used as a metric against which measureable progress can be tracked.

STATUS ON THE RECOMMENDATIONS FROM THE SEPTEMBER 2013 REPORT

The report deals first with the 10 summary recommendations contained in the executive summary of the September 2013 report. A brief summary of progress is provided for each recommendation. The report then addresses the detailed table of findings and recommendations that were contained in the appendix of the original report. Included in this table is a prioritization scheme to assist ADE in determining the workflow processes.

PROGRESS ON THE 10 KEY RECOMMENDATIONS

These 10 recommendations are a distillation of the full set of findings and recommendations that were contained in the body of the September 2013 report and catalogued in the Appendix. ADE is tracking their own progress on these 10 recommendations and this self-reporting is available to the public on the AELAS website at:
http://www.azed.gov/aelas/files/2013/10/wested-action-plan.102813.pdf

ADE has assigned responsibility for each of these key recommendations. They are to be commended for the aggressive manner in which they are pursuing these recommendations, the openness with which their progress is shared, and for their ongoing search for improvement ideas and opportunities.

Two caveats need to be mentioned to facilitate the interpretability of the recommendations and contextualize the progress noted by the quarterly monitoring. The first caveat pertains to the complexity of implementing a data culture in which AELAS will reside. One of the ultimate objectives of the AELAS is to enculturate data use at both the state and local levels. Data-driven decision making should become an integrated part of educators across the state and ADE staff. Data use is seen as an ongoing process, not isolated events. To build and sustain a culture of data use, there must be necessary structural supports to realize that vision. AELAS, as the data system, will provide the needed technological infrastructure. But other components of the infrastructure must be developed and nurtured to ensure the investment in the technology is used. The literature on data-driven decision making is clear. Leadership is one of the most important components. ADE is fortunate to have leadership from Superintendent John Huppenthal, Deputy Superintendents Elliott Hibbs and Dr. Jennifer Johnson, as well as from the CIO, Mark Masterson. Another component is an explicit vision for data use; that is, what are data to be used and an expectation that the data will be used. To date, this vision is more implicit through the development of AELAS, than explicit. However, in conversation with ADE, they indeed do have a vision, and the communication of it is improving. A third component, and one that is absolutely essential (yet often assumed or overlooked in many instances) to the success of AELAS, is the human infrastructure. If end users are not data literate (i.e., able to use data competently and responsibly to

make decisions), the investment in the technology will be placed at risk by individuals who may use the data inappropriately, to make invalid decisions, or not use the data at all. The WestEd/CELT team recognizes that the human capacity issue is not directly addressed in ARS 15-249, yet urges the recognition of its importance as a parallel activity to the development of AELAS. Other supports to the structure and functioning of a data culture are also important and will evolve and mature as AELAS is rolled out. The fundamental message here is that ADE must recognize that the development of the other components, in particular, the human infrastructure to use data, must be developed in parallel with the technological component. This effort must recognize the systemic complexity of implementing a sustainable data culture. This enculturation will not occur immediately. It must be facilitated, nurtured, and developed over time, in parallel with the development of the technological system.

The second caveat pertains to the specific recommendations outlined in the September report. The recommendations described below are broad and complex, interacting with many components that include the technology, but often are more systemic and structural in nature. Working on all of the recommendations at one time may be an impossible task. Thus, if the WestEd/CELT notes in a particular quarter that no progress has been made, that is not to be interpreted in a negative manner. It may well mean that other recommendations and their cascading tasks have taken precedence during the particular time frame. If after several quarters, the monitoring has yielded a continuous lack of progress, then a deeper analysis into the prioritization and workflow may be necessitated.

Following are the 10 recommendations and a brief statement as to the progress.

1. Staying on course with the full scope of work for AELAS, which includes opt-in components, is important to successfully achieving both the legislative intent for establishing a robust data collection and reporting system and the classroom need for quality information to support effective teaching and learning. Our experience shows that the reporting of data to state agencies for compliance reasons, when there is no subsequent benefit or use of those data by the districts and schools, results in generally poor quality data. Providing systems and dashboards that help schools and teachers use data for improving classroom instruction will help ensure that the data are not only accurate but useful. This will ultimately result in better quality data for ADE, which is the spirit and intent of the legislation. It is recommended that ADE continue to pursue the current scope for AELAS.

   Summary status: To the degree that the department has received funding, the ADE has defined and is pursuing the foundational projects that lay the groundwork for the full vision of AELAS. This includes the following projects:
      i. SIS Student Data Store - SDS (a.k.a. AELAS Education Data Fidelity – ED14004);
      ii. School Finance - ED14002;
      iii. Student Information System (SIS) Opt-in (ED14005); and

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Statewide Longitudinal Data System (SLDS) Dashboard (a.k.a. Education Data Infrastructure, AZDash, Arizona Education Data Driven Decision System, AZED^{3}S – ED-14006).

These projects lay the necessary groundwork, but do not deliver the full functionality of AELAS. The department recently received notice that the Governor has recommended a $16,400,000 appropriation for AELAS and systems support and operation for FY14-15. This includes $14,200,000 for ongoing development, appropriated to the Automation Projects Fund, and $2,200,000 for information technology (IT) production services, appropriated directly to ADE. This will allow another set of projects and releases of AELAS components for 2014-15 that will take the department further toward the full vision of AELAS. However, additional funding for releases in 2015-16 and beyond will be required to fully implement the AELAS scope.

2. A business architecture (e.g., vision, goals, processes, policies, and use cases) for an integrated learning enterprise system that includes the functionality found in student information systems (SISs), instructional improvement systems (IISs), and individualized education programs (IEPs) systems is needed. It is recommended that using an education business architecture model, ADE work to define an integrated system of processes, data, and applications built around the planned real-time operational data store (ODS).

   Summary status: ADE is making good progress with the Maricopa County Education Service Agency (MCESA) pilot work. Translating the work in the pilot into a business architecture around instructional improvement that can form the basis for a state-wide IIS opt-in business model still remains to be done. ADE has an ongoing strategic planning process that identifies and actively manages the initiative and the key performance indicators they affect. This process can be used as a means to introduce enterprise architecture (EA) governance and begin to develop a business architecture for the department.

   ADE IT staff has established an architect role that is creating a process category map (or capability model) and proceeding to get program areas within the department to accept ownership of their processes. This is a good step toward building an enterprise business architecture for ADE.

3. It is recommended that ADE clearly address and communicate AELAS/Student Accountability Information System (SAIS)/SLDS costs and budget within fully developed project plans, deliverables, costs, funding sources, interdependencies and schedules.

   Summary status: Much progress has been made to capture and report progress on the projects funded for 2013-14. The documentation, project plans, and project costs (budget and actual) are closely tracked for these projects. The AELAS team has created a website which reports all budgeted costs, actual spending and project status as well as shows the original business case.

   For the purpose of managing expectations and communicating progress toward the full vision of AELAS, a more complete picture of all of the projects (for 2014-15, 2015-16 and

2016-17) and their projected costs could be developed. This is discussed further in the detailed table below in the sections numbered 30 and 32.

4. Improved communication to diverse audiences, including educators, policymakers and other stakeholder groups is strongly recommended using strategies such as recruiting champions from all sectors across the state and providing "talking points" to them as well as use-case vignettes, one page overviews and longer briefs (avoiding technical jargon), and working closely with public information officers in local education and partner agencies to disseminate information. Engage a professional communications person or agency outside of the IT organization to lead the communications efforts.

   Summary status: ADE is to be commended for the progress made in this area. ADE leadership, in particular Elliott Hibbs and Dr. Jennifer Johnson, and Mark Masterson, have begun to clearly articulate their vision for AELAS and communicate that vision to various internal and external stakeholder groups. One-page marketing materials have been developed and were in the final stages of review by executive leadership at the time of the January 2014 site visit. This progress also includes a revised website for AELAS and ongoing internal and external discussions.

5. It is recommended that ADE continue to establish the data governance process by effective use of data stewards and the development of data standards for key AELAS systems, prioritizing the SIS data categories. Using the guidance of national education standards, such as the Common Education Data Standards (CEDS) developed through the Council of Chief State School Officers (CCSSO), will ensure that such data as discipline and attendance can be standardized and agreed upon by the districts to derive data quality benefits from using a common SIS.

   Summary status: ADE is to be commended for the progress made in this area. Draft standards for the SIS data were published with the SIS Request for Proposals (RFP) and were based upon the CEDS and Ed-Fi standards. Vendors are required to be compliant. ADE hired a full time data governance manager (an internal hire) to lead their efforts in this area.

6. It is further recommended to continue to reduce the level of redundancy of data collections and to implement the plan for reducing the data collections recently developed with the districts. It is important to be transparent and explicit about the frequency of and expectations for data upload, and communicate these changes on a timeline that allows districts (and their vendors) to make needed adjustments. Also, the use of a roster verification tool and process for the teacher-student data connection is recommended. Such a tool is currently being piloted by the ADE. This will improve reliability and build credibility among the teachers for the quality of the data linkages.

Summary status: ADE is to be commended for the progress made in this area. The Ed-Fi ODS work is currently the focal point for reducing the redundancy of data collections. The process is engaging the appropriate data stewards.

7. A key recommendation of this report is to establish a not-for-profit organizing structure that is separate from, but endorsed by, the legislature and ADE, to engage the districts and charter schools more in the leadership, support (technical and programmatic), risk management, and coordination of the opt-in components of AELAS. This group would be responsible for managing the ongoing operations (or contracts for software as a service) of the opt-in AELAS components including the specification and contracting for the components and the cost and revenue model.

    Summary status: No progress has been made in this area.

8. It is recommended that ADE provide ongoing training to improve the capacity of educators to use data. The focus should be on system training and data literacy. This would include reaching out to Arizona State University, Northern Arizona University, the University of Arizona and other partners in higher education to work with them to have data use included in course offerings.

    Summary status: No progress has been made in this area.

9. A recommendation to ensure adoption throughout the state includes consideration for smaller Local Education Agencies (LEAs). This has started and should continue to be expanded by working with the small and rural districts and charter schools on their technology readiness with a focus on sufficient technological infrastructure and bandwidth to implement AELAS and future online assessments.

    Summary status: No progress has been made in this area.

10. A comprehensive, long-term approach to planning for AELAS is recommended with continued consultation with ADE stakeholders and users. Building upon the initial needs analysis and expanding opportunities for feedback into an ongoing continuous improvement process will support this. Thus, it is recommended that there be periodic and ongoing needs analyses throughout the course of the development and implementation processes. Another key long-term strategy is the prioritization of partnerships with the business community to leverage their expertise and support.

    Summary status: No progress has been made in this area.

PROGRESS ON ALL THE REPORT RECOMMENDATIONS

The next section addresses the detailed recommendations from the September 2013 WestEd/CELT AELAS Report. It provides a status update for each of the recommendations as a way to monitor progress over the course of the quarterly reports. It is important to note that there are many recommendations, 37 in total. Some are of higher priority than others. Many recommendations build on other ones, thereby causing a cascading effect. The lack of attention to some recommendations is not to be interpreted as a negative observation, only that other activities are being attended to first. Where necessary, the WestEd/CELT team has noted that attention may need to be shifted to attend to some recommendations that will need to rise higher in the priority list.

   The WestEd/CELT team has provided a rough schema for prioritizing the 37 recommendations that were noted in the original report. It is important to note that the prioritization process is exceedingly difficult. ADE is strongly urged to accomplish all of the recommendations. However, a small number of activities or actions are likely to address most of the recommendations. The inclusion of the potential solutions serves to highlight the number of recommendations that can be addressed by a few actions from ADE. The prioritization schema has been added to the table below. These key actions include:

1. Establish a strong Communications Plan;
2. Establish a strong/capable PSO/PMO;
3. Create an LEA leadership organization (Recommendation 16);
4. Implement data governance policies and practices; and
5. Implement governance structures (i.e., performance management plans) within the ADE program areas to institute data literacy and the associated pedagogical and management practices to integrate AELAS capabilities into classroom practices

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	AELAS STRATEGIC ALIGNMENT **ALIGNMENT WITH THE GOVERNOR'S EDUCATION REFORM PLAN**				
1	LEA leaders who we interviewed expressed clear and similar visions for AELAS; however, other interviewees, both internal and external to ADE, had varied understandings of what ADE's specific objectives were with regards to AELAS.	ADE leadership needs to do more to clearly and concisely articulate their vision and rationale to stakeholders, both internal and external to the department.	ADE is to be commended for the progress in this area. This progress includes a revised website for AELAS, one-page communication materials, and ongoing internal and external discussions. One area to address is the planned approach of creating the various components of AELAS in releases. The full picture of what these releases will involve at the various stages of AELAS is not well understood or communicated.	High	• Strong Communications Plan with views by stakeholder needs.
2	Despite some conflicting opinions as to whether AELAS was the right option for the state's data system needs, there was strong confidence that if any Department of Education administration had the IT skills and ability to create a quality data system, it was the current administration. Those interviewed were pleased with the progress that this ADE administration has made repairing SAIS and building confidence in the Department's technological	Continue to support the efforts of the IT department in ADE to build the skills, processes, methodologies and architecture necessary for AELAS.	Progress in this area is commendable. There is a new Project Support Office (PSO) with a renewed focus on the development methodology and consistent project documentation. There is a contract with a project management consultant to review their methodology and the consistency of project documentation. The team continues to improve in the creation of the phase-gate documentation, and adherence to this process, and the oversight of the projects for AELAS and ADE overall continue to follow an exemplary process led by the Deputy Superintendent Elliot Hibbs.	High	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	capabilities.				
	AELAS ALIGNMENT TO ARS 15-249				
3	There is not a consensus among those interviewed that the current AELAS scope is required to meet the legislated requirements for ARS 15-249.	ADE leadership needs to clearly and concisely articulate their vision and rationale to stakeholders, both internal and external to the department.	Progress here is commendable. Communications of AELAS both internal and external to the department are improving. ADE leadership, in particular Elliott Hibbs, Jennifer Johnson, and Mark Masterson, have begun to clearly articulate their vision for AELAS and communicate that vision to various internal and external stakeholder groups. As part of this oversight agreement the WestEd/CELT team is developing a comprehensive planning template for use by ADE to facilitate the development of communication tools in this area.	Low	• Strong Communications Plan with views by stakeholder needs.
4	It is the opinion of the team that the scope of the AELAS system goes beyond what a strict interpretation of ARS 15-249 requires, especially as regards the opt-in component. Nonetheless, there are good reasons why the widened scope is important to successfully achieving the intent of the legislation. Our experience shows that the reporting of data to state agencies for compliance reasons, when there is no subsequent benefit or use of those data by the districts and schools, results in generally poor quality data. Providing systems and dashboards that help schools and teachers use data for improving classroom instruction will help ensure	We recommend that ADE continue to pursue the currently defined scope for AELAS.	The scope for the actual work being performed for AELAS in fiscal year 2013-14 was of necessity narrowed to adjust to the funding that was made available. However, the original scope of AELAS as described in the business case continues to be the long-term intent. This intent will be met through an ongoing series of releases of the AELAS components. The scope and functionality of these releases will be determined in large part by the funding that is made available for each funding period. The current work being performed is designed so that it supports and conforms to such a strategy of ongoing releases.	High	• Strong Communications Plan with views by stakeholder needs.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	that the data are not only accurate but useful. This will ultimately result in better quality, useful data for ADE, which is the spirit and intent of the legislation.				
	STAKEHOLDER AWARENESS AND BUY-IN: ADE STAKEHOLDER AWARENESS				
5	ADE staff was concerned that if they are not given a forum to learn about the details of AELAS and to provide feedback on the front end, then the new system would be jeopardized. If they could not provide their feedback early on in the development, pieces would have to retroactively be built onto AELAS as happened with SAIS. This could lead AELAS to experience many of the past inefficiencies of SAIS.	In order for agency-wide buy-in to be possible, ADE staff should be provided a forum in which to provide feedback. They should also be provided with common talking points for messaging and regular updates about the vision for and development of AELAS.	Stakeholder support has improved. Internal forums have been held. ADE is holding town halls across the department and is planning an internal open house. This needs to be a continued focus to build further stakeholder support and engagement.	High	• Strong Communications Plan with views by stakeholder needs.
	STAKEHOLDER AWARENESS AND BUY-IN: AWARENESS AMONG THE GOVERNOR'S OFFICE, ADOA STAFF, AND LEGISLATORS				
6	Nearly every policymaker interviewed made clear a desire for a high-quality data system and seemed open to the possibility of supporting AELAS if provided more information about the system and given a forum to have questions and concerns addressed.	The team believes that buy-in among the policymakers can be increased, but only if the policymakers are provided more detailed information. This includes one-pagers which provide information on the scope of work, timelines, accomplishments to date, and additional budget information.	One-page marketing materials have been developed and were in the final stages of review by executive leadership at the time of the January 2014 site visit. These will be used as the briefing packets for legislators. The AELAS teams have made progress in creating a common vocabulary among the projects. Continued work in this area is helpful to assist policymakers understand the functional benefits to teachers, leaders, and students from their support of AELAS.	High	• Strong Communications Plan with views by stakeholder needs.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
			Inconsistencies in project names hinder the understanding of how the AELAS work is structured. Continue to monitor and refine these communications and look for an articulate teacher(s) to help carry these messages to legislators and to the school districts.		
7	Some policymakers shared that they have asked ADE for additional information but have not yet received it.	Prioritize responding to policymaker's questions and requests for information by naming an ADE staff member with knowledge about AELAS to serve as a point of contact for the policymakers and by conducting meetings with policymakers and legislative education committees.	AELAS has a designated legislative spokesperson in Chris Kotterman, ADE Deputy Associate Superintendent of Policy Development & Government Relations.	High	• Strong Communications Plan with views by stakeholder needs.
			STAKEHOLDER AWARENESS AND BUY-IN: AMONG LEAs AND OTHER STAKEHOLDERS		
8	In no uncertain terms, the creation of a state-of-the-art data system is something that is coveted by leaders from across the state, and is essential for the plans, goals, and objectives of countless Arizona business and education organizations and entities. However, as previously mentioned the vast majority of those interviewed were unclear as to specifically what is in AELAS, and were unable to thoughtfully weigh in on how AELAS specifically aligned with strategic plans.	Establish a multi-pronged communication strategy that can be customized to specific audiences. For the district stakeholders, having someone from ADE who comes from a district and can speak in their terms about AELAS would be a recommended strategy. Having the ADE staffer accompanied by a current educator who can speak knowledgably about the system from experience would also be an asset. For policymakers, the message should demonstrate the need for the system and for adequate	The AELAS team has created a website that reports all budgeted costs, actual spending, and project status as well as showing the original business case, WestEd/CELT Assessment report, and status on the recommendations. Marketing materials have been developed for legislators. Materials also have been developed for educators. Both sets of materials were still in progress of development and review as of January 2014 visit. Lori Ventura is now part of the AELAS outreach team. She is a former teacher, is developing a communications plan, and is a key person for getting districts to sign up for the dashboard or AELAS.	High	• Strong Communications Plan with views by stakeholder needs.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
		resources. ADE should identify and use individuals around the state as eloquent spokespersons for the system. A set of concise one-page synopses about AELAS for different audiences should be prepared. Longer five-pagers also should be developed with additional customized information.	ADE will be hosting a "Meet and Greet" session with legislators to provide information about and an introduction to AELAS. A person has been designated as the lead for the "Meet and Greet" sessions with legislators (Chris Kotterrman). The focus is to keep these non-technical Educational leaders, such as the project sponsor Deputy. Superintendent Hibbs, are key to the communication of the benefits of AELAS to policy makers, district leaders, school leaders, and teachers.		
			THE CURRENT SAIS SYSTEM		
9	Challenges exist regarding the level of redundancy in the current data collect processes for SAIS.	Continue to examine carefully the level of redundancy of data collections and to consolidate efforts where possible.	The Ed-Fi ODS work is currently the focal point for reducing the redundancy of data collections. The process is engaging the appropriate data stewards. At this point, no other data collections beyond those that Ed-Fi might address are being targeted. This should continue to be a focal point for data stewards to take ownership of themselves, with IT awareness and support. Vendor integration of Ed-Fi extractors in a timeline matched to ADE needs is an area of concern. As is the potential of a prolonged or low rate of SIS opt-in. Districts who opt-in to the SIS are most likely to benefit from a reduced data collection burden, the remaining districts may not get this benefit if the vendors do not adopt the Ed-Fi standards in all their deployments.	High	• Strong Communications Plan with views by stakeholder needs. • Data governance structures (including review of who has authority to collect data) that directs data collections toward streamlined data collection.
10	Before they can be used for any high-stakes purposes such	ADE is pursuing as a part of AELAS the design and	The AELAS team has identified a rules engine platform and completed a proof of	High	• Strong Communications Plan with views by

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	as determining educator effectiveness, ADE teacher-student data connections will require a high level of confidence on the part of educators as regards the quality of these links. Such confidence will be difficult to achieve with the history of SAIS.	implementation of a rules engine for cleansing data prior to uploading data into storage. We recommend that ADE continue the work to establish a rules engine for data checking and cleansing and consider extending the use of this tool to the districts to allow them to nightly check the local data entered by schools into their student information systems on the previous day. This is an essential step toward achieving high accuracy of the data. Continue work to establish a roster verification tool and process for the teacher-student data connection prior to any high-stakes use of these data. This will build credibility among the teachers for the quality of the linkages at the state level, which is critical to their acceptance of any use of such data in their evaluation process.	concept. Contract negotiations with the vendor are proceeding satisfactorily. The program areas are reported to be excited about the rules engine. Acquiring a roster verification tool is in progress to gather requirements from MCESA. An interim solution will be used for this in/by? April/May 2014. Now is the time to plan efforts to develop confidence among teachers in the student-teacher data connection. Use of the SLDS dashboards to view classroom data by teachers is an indirect way to validate class rosters while at the same time providing useful data to teachers.		stakeholder needs.
11	ADE staff report, that while there have been significant improvements in SAIS performance, the current SAIS system is on an unsupportable platform and may fail at any time, resulting in serious costs and federal reporting issues. While it is not within the scope of this work to delve deeply into the technical underpinnings of SAIS to	Given that SAIS may fail at any time, it is very important that ADE establish a strategy to move away from this system as soon as possible. Before any development work begins on a new system, ADE leadership should consider initiating a policy, legislative, and process review of the current SAIS business architecture, rather than creating a new SAIS that repeats the same processes and	The full phase out of the old SAIS components was not funded for 2013/14. Funding to this point included an AELAS rewrite of the Class Site Fund financial system, which included 13 of 48 financial functions of SAIS. Work will remain to be done in fiscal year 2014-15. A policy and legislative review of the SAIS business architecture has not been started.	Low	• Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	verify this finding, the reasons provided by the ADE staff for this very significant concern were very credible.	policies. This should not be an IT exercise, but rather a policy exercise. IT should be involved and can help to document the decisions and guide the discussion where more specificity is required. This work should begin immediately, as it is on the critical path of a SAIS rewrite that must be done because of the vulnerability of the current SAIS platform.			in components through a not-for-profit organizing structure separate from ADE.
	AELAS WORK IN PROGRESS: GOVERNANCE				
12	The ADE internal data governance process is getting traction from a combined top-down and bottom-up effort. However, it has not reached a level of maturity, visibility, or widespread acceptance that is required for the AELAS efforts to reap their full benefit.	Continue to build and strengthen the data governance process and develop data standards for the key SIS data categories such as discipline, truancy, excused and unexcused absences. Use the data stewards for these data categories to engage the LEA data stewards in determining these standards. Do this prior to rollout of the SIS and make this part of the training. (More information below on using Ed-Fi and CEDS as guides for these standards.) Similarly engage the data stewards for the assessment program areas to come to consensus on how to leverage the AELAS assessment engine, the ADE data warehouse and ADE dashboards in a comprehensive assessment strategy within the overall instructional improvement	Draft standards for the SIS data were published with the SIS RFP. Vendors are required to be compliant. Includes option sets. Districts were told about this last year. No significant reactions heard to date. ADE hired a full time data governance manager to lead their efforts in this area. The person was an internal hire, which should facilitate their ability to quickly impact data governance issues.	High	• Business (educators) organization leadership. • Implement, formalize and institutionalize data governance structures (including review of who has authority to collect data) that directs data collections toward streamlined data collection.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
			system.		
			AELAS WORK IN PROGRESS: PROJECT OVERSIGHT		
13	The requirements gathering for the AELAS opt-in systems (e.g., the SIS), while heavily engaging district focus groups, seemed to not have enough emphasis on understanding each individual processes. Focus sessions could be designed around these processes, with the focus group makeup carefully selected to have important and knowledgeable subject matter experts (or process owners) and program areas. Examples include involving more principals and assistant principals for scheduling and grade book processes; involving special education professionals to determine what data are being pulled and how; involving research and evaluation staff for formulas and data needed for accountability.	If ADE is to support the SIS usage among the districts, it is important that the Department establish non-IT process owners who can understand the SIS processes and tools and support the districts effectively. Be more thorough in the selection of the focus groups to ensure that the range of subject matter experts is sufficient to represent all processes being automated by the opt-in components, such as the SIS. ADE should be included as one of the process owners, as they are appointed.	The selection of the SIS vendor(s) is progressing, although not on schedule due to the requirement to re-bid the work. This means that the 2014-15 implementation window for the SIS pilot districts has been missed and best practices beyond IT is limited. It is good that the RFP review team includes district representation, but the issue of limited ADE ownership of the SIS beyond the IT group is still open. An SIS implementation at the state level for locally controlled districts is complex and has the potential to create public-relations issues for AELAS that could jeopardize the adoption of other AELAS components.	High	• Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.
14	As of the date of the onsite interviews, ADE had not determined what districts will be part of the selection process for the SIS.	Establish the strategy for selecting districts for inclusion in the SIS selection process and define their role in this process.	The selection process is progressing with district representation.	Low	• Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
					coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.
15	There is no sponsor for the SIS (or any of its major components or processes such as secondary school scheduling) beyond the IT department. It is important that IT not be viewed as the sponsor and owner of the AELAS opt-in systems. Because Arizona is not a centralized state, the districts are left to individually decide on how some of the opt-in systems in AELAS will work and be configured. This is an "open-ended" business architecture that may result in some of the AELAS components not being fully utilized at the district and classroom level and not being sufficiently consistent across the state. For example, with the educator evaluation effort, there is no program-area sponsor to drive consistency and districts are left to choose the system (True North Logic (TNL) or Teachscape), the framework, the standards and the rubrics themselves. This could drive up implementation and training costs and make	Identify sponsors in ADE for the components of AELAS. Use them to champion their systems, drive consistency of practice, develop data standards, and provide ongoing training and support. For the SIS, since it represents multiple functions such as grade book, scheduling and attendance, it may be practical to have multiple sponsors or process owners that coincide with the corresponding data owners.	Dr. Johnson has become an advocate for AELAS outside of the IT department.	High	• Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	the data across districts different to such a degree as to inhibit statewide data gathering and reporting in this area. Educator evaluation data for Arizona will not likely have the consistency across districts like what other states have accomplished, (e.g., in GA or NC where statewide implementations were directed by the state, with rubrics, evaluation standards and consistent training).				
	AELAS WORK IN PROGRESS: RISK MANAGEMENT				
16	ADE is taking on challenges for systems in AELAS that are beyond their control to manage and support. These are primarily regarding the opt-in components (SIS, Content Management System (CMS), learning management system (LMS), assessment system), whose functions, requirements, operations and usage are controlled by the districts. Many of the critical success factors for these systems are beyond the influence of ADE, such as change management at the classroom and school level, teacher and principal buy-in and use, infrastructure within the district and schools, and end user devices. While a more centrally managed state such as North Carolina might	Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE. Use this group to take on such tasks as: o Establish the not-for-profit entity to manage this going forward. o Establish the cost and revenue model for the AELAS opt-in components and manage the financials. o Establish a change management and data migration plan for LEAs and charters. o Address the infrastructure issues at	No progress on this recommendation.	High-more important as the system becomes operational	• This recommendation is a key to fulfilling many of the other recommendations. The ADE information systems are being built for, and need to be led by educators. • Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	take on these roles, it is problematic for a local control

While the challenges associated with the individual AELAS projects that are currently in flight appear to be manageable, the challenges associated with the full implementation of all of the AELAS opt-in components are large and cross all major categories such as funding, stakeholder awareness and buy-in, employee/ leadership turnover, communications and change management, organizational capacity, infrastructure (especially at the local level), data quality, vendor product/service maturity levels and business/organizational readiness (especially at the local level).state such as Arizona. | the LEAs.
o Be responsible for the specification, selection and contracting for the opt-in components.
o Be responsible for managing the ongoing operations (or contracts for software as a service) of the opt-in AELAS components.
o Reach out to the small, rural, and charter schools to encourage them to maintain sufficient technological infrastructure and bandwidth to implement AELAS. | | | • Strong Communications Plan with views by stakeholder needs.
• Governance structure/business architecture that institutionalizes use of data into; job descriptions, hiring processes, performance management systems, organizational authority structures and evaluation processes. |
| 17 | There is a considerable challenge for AELAS related to the lack of infrastructure and end-user devices in the districts, schools and classrooms. There is a wide variability of technical readiness for such a system across the state. While the ADE can be successful in their implementation of AELAS, the districts and schools may be restricted in getting the full value from AELAS because of | Work on a strategy for addressing the infrastructure needs of the districts.
o Define a strategy for addressing the infrastructure needs of the districts.
o Develop a self-certification process in collaboration with LEAs, such as the Virginia model, for districts and charter | No progress has been made on this recommendation. | Medium-being addressed in current budget request | • Strong Communications Plan with views by stakeholder needs. |

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	such local issues.	schools to determine their level of readiness for implementation and identify those areas needing further work and resources. o Reach out to the small, rural districts and charter schools to identify where there is insufficient technological infrastructure and bandwidth to implement AELAS. Flag these organizations as at risk for fully realizing the benefits of AELAS. o Establish the state's roles (through policy or guidelines) for addressing these shortfalls.			
			AELAS WORK IN PROGRESS: RESOURCE MANAGEMENT		
18	Long term staffing and sustainability for the organization currently in place is a serious challenge.	Plan for attrition. With vagaries in funding from year to year it is highly likely that the staff and skills that currently are on board for the AELAS, SAIS, and SLDS work will seek other sources of employment. Cross-training, good documentation and ownership by the program areas for the data, application system functionality and processes will go a long way to mitigate the effects of attrition among the IT staff.	Some progress has been made to reduce the risks from attrition. However, the funding uncertainties remain a risk to both contract and internal resources. The need to have a foundation of full time staff on the AELAS projects was discussed during the interviews and progress is being made in this area. There is some evidence of reduced risk to loss of key leaders in the IT organization. For example, there has been cross-training of the architect role – to inculcate in several individuals the vision and architecture of AELAS. ADE will most likely remain dependent on a development team composed of contracted labor. Root	Medium-progress is being made on this topic	• Strong Communications Plan with views by stakeholder needs. • Overview of skills that can be fulfilled by FTEs versus contractors. • Complete a salary survey for key AELAS IT positions and publish the results.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
		Also, the work done already by the ADE IT team around the use of Phase gates, documentation and methodologies can help to mitigate the effects of attrition and should be continued.	causes are the limited breath of candidates with specialized knowledge in education IT (such as SIS and learning management systems) and state pay scales for IT positions versus private sector wages. Loss of the ADE CIO remains a real risk for the AELAS project, however. The CIO has the vision, and although he has communicated that vision, the conceptualization is his. A contingency plan to maintain sustainability and continuity would be helpful. Project documentation appears to be good, especially for the phase gates. This documentation should help lower the risk of staff turnover as well as help with ongoing support of the AELAS components. The ability to manage resources and anticipate resource needs is improving. ADE has a portfolio management system (PMS) just coming online. The PMS interfaces with their system to be able to look ahead and identify resource needs for the future. ADE has just re-baselined all of their projects to show who is coming on and when. This is something on which the new director for the PSO is focusing.		
19	As mentioned earlier in the report, not enough of the department and its program areas are engaged in the AELAS effort at this point. The effort is too "technology centric" to enjoy wide-spread adoption by program areas in ADE and in the schools and	Organize meetings for other ADE staff to participate in where the staff members have the opportunity to learn about AELAS, provide their feedback, and become more involved in the development of the system.	The AELAS team has been holding internal meetings and awareness is better. This needs to continue to be a focus. Successful adoption of AELAS capabilities by teachers, students, and leaders is dependent upon the non-technical deployment activities, such as professional development plans that	High	• Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	classrooms.		integrate data-driven instructional practices into traditional pedagogy. Now is the time to assist other program areas in the department to envision how they contribute to this change through AELAS.		programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.
20	The institutional knowledge gained by the existing staff and contractors is in jeopardy of being lost over time.	Over time, convert key contract employee positions to regular employee positions, as the need for special contracted skills/knowledge diminishes and is replaced by the need for more long-term support personnel. Seek a stable funding source for these resources.	The hiring of full time staff is a topic mentioned numerous times and has been prioritized. But the limited candidate pool of qualified individuals, the number of full time staffing positions, and pay scales for IT positions will continue to cause challenges in this area.	Medium-sustainability is being addressed	• Create overview of skills that can be fulfilled by FTEs versus contractors. • Complete a salary survey for key AELAS IT positions and publish the results.
	AELAS WORK IN PROGRESS: METHODOLOGY				
21	There has been substantial work and cost expended to lay a foundation for AELAS that is not being seen and understood. This work includes things such as improved staffing and expertise, enhanced methodologies and procedures, and better project management methodologies and tools. This work did not get reported in a lot of the interviews when asked for examples of success.	Continue to support the efforts of the IT department in ADE to build the skills, processes, methodologies and architecture necessary for AELAS.	Again, progress in this area is commendable. There is a new PSO with a renewed focus on the development methodology and consistent project documentation. There is a contract with a project management consultant to review the ADE methodology and the consistency of project documentation. The team continues to improve in the creation of the phase-gate documentation, and adherence to this process, as well as the oversight of the projects for AELAS. ADE continues to follow an exemplary process led by Deputy Superintendent Elliot Hibbs. It is also worthy of note that the recommendations from the September 2013	High	• Strong Communications Plan with views by stakeholder needs.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
			WestEd/CELT report have been taken very seriously and addressed expeditiously. The ADE IT team actively continues to seek opportunities for improving their work and processes.		
22	The application development and architecture methodologies developed and in apparent use by ADE for AELAS, SAIS, and SLDS were impressive. The documentation was thorough and professional. The understanding and buy in from the staff for these disciplines was similarly impressive. The business architecture however, has not been sufficiently developed. While the individual projects within AELAS seem to be well managed in terms of challenges, and the likelihood that any particular individual project will be successful is good, there is a real challenge that the vision, the full potential of AELAS will not be realized—e.g., the whole will not congeal into something more than a collection of parts. This will be more of a failing of integration at the level of the business architecture. Some examples include: the TNL project's	Establish ADE sponsors for each of the AELAS functional areas and engage the sponsors, process owners and data stewards in the establishment of a business architecture for instructional improvement. Focus on the business architecture (e.g., processes, policies and use cases) for an integrated learning enterprise system that includes the functionality found in SIS, IIS, and IEP systems. Use such practices as the Centers of Excellence and the MCESA pilot to help create this business architecture. Establish SAIS business sponsors sign off on production loads and quality assurance (QA). At the proper time, request an internal audit of the SAIS ADM process and accompanying LEA funding allocation process.	ADE has an ongoing strategic planning process that identifies and actively manages initiatives and the key performance indicators they affect. This process can be used as a means to introduce EA governance and begin to develop a business architecture. The ADE IT staff has established an architect role that is creating a process category map (or capability model) and proceeding to get program areas to accept ownership of their processes. This is a good step toward building an enterprise business architecture. A review of how AELAS specifically supports district level processes (i.e., developing a lesson based upon data) was not addressed during this review period. As AELAS capabilities mature the need for a documented business architecture for district activities will be required to build and configure AELAS components. An example is a common methodology to create meta tags for instructional content (descriptions of the content). A consistent methodology of meta tagging will increase the usability of a content management system for teachers.	Highest	• Strong Communications Plan with views by stakeholder needs.

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	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	lack of a true business architecture; the lack of data owners and standards for the SIS; the lack of sponsors and process owners[1] for the LMS, CMS , and assessment systems to make these support an integrated process; and lack of process clarity to bridge among the SIS, LMS, and IEP systems and data structures.				
23	The IT department needs to insure that its staff communicates changes and updates to the system in a more organized fashion. Internally, change management seemed to be well coordinated. However, there did not appear to be a standard way of communicating to the end users the changes that are being made to the systems.	Establish the industry-standard technology change management practices that carry the change notification to all appropriate system users.	This change management process is in place for the support team.	Low-when system has more functionality this will become a higher priority	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
	AELAS WORK IN PROGRESS: SYSTEMS ARCHITECTURE				
24	ADE's design considerations have recently been modified to accommodate the potential for supporting a diverse array of end user devices that might be found in a school or district, especially as bring-your-own-device (BYOD) strategies begin to be deployed.	Continue to develop the user interfaces (UI) to include responsive design to ensure a broader adoption by giving access to tablets and phones. Include this capability in future RFP language.	This issue has been addressed.	Low	
25	Where possible and support	Continue the data integration	This is progressing, however the	High	ADE IT team understands

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[1] This issue has been resolved since the data collection.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	exists, ADE's preference is to buy versus build as long as the total cost of ownership (TCO) is cost effective. Building applications is not a core strength that they plan to develop/maintain. This means they need strong integration skills and strong integration business and service architectures as well as a sound data architecture. ADE is focusing on CEDS (Common Education Data Standards) for standardizing data elements and option sets and Ed-Fi[2] for the operational data store and data transport layer.	project using Ed-Fi as the key component as a viable approach to minimizing integration costs going forward.	Double=Line Partners team, who is the key developer for many of the required components, is behind where ADE needs them to be. The current Ed-Fi data model doesn't meet the needs for persistency as required by an ODS, which is to be addressed by Ed-FI and Double=Line Partners. Also the ADE team is extending the data model beyond K12 into higher education while maintaining compliance with the Ed-Fi architecture. A question remains as to whether ADE can maintain these extensions themselves until they are adopted into Ed-Fi. However this appears to be the proper strategy to follow. The data governance process is engaged to help manage this work with Ed-Fi. ADE has hired a full time equivalent (FTE) position for data governance from within ADE, providing continuity in business practices. Enterprise data architecture is an area of concern as multiple ADE projects proceed concurrently that are dealing with many of the same data elements. The role of the enterprise data architect hasn't been fully operational as of yet.		this issue. No need for changes.
	AELAS WORK IN PROGRESS: DATA ACCESS, QUALITY, AND SECURITY				
26	ADE currently has a data dictionary. The dictionary does not however see regular use by the data stewards and IT staff to foster master data management, data sharing,	Continue to build upon the data governance process and use the data dictionary as a critical tool to capture and maintain metadata for	The adoption of ESP's data dictionary is on hold due to funding. In the meantime, the ADE team is investigating the use of the Embarcadero data dictionary and master data	Medium-When the SIS system becomes operational this will	• Implement recommendation 16 - Establish an LEA leadership group to

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[2] See http://www.ed-fi.org/about-the-ed-fi-alliance/. Ed-Fi is a data standard and suite of tools that provides applications for the consolidation of diverse sources of data for K-12 educational data.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	reducing data collections and better standardization of the data elements.	driving better master data management.	management tools since ADE uses some of this tool suite already.	become a higher priority	• engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE. • Implement, formalize and institutionalize data governance structures (including review of who has authority to collect data) that directs data collections toward streamlined data collection.
27	The data standards needed for some of the opt-in systems, especially the SIS, are not in	Develop data standards for opt-in systems, particularly the SIS.	The ADE team has adopted the CEDS Ed-Fi data standards and option sets for the SIS opt-in project. The option sets are	Low-the teams has the ability to	ADE IT team understands this issue. No need for changes.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	place.		being reviewed, as the CEDS options are fewer that ADE's currently. These standards have been communicated to the districts. The ADE team is actively participating in the development of the standards needed for the SIS Opt-in, Ed-Fi data store and Ed-Fi extractors. These projects are dependent upon the finalization of the standards and their adoption by the SIS vendors.	manage this	
28	ADE lacked evidence of data migration planning for the opt-in components. The data integration platform plays a key role in this, but much work remains to be done before this is a usable approach. Vendor adoption strategies for the data ingestion process and tools also need to be developed.	Data mapping of the wide range of LEA source systems of record for ingestion into Ed-Fi and the subsequent data extraction, data loading and error correction required is a great deal of effort and expense. Other states and school districts are moving forward to adopt Ed-Fi, and as a consequence these data mappings and extractions will be developed by multiple organizations. Look for opportunities to benefit and share from these other efforts.	This is a work in progress. ADE is working with the vendors to get them to adopt the Ed-Fi API structures. At least one potential vendor is already fully on board. Much of the final data mapping will remain for subsequent phases of the opt-in SIS when implementation begins in the districts. This scope of work is an area to watch and monitor due to the unique challenges encountered with each district's data and adherence to any form of standardization.	Highest-vendor deployment efforts of Ed-Fi are a risk	• Strong PSO operation and methodologies.
29	The topic of data privacy/security concerns surfaced in some interviews. This is relevant to SAIS, but more so to the broader AELAS future data collection strategy and the opt-in components. Interviewees expressed concern regarding what data are being collected and for what purposes. This is consistent with emerging	Concerns about data privacy and use are taken very seriously by the ADE, but stronger efforts and communications to help manage perceptions and expectations are needed. Better articulate steps underway to protect data privacy in order to manage perceptions and expectations. Messaging should be crafted to help clarify and confirm that	The ADE IT team has been very proactive in this area. They are trying as an agency to get in front of this – not just the IT department is addressing it. The ADE has developed position statements on data privacy, and they are drafting policy documents with the ADE legal team and reviewing them with the Data Governance Commission. The ADE is proactively planning in this area through the development of potential privacy bill language for review and adoption by the	Low-the team is aware of and prepared in this area.	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	concerns on a broader (national) level around privacy issues related to large data repositories hosted in the cloud and student data being used for vendor profit/gain.	personally identifiable data will be protected, Family Educational Rights and Privacy Act (FERPA) requirements will be met, and the value from such data will return to the districts and schools to inform instructional practice and increase student achievement.	legislature.		
		FINANCIAL ANALYSIS: BUSINESS CASE – OPT IN COMPONENTS OF AELAS			
30	The conclusion the West-Ed/CELT team reached is that opt-in costs shown in the business case are within reason. A great deal more work on project planning, clarity around deliverables, roles and strategies is required before the opt-in costs can be stated any more definitively.	Continue to refine and update the cost model for AELAS as actual costs are known and as projects are further defined and scoped.	No additional work has been done on the cost model for full AELAS functionality. Rather, costs have been estimated and are being tracked closely for the AELAS scope that has been approved to date. The WestEd/CELT team will be working with the ADE IT team to develop a gap analysis between what is currently funded for AELAS and what was articulated in the business case.	Highest-communication efforts needed to highlight all the components to make the ADE information systems useful to teachers and leaders. Example is the content for PCG assessment engine.	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
31	Regarding the savings identified in the business case for the opt-in components, the costs that the smaller districts reported that they are currently paying for systems in the nine (9) opt-in categories are much higher than should be expected. While the opt-in strategy will address some of this over time, a shorter path	Pursue on an expedited schedule a state procurement list for districts to select from for such systems as SIS, IEP, and IIS. Offer guidance/professional development to districts on procurement practices to help them better negotiate pricing for procurements in the future.	No progress has been made on this recommendation.	Low-current efforts prioritize work in this issue.	

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	to realizing savings is to bid these systems at the state level and provide a procurement list from which districts can select.				
	FINANCIAL ANALYSIS: BUSINESS CASE – ADE CORE SYSTEMS OF AELAS				
32	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 and more difficult over time to advocate for continuing expenditures.	Develop a comprehensive plan for the full implementation of AELAS and the SAIS rewrite. Such a plan would include each of the projects and their accompanying resource needs, funding requirements, stakeholder resources, district resources, and major deliverables and milestones over a multi-year period. Funding sources and funding gaps should also be identified. Outline all of the projects (in progress and to be launched), the scope/deliverables, schedules, sponsors and team members, costs, and funding sources. Be transparent as regards the AELAS/SAIS/SLDS budget. Publish the planned budget to date, actual spend to date, burn rate, percent complete by project for all efforts associated with these efforts. Include the source of the funding.	See number 30 above. The comprehensive plan and cost model for the full implementation of all of the AELAS functionality has not been developed. The Department has been highly transparent with the budget and actual spent to date. One area that requires better communication is the notion that AELAS functionality will be delivered in a series of releases of the various components, as these are funded and completed. Exactly what functionality will be available when is still not defined, except for the functionality that has been funded. The WestEd/CELT team will be assisting the ADE to develop this gap analysis and a framework for presenting it.	Highest – similar to 30 above	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
33	The budgeted $5.3 million for IT operations for 2014 is low compared to a recent Gartner study conducted on behalf of the State of Washington Office of the Superintendent	For 2015 budget planning, plan to increase the line item for IT operations to be more in line with peer-state expenditures, with additional consideration for support for the AELAS	The Governor has recommended that $2,200,000 for IT production services be appropriated to ADE for FY 2014-15.	??Need to review current budget recommenda tion to	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.

	Findings	Recommendations	Status	Priority-Justification	Potential Solutions
	of Public Instruction. This study cites a range of $5.7 to $6.8 million for peer state (e.g., Washington peer state) agencies for 2013.	components that come online.		provide an opinion on this topic	
34	The FY 2014 AELAS Appropriation ($7 million) does not provide the money to sustain the aggressive schedule that was planned for AELAS rollout, and will delay some of the benefits anticipated in the business plan.	Create an alternate schedule for the AELAS rollout. Provide specific information about how the FY 2014 Appropriation impacts the rollout plan for AELAS.	A schedule for the funded components of AELAS was developed for the FY 2013-14 funds. The scope afforded by the recommended FY 2014-15 funding is being determined.	High	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
35	The long-term sustainability for a system such as AELAS in Arizona is a serious issue. Funding streams can be in danger of being reduced or eliminated each year. Staffing for the full project and long-term ongoing support is unknown at this point.	In light of the gap between requested and actual approved budget for the AELAS appropriation, and the uncertainty this implies for future year budgets, consider funding, managing and supporting the opt-in components of AELAS through a not-for-profit entity outside of ADE.	No effort has been applied to this recommendation to date. In light of the support currently provided by the Governor's office and the legislature, this recommendation should be deferred.		• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
			LOCAL ISSUES		
36	Small and rural districts may lack the technologies and resources necessary to implement AELAS.	Develop strategies to mitigate the infrastructure issues that the small and rural districts are likely to encounter. Such strategies might include outreach to the business community for some of the needed resources.	No progress has been made on this recommendation to date.	Medium – part of current budget recommendation	• Strong Communications Plan with views by stakeholder needs. • Strong PSO operation and methodologies.
			DATA LITERACY AND TRAINING		
37	Many end users may not be sufficiently knowledgeable about how to use data; that is data literacy will be an issue. Data literacy here includes general data use to inform	Reach out to the state's institutions of higher education and their schools of education to impress upon them the need to include data use course in their curricula or to integrate data	No effort has been applied to this recommendation to date, yet there is by recognition by Elliott Hibbs, Jennifer Johnson, and Mark Masterson about the importance of improving data literacy in the SEA and the LEAs.	High	• Strong Communications Plan with views by stakeholder needs. • Implement data literacy program, modify current

Findings	Recommendations	Status	Priority-Justification	Potential Solutions
educators' practice, not just the capacity to use the technologies.	concepts into existing courses. This will help to prepare future educators. Reach out to schools of education or existing professional development providers that specialize in data use to provide quality in-service opportunities to enhance educators' data literacy. Training on the technologies should include knowledgeable educators who can help ADE to better communicate with the end users.	A comprehensive plan is needed in this area, including: changes to teacher standards, teacher and leader evaluation, ADE and district professional development (PD) plans (i.e. data literacy curriculum within a PD structure).		governance structures (teacher job descriptions, evaluation frameworks, etc.) to support data use and digital instruction. • Implement recommendation 16 - Establish an LEA leadership group to engage the LEAs (districts and charter schools) more in the leadership support (technical and programmatic), risk management and coordination of the opt-in components through a not-for-profit organizing structure separate from ADE.

The WestEd/CELT team was asked to review the status of the currently funded AELAS projects and provide an opinion on the current status of each. The WestEd/CELT team has made some general observations on the AELAS projects from the January 2014 series of onsite interviews and reviews of current project documents.

- The AELAS projects that have been funded to date are well planned within the context of a comprehensive vision for the system. The combination of AELAS projects and non-AELAS funded projects has the potential to create a foundation for a broader instructional improvement system as proposed in the FY 2015 budget. Furthermore and most importantly, the implementation of AELAS has the potential to put into the hands of educators across the state, the kinds of data and data tools that are most needed –real-time data that can inform instructional as well as administrative decision making that will lead to continuous improvement, not just accountability and compliance data uses. The vision for and implementation of such a data system places ADE as a leading provider amongst all the other states.

- ADE has built a particularly qualified development team. Senior positions on the team are filled by members with public and private sector experience, including the areas of Enterprise Architecture, Student Information Systems, and Instructional Improvement Systems.

- The ADE project managers on AELAS projects appear to have robust project management skills and are effective in using standard project management methodologies to track and manage their work. ADE continues to coordinate their work and move toward a common project management methodology by utilization of the PSO. It is important to non-technical stakeholders that the PSO become the organization that translates the technical work into language understandable to laypeople and policy makers. While much progress has been made in creating common terminology across projects it is still difficult to conceptualize the project nomenclature into a group of services that will help teachers, leaders and students. ADE has recognized this fact and is currently working with a project management manager in this area.

- The ADE and AELAS projects have incorporated the concepts of enterprise architecture and information system standards (i.e. Ed-Fi and CEDS) within their planning work. These are positive foundational concepts that can minimize development and operating costs and they guide the AELAS structure into a solid foundation for future enhancements.

- Success of the AELAS projects is heavily dependent upon adoption and utilization by districts. The interviews completed during the summer 2013 onsite visit were focused upon the technical aspects of the AELAS projects, which is within the scope of the WestEd/CELT scope of work. Focus on the non-technical deployment and professional development efforts to improve the utilization of AELAS functionality, such as the AZED³S dashboards, will be important as AELAS moves into the schools. This includes the provision for the development of data literacy among internal stakeholders and the provision for long-term improvement of data literacy among educators across the state.

AELAS Student Information System (SIS) (ED14005)

The AELAS is a SIS with the objective to provide districts with a flexible locally controlled SIS within an environment the ADE manages and at reduced costs. This is a worthwhile endeavor that has the potential to save districts money and simultaneously provide higher functionality, such as Ed-Fi data extractors to streamline reporting and single sign on through ADE Connect. The project team is currently in the SIS proposal evaluation stage so a very limited amount of information could be shared during the WestEd/CELT visit. But based on the limited information the team has some observations.

- The project team is to be commended for their professionalism and thoroughness. They have developed a comprehensive team of stakeholders to participate on the project.
- The implementation, operation, and governance of a state level student information system in a local control environment is complex and requires a special understanding of district and school operations that may not currently reside in the ADE.
- The SIS is behind schedule because of a change in purchasing strategy which required the option to select multiple vendors. This necessitated a re-release of the RFP. The project should carefully plan the timing of the district pilot implementations with this delay in mind.

AELAS Education Data Fidelity – ED14004
This project includes the use of data standards (Ed-Fi) to collect data combined with the development of an operational data store (ODS) containing a comprehensive set of transactional data for use by multiple applications and creation of an organization entity management system. These concepts are considered information system best practices and create the foundation for AELAS. Standardized data collection processes are important to decrease the data collection burden on districts. The ODS is important to consolidate the storage of student learning into a single location to provide a broad picture of student results and enable the sharing of information across systems. The organization entity management system contains information on providers of education related services throughout the state (i.e., schools, bus companies).

The planning work for this project is extensive. The Arizona team is working closely with the Ed-Fi organization, their partner Double=Line Partners, and the state of Tennessee to create the Ed-Fi extractors and ODS data model. This type of standards work has not been achieved in the education sector (though it has been used extensively in the private sector for many years). The Arizona project team is driving these efforts forward and in some cases providing leadership to speed the development process. This work by the ADE does have broad support among several other states, the Dell Foundation and the CCSSO.
The WestEd/CELT team has the following observations:

- The Ed-Fi work is breaking new ground in the education sector. The potential benefits are large, but there is the potential for project delays as the Ed-Fi Alliance develops the data model and APIs to meet ADE's needs.
- Streamlined data collection via the Ed-Fi extractors can provide districts with streamlined data submission processes, but their implementation is dependent upon adoption and integration of the Ed-Fi extractors into their applications (i.e. SIS) and potentially upon their decision to opt-in to the AELA SIS.

- The SIS Opt-In strategy is organizationally necessary, but it limits the state's leverage with SIS vendors to integrate the Ed-Fi extractors.
- The organizational entity management system is on track as part of the School Finance project (ED14002) but approximately eleven other state applications use the current SAIS organization tables. Therefore full functionality of the OEM will not be realized until those other applications are rewritten to utilize the OEM.

AELAS-School Finance - ED14002

The School Finance project moves the process of Class Site Fund payments from the legacy Student Accountability Information System (SAIS) onto a modernized, maintainable platform (AELAS). The documentation completed for this project is comprehensive and the interview of the project team was fruitful. Of the current AELAS projects the School Finance project is the least complex since there is a set of current processes upon which to base the development, but its potential impact on the ADE is large because of the large sums of money distributed via the system.

Documentation provided and interviews indicate the project is well planned and on track for a successful deployment. The research conducted was from a technical perspective; another perspective to investigate is that of financial accuracy, which is beyond the scope of this review. The Class Site Fund payments will be dependent upon the quality of the data put into the system (which should improve over time with the Ed-Fi data collection tools) plus the calculations programmed into the application.

Business requirements for this important system appear robust and have a formal stakeholder sign off process.

AELAS-Arizona Education Data Driven Decision System - AZED³S

This project's set of dashboards and reports is based upon work completed with Federal dollars and uses state dollars to make student results data accessible and comprehensible by education stakeholders, particularly teachers, leaders, and policy makers.

- The dashboard mock-ups are graphically appealing. The current dashboards report state high-stakes assessment results. This reporting system framework can be a foundation for a more robust formative, interim, or benchmark assessment system that can affect classroom instruction with more real-time data.
- High stakes assessments have limited value in evaluation of student learning and teaching. To meet the real-time data goals of AELAS, the future releases of the reporting system will benefit from including data from the process of formative assessments, benchmark assessments, interim assessment, more locally valid assessments, and other relevant student performance data that are more closely related to the teaching and learning process at the local level.

Use of the Ed-Fi dashboards as a foundation for many of the AZED³S is an example of standards providing value to organizations that use them, such as the ADE.

The WestEd/CELT team has provided a document to assist ADE in its planning and self-monitoring. The AELAS Phase Gate Artifacts Audit was placed in an online Appendix, with access through the following URL.

Appendix: http://datafordecisions.wested.org/?attachment_id=834