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

Submitted to the Arizona Department of Education by WestEd and CELT

Date: June 30, 2015

CELT
Center for Educational Leadership and Technology

WestEd

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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 June 4-5, 2015. WestEd (the prime contractor) and 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 all previous quarterly monitoring reports, updating commendations and recommendations. However, this report also reports on progress targeted in the Special Review of the AzEDS Implementation Options report delivered to ADE on May 14, 2015.

ADE recently decided to implement a "dual system" methodology for district data submissions to address implementation delays in the receipt of district data through AzEDS. The critical AELAS milestone of July 1, 2015 for the changes in how districts submit information to the ADE was not going to be met due to the fact that vender certifications for Ed-Fi were lagging and because the business rules for SAIS had not been all re-codified. The dual system option for district data submission was assessed by the West Ed/CELT team during a site visit on May 6, 2015. The report is included as Appendix A. The conclusion of this report was that:

> "The West Ed/CELT team feels that the ADE has selected the best approach for moving forward with its strategy of replacing the old data collection methods and SAIS components. The dual system approach appears to have been thoroughly thought out and designed. It addresses the schedule concerns and many of the risks of the old approach. The new approach does create some new risks and issues, as discussed above. Finalizing the integrity rules and the as yet unknown data issues from the API approach appear to be the biggest risks now. As the system goes into production, the usage and load on the system and the impact on performance are an as yet unknown and should be monitored closely."

The progress on the dual system option was reviewed during the June 4-5 visit. The ADE team appears to be moving ahead as planned with the new approach. However, the project deliverable dates will be difficult to meet due to IT resource constraints and the limited availability of the finance team to develop and finalize the SAIS/AzEDS business rules. Progress on this work as well as the other AELAS projects and on the previous recommendations was also discussed during the visit. The sections that follow highlight the findings and recommendations from this visit.

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 June 2015 site visit:

1. The number of district commitments to adopt the Statewide Student Information System (SSIS) is double the estimates for the project to date.

2. Data governance has made significant movement forward with the issuance of a data governance manual, the identification of the data stewards, the establishment of a process and form for requesting new data requests.
3. The ADE is making progress toward the adoption of a process management discipline. Work has been initiated both within IT (for their IT communication and publication process) and well as external to IT (in the ESS program area).
4. The Content Management System (CMS) is operational.
5. CTE has done good work in populating the CMS with lesson plans for broad adoption/use by districts.
6. ADE has begun to integrate local district assessment outcomes into AELAS.
7. ADE is focusing on improving educators' capacity to use data; that is, their data literacy.

FINDINGS BY RECOMMENDATIONS

The 10 initial recommendations served as the baseline from which the WestEd/CELT team working during the site visit. Below is a synthesis of the team's findings as they pertain to each recommendation.

1. **Stay the course as envisioned in the AELAS business case.**

Finding	_Recommendations_
Given that there are now new administrations for the governor's office and the ADE, there is a need for a new strategic plan and clear direction regarding the vision for education and the roles and responsibilities of the ADE, especially pertaining to the implementation and use of AELAS.	When the AELAS strategic direction was being developed, the ADE used a very inclusive process to gather district and stakeholder feedback. We recommend using a similar process for developing the new education strategic plan and roles for the ADE. Reconcile/align the AELAS directions with this new plan.
The return on investment in the original business case for AELAS is now questionable because the opt-in systems are being delayed or cancelled for other systems beyond the SIS, such as the Learning Management System (LMS). Districts will not realize the full potential benefits originally defined in the business case.	Revisit the original business case and update the return on investment calculations. Use this during the strategic visioning process.

Finding	Recommendations
The Teaching and Learning leadership team has not developed a robust vision for how AELAS can improve student outcomes. Nor have they developed executable plans for how AELAS will be integrated into districts and classrooms. Examples of where such a vision and plan can help to clarify how AELAS becomes fully utilized to improve student outcomes include: - To help establish the next set of opt-in solutions. Without such a vision for Teaching and Learning, the next round of opt-in systems are being delayed or dropped (e.g., Learning Management System). - To establish an overall assessment strategy. Without such a strategy there is a large area of potential savings and synergy untapped. The State assessment system has been eliminated from AELAS. This is a major redefinition of AELAS and minimizes or eliminates the potential for data-driven and student-centered instruction. - To establish a strategy for developing, vetting and sharing instructional content. CTE has done a good job of loading content into the Content Management System. Other program areas (and districts) could participate more.	Use the education strategic plan to define the role that the ADE plays regarding Teaching and Learning and align the program area plans and AELAS strategies in support of this. Populate the Content Management System with resources beyond CTE.

Finding	Recommendations
Dual system approach: • The approach surfaced an unexpected sift in the financial area's approach to the ACE business rules. They have gone back and revised a large percent of the business rules to ensure all workarounds are being accommodated in both streams. This also affects the Integrity processing rules which also must now be revisited. This is an unexpected increase in scope for the dual system approach. • The dual approach has significantly reduced the risk to operations for the department. • The dual approach still does not enable an exact comparison of the old SAIS processing and rules against the new AzEDS processing and rules (since the aggregation and limiting rules are replaced by ACE for both of the data streams). This subtlety needs to be carefully communicated. Be prepared for go-live cutover with these communications. • Availability of the finance area staff for developing the business rules, as well as the limited IT resources for coding the SAIS and AzEDS systems are both placing pressure on meeting the published completion dates for the dual system approach. The IT staff	ADE must continue to press the finance area to complete the full set of business rules for the replacement for SAIS. Create communications materials and FAQ's to help to educate and inform how the dual system process works and what the comparison between the two systems is actually telling the districts when there are differences.

Finding	Recommendations
has shuffled resources internally to address the technical staff need. Regular hours have been scheduled with the finance team to try to improve their participation/availability.	
Integration of legacy reports and systems with the AELAS environment (e.g., ODS and OEM). • The ADE is taking a new approach for this effort. They are identifying which projects benefit most from operating with the ODS. Then they build the APIs to meet the project needs. This is a much more limited approach to conversion. This approach will keep legacy data stores in place longer until they see value to the new ODS data and decide to convert. The ADE is adding more data into the ODS as this approach progresses to build the value in the ODS. Example: including ESS vouchers in the ODS as an extension to the Ed-Fi data model.	Continue this more manageable approach to the SAIS legacy systems conversion process.
SSIS District Adoptions: • The SSIS conversions are progressing better than planned with twice the budgeted number of districts converting. Most of these are very small districts,	Be careful that not too much of the financial burden is placed on the vendor during the ramp-up time. Cash flow problems can weaken vendor support and even their long-term viability and turn customers sour on a vendor, undermining the selection process.

Finding	Recommendations
which creates a cost recovery issue for the project in the first quarter of FY16. • One assumption in the PIJ for this project is that the SIS vendors can accommodate the data retention and API requirements of the 915 process. This may not be a valid assumption. • ADE is working to streamline the data conversion process for the small districts. • ADE has begun to think about a support model for the SIS in the context of a product line. • A sponsor has been identified for the SIS (CFO). The program areas are beginning to show interest in becoming more familiar and involved in the SSIS.	Ensure that the appropriate performance monitoring is being performed by the vendor to accommodate growth on the SSIS. Work with SIS vendors to position them to handle 915 data retention and submission requirements; or pursue changes to the legislation to follow the charter school payment process. Treat the SIS support as a product line – identify the capabilities and the processes and measure/monitor the performance of the processes. Get more of the program areas (e.g., finance, exceptional education) trained on and monitoring the SIS data for quality. Continue to monitor the cost recovery data to ensure the ADE is adequately funded for the deployment of a large number of small districts.

2. **Utilize business architecture concepts, aligning department strategic plans to and across program area plans and associated execution activities and methodologies**.

Finding	Recommendations
The department is making progress toward the adoption of a process management discipline. Work has been initiated both within IT (for their IT communication and publication process) and well as external to IT (in the ESS program area).	For the next phases of redesign of the SAIS system components, use the discipline of business process re-engineering (BPR), including process diagramming, to define the as-is and to-be processes as a means to establish the requirements and business rules. For the larger district SSIS implementations, work with EduPoint to create process models

Finding	*Recommendations*
	and diagrams for the major SSIS processes (e.g., scheduling, attendance, report cards, registration, etc.). Use these to identify process owners within the districts and to conduct training within the district. This will serve to make the district more self-sufficient and accountable for the effective use of the SSIS and reduce dependence on ADE. Develop an information use strategy. ADE is using the Common Education Data Standards and Ed-Fi to establish data elements to be collected. While a good start to develop AELAS, the Teaching and Learning areas need a strategy that includes the goals they plan to achieve, the capabilities they must have to achieve those goals, the processes that will be used to execute those capabilities and the information (data elements) needed to support the goals, capabilities and processes

3. **ADE directly address the budgetary issues that pertain to AELAS, SAIS, and the SLDS that include detailed work plans, deliverables, and timelines.**

Finding	*Recommendations*
The IT Portfolio report is a good high level overview of ADE IT project statues. But, when projects are re-baselined projects are reported as "green" even though they may be months behind the original schedule.	Add notations to the projects in the IT Portfolio report that capture the original due date of the project and when it was re-baselined.
The district support team is working to ensure they have the people and processes to support districts with AELAS (particularly SSIS)	Review support desk processes for potential efficiency gains with automation technology. Such as Interactive Voice Response Unit (IVR) and Customer Relationship Management (CRM).
Project plans and associated timelines do not adequately capture impacts of non-IT resource constraints and implementation activities necessary for system adoption.	Modify the ADE project management discipline to include the non-technology tasks required to deploy information systems. An example is Organizational Entity Manager

Finding	Recommendations
	(OEM). While the technology portions of the project are completed the decisions and work from the finance group to make it operational prevent the project from being implemented.

4. **Improve and continue to develop a communication plan to diverse stakeholders.**

Finding	Recommendations
Understanding the dual option approach and its subtleties will be difficult for the school districts and charter schools. There is a lot of room for misunderstanding and frustration among the districts, especially if their funding is significantly impacted. In such a setting, perception rather than reality often rules and good communication is very important. The dual system information for the items below need to developed and communicated: • Dates for when certain SAIS or AzEDS features are shut off or turned on (and why). • The differences in the funding calculations and the flow of data through the revised rules. • Simple explanations for why the funding calculations will be different. • Who to contact for questions or concerns.	As is stated in the report in Appendix A in the section on additional risk mitigation strategies, develop a proactive effort at the ADE to assist districts with the new data submission process and to help address questions that will arise from the impact of the new approach and business rules on their funding. Prepare communications and FAQs to be issued at the proper times and maintained for reference on the web site for ADE.

5. **Creation of a data governance process**.

Finding	Recommendations
Data governance has made significant movement forward with the issuance of a	Continue efforts to complete and implement the data privacy initiatives through the data

Finding	Recommendations
data governance manual, the identification of the data stewards, the establishment of a process and form for requesting new data requests.	governance and data stewards. Privacy is highly dependent upon an effective data governance process and actively involved data stewards.
	Use the data stewards to discuss security issues and to help discern such things as whether encryption of data as it resides and/or moves to/from the Azure platform is appropriate.
	Use the new data governance process and data stewards to establish a common set of SSIS data definitions and valid values (option sets) to improve data quality and data analysis across districts (e.g., truancy, discipline, attendance). Make this a collaborative effort with the school districts.
	Begin orienting the data stewards in the use of the data dictionary to capture information such as the SSIS data definitions and valid values, the funding calculations and business rules for AzEDS and the source systems of record that the data stewards expect the users of ADE data to draw from.
Each district has their own distinct interpretation of State statue and resulting impacts on district data collection and reporting.	

6. **Reduce the redundancy among data collections**.

Finding	Recommendations
There were no new findings or recommendations in this area, other than to note that as the dual system option and OEM go into production, there is an opportunity to be more aggressive in encouraging the ADE program areas to discard their silos of data bases in favor of the ODS and new	

Finding	Recommendations
Organizational Entity Manager structure.	

7. Creation of a non-profit organizing structure.

Finding	Recommendations
ADE is aware of this need, but no action has been taken.	

8. **Improvement of human capacity around the use of data (e.g., data literacy).**

Finding	Recommendations
ADE is aware of this need. They are applying for a grant to the Bill and Melinda Gates Foundation to work with the University of Arizona on building data literacy capacity among teacher candidates in the School of Education. ADE is applying for a 2015 SLDS grant from the Institute of Education Sciences with two key foci that address this need; educator talent management and instructional support. These two foci both address the strengths of AELAS, yet recognize the need that educators must be data literate in order to use data and AELAS effectively.	Continue to find ways to improve the human capacity within ADE and the districts not just focused on training on the technologies, but more importantly on responsible and effective data use. Review current AzDASH training materials to ensure teachers are being correctly trained in uses of high-stakes summative assessments.

9. **Attend closely to the needs of the most rural districts.**

Finding	Recommendations
No new findings or recommendations in this area.	

10. **Development of a comprehensive long-term plan and continued outreach to stakeholders in the form of periodic needs analyses as a process by which to monitor changing needs of the stakeholder groups**.

Finding	*Recommendations*
Discussions regarding the implementation of a Strategic Management Office have ceased with the transition to the new ADE administration.	Formally review the potential benefits to the ADE of implementing a Strategic Management Office. This coordinating body would include; process management, project management, data governance and strategic measures.
Given the new administrations, there is a need for a new strategic plan and clear direction with respect to the vision for education and the roles and responsibilities of the ADE. Reconcile the AELAS directions against these directions. Use a similar process as was used to gather district and stakeholder feedback and support for developing the AELAS directions.	The vision for AELAS was the result of dozens of interviews with district staff and leadership. Ongoing interviews need to be conducted by ADE on a recurring basis, per the recommendations in the first report, to ensure that ADE remains directed by the voice of the customer. Transition to a new ADE administration provides an opportunity to review and gather stakeholder needs and opinions.

11. Engage program areas and policymakers in supporting the work of AELAS.

Finding	*Recommendations*
It is essential to have policymakers within ADE and across the state engaged and supporting AELAS. It is also essential to engage program areas within ADE to actively support AELAS.	ADE staff should visit a state like Kentucky where they have a functionally equivalent system to AELAS to learn from their practices and process, and have the program areas actively engaged.

CHALLENGES

The most pressing challenges for the ADE from our visit appear to be:
1. Insufficient resources are available to meet the aggressive delivery schedules for AzEDS and the SAIS replacement.
2. Getting enough time from the program areas for AzEDS and the SAIS replacement for:
    a. Development of the business rules;
    b. Testing of the new AzEDS and SAIS data flows and results;

       c.   Development of good communications and FAQs; and

       d.   Establishing and executing a district response plan for customer queries and concerns when the dual district data submission systems are implemented

3.   The need for a clear strategic direction for the current administration with respect to education for Arizona and the role AELAS can play in achieving State strategic goals.

4.   The diminishing return on investment on AELAS from reduction in scope of the opt-in systems.

5.   The sustainability and continuity of commitment to the AELAS work across all levels of government in Arizona.

CONCLUSION AND NEXT STEPS

Although AELAS is a cutting edge application that other states are emulating, the ADE can learn from other states about these states' development and implementation processes. In particular, other states that have developed effective and successful data systems have all the key policymakers supporting their work. Because AELAS is a statewide education information system, it is important that there be a common understanding of the desired benefits of AELAS on educators across the state, given the substantial investment that has already been made and the funding necessary to sustain AELAS in the future. It is not only essential not only to engage the policymakers, but also to engage the program areas within ADE. The AELAS effort might benefit from consulting with and visiting a state like Kentucky that has managed to enlist the support of all relevant stakeholders over the course of several years of consensus building.

The delay in AzEDS implementation and the associated "dual option" data collections system are substantial changes to the AELAS plan. ADE must continue to remain diligent to the risks documented in the risk mitigation strategy as they make progress on their work plan and the transition from SAIS to AzEDS. ADE has taken substantial steps toward the mitigation of risk. They must continue along this line.

Effective communication remains a key ADE focus area. They must ensure that the districts are aware of the timeline and the transition, keeping them informed about the potential implications for their work.

Data governance and privacy are foundational to AELAS success and ADE must continue to implement and enhance this work. Progress, maturity and ADE expertise in data governance and privacy is required to provide verifiable assurances to the public regarding the protection of the data that reside in AELAS.

AELAS work has developed a focus upon the technical improvements to the state system, school finance and statewide student information system. The AELAS business case outlined the need and importance of this work, but it also communicated the potential increases in student outcomes from the provision of digital instructional materials, digital student assessments (such as interim, benchmark, and end of course assessments), professional development and the "near-time" availability of data to customize instruction to the needs of students (Readers can see Appendix M – High Level Capabilities on page 161 of the business case for more details in this area). Work to implement teaching and learning functions of AELAS have been left to districts and the ADE technology team. The "Opt-In" functions of AELAS, such as the Content Management System, Learning Management System, and Assessment System are either not completed, not configured or not adopted (by districts). While AELAS must support the local control, decentralized structure of Arizona education it requires a strategic plan and district coordination work within the ADE to

reach the conditions in which districts, schools, teachers and students see AELAS as a valuable and usable asset. Currently the IT team is the primary group playing this role but it must be transitioned to the Teaching and Learning leaders of ADE.

Technical components of AELAS continue their success. AzDASH, ADE Connect, Customer Relationship Management, Operational Data Store, School Finance, and Statewide Student Information System are meeting implementation deadlines and being adopted by districts. The AzEDS implementation delay is unfortunate but not unusual in a project as comprehensive as AELAS and one based upon an evolving set of new data standards. The outstanding area of concern is when and how Arizona will decide how it will use the Teaching and Learning capabilities of AELAS to provide new digital resources to educators and teachers within a unified statewide vision for student success.

APPENDIX A

Appendix A contains the Special Review report submitted to ADE on May 14, 2015.

Special Review of the AzEDS Implementation Options

Submitted to the Arizona Department of Education by WestEd and CELT

Date: May 14, 2015

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Introduction

This report was written specifically to address changes in direction for the AzEDS project, a critical component to the larger AELAS system. The AELAS system is a comprehensive and complex change to how the State of Arizona exchanges information between the Arizona Department of Education (ADE) and school districts (local education agencies) and uses that information to improve student outcomes. Readers are encouraged to review the quarterly WestEd/CELT AELAS reports for a broader perspective on overall AELAS progress.

Background

The fall 2014 AELAS report from West Ed/CELT referenced a disconcerting finding of the visit, which was:

> "… the schedule delay in replacing the SAIS data collections with the Ed-Fi API structure. Publication of the Ed-Fi REST API specifications and Operational Data Store (ODS) database schema is significantly behind schedule. But more importantly, work on the design of the data loading and validation processes has not begun yet. The design of this "middle" component (data validation and loading) to take the API data and transform and prepare it for use in the financial payment systems is behind schedule. The ADE has realized over time that this middle component is far more complex than earlier anticipated. This process is intended to leverage the "real-time" transfer of SIS data through the Ed-Fi APIs to the ADE for use in reducing the burden of state reporting and also subsequently provide this same real-time data back to the classroom teacher. This "middle-component" work has not yet started, and will not start until late December 2014. Completion is estimated to be in FY 2016. As a result, the schedule for testing, piloting and turning off the old SAIS data transfer and getting off of the old servers, SQL systems and Windows XP desktops will likely extend until the end of FY 16. This will of necessity delay the time when the current SAIS data collections will be turned off for the district and will likely erode confidence and support for AELAS. This is one key area where the comprehensive AELAS project plan and schedule is not complete. A clear plan, schedule and communication strategy needs to be established as soon as possible to manage the expectations of the districts."

Again, in the December 2014 report, the West Ed/CELT team noted:

> "The criticality of implementing the processes to gather, validate and store data via AzEDS was noted in the last report. During this review the ADE IT team shared their conceptual architecture for AzEDS, which is significant progress since the last report. The amount of work to be completed for implementation by next fiscal year is immense. The planning issues raised in the last report appear to be addressed, at least at a conceptual level. However, the bigger concern and work effort are in developing the business rules and logic for extracting and validating the data. Monitoring of the planned work until its completion is very important."

In the April 2015 report, the West Ed/CELT team noted in the report:

> "These AELAS projects, OEM and AzEDS, must be completed and implemented for the new data collection process to begin. This work is the foundation for Classroom Site Fund (CSF) distribution calculations. "Completion" of the work includes the technical as well as the set-up and configuration work that must be completed by the finance group and data stewards. In addition to populating the OEM, there is a pressing need to develop, pilot, and implement the necessary business rules, and to understand their potential impact on district operations as

the July 2015 transition occurs. There needs to be a formal contingency plan to address the scenario when districts cannot get their data clean enough to pass the business rules or they do not have an Ed-Fi capable SIS. The go-live date is a mere three months away and these business rules are essential. <u>The recommendation would be to delay the transition until the business rules are defined and in place and the OEM complete</u>. The IT team is working on a migration plan."

Very soon after the April 2015 report, the ADE shared with the West Ed/CELT team a plan for mitigating the risks and delays associated with the AzEDS project. The department requested that the West Ed/CELT team render an opinion on the dual system approach, as outlined in Figures 1 and 2 below.
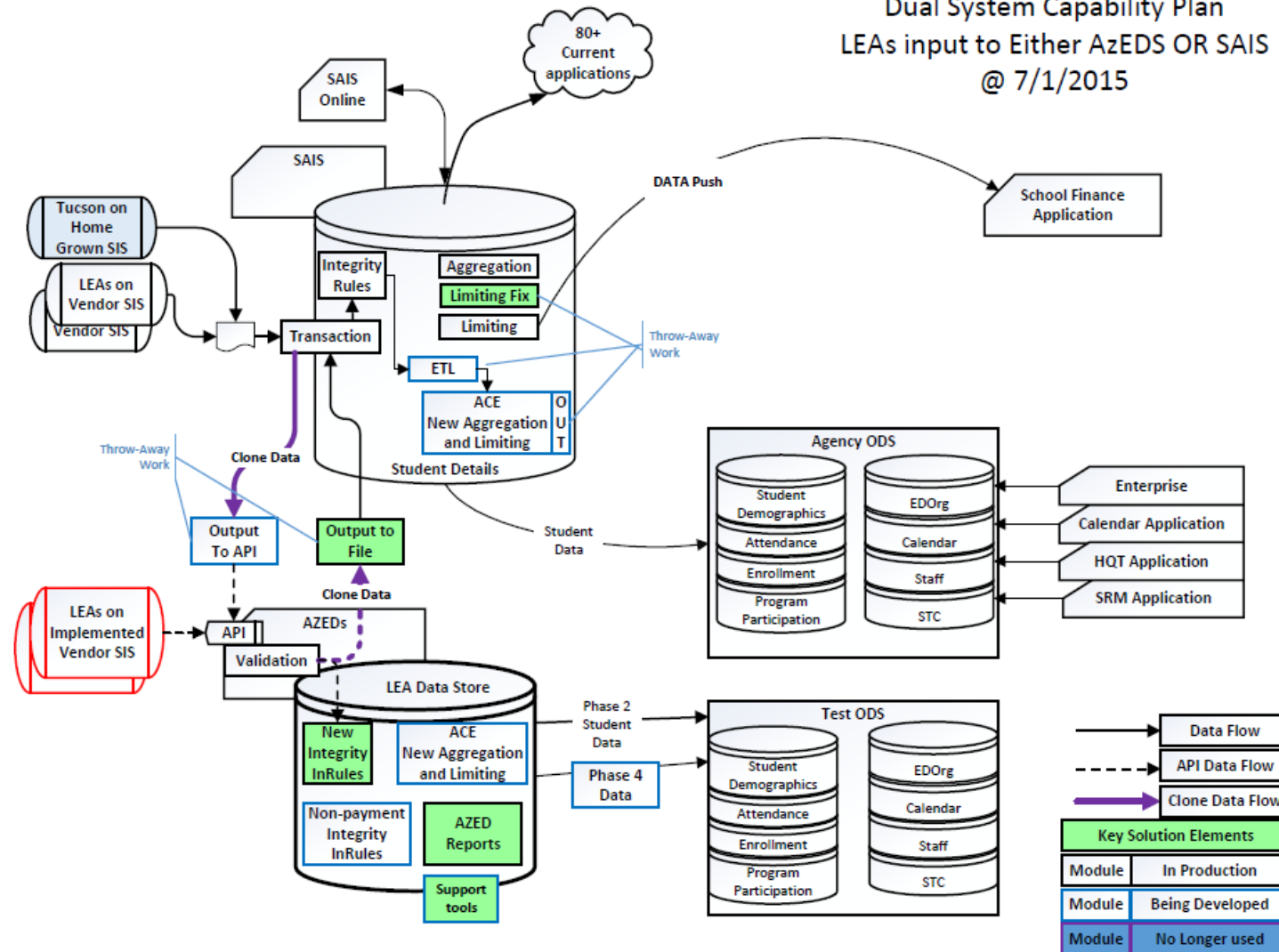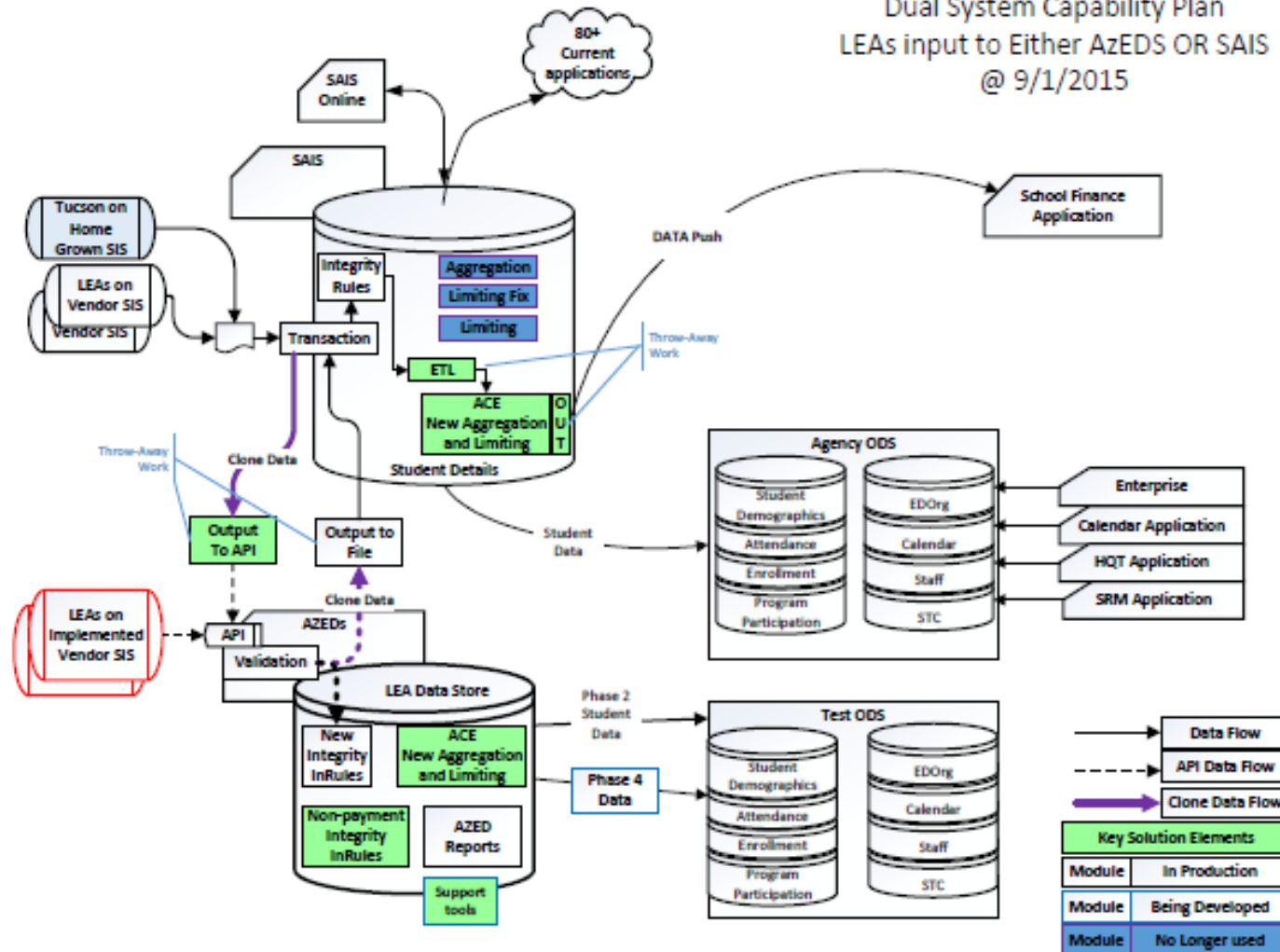
Figure 1: Dual System Approach 7/1/2015

Figure 2: Dual System Approach 9/1/2015

Initial Review of the AzEDS Options

The West Ed/CELT team had specific concerns for the previous approach for the AzEDS implementation. These included:

- 2016 data for 2017 district budgets and 2016 charter school budgets will only be allowed to come through SIS APIs to AzEDS, with the exception of Tucson Unified School District (TUSD).
- The business rules, aggregating and limiting routines, support tools and reports for the AzEDS data push to School Finance are behind and cannot all be completed by the 7/1/2015 go-live date for AzEDS. (Note: over 1,500 SAIS business rules had to be reviewed for inclusion in the new AzEDS approach. Only 300 rules will be in the new system).
- The SIS vendor certifications and loads to all of the districts for the AzEDS APIs will likely not be complete by 7/1/2015.

The new approach with dual system capability had the following characteristics for addressing the concerns stated above:

- 2016 data for 2017 district budgets and 2016 charter school budgets will be allowed to come through SIS APIs to AzEDS or through the old SAIS approach.
- Data will be cloned and pushed to both systems (SAIS and AzEDS) regardless of the entry method. This work for the data movement from AzEDS to SAIS and from SAIS to AzEDS will be used until the System of Record changes to AzEDS.
- Limiting routine fixes will be completed by 7/1/2015 for SAIS to establish ADM and prepare data for the push to School Finance. This will be turned off when the new aggregation and limiting routines are completed on 9/1/2015, but it allows the 7/1/2015 deadline to be met for processing ADM calculations for districts and charters.
- New aggregation and limiting routines will be developed (as planned) for AzEDS by 9/1/2015 and be used to process data for both streams for data (SAIS and AzEDS).
- There will be a TEST ODS developed and maintained such that the districts and charter schools can see the different results for their ADM (and subsequent impact on budgets) from AzEDS and SAIS. The TEST ODS will be turned off after all districts are cut over to AzEDS, and AzEDS is transitioned to the System of Record.

After an initial review of the diagrams, the West Ed/CELT stated to the ADE that the dual system approach seemed to mitigate many of the risks associated with the earlier approach. To form a better opinion on the matter, an onsite review was scheduled for the week of May 4, 2015. Additional documentation was requested on the new approach to be received and reviewed before the site visit.

In-Depth Review - Site Visit Approach and Initial Questions

Prior to the site visit, the West Ed/CELT team received and reviewed the following documentation:

1. PIJ EDI 4004 AELAS SDS FY16 – this was a draft of a revised PIJ for AzEDS.
2. Project Investment Justification PIJ School Finance Payments - CR 2015 – this was a draft of a revised PIJ for school finance.
3. AzEDS Finance Plan 4 15 2015 – high-level diagrams that laid out the previous approach compared to the new dual system option for AzEDS.
4. AzEDS SF Architecture – more detailed architecture diagrams for the new dual system approach for AzEDS.
5. Portfolio Review_20150430_2 – Arizona's report on their project portfolio - monthly report for April.
6. School Finance High level Schedule 4 29 15 – high-level project plan for school finance.
7. Project AzEDS Build 20150429 – high level project plan for AzEDS.

The onsite visit explored a number of topics with the technical team. These included, but were not limited to, the following:

1. The AzEDS component diagram (Figure 3 below) was thoroughly reviewed to discuss:
   - What is happening at each decision point and data flow
   - What stage of development each component is at
   - The estimated time to complete
   - Who has the lead for each component
   - What % of their time is allocated to the component
   - What is the estimated completion date
   - The type of testing and QA test plan developed
   - The volume of data projected to flow through the component daily
   - The load/performance testing
2. The data submittal schedule for SAIS and AzEDS from the district perspective – e.g., what data flows up by category, when, what reports come back, how is the data corrected.
3. The role of the district SIS currently versus with AzEDS and Ed-Fi.
4. District feedback from those sending data through the API now.
5. The status of the OEM work and the impact on AzEDS.
6. The communication and prep work to mitigate the impact (technical but more importantly the political impact) of the funding differences.
7. The issue of cascading updates as related to the funding calculations.
8. The impact of the ADE ODS schedule.
9. Lessons learned from the EduPoint implementations to date.
10. Ed-Fi ED-ORG data structure versus the customized AzEDS ED-ORG files.

11. The exceptions database (database to hold any business rule exceptions data so it can be retrieved by the SIS using a web service) and the exceptions web service (that exposes the business rule exceptions, so the SIS can consume it and have the LEA data steward correct the exceptions).
12. The impact of completing the current PIJ for AzEDS and issuing a new PIJ for the dual system approach.
13. The addition of the Ed-Fi domains for school calendar and student cohort to the phase 2 scope.
14. The 915 process (prior year budget changes) and AzEDS' ability to support this.
15. The essential steps required to be able to turn off SAIS data submittals for FY 16 (e.g., the 915 process).
16. The assumptions for rule 915 in the PIJ. Specifically:
    - The ADE will not create a secondary data collection tool to submit data (SAIS Online). Previous years of AzEDS data and submittal process will be used to correct and resubmit data.
    - The LEAs will maintain the data through the SIS vendor's solution.
    - Vendors are able to retain submission requirements for prior fiscal years and submit data for current and prior fiscal years according to the submission requirements for each year.
    - If ADE stores data for each fiscal year in a separate database the vendors/LEAs must be able to configure prior years to point to a specific ADE environment/ database to update the data for that specific year.
17. The Ed-Fi unique ID split/merge capability and the impact of not having this until 2016.
18. Charter estimated counts.
19. Support tools for helping ADOE assist districts with data submission issues.
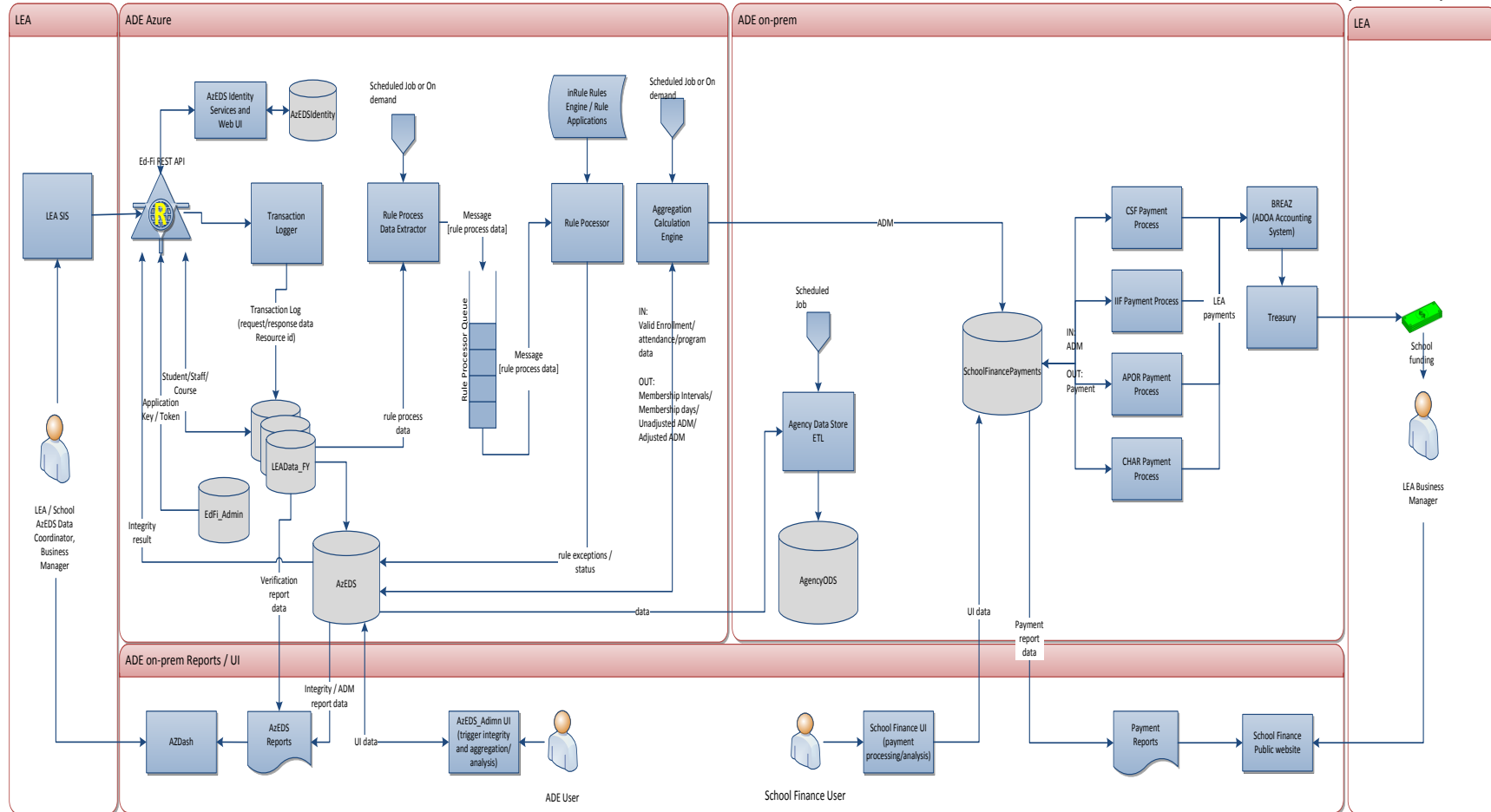
AzEDS & School Finance Payments Components

Figure 3: AzEDS Component Diagram

Findings and Recommendations

From the discussion around the above topics and others, the West Ed/CELT team developed the following findings and recommendations:

Findings	Recommendations
1. The go-live date for ACE is widely publicized as 9/1/2015; however the immediate critical path for this effort is squarely within the realm of the finance department and their availability to support the necessary facilitated discussions with the IT team to create the business rules. IT schedules are at risk due to factors beyond their control.	Revise and publicize the go-live date for ACE (and the comparison of SAIS and AzEDS data for calculating funding) as 12 weeks after the finance department has presented IT with a signed off version of the ACE requirements.
2. The OEM work (also behind schedule) requires considerable time from the same finance team members as does the ACE effort. This detracts from the time they have to spend on the ACE requirements. However, with the dual system approach, OEM is not a critical path item.	Consider delaying the OEM work for enough time to allow the finance team members additional time to focus on the requirements for ACE.
3. There is some uncertainty and lack of complete understanding regarding when SAIS will be shut down and what exactly this means for the department and for districts. Questions around the 915 process and ongoing use of the SAIS data structures are a couple of factors that make the timing and approach for shutting down SAIS (or its major components) uncertain.	After the dual system option is live, establish a project plan for shutting down SAIS. Explain in the plan what components are shut down and when and what the impact is for the Department and the districts.
4. It appears that SAIS (or certain of its components) will remain in production past 2016 in order to continue to process 915 calculations for data that was originally submitted through SAIS.	As part of the above plan, communicate the fact that SAIS will remain in production past 2016 to do the 915 calculations. Establish and publish the project plans and schedules for supporting the 915 calculations for the long-term (e.g., beyond SAIS).
5. The assumptions for rule 915 as documented in the PIJ for AzEDS place a lot of responsibility for this process on the SIS vendors and the districts for the future process beyond SAIS. The assumptions have also not	Part of the plan for turning off SAIS needs to include a well strategized and documented plan for the 915 process beyond SAIS. This plan should include time for developing and vetting the requirements with the finance department

Findings	Recommendations
been validated. These assumptions include: • The ADE will not create a secondary data collection tool to submit data (SAIS Online). Previous years of AzEDS data and submittal process will be used to correct and resubmit data. • The LEAs will maintain the data through the SIS vendor's solution. • Vendors are able to retain submission requirements for prior fiscal years and submit data for current and prior fiscal years according to the submission requirements for each year. • If ADE stores data for each fiscal year in a separate database the vendors/LEAs must be able to configure prior years to point to a specific ADE environment/database to update the data for that specific year.	and with the districts. It also should give vendors a reasonable amount of time to develop the 915 options after they get the specs for the new development. Consider allowing at least 8 months for vendor development. Consider also a test site for the vendors to use for a certification process for this function.
6. There are a number of districts that use the SAIS online tool for the practice of correcting data. It will become increasingly important as AzEDS goes into production that districts follow the best practice of correcting data at its source.	Seek out the districts that consistently use the SAIS online entry tool for correcting SAIS data and offer training and guidance on data management practices. Proactively address the need for them to change this practice prior to shutting down SAIS online.
7. Cascading of data by the SIS vendors and properly capturing this in AzEDS appears to be a potential source for data errors in the future. While there is a certification process to ensure that vendors can properly submit data through the Ed-FI APIs, this certification does not currently address whether the vendor properly cascades all appropriate data elements. While the ADE has developed a cascading option, this is turned off for any data that might affect funding calculations.	Establish test cases for ensuring that all vendors can appropriately cascade all AzEDS data, especially data that affects funding calculations.
8. The use of the more public Azure	Consider securing the FERPA related data

Findings	Recommendations
platform for storing student data may raise concerns for data privacy among some of the Arizona constituency. While there is no inherent concern for the Azure platform in this regard, the fact that student data is stored on a more public platform may be perceived by the general public as a potential data privacy issue.	at rest on the Azure platform through encryption. There is currently little such FERPA data on this platform, however as this type of data increases with the expansion of AzEDS, it may become an important consideration.
9. While the dual system option appears to be the best solution for moving forward at this time, it will be a complicated and difficult set of software and data structures to maintain. The potential exists to stretch limited ADE IT resources, create confusion about what data can and should be used, and as mentioned above create confusion about what SAIS options and systems are being turned off and when.	The West Ed/CELT team does not see any viable options for simplifying the dual system option approach. However we do recommend that the data governance process and data stewards be educated and fully engaged to understand the dual option and the implications for data quality and confusion about what data store to use for various purposes. The data stewards should be used to establish rules and guidelines to mitigate this confusion and to communicate with and train the districts. Additionally, we suggest that ADE develop a communications strategy and plan for informing the local education agencies about what SAIS options and systems are being turned off and when.
10. While the dual system approach addresses most of the problems of the prior approach, it will be more difficult to support and maintain until such time as SAIS is shut down.	Begin immediately to plan for the necessary support staff and procedures for when this system goes live. Train the help desk staff to be prepared for tier 1 problem resolution. Ensure staff has the training and/or the time required to handle tier 2 and 3 support requests. Ensure contracts are in place as necessary for tier 3 support (e.g., for Double-Line Partners if they are needed for tier 3 support).
11. Operational and internal support for nightly processes has not been completed.	Before the dual system can begin processing data in an automated fashion it will be necessary to fully schedule all of the required steps needed to process the data. These steps will need to be identified, coded, sequenced and scheduled to run nightly. Support for these jobs will need to be determined

Findings	Recommendations
	which includes assigning resources to monitor and address any issues that may occur during a nightly process. Communication to any downstream system will need to be created in order to inform them of any issues that may have occurred during the nightly processing.
12. All of the data that flows through the API component currently is sourced through the SIS. Some of the data required for AzEDS (e.g., student-teacher course information) comes through a separate interface that districts enter data into (teachers, courses, course instances and students) called STC. This system is hosted by the state and data is manually entered by the district at 2 intervals in the year. When the AzEDS system is fully sourced through the API component this older STC system will be able to be turned off. However, an issue that the West Ed/CELT is aware of as regards teacher-student data connections is that the local SIS does not always keep an accurate teacher-student data connection at any particular point in time. A roster verification process and tool is typically used by districts to validate the teacher-student data connections for any high-stakes use of the data.	For high-stakes use of the teacher-student data connection (e.g., teacher pay tied to student performance), a roster verification process will still be required to ensure that teachers and administrators have confidence in the data. Any changes to the roster data resulting from this verification process will need to be propagated back to the district's source system of record.

Risk Assessment Table for the AzEDS Options

Both the previous approach and the new dual system approach have a set of risks associated with them. In many cases, the dual system approach helps to mitigate the impact, if not the probability, of the risk. The table below outlines the risks that the West Ed/CELT team sees and what we believe to be the impact of the dual system option compared to the original option.

Risk	Original Approach		Dual System Option	
	Probability	Impact	Probability	Impact
1. The integrity rules (non-payment) and new limiting and aggregation routines will not be complete by 7/1/2015 in time for the system to go live. There is a real risk that these will not be complete by the published date in the dual system plan of 9/1/2015.	High	High	High	Low See note 1
2. SIS vendor certifications may not be all complete and disseminated to the districts for a July 1, 2015 go-live date.	High	High	High	Low See note 2
3. For some districts, data quality of the SIS data as extracted for AzEDS may not be of a quality needed to support the school finance application.	High	High	High	Low See note 2
4. The school finance results (e.g., budget dollars to LEAs and charter schools) will be different between the old SAIS and the new AzEDS processes. These results may create backlash from the districts.	High	High	High	Medium See note 3
5. The business rules for the SAIS replacement are different than those of the original SAIS. This means that even if the data flowing through AzEDS completely matched the SAIS data, the calculations for school finance will return different results.	High	High	High	Medium See note 3
6. The districts may not have sufficient procedures in place needed to correct the AzEDS data at the source (SIS) which may cause more work for these districts to put this in place.	Medium	High	Medium	Low See note 4
7. Data in the SAIS tables, LEA Data Store, Agency ODS and Agency Test ODS will likely not be in synch due to different business rules and timing, and will produce different results for similar reports.	Low	Low	High	High See note 5

	Original Approach		Dual System Option	
Risk	Probability	Impact	Probability	Impact
8. Extending the life of the SAIS components will increase the risks that these obsolete SAIS systems may stop functioning.	Low	Low	High	High
9. Maintaining dual systems will increase support costs and pressure on support staff.	Low	Low	High	Medium
10. Growing privacy concerns around student level data may create a political environment that is dangerous to AELAS regardless of system quality and functioning.	High	High	High	High
11. The ADE is understaffed for the amount of district training and support to transition 650 districts to AzEDS in one year.	High	High	High	High

Notes:
1. For option 2 the impact of this risk is mitigated by using the current SAIS rules, aggregation and limiting routines and a limiting routine fix until the new integrity rules and aggregation and limiting routines are in place.
2. For option 2 the impact of this risk is mitigated by allowing districts to continue entering data under the old SAIS approach until they are ready to switch to AzEDS.
3. For option 2 the impact of this risk is mitigated by allowing the district to see the ADM and budget impact as calculated by both the old SAIS and the new AzEDS approach. This will allow an opportunity for districts to explore the differences and correct any major problems on their end before switching to the new approach.
4. For option 2 the impact of this risk is mitigated by allowing districts extra time to put these data correction procedures in place before switching to the new approach.
5. This risk can be mitigated by clearly delineating the system of record for each of type of report and data query.

Additional Risk Mitigation Strategies to Consider

1. Develop a proactive effort at the ADE to assist districts with the new data submission process and to help address questions that will arise from the impact of the new approach and business rules on their funding.
   a. Communication plan and materials to convey how the new business rules operate and the impact these will have on LEA and charter school budgets. Including webinars, websites, and regional meetings on AzEDS.
   b. Training and coaching on data quality and data correction procedures for the districts and charter schools.
   c. Monitoring of SIS versioning for each district to ensure AzEDS compliance software versions are loaded at each district. This could be tracked in the CRM.
   d. Escalation plan for districts that lack the skills, resources or political will to implement AzEDS.
   e. Identify districts that have successfully implemented AzEDS (including district data quality/governance activities) and create communications along the message "AELAS works" to establish clear responsibility between problems in loading data between districts and the ADE.
   f. Establish data quality "SWAT" teams to assist early adopters of AzEDS and use those experiences to develop data quality/AzEDS training and toolkits for other districts.
   g. Build political trust among state representatives that AELAS works and prepare them for complaints from districts that they cannot load data via AzEDS.
2. Help the districts to understand the new business rules and data standards by providing this information in a structure that is easily available to them such as a data dictionary. Publish the data dictionary to the districts along with the business rules. Include these in the communication and training plan for the districts.
3. Help the districts prepare for the transition to the new AzEDS and away from the old SAIS routines by providing a form of district readiness survey. Such a survey could help districts to better understand the potential impact of district specific problems when submitting data via AzEDS. This could include an option for voluntary on-site data quality audits.

Summary:

The West Ed/CELT team feels that the ADE has selected the best approach for moving forward with its strategy of replacing the old data collection methods and SAIS components. The dual system approach appears to have been thoroughly thought out and designed. It addresses the schedule concerns and many of the risks of the old approach. The new approach does create some new risks and issues, as discussed above. Finalizing the integrity rules and the as yet unknown data issues from the API approach appear to be the biggest risks now. As the system goes into production, the usage and load on the system and the impact on performance are an as yet unknown and should be monitored closely.