

Arizona Department of Education Executive update



Presented to:
Information Technology
Authorization Committee

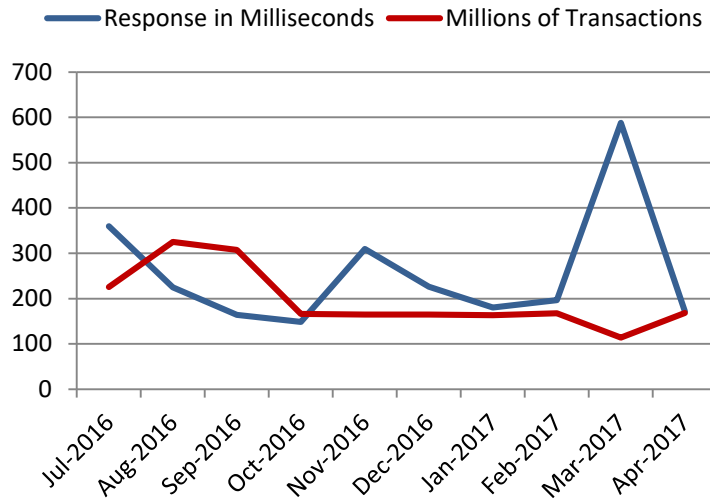
May 24, 2017

Mark T. Masterson
Chief Information Officer

First and foremost

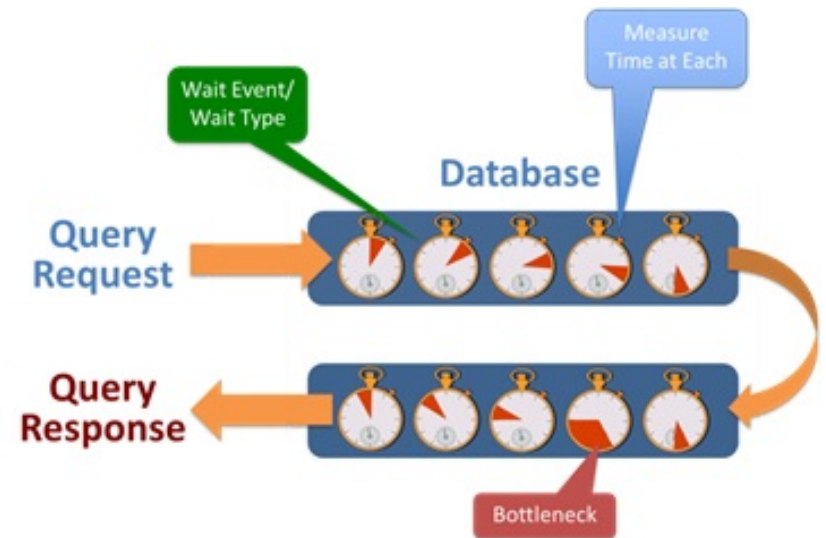
AzEDS data quality has provided the State of Arizona an annual cost savings of \$40M compared to SAIS

AzEDS in Azure performance



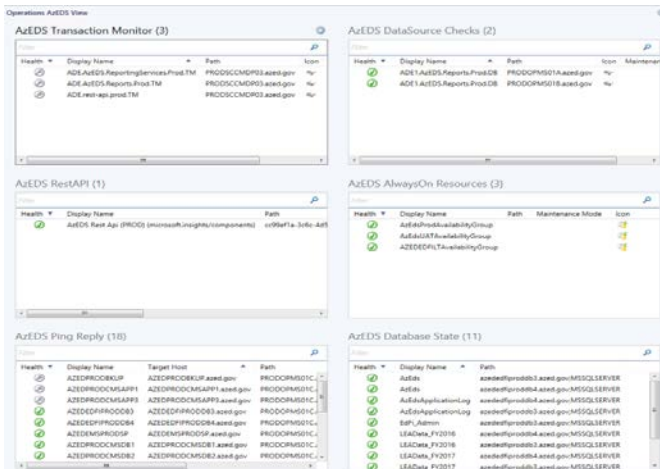
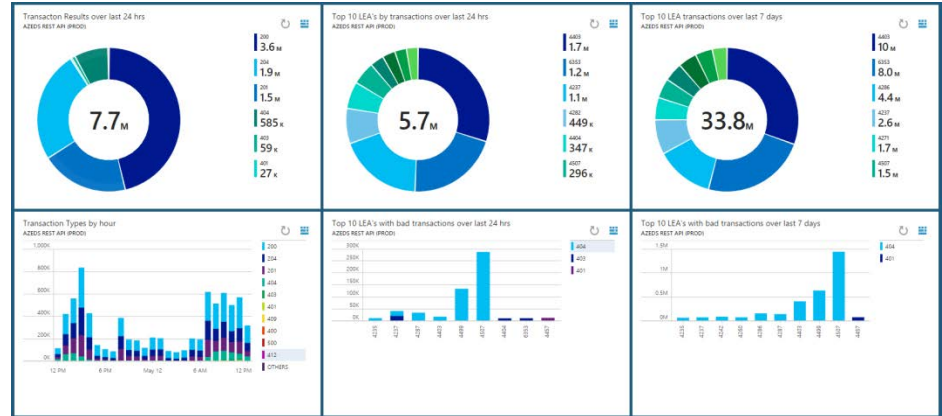
➤ **Average transaction response time is 257 milliseconds.** Response time is the sum of actual processing time and the time the session spends waiting on availability of resources.

➤ ADE processes an average of **6.5 million transactions a day** through the AzEDS system. Leveraging Azure elasticity, ADE was able to scale to meet that demand and maintain response times despite increases in transaction counts.



AzEDS proactive management

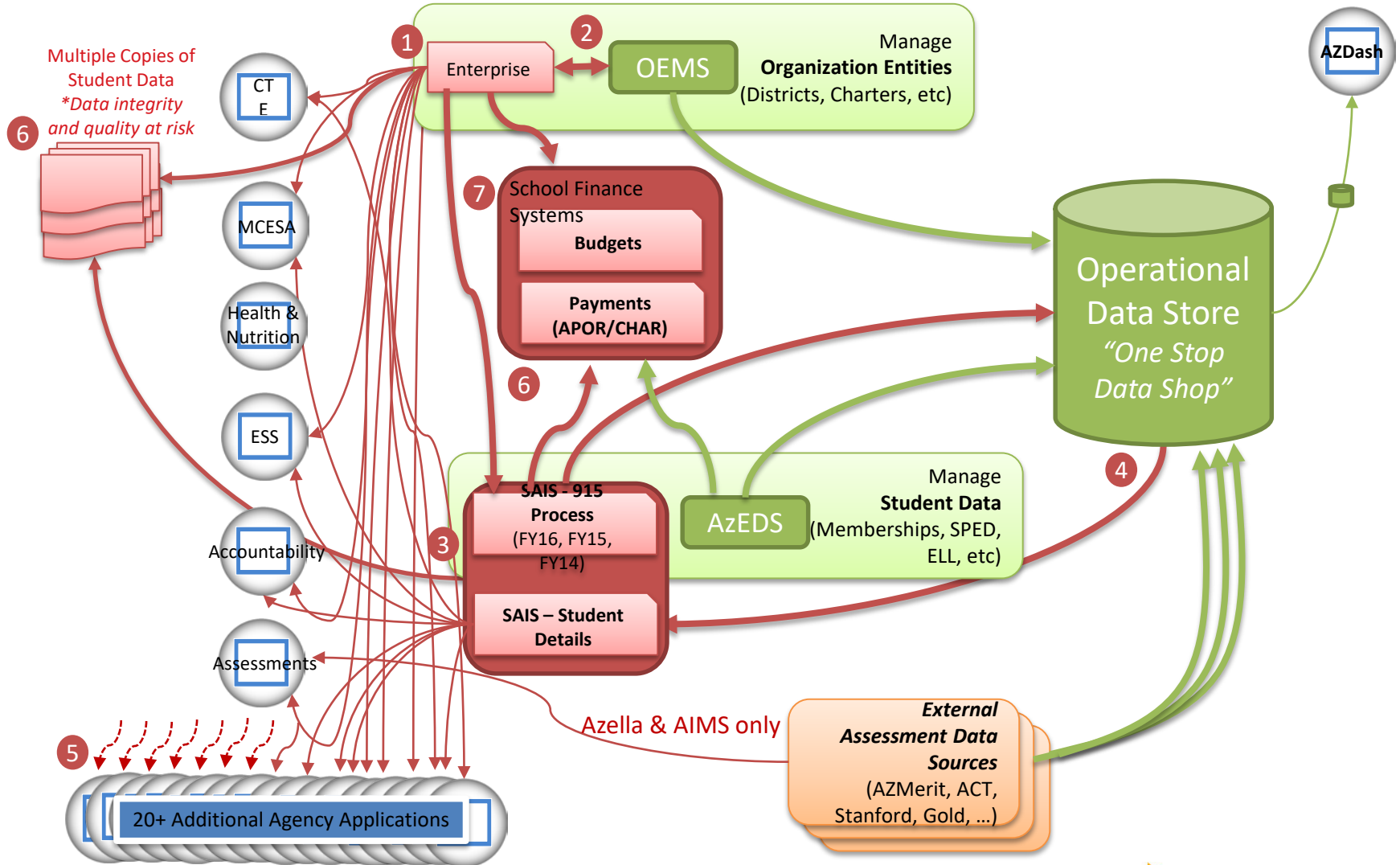
ADE monitors 24/7 using Azure Application Insights and Microsoft System Center Operations Manager (SCOM) identify when system operations are abnormal or slow. Alerts are generated to the Dev/Ops team when Key Performance Indicators (KPI) are exceeded, and are visualized on the big screens in the operations room. Synthetic transactions simulate a user's perspective.



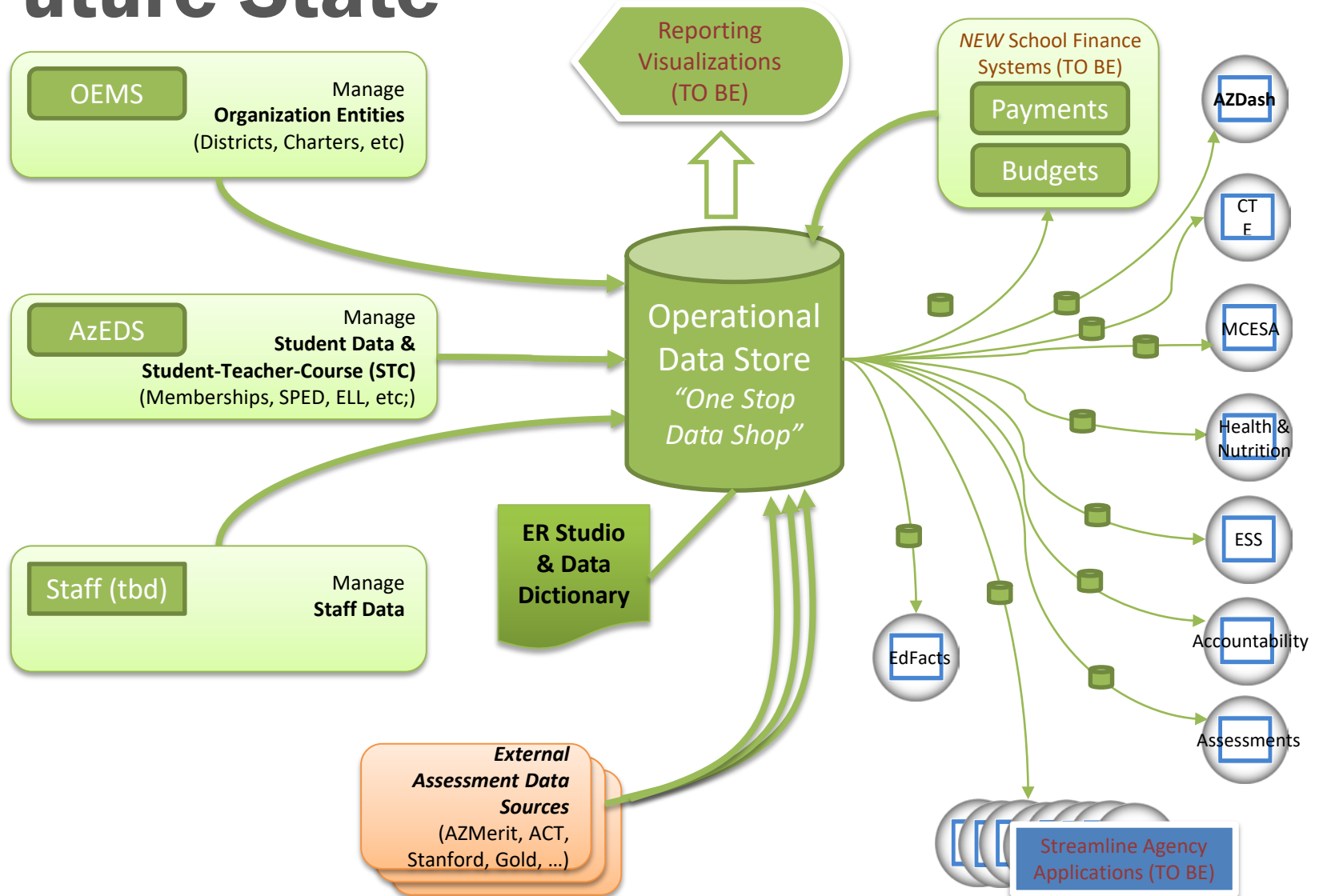
A picture of today

Note – Not depicted but also part of current state are:

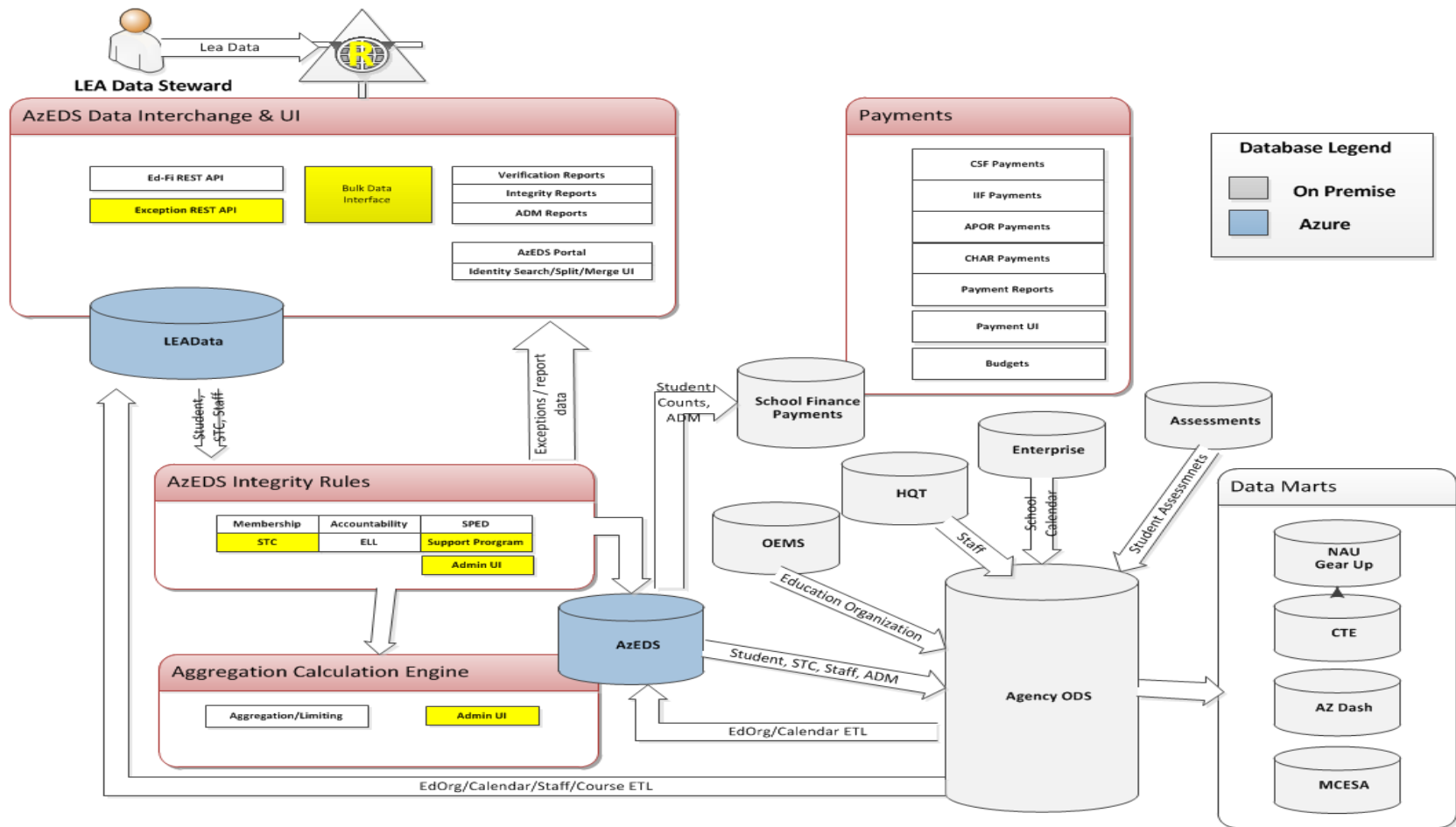
- Staff / HQT – applications currently pulling data directly and will streamline in future state
- STC in AzEDS
- Calendar (Enterprise)



Future State



2017 AzEDS high-level architecture



AzEDS FY18 development

\$1,500,000

- 4 main deliverables for FY 2018 in AzEDS
 - Single-source Agency data, and decommission legacy apps via Operational Data Store (\$700,000)
 - LEA vendor Calendars submissions via the AzEDS API (\$300,000)
 - ESSA requirement for Financial Transparency data collection (\$200,000)
 - New LEA Finance/Teacher API
 - Requirements, design and prototype only
 - Self-servicing LEA user interface and Agency approval workflow for Organizational Entity Management System (OEMS) (\$300,000)

APOR/CHAR requirements

\$500,000

- Develop high-level requirements for new payment system
 - Includes breaking down the existing APOR and CHAR (20+ processes and steps for monthly payment alone)
 - Annual payment separate process
 - Create statute-based modeling for proposed replacement
 - Automate existing manual processes
- Decouple APOR/CHAR from legacy Enterprise

FY18 AELAS Maintenance

\$5,3000,000

- AzEDS Support
 - User bugs and ticket analysis and fixes to resolution
 - 2 API releases and enhancements to rules, portal, reports, tools, etc
- AZDash
- ADEConnect
- Data migration and State/Federal reporting
 - Design support for applications migrating to ODS
 - Analysis support for Program area reporting to Feds

FY18 AELAS spending plan

APOR/CHAR requirements \$ 500,000

AzEDS \$ 1,500,000

AELAS Maintenance and Operations \$ 5,300,000

- AzEDS Support \$1,200,000
- Program Support Office \$ 500,000
- AZDash \$ 600,000
- AELAS Network Operations \$ 700,000
- ADEConnect \$ 450,000
- AELAS Strategic Oversight \$ 320,000
- School Finance Support \$ 250,000
- Data Migration & State/Fed Reporting \$ 630,000
- Hardware and Software \$ 650,000

TOTAL \$ 7,300,000

What was tabled in FY17

- Integrating existing systems that use SAIS for data
- New dashboards for AZDash
- Adequate software/hardware needs for AELAS development
- APOR/CHAR rewrite

On-going challenge for AELAS success

- Insufficient and Unpredictable Funding
 - Approved funding each year has not approached each annual ask
 - Maintenance funding each year has not been appropriated

FY 2017 AELAS closed projects

Project Name	Accomplishments
<p>ADE Online Certification (OACIS) PIJ ED12003</p>	<ul style="list-style-type: none"> • OACIS Public Portal; value – The Certification public portal allows educators, parents, and the general public to access information regarding an Arizona educator’s certification • Initial code (only) for OACIS Public Portal and Educator Portal • Project closed in Red status with end of contract period June 30, 2017. Due to vendor: <ul style="list-style-type: none"> • Missing required scope deliveries • Consistent missing of Delivery milestones • Code delivered as compiled, not source as per contract
<p>AELAS SIS Opt-In PIJ ED14005</p>	<ul style="list-style-type: none"> • 44 current LEAs are on the State supported Student Information System • LEA count peaked during FY17 due to JLBC condition to Cap total implementations to those active and in pipeline at the start of FY17 • 74,000 students being managed and reported through State SIS

Thank You

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AELAS Development Reference Slides



Single-source Agency data/decommission legacy

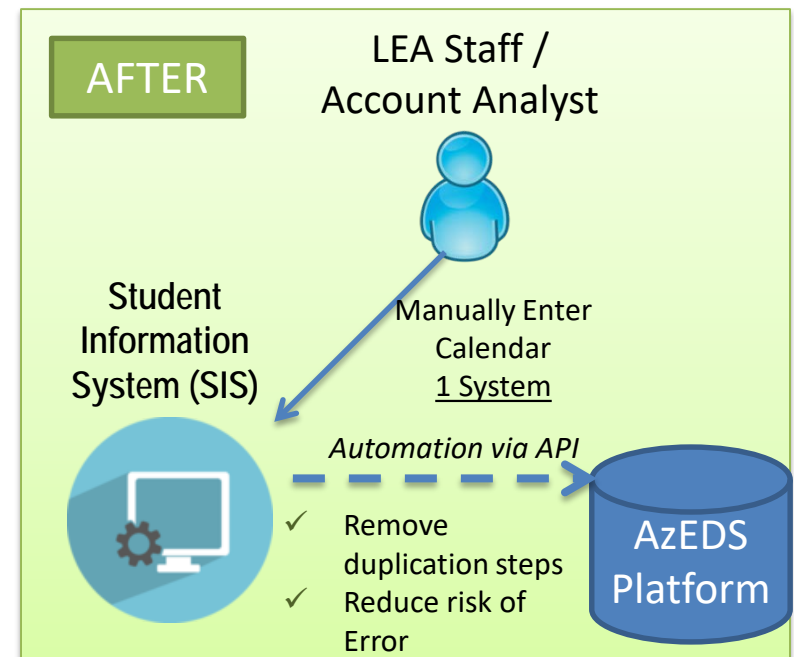
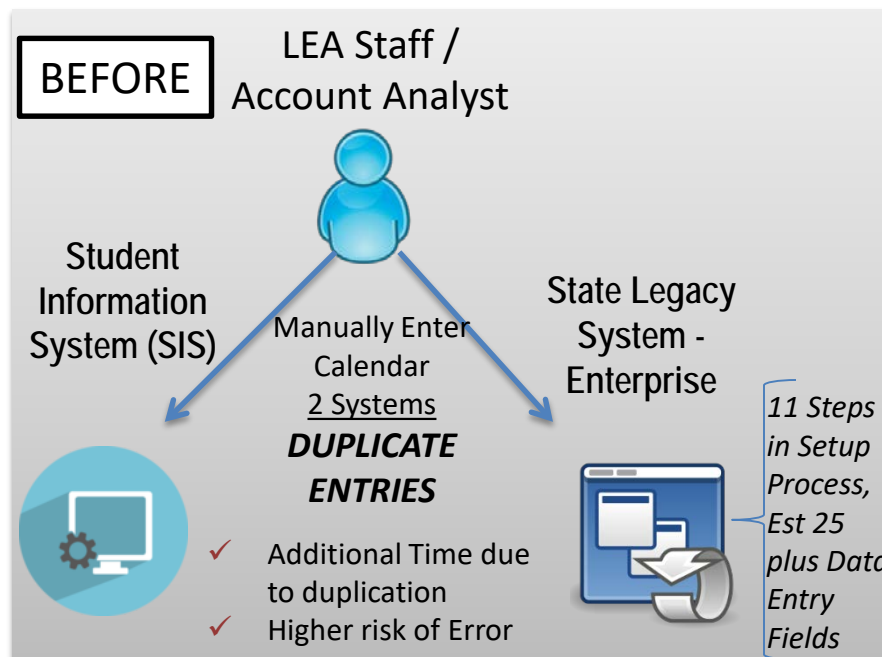
\$700,000

- Decommissioning of legacy platforms, Enterprise and SAIS
 - Reduce redundancy, quality risks and cost of maintaining 2 systems in parallel
 - Build additional 3-5 Data Marts for specific Agency divisions (5 complete), supporting Program Area application migration
 - Migrate 30 legacy applications to utilize Entity and Student Data via ODS
 - Enhance ODS ED-ORG domain to enable the shutdown of Enterprise entity management
- Build out Ed-Facts reporting using new ODS as single source for all Federal and State Reporting (180 reports)
- Extend AzEDS ODS to increase ability to be single source of data for all Agency data needs that cross multiple Program Areas
 - Build new School Finance domain
 - Build new Average Daily Membership (ADM) domain
 - Enhance Staff domain (teacher performance data)
- Build 5 dimensional data cubes for analytics reporting

AzEDS LEA vendor (16) Calendar via AzEDS API \$300,000

As Is: LEAs have to setup a Calendar in their Student Information System (SIS) and in Enterprise (double entry).

To Be: Streamlined process that reduces LEA burden by enabling the calendar setup in a SIS to be sent to the state via AzEDS API. Initial API development is complete, remaining effort for Integrity rules, reports and workflow for School Finance approvals.



AzEDS LEA Finance/Teacher API

\$200,000

- Develop and obtain high-level scope and business needs to support financial transparency data gathering and reporting
 - ESSA requirement
- Estimate development and on-going maintenance timeline and costs to support requirements
- Complete initial prototype of solution

OEMS user interface and approval workflow

\$300,000

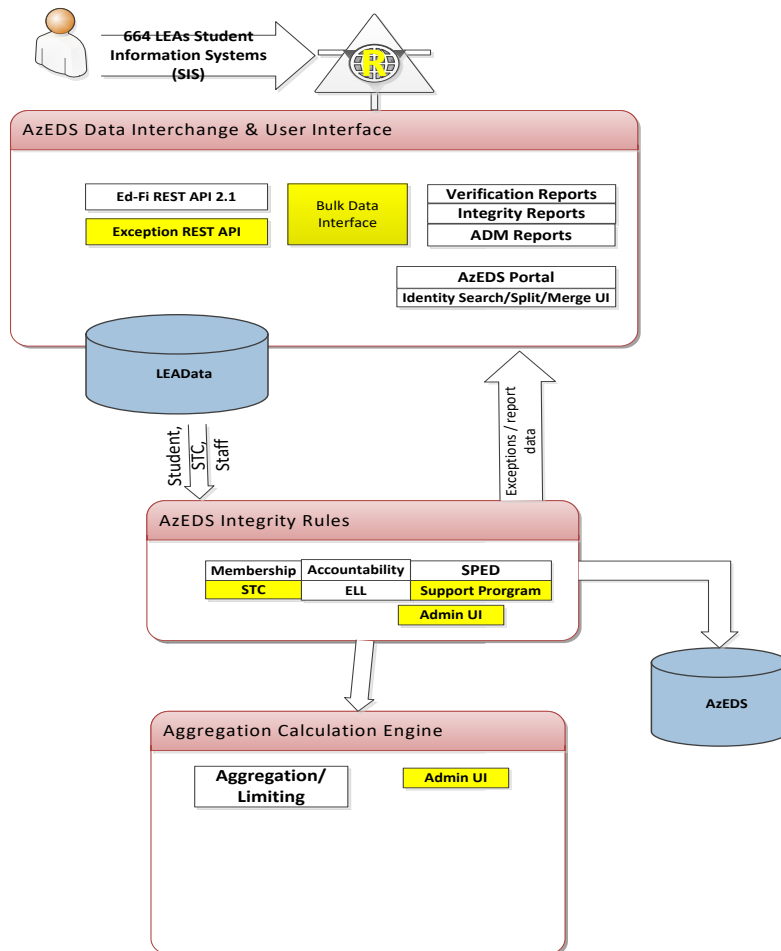
- Develop new user interface for LEAs to self service their entity organization and contact information
- Develop workflows to enable ADE staff to approve, and lock down, the changes submitted by LEAs

Challenges from disconnected silos

- Vendors built upon old non-supported technology platform
- Poor code practices
 - No code reuse across application,
 - no data services
 - No code libraries
- Cross domain applications required linked servers or database replication
- Limited interoperability between core systems
- Data Integrity and Aggregation for school finance payments a multi-day operation
- No common definition of data elements
- Yearly database snapshots to capture historical data

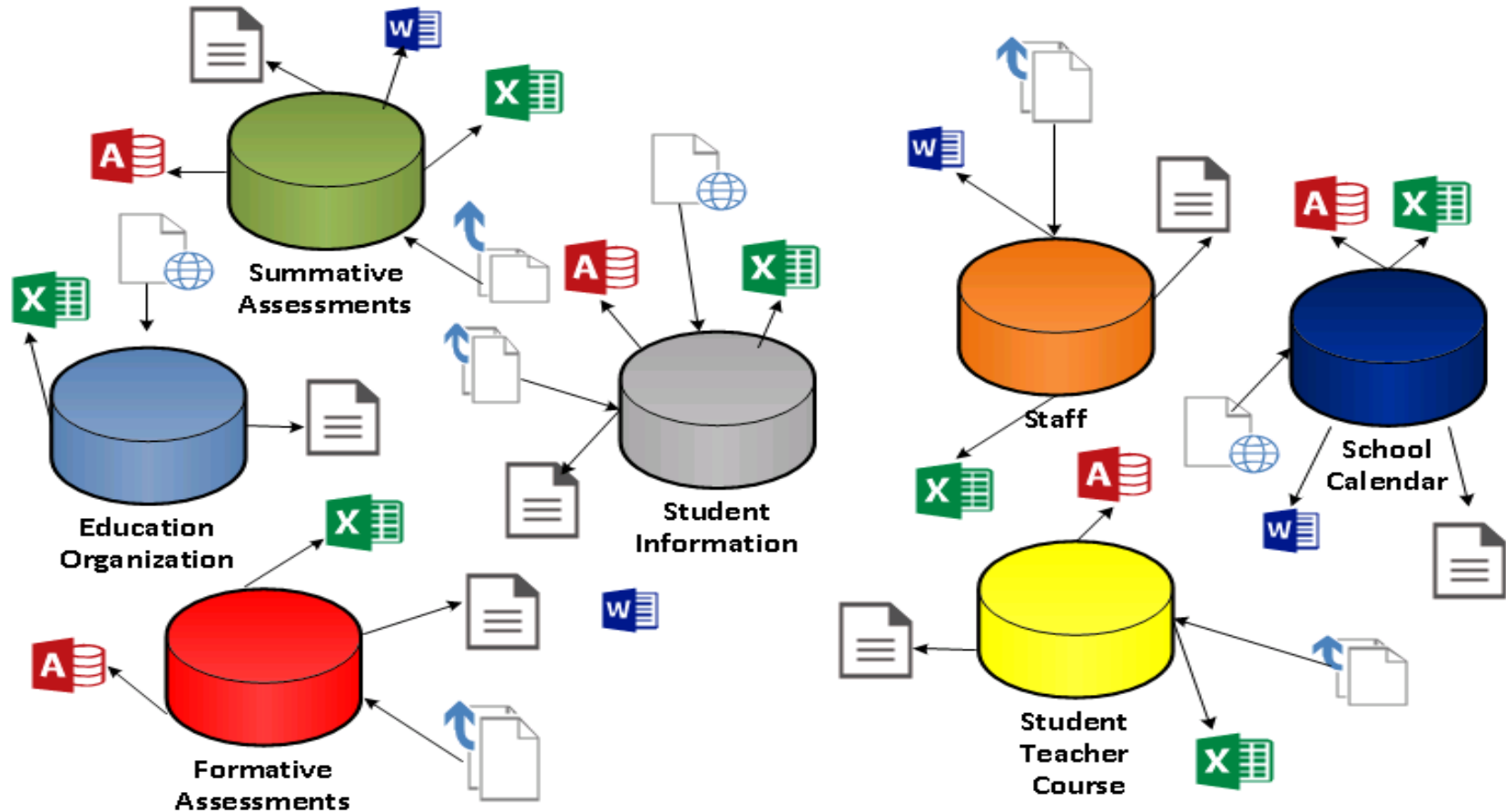
Components of AELAS

AzEDS



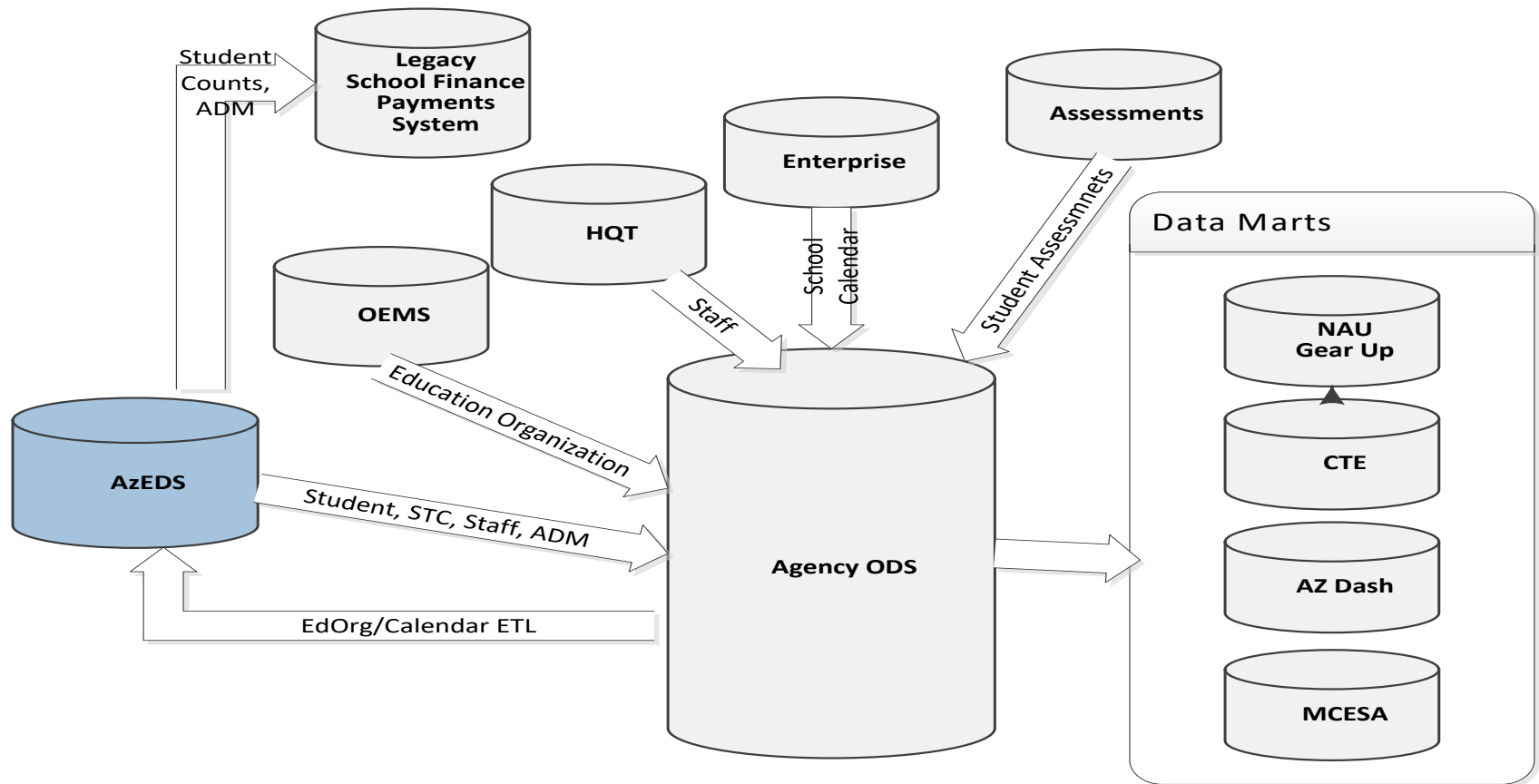
- 4-10M transactions daily
- Returned \$40M back to the State due to accuracy of systems and rules
- Returns \$40M each and every year going forward

Components of AELAS Operational Data Store



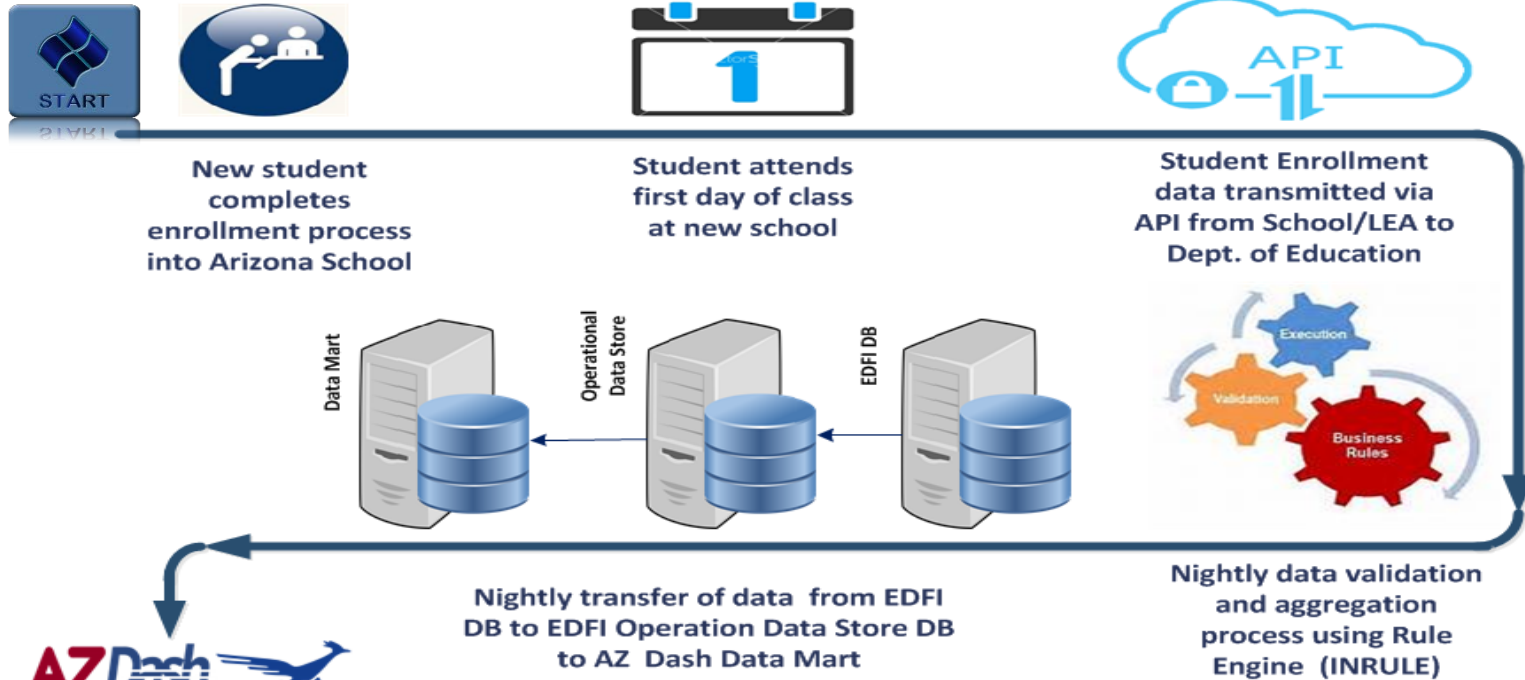
Components of AELAS Operational Data Store

Our design and implementation to-date and with continued investment will remove these silos.



Components of AELAS

AZDash



Accelerating Student Achievement

- Assessment History
- Attendance History
- Enrollment History
- Student Program History
- Student Demographics

Longitudinal student data available
next business day after data
submission from School/LEA

AZDash Application

District: School: Teacher:

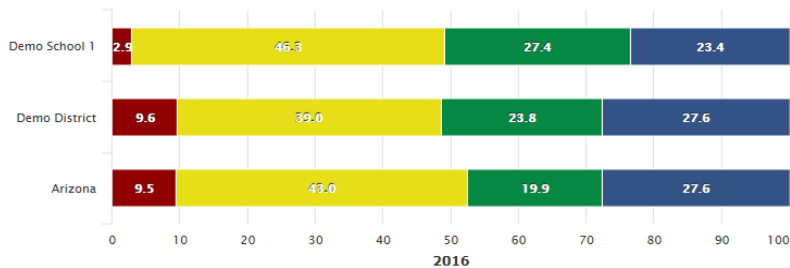
My Schedule: 2016-2017

Course	Class Period	Students Enrolled
Language Arts (grade 4)	Period: 4th	22
Reading (grade 4)	Period: 4th	22
Writing (grade 4)	Period: 4th	22
Composition—Other	Period: 4th	22
Mathematics (grade 4)	Period: 4th	22
Science (grade 4)	Period: 4th	22
Social Studies (grade 4)	Period: 4th	22

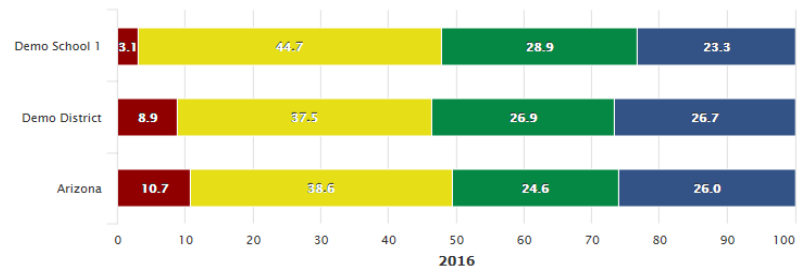
Assessment Results



AzMERIT ELA %



AzMERIT Math %



Components of AELAS School Finance payment system

