

# Arizona Department of Education Executive update



Presented to:  
Information Technology  
Authorization Committee

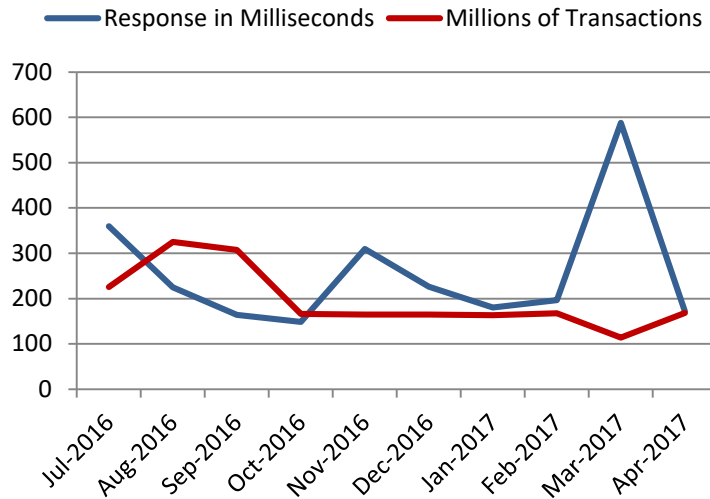
May 24, 2017

Mark T. Masterson  
Chief Information Officer

# First and foremost

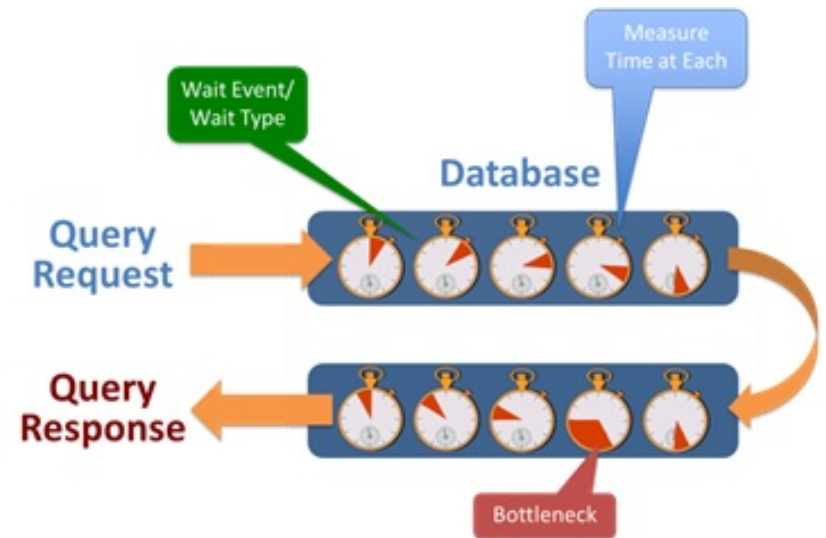
AzEDS data quality has provided the State of Arizona an annual cost savings of \$40M compared to SAIS

# AzEDS in Azure performance



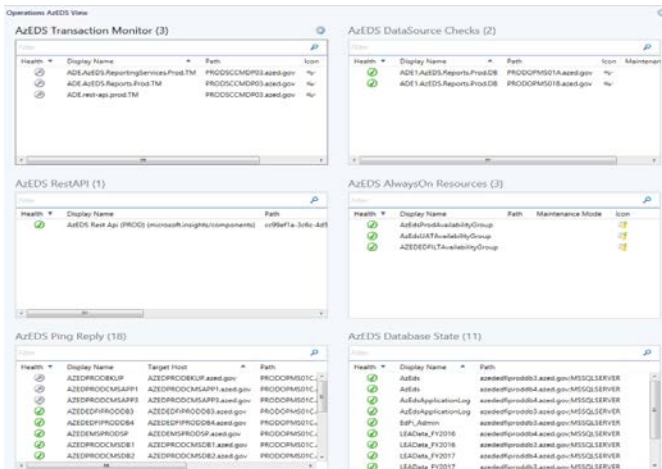
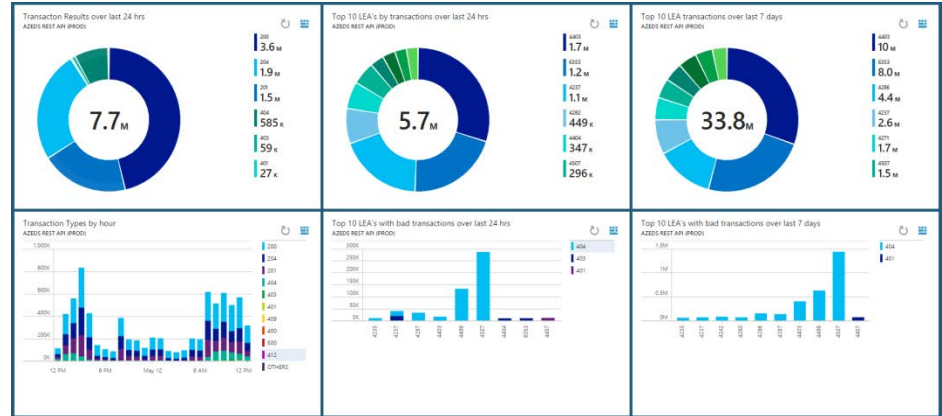
➤ **Average transaction response time is 257 milliseconds.** Response time is the sum of actual processing time and the time the session spends waiting on availability of resources.

➤ 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

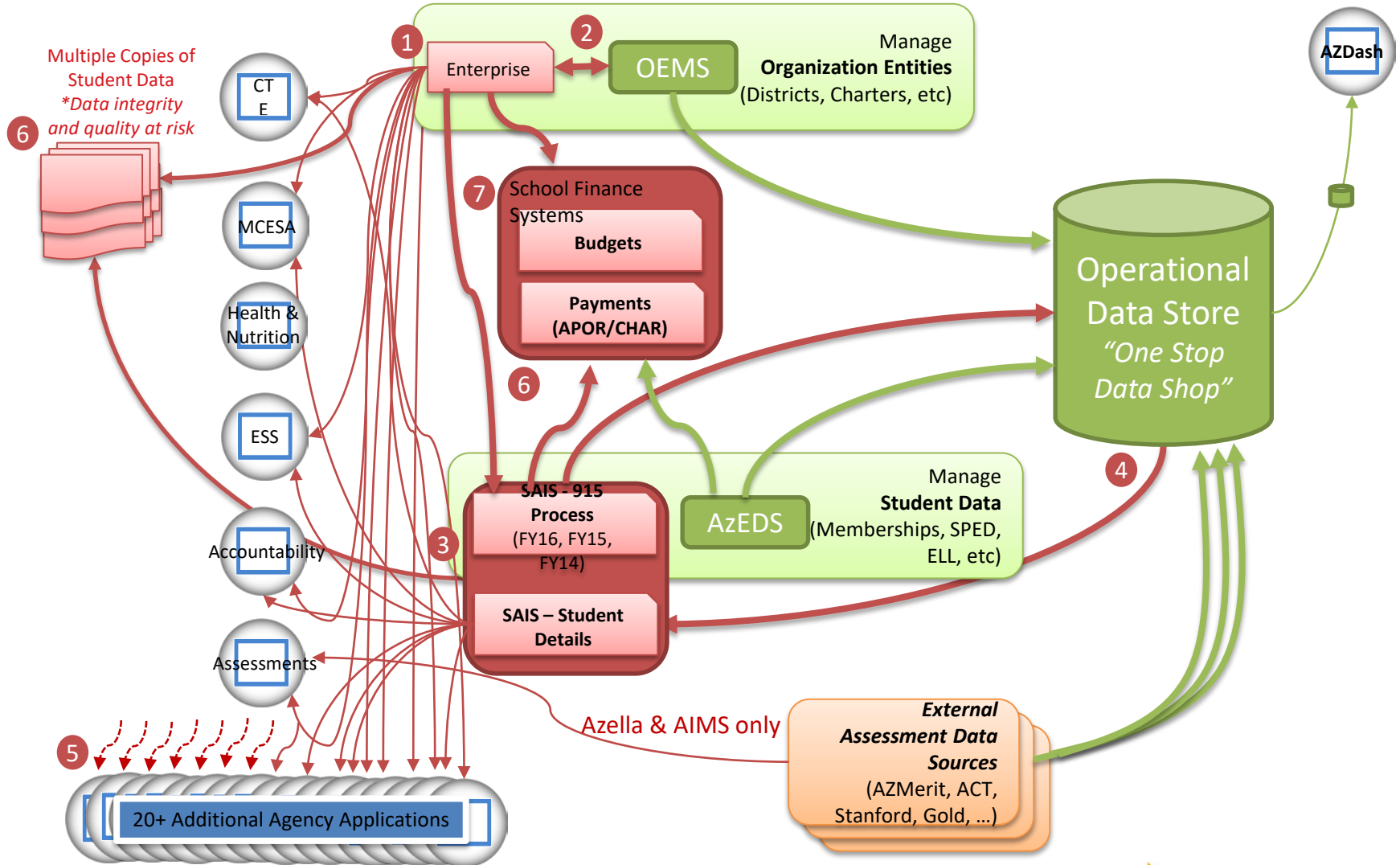
ADE monitors 24/7 using Azure Application Insights and Microsoft System Center Operations Manager (SCOM) identify when system operations are abnormal or slow. Alerts are generated to the Dev/Ops team when Key Performance Indicators (KPI) are exceeded, and are visualized on the big screens in the operations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



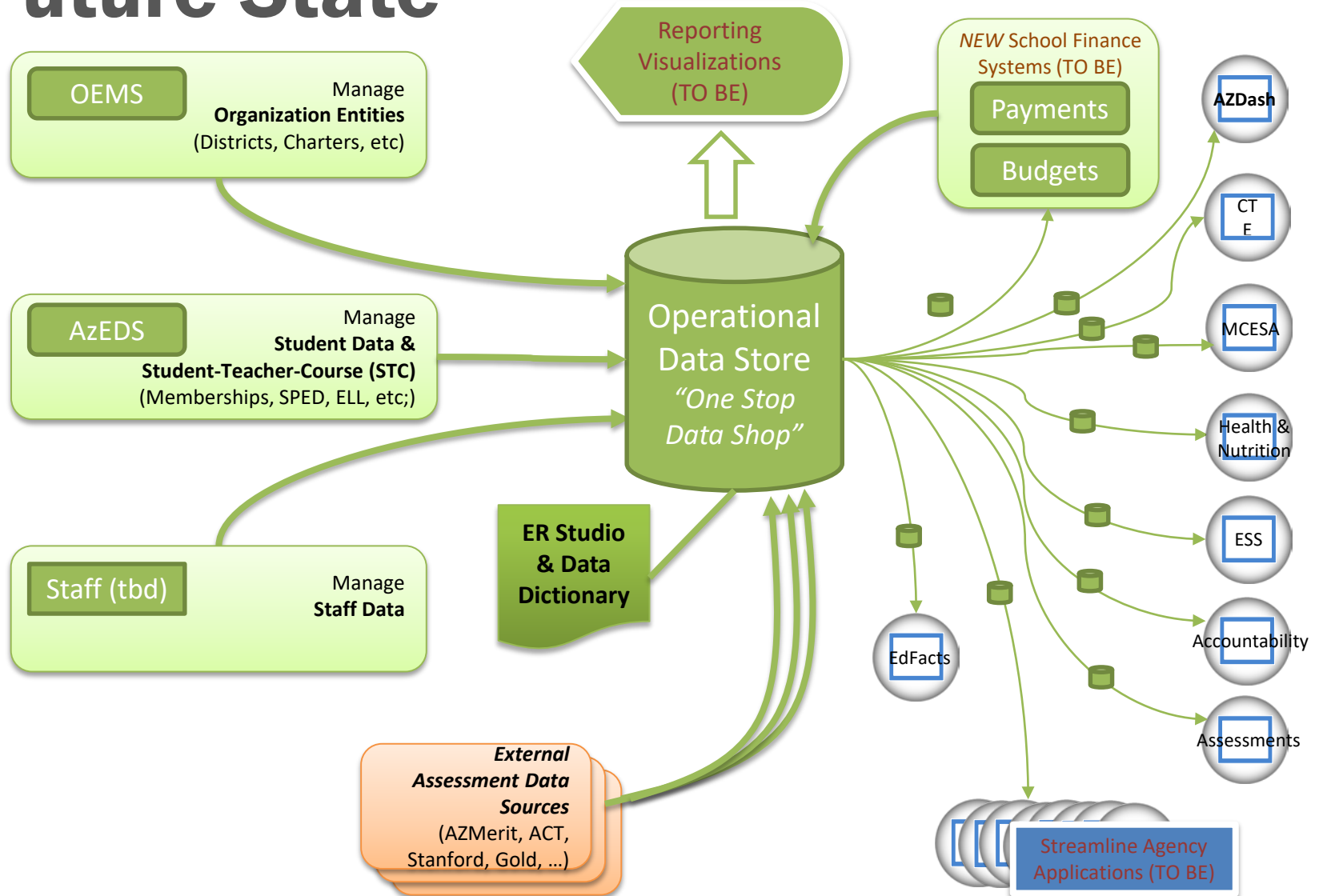
# A picture of today

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

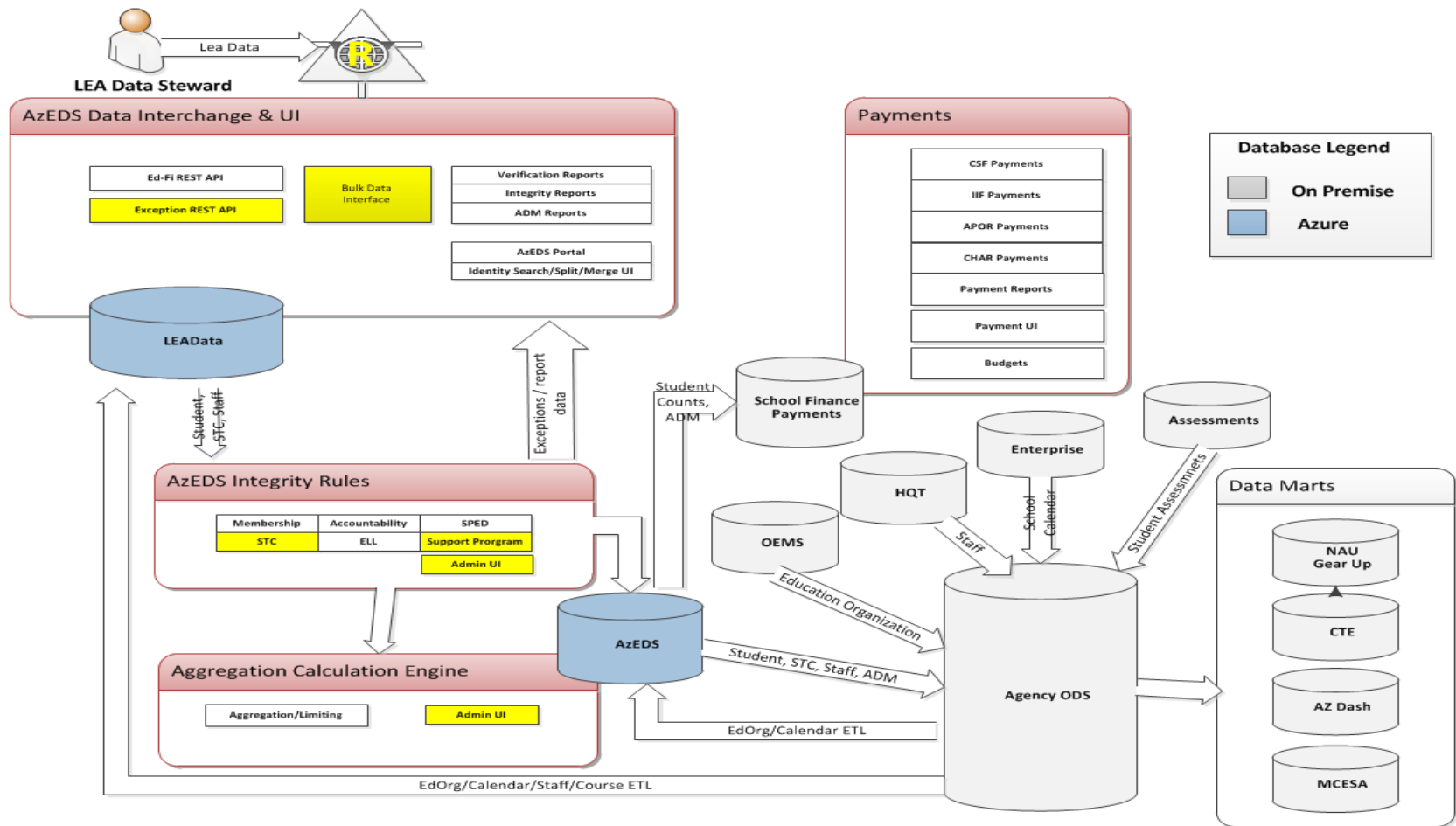
- Staff / HQT – applications currently pulling data directly and will streamline in future state
- STC in AzEDS
- Calendar (Enterprise)



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

# Thank You

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# AELAS Development Reference Slides





# Single-source Agency data/decommission legacy

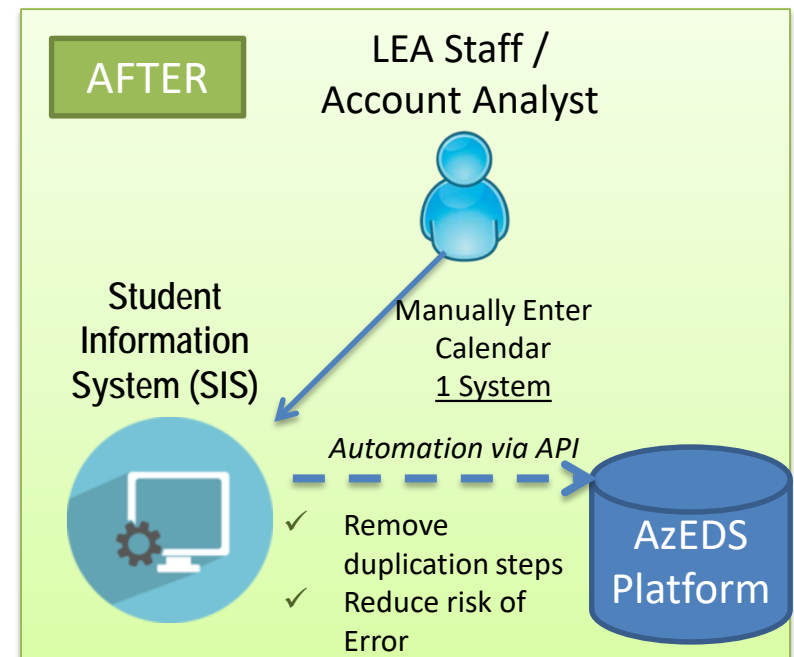
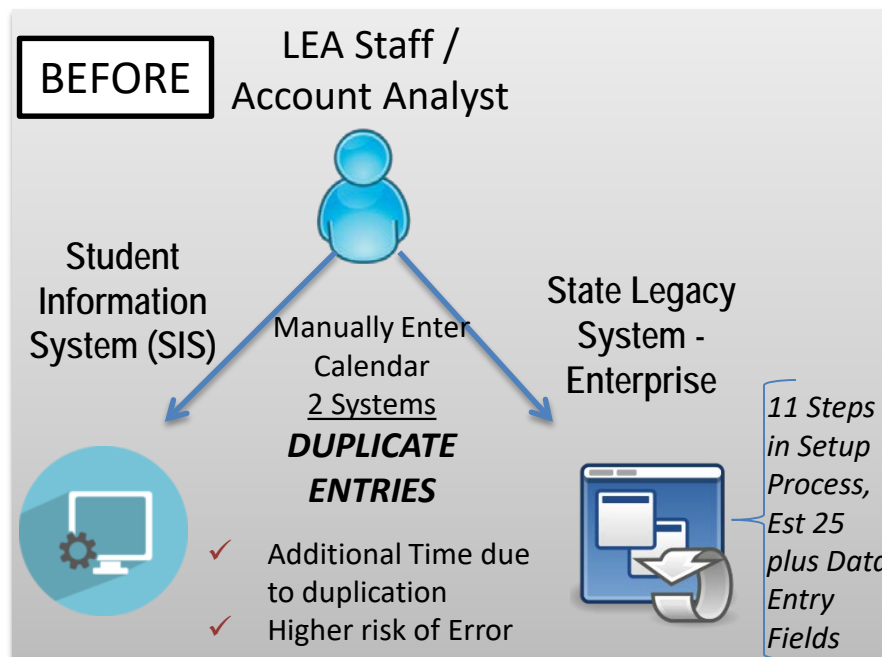
## \$700,000

- 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**

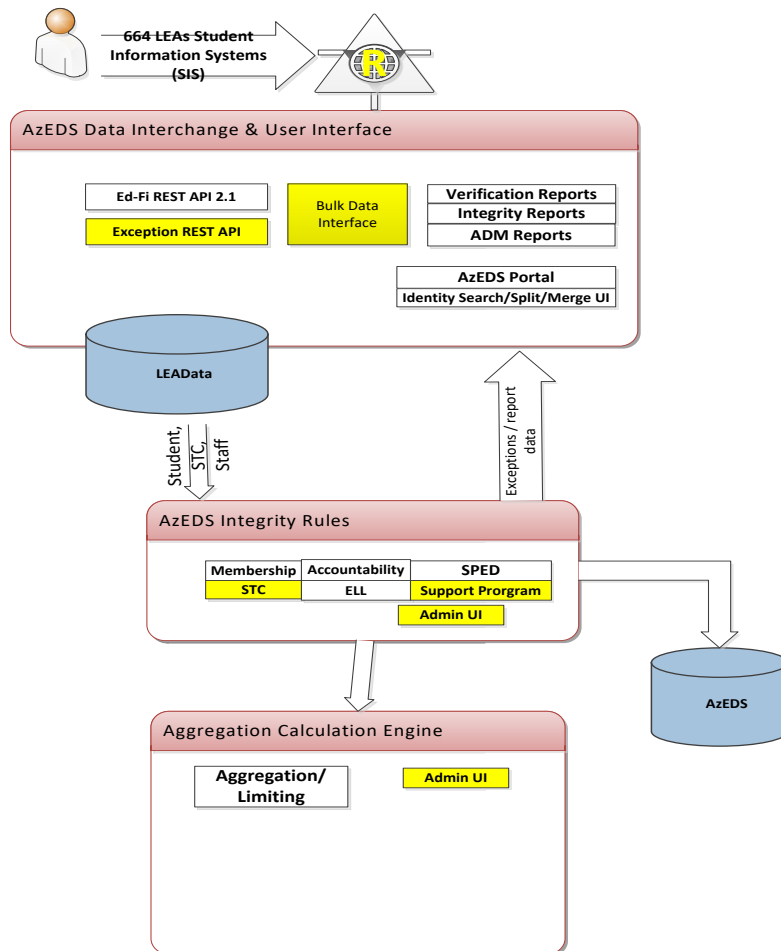
- Develop new user interface for LEAs to self service their entity organization and contact information
- Develop workflows to enable ADE staff to approve, and lock down, the changes submitted by LEAs

# 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

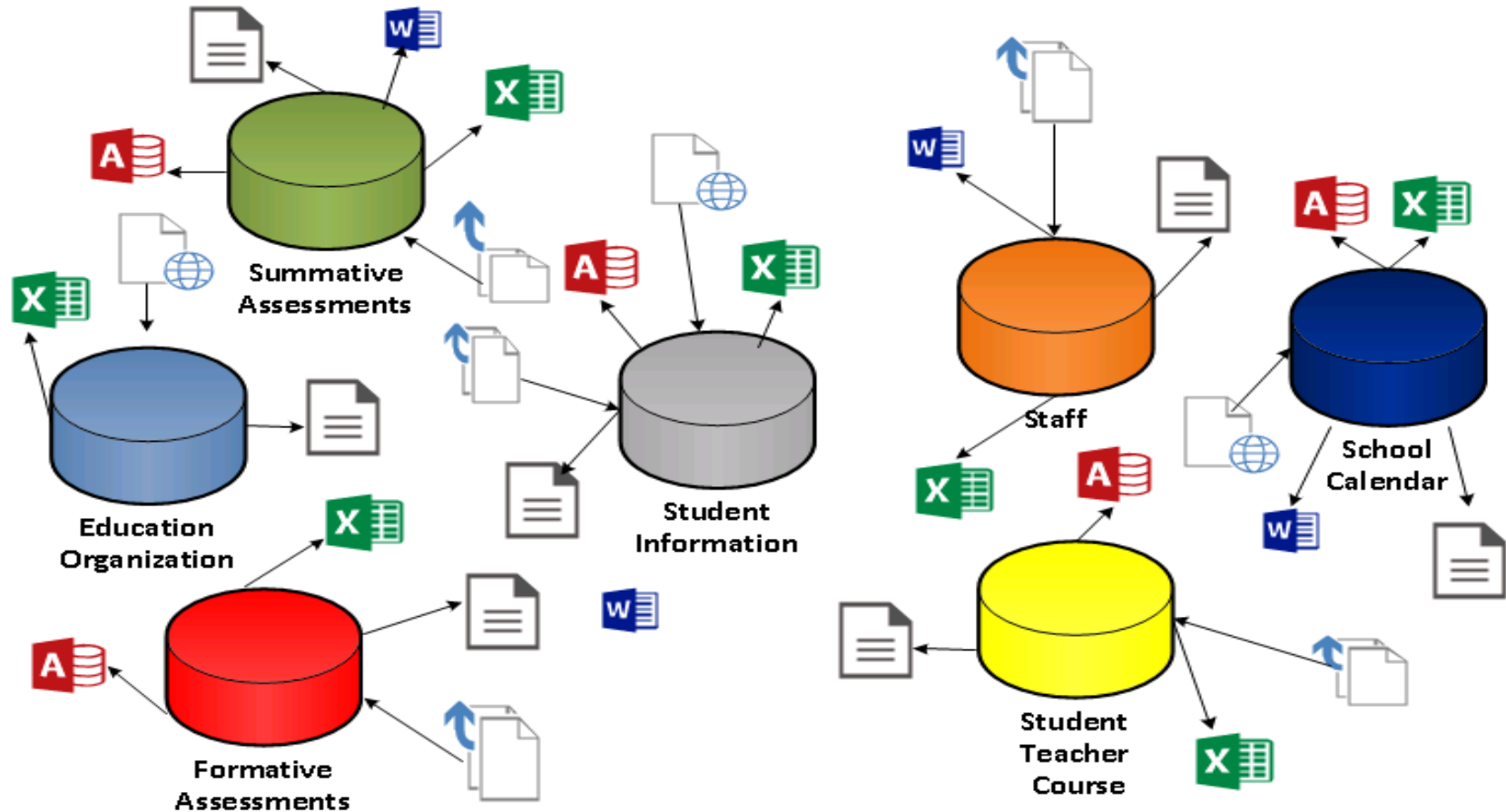
# Components of AELAS

## AzEDS



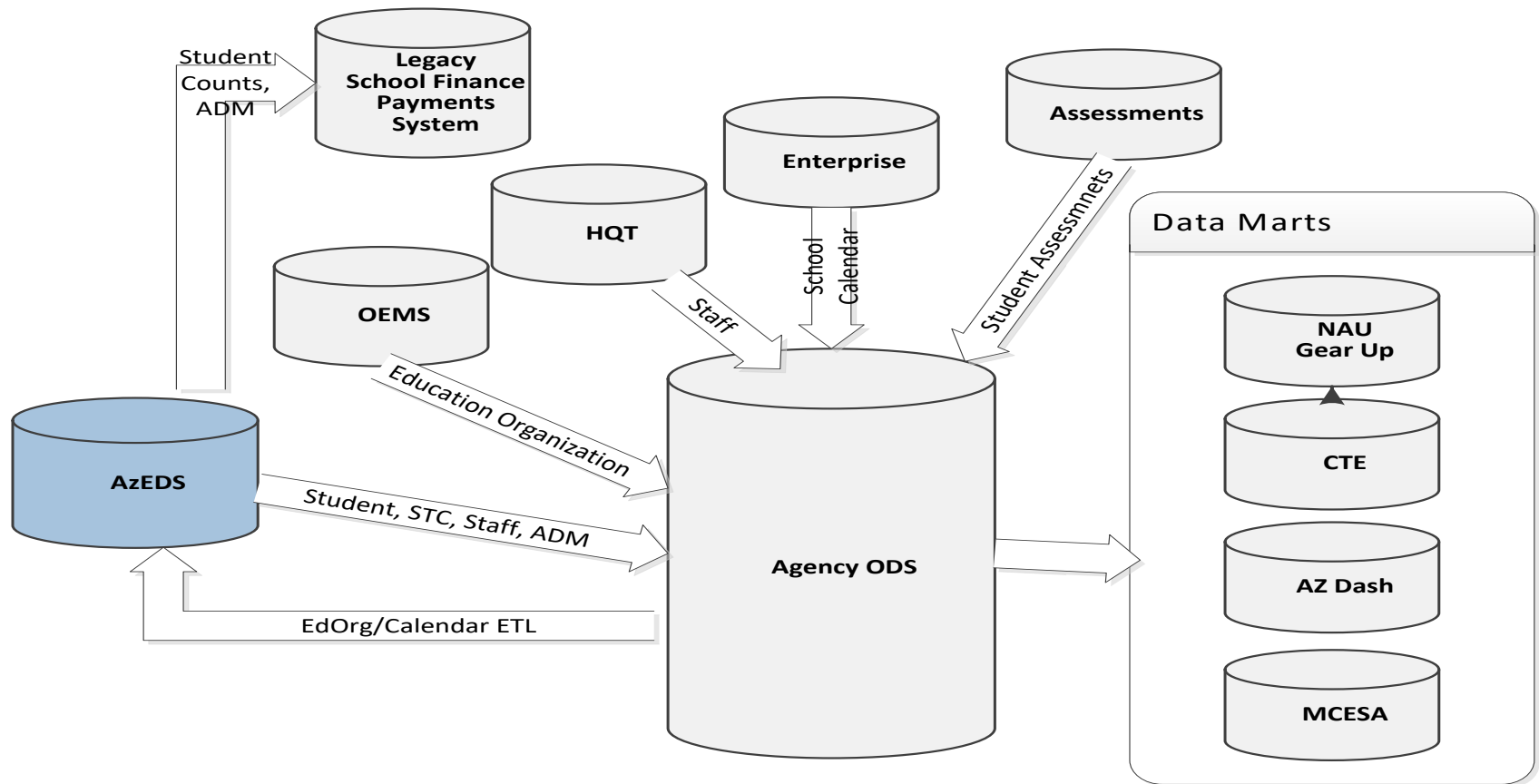
- 4-10M transactions daily
- Returned \$40M back to the State due to accuracy of systems and rules
- Returns \$40M each and every year going forward

# Components of AELAS Operational Data Store



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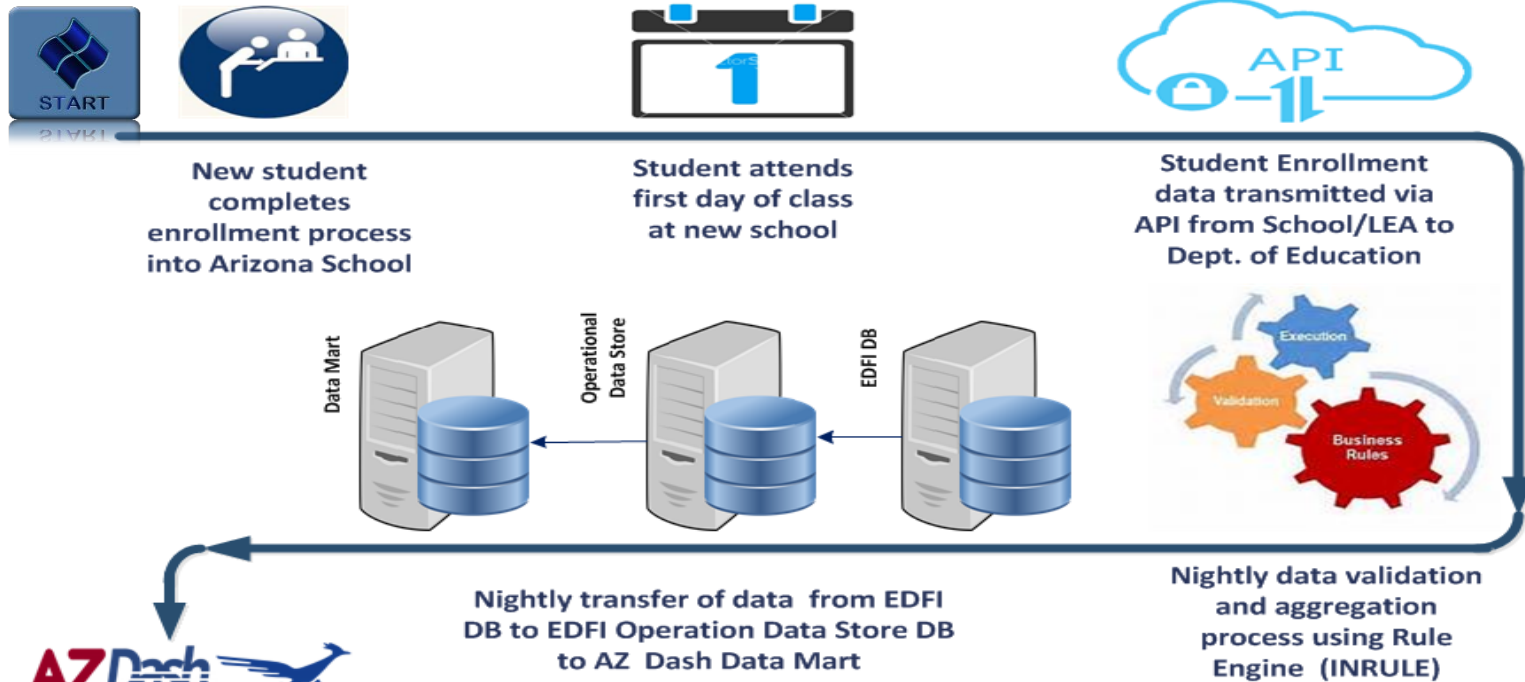
Our design and implementation to-date and with continued investment will remove these silos.





# Components of AELAS

## AZDash



- 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:

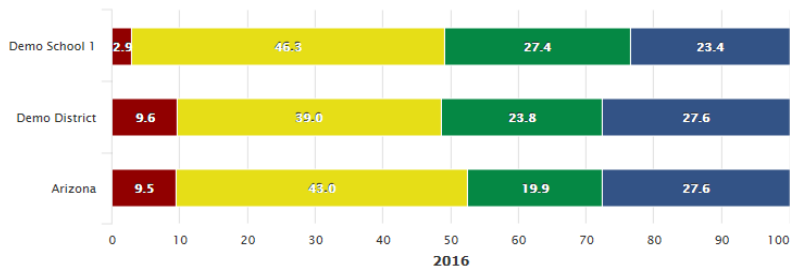
## My Schedule: 2016-2017

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

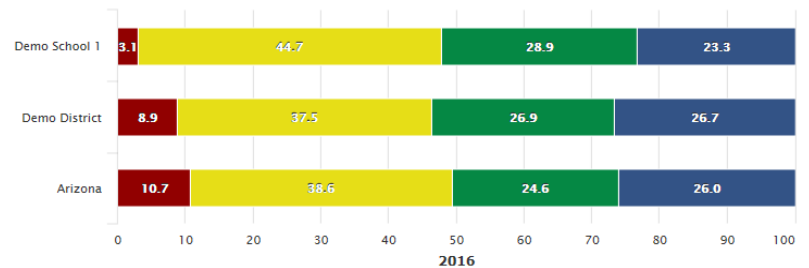
## Assessment Results



AzMERIT ELA %



AzMERIT Math %



# Components of AELAS School Finance payment system

