TSTC Data and Analytics Architecture

System of Record
Regulatory Audit

ERP System of Record
- Data Duplication for
Reporting/Audit

Integration Layer

Data Hub
Semantic Layer 1

Data Warehouse
Semantic Layer 2

Tableau and RStudio
Semantic Layer 3

Storyboard software
Semantic Layer 4

Early Alert System

Salesforce

SAS Concur Travel Expenses

SPOL

Workday Adminstration Information System
Finance/HR/Student Enrollment

API

EIB

API

EIB

Workday Studio

USAS

THECB

Prism

Maintaining data in multiple storage systems costs time and money.

Data Lake

Data Lakehouse

*The **Snowflake** data lakehouse can handle unstructured, structured, and semi-structured data, such as JSON and XML.*

Student Enrollment Data

State Reporting DataMart

Student Enrollment Data Mart

Student Section Data Mart

Faculty Vitality Data Mart

__Fact <> Truth__ : The truth of information is always multidimensional. Here we can introduce the truth and better understand it.

System of Record (SOR):A system of record is the authoritative data source for a given data element (fact) or transactional piece of information.

Colleague

Asset File

Building File

Informer

DBaaS

Cloud Data Warehouse DBaaS

Budget Vitality Data Mart

Financial Investments Data Mart

Financial Predictives Data Mart

Financials Data

Canvas LMS

iPeds/BLS

Internal Data Sources (Canvas)

External Data Sources

TWC

Denodo On-Prem Integration Agent

Data Warehouse Data Cubes. Our data facts and dimensions and our data calcuations and data assumptions defined.

Denodo Cloud Data Model Agent

Employment Data

Student Recruitment Data

Grants Data

HR Trends Data Mart

HR Pipeline Data Mart

CMO campaigns and targets

Diagram Color Key
- On Prim Apps
- Cloud SaaS
- OIT managed ETL
- ODA managed datasets
- Level 4 semantic datasets

Having all of our data in a single place not only gives us complete ownership over all of our data, but we can also perform more profound analyses. It also means that we can easily move to a different analytics tool at any time because we can import all our historical data.

Here we begin to get a complete picture of the data facts and dimensions as a whole. Curating both structured and unstuctured data.

Denodo Platform

Data Virtualization	Design Tools	**Publish** Real-time (Right-time) Data Services	Monitoring
	Optimizer	**Combine** Transform, Improve Quality, Integrate	Governance
	Cache	**Connect** Normalized Views of Disparate Data	Metadata
	Scheduler		Security

R-Studio

Tableau

__How do we measure retention?__

__What's our overall retention rate?__

__What behaviors in a user's first term indicate they're likely to be a completion?__

__What is the value of a completion versus a leaver to the funding formula?__

SOR Colleague
APPL.ADMIT.COUNTY

1. Defined Data Point :
APPL ADMIT COUNTY
values like
031,050,070,161,227

2. Model of Facts and Dimensions :
APPLICATION ADMITTED COUNTY
values need to be clear and link to our
View_College_Institution dimension as well as
View_Texas_MSA_Population_By_County so
Cameron,Coryell,Ellis,Matagorda, Travis

3. Cubes of Facts :
APPLICATION ADMITTED
APPLICATION NOT ADMITTED
APPLICATION ATTEMPTED
APPLICATION STATUS
APPLICATION RANK
Dimensions :
Application :
APPLICATION ADMITTED COUNTY
Applicant :
APPLICANT HS GPA
APPLICANT HOME ADDRESS COUNTY
Dimension :
Texas_County_Dimensions
POPULATION
GASPRICES

Student Recruitment Data Cube

4. Information with Facts :
APPLICATION ADMITTED
APPLICATION STATUS
Dimensions :
Application :
APPLICATION ADMITTED COUNTY
Applicant :
APPLICANT HS GPA
Dimension :
Texas_County_Dimensions
GASPRICES

CMO campaigns and targets

Dimensional Views

General Cubes

Functional Cubes