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Introduction

The purpose of this job aid is to provide an explanation of dimensional data modeling and of using dimensions and facts to build analyses within the Account Payables Subject Areas.

Dimensional Data Model

The dimensional model is comprised of a fact table and many dimensional tables and is used for calculating summarized data. Since Business Intelligence reports are used in measuring the facts (aggregates) across various dimensions, dimensional data modeling is the preferred modeling technique in a BI environment.

STARS - OBI data model is based on Dimensional Modeling. The underlying database tables are separated as Fact Tables and Dimension Tables. The dimension tables are joined to fact tables with specific keys. This is usually called Star Schema.

The star schema separates business process data into facts, which hold the measurable, quantitative data about a business, and dimensions which are descriptive attributes related to fact data.

Examples of fact data include AP Amount, expense amount, transaction amount etc.

Related dimension attribute examples include Department, Fund, SID, time etc.

Fact Tables:

Fact tables record measurements or metrics for a specific event. Fact tables generally consist of numeric values and foreign keys to dimensional data where descriptive information is kept. Fact tables are designed to a low level of uniform detail (referred to as "granularity" or "grain"), meaning facts can record events at a very atomic level. This can result in the accumulation of a large number of records in a fact table over time. Fact tables are generally assigned a surrogate key to ensure each row can be uniquely identified.

Dimension Tables:

Dimension tables have a relatively small number of records compared to fact tables, but each record may have a very large number of attributes to describe the fact data. Dimensions can define a wide variety of characteristics, but some of the most common attributes defined by dimension tables include

- Time
- Employee



Department

Dimension tables are generally assigned a surrogate primary key, usually a single-column integer data type, mapped to the combination of dimension attributes that form the natural key.

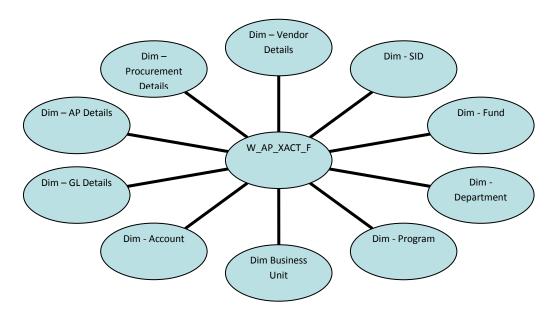
Star Schema:

Star schemas are optimized for querying large data sets and are used in data warehouses and data marts to support OLAP cubes, business intelligence analytic applications, and ad hoc queries.

Within the data warehouse or data mart, a dimension table is associated with a fact table by using a foreign key relationship. The dimension table has a single primary key that uniquely identifies each member record (row). The fact table contains the primary key of each associated dimension table as a foreign key. Combined, these foreign keys form a multi-part composite primary key that uniquely identifies each member record in the fact table.

The Fact Table name in **STARS - OBI** Subject Areas is usually preceded with the name **FACT.** This is done to distinguish the Fact tables from the Dimension Tables.

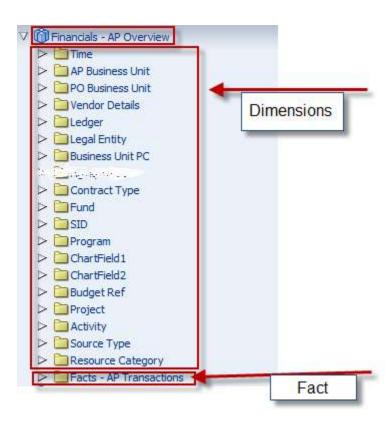
In the example provided below, the underlying Dimension Tables in this Subject Area are joined to the Fact table to form the star schema.





Subject Area:

A subject area contains folders; attribute columns (Dimensions) and measure columns (Facts) that represent information about the areas of an organization's business or about groups of users within an organization. Subject areas usually have names that correspond to the types of information that they contain, such as Financials – AP Overview, Financials – AP Holds, Financials – AP Voucher Accounting, Financials – AP Voucher Line Distrib Details, Financials – AP Voucher XRef Payments, etc.



There are common **Dimensions Tables** across Financial Subject Areas such as Time, Ledger and Chartfields. These common Dimensions are followed by Subject Area specific Dimensions such as GL Details, AP Details, AR Line Details and Fixed Assets Details. There are **FACT Tables** across specific Subject Areas.



Financial Subject Areas

Account Payables Subject Areas

The Account Receivables is the area where we keep track of organizational Invoice Aging, Item Billing and Payments that happen in a life of an Item. It is used to know amount needs to be received from the customer and the time it took. The Account Receivables are the master subject areas that have the information posted to them from different sources like Item, Item Activity, Item Billing, Payments, Direct Journals and Invoice Aging etc...

There are five subject Areas in STARS that represent the Accounts Payable module in CORE-CT.

- Financials AP Overview Subject Area
- Financials AP Holds Subject Area
- Financials AP Voucher Accounting Subject Area
- Financials AP Voucher Line Distrib Details Subject Area
- Financials AP Voucher XRef Payments Subject Area

Financials – AP Overview: This is a summary subject area that provides the ability to report on payment performance, supplier balances, due and overdue balances.

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Financials – AP Holds: This is a subject area that provides insight into holds placed and released and discounts and to what extent the organization is taking advantage of them.

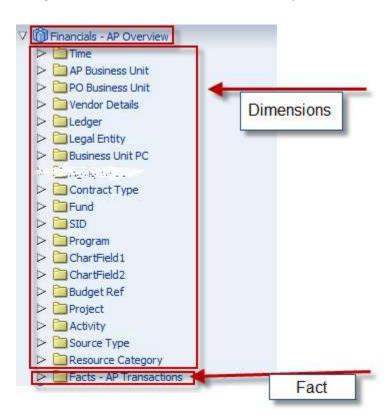
Financials – AP Voucher Accounting: This subject area includes all the metrics related to Voucher Accounting such as Voucher Distribution, Voucher, and Voucher Line etc.

Financials – AP Voucher Line Distrib Details: This subject area includes all the metrics related to Voucher Distrib Line such as Voucher Distribution Line Num, Voucher, and Voucher Line etc

Financials – AP Voucher XRef Payments: This subject area includes both Voucher and Payment metrics such as Payment ID, Remit SetID, Invoice Amount, Paid Amount, and Outstanding Amount.



Using Dimensions and Facts to create an analysis:



These objects in the left pane are based on database tables in the backend and the data model behind these subject area tables is dimensional modeling.

The tables listed from Time, Ledger and Business Unit through Resource Category are the **Dimension Tables** in this subject area.

There is one Fact table for this Subject Area and it is called **Facts – AP Overview**. The Fact Table name in STARS subject areas is usually preceded with the name **FACT**. This is done to distinguish the Fact tables from the Dimension Tables.





Here is an example of the **Financials – AP Overview** Subject Area analysis:

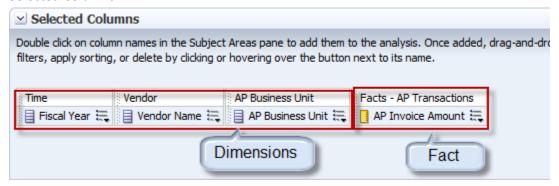






Criteria Tab

Selected Columns



Selected Filters





Results Tab

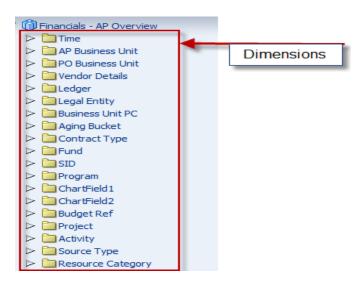
Fiscal Year	AP Business Unit	Vendor Name	AP Invoice Amount
2017	AESM1	A1 AFFORDABLE SEAMLESS GUTTERS LLC	450.00
2017	AESM1	ACADIANA AVIARIES	274.00
2017	AESM1	ADVANCED CORPORATE NETWORKING	5,187.30
2017	AESM1	AMERICAN MUSEUM OF NAT'L HISTORY	200.00
2017	AESM1	ARGUS ELECTRONIC GMBH	780.16
2017	AESM1	AUTOMATED LOGIC NEW ENGLAND	9,332.50
2017	AESM1	BDA SERVICES	762.00
2017	AESM1	CONNECTICUT TICK CONTROL LLC	8,480.00
2017	AESM1	CONNECTICUT WING CIVIL AIR PATROL	6,345.00
2017	AESM1	DEPARTMENT OF ENERGY & ENVIRONMENTAL	200.00
2017	AESM1	DEPT OF ADMINISTRATIVE SERVICES	65,750.31



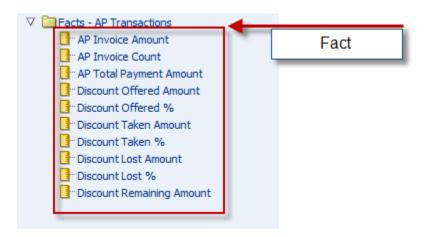
Financials – AP Overview Subject Area:

The Financials – AP Overview is a summary subject area that provides the ability to report on payment performance, supplier balances, due and overdue balances.

AP Overview Dimension:



AP Overview Fact:



Fact - Measure Definitions:

AP Invoice Amount: This metric is the amount on the invoice from the supplier(s).

AP Invoice Count: This metric is a count of invoices from the supplier(s).



AP Total Payment Amount: This metric shows the total payments posted in the system against all suppliers. This can be analyze by individual suppliers as well as plotted against time for trending.

Discount Offered Amount: This metric measures the total discount amount offered for the current period

Discount Offered %: This metric measures the total discount amount that is currently offered against the total invoice amount for the current period

Discount Taken Amount: This metric measures the total discount amount that was taken for the current period

Discount Taken %: This metric measures the total discount amount that was taken against the total invoice amount for the current period

Discount Lost Amount: This metric measures the total discount amount that was lost in the current period

Discount Lost %: This metric measures the total discount amount that was lost against the total invoice amount for the current period

Discount Remaining Amount: This metric shows the remaining discount amount in the current period.

When we try to build a report out of multiple areas in Payments like Invoice amount, Payment Amount and discounts applied, we need to use the AP Overview Subject area as it has all the details.

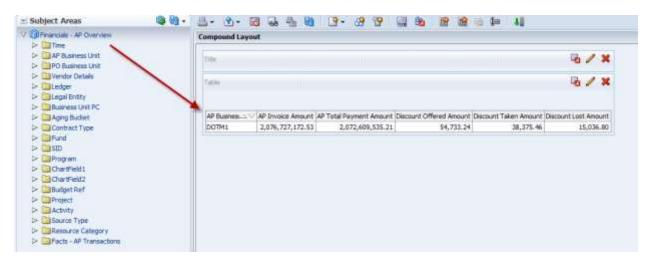


Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Table views on the Compound Layout.



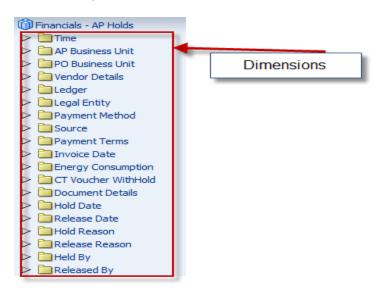


Financials – AP Holds Subject Area:

This is a subject area that provides insight into holds placed and released and discounts and to what extent the organization is taking advantage of them.

So if we are developing reports based on invoices on hold and days in hold applied data based reports we would use AP Holds Subject Area.

AP Holds Subject Area Dimensions.



AP Holds Subject Area Fact:





Fact - Measure Definitions:

Average Days on Hold: This metric measures the average number of days that invoices are on hold

AP Hold Count: This metric shows the total count of invoices that are currently on hold.

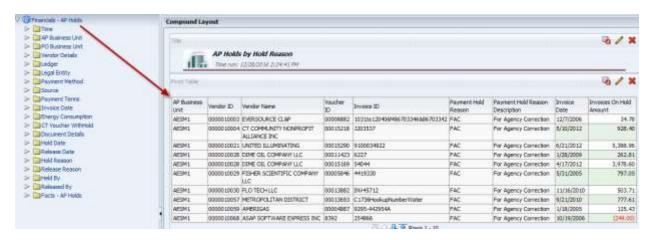
AP Hold Count by Invoice: This metric shows the total count of invoices that are currently on hold per each invoice.

Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Pivot Table views on the Compound Layout.



Dashboard View:





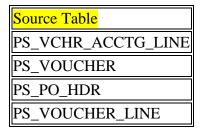
Financials – AP Voucher Accounting Subject Area:

This subject area includes all the metrics related to Voucher Accounting such as Voucher Distribution, Voucher, and Voucher Line etc.

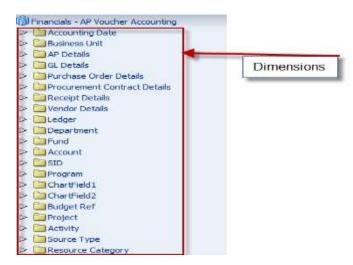
These entries are the complete AP sub-system entries including AP offset, charges and cash entries. This subject area contains detailed AP voucher information before it is summarized in the General Ledger

So if we are developing reports to show AP Amount by Voucher Accounting we use AP Voucher Accounting Subject Area.

It sources data from following tables in CORE.

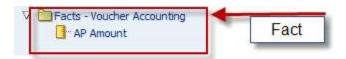


AP Voucher Accounting Dimensions.





AP Voucher Accounting Fact:



Fact - Measure Definitions:

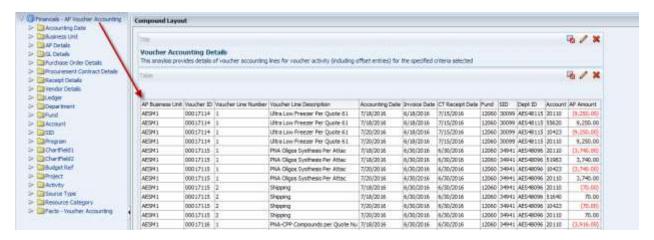
AP Amount: This metric shows the Amount from Voucher Accounting Details. It refers to Monetary_amount from PS_VCHR_ACCTG_LINE from CORE.

Example:

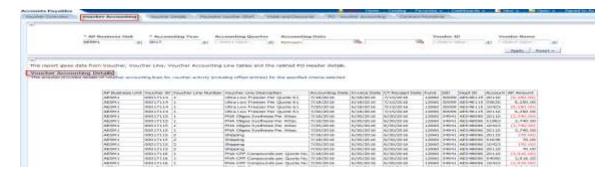
Compound Layout View:

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This is an example of Title and Table views on the Compound Layout.



Dashboard View:

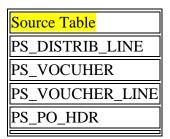




Financials – AP Voucher Line Distrib Details Subject Area:

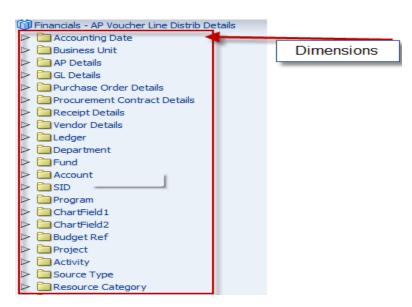
This subject area includes all the metrics related to Voucher Distribution Line such as Accounting Distribution Details, Voucher ID, Voucher Line, Disrib Line Number, Account, Fund, SID, etc.

It sources data from following tables in CORE.



So if we are developing reports to show AP Amount by Accounting Distribution Line level we use the AP Voucher Line Distrib Details Subject Area.

AP Voucher Line Distrib Details Dimensions:



AP Voucher Line Distrib Details Fact:





Fact - Measure Definitions:

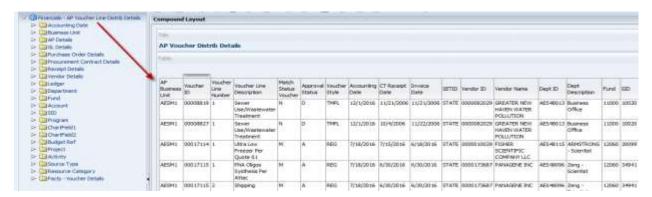
AP Amount: This metric gives AP Amount at Voucher Distribution Line level. It refers to Monetary Amount from PS_DISTRIB_LINE.

Example:

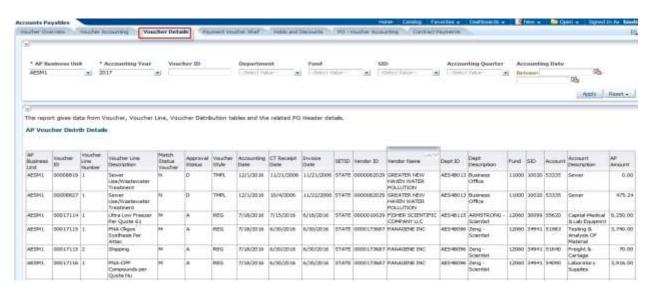
Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Table views on the Compound Layout.



Dashboard View:



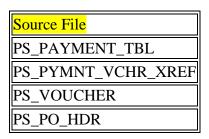


Financials – AP Voucher XRef Payments Subject Area:

This subject area includes all the metrics related to Voucher and Payment Details such as Payment ID, Remit Set ID, Paid Date, Invoice Date, Voucher ID, Voucher Style, etc.

This subject area contains AP Amount from the Payment Side.

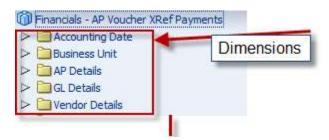
It sources data from following tables in CORE.



So if we are developing reports to show Paid Amount, Paid Date and Invoice Date related fields we would use the AR Item Distribution Subject Area.

Here we can find both Voucher Amount, Payment Amount and outstanding amounts.

AP Voucher XRef Payments Dimensions.



AP Voucher XRef Payments Facts.





Fact - Measure Definitions:

AP Invoice Amount: This metric is the amount on the invoice from the supplier(s).. It refers to Merchandise_amt from PS_Voucher.

AP Total Payment Amount: This shows the total payments posted in the system against all suppliers. This can be analyze by individual suppliers as well as plotted against time for trending. It refers to Paid_amt from PS_PYMNT_VCHR_XREF.

AP Total Outstanding Amount: This is the difference between AP invoice Amount and AP Total Payment Amount.

Discount Offered Amount: This metric measures the total discount amount offered for the current period.

Discount Taken Amount: This metric measures the total discount amount that was taken for the current period.

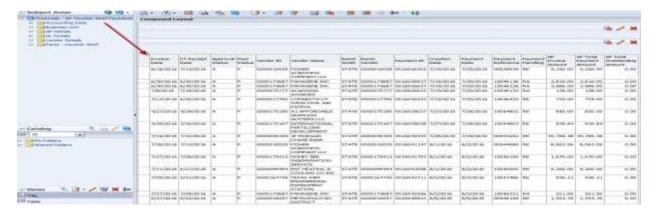
Discount Lost Amount: This metric measures the total discount amount that was lost in the current period.

Example:

Compound Layout View:

Compound Layout view allows us to assemble different views for display on a dashboard.

This is an example of Title and Table views on the Compound Layout.







Dashboard View:

