



Account Receivables Dimension and Fact Job Aid

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Account Receivables Dimension and Fact Job Aid

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 Receivables 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 budget 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



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- 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.

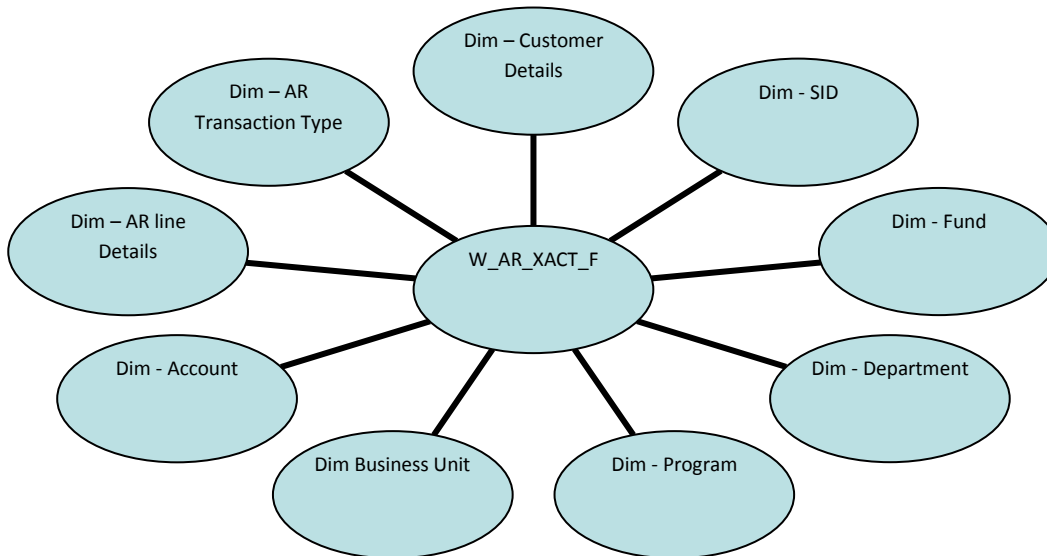
Star Schema:

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.

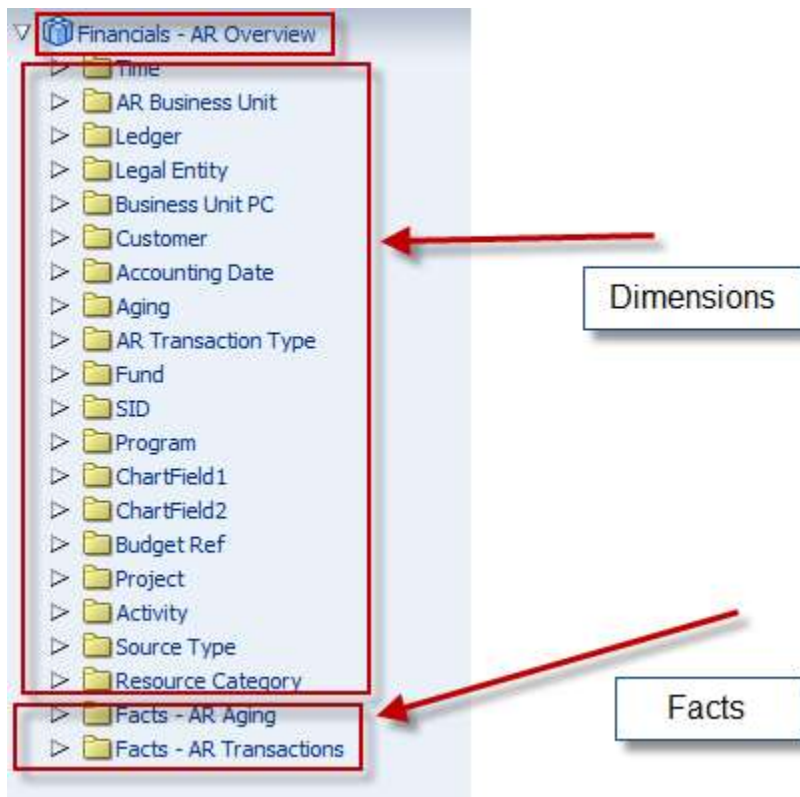
In the example provided below, the underlying Dimension Tables in this Subject Area are joined to the Fact table to form the star schema.



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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 – AR Overview, Financials – AR Item Payments, Financials – AR Item Billing, Financials – AR Item Billing, 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.



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Financial Subject Areas

Account Receivables 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 Fixed Asset module in CORE-CT.

- **Financials – AR Overview** Subject Area
- **Financials – AR Invoice Aging** Subject Area
- **Financials – AR Item Activity** Subject Area
- **Financials – AR Item Billing** Subject Area
- **Financials – AR Item Payments** Subject Area
- **Financials – AR Item Distribution** Subject Area
- **Financials – AR Payments Direct Journals** Subject Area

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

Financials – AR Invoice Aging: This is a detailed subject area that provides summary aging balances as well as ability to drill down to invoice transactions. Provides aging analysis from two different perspectives, one with respect to invoice date and the other one with respect to payment due date. The one with payment due date provides analysis of cash flow expected by those due dates. This subject area also provides due and overdue balances aged by predefined buckets. Further this subject area provides ability to drill down from these aging balances to invoice transactions.

Financials – AR Item Activity: This subject area includes all the metrics related to Item Activity such as Item Status, Item, and Item Line etc.

Financials – AR Item Billing: This subject area includes AR Amount related to Item Billing activity with respect to Account, Fund, SID, and other chart fields etc.

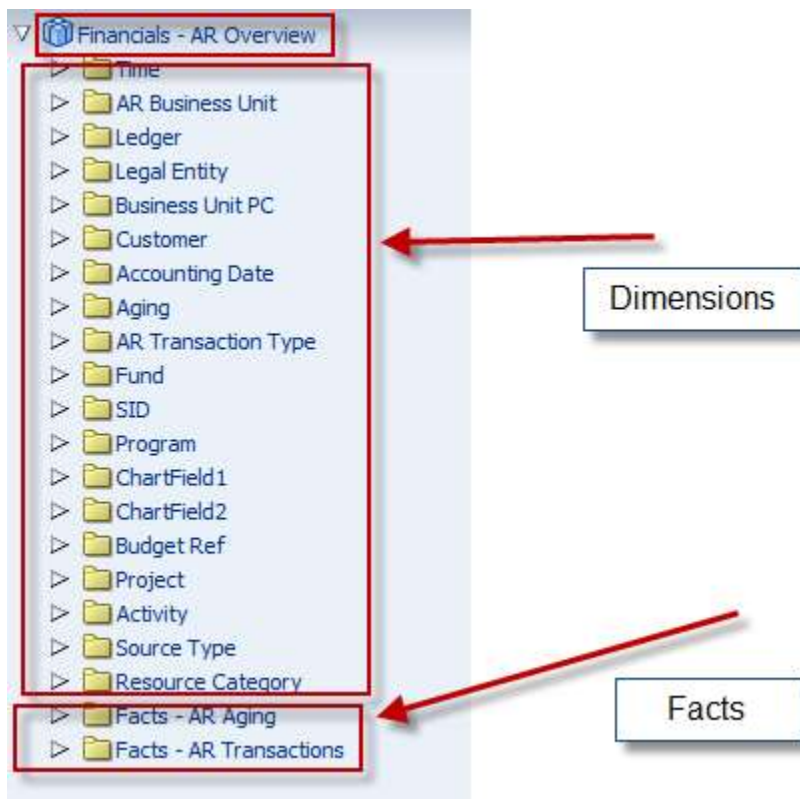
Account Receivables Dimension and Fact Job Aid

Financials – AR Item Payments: This subject area includes AR Amount metric related to Payment with respect to Payment ID, Bank Info.

Financials – AR Item Distribution: This subject area includes AR Amount metric related to Item Distribution activity with respect to Account, Fund, SID, and other chart fields etc.

Financials – AR Payments Direct Journals: This subject area includes AR Misc Pay Amount related to Item Miscellaneous payments that applied directly to journals with Payment and Distribution Sequence numbers.

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.

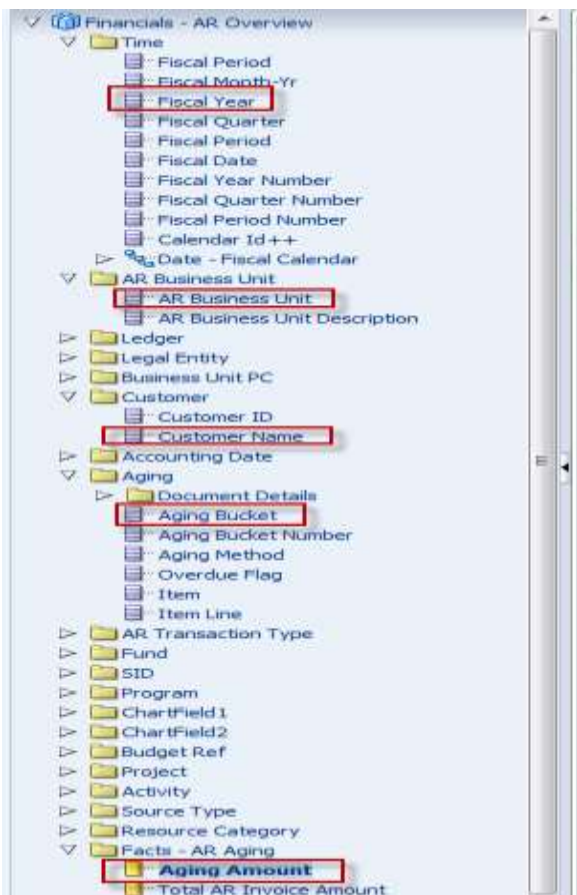
The tables listed from Time, Ledger and Business Unit through Resource Category are the **Dimension Tables** in this subject area.



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There is one Fact table for this Subject Area and it is called **Facts – AR 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 a **Financials – AR Overview** Subject Area analysis:





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Criteria Tab

Selected Columns

Selected Columns

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop columns to reorder them. Esc sorting, or delete by clicking or hovering over the button next to its name.

Time	AR Business Unit	Customer	Aging	Facts - AR Aging
Fiscal Year	AR Business Unit	Customer Name	Aging Bucket	Aging Amount

Dimensions
Fact

Selected Filters

Filters

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane after selecting its name in the catalog pane.

▼ Fiscal Year **is equal to / is in 2016**
AND ▼ AR Business Unit **is equal to / is in AESM1**

Results Tab

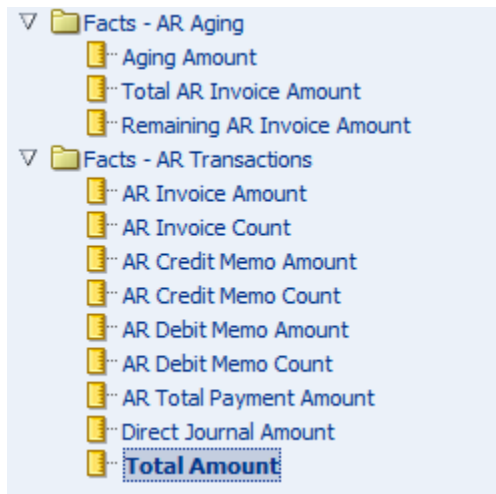
Fiscal	AR Business Unit	Customer Name	Aging Bucket	Aging Amount
2016	AESM1	California Dried Plum Board	31-60	26,516.50
2016	AESM1	California Dried Plum Board	Current	0.00
2016	AESM1	Center for Disease Control (CDC)	31-60	87,890.85
2016	AESM1	Center for Disease Control (CDC)	61-90	87,890.85
2016	AESM1	Center for Disease Control (CDC)	Current	87,890.85
2016	AESM1	Colorado State University	121+	360,643.50
2016	AESM1	Colorado State University	61-90	62,541.00
2016	AESM1	Colorado State University	91-120	31,270.50
2016	AESM1	Colorado State University	Current	(109,791.00)
2016	AESM1	Cornell University	121+	111,582.75
2016	AESM1	Cornell University	31-60	38,784.75
2016	AESM1	Cornell University	61-90	48,882.75
2016	AESM1	Cornell University	91-120	48,882.75
2016	AESM1	Cornell University	Current	(82,711.00)
2016	AESM1	Department of Agriculture	121+	215,679.42
2016	AESM1	Department of Agriculture	31-60	20,287.96
2016	AESM1	Department of Agriculture	61-90	50,191.41
2016	AESM1	Department of Agriculture	91-120	61,177.56
2016	AESM1	Department of Agriculture	Current	20,287.96



Account Receivables Dimension and Fact Job Aid

Financials – AR Overview Subject Area:

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



Fact - Measure Definitions(AR Aging)

Aging Amount : This metric shows open Amount from the customer. It is derived from Bal_amt column from PS_ITEM

Total AR Invoice Amount: This metric AR Invoice amount for each each invoice line item.

Remaining AR Invoice Amount: This metric shows the remaining balance at each invoice level after accounting for partial payments against each invoice line item. This is computed for only open invoice which are still not fully paid. The remaining amount will be equal to invoice amount if no payment is applied.

Facts Measure Definitions(AR Transactions)

AR Invoice Amount: This metric is the total amount of the invoice sent to the customer. It refers ORIG_ITEM_AMT from PS_ITEM when Type_code is 'INVOICE'.

AR Invoice Count: The count of invoices for the customer.

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AR Credit Memo Amount: This metric provides the value of Credit Memo Amount by summarizing all credit memo transactions.

AR Credit Memo Count: The count of credit memos issued for the customer.

AR Debit Memo Amount: This metric shows debit memo amounts issued to the customers.

AR Debit Memo Count: The count of debit memos issued for the customer.

AR Total Payment Amount: This shows total payments received from the Customers that includes both applied and unapplied against outstanding invoices.

Direct Journal Amount: This metric shows amount where pay misc flag is 'Y'. This is the amount that applied directly to journals.

Total Amount: This metric shows amount where pay misc flag is 'N'. This is the amount that applied to Payments.

When we try to build a report out of multiple areas in assets like Aging and Transactions. We need to use the AR Overview Subject area as it has all the details.

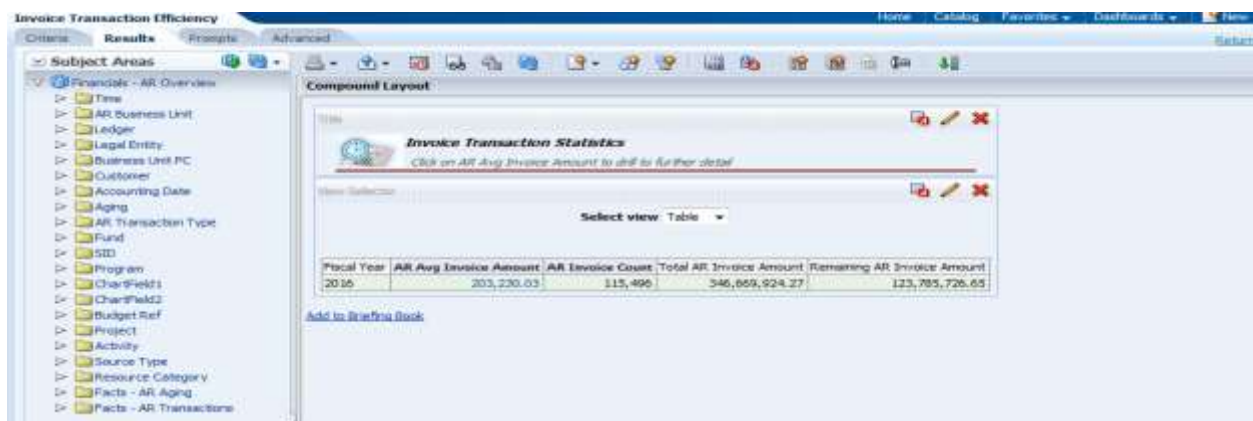
Example:

Compound Layout View:

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

This is an example of Title and View Selector on the Compound Layout.

View Selector gives users the option to choose a display of information from list of choices (View) presented to them.



The screenshot displays the 'Invoice Transaction Efficiency' dashboard. On the left, a 'Subject Areas' tree is visible, with 'Invoice - AR Overview' selected. The main area shows a 'Compound Layout' titled 'Invoice Transaction Statistics'. Below the title is a 'View Selector' set to 'Table'. The table contains the following data:

Fiscal Year	AR Avg Invoice Amount	AR Invoice Count	Total AR Invoice Amount	Remaining AR Invoice Amount
2015	203,230.03	115,496	346,659,924.27	123,785,726.65

Below the table is a link that says 'Add to Briefing Book'.

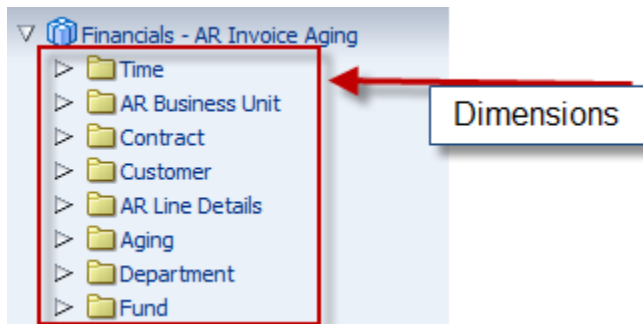
Account Receivables Dimension and Fact Job Aid

Financials – AR Invoice Aging Subject Area:

This is a detailed subject area that provides summary aging balances as well as ability to drill down to invoice transactions. Provides aging analysis from two different perspectives, one with respect to invoice date and the other one with respect to payment due date. The one with payment due date provides analysis of cash flow expected by those due dates. This subject area also provides due and overdue balances aged by predefined buckets. Furthermore, this subject area provides the ability to drill down from these aging balances to invoice transactions.

So if we are developing reports based on point in time aging snapshot data based reports we would use AR Invoice Aging Subject Area.

AR Invoice Aging Dimensions.



AR Invoice Aging Fact Measure:



Fact - Measure Definitions:

Aging Amount: This metric shows Open Amount from the customer. It is derived from Bal_amt column from PS_ITEM

Total AR Invoice Amount: This metric AR Invoice amount for each each invoice line item.

Account Receivables Dimension and Fact Job Aid

Remaining AR Invoice Amount: This metric shows the remaining balance at each invoice level after accounting for partial payments against each invoice line item. This is computed for only open invoices which are still not fully paid. The remaining amount will be equal to invoice amount if no payment is applied.

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 on the Compound Layout.



The screenshot shows the 'Compound Layout' view with the following pivot table data:

AR Business Unit Description	Customer ID	Customer Name	Total Amount	Future	Current	31-60	61-90	91-120	121+
State Comptroller's Office	OAG001	Attorney General	32.40		32.40				
State Comptroller's Office	OHA001	Office of Healthcare Advocate	376.00		376.00				
State Comptroller's Office	OSC001	Office of State Comptroller	14,073.33		14,046.32				27.01
State Comptroller's Office	OTT001	Office of State Treasurer	169.70		169.70				
State Comptroller's Office	PCA001	Probate Court Administration	4,786.29						4,786.29
State Comptroller's Office	TRB001	Teachers' Retirement Board	1,164.82		1,164.82				
State Comptroller's Office	UOC001	University of Connecticut	0.00						0.00
Grand Total			20,602.54		15,789.24				4,813.30

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Financials – AR Item Activity:

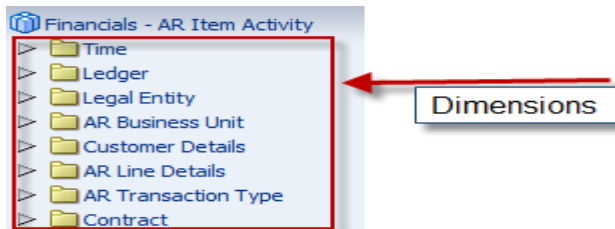
This subject area includes all the metrics related to Item such as Item Details, Item Status, AR Amount, etc.

So if we are developing reports to show AR Amount by Item Activity we use AR Item Activity Subject Area.

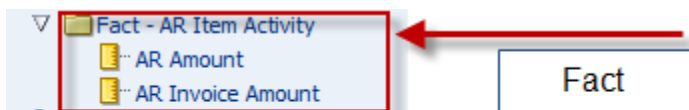
It sources data from following tables in CORE.

Source Table
PS_ITEM_ACTIVITY
PS_ITEM
PS_BUS_UNIT_TBL_AR
PS_BI_HDR
PS_BI_LINE
PS_GROUP_CONTROL
PSPRCSRQST
PS_ITEM_ACTIVITY_DISC

AR Item Activity Dimensions.



AR Item Activity Fact.





Account Receivables Dimension and Fact Job Aid

Fact - Measure Definitions:

AR Amount: This metric shows the original entry amount on PS_Item. It refers to ORIG_ITEM_AMT from PS_Item.

AR Invoice Amount: The total amount of the invoice sent to the customer. It refers ORIG_ITEM_AMT from PS_ITEM when Type_code is '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 Table View on the Compound Layout.

The screenshot shows a Compound Layout View with two components: a Title and a Table. Both components have a title bar with a refresh icon, an edit icon, and a delete icon. The Table component displays a table with the following data:

Item	Item Status	AR Amount
AES49	Closed	(54,895.50)
AES50	Closed	54,895.50
AES51	Closed	(33,157.55)
AES52	Closed	(99,513.10)
AES53	Closed	(32,965.00)
AES54	Closed	(19,133.25)
AES55	Closed	(79,549.50)
AES56	Closed	(20,900.00)
AES57	Closed	(7,204.75)
AES58	Closed	(5,723.50)
AES59	Closed	(54,895.50)
AES60	Closed	(31,270.50)
AES61	Closed	(10,098.00)
AES62	Closed	(19,941.90)
AES64	Closed	(31,270.50)
AES65	Closed	(26,516.50)
AES66	Closed	20,900.00
AES67	Closed	33,157.55

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Financials – AR Item Billing:

This subject area includes all the metrics related to Item such as Item Details, Item Status, AR Amount, Account, Fund, SID, etc.

It sources data from following tables in CORE.

Source Table
PS_BI_ACCT_ENTRY
PS_BI_LINE
PS_BI_HDR

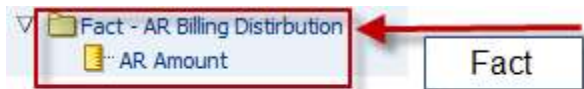
This subject area contains Fund, SID, Account related info as well.

So if we are developing reports to show AR Amount by Item Billing we use AR Item Billing Subject Area.

AR Item Billing Dimensions:



AR Item Billing Fact:



Account Receivables Dimension and Fact Job Aid

Fact - Measure Definitions:

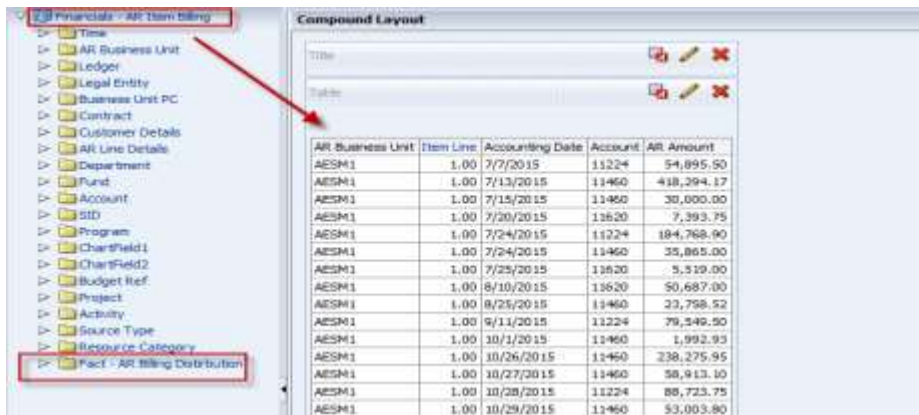
AR Amount: This metric gives Billing Amount. It refers to Monetary Amount from PS_BI_ACCT_ENTRY.

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 View on the Compound Layout.



AR Business Unit	Item Line	Accounting Date	Account	AR Amount
AESM1	1.00	7/2/2015	11224	54,895.50
AESM1	1.00	7/13/2015	11460	418,294.17
AESM1	1.00	7/15/2015	11460	30,000.00
AESM1	1.00	7/20/2015	11620	7,393.75
AESM1	1.00	7/24/2015	11224	184,768.90
AESM1	1.00	7/24/2015	11460	35,865.00
AESM1	1.00	7/25/2015	11620	5,519.00
AESM1	1.00	8/10/2015	11620	50,687.00
AESM1	1.00	8/25/2015	11460	23,798.52
AESM1	1.00	9/11/2015	11224	79,549.50
AESM1	1.00	10/1/2015	11460	1,992.93
AESM1	1.00	10/26/2015	11460	238,275.95
AESM1	1.00	10/27/2015	11460	58,913.10
AESM1	1.00	10/28/2015	11224	89,723.75
AESM1	1.00	10/29/2015	11460	53,003.80

Account Receivables Dimension and Fact Job Aid

Financials – AR Item Distribution:

This subject area includes all the metrics related to Item such as Item Details, Item Status, AR Amount, Account, Fund, SID, etc.

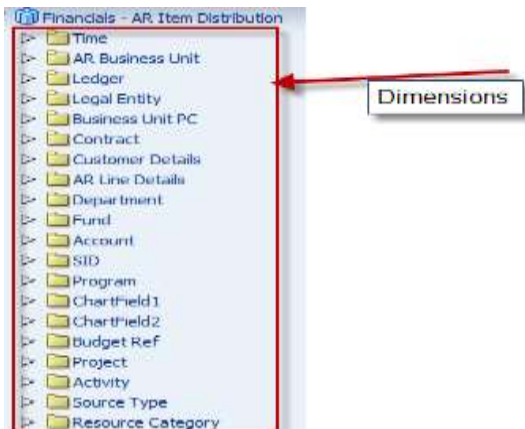
This subject area contains AR Amount at the distribution level as well.

It sources data from following tables in CORE.

Source File
PS_ITEM_DST
PS_ITEM_ACTIVITY
PS_ITEM
PS_BI_HDR
PS_BI_LINE

So if we are developing reports to show AR Amount by Item Distribution we use AR Item Distribution Subject Area.

AR Item Distribution Dimensions.



Account Receivables Dimension and Fact Job Aid

AR Item Distribution Facts.



Fact - Measure Definitions:

AR Amount: This metric gives amount from AR_XACT_F where type code is 'Distribution'. It refers to Monetary Amount from PS_ITEM_DST.

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 View on the Compound Layout.

AR Business Unit	Item	Item Status	Item Line	Item Descr	Account	AR Amount
AESM1	AES49	Closed	1.00		11224	(54,895.50)
AESM1	AES50	Closed	1.00		11224	54,895.50
AESM1	AES51	Closed	1.00	34915	11224	(33,157.55)
AESM1	AES52	Closed	1.00	34921	11224	(99,513.10)
AESM1	AES53	Closed	1.00	34928	11224	(32,965.00)
AESM1	AES54	Closed	1.00	34930	11224	(19,133.25)
AESM1	AES55	Closed	1.00	34913	11224	(79,549.50)
AESM1	AES56	Closed	1.00	34920	11224	(20,900.00)
AESM1	AES57	Closed	1.00	34940	11224	(7,204.75)
AESM1	AES58	Closed	1.00	34941	11224	(5,723.50)
AESM1	AES59	Closed	1.00	34938	11224	(54,895.50)
AESM1	AES60	Closed	1.00	34938	11224	(31,270.50)
AESM1	AES61	Closed	1.00	34920	11224	(10,098.00)
AESM1	AES62	Closed	1.00	34921	11224	(19,941.90)
AESM1	AES64	Closed	1.00	34938	11224	(31,270.50)
AESM1	AES65	Closed	1.00	34913	11224	(26,516.50)
AESM1	AES66	Closed	1.00	34920	11224	20,900.00
AESM1	AES67	Closed	1.00	34915	11224	33,157.55
AESM1	AES68	Closed	1.00	34930	11224	19,133.25
AESM1	AES69	Closed	1.00	34940	11224	7,204.75
AESM1	AES70	Closed	1.00	34941	11224	5,723.50
AESM1	AES71	Closed	1.00	34938	11224	54,895.50
AESM1	AES72	Closed	1.00	34938	11224	31,270.50
AESM1	AES73	Closed	1.00	34920	11224	10,098.00
AESM1	AES74	Closed	1.00	34921	11224	19,941.90
AESM1	AES76	Closed	1.00	34928	11224	31,270.50



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Financials – AR Item Payments:

This subject area includes all the metrics related to Item such as Item Payments, Bank info, Pay Flags, AR Amount etc.

This subject area contains AR Amount at the Payment level with pay and bank details.

It sources data from following tables in CORE.

Source Table
PS_PAYMENT
PS_DEPOSIT_CONTROL
PS_BUS_UNIT_TBL_AR

So if we are developing reports to show AR Amount by Item Payments with bank, Payment indicators we use AR Item Payments Subject Area.

AR Item Payments Dimensions.



AR Item Payments Fact.



Fact - Measure Definitions:

AR Amount: This metric gives amount from AR_XACT_F where type code is 'Payment'. It refers to Payment Amount from PS_Payment.

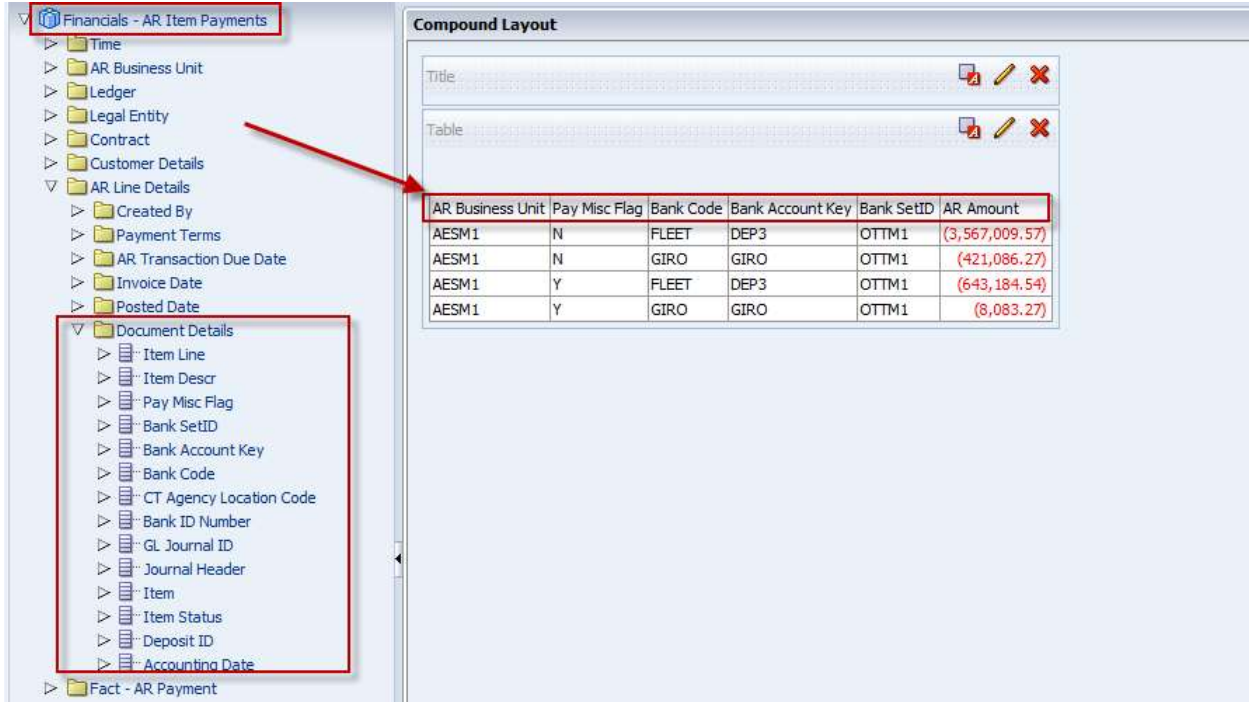
Account Receivables Dimension and Fact Job Aid

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 View on the Compound Layout.



AR Business Unit	Pay Misc Flag	Bank Code	Bank Account Key	Bank SetID	AR Amount
AESM1	N	FLEET	DEP3	OTTM1	(3,567,009.57)
AESM1	N	GIRO	GIRO	OTTM1	(421,086.27)
AESM1	Y	FLEET	DEP3	OTTM1	(643,184.54)
AESM1	Y	GIRO	GIRO	OTTM1	(8,083.27)

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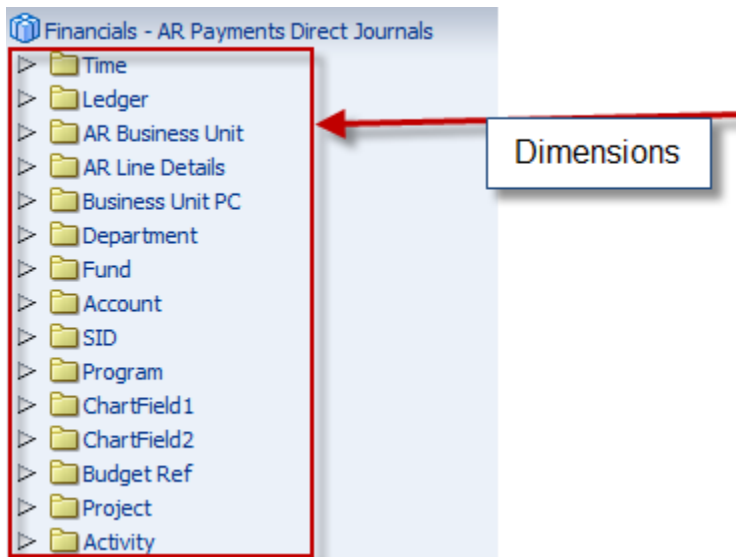
Financials – AR Payments Direct Journals:

This subject area includes metric related to MISC Payments or Miscellaneous deposits directly applied to journals.

This subject area contains Pay Miscellaneous Amount with Deposit, Payment and Distribution numbers.

So if we are developing reports to show Misc Pay Amount by Business unit, Fund, Account, SID, and other chart fields we would use the AR Payments Direct Journals Subject Area

AR Payments Direct Journals Dimensions.



AR Payment Direct Journals Facts.



Account Receivables Dimension and Fact Job Aid

Fact - Measure Definitions:

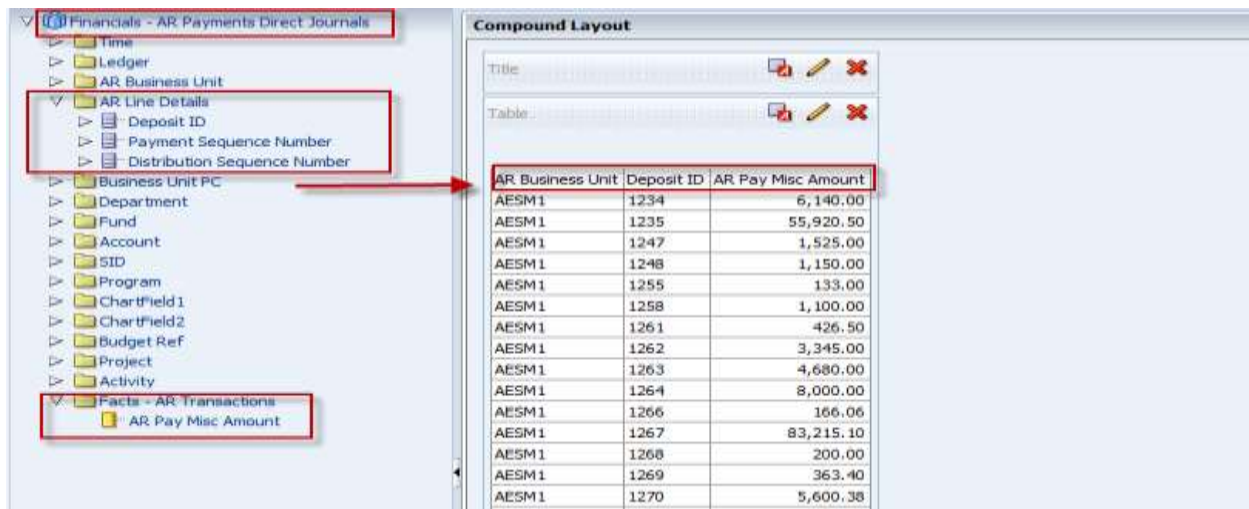
AR Pay Misc Amount: This metric is useful to determine the Direct deposit Amount that is posted directly to journals. This field is derived from MONETARY_AMOUNT column from PAY_MISC_DST in CORE.

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 View on the Compound Layout.



The screenshot displays the 'Compound Layout' interface. On the left, a tree view shows the following structure:

- Financials - AR Payments Direct Journals
 - Time
 - Ledger
 - AR Business Unit
 - AR Line Details
 - Deposit ID
 - Payment Sequence Number
 - Distribution Sequence Number
 - Business Unit PC
 - Department
 - Fund
 - Account
 - SID
 - Program
 - ChartField 1
 - ChartField 2
 - Budget Ref
 - Project
 - Activity
 - Facts - AR Transactions
 - AR Pay Misc Amount

On the right, the 'Compound Layout' shows a table view with the following data:

AR Business Unit	Deposit ID	AR Pay Misc Amount
AESM1	1234	6,140.00
AESM1	1235	55,920.50
AESM1	1247	1,525.00
AESM1	1248	1,150.00
AESM1	1255	133.00
AESM1	1258	1,100.00
AESM1	1261	426.50
AESM1	1262	3,345.00
AESM1	1263	4,680.00
AESM1	1264	8,000.00
AESM1	1266	166.06
AESM1	1267	83,215.10
AESM1	1268	200.00
AESM1	1269	363.40
AESM1	1270	5,600.38