ATHENA IT SOLUTIONS

Bridging the gap between big data and big decisions.

INFO 7290: Data Warehousing & Business Intelligence

BI & Data Integration

Final Team Project

Northeastern University

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BI Team Project: Requirements

- Contoso_Retail_BI_Test is a backup of the SQL Server schema with sample data to use for BI development

- Tasks:
  - Restore above database
  - Use above database for BI development & then switch to Contoso_Retail_BI when you have it loaded
  - Create Contoso_Retail_BI from Contoso_Retail_BI_Test

BI Team Project:
Requirements

Deliverables:

1. BI -- Develop BI Dashboards, Reports & Visualizations Sales (Channel) analysis
   - Online sales analysis
   - Sales Channel Analysis
   - Inventory analysis
   - ~~Sales quota analysis~~

2. DI -- Load data sources into DW
   - SOR: flat files, SQL Server, ~~Oracle~~, PostgeSQL & MySQL
   - DW: Microsoft Contoso Retail BI dataset (customized version) – SQL Server

BI Team Project:
Deliverables - BI

BI Tools:

- Tableau
- Qlik
  - Qlik Sense
  - QlikView (Optional)
- Microsoft BI
  - PowerBI
  - PowerPivot, PowerView, PowerMap, Excel 2103 (Optional)

Deliverables:

- Dashboards with visualization for each analysis & for each BI tool
- Comparison of each tool – key differences – strengths & weaknesses

BI Team Project:
Deliverables - DI

Data Integration Tools:

- Talend Enterprise Data Integrator

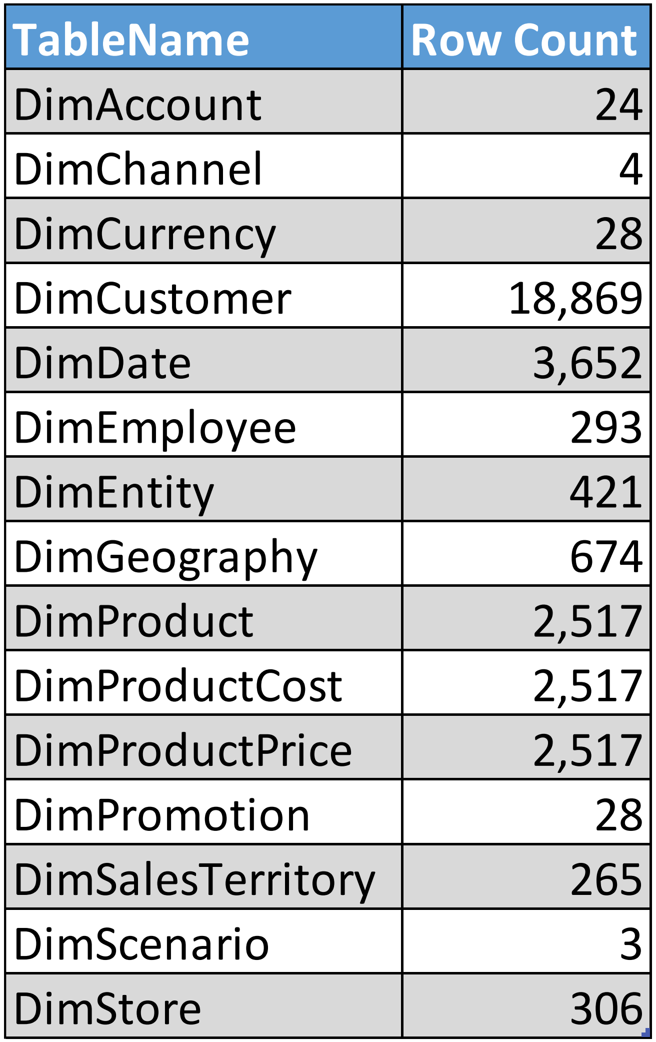
Deliverables:

- Load DW from data sources
  - Document all jobs
  - Provide load statistics
  - Provide analysis of load jobs using one of BI tools used in this projecy
- Handle data quality & error messages
  - Document error handling results
- Load rejection records
  - Track reasons for rejections
  - Provide analysis of rejections & reasons using one of BI tools used in this project

- Note:
  - Follow project standards

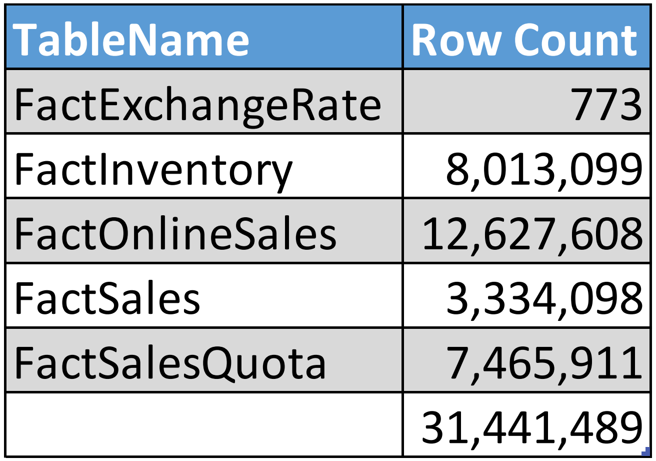
BI Team Project:

Requirements - Contoso – Fictional Retail Company



TableName	Row Count
DimAccount	24
DimChannel	4
DimCurrency	28
DimCustomer	18,869
DimDate	3,652
DimEmployee	293
DimEntity	421
DimGeography	674
DimProduct	2,517
DimProductCost	2,517
DimProductPrice	2,517
DimPromotion	28
DimSalesTerritory	265
DimScenario	3
DimStore	306

32,118



TableName	Row Count
FactExchangeRate	773
FactInventory	8,013,099
FactOnlineSales	12,627,608
FactSales	3,334,098
FactSalesQuota	7,465,911
	31,441,489

Note: The final dataset may have slight schema changes and row counts may vary

Dashboards - Tabular Reports, Visualizations or Maps
Deliverables – Analysis

- Data Subjects:
  - Online Sales Analysis (FactOnlineSales)
  - Sales Analysis (FactSales)
  - Inventory Analysis (FactInventory)
- Types of analysis:
  - Trending
  - Ranking
  - Comparison
  - Period over Period
  - Geo Map
  - Contribution

- Measures:
  - Sales $, Profit, Profit Margin, Avg Order Size,…
- Dimensions:
  - Customers: Company & Person, demographics
  - Product: Product Hierarchy (Category, Subcategory, Product), Brand, other attributes
  - Store: Type, other attributes
  - Dates
  - Geography

Dashboards - Tabular Reports, Visualizations or Maps

Deliverables – Sample Questions

A. (Overall) Sales Analysis

1. Sales & profit by channel and time (Year/Qtr/Month)
2. Rank sales
   a) Product Category & Subcategory
   b) Country & State
   c) Stores
3. Geo Sales Analysis
4. Contribution analysis – sales & profit
   a) Product

Dashboards - Tabular Reports, Visualizations or Maps

Deliverables – Sample Questions

B. Online Sales Analysis

1. Sales & profit by customer demographics such as education, income, etc.
2. Sales & profit with Period over Period analysis
3. Top 20 customers by sales & profit
4. Sales Analysis – Geo analysis
5. Provide contribution analysis

Dashboards - Tabular Reports, Visualizations or Maps

Deliverables – Sample Questions

C. Inventory Analysis

1. Inventory Costs by channel and time
2. Rank inventory costs
   a) Product Category & Subcategory
   b) Country & State
   c) Stores
3. Geo Sales Analysis
4. Contribution analysis – inventory cost
   a) Product
   b) Store

BI Team Project:
Systems of Record (SOR)

- Use existing schema from Contoso_Retail_BI as your target DW schema. Truncate existing data on your data integration jobs.

- Data is being sourced from 3 geographic area (continents) databases:
  - Contoso_Retail_SOR_NorthAmerica - Microsoft SQL Server
  - Contoso_Retail_SOR_Europe - MySQL
  - Contoso_Retail_SOR_Asia – PostgreSQL

- In addition many tables are sourced from various files in Excel, csv or text delimited file format

BI Team Project:
Systems of Record (SOR) 1 of 2 - 8/1/2016

DB_Name	Table_Name	Table_Rows
Contoso_Retail_SOR_NorthAmerica	DimCustomer_Company	276
Contoso_Retail_SOR_NorthAmerica	DimCustomer_Person	9,395
Contoso_Retail_SOR_NorthAmerica	DimGeography	674
Contoso_Retail_SOR_NorthAmerica	DimProduct	2,517
Contoso_Retail_SOR_NorthAmerica	DimProductCategory	8
Contoso_Retail_SOR_NorthAmerica	DimProductSubcategory	44
Contoso_Retail_SOR_NorthAmerica	DimPromotion_NA	10
Contoso_Retail_SOR_NorthAmerica	DimStore_NA	209
Contoso_Retail_SOR_NorthAmerica	FactCatalogSales_NA	194,976
Contoso_Retail_SOR_NorthAmerica	FactInventory	5,668,381
Contoso_Retail_SOR_NorthAmerica	FactOnlineSalesOrderDetail_NA	4,645,792
Contoso_Retail_SOR_NorthAmerica	FactOnlineSalesOrderHeader_NA	686,811
Contoso_Retail_SOR_NorthAmerica	FactResellerSales_NA	157,460
Contoso_Retail_SOR_NorthAmerica	FactStoreSales_NA	1,467,942

DB_Name	Table_Name	Table_Rows
Contoso_Retail_SOR_Europe	DimCustomer_Company	43
Contoso_Retail_SOR_Europe	DimCustomer_Person	5,505
Contoso_Retail_SOR_Europe	DimGeography	674
Contoso_Retail_SOR_Europe	DimProduct	2,517
Contoso_Retail_SOR_Europe	DimProductCategory	8
Contoso_Retail_SOR_Europe	DimProductSubcategory	44
Contoso_Retail_SOR_Europe	DimPromotion_EU	19
Contoso_Retail_SOR_Europe	DimStore_EU	56
Contoso_Retail_SOR_Europe	FactInventory	1,918,225
Contoso_Retail_SOR_Europe	FactOnlineSalesOrderDetail_EU	3,847,281
Contoso_Retail_SOR_Europe	FactOnlineSalesOrderHeader_EU	651,952
Contoso_Retail_SOR_Europe	FactResellerSales_EU	153,579
Contoso_Retail_SOR_Europe	FactSalesQuota_EU	483,284
Contoso_Retail_SOR_Europe	FactStoreSales_EU	487,110

DB_Name	Table_Name	Table_Rows
Contoso_Retail_SOR_Asia	DimCustomer_Company	67
Contoso_Retail_SOR_Asia	DimCustomer_Person	3,593
Contoso_Retail_SOR_Asia	DimGeography	674
Contoso_Retail_SOR_Asia	DimProduct	2,517
Contoso_Retail_SOR_Asia	DimProductCategory	8
Contoso_Retail_SOR_Asia	DimProductSubcategory	44
Contoso_Retail_SOR_Asia	DimPromotion_AS	10
Contoso_Retail_SOR_Asia	DimStore_AS	41
Contoso_Retail_SOR_Asia	FactInventory	1,628,104
Contoso_Retail_SOR_Asia	FactOnlineSalesOrderDetail_AS	4,134,535
Contoso_Retail_SOR_Asia	FactOnlineSalesOrderHeader_AS	337,598
Contoso_Retail_SOR_Asia	FactResellerSales_AS	151,194
Contoso_Retail_SOR_Asia	FactSalesQuota_AS	467,871
Contoso_Retail_SOR_Asia	FactStoreSales_AS	473,738

DB_Name	Table_Name	Table_Rows
Contoso_Retail_SOR_Referen	DimCustomer_Company_Crossmap	385
Contoso_Retail_SOR_Referen	DimCustomer_Person_Crossmap	18,484
Contoso_Retail_SOR_Referen	DimDate	3,652
Contoso_Retail_SOR_Referen	DimGeography	674
Contoso_Retail_SOR_Referen	DimProduct_CrossMap	2,517
Contoso_Retail_SOR_Referen	DimPromotion_Crossmap	28
Contoso_Retail_SOR_Referen	DimStore_Channel_Crossmap	306

Note: These will be revised

BI Team Project:
Systems of Record (SOR) 2 of 2 - 8/1/2016

File Name
cost_cny_step_1_of_4.txt
cost_cny_step_2_of_4.txt
cost_cny_step_3_of_4.txt
cost_cny_step_4_of_4.txt
cost_eur_step_1_of_4.csv
cost_eur_step_2_of_4.csv
cost_eur_step_3_of_4.csv
cost_eur_step_4_of_4.csv
cost_usd_steps_all.xlsx
DimAccount.txt
DimChannel.csv
DimCurrency.csv
DimDate.csv
DimEmployees.csv
DimEntity.csv
DimGeography.csv
DimSalesTerritory.csv
DimScenario.txt
FactExchangeRate.xlsx
price_cny_step_1_of_4.txt
price_cny_step_2_of_4.txt
price_cny_step_3_of_4.txt
price_cny_step_4_of_4.txt
price_eur_step_1_of_4.csv
price_eur_step_2_of_4.csv
price_eur_step_3_of_4.csv
price_eur_step_4_of_4.csv
price_usd_steps_all.xlsx

Note: These will be revised

BI Team Project:
Systems of Record (SOR)

- There are 4 sales channels for this company:
  - Catalog
  - Retail
  - Stores
  - Online Sales
- In DW Sales are broken into:
  - FactSales – includes all 4 channels
  - FactOnlineSales – only includes Online Sales
- IN SOR sales are broken into 4 sales channels & 3 continents (North America, Europe & Asia):
  - Catalog – note: US-based only
  - Retail
  - Stores
  - Online Sales – further broken into Header & Detail (line) tables

BI Team Project:
Systems of Record (SOR)

- DW has all data in US dollars (USD)

- SORs have prices, costs & sales in "continent" currency
  - North America – USD
  - Europe - Euro
  - Asia - China Yuan

- Sales, Returns & Costs are in "constant" currency, i.e. recorded using published unit prices & costs
  - Daily currency exchange rate should be used in converting Euro & Yuan to USD

BI Team Project:
Systems of Record (SOR)

- Unit Price & Unit Cost should NOT stored in Fact Sales related tables nor in the DimProduct dimension

- Unit Prices & United Costs were independently changed 3 times during 2012-2014. You need to create SCD dimension for both Unit Price & Unit Cost Dimensions.
    - ○ Step 1 – initial unit prices or costs
    - ○ Step 2 – prices or costs revised
    - ○ Step 3 – prices or costs revised
    - ○ Step 4 – prices or costs revised

Cost_Step	Effective_Date
1	1/1/2012
2	10/1/2012
3	10/1/2013
4	10/1/2014

Pricing_Step	Effective_Date
1	1/1/2012
2	7/1/2012
3	7/1/2013
4	7/1/2014

~~Note: These will be revised~~

BI Team Project:
Error Handling

- Error Handling Standard will be to reject any rows that have incorrect FKs such as:
    - Product
    - Customer
    - Geography
    - Promotion
    - Store

- Fact tables should have a “rejects” table that contains the rows with errors and a error reason column

Suggestions on building model

Online Sales Example

BI Suggestions

Creating the data models to load is key activity

- Create views for all data queried or imported into BI Tools
  - Only include columns that will be used in analysis
  - Create role playing dimensions!
  - Rename columns that have generic names reused in more than one table but that does not mean the same thing in each of these columns
  - Avoid circular loops due to foreign keys (either in database or created by BI tool)
- ***Create a separate BI application for each sub-model!!!***
- Loading (importing) data into BI Tool versus query is fastest IF you have the memory on your notebook.
  - You can create application one way and then copy it with the other setting to determine what is fastest for your notebook.

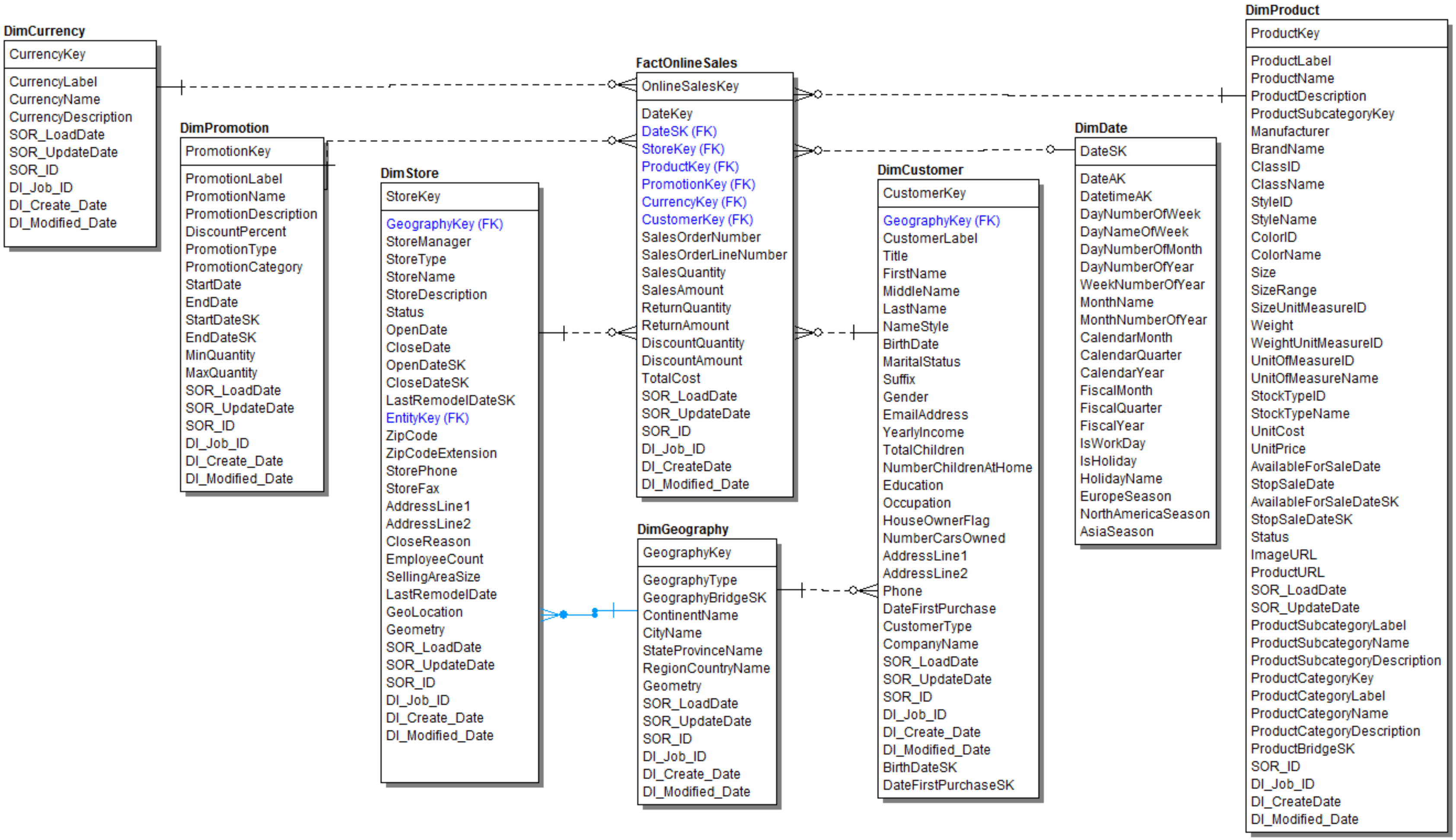
BI Suggestions

Creating the data models to load is key activity

Notes:

- Microsoft products will use database keys to determine relationships while other tools use column names to create. If using views will need to specify all relationships in Microsoft tools but others will not.
- Microsoft products will automatically eliminate circular relationships by disabling one or more of the violating relationships. Great for load but may need to adjust which one used.
- Qlik is VERY sensitive to circular loops. QlikView will create synthetic keys that take LONG time to load & produce INCORRECT results. QlikSense will take a long time & then NOT load.

Online Sales – Sub-model (or Workspace)



DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimPromotion

PromotionKey

PromotionLabel
PromotionName
PromotionDescription
DiscountPercent
PromotionType
PromotionCategory
StartDate
EndDate
StartDateSK
EndDateSK
MinQuantity
MaxQuantity
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimStore

StoreKey

GeographyKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
EntityKey (FK)
ZipCode
ZipCodeExtension
StorePhone
StoreFax
AddressLine1
AddressLine2
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate
GeoLocation
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

FactOnlineSales

OnlineSalesKey

DateKey
DateSK (FK)
StoreKey (FK)
ProductKey (FK)
PromotionKey (FK)
CurrencyKey (FK)
CustomerKey (FK)
SalesOrderNumber
SalesOrderLineNumber
SalesQuantity
SalesAmount
ReturnQuantity
ReturnAmount
DiscountQuantity
DiscountAmount
TotalCost
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

DimGeography

GeographyKey

GeographyType
GeographyBridgeSK
ContinentName
CityName
StateProvinceName
RegionCountryName
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimCustomer

CustomerKey

GeographyKey (FK)
CustomerLabel
Title
FirstName
MiddleName
LastName
NameStyle
BirthDate
MaritalStatus
Suffix
Gender
EmailAddress
YearlyIncome
TotalChildren
NumberChildrenAtHome
Education
Occupation
HouseOwnerFlag
NumberCarsOwned
AddressLine1
AddressLine2
Phone
DateFirstPurchase
CustomerType
CompanyName
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date
BirthDateSK
DateFirstPurchaseSK

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

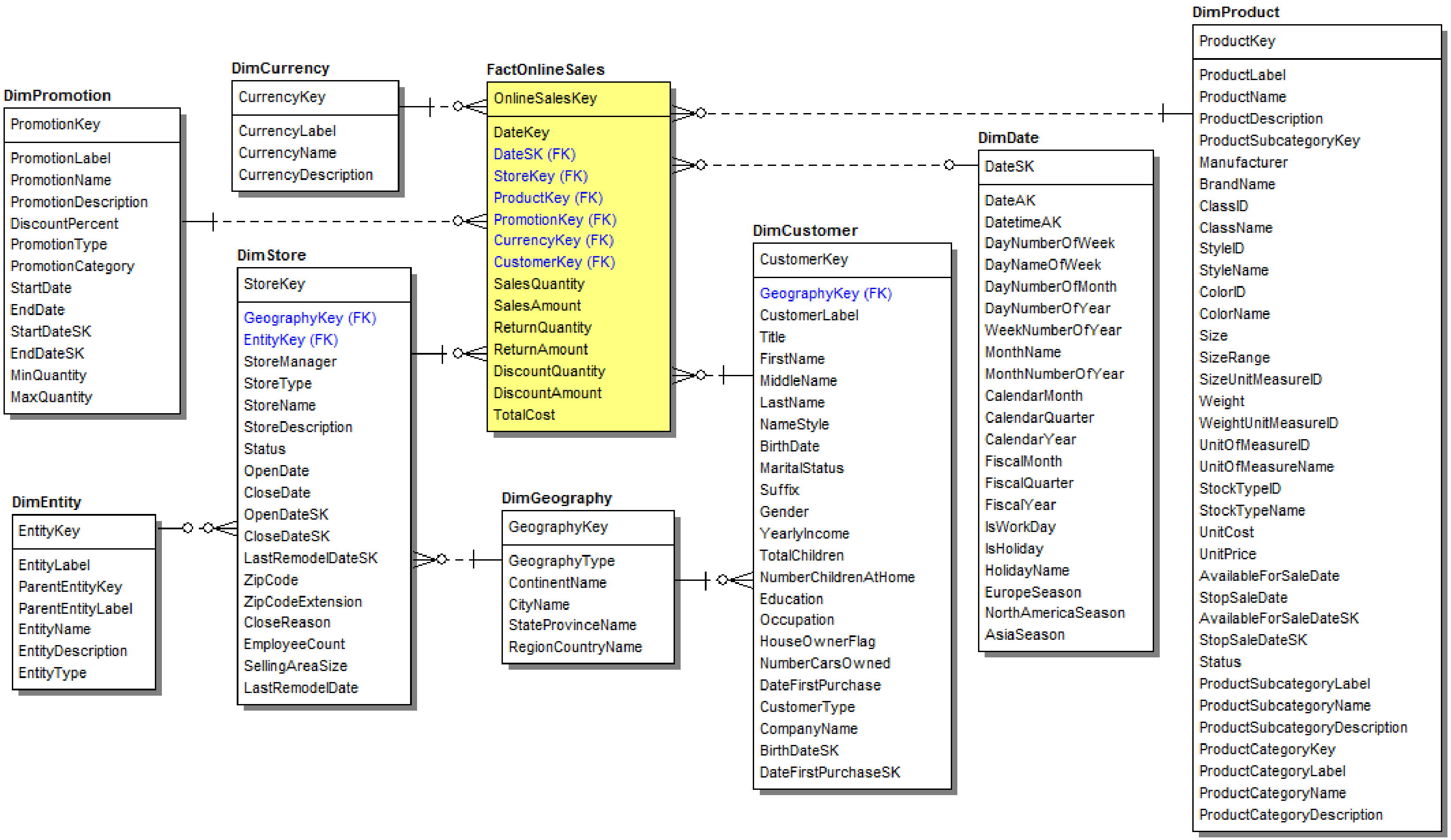
DimProduct

ProductKey

ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ImageURL
ProductURL
SOR_LoadDate
SOR_UpdateDate
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription
ProductBridgeSK
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

Online Sales – Sub-model

Draft – eliminating columns that will not be used in analysis



DimPromotion
PromotionKey
PromotionLabel
PromotionName
PromotionDescription
DiscountPercent
PromotionType
PromotionCategory
StartDate
EndDate
StartDateSK
EndDateSK
MinQuantity
MaxQuantity

DimCurrency
CurrencyKey
CurrencyLabel
CurrencyName
CurrencyDescription

FactOnlineSales
OnlineSalesKey
DateKey
DateSK (FK)
StoreKey (FK)
ProductKey (FK)
PromotionKey (FK)
CurrencyKey (FK)
CustomerKey (FK)
SalesQuantity
SalesAmount
ReturnQuantity
ReturnAmount
DiscountQuantity
DiscountAmount
TotalCost

DimStore
StoreKey
GeographyKey (FK)
EntityKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
ZipCode
ZipCodeExtension
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate

DimEntity
EntityKey
EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType

DimGeography
GeographyKey
GeographyType
ContinentName
CityName
StateProvinceName
RegionCountryName

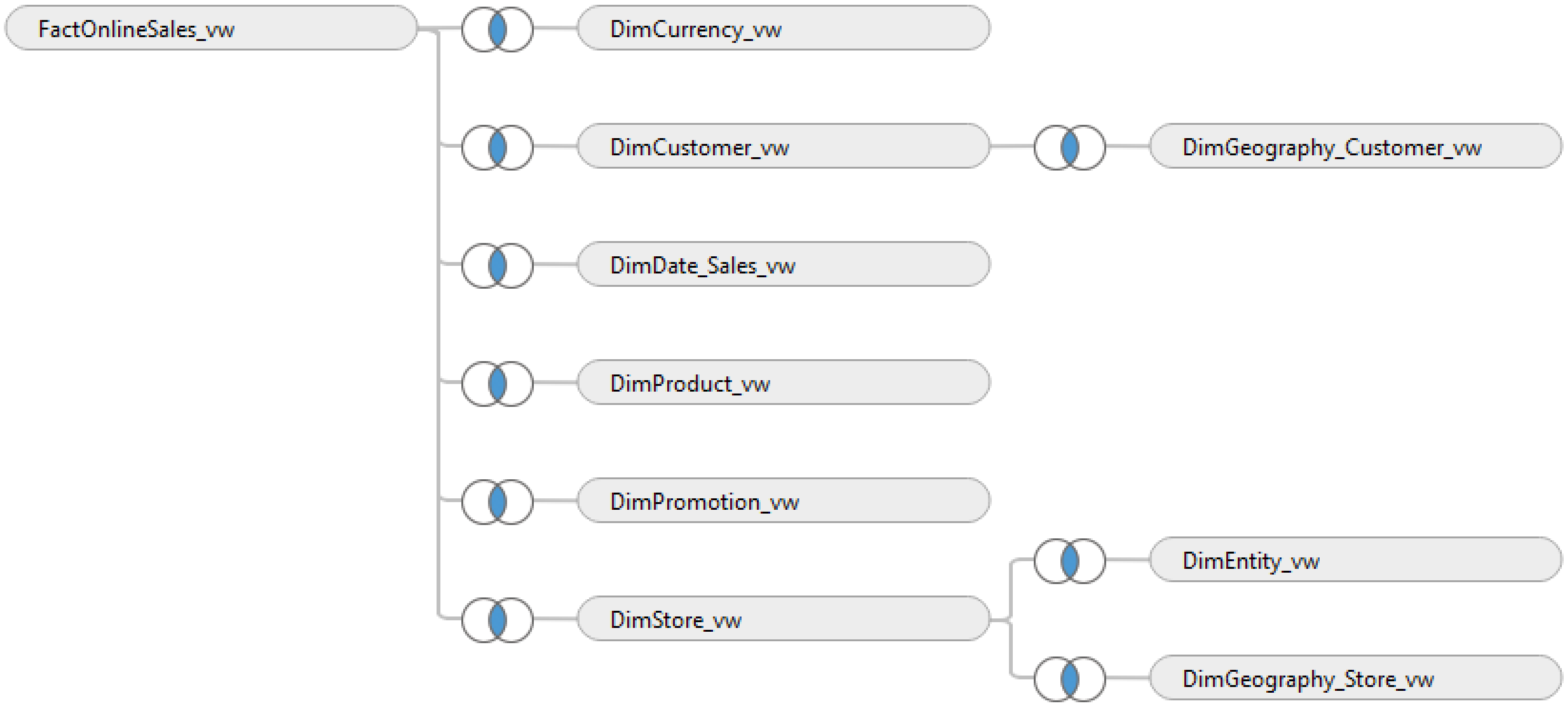
DimCustomer
CustomerKey
GeographyKey (FK)
CustomerLabel
Title
FirstName
MiddleName
LastName
NameStyle
BirthDate
MaritalStatus
Suffix
Gender
YearlyIncome
TotalChildren
NumberChildrenAtHome
Education
Occupation
HouseOwnerFlag
NumberCarsOwned
DateFirstPurchase
CustomerType
CompanyName
BirthDateSK
DateFirstPurchaseSK

DimDate
DateSK
DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimProduct
ProductKey
ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription

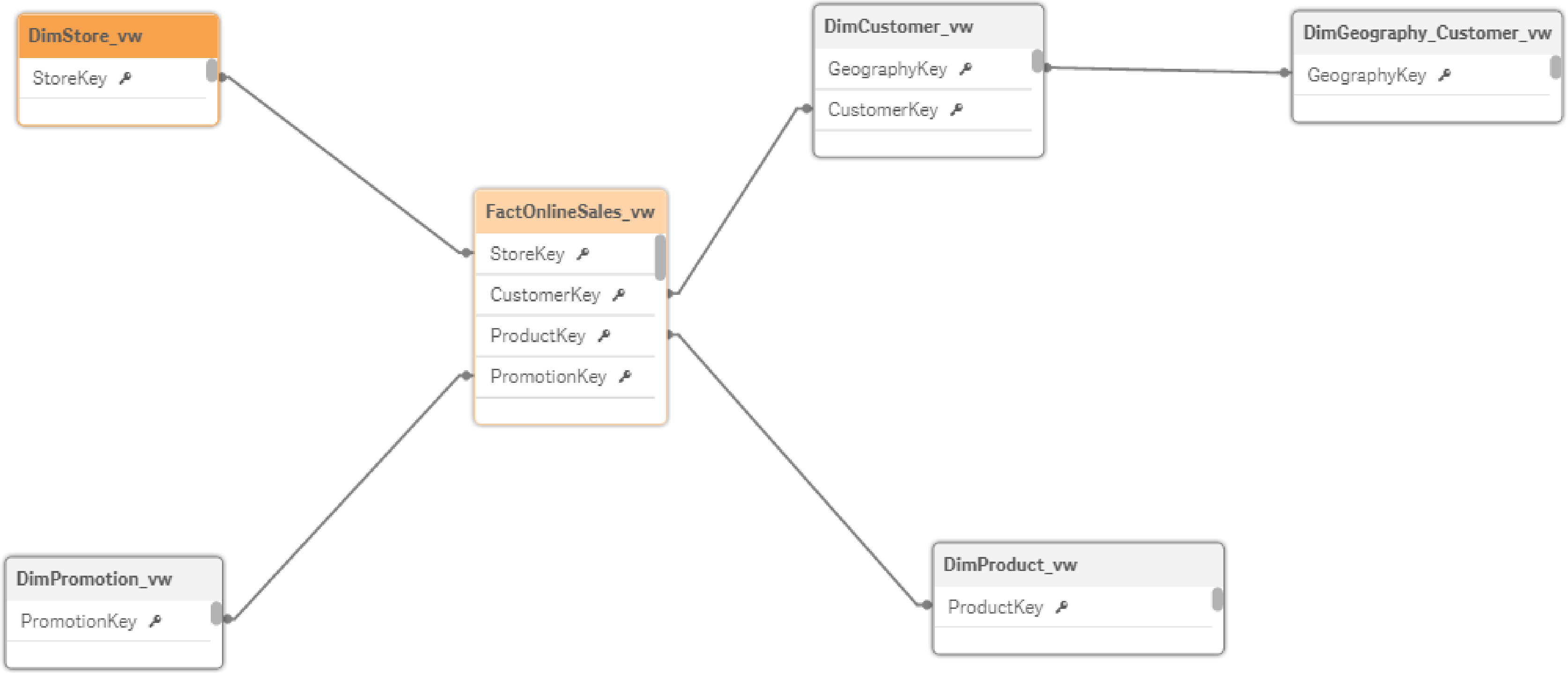
Online Sales - Tableau

Sample using views



Online Sales - QlikSense

Sample using views



DimStore_vw
- StoreKey

FactOnlineSales_vw
- StoreKey
- CustomerKey
- ProductKey
- PromotionKey

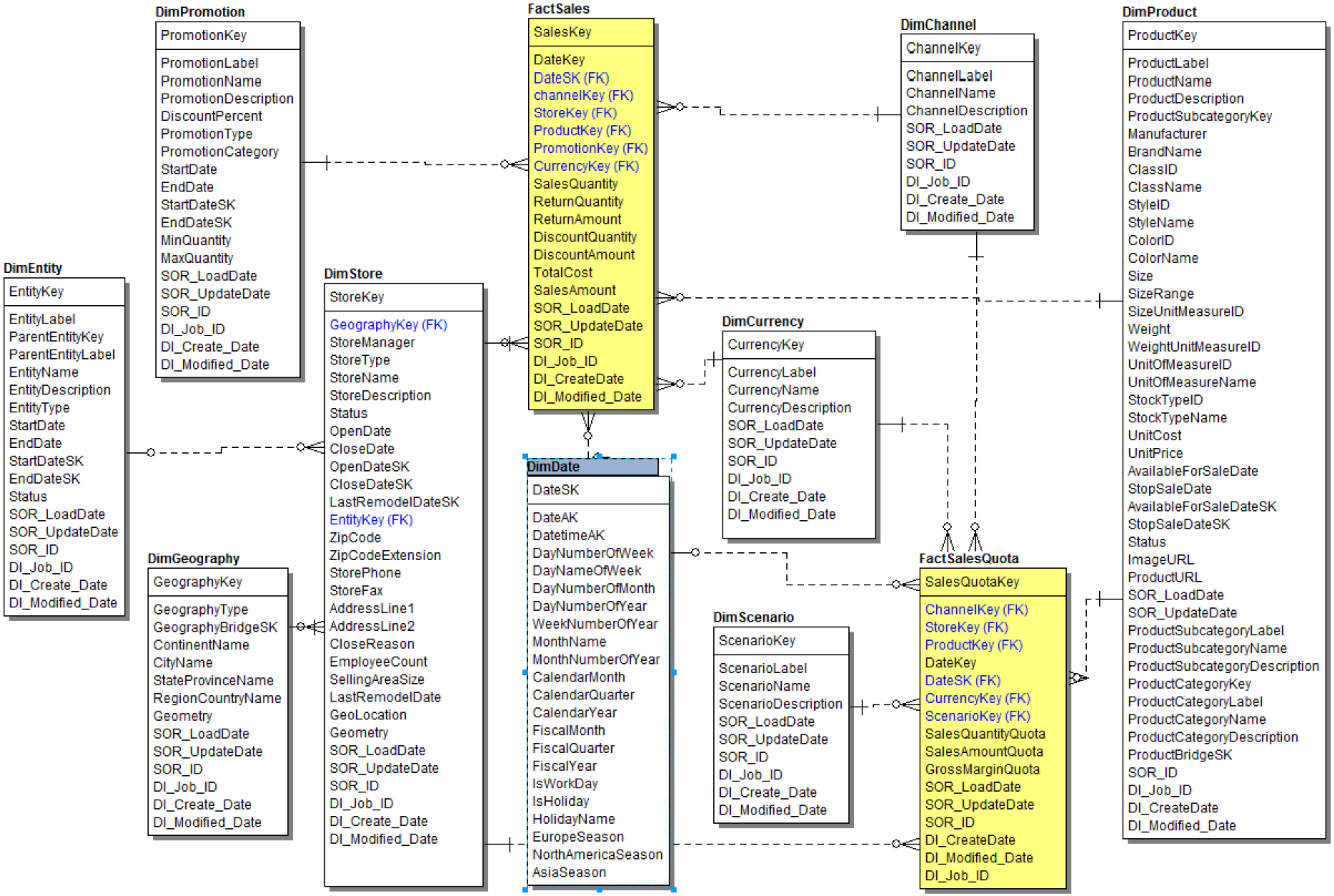
DimCustomer_vw
- GeographyKey
- CustomerKey

DimGeography_Customer_vw
- GeographyKey

DimPromotion_vw
- PromotionKey

DimProduct_vw
- ProductKey

Overall Sales – Sub-model (or Workspace)



DimPromotion

PromotionKey

PromotionLabel
PromotionName
PromotionDescription
DiscountPercent
PromotionType
PromotionCategory
StartDate
EndDate
StartDateSK
EndDateSK
MinQuantity
MaxQuantity
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

FactSales

SalesKey

DateKey
DateSK (FK)
channelKey (FK)
StoreKey (FK)
ProductKey (FK)
PromotionKey (FK)
CurrencyKey (FK)
SalesQuantity
ReturnQuantity
ReturnAmount
DiscountQuantity
DiscountAmount
TotalCost
SalesAmount
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

DimChannel

ChannelKey

ChannelLabel
ChannelName
ChannelDescription
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimProduct

ProductKey

ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ImageURL
ProductURL
SOR_LoadDate
SOR_UpdateDate
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription
ProductBridgeSK
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

DimEntity

EntityKey

EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType
StartDate
EndDate
StartDateSK
EndDateSK
Status
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimStore

StoreKey

GeographyKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
EntityKey (FK)
ZipCode
ZipCodeExtension
StorePhone
StoreFax
AddressLine1
AddressLine2
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate
GeoLocation
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimGeography

GeographyKey

GeographyType
GeographyBridgeSK
ContinentName
CityName
StateProvinceName
RegionCountryName
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimScenario

ScenarioKey

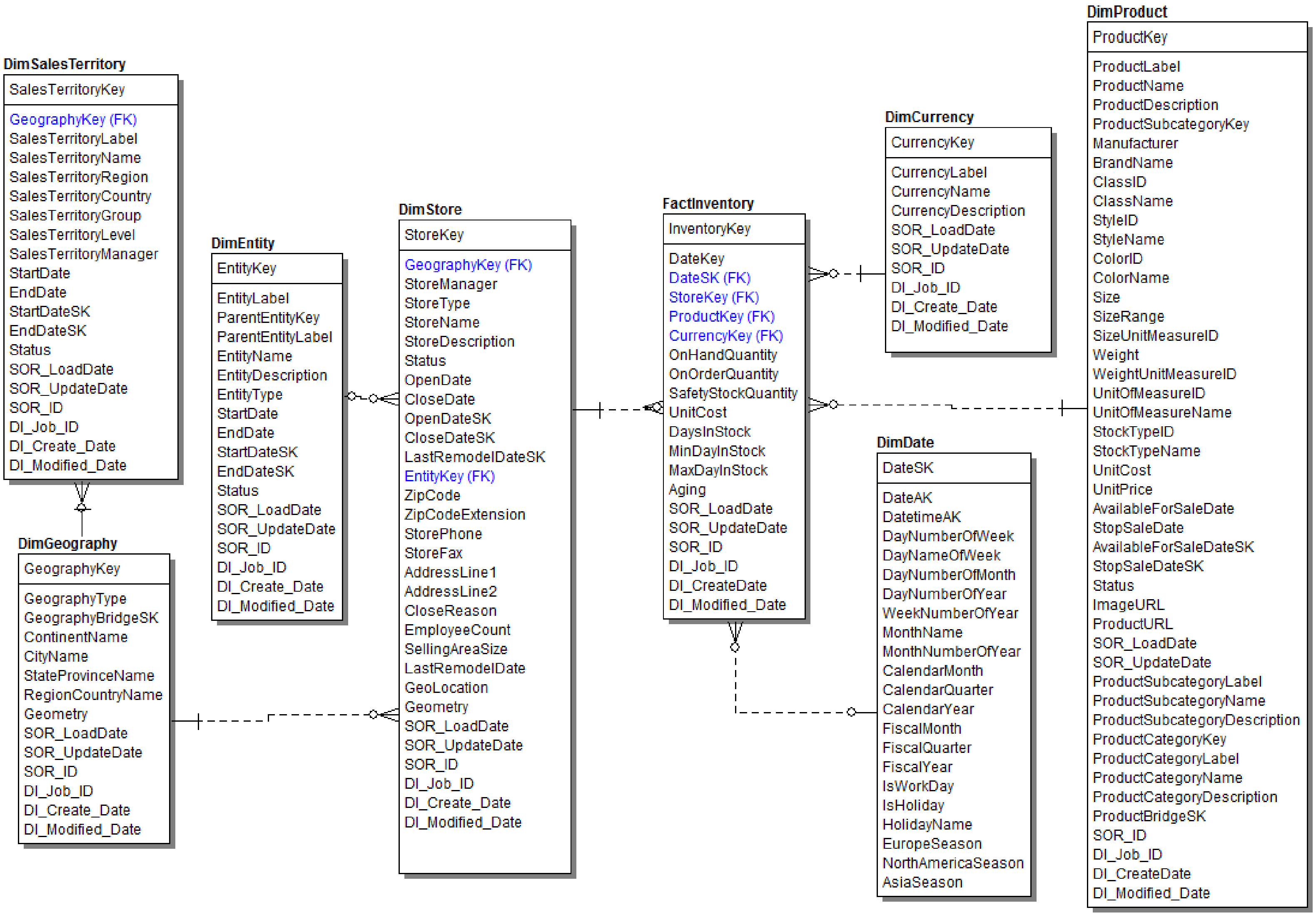
ScenarioLabel
ScenarioName
ScenarioDescription
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

FactSalesQuota

SalesQuotaKey

ChannelKey (FK)
StoreKey (FK)
ProductKey (FK)
DateKey
DateSK (FK)
CurrencyKey (FK)
ScenarioKey (FK)
SalesQuantityQuota
SalesAmountQuota
GrossMarginQuota
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_CreateDate
DI_Modified_Date
DI_Job_ID

Inventory – Sub-model (or Workspace)



DimSalesTerritory

SalesTerritoryKey

GeographyKey (FK)
SalesTerritoryLabel
SalesTerritoryName
SalesTerritoryRegion
SalesTerritoryCountry
SalesTerritoryGroup
SalesTerritoryLevel
SalesTerritoryManager
StartDate
EndDate
StartDateSK
EndDateSK
Status
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimGeography

GeographyKey

GeographyType
GeographyBridgeSK
ContinentName
CityName
StateProvinceName
RegionCountryName
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimEntity

EntityKey

EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType
StartDate
EndDate
StartDateSK
EndDateSK
Status
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimStore

StoreKey

GeographyKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
EntityKey (FK)
ZipCode
ZipCodeExtension
StorePhone
StoreFax
AddressLine1
AddressLine2
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate
GeoLocation
Geometry
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

FactInventory

InventoryKey

DateKey
DateSK (FK)
StoreKey (FK)
ProductKey (FK)
CurrencyKey (FK)
OnHandQuantity
OnOrderQuantity
SafetyStockQuantity
UnitCost
DaysInStock
MinDayInStock
MaxDayInStock
Aging
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription
SOR_LoadDate
SOR_UpdateDate
SOR_ID
DI_Job_ID
DI_Create_Date
DI_Modified_Date

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

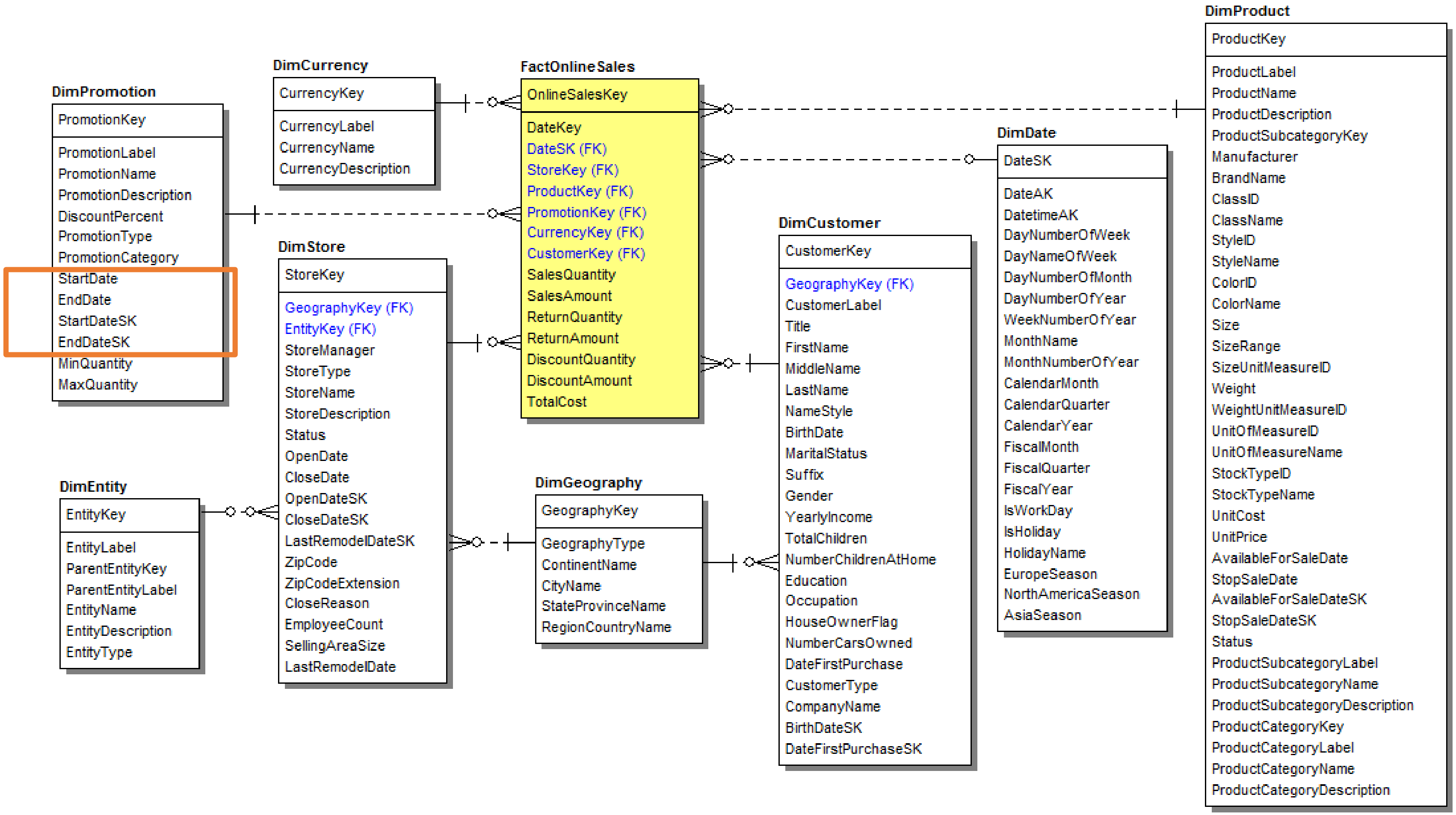
DimProduct

ProductKey

ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ImageURL
ProductURL
SOR_LoadDate
SOR_UpdateDate
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription
ProductBridgeSK
SOR_ID
DI_Job_ID
DI_CreateDate
DI_Modified_Date

Views

Online Sales



DimPromotion

PromotionKey

PromotionLabel
PromotionName
PromotionDescription
DiscountPercent
PromotionType
PromotionCategory
StartDate
EndDate
StartDateSK
EndDateSK
MinQuantity
MaxQuantity

DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription

FactOnlineSales

OnlineSalesKey

DateKey
DateSK (FK)
StoreKey (FK)
ProductKey (FK)
PromotionKey (FK)
CurrencyKey (FK)
CustomerKey (FK)
SalesQuantity
SalesAmount
ReturnQuantity
ReturnAmount
DiscountQuantity
DiscountAmount
TotalCost

DimProduct

ProductKey

ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimStore

StoreKey

GeographyKey (FK)
EntityKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
ZipCode
ZipCodeExtension
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate

DimCustomer

CustomerKey

GeographyKey (FK)
CustomerLabel
Title
FirstName
MiddleName
LastName
NameStyle
BirthDate
MaritalStatus
Suffix
Gender
YearlyIncome
TotalChildren
NumberChildrenAtHome
Education
Occupation
HouseOwnerFlag
NumberCarsOwned
DateFirstPurchase
CustomerType
CompanyName
BirthDateSK
DateFirstPurchaseSK

DimEntity

EntityKey

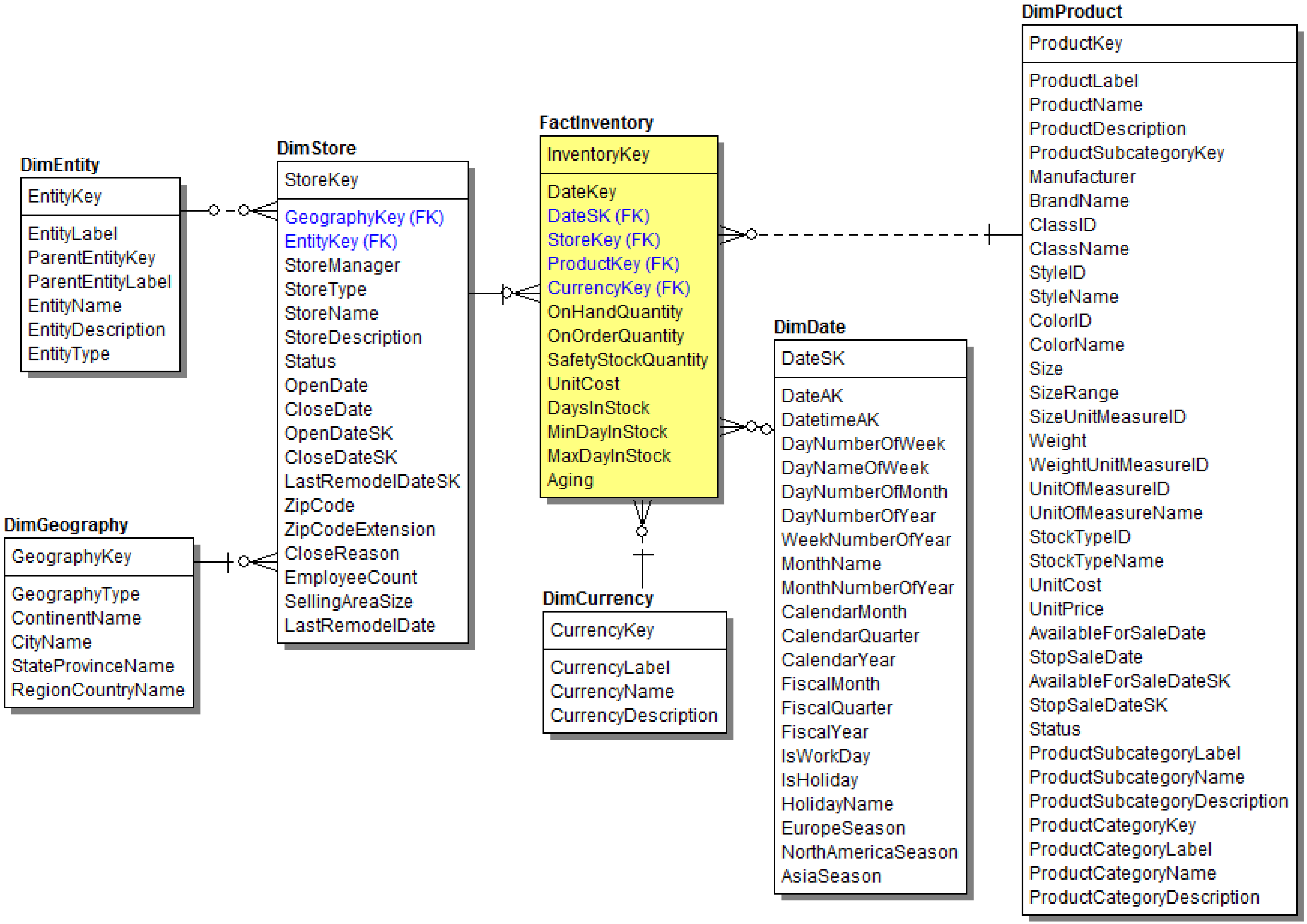
EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType

DimGeography

GeographyKey

GeographyType
ContinentName
CityName
StateProvinceName
RegionCountryName

Inventory



DimEntity
EntityKey
EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType

DimGeography
GeographyKey
GeographyType
ContinentName
CityName
StateProvinceName
RegionCountryName

DimStore
StoreKey
GeographyKey (FK)
EntityKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
ZipCode
ZipCodeExtension
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate

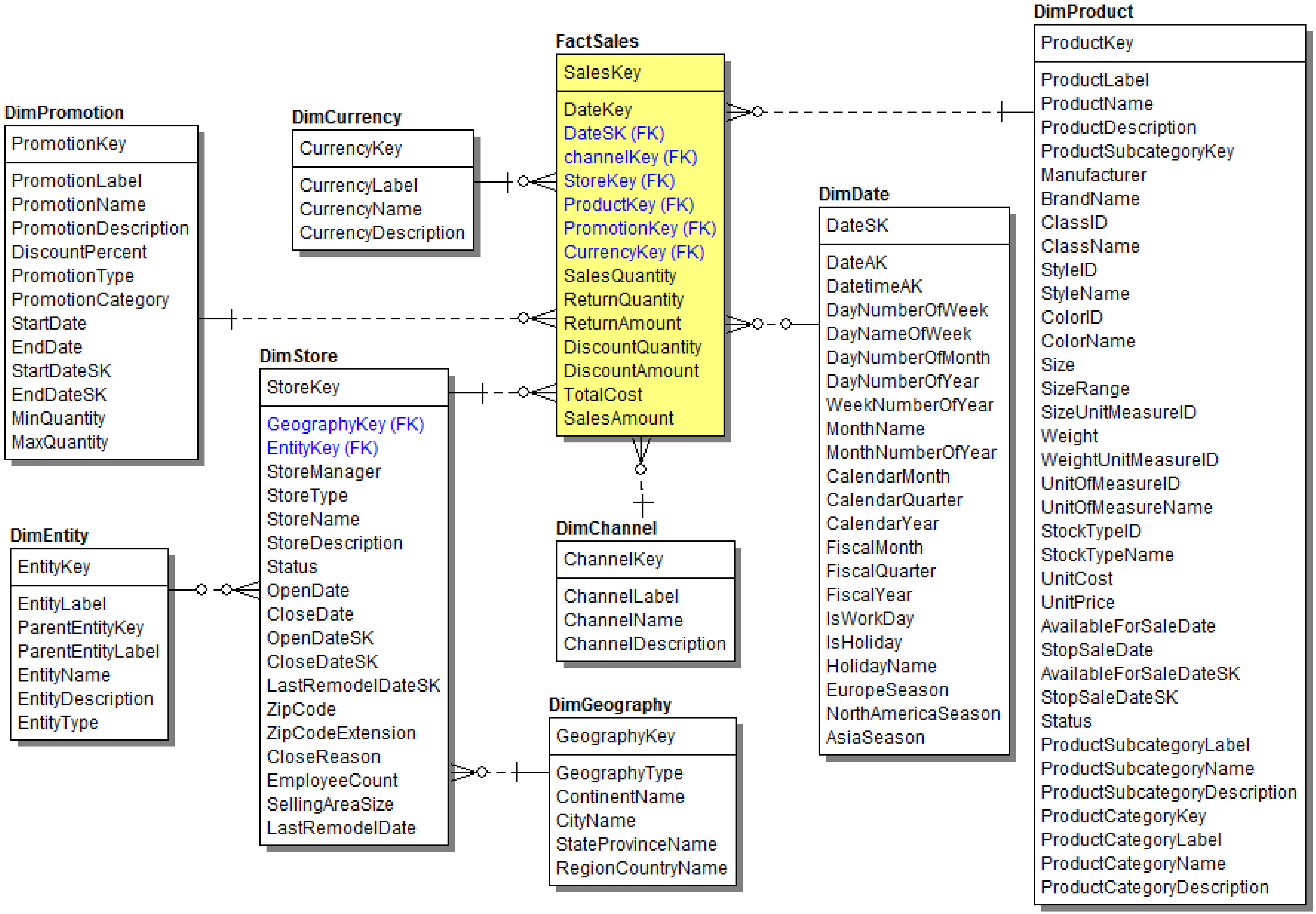
FactInventory
InventoryKey
DateKey
DateSK (FK)
StoreKey (FK)
ProductKey (FK)
CurrencyKey (FK)
OnHandQuantity
OnOrderQuantity
SafetyStockQuantity
UnitCost
DaysInStock
MinDayInStock
MaxDayInStock
Aging

DimCurrency
CurrencyKey
CurrencyLabel
CurrencyName
CurrencyDescription

DimDate
DateSK
DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimProduct
ProductKey
ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription

Sales Quota



DimPromotion

PromotionKey

PromotionLabel
PromotionName
PromotionDescription
DiscountPercent
PromotionType
PromotionCategory
StartDate
EndDate
StartDateSK
EndDateSK
MinQuantity
MaxQuantity

DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription

FactSales

SalesKey

DateKey
DateSK (FK)
channelKey (FK)
StoreKey (FK)
ProductKey (FK)
PromotionKey (FK)
CurrencyKey (FK)
SalesQuantity
ReturnQuantity
ReturnAmount
DiscountQuantity
DiscountAmount
TotalCost
SalesAmount

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimProduct

ProductKey

ProductLabel
ProductName
ProductDescription
ProductSubcategoryKey
Manufacturer
BrandName
ClassID
ClassName
StyleID
StyleName
ColorID
ColorName
Size
SizeRange
SizeUnitMeasureID
Weight
WeightUnitMeasureID
UnitOfMeasureID
UnitOfMeasureName
StockTypeID
StockTypeName
UnitCost
UnitPrice
AvailableForSaleDate
StopSaleDate
AvailableForSaleDateSK
StopSaleDateSK
Status
ProductSubcategoryLabel
ProductSubcategoryName
ProductSubcategoryDescription
ProductCategoryKey
ProductCategoryLabel
ProductCategoryName
ProductCategoryDescription

DimStore

StoreKey

GeographyKey (FK)
EntityKey (FK)
StoreManager
StoreType
StoreName
StoreDescription
Status
OpenDate
CloseDate
OpenDateSK
CloseDateSK
LastRemodelDateSK
ZipCode
ZipCodeExtension
CloseReason
EmployeeCount
SellingAreaSize
LastRemodelDate

DimEntity

EntityKey

EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType

DimChannel

ChannelKey

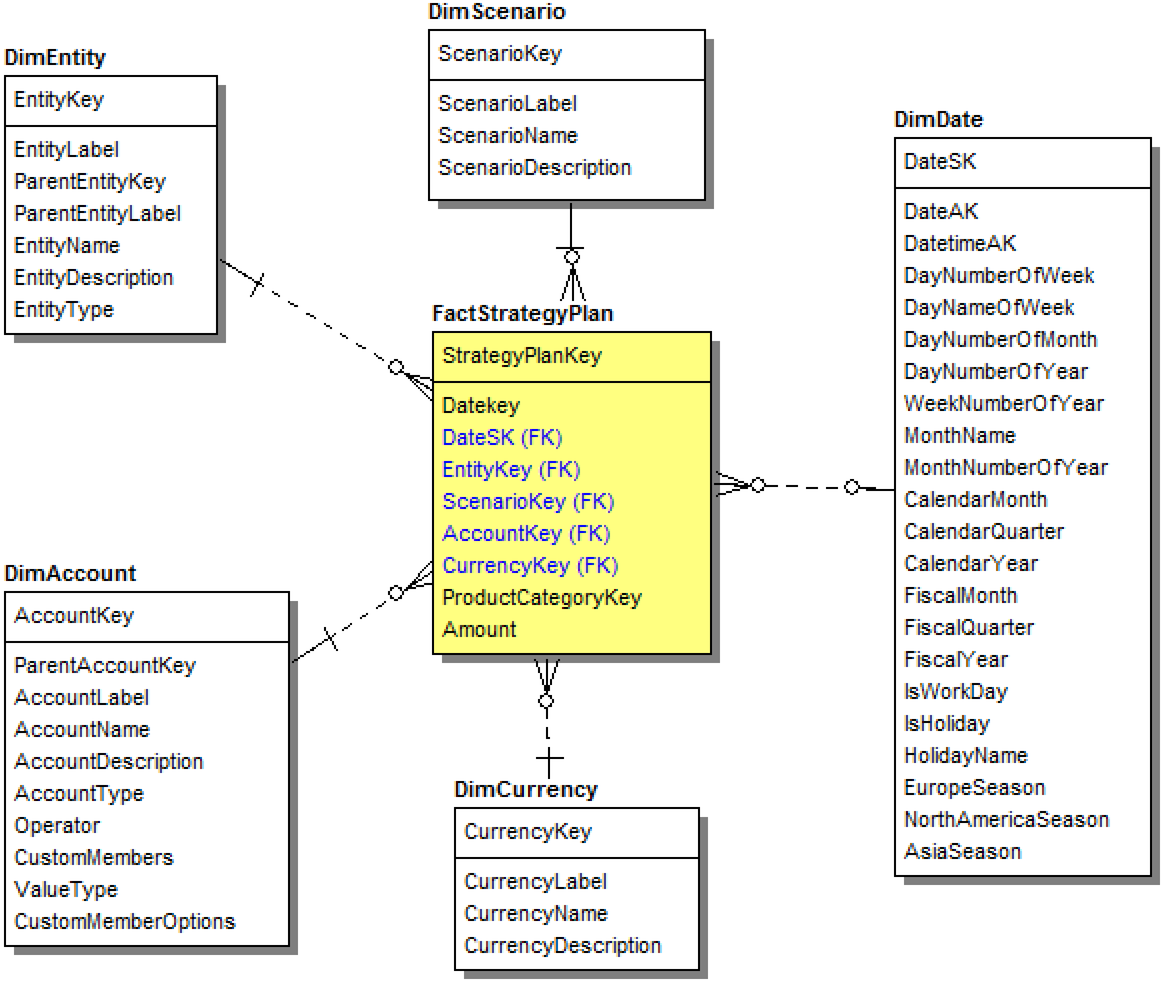
ChannelLabel
ChannelName
ChannelDescription

DimGeography

GeographyKey

GeographyType
ContinentName
CityName
StateProvinceName
RegionCountryName

Sales Strategy



DimScenario

ScenarioKey

ScenarioLabel
ScenarioName
ScenarioDescription

DimEntity

EntityKey

EntityLabel
ParentEntityKey
ParentEntityLabel
EntityName
EntityDescription
EntityType

FactStrategyPlan

StrategyPlanKey

Datekey
DateSK (FK)
EntityKey (FK)
ScenarioKey (FK)
AccountKey (FK)
CurrencyKey (FK)
ProductCategoryKey
Amount

DimDate

DateSK

DateAK
DatetimeAK
DayNumberOfWeek
DayNameOfWeek
DayNumberOfMonth
DayNumberOfYear
WeekNumberOfYear
MonthName
MonthNumberOfYear
CalendarMonth
CalendarQuarter
CalendarYear
FiscalMonth
FiscalQuarter
FiscalYear
IsWorkDay
IsHoliday
HolidayName
EuropeSeason
NorthAmericaSeason
AsiaSeason

DimAccount

AccountKey

ParentAccountKey
AccountLabel
AccountName
AccountDescription
AccountType
Operator
CustomMembers
ValueType
CustomMemberOptions

DimCurrency

CurrencyKey

CurrencyLabel
CurrencyName
CurrencyDescription