



## Enterprise Data Modelling by Example



**Barry Williams**

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## 1. Welcome

### 1.1 Introduction

This is a collection of Essays on Best Practice in Data Management.

Data Management is like a 'Slowly-Changing Dimension'

It changes imperceptibly and then after about a year (on the average) you realize that the landscape has changed.

Our intention in this book is to capture and define Best Practice at a particular point in time and then keep it up-to-date with new versions of the Book every quarter.

### 1.2 The Approach

Use Horizontal Subject Areas as Design Patterns.

These provide generic solutions to commonly occurring situations.

Use the Canonical Data Model as an Event-oriented technique and apply it incrementally.

In each Chapter, we follow our Best **Practice sequence of** Steps.

After reviewing our ten EDMs and completing our ten Chapters, we are in a good position to review the results and determine whether we have validated our Approach, or whether it needs to be modified in some way.

The Steps are as follows :-

- Step 1. Create a Statement of Business Objectives
- Step 2. Review the Enterprise Data Model
- Step 3. Adapt and incorporate Subject Area Models
- Step 4. Review Generic Data Mart
- Step 5. Validate the Canonical Data Model
- Step 6. Map to the Canonical Data Model
- Step 7. Review Source Documents
- Step 8. Create initial Information Catalogue.

## 2. Customer Services

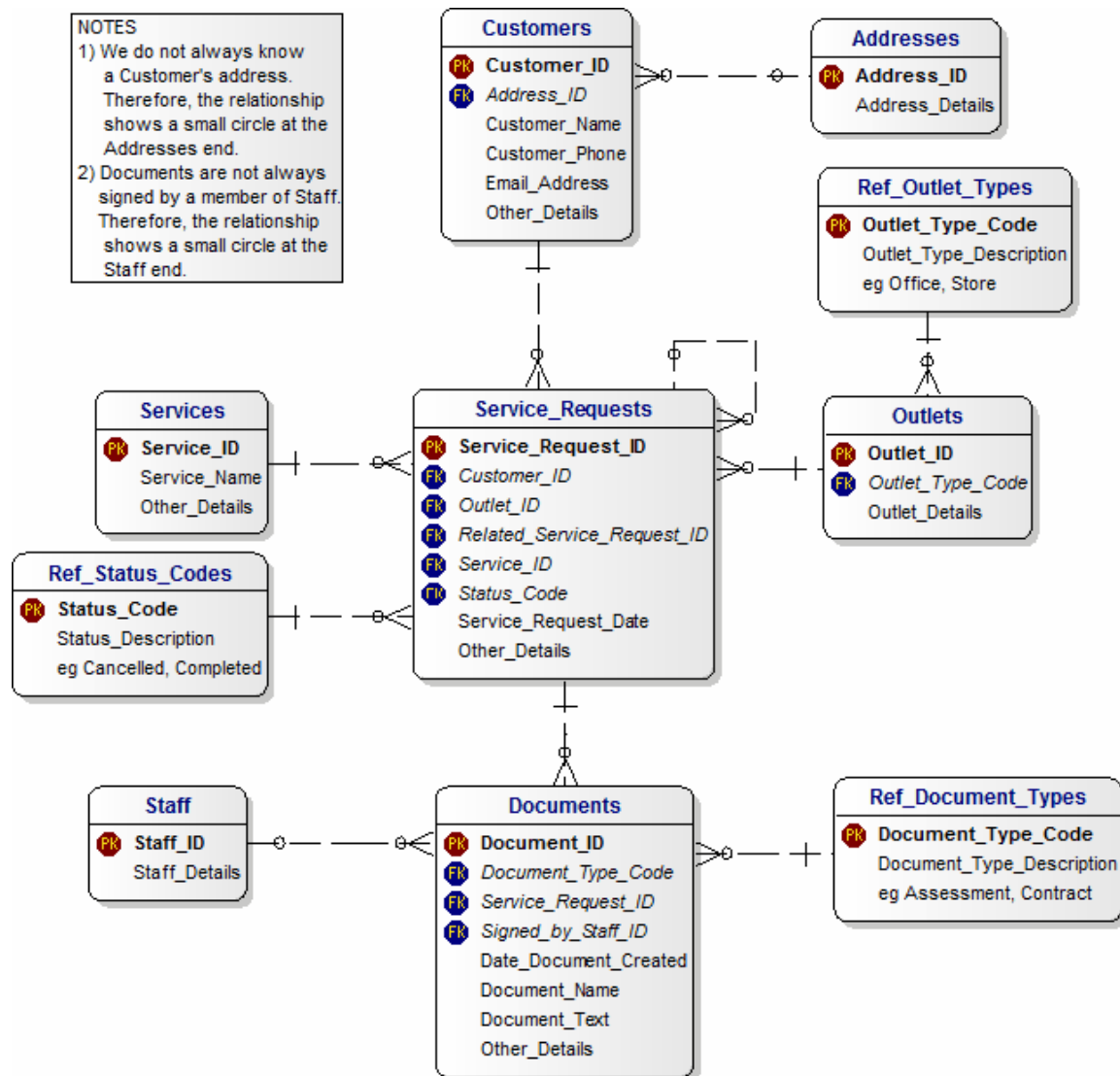
### 2.1 Link

The material is shown on this page :-

- [http://www.databaseanswers.org/data\\_models/customers\\_and\\_services\\_generic/index.htm](http://www.databaseanswers.org/data_models/customers_and_services_generic/index.htm)

### 2.2 The Steps

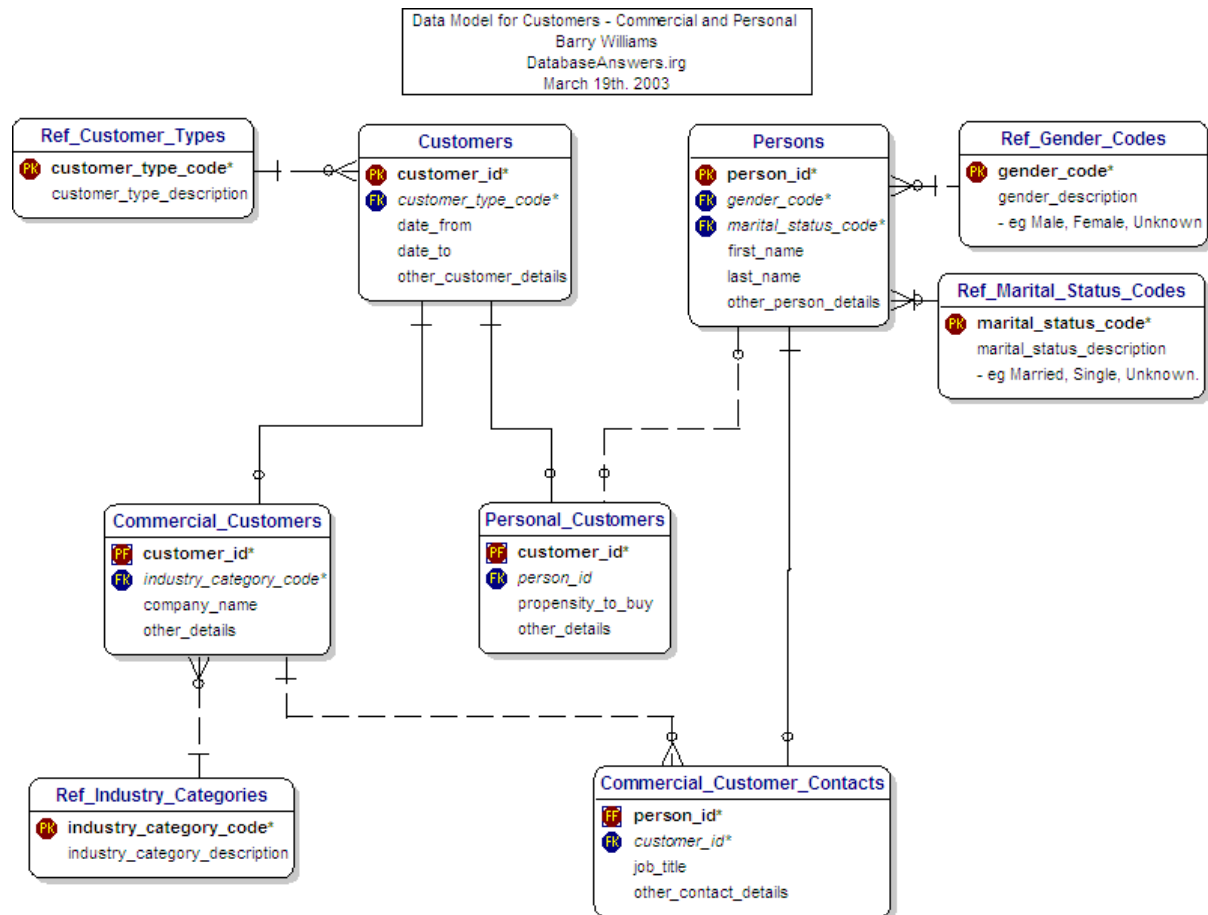
Step 2. Review the Enterprise Data Model



## Step 3. Review Subject Area Models

## Customers –

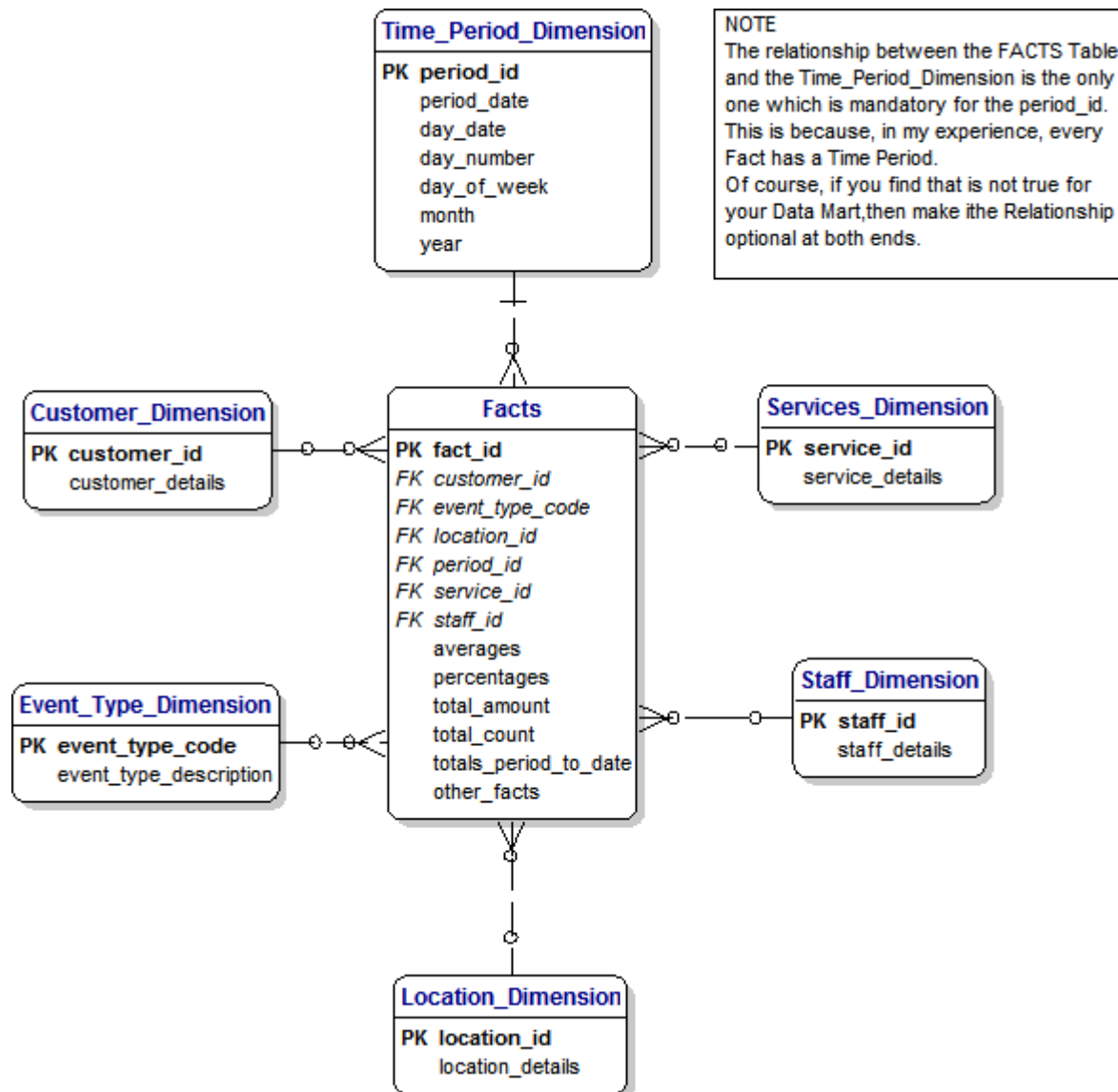
- [http://www.databaseanswers.org/data\\_models/retail\\_customers/customers\\_area\\_model.htm](http://www.databaseanswers.org/data_models/retail_customers/customers_area_model.htm)



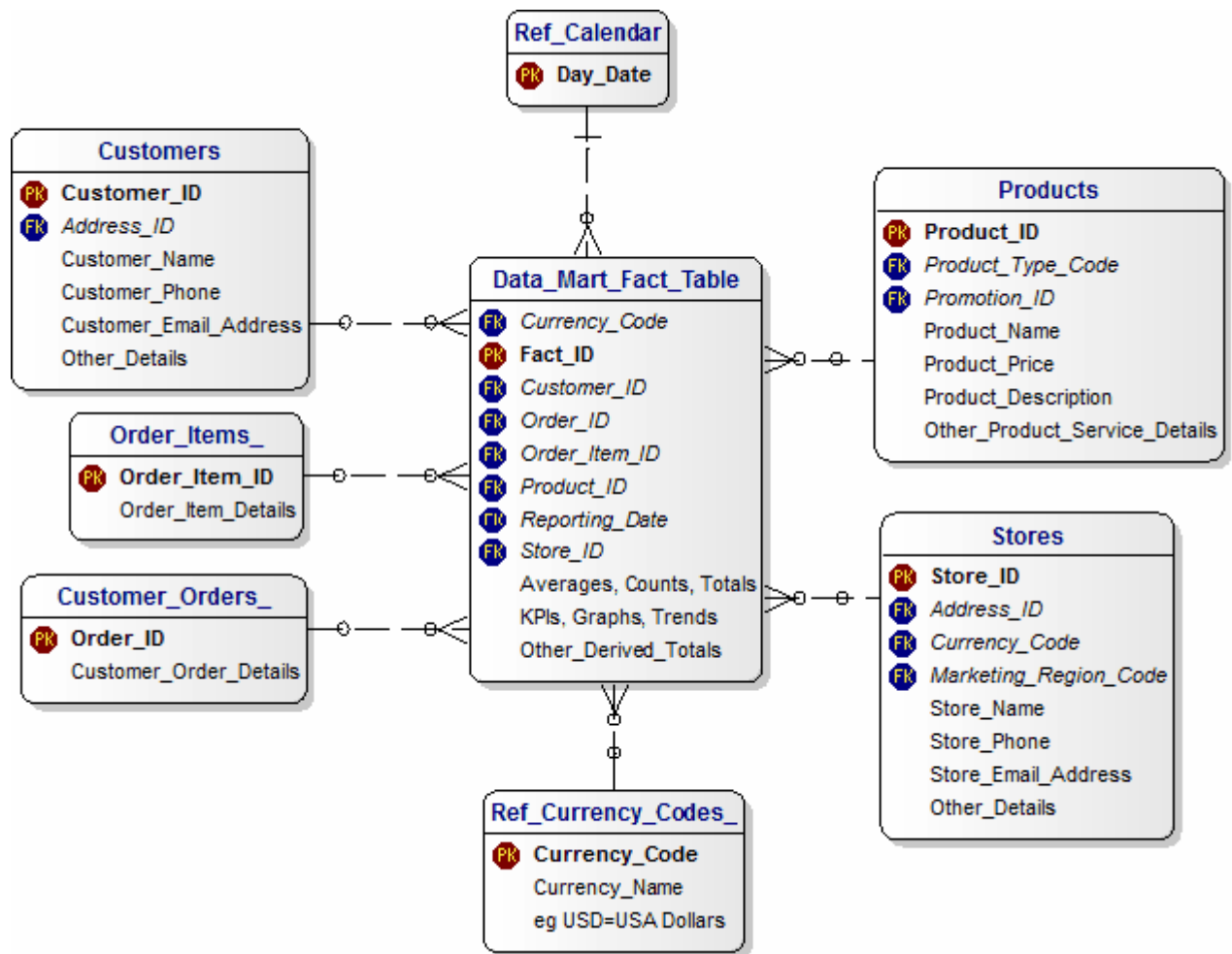
## Step 4. Review Generic Data Mart

The Data Mart is published on this page :-

- [http://www.databaseanswers.org/best\\_practice\\_road\\_map/customer\\_services\\_Data\\_Mart.htm](http://www.databaseanswers.org/best_practice_road_map/customer_services_Data_Mart.htm)



- [http://www.databaseanswers.org/data\\_models/customers\\_and\\_products\\_generic/data\\_mart.htm](http://www.databaseanswers.org/data_models/customers_and_products_generic/data_mart.htm)



Step 6. Validate the Canonical Data Model

Step 7. Map to the Canonical Data Model

Step 8. Review Source Documents

Step 9. Create initial Information Catalogue.

## **3. Entertainment**

### **3.1 Link**

The material in this Chapter is shown on these pages of our Web Site :-

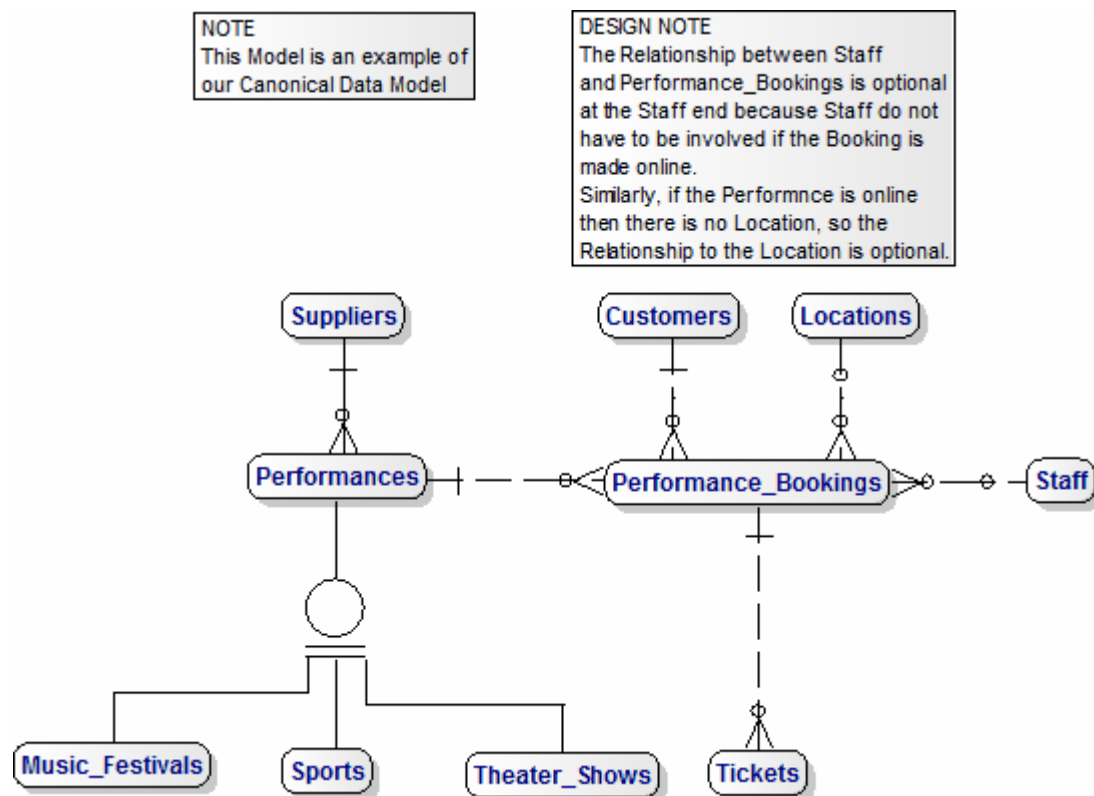
- [http://www.databaseanswers.org/data\\_models/top\\_ten\\_data\\_models\\_entertainment.htm](http://www.databaseanswers.org/data_models/top_ten_data_models_entertainment.htm)
- [http://www.databaseanswers.org/data\\_models/entertainment\\_top\\_level/index.htm](http://www.databaseanswers.org/data_models/entertainment_top_level/index.htm)



### 3.2 The Steps

Step 2. Review the Enterprise Data Model

- [http://www.databaseanswers.org/data\\_models/entertainment\\_top\\_level/index.htm](http://www.databaseanswers.org/data_models/entertainment_top_level/index.htm)



## Step 3. Adapt and incorporate Subject Area Models

- Cinema Bookings - [http://www.databaseanswers.org/data\\_models/cinema\\_bookings/index.htm](http://www.databaseanswers.org/data_models/cinema_bookings/index.htm)
- Circus - [http://www.databaseanswers.org/data\\_models/circus/index.htm](http://www.databaseanswers.org/data_models/circus/index.htm)
- City Tourist Guide - [http://www.databaseanswers.org/data\\_models/city\\_tourist\\_guide/index.htm](http://www.databaseanswers.org/data_models/city_tourist_guide/index.htm)

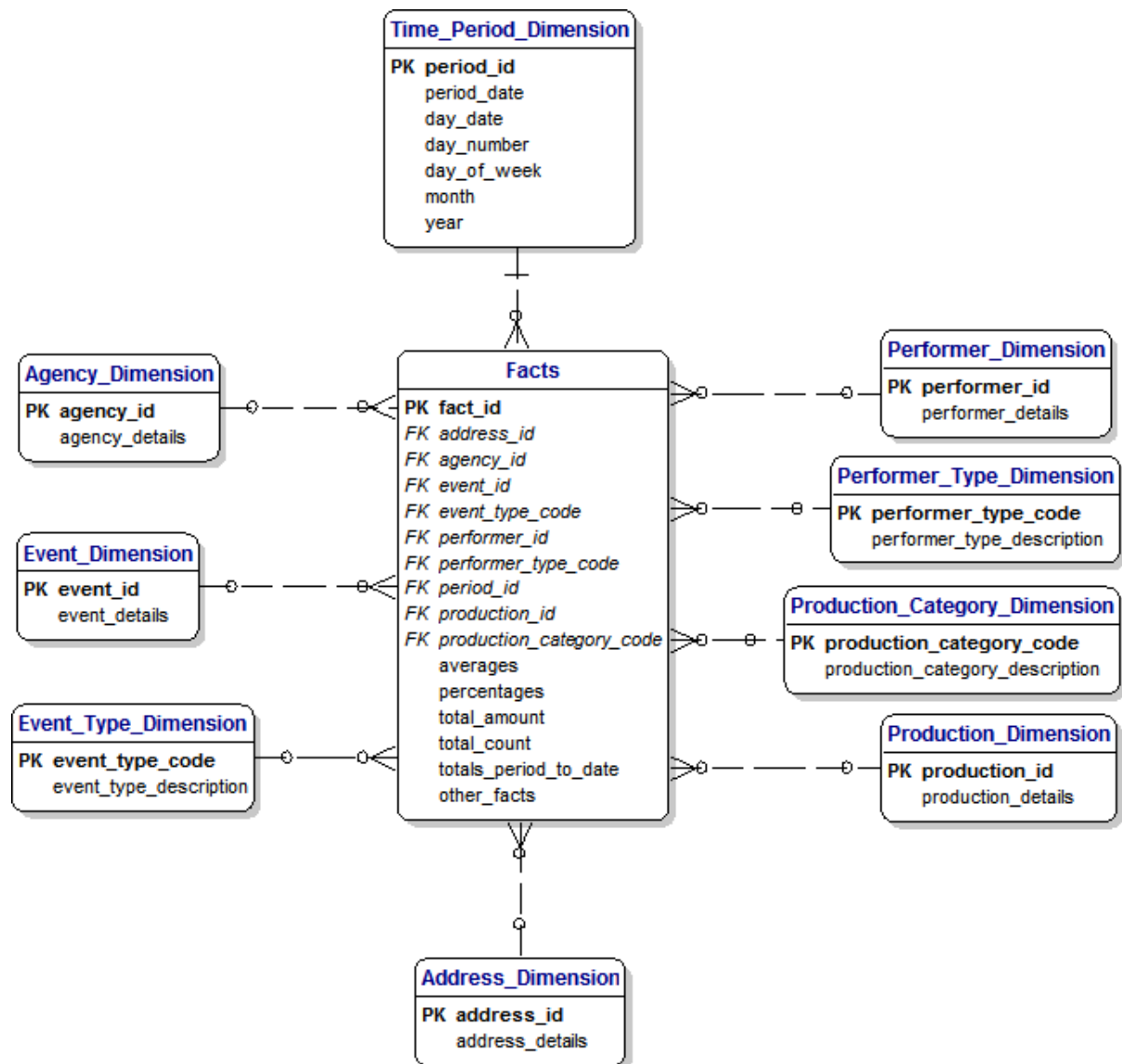
This Model features in our downloadable e-Book entitled “Tourist Guide to London for Data Modellers” :-

- [http://www.databaseanswers.org/downloads/Tourist\\_Guide\\_to\\_London\\_for\\_Data\\_Modellers.pdf](http://www.databaseanswers.org/downloads/Tourist_Guide_to_London_for_Data_Modellers.pdf)
- Licences and Permits - [http://www.databaseanswers.org/data\\_models/licences\\_and\\_permits/index.htm](http://www.databaseanswers.org/data_models/licences_and_permits/index.htm)
- Making a Movie - [http://www.databaseanswers.org/data\\_models/movie\\_making/index.htm](http://www.databaseanswers.org/data_models/movie_making/index.htm)
- Making a Movie (for beginners) –
  - [http://www.databaseanswers.org/data\\_models/movie\\_making/making\\_a\\_movie4\\_beginners.htm](http://www.databaseanswers.org/data_models/movie_making/making_a_movie4_beginners.htm)

## Step 4. Review Generic Data Mart

This Dimensional Model for a Clown Registry is appears on this page :-

- [http://www.databaseanswers.org/best\\_practice\\_road\\_map/entertainment\\_Data\\_Mart.htm](http://www.databaseanswers.org/best_practice_road_map/entertainment_Data_Mart.htm)



## Step 6. Validate the Canonical Data Model

## Step 7. Map to the Canonical Data Model

## Step 8. Review Source Documents

## Step 9. Create initial Information Catalogue.

## 4. Gym Management

### 4.1 Link

The material in this Chapter is shown on this page of our Web Site :-

- [http://www.databaseanswers.org/data\\_models/gym\\_management/index.htm](http://www.databaseanswers.org/data_models/gym_management/index.htm)

This Model is an excellent example of our Approach of having a Top-Level Model which contains Subject Areas, each with its own Model.

### 4.2 The Steps

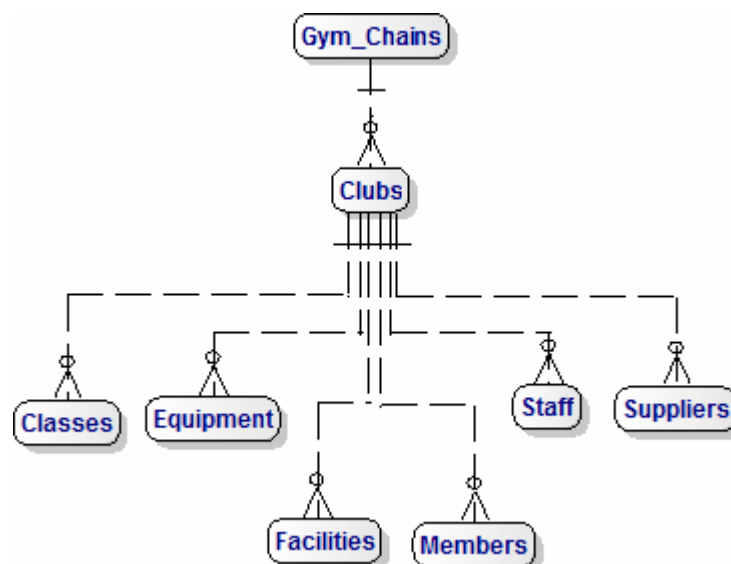
Step 1. Create a Statement of Business Objectives

Our Specifications were provided in a question to our Web Site :-

“We would please like a schema for or one that will fit the following example or one that you think could easily adjust to fit from your site to manage and maintain a gym membership, facilities and equipment e.g. weight lifting, swimming, boxing etc. covering the branches, facilities, staff, membership, suppliers, parts and repairs.”

Step 2. Review the Enterprise Data Model

This shows the current draft of the EDM :-



Step 3. Adapt and incorporate Subject Area Models

We have a number of Subject Area Data Models on our Web Site.

They are featured on this page :-

- [http://www.databaseanswers.org/data\\_models/subject\\_area\\_data\\_models.htm](http://www.databaseanswers.org/data_models/subject_area_data_models.htm)

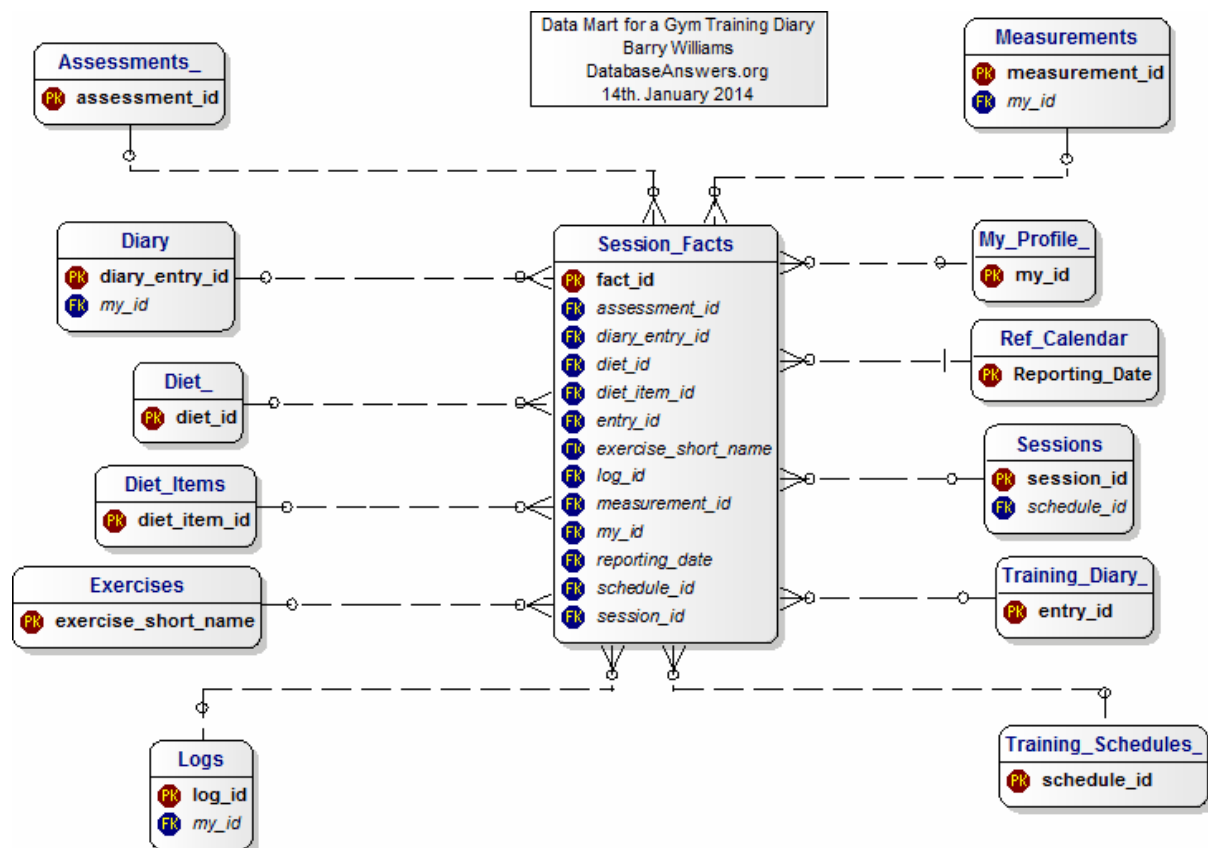
Here are the ones that are appropriate to Gym Management :-

- Classes - [Workout Programmes](#)
- Equipment - [Maintenance](#) and [Repairs](#)
- Facilities - [Subject Area](#)
- Members - [Invoices and Payments](#) and [Personal Training](#)
- Staff - [Movements](#) and [Museums](#)
- Suppliers - [Procurement](#)

## Step 4. Review Generic Data Mart

This Dimensional Model is shown on this page :-

- [http://www.databaseanswers.org/data\\_models/gym\\_training\\_diary/data\\_mart.htm](http://www.databaseanswers.org/data_models/gym_training_diary/data_mart.htm)



## Step 6. Validate the Canonical Data Model

## Step 7. Map to the Canonical Data Model

## Step 8. Review Source Documents

## Step 9. Create initial Information Catalogue.

## 5. Insurance

### 5.1 Link

This material is available on this page of our Web Site :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_insurance/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_insurance/index.htm)

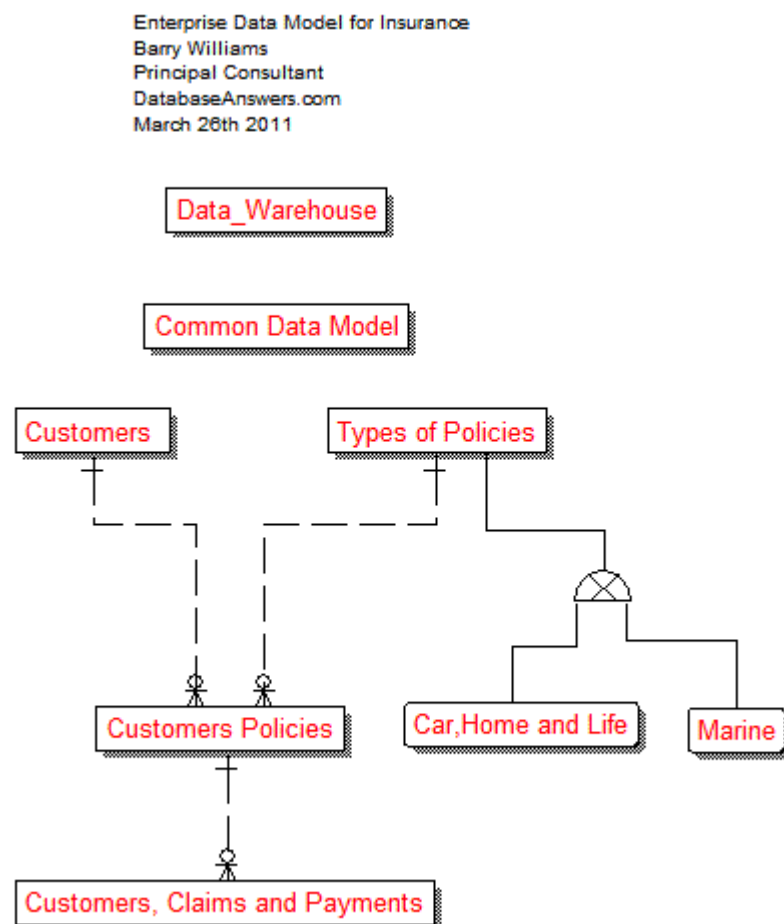
### 5.2 The Steps

Step 1. Create a Statement of Business Objectives

We start by agreeing a Statement of Business Objectives to establish the scope of the Enterprise

Step 2. Review the Enterprise Data Model

This EDM is on the page quoted above :-

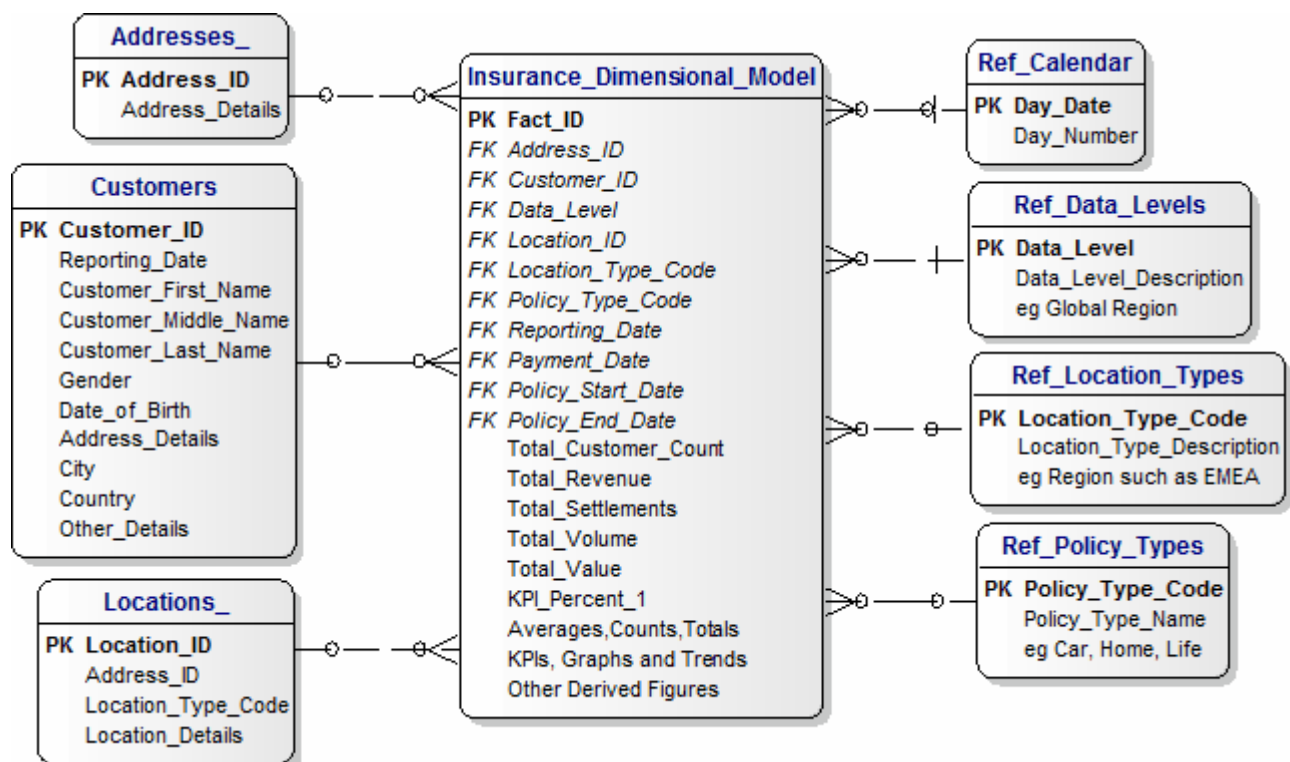


Step 3. Adapt and incorporate Subject Area Models

We have also created Data Models for these **Subject Areas** :-

- [Customers, Claims and Brokers](#)
- [Personal Insurance, Claims and Payments](#)
- [Types of Insurance - Car, Home and Life](#)
- [Types of Insurance - Marine and Motor Vehicles](#)

Step 4. Review Generic Data Mart



Step 6. Validate the Canonical Data Model

Step 7. Map to the Canonical Data Model

Step 8. Review Source Documents

Step 9. Create initial Information Catalogue.



## 6. Investment Banking

### 6.1 Link

This material is available on this page of our Web Site :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_investment\\_banks/marketing\\_pack\\_for\\_investment\\_banking.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_investment_banks/marketing_pack_for_investment_banking.htm)

### 6.2 The Steps

The results of applying the Steps are as follows :-

Step 1. Create a Statement of Business Objectives

We start by agreeing a Statement of Business Objectives to establish the scope of the Enterprise Data Model.

Once we have agreed the Statement of Business Objectives we can create a draft Top-Level Model with associated Subject Areas, each of which is shown in its own Model.

This is an example of a Statement of Business Objectives for an Investment Bank :-

"Our Business objectives are to offer a range of Services to Clients, which can be either organizations or **High-Net-Worth Individuals**.

These Services will involve completing Deals for our Clients in which our Staff will participate with the purpose of achieving acceptable returns on investment.

Brokers may participate in these Deals, which will all be completed by Settlements.

Deals may involve multiple Currencies and incur subsequent Transactions, such as adjustments.

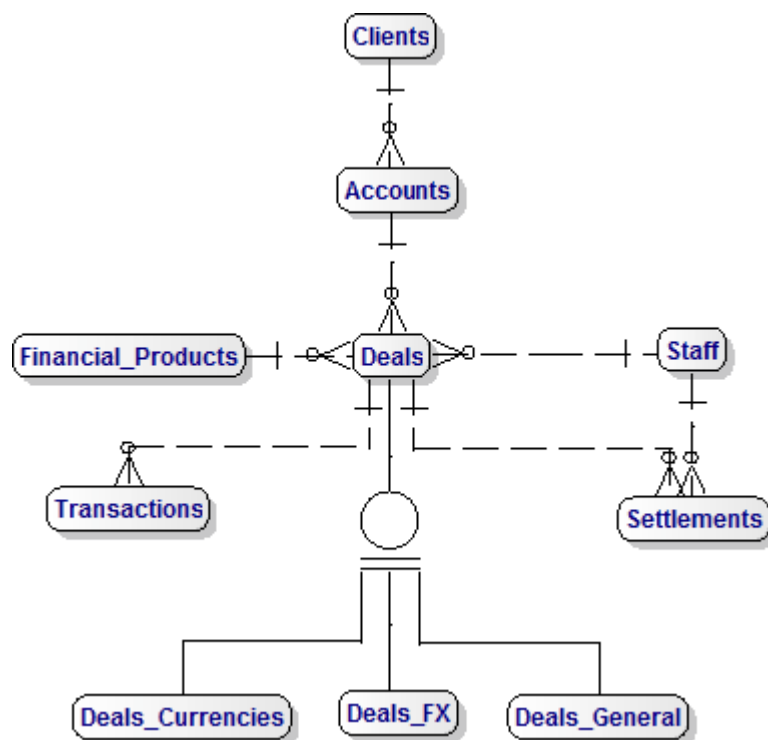
The Enterprise Data Model will establish the data available for a Data Warehouse to meet Business Intelligence requirements.

## Step 2. Review the Enterprise Data Model

After we have agreed the Statement of Business Objectives with the business we can review our Enterprise Data Model.

This will establish the data available for Data Marts to meet Business Intelligence requirements.

We can adopt an approach geared to a Product Lifecycle (Buy and Sell) or to a Customer (Engage, Service, Disengage) or KPI-related, or some combination of these.



## Step 3. Adapt and incorporate Subject Area Models

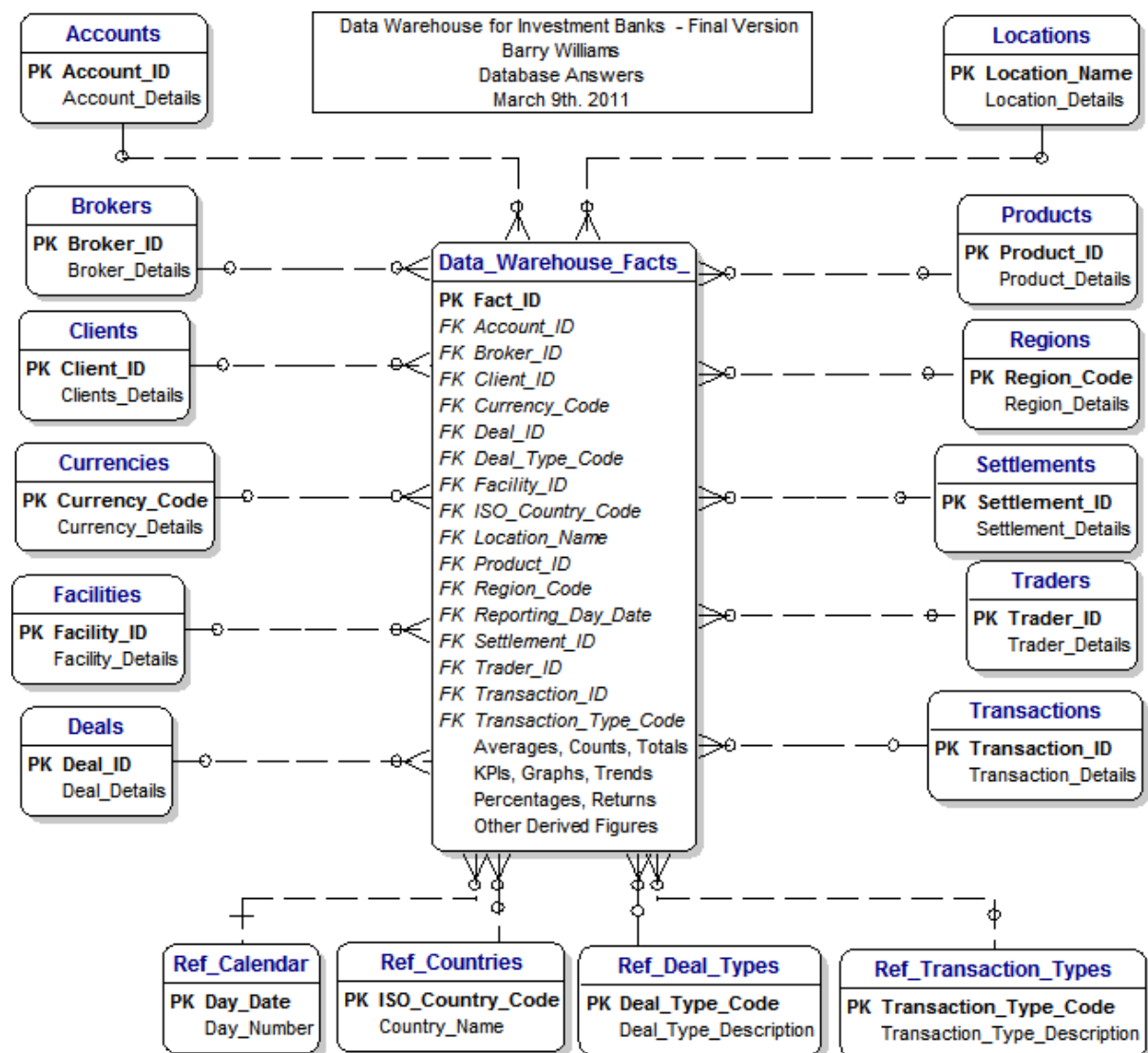
We have also created Data Models for these **Subject Areas** :-

- [Accounts](#)
- [Brokers](#)
- [Customers/Clients](#)
- [Deals](#)
- [Deals FX](#)
- [Deals \(General\)](#)
- [Financial Products](#)
- [FpML Products](#)
- [FpML Products Data Model](#)

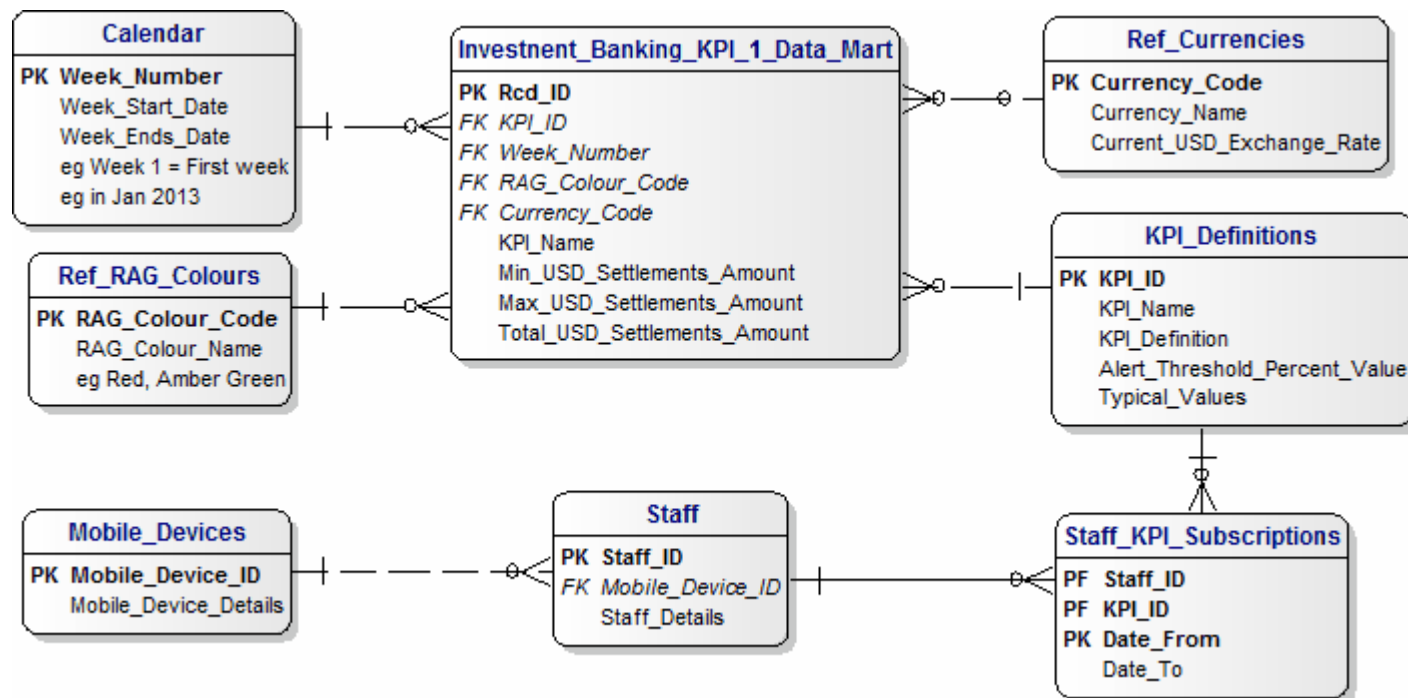
- [Key Performance Indicator \(KPI\)](#)
- [Settlements](#)
- [Staff](#)
- [Transactions](#)
- [Other Subject Areas](#)

#### Step 4. Review Generic Data Mart

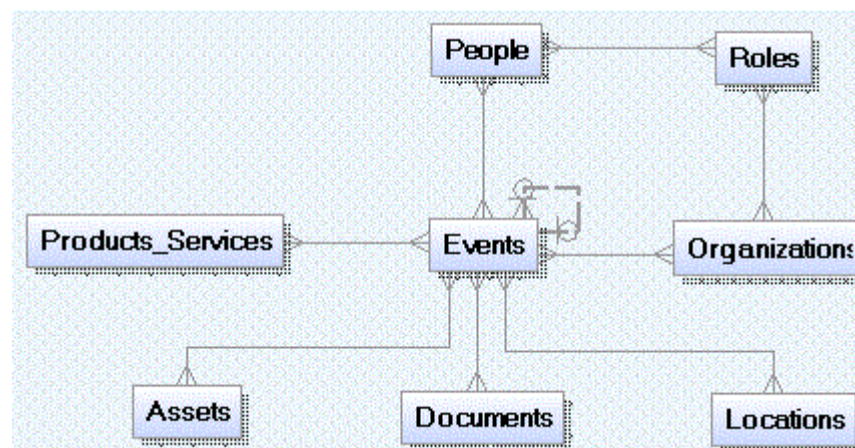
This is :-



For Investment Banking, we have also created this Data Mart for a KPI which monitors Total Settlements Amounts by Currencies. :-

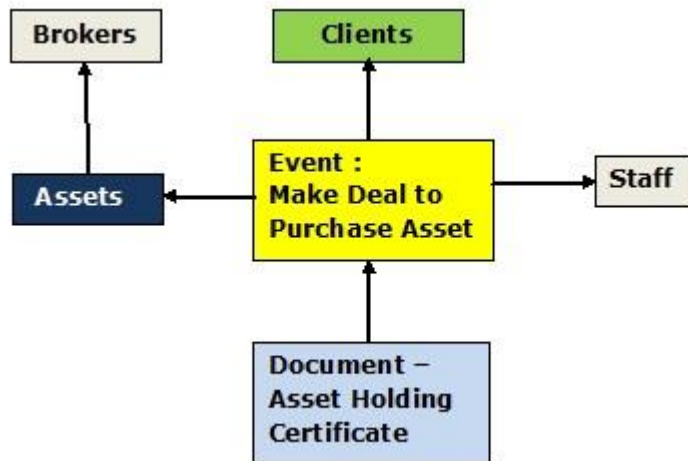


Step 5. Validate the Canonical Data Model



## Step 7. Map to the Canonical Data Model

This is an example of mapping to the Canonical Data Model.



## Step 8. Review Source Documents

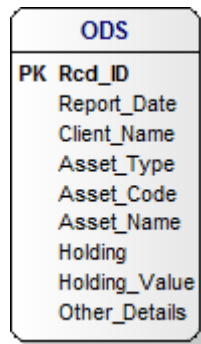
This is an example of an Client Asset Holding Weekly Report.

Monthly Asset Allocation Report - November 2010									
ISIN	Counterpart Name	Assets Type	Security Name	Security Code	Quantity	Currency	Accrued interest		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	ACERGY	LU0075946355	151,243.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	AGR GROUP	NO0010277171	406,257.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	AKER SAS CL.A	NO0010234552	18,061.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	AKER SOLUTIONS	NO0010215684	136,197.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	AP MOELLER MAERSK S.B	DK0010244508	25.000	DKK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	BAKER HUGHES ORD.	US0572241075	29,346.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	BERGEN GROUP	NO0010379779	251,296.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	CAMILLO EITZEN	NO0010227036	106,916.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	DOCKWISE	BMG2786A1062	34,714.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	EITZEN CHEMICAL	NO0010327620	3,541,630.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	ELECTROMAG GEOS	NO0010358484	744,849.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	FAIRSTAR HEAVY TRANSPORT	NL0000026292	242,925.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	FRED.O LSEN ENERGY	NO0003089005	42,173.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	GOLDEN OCEAN GROUP	BMG4032A1045	1,110,956.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	HALLBURTON	US4062161017	27,044.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	JINHUI SHIPPING TRANSPORTATION	BMG5137R1088	191,975.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	NOBLE	C-10033347318	19,646.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	NORWEGIAN CAR CARRIERS	NO0003146904	1,111,890.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	OCFJELL S.A	NO0003399909	219,751.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	OCFJELL S.B	NO0003399917	27,206.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	PETROLEUM GEO-SERVICES	NO0010199151	199,845.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	POLARCUS	KYG7153K1085	326,217.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	PRIDE INTERNATIONAL	US74153Q1022	11,060.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	PROSAFE	CY0100470919	51,009.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	ROWAN COS	US7793821007	16,227.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SAGA TANKERS	NO0010572589	179,841.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SCHLUMBERGER	AN8068571086	13,400.000	USD	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SEABIRD EXPLOITATION	CY0101162119	692,292.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SEADRILL	BMG7945E1057	143,932.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SEAWELL	BMG795601019	52,059.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SEVAN MARINE	NO0010187032	153,639.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SIEM OFFSHORE	KYG813131011	195,993.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SONGA OFFSHORE	CY0100952113	265,555.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	STAR REEFERS	KYG8567Q1055	2,513.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	STOLT-NIELSEN	BMG850801025	229,033.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	SUBSEA 7 CL USD	KYG8549P1081	56,787.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	TGS-NOPEC GEOPHYSICAL COMP.	NO0003078800	73,866.000	NOK	0.000		
LU0269355474	CARLSON FUND - DNB NOR NAVIGATOR	Equities	THE CONTAINERSHIP COMPANY	NO0010566367	57,896.000	NOK	0.000		

Step 9. Create initial Information Catalogue.

This is an example of an Operational Data Store that shows the data in a typical Source Document.

We can use this to create our initial Information Catalogue.



## 7. Law Enforcement

### 7.1 Link

The material in this Chapter appears on this page :-

- [http://www.databaseanswers.org/data\\_models/top\\_ten\\_data\\_models\\_law\\_enforcement.htm](http://www.databaseanswers.org/data_models/top_ten_data_models_law_enforcement.htm)

### 7.2 The Steps

We also have a Tutorial for MDM in Law Enforcement :-

- [http://www.databaseanswers.org/tutorial4\\_mdm\\_in\\_law\\_enforcement/index.htm](http://www.databaseanswers.org/tutorial4_mdm_in_law_enforcement/index.htm)

The Steps are as follows :-

Step 1. Create a Statement of Business Objectives

Step 2. Review the Enterprise Data Model

The Police Generalised Data Model :-

- [http://www.databaseanswers.org/data\\_models/police\\_generalized\\_data\\_model/index.htm](http://www.databaseanswers.org/data_models/police_generalized_data_model/index.htm)

Also check out the associated Tutorial :-

- [http://www.databaseanswers.org/data\\_models/police\\_generalized\\_data\\_model/facts.htm](http://www.databaseanswers.org/data_models/police_generalized_data_model/facts.htm)

Starts here :-

#### **"The Area being Modelled is :-**

A Generalised Database for any Police Service

Source material for this work was originally taken from the UK Pito Corporate Data Model

#### **A. THE USER REQUIREMENTS :**

A Generalised Database that will apply to any Police Force, anywhere in the world.

#### **B. THE APPROACH :**

The Approach was to start with the Generic Data Model for Organisations and People, and map the Police Force Database on to this Data Model.

Details of Entity Mappings are contained in this Table.

Org and People Model	Police Model	Comment
	Account	
	Calendar	Easily added to Org & People
	Party	
Asset	Vehicle	
Event	Business Activity	
Organisation	Organisation	
People	Person	

And ends here \*\*\*\*\*

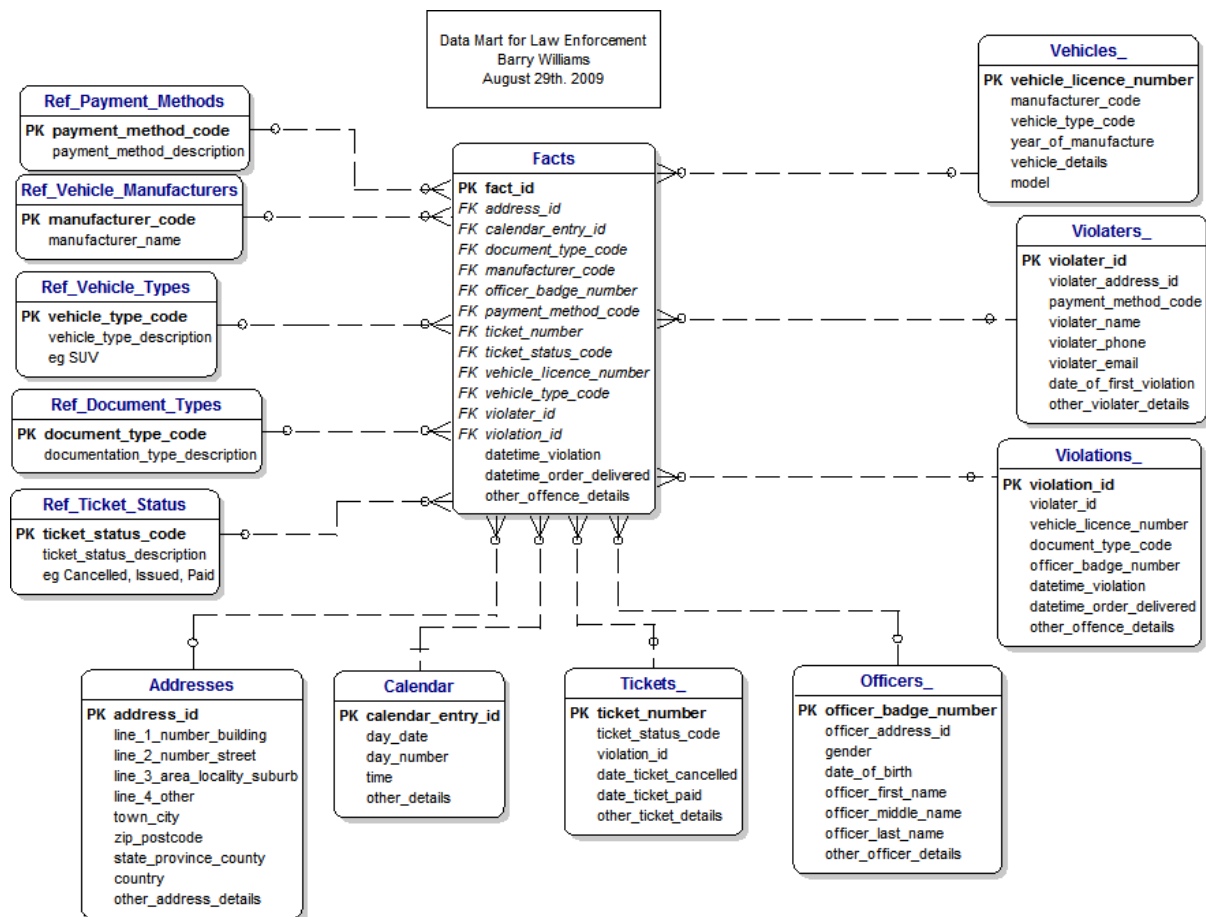
### Step 3. Adapt and incorporate Subject Area Models

- Fingerprint Recognition - [http://www.databaseanswers.org/data\\_models/fingerprint\\_recognition/index.htm](http://www.databaseanswers.org/data_models/fingerprint_recognition/index.htm)
- Forensic Science Labs - [http://www.databaseanswers.org/data\\_models/forensic\\_science\\_labs/index.htm](http://www.databaseanswers.org/data_models/forensic_science_labs/index.htm)
- Global Crime - [http://www.databaseanswers.org/data\\_models/global\\_crime/index.htm](http://www.databaseanswers.org/data_models/global_crime/index.htm)
- Police Departments - [http://www.databaseanswers.org/data\\_models/police\\_departments/index.htm](http://www.databaseanswers.org/data_models/police_departments/index.htm)
- Prisons and Prisoners - [http://www.databaseanswers.org/data\\_models/prisons\\_and\\_prisoners/index.htm](http://www.databaseanswers.org/data_models/prisons_and_prisoners/index.htm)
- Tracking Evidence - [http://www.databaseanswers.org/data\\_models/tracking\\_evidence/index.htm](http://www.databaseanswers.org/data_models/tracking_evidence/index.htm)

### Step 4. Review Generic Data Mart

This is a Data Mart for Traffic Cops and Tickets :-





Step 6. Validate the Canonical Data Model

Step 7. Map to the Canonical Data Model

Step 8. Review Source Documents

Step 9. Create initial Information Catalogue.

## 8. Local Government

### 8.1 Link

The material in this Chapter appears on this page :-

- [http://www.databasanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_local\\_government/index.htm](http://www.databasanswers.org/data_models/enterprise_data_model_for_local_government/index.htm)

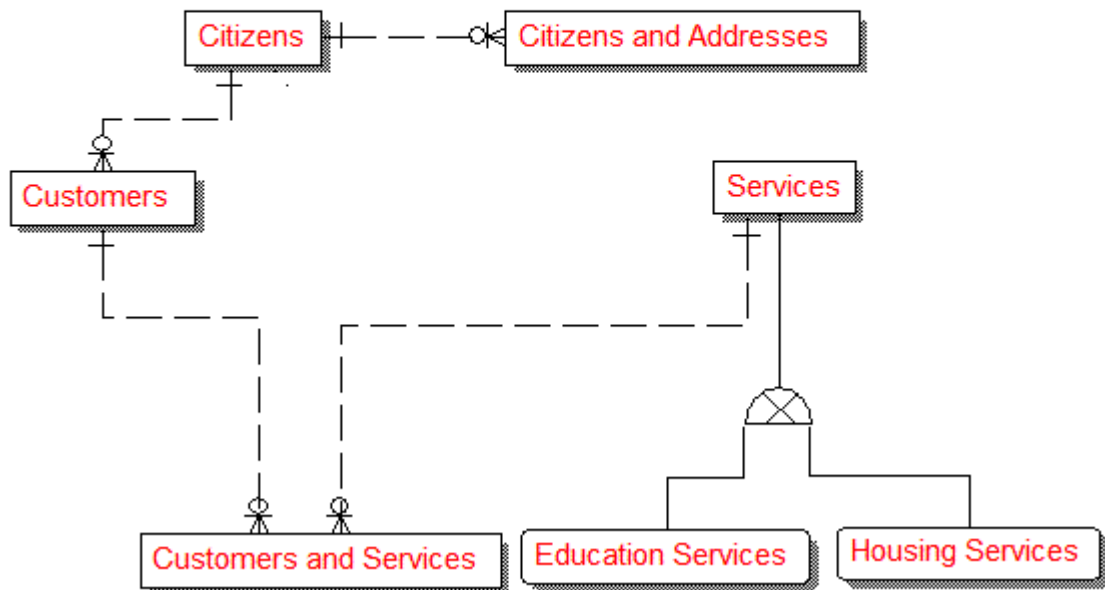
### 8.2 The Steps

Step 2. Review the Enterprise Data Model

This Model is on this page :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_local\\_government/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/index.htm)

Enterprise Data Model for Local Gov't  
Barry Williams  
Principal Consultant  
DatabaseAnswers.com  
March 26th 2011



Step

3.

Adapt

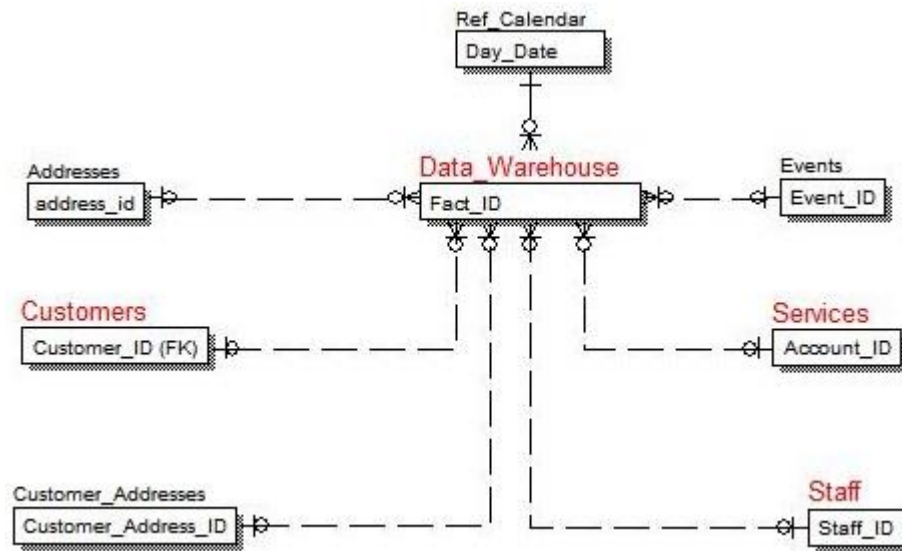
and incorporate Subject Area Models

We have also created Data Models for these **Subject Areas** :-

- [Children's Attainments](#)
- [Citizens](#)
- [Citizens and Addresses](#)
- [Services](#)
- [Customers and Services](#)
- [Education Services](#)
- [Housing Services](#)

Step 4. Review Generic Data Mart

This Model needs replacing.



## **9. Logistics**

### **9.1 Link**

The material in this Chapter appears on this page :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_logistics/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_logistics/index.htm)

### **9.2 The Steps**

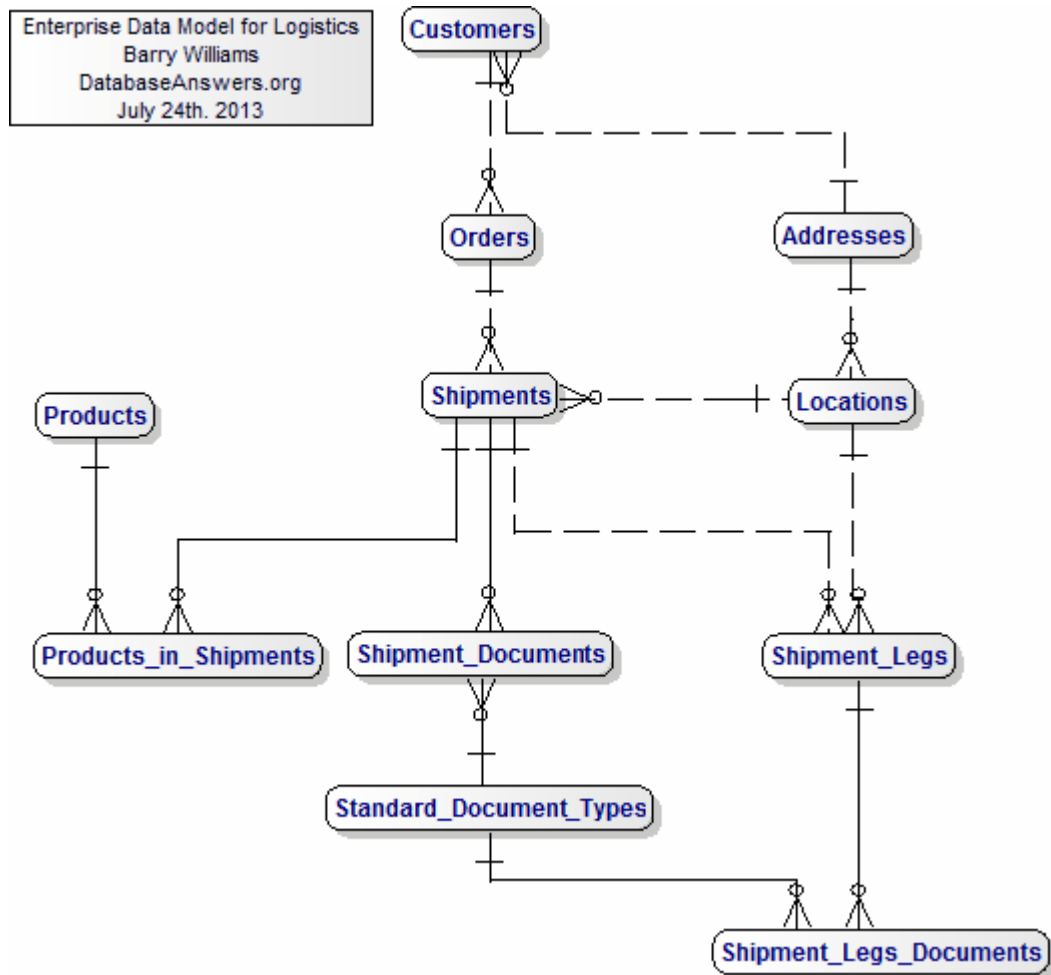
The Steps are as follows :-

- Step 1. Create a Statement of Business Objectives
- Step 2. Review the Enterprise Data Model
- Step 3. Adapt and incorporate Subject Area Models
- Step 4. Review Generic Data Mart
- Step 6. Validate the Canonical Data Model
- Step 7. Map to the Canonical Data Model
- Step 8. Review Source Documents
- Step 9. Create initial Information Catalogue.

## Step 2. Review the Enterprise Data Model

This Data Model is available on this page :-

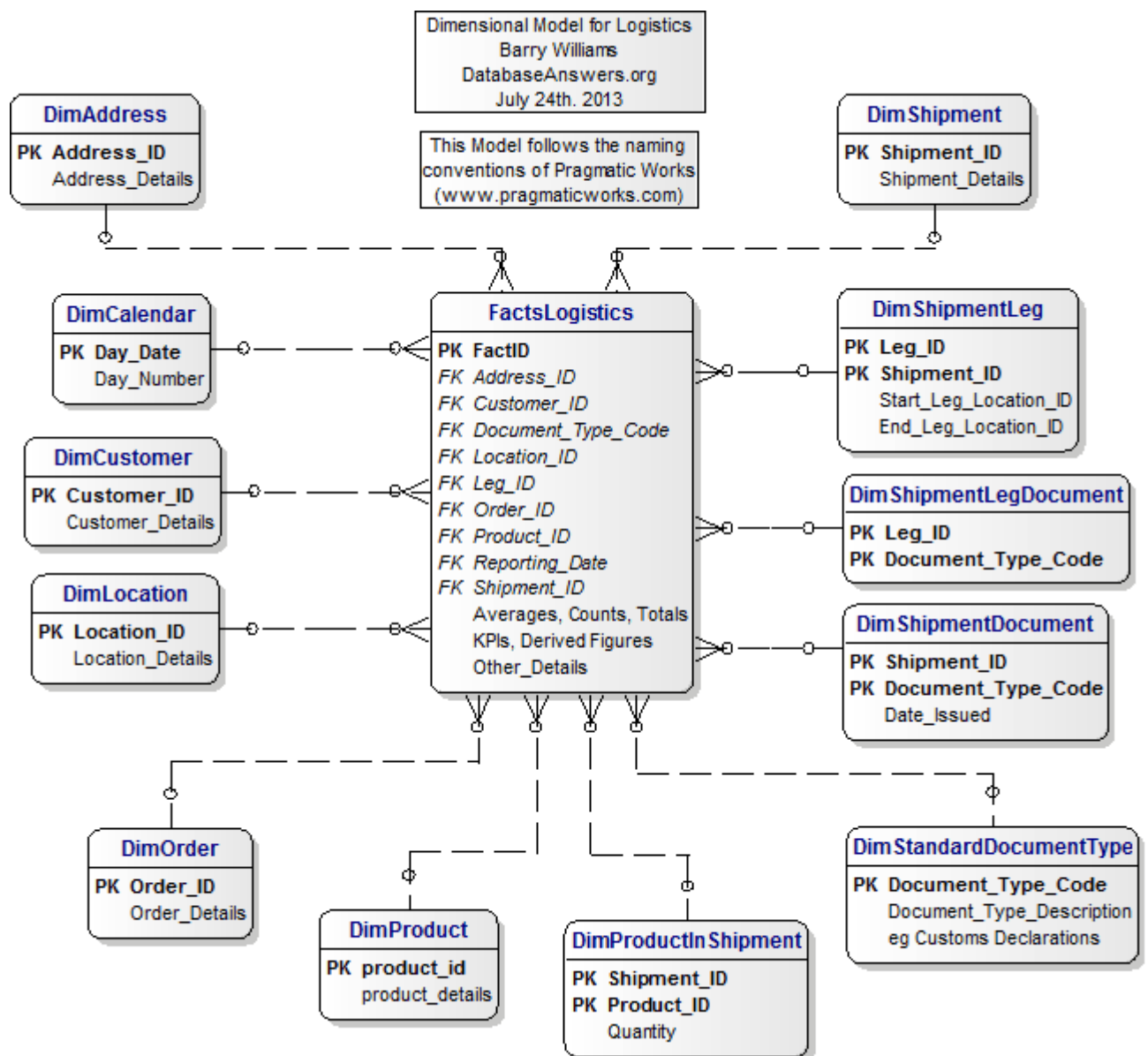
- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_logistics/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_logistics/index.htm)



Step 3. Adapt and incorporate Subject Area Models

Step 4. Review Generic Data Mart

This Data Mart has been named according to the style recommended by Pragmatic Works where Dimension and Fact Tables are named appropriately.



## 10. Postal Services

### 10.1 Link

The material in this Chapter appears on this page :-

- [http://www.databaseanswers.org/data\\_models/postal\\_services/index.htm](http://www.databaseanswers.org/data_models/postal_services/index.htm)

### 10.2 The Steps.

Step 1. Create a Statement of Business Objectives

Our main sources of information is the TNT Post Web Site.

We find that one of the Services they offer is Tracking

Our first thought as outsiders who have sent and received post is that the business delivers letters, packages and parcels to an Address for a fee.

We decide to call these Things of Interest 'Deliverables'.

We look for some kind of "Business Mission Statement" that can help us to derive a Top-Level view of the business.

We find this statement on the Web Site :-

"TNT Post is the Royal Mail's number one challenger for **business mail** of all kinds.

Whether we're handling your letters, packets and parcels or successfully managing your unaddressed doordrop strategy, you'll find we're straight-talking people who get the job done.

Our can-do approach and our focus on efficiency make us different, saving you time and money. We provide a high quality, full service concept for all your business mail and distribution needs. Our portfolio is designed to deliver what you want. We are confident that we can meet your postal service requirements and exceed your expectations, whatever the scale and scope of your enterprise."

On the Web Site, we see an option for Customers to register Complaints.

We decide to model that as a more general Feedback facility, to include Compliments and Suggestions.

At this point, we can say that the **Things of Interest** are :-

1. Contracts
2. Customers
3. Deliverables
4. Deliveries
5. Distribution Centres (the mail has to be stored somewhere)

6. Feedback
7. Payments
8. Schedules
9. Services
10. Staff
11. Vehicles

The Organisation offers Services, which include :-

1. Deliver items.
2. Receive Payments
3. Publish Schedules
4. Agree Contracts with Customers

At this point, we can create our first draft of the Top-Level Data Model.

We will need to decide what our Subject Areas are going to be.

Then we will need to review our first draft with the Review Committee of business users.

Finally, we define the Business Data Rules.

Now that we have defined the 'Things of Interest' we can establish how they are related. We call these the 'Business Data Rules' and then we review them with our Steering Group and modify them as required.

1. A Customer always signs one or more Contracts for Services.
2. Customers can post Deliverables in line with the terms of a Contract.
3. The Postal Company provides Services that deliver Deliverables according to the terms of a Contract.

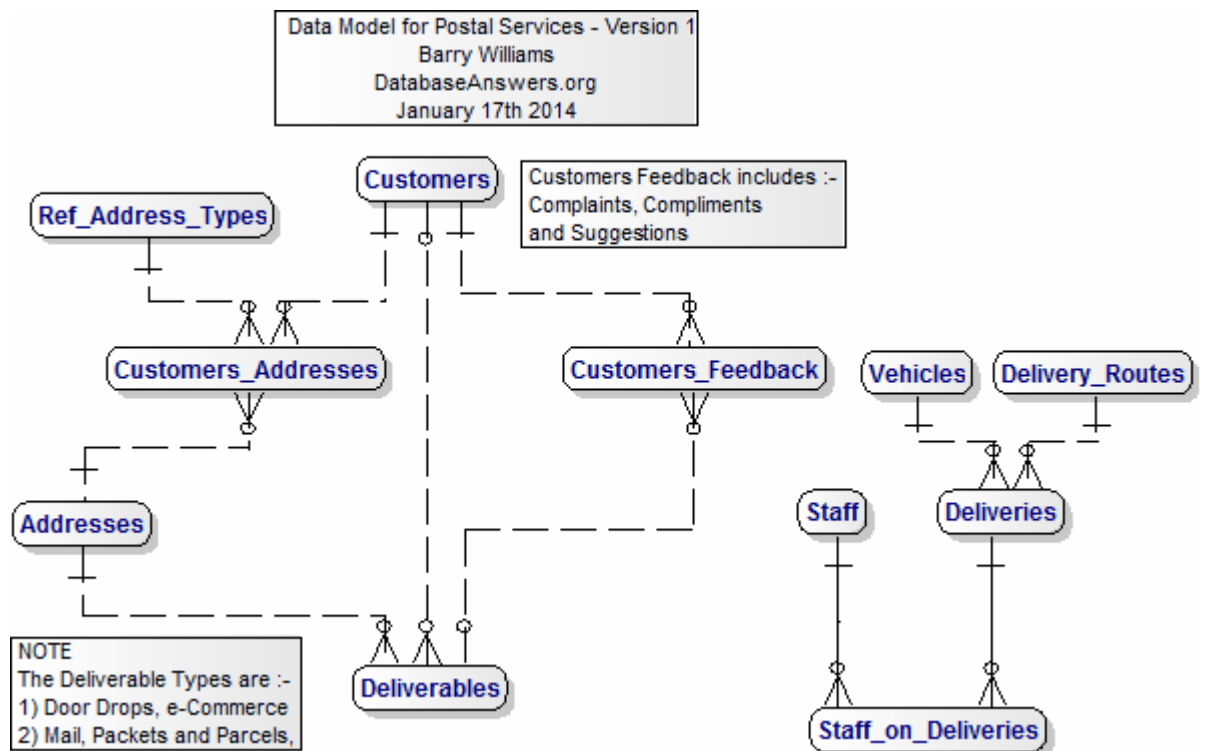
### **Step 4. Identify the Reference Data**

The Reference Data is important because it provides the Foundation for all the other Data.

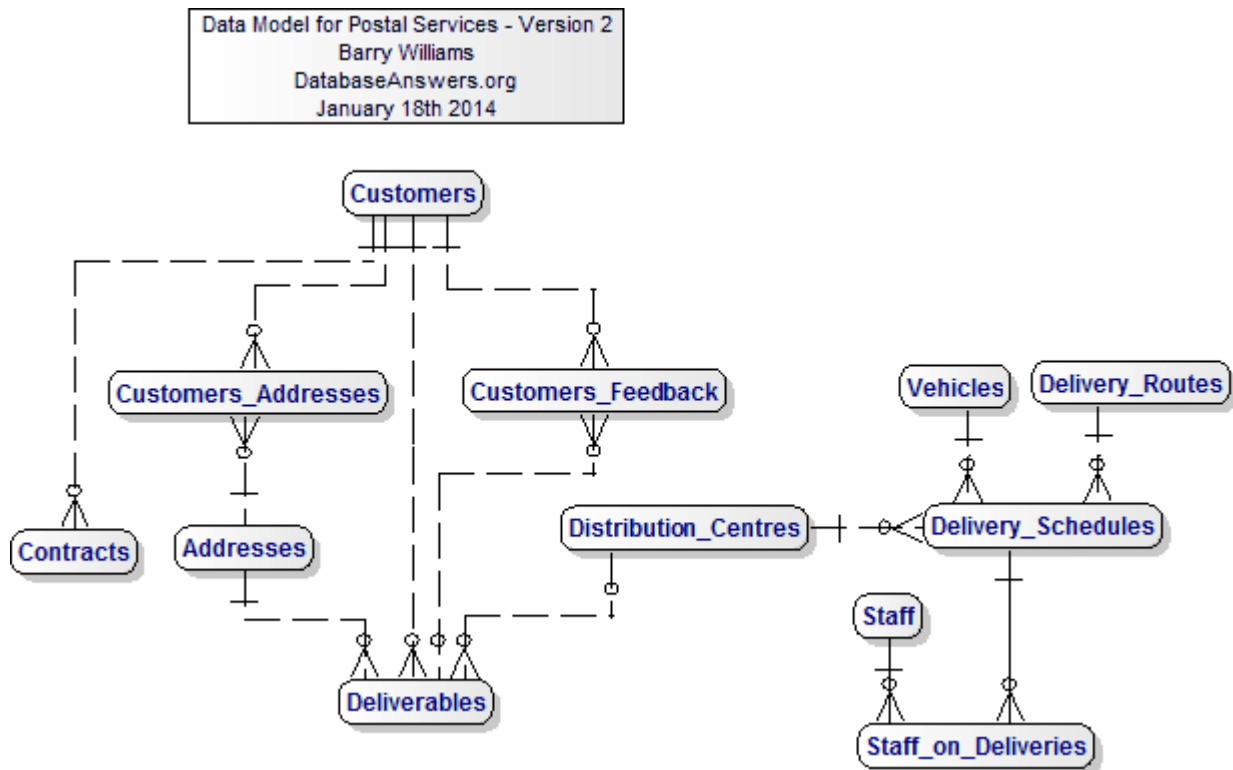


Step 2. Create the first draft Enterprise Data Model

This is our first Version :-



The following day, I reviewed the Web Site in more detail and here is my second Version :-



### Step 3 : Incorporate Subject Area Models

Working from this second Version, I located some appropriate Subject Area Models in my Library :-

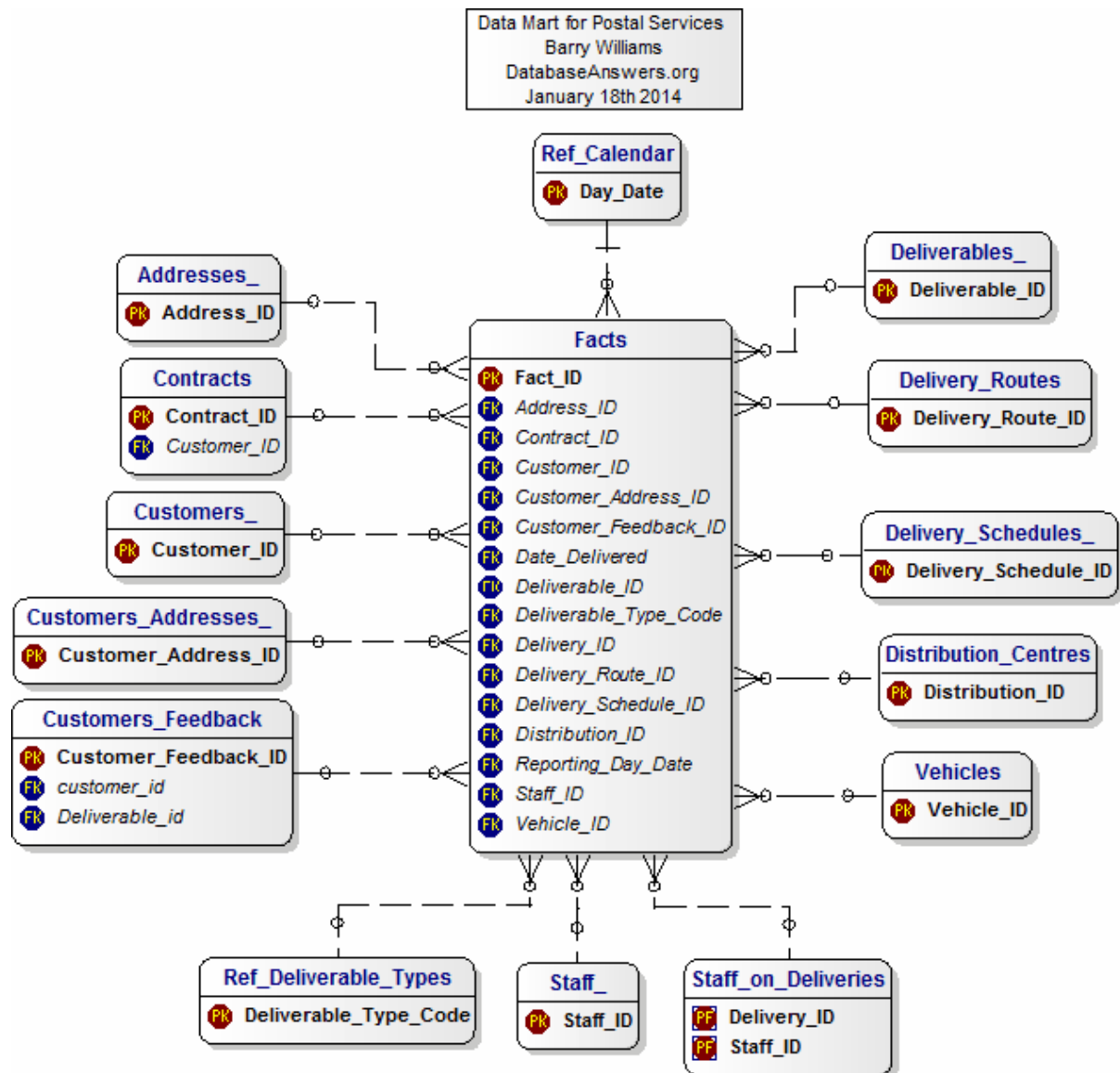
- [http://www.databaseanswers.org/data\\_models/subject\\_area\\_data\\_models.htm](http://www.databaseanswers.org/data_models/subject_area_data_models.htm)

Subject Areas are :-

- [Contracts](#)
- [Customers](#)
- [Customer and Addresses](#)
- [Deliveries \(Schedules\)](#)
- [Feedback](#)
- [Invoices and Payments](#)
- [Staff](#)
- [Vehicle Maintenance](#) and [Tracking](#)

## Step 4. Create a Data Mart

We are now in a position where we can create design for the Data Mart :-



Step 5. Validate the Canonical Data Model

Step 6. Map to the Canonical Data Model

Step 7. Review Source Documents

Step 8. Create initial Information Catalogue.

## 11. Retail Business

### 11.1 Link

The material in this Chapter appears on this page :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_retail/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/index.htm)

### 11.2 The Steps.

Step 1. Create a Statement of Business Objectives

The [Specifications](#) are available for review.

We start by agreeing a **Statement of Business Objectives** to establish the scope of the Enterprise Data Model.

Once we have agreed the Statement of Business Objectives we can create a draft Top-Level Model with associated Subject Areas, each of which is shown in its own Model.

This is an example of a Statement of Business Objectives for a Retail organization :-

"Our Business objectives are to offer a wide range of affordable Products. We will control costs to achieve maximum profit potential from a wide range of affordable Products which are sourced on a 'just-in-time' basis tailored to our target market, with specific Customer profiles.

The Enterprise Data Model will establish the data available for a Data Warehouse to meet Business Intelligence requirements."

This Data Model is a variation of the [Retail Customers](#) Model.

The [Specifications](#) are available for review.

We start by agreeing a Statement of Business Objectives to establish the scope of the Enterprise Data Model.

Once we have agreed the Statement of Business Objectives we can create a draft Top-Level Model with associated Subject Areas, each of which is shown in its own Model.

This is an example of a Statement of Business Objectives for a Retail organization :-

"Our Business objectives are to offer a wide range of affordable Products.

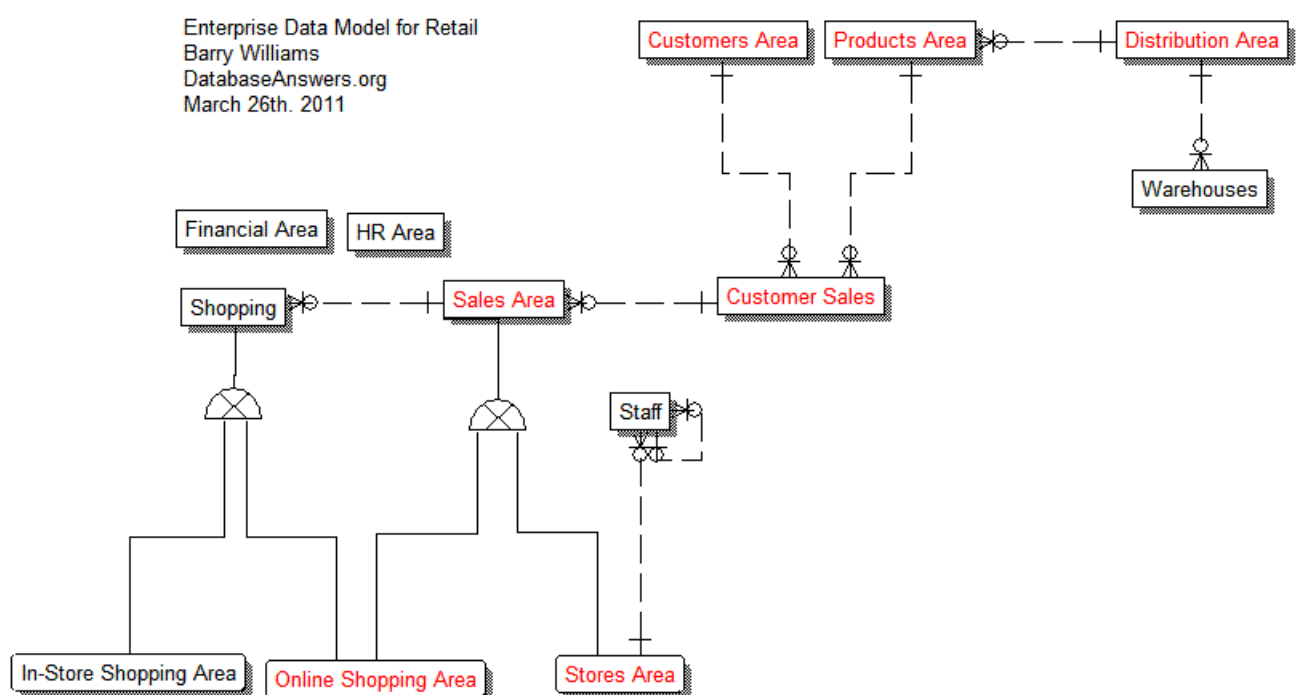
We will control costs to achieve maximum profit potential from a wide range of affordable Products which are sourced on a 'just-in-time' basis tailored to our target market, with specific Customer profiles.

The Enterprise Data Model will establish the data available for a Data Warehouse to meet Business Intelligence requirements."

## Step 2. Review the Enterprise Data Model

This EDM is a variation of the [Retail Customers Model](#) and appears on this page –

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_retail/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/index.htm)

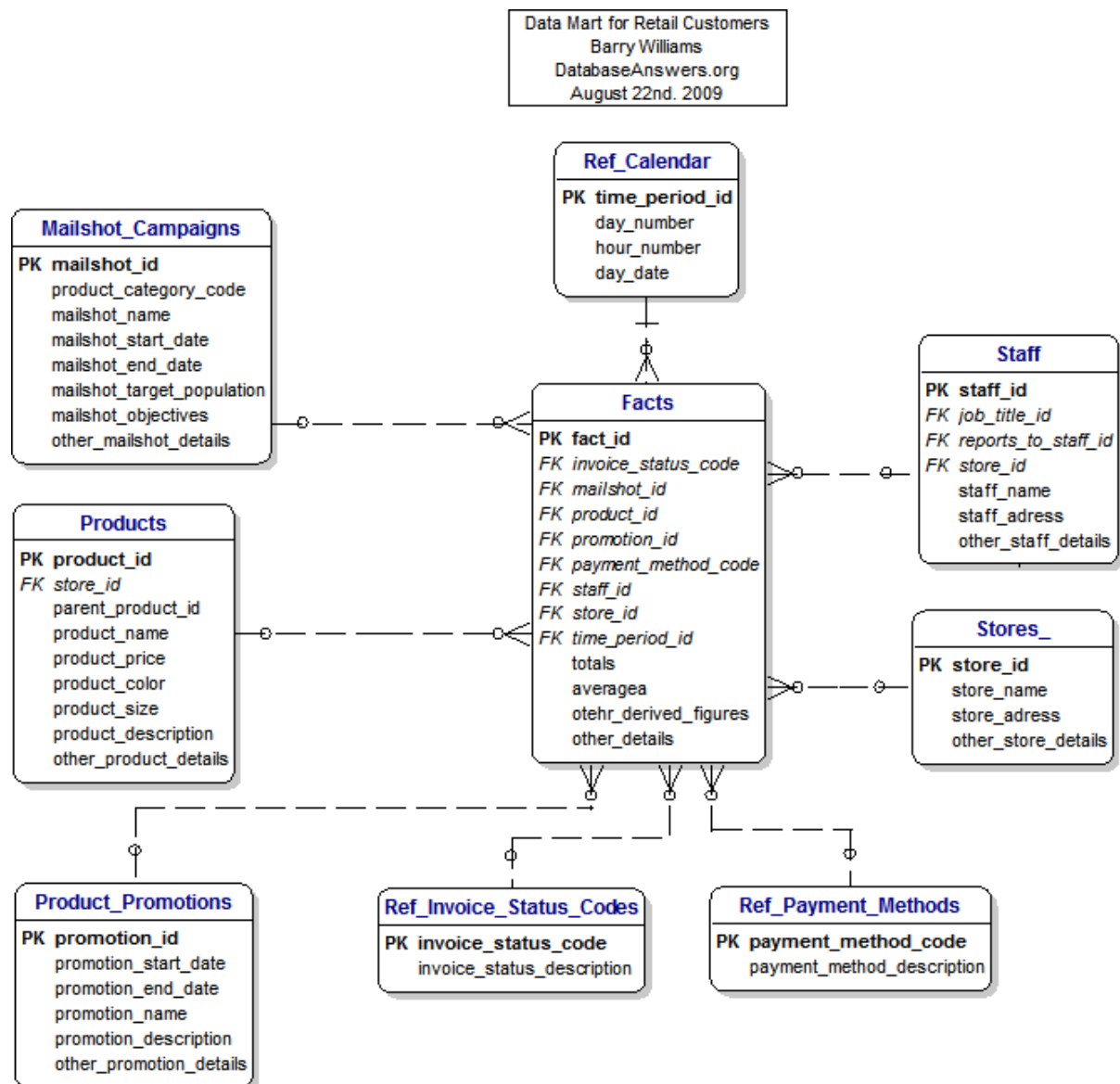


## Step 3. Review the Subject Area Models

- [Customers Subject Area](#)
- [Customers and Orders](#)
- [In-Store Shopping](#)
- [Online Shopping](#)
- [Order History](#)
- [Products Subject Area](#)
- [Products, Stores and Sales Subject Area](#)
- [Registered Users \(with MDM Customer Master Index\)](#)

## Step 4. Review Generic Data Mart

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_retail/retail\\_customers\\_data\\_mart.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/retail_customers_data_mart.htm)



## Step 6. Validate the Canonical Data Model

## Step 7. Map to the Canonical Data Model

## Step 8. Review Source Documents

Step 9. Create initial Information Catalogue

## 12. Travel and Transport

### 12.1 Link

The material for this Chapter has been taken from this page on our Web Site which covers travel by Trains, Boats and Planes:-

- [http://www.databaseanswers.org/data\\_models/trains\\_and\\_boats\\_and\\_planes/index.htm](http://www.databaseanswers.org/data_models/trains_and_boats_and_planes/index.htm)

Additional material for specific modes of Travel appears on this page :-

- [http://www.databaseanswers.org/data\\_models/top\\_ten\\_data\\_models\\_transport\\_and\\_travel.htm](http://www.databaseanswers.org/data_models/top_ten_data_models_transport_and_travel.htm)

### 12.2 The Steps.

There are three sections in this Chapter :-

- Air Travel
  - [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_air\\_travel/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_air_travel/index.htm)
- Shipping
  - [http://www.databaseanswers.org/data\\_models/container\\_shipping/index.htm](http://www.databaseanswers.org/data_models/container_shipping/index.htm)
- Train Travel
  - [http://www.databaseanswers.org/data\\_models/train\\_ticketing\\_systems/index.htm](http://www.databaseanswers.org/data_models/train_ticketing_systems/index.htm)

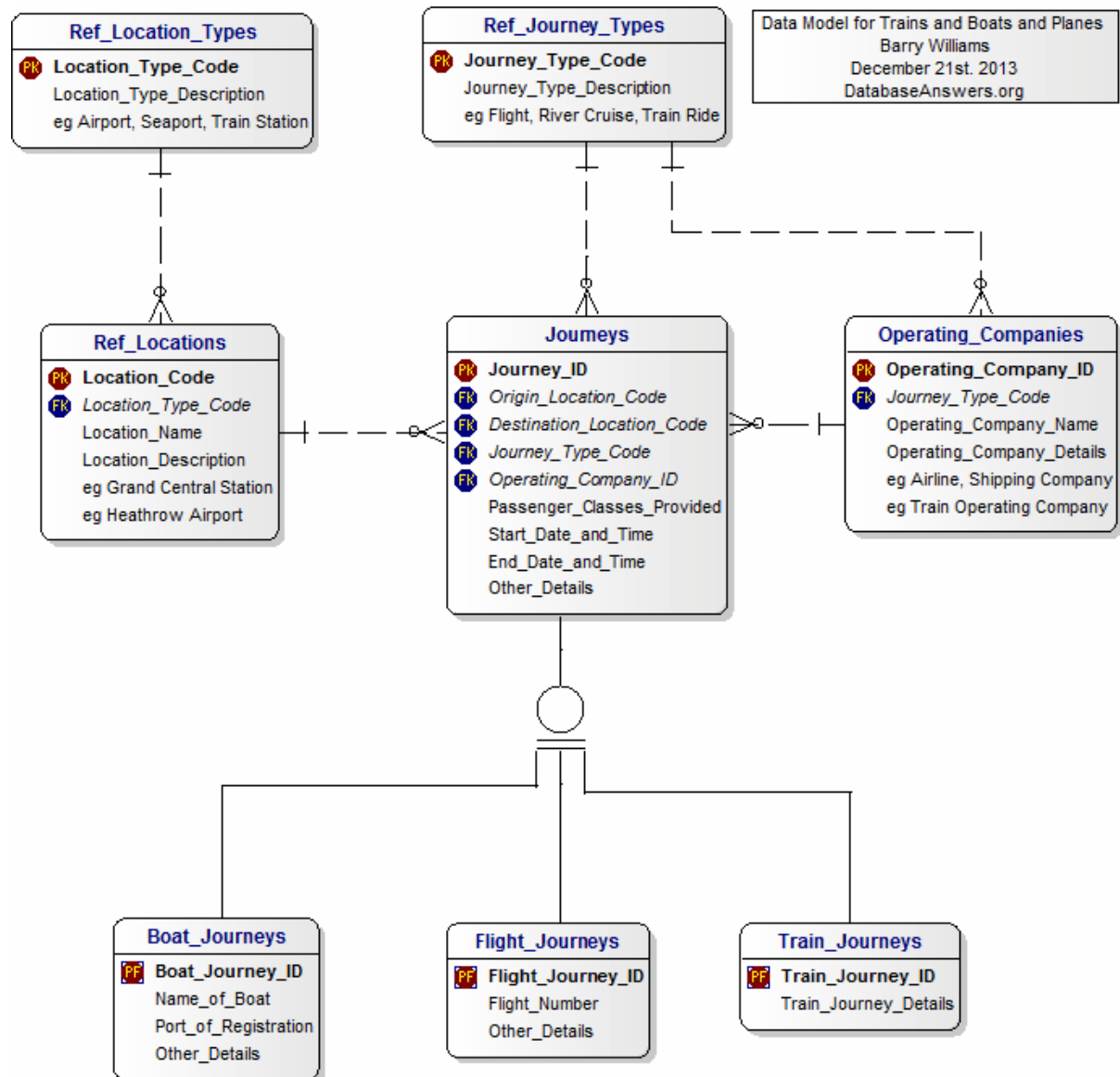
The Steps are as follows :-

Step 1. Create a Statement of Business Objectives



## Step 2. Review the Enterprise Data Model

This shows the current state of our Third-Normal Form Data Model :-



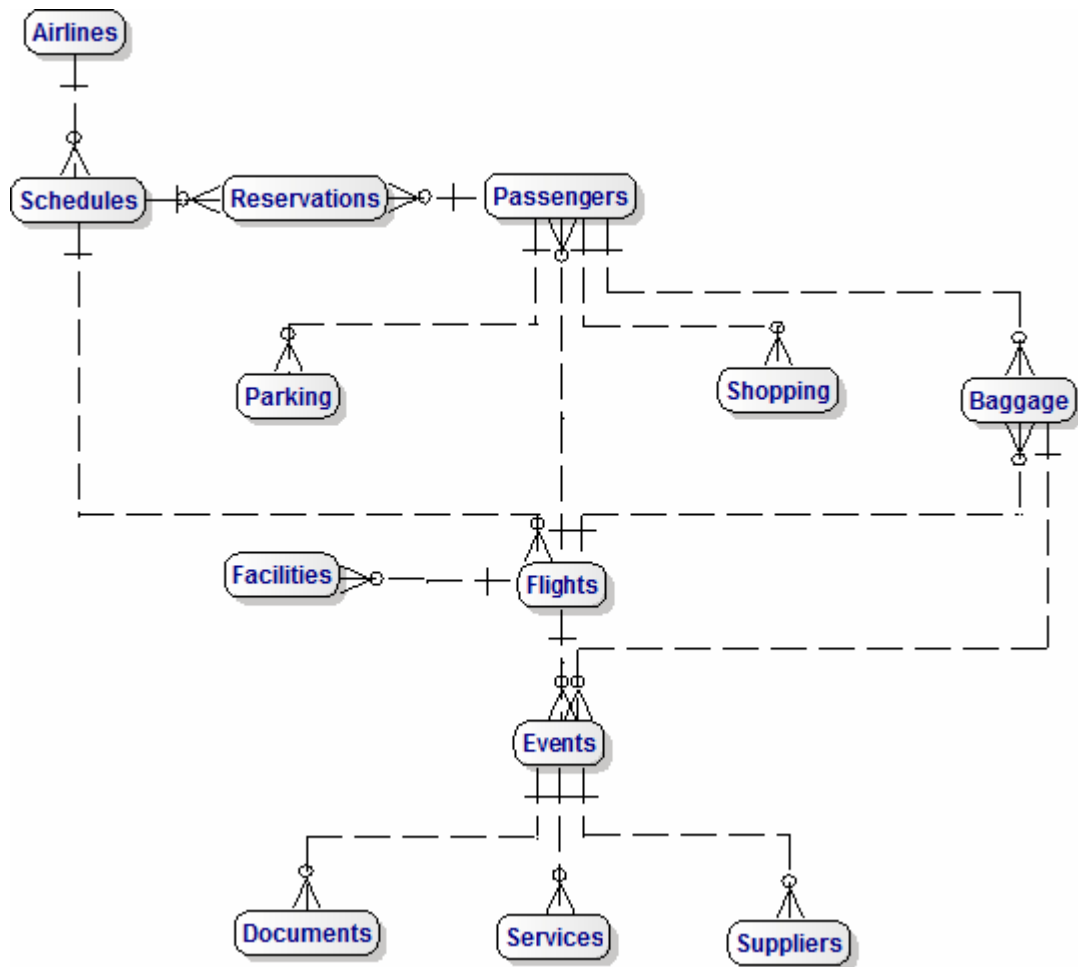
### 12.2.1 Air Travel

Step 3. Adapt and incorporate Subject Area Models

#### 3.1 Subject Area for Air Travel

This Model appears on this page for an Enterprise Data Model for Air Travel :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_air\\_travel/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_air_travel/index.htm)



## 3.1.1 Detailed Subject Area for Air Travel

We have also created Data Models for these **Subject Areas** :-

- [Aircraft Maintenance](#)
- [Airline Operations](#)
- [Airline Reservations](#)
- [Airport Management](#)
- [Passengers Online Bookings](#)

Step 4. Review Generic Data Mart

Step 6. Validate the Canonical Data Model

Step 7. Map to the Canonical Data Model

Step 8. Review Source Documents

Step 9. Create initial Information Catalogue.

### 12.2.2 Shipping

You can download our short Discussion Paper on Enterprise Data Modelling for Container Shipping -

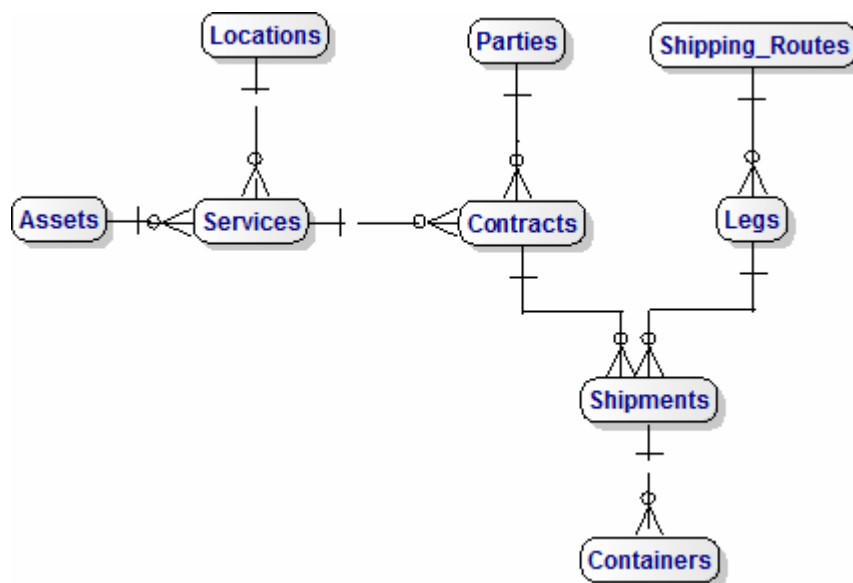
- [http://www.databaseanswers.org/data\\_models/container\\_shipping/Discussion\\_Paper\\_on\\_Enterprise\\_Data\\_Model.pdf](http://www.databaseanswers.org/data_models/container_shipping/Discussion_Paper_on_Enterprise_Data_Model.pdf)

Step 3. Review the Subject Area Models for Shipping

#### 12.2.2.1 Top-Level Model for Shipping

This Model appears on this page for the Top-Level Data Model for Container Shipping :-

- [http://www.databaseanswers.org/data\\_models/container\\_shipping/index.htm](http://www.databaseanswers.org/data_models/container_shipping/index.htm)



#### 1.2.2.2.2 Subject Area Models for Shipping

- Containers -  
[http://www.databaseanswers.org/data\\_models/container\\_shipping/subject\\_area\\_for\\_containers.htm](http://www.databaseanswers.org/data_models/container_shipping/subject_area_for_containers.htm)
- Data Mart –  
○ [http://www.databaseanswers.org/data\\_models/container\\_shipping/data\\_mart.htm](http://www.databaseanswers.org/data_models/container_shipping/data_mart.htm)

### 12.2.3 Train Travel

Step 3. Adapt and incorporate Subject Area Models

#### 3.1 Subject Area for Train Travel

- Public Transport
  - [http://www.databaseanswers.org/data\\_models/public\\_transport/index.htm](http://www.databaseanswers.org/data_models/public_transport/index.htm)
- Data Mart for Public Transport :-
  - [http://www.databaseanswers.org/data\\_models/public\\_transport/public\\_transport\\_data\\_mart.htm](http://www.databaseanswers.org/data_models/public_transport/public_transport_data_mart.htm)
- Railway Reservations –
  - [http://www.databaseanswers.org/data\\_models/railway\\_reservations/index.htm](http://www.databaseanswers.org/data_models/railway_reservations/index.htm)
- Train Systems :-
  - [http://www.databaseanswers.org/data\\_models/train\\_system\\_map/index.htm](http://www.databaseanswers.org/data_models/train_system_map/index.htm)
- Train Ticketing Systems :-
  - [http://www.databaseanswers.org/data\\_models/train\\_ticketing\\_systems/index.htm](http://www.databaseanswers.org/data_models/train_ticketing_systems/index.htm)

## 13. Wine

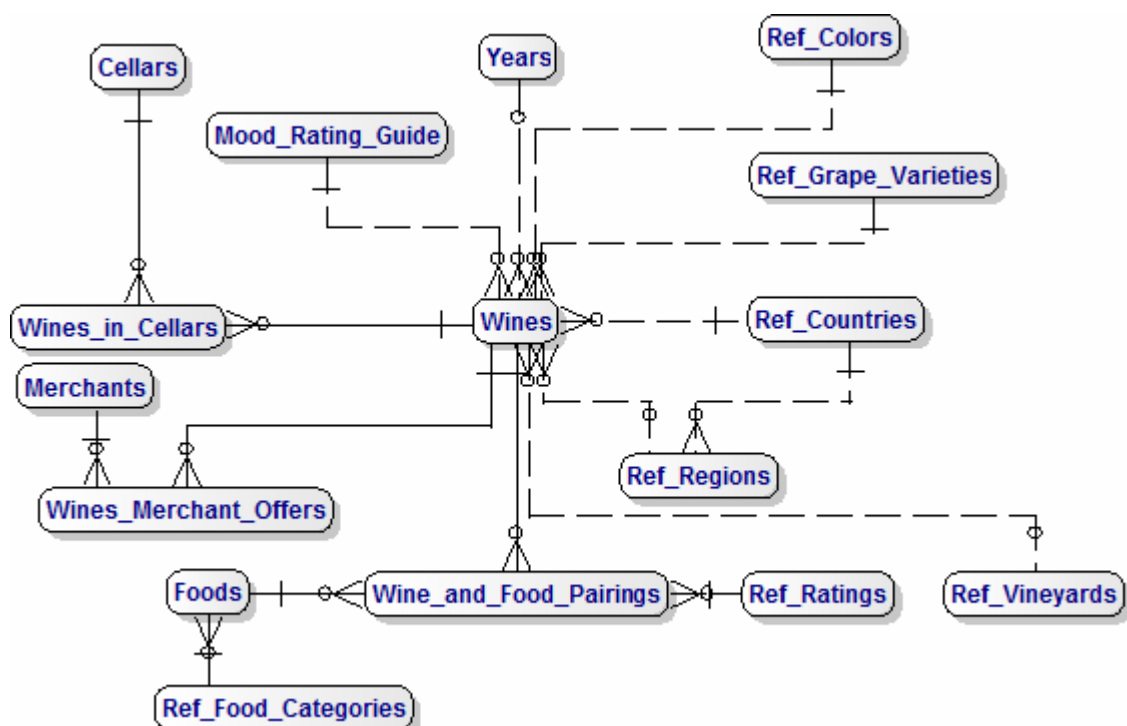
### 13.1 Link

The material in this Chapter appears on this page :-

- [http://www.databaseanswers.org/data\\_models/enterprise\\_data\\_model\\_for\\_wine/index.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_wine/index.htm)

### 13.2 The Steps

Step 2. Review the Enterprise Data Model



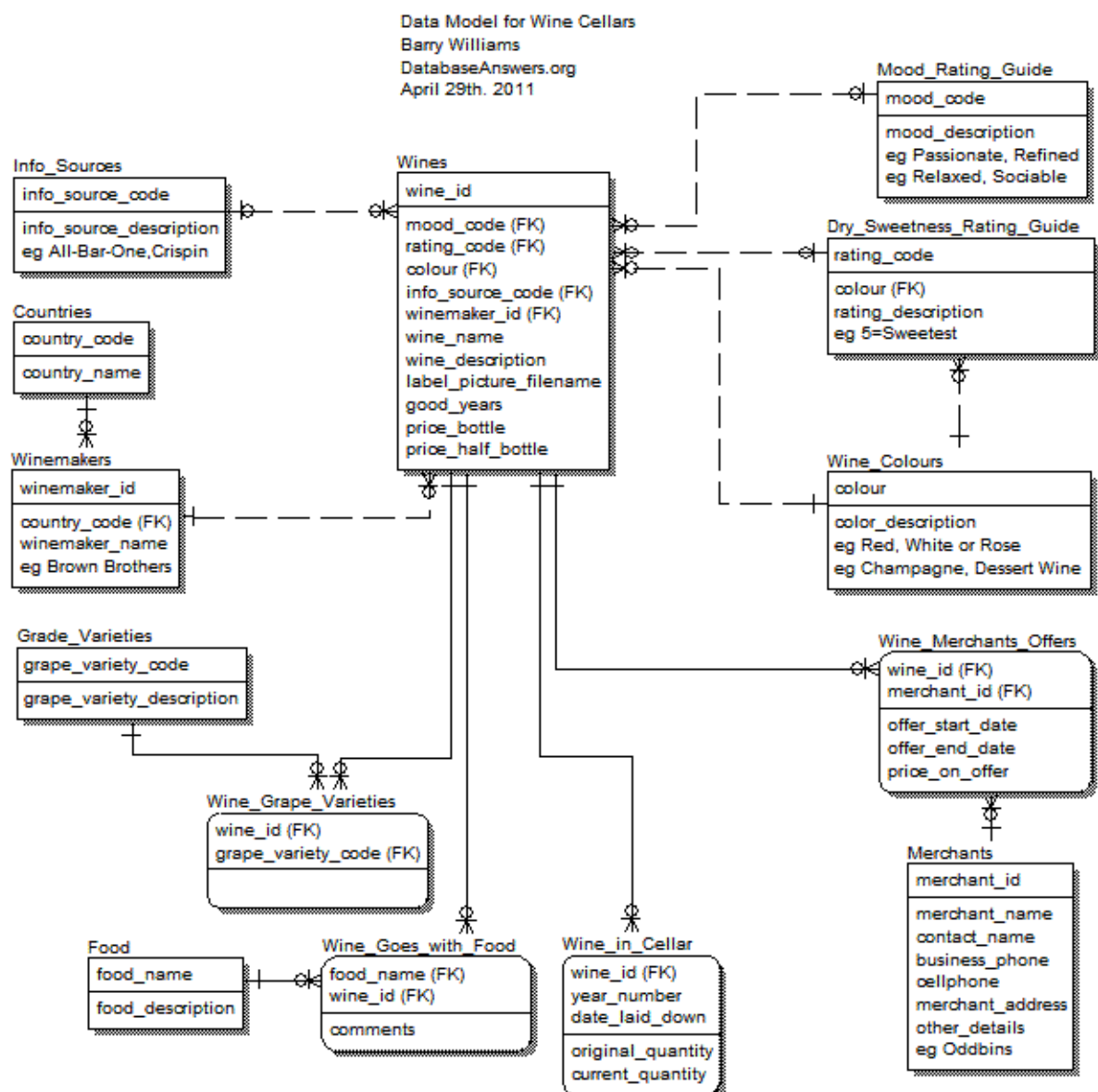
### Step 3. Review Subject Area Models

We have created Data Models for these **Subject Areas** :-  
These Models have been combined in the Enterprise Data Model.

- [Wine Cellars](#)
- [Wine Food and Merchants](#)
- [Wine Food and Pairings](#)
- [Wine Lists](#)

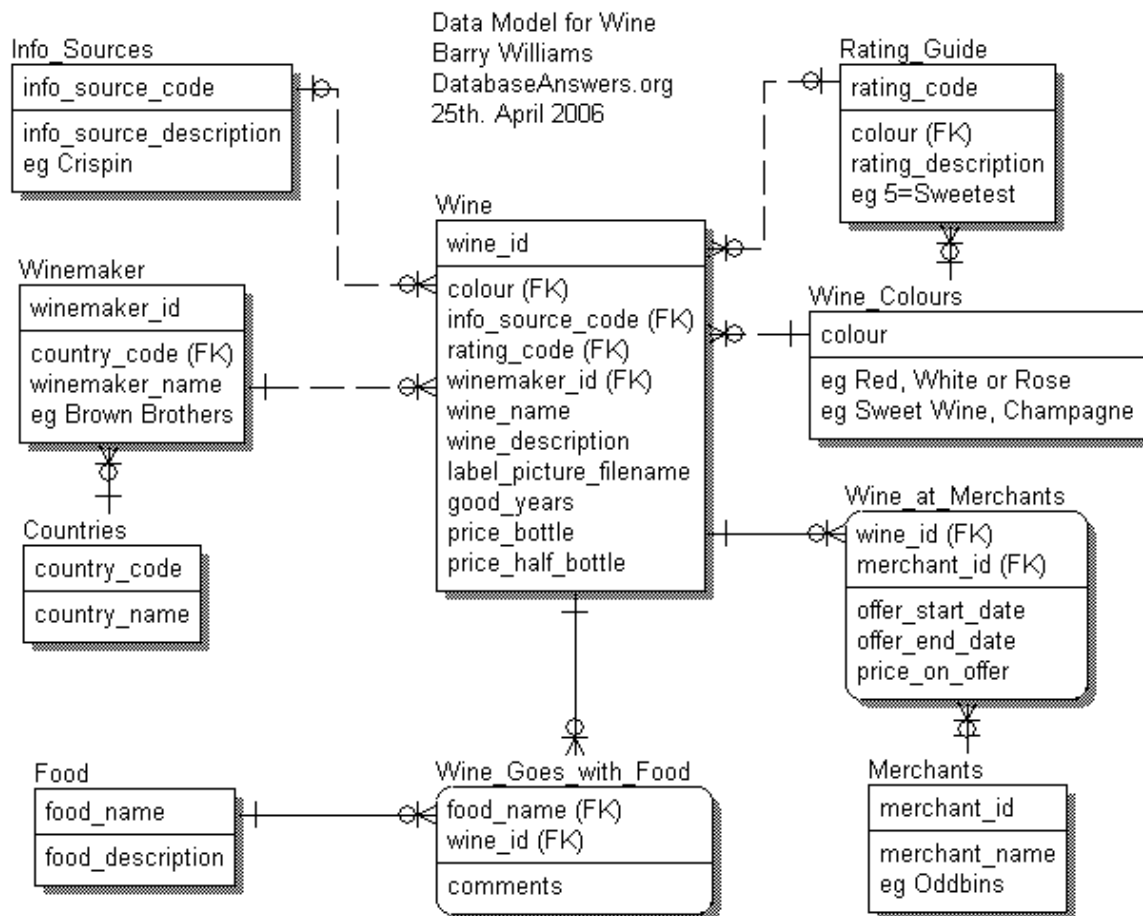
Link to Wine Cellars Data Model :-

- [http://www.databaseanswers.org/data\\_models/wine\\_cellars/index.htm](http://www.databaseanswers.org/data_models/wine_cellars/index.htm)



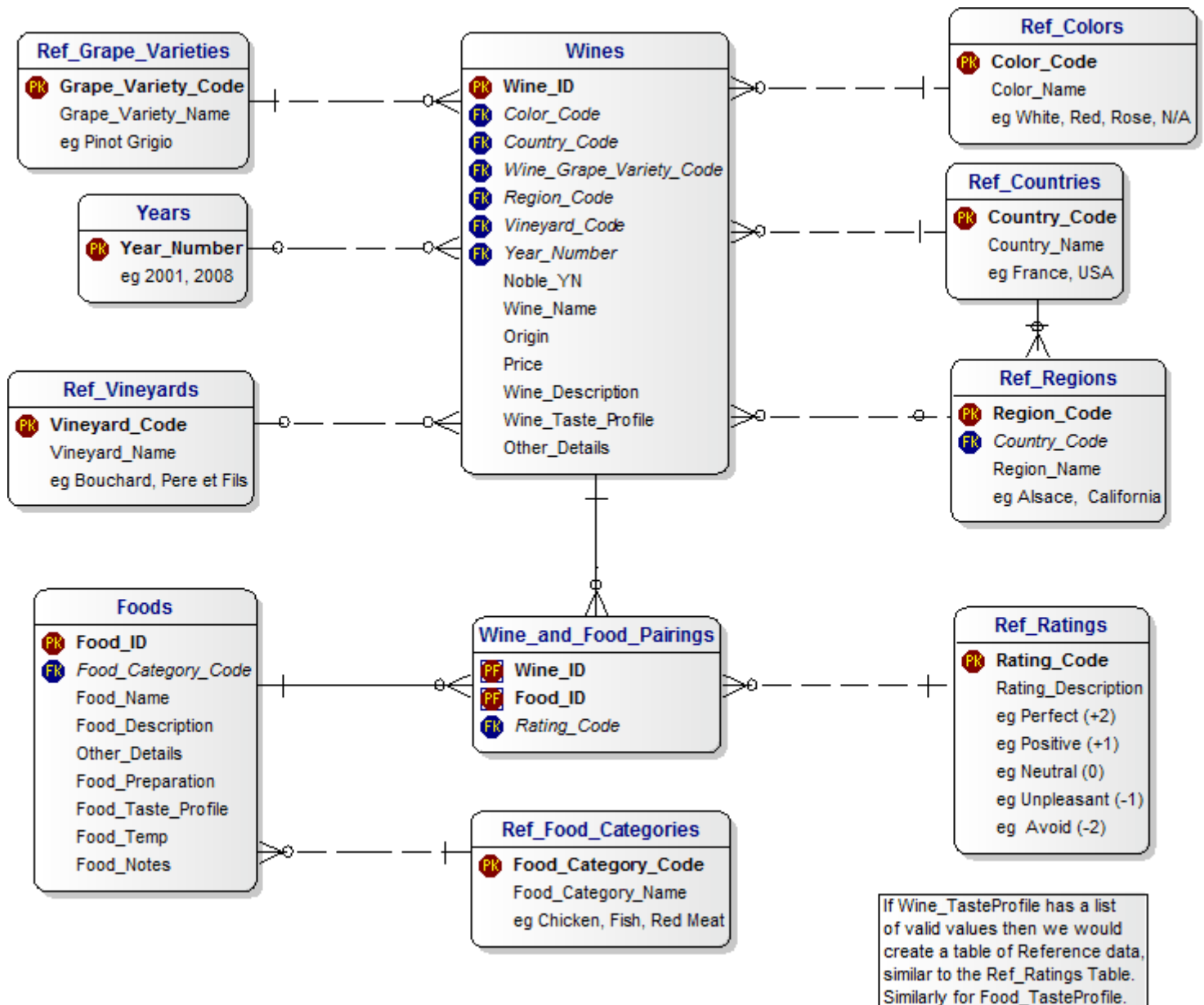
Wine, Food and Merchants :-

- [http://www.databaseanswers.org/data\\_models/wine\\_food\\_and\\_merchants/index.htm](http://www.databaseanswers.org/data_models/wine_food_and_merchants/index.htm)



Wine, Food and Pairings :-

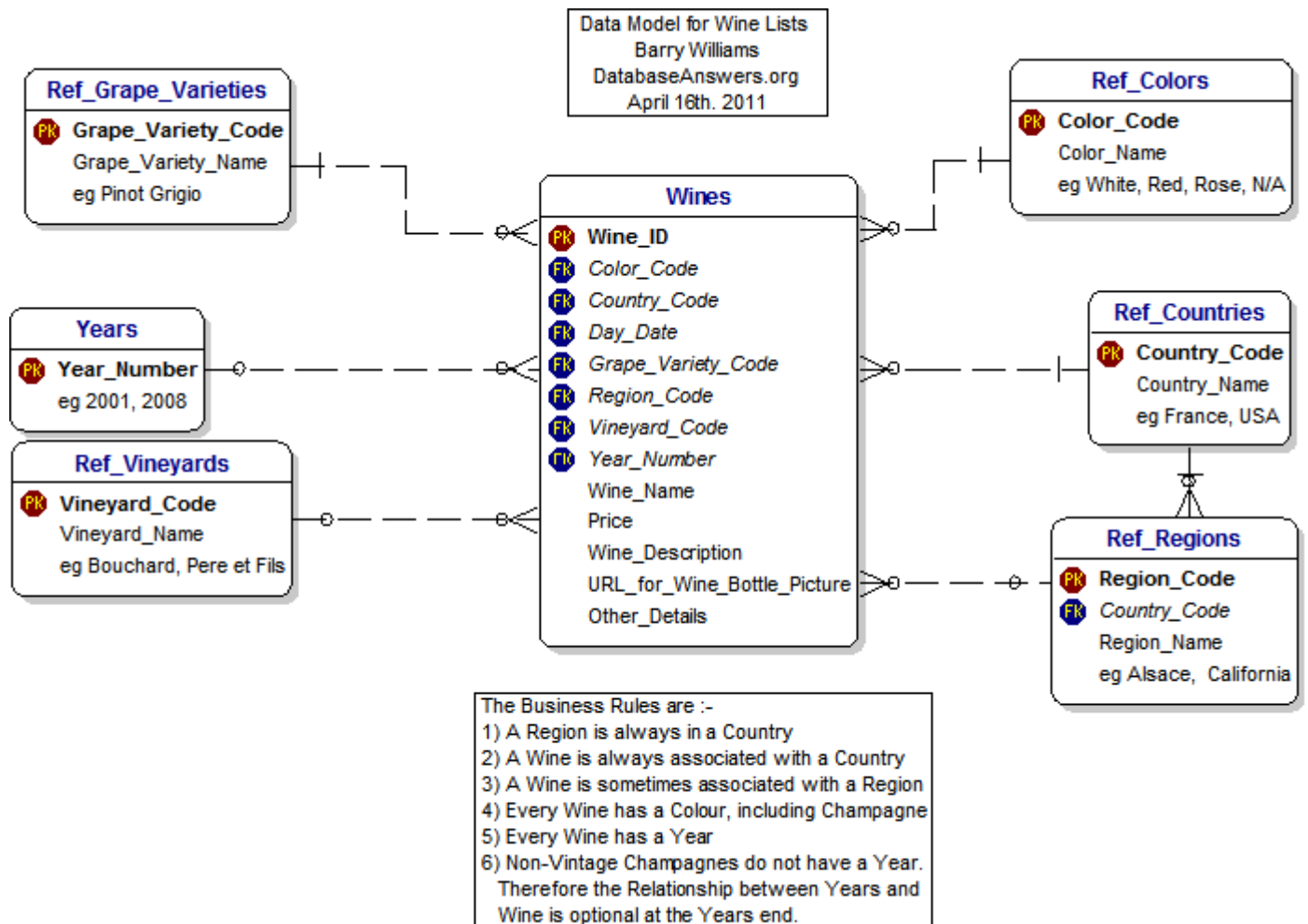
- [http://www.databaseanswers.org/data\\_models/wine\\_food\\_and\\_pairings/index.htm](http://www.databaseanswers.org/data_models/wine_food_and_pairings/index.htm)





Wine Lists :-

- [http://www.databaseanswers.org/data\\_models/wine\\_lists/index.htm](http://www.databaseanswers.org/data_models/wine_lists/index.htm)



Step 4. Review Generic Data Mart

Step 5. Validate the Canonical Data Model

Step 6. Map to the Canonical Data Model

Step 7. Review Source Documents

Step 8. Create initial Information Catalogue

**Appendix A. Cloud Migration** This Approach to Enterprise Data Modelling can provide a very powerful technique for migrating to a Data Architecture that incorporates Cloud features.

This page shows the appropriate Data Architecture :-

- [http://www.databaseanswers.org/reference\\_data\\_architecture.htm](http://www.databaseanswers.org/reference_data_architecture.htm)

The Enterprise Data Model (EDM) is used for the Data Warehouse and Data Marts.

The Master and Reference Data will be in the Clouds And will form the foundation and will be compliant with the EDM.

