8. Enterprise Data Models

8.0 Welcome

You are invited to follow developments in the Library of Data Models on our Web Site:

- [http://www.databaseanswers.org/data_models/index.htm](http://www.databaseanswers.org/data_models/index.htm)

You can also join our Database Answers Community

- [http://databaseanswers.ning.com/](http://databaseanswers.ning.com/)

8.1 Introduction

This Chapter will discuss Enterprise Data Models for a number of different kinds of enterprise.
8.1.1 What is this?

8.1.2 Why is it important?
Being able to create Enterprise Data Models will help you to handle the most challenging situations that you might encounter as a Data Modeller.

The Best Practice Approach has these Steps:

- Create a Top-Level Data Model that represents a business-eye view of the organisation.
  - It will include all the Subject Areas, such as Marketing, Finance and CRM.
  - Each of these Subject Areas will have its own Data Model.

8.1.3 What will I Learn?
Enterprise Data Models are very useful because they help to establishing ‘A Single Version of the Truth’.

For example, it is common for organisations to have multiple occurrences of Customer records, with the same person appearing as Joe Bloggs, Joseph Bloggs, Joey Bloggs and so on.

These can be matched to one common record and all the associated details can be consolidated.

This aspect is discussed in more details in Chapter 11 that covers Master Data Management.

The Approach we adopt is to define a ‘Statement of Objectives’ that will establish the important Things of Interest’ that need to be in the Enterprise Data Model.

This establishes a context from which Subject Areas can be derived. Any change in the Statement of Objectives can easily be reflected in changes to the Subject Areas.
8.2 Business Intelligence (BI)

8.2.1 Statement of Objectives

Our example is our Anglo-Swiss Consulting Company which has offices in London and Zurich.

The typical Statement of Objectives for our Company would be stated in these terms:

“To provide high-level consulting services to a targeted Clients operating from multiple locations.

To support these Objectives, we have designed a BI approach called BMEWS, which stands for –

“Business Monitoring and Early Warning System”.

“To provide a flexible solution to a range of user requirements for Business Intelligence.”

Therefore, the Subject Areas in the Enterprise Data Model must include:

Consulting:
- Clients
- Costs
- Revenues
- Services
- Staff

BMEWS:
- Data Warehouse and Data Marts
- Key Performance Indicators (‘KPIs’)
- Data Sources and Integration
8.2.2 The Enterprise Data Model

This Model appears on this page on the Database Answers Web Site:


Enterprise Data Model for BMEWS BI
Barry Williams
Principal Consultant
DatabaseAnswers.com
April 19th 2011

![Diagram of the Enterprise Data Model](http://www.databaseanswers.org/data_models/enterprise_data_model_for_BMEWS/index.htm)
8.2.3 BI Data Warehouse

This Model appears on this page on the Database Answers Web Site:

8.3 Insurance

8.3.1 Statement of Objectives
The typical Statement of Objectives for an Insurance company would be stated in these terms:

“To provide a wide range of attractively-priced and economical services to a targeted range of customers, with economic management of Claims processing and Settlements.”

Therefore, the Subject Areas in the Enterprise Data Model must include:

- Claims
- Customers
- Policies
- Products and Services
- Staff
- Settlements

8.3.2 The Enterprise Data Model
This Model appears on this page on the Database Answers 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)
8.3.3 The Customers, Claims and Brokers Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/insurance_customers_and_claims/insurance_brokers_erwin_physical.htm](http://www.databaseanswers.org/data_models/insurance_customers_and_claims/insurance_brokers_erwin_physical.htm)
8.3.4 Policies and Claims Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/insurance_policies_and_claims/index.htm](http://www.databaseanswers.org/data_models/insurance_policies_and_claims/index.htm)
- [http://www.databaseanswers.org/data_models/insurance_personal/index.htm](http://www.databaseanswers.org/data_models/insurance_personal/index.htm)
8.3.5 Types of Insurance - Car, Home and Life Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/insurance_car_home_life/index.htm](http://www.databaseanswers.org/data_models/insurance_car_home_life/index.htm)
8.3.6 Types of Insurance – Marine and Motor Vehicles Subject Area

This Model appears on this page on the Database Answers Web Site:

- http://www.databaseanswers.org/data_models/insurance_general/index.htm

This Model is a combination of fixed and open-ended data items with each Policy. The Marine_Policies and Motor_Vehicle_Policies hold the fixed, known data items. The Additional_Data_Items stores new items that can be used for new Policies.
### 8.3.7 Common Data Model

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/insurance_data_warehouses/common_data_model.htm](http://www.databaseanswers.org/data_models/insurance_data_warehouses/common_data_model.htm)

![Insurance Common Data Model Diagram](image-url)
8.3.8 Insurance Data Warehouse

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/insurance_data_warehouses/index.htm](http://www.databaseanswers.org/data_models/insurance_data_warehouses/index.htm)
8.4 Investment Banking

8.4.1 Statement of Objectives
The typical Statement of Objectives for an Investment Bank would be stated in these terms:

“To participate in a profitable trading operation by buying and selling stocks, shares and other commodities.”

Therefore, the Subject Areas in the Enterprise Data Model must include:

- Accounts
- Clients
- Financial Products and Services
- Staff
- Settlements
- Trades or Deals

8.4.2 Enterprise Data Model
This Model appears on this page on the Database Answers Web Site:

8.4.3 Accounts Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/investment_banking/accounts.htm](http://www.databaseanswers.org/data_models/investment_banking/accounts.htm)
8.4.4 Customers Subject Area

This Model appears on this page on the Database Answers Web Site:

- http://www.databaseanswers.org/data_models/investment_banking/customers.htm

![Database Diagram](Image)
8.4.5 Deals Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/investment_banking/deals_general.htm](http://www.databaseanswers.org/data_models/investment_banking/deals_general.htm)
8.4.6 Settlements Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/investment_banking/settlements.htm](http://www.databaseanswers.org/data_models/investment_banking/settlements.htm)
8.4.7 Staff Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/investment_banking/staff.htm](http://www.databaseanswers.org/data_models/investment_banking/staff.htm)

Investment Banking - Staff
Barry Williams
DatabaseAnswers.com
25th July 2004

![Database Diagram](image-url)
8.4.8 Data Warehouse

This Model appears on this page on the Database Answers Web Site:-

- [http://www.databaseanswers.org/data_models/banking_data_warehouses/investment_banking_data_warehouse_final_version.htm](http://www.databaseanswers.org/data_models/banking_data_warehouses/investment_banking_data_warehouse_final_version.htm)
8.5 Local Government

8.5.1 Statement of Objectives

The typical Statement of Objectives for Local Government would be stated in these terms:

“To provide a range of Services to a varied range of non-residents and residents.

To ensure that these Services are provided economically to meet the specific requirements of the community”

Therefore, the Subject Areas in the Enterprise Data Model must include:

- Customers or Citizens, with both Residents and non-Residents.
- Services and Products
- Service Delivery

8.5.2 Enterprise Data Model

This Model appears on this page on the Database Answers Web Site:

8.5.3 Children’s Attainments Subject Area

This Model appears on this page on the Database Answers Web Site:

8.5.4 Citizens Subject Area

This Model appears on this page on the Database Answers Web Site:

8.5.5 Citizens and Addresses Subject Area

This Model appears on this page on the Database Answers Web Site:

8.5.6 Citizens and Services Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/customers_and_services.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/customers_and_services.htm)
8.5.7 Education Services Subject Area

This Model appears on this page on the Database Answers Web Site:-

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/education_services.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/education_services.htm)
8.5.8 Housing Services Subject Area

This Model appears on this page on the Database Answers Web Site:

- http://www.databaseanswers.org/data_models/enterprise_data_model_for_local_government/housing_services.htm

This Model includes ‘Haringey Council’.
8.5.9 Data Warehouse

This Model appears on this page on the Database Answers Web Site:

8.6 Retail

8.6.1 Statement of Objectives

The typical Statement of Objectives for a Retail organisation would be stated in these terms:

“To offer a range of affordably-priced retail goods and services which are economically distributed and meet the requirements of a targeted customers. These will be made available in-store and online.”

The Subject Areas reflect the Statement of Objectives.

The purpose of this Statement of Objectives is to establish the scope of the Enterprise Data Model:

The objectives are to offer a wide range of affordable Products.

Costs will be controlled 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.

Therefore, the Subject Areas in the Enterprise Data Model must include:

- Customers
- Distribution
- Inventory
- Marketing
- Products
8.6.2 Enterprise Data Model

This Model appears on this page on the Database Answers Web Site:

8.6.3 Customers Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/customers_area_model.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/customers_area_model.htm)
8.6.4 Customers and Orders Subject Area
This Model appears on this page on the Database Answers Web Site:

8.6.5 In-Store Shopping Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/in_store_shopping_area_model.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/in_store_shopping_area_model.htm)
8.6.6 Online Shopping Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/online_shopping_area_model.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/online_shopping_area_model.htm)
8.6.7 Order History Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Order_History.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Order_History.htm)
8.6.8 Products Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Subject_Area_for_Products.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Subject_Area_for_Products.htm)
8.6.9 Products, Stores and Sales Subject Area

This Model appears on this page on the Database Answers Web Site:

- www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Subject_Area_for_Products_Stores_and_Sales.htm
8.6.10 Registered Users (with MDM) Subject Area

This Model appears on this page on the Database Answers Web Site:

- [http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Registered_Users.htm](http://www.databaseanswers.org/data_models/enterprise_data_model_for_retail/Registered_Users.htm)
8.6.11 Data Warehouse

This Model appears on this page on the Database Answers Web Site:

8.7 What have we learned?
In this Chapter we have learned how to design Data Models for large commercial Enterprises.

These kind of Enterprises are typically very complex and it can seem at first impossible to design a Data Model that is useful.

In fact, it is common to see Enterprise Data Models that include hundreds of Entities.

It is, of course, very difficult to use these Models.

A good general approach is to start by designing a Top-Level Data Model with a limited number of Entities.

Then designing a number of Subject Area Models will complement the Top-Level Model to allow you to cover a wide range of functionality within the Enterprise.