Data Warehousing
Architecture & Major Components

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Data Warehouse Architecture

Source Data

Financial App 1
Financial App 2
Financial App 3
Financial App 4
Financial App 5

ETL

Operational Data Store

ODS

ETL

Data Warehouse

Data Marts
XML Interface
Standard Reports
OLAP
What If Analysis
Data Mining

Meta Data
Major Components

- Multi Dimensional Database
- ETL
- OLAP
- Meta Data
Multi Dimension Database

Data Mart are normally a multi dimensional database using industry standard STAR Schema approach. This will include:

- Dimensions tables
- Fact Tables
- Hierarchies (For Drill down and drill across)
- Role Models (Multiple references of Dimension to the Fact table)
- Summary / Aggregate tables
- Snow Flaking and Normalization as required

Optimized database design for better performance

- STAR Transformation
- Bit Map Indexes
- Database Partitioning
ETL

- Create Source and Target Meta Data
- Identify the Source & the Target data mart data structures
- Create Extraction Programs using ETL tool (e.g. Ascential Data Stage / Informatica)
- Define data cleansing, transformation and aggregation rules
- Perform data capture and enrichment processing
- Evaluate incremental (delta) refresh option of the data mart to reduce the production cycle
OLAP

✓ OLAP (Online Analytical Processing) tool provides the front end analytical capabilities
✓ Functionality provided
  ▪ Slice & Dice
  ▪ Drill up, Drill down & Drill across
  ▪ Pivoting
  ▪ Trend analysis across Time
  ▪ Easy interface to tools such as Excel / MS Word
✓ Implemented in a three tier web based architecture
Deliverables

- Project management plan (PMP)
- Business requirements and analysis document
- Hardware and software recommendations
- Data mart architecture document
- Data mart design document
- Logical design (data model)
- Physical database design
- ETL program (automatic data loader)
- Incorporating BI reporting and OLAP interface
- Establish testing process / system test plan
- UAT test plan
- Implementation plan
Thank you

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