



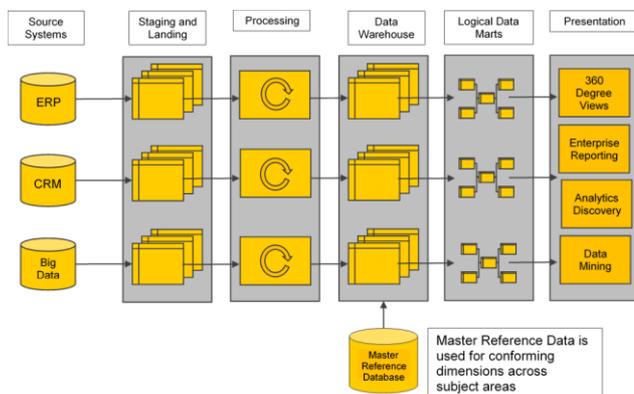
Modern Data Warehousing & Business Intelligence

Introduction

Great strides have been made in the world of big data technologies over the past decade. Cloud infrastructure along with new storage paradigms like Hadoop, graph databases and message buses have provided a new dimension to the arsenal of tools available to tackle the deluge of data the world is facing.

A “modern” data warehouse architecture that combines SQL and not only SQL (NO-SQL) technologies is a preferred way to store and enrich enterprise data where “small data” is seen as latest fad, where the focus is back on quality rather than quantity.

Our view is that a well-structured data warehouse, with SQL at its core, still offers a technological maturity that is still lacking from these new world tech solutions that remains relevant to financial service providers.



Data Warehouse High-Level Architecture

The architecture for a data warehouse hasn't changed much over the years except for the inclusion of “Big Data” sources. The figure above, outlines the layers and concerns of such an environment:

1. Source systems – Transactional and external systems used for day-to-day business operations.
2. Staging and Landing – Data is received from the source systems either by extracting data or having the source systems pushing the data into a landing area.
3. Processing – Applying business logic and rules in one central location
4. Data Warehouse – Location where the processed data is published and conformed to enterprise entities.
5. Logical Data Marts – Logical or virtual subject orientated data markets (i.e. sales, marketing, finance, etc.) that feeds off the data warehouse.
6. Presentation – Presentation layer where the business users will consume the information.

The following high-level stages are generally prescribed when implementing a data warehouse that will provide a return on investment to the business:

High-Level Implementation Practices

Analysis & Design	
Identify the top burning questions business needs to answer	<ul style="list-style-type: none"> • Hold brainstorming workshops with business stakeholders to identify the issues • Identify and analyze business unit's key concerns and underlying business processes
Develop a business case for performing the analytics	<ul style="list-style-type: none"> • Quantify the economic impact of the identified concerns. • Determine the value of “perfect information” to the organization. • Document a business case that defines the return on investment to the organization
Develop	
Establish a foundational data warehouse	<ul style="list-style-type: none"> • Provision server infrastructure for development, user acceptance testing, pre-production and production • Profile the source data systems to identify missing gaps • Undertake a data modelling of the fact and dimension tables. • Consider the use of data automation accelerators. • Establish an operational data store making use of new big data technologies, like Hadoop, where appropriate. • Identify the high-level entities that need to be modelled in the business (i.e. customer, accounts, products, transactions, etc.). This feeds from the analytical mastering exercise. • Develop the extract transform and load (ETL) packages required for staging, processing and publishing tasks. • All business rules and logic is centralised for ease of maintenance.
Testing	<ul style="list-style-type: none"> • Develop automated testing scripts for matching source to target systems
DevOps	<ul style="list-style-type: none"> • Make use of DevOps processes to move the developed ETL packages and supporting scripts to a production environment. • Maintain a master build that is moved through development to production
Transition	
Hand over operations	<ul style="list-style-type: none"> • Handover key technical documents, such as high-level architectures, metadata and data dictionaries • Hand over the running and maintenance of the warehouse system to client • Provide training workshops • In agile fashion, iterate and continuously improve the design and implementation as business needs change.

Contact Us

Our executive team has extensive experience in data warehousing and business intelligence in banking, credit risk, stress testing and data management. We see an overlap in these areas that provide a sweet spot for a return on investment made.

If you or your team could benefit from this approach, please contact us to discuss how we can assist you and your team.

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