The Basics of Business Intelligence

PMI IT LIG

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Nashville, TN Chapter

Presenter

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Brief Bio:

- Business Intelligence / Data Warehousing practitioner since early 1990's.
- One of the founding leaders of the Data Warehousing / CRM practice at Price Waterhouse consulting.
- Hands-on experience with every component of the reference architecture.

Presentation Outline

- Objectives
- Confusing Terms
- What is Business Intelligence
- Understanding the Value Proposition
- Reference Architecture
- Key Takeaways
- Reference Material
- Wrap-up

Objectives

Elementary

- Overview of Business Intelligence (BI) / Data Warehousing (DW)
- Basic Understanding of BI Terminology
- Business Needs that BI Addresses

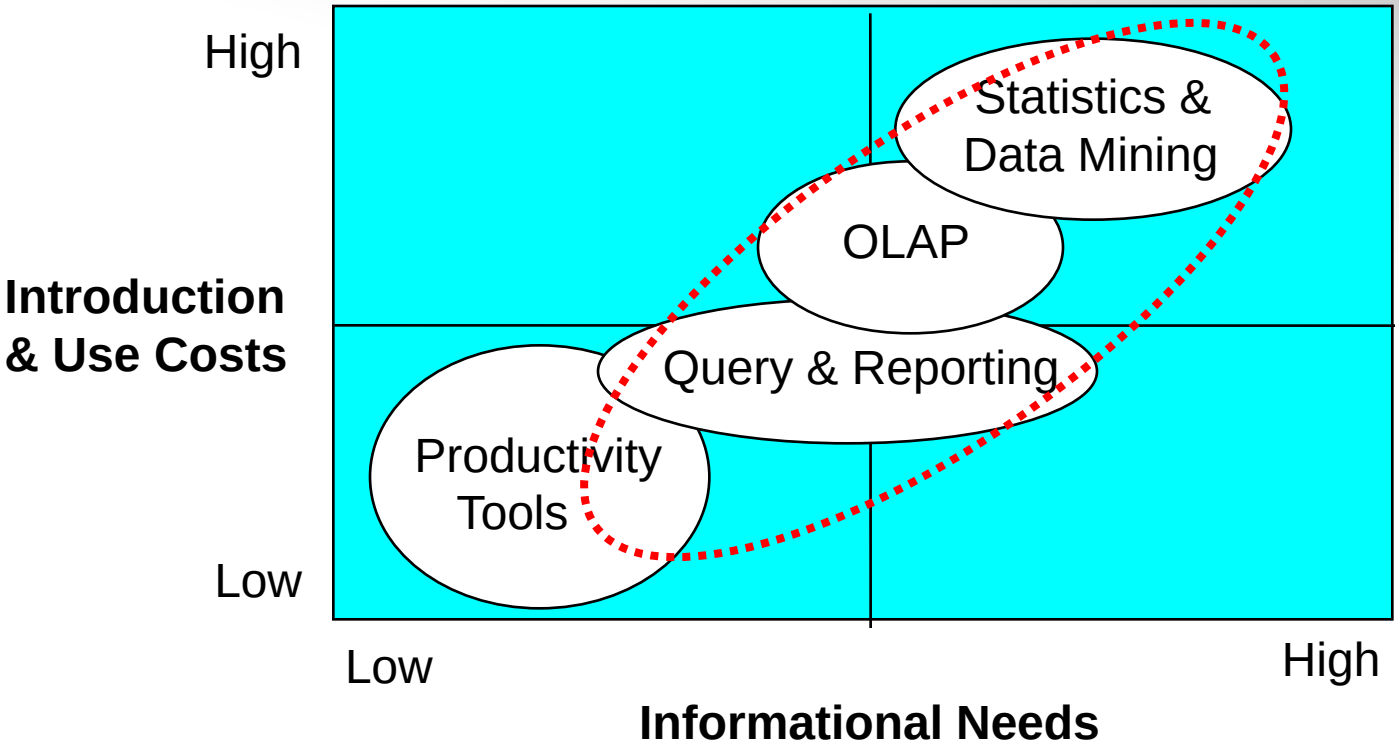
Extra Credit

- Conceptual Understanding of BI Components
- Awareness of Functional and Technical BI Components

Confusing Terms

- Business Intelligence
- Data Warehousing
- Corporate Performance Management
- Multi-Dimensional Analysis
- OLAP
- Data Mining
- Analytics
- Decision Support System
- Executive Dashboard
- Scorecard
- Executive Information System

What is Business Intelligence



What is Business Intelligence

Transactional

- Place an order for a product.
- Look up price for a product.
- Apply a discount.
- Assign a shipper.
- Trigger inventory pick-list.
- Verify shipment of product.
- Create invoice for the product.
- Apply credit to sales rep.

Essential to running the business

Analytical

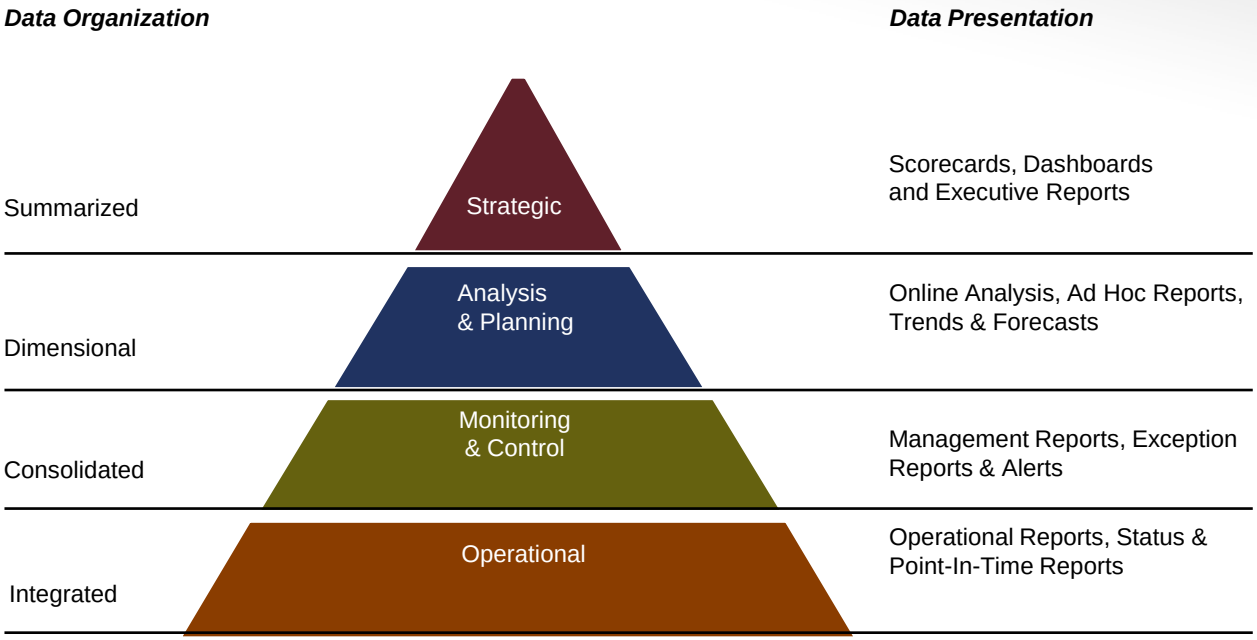
- What type of customers are ordering this product?
- Who are my top 10 accounts? (by name, by revenue, by profitability, by region)
- What have been the product purchase patterns over the past 3 years?
- How are product purchases different? (by customer segment, by sales rep, by store)
- Which shippers have the best on-time delivery records?
- Who are my top performing sales reps? (by product, by region, by quarter)

Essential to watching the business

What is Business Intelligence

Business Intelligence is primarily about the collection, integration, and transformation of data…..into readily available Information.

A data warehouse is a centralized, controlled repository of cleansed, verified, rules-based data to be used for strategic planning as well as tactical maneuvering.



What is Business Intelligence

Possible Analytical Applications of BI

- Marketing & Sales Analysis
- Web Channel (clickstream) Analysis
- Database Marketing
- Budgeting and Forecasting
- Financial Reporting and Consolidation
- Management Reporting
- Workforce Analysis
- Executive Dashboard
- Balanced Scorecard
- Profitability Analysis
- Supply Chain Analysis
- Human Resource Management Analysis
- Category Management

Understanding the Value Proposition

- Increased efficiency – helps improve the performance of transactional processing systems by alleviating information delivery requirements.
- Expedites decision making – empowers users with the information to make smarter business decisions faster
- Saves money – lowers the (recurring) cost of data analysis
- Helps identify new business opportunities – can help identify the future needs so that a service/product can be supplied by the time there is demand
- Helps insure successful business strategies – assures consistent analysis across the enterprise, minimizing the risk of basing decisions on inaccurate data
- Lowers risk – helps identify alternative solutions to reduce the risks of current methods

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Understanding the Value Proposition

Closes the Information Gap

- Model and manage value drivers (e.g. identify, attract and retain profitable customers)
- Convert information into action
- Improve customer, employee, supply chain, finance and business strategy understanding

Improves Focus and Understanding of Core Businesses

- Link strategy to responsibility
- Improve information management
- Eliminate data overload by providing analytics that support key drivers and predictors
- Drive information and analytic needs by role

Increases Organizational Responsiveness and Agility

- Make better decisions faster than ever before
- Reduce/Eliminate data gathering
- Recognize analytic need as a corporate, not functional, issue
- Create marketplace flexibility & agility

Maximizes Information and Analytic Investments

- Leverage existing investments (ERP, data warehouses)
- Prioritise analytic investments to achieve maximum benefit

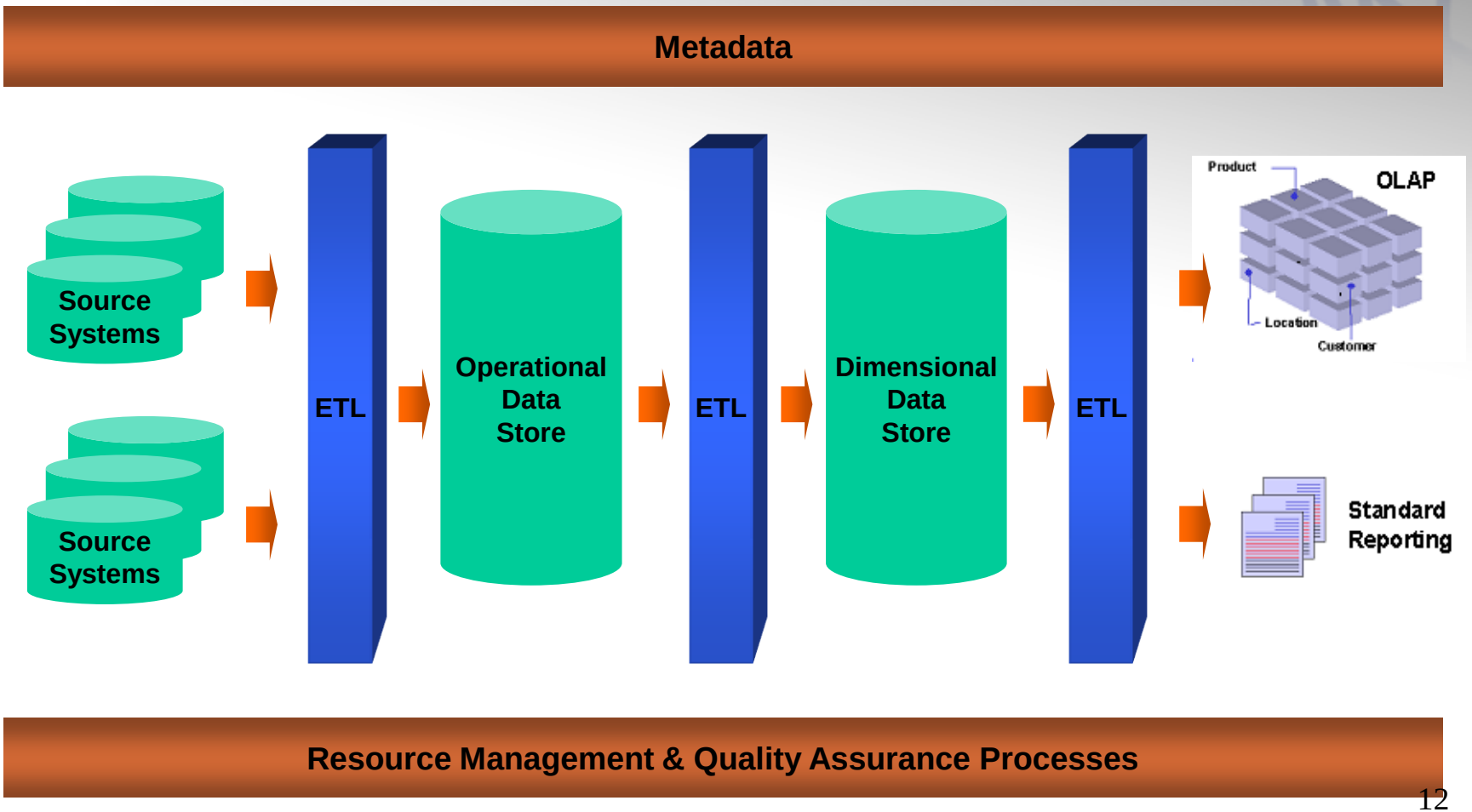
Leverages Strategic Business Intelligence Across the Enterprise

- Coordinated organizational approach (avoid information 'silos')
- Improve responsiveness to events
- Understand predictors before they become facts

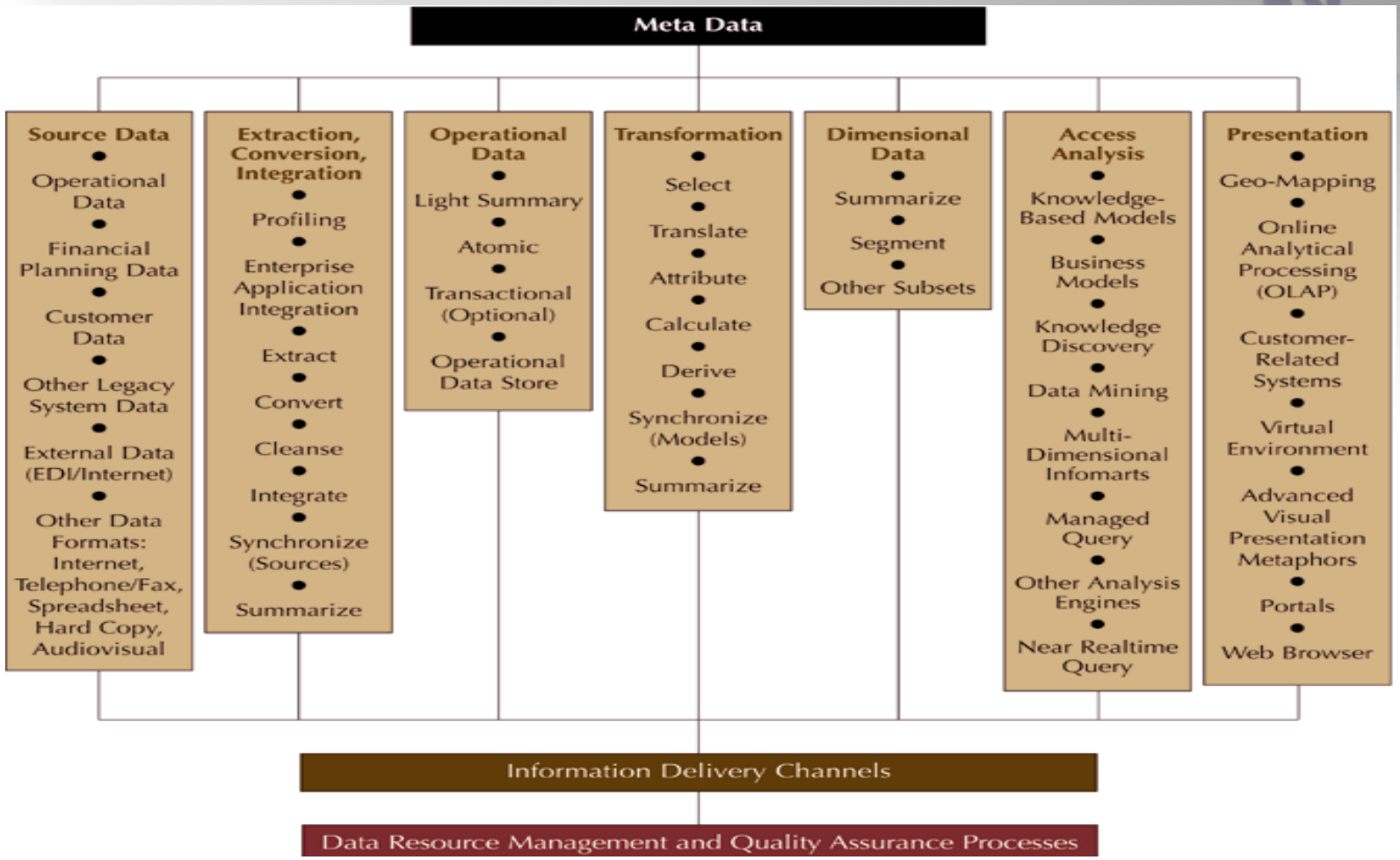
Optimises Information Technology Investments

- Realize the benefits of previous (& future) technology investments
- Prioritise/rationalize new analytic projects
- Select & implement solutions appropriate for the enterprise not just one unit

Reference Architecture



Reference Architecture



Source: System Management Methodology – Price Waterhouse Consulting

Reference Architecture

The logical components in a data warehouse architecture are:

- **Source layer** – the component(s) that provides the initial source data.
- **Extract/Transform/Load layer** – the component that supports extraction, cleansing, integration, transformation, and transport of source data to a target data store.
- **Data layer** – the component that consists of the Operational Data Store and/or the Dimensional Data Store and/or the cube that provides a consistent, consolidated view of the enterprise.
- **Presentation layer** – focuses on the customization, facilitation and representation of the data analysis for the end-users.
- **Metadata layer** – data that describes a data warehouse object in terms of definition, usage, sourcing, structure, etc….
- **Resource Management & Quality Assurance** – the component that addresses the need to control, audit and assure data quality of the data flows.

Data Concepts

Typical data concepts:

- Data is integrated around subject areas
- Persisted information and historical content
- Data is mostly static
- Primarily read-only
- Modeled with structures that facilitate information analysis (as opposed to capturing and recording of transactions)
- Modeled for bulk retrieval
- Centered around Facts and Dimensions
- Detailed data as well as Summarized/Aggregated data
- Gets built over time, never all at once!

Key Takeaways

Elementary

- Overview of Business Intelligence (BI) / Data Warehousing (DW)
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Extra Credit

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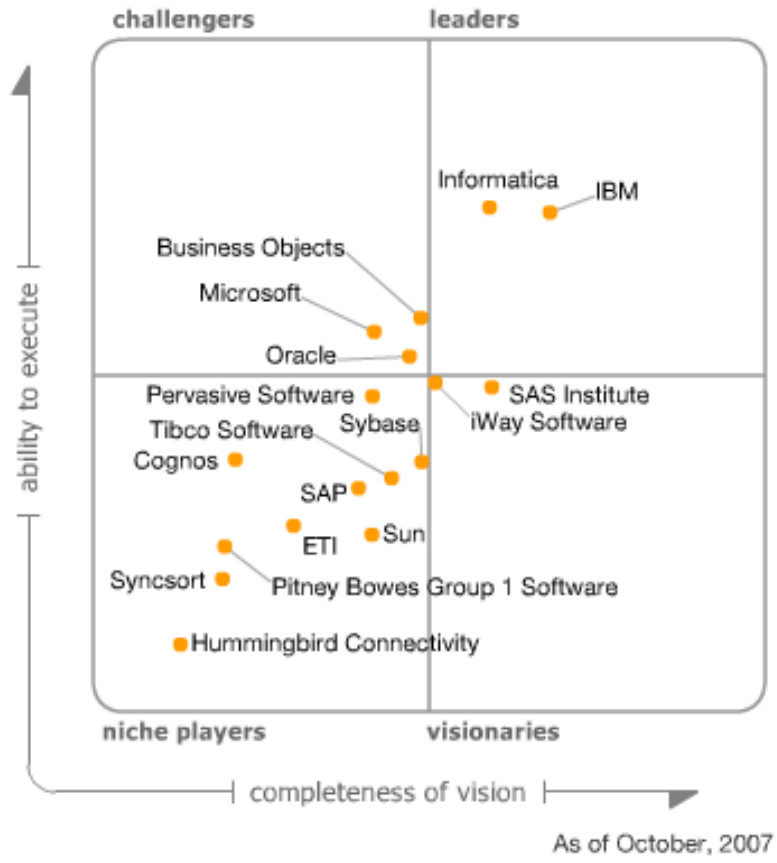
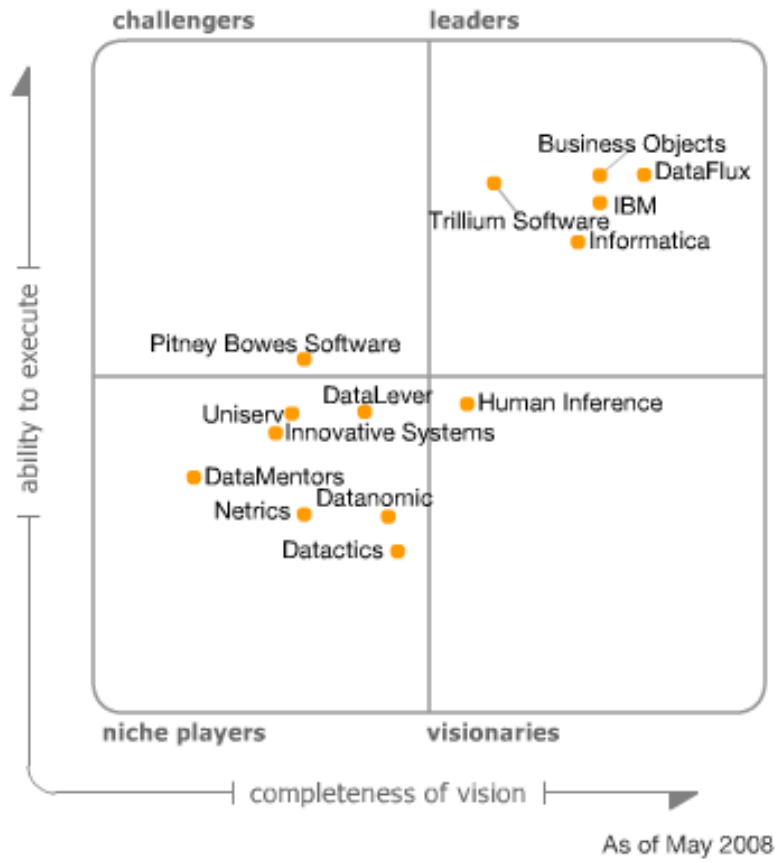
Data Integration / ETL Tools



- **Marketplace Leaders:**
  - IBM (Ascential Software)
  - Informatica

Source: Gartner

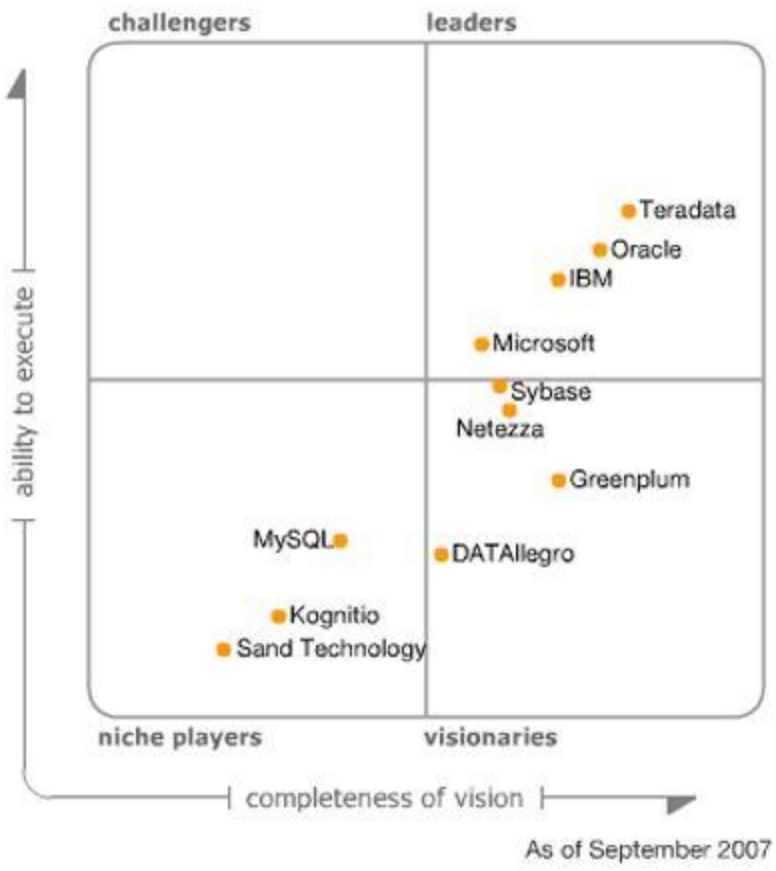
Data Quality Tools



- **Marketplace Leaders:**
  - Firstlogic (Business Objects)
  - Trillium Software
  - DataFlux
  - IBM
  - Informatica

Source: Gartner

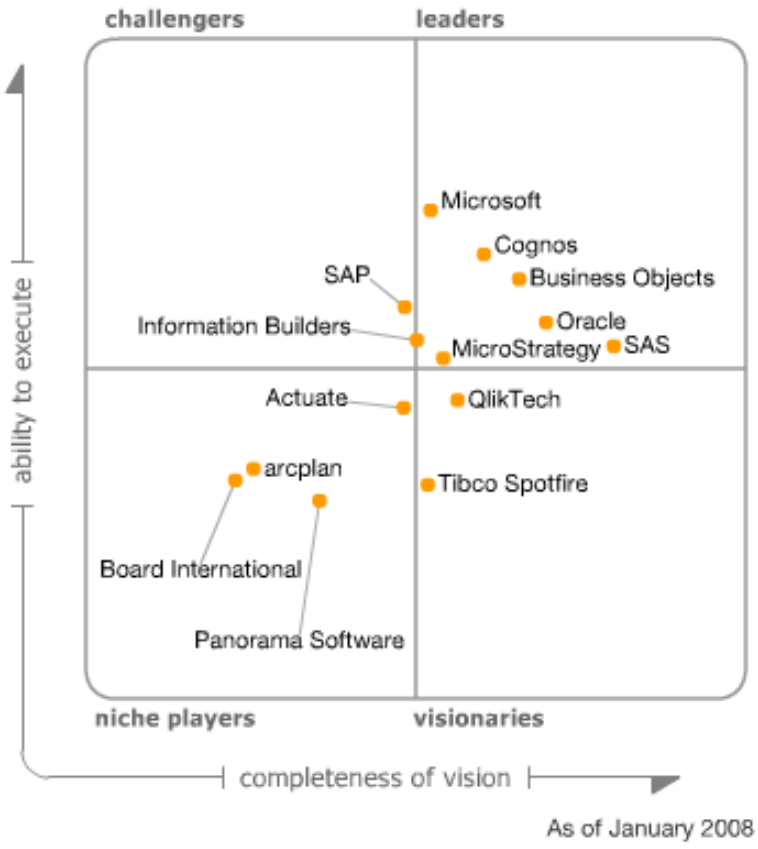
Database Management Systems



- **Marketplace Leaders:**
  - Teradata
  - Oracle
  - IBM (DB2 / UDB)
  - MS SQL Server

Source: Gartner

Analytics / Presentation Tools

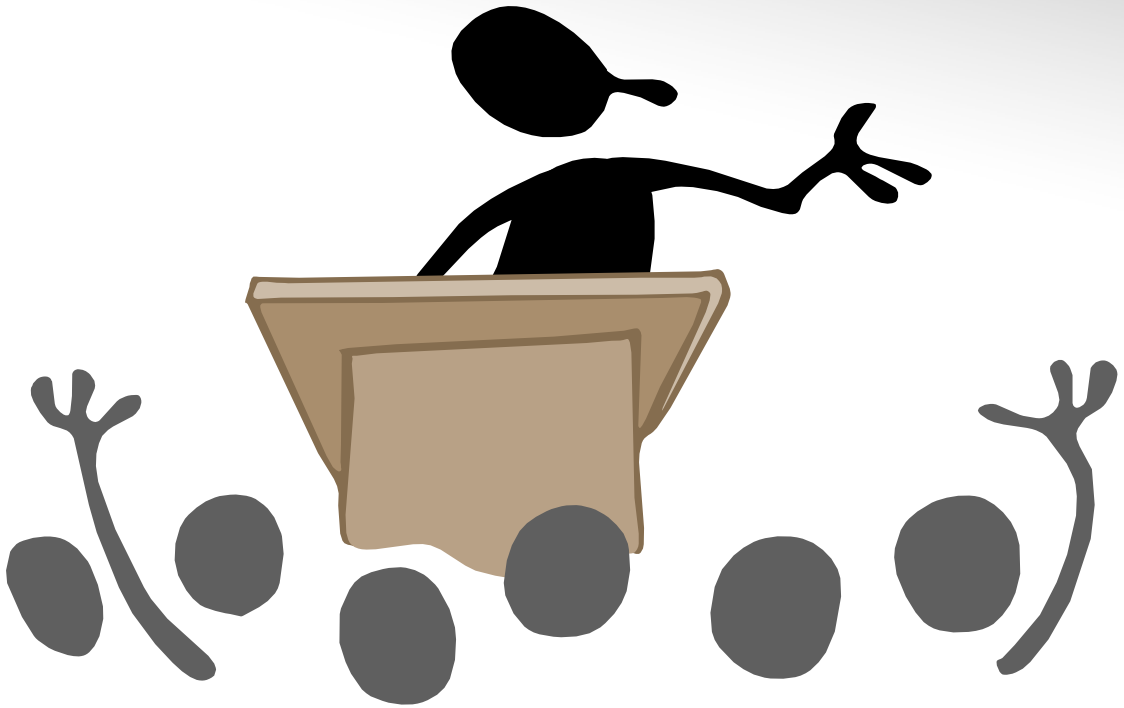


- **Marketplace Leaders:**
  - Cognos
  - Business Objects
  - Oracle (Hyperion)
  - SAS
  - Microstrategy
  - Microsoft

Source: Gartner

Wrap-up

Questions / Comments / Thoughts....



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Thank you!!