



# The Basics of Business Intelligence

PMI IT LIG  
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# Presenter

**Anthony Boles**

**Managing Director**

**Intelligent Ventures Inc.**

1113 Murfreesboro Rd.

Suite 106-103

Franklin, TN 37064

615-599-8666

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

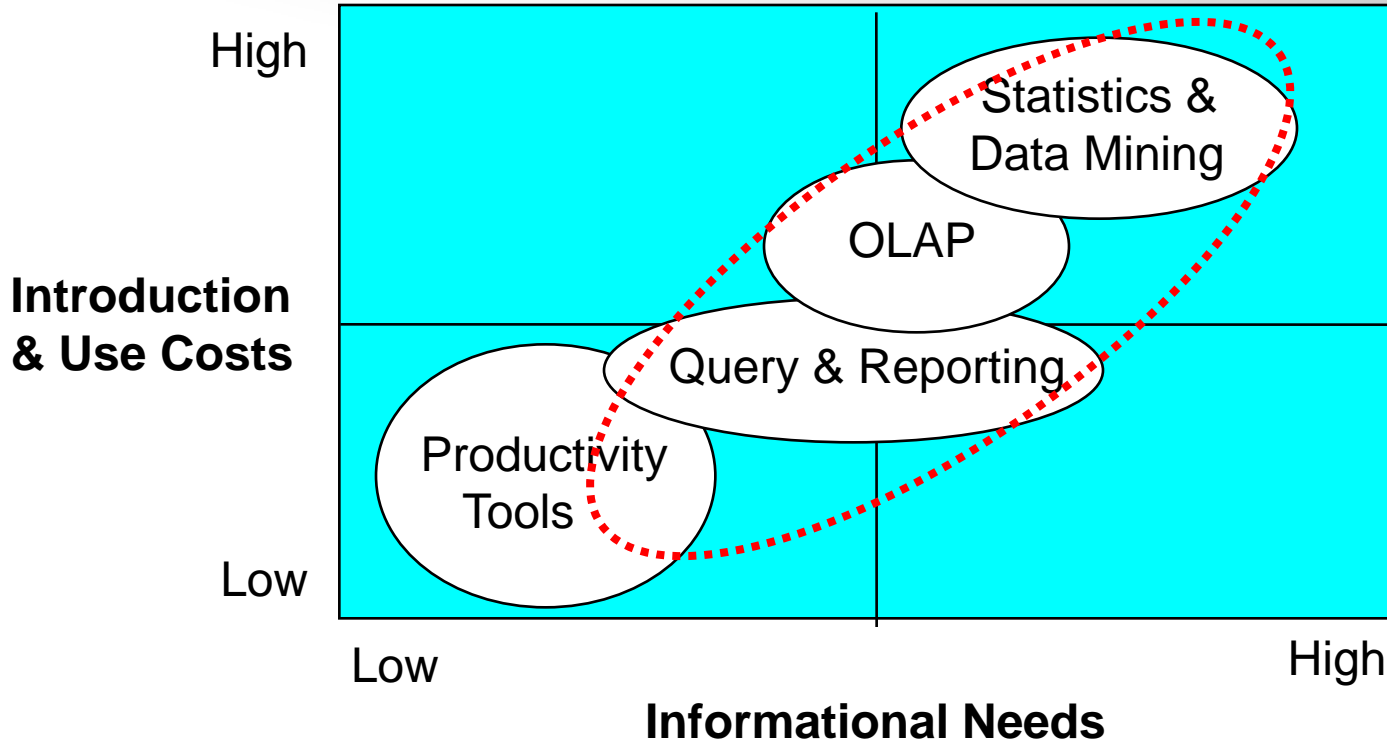


# Confusing Terms

- 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*



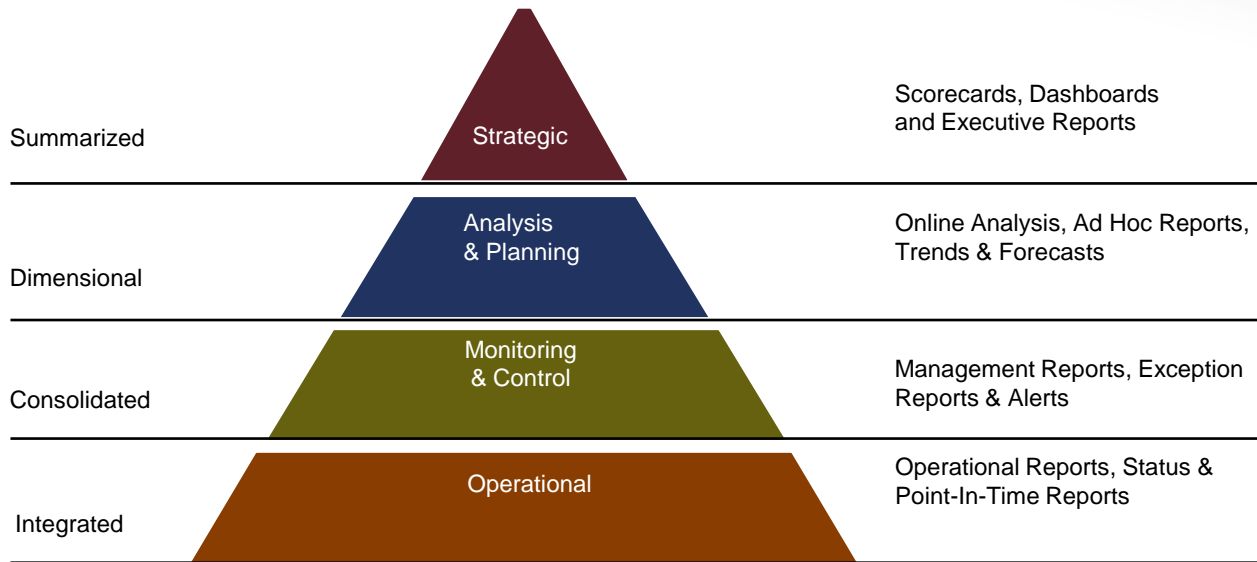
# What is Business Intelligence

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.

**Data Organization**

**Data Presentation**







# 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



# 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

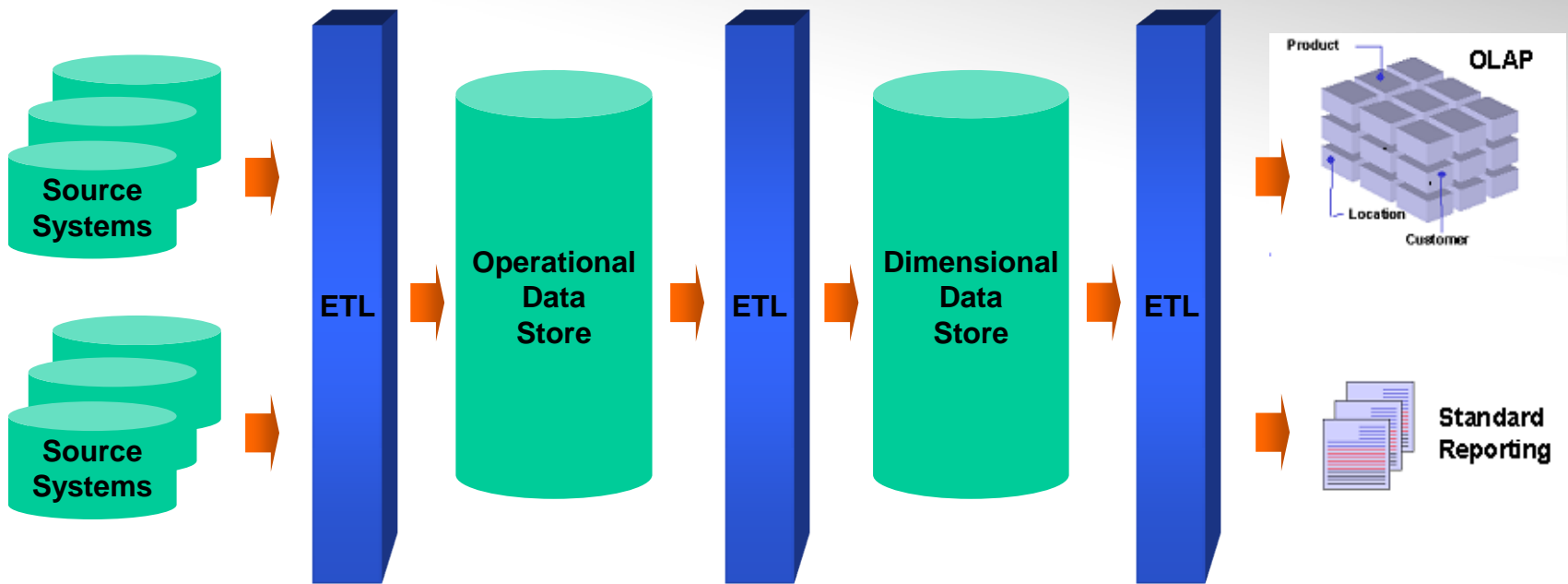
## Optimises Information Technology Investments

- 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

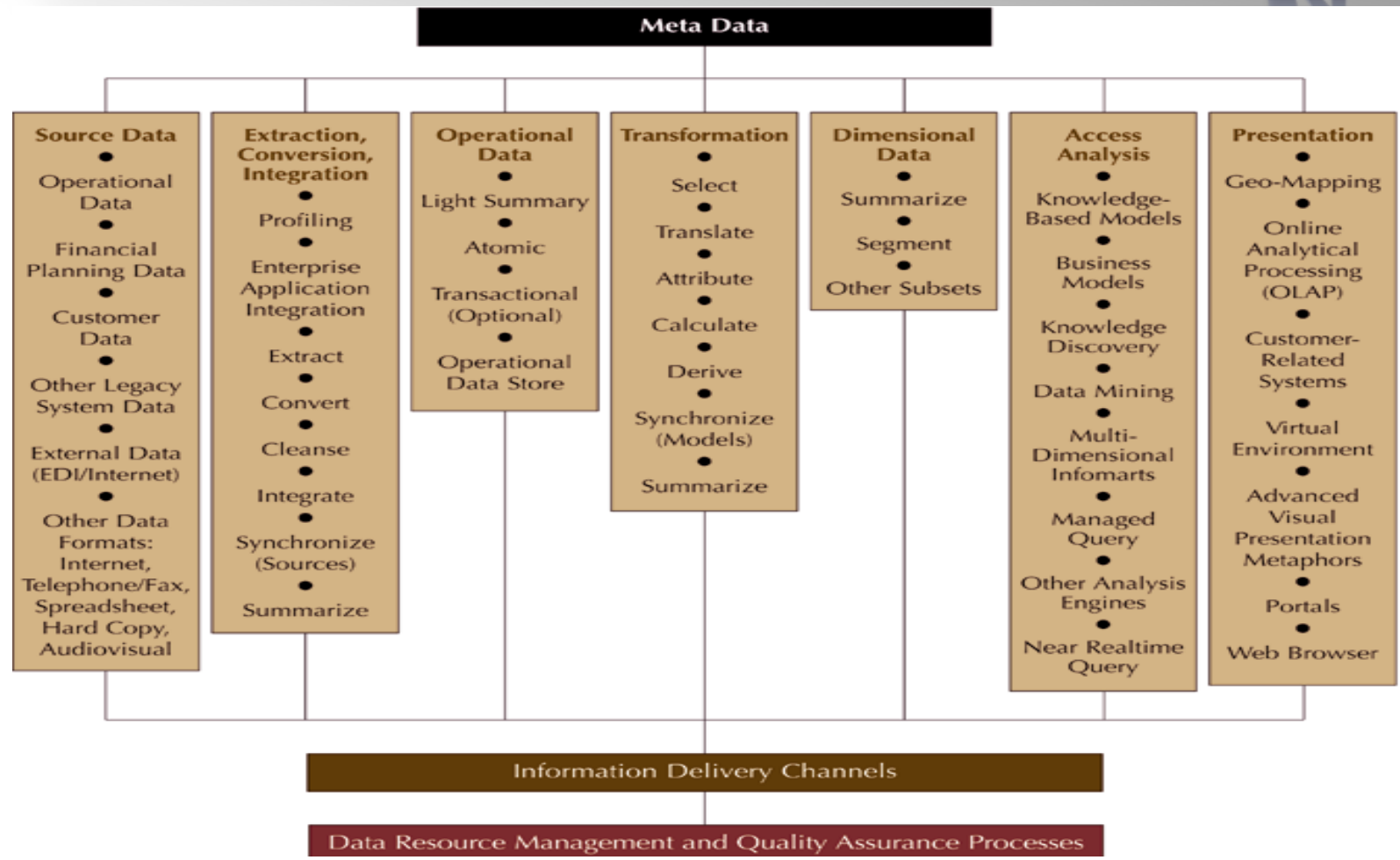
Metadata



Resource Management & Quality Assurance Processes



# Reference Architecture





# 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)
- Basic Understanding of BI Terminology
- Business Needs that BI Addresses

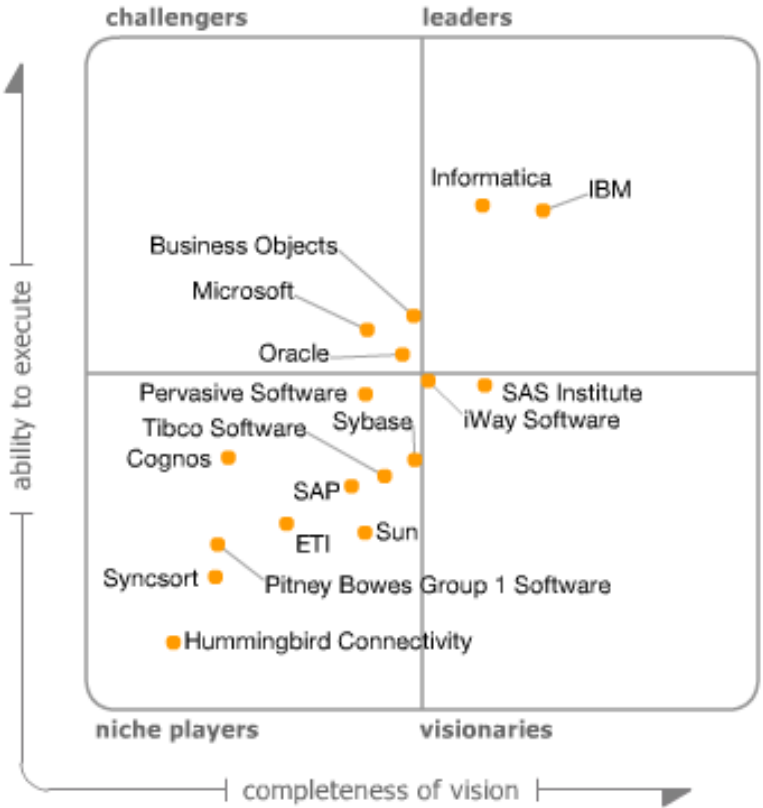
## Extra Credit

- Conceptual Understanding of BI Components
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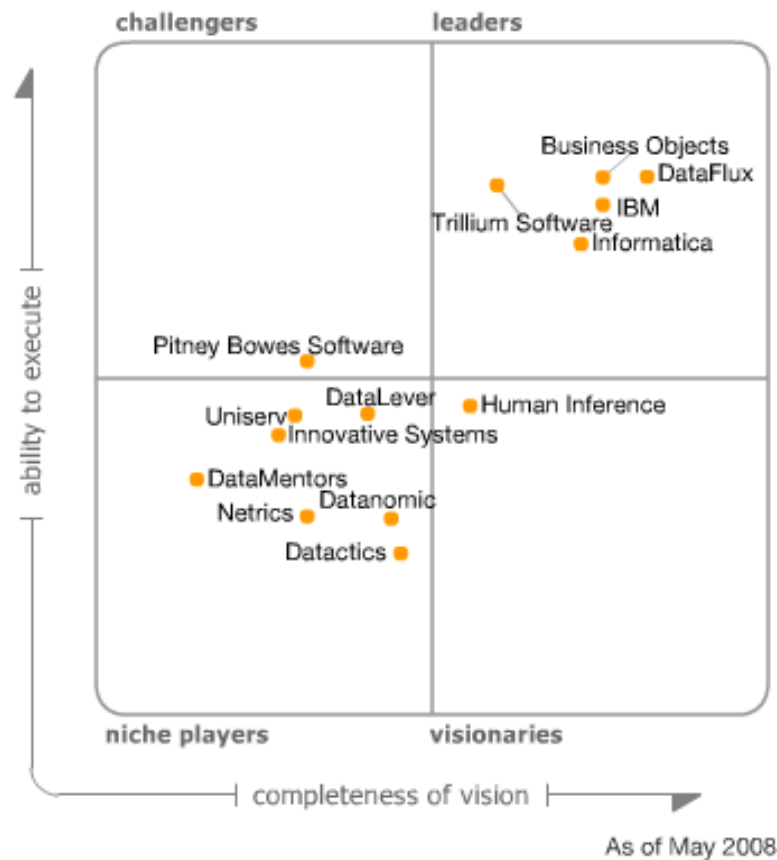
# Data Integration / ETL Tools



As of October, 2007

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

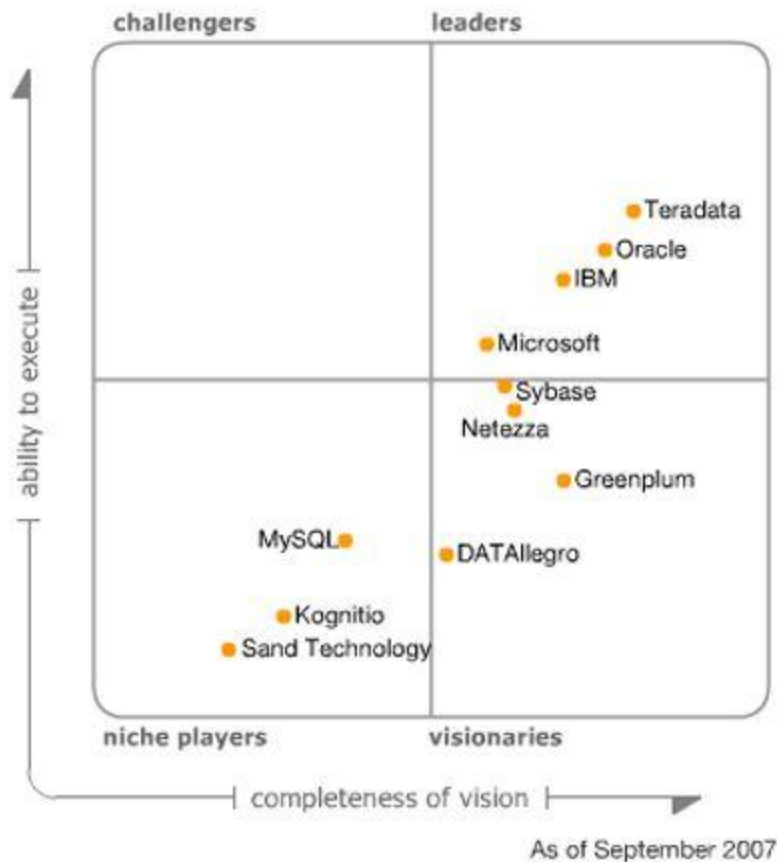
# Data Quality Tools



## • Marketplace Leaders:

- Firstlogic (Business Objects)
- Trillium Software
- DataFlux
- IBM
- Informatica

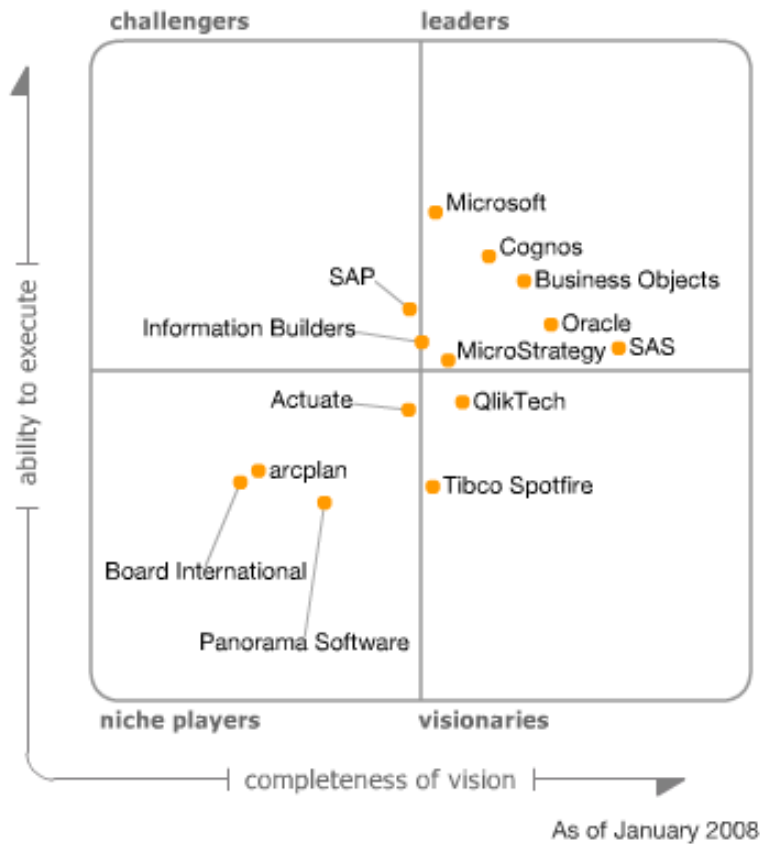
# Database Management Systems



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



# Analytics / Presentation Tools

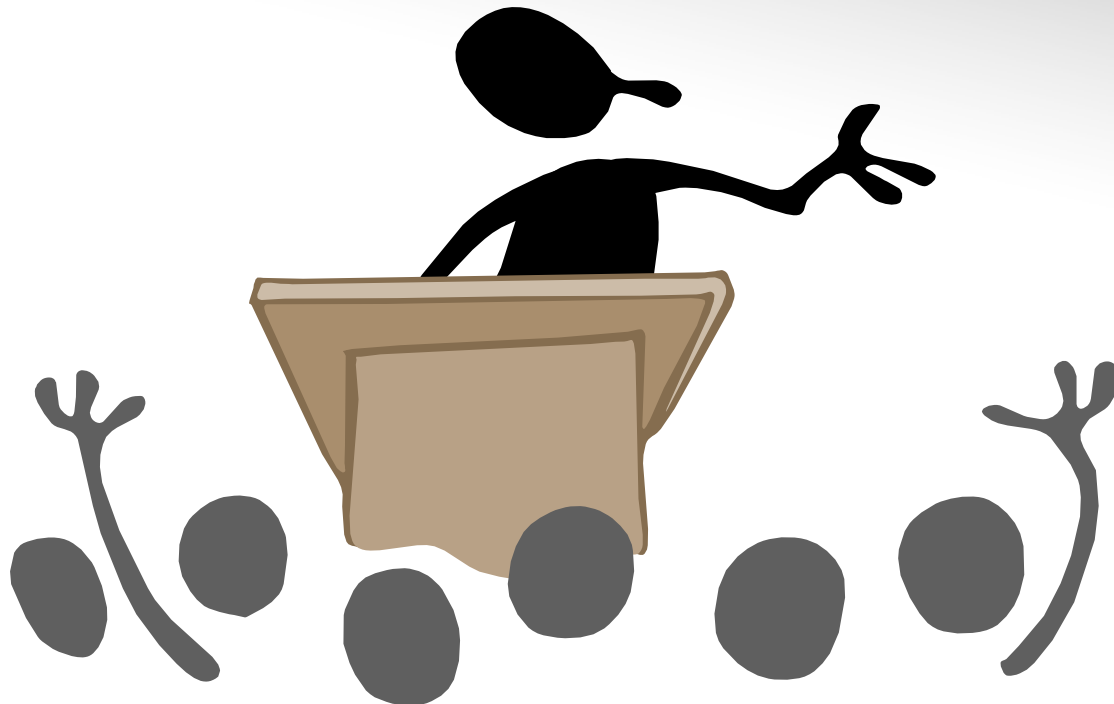


- **Marketplace Leaders:**

- Cognos
- Business Objects
- Oracle (Hyperion)
- SAS
- Microstrategy
- Microsoft

# Wrap-up

Questions / Comments / Thoughts....





Thank you!!

