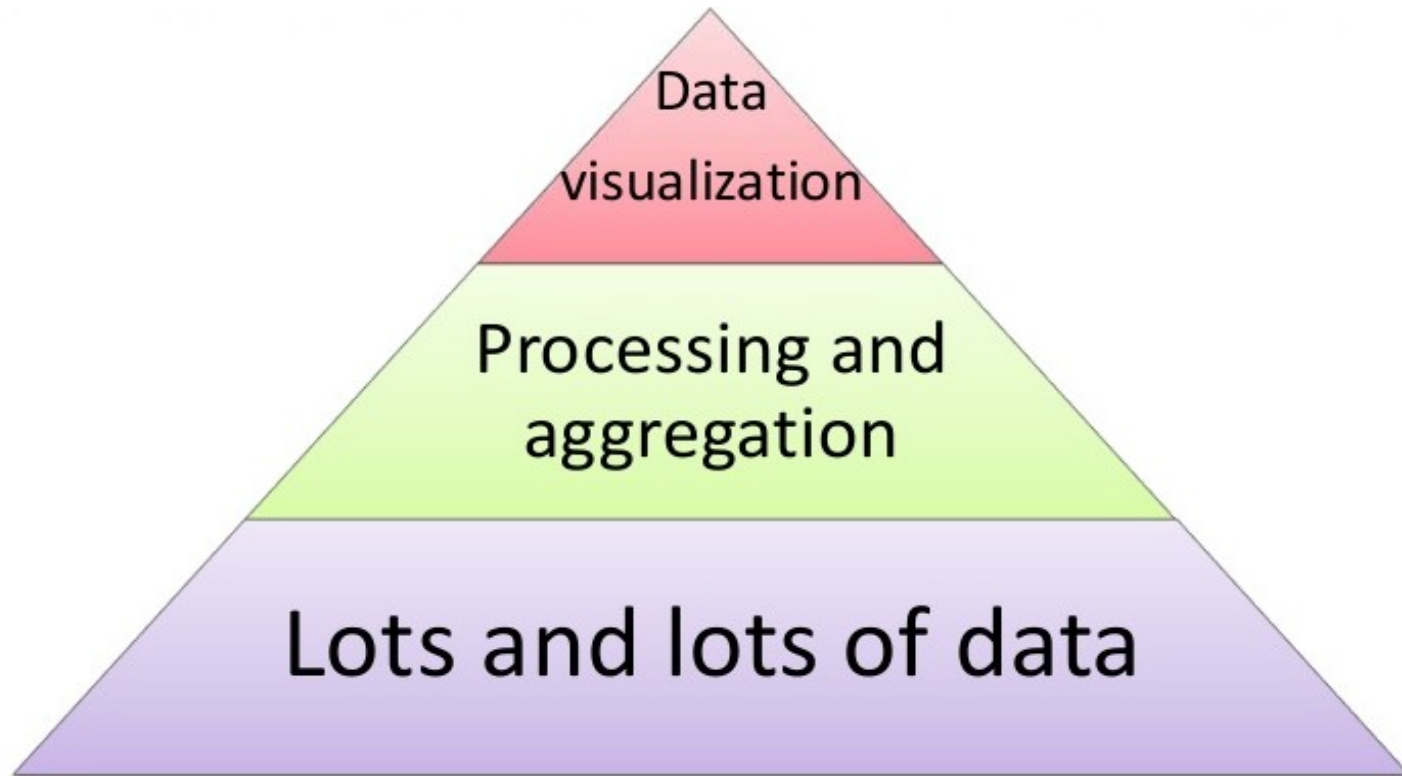


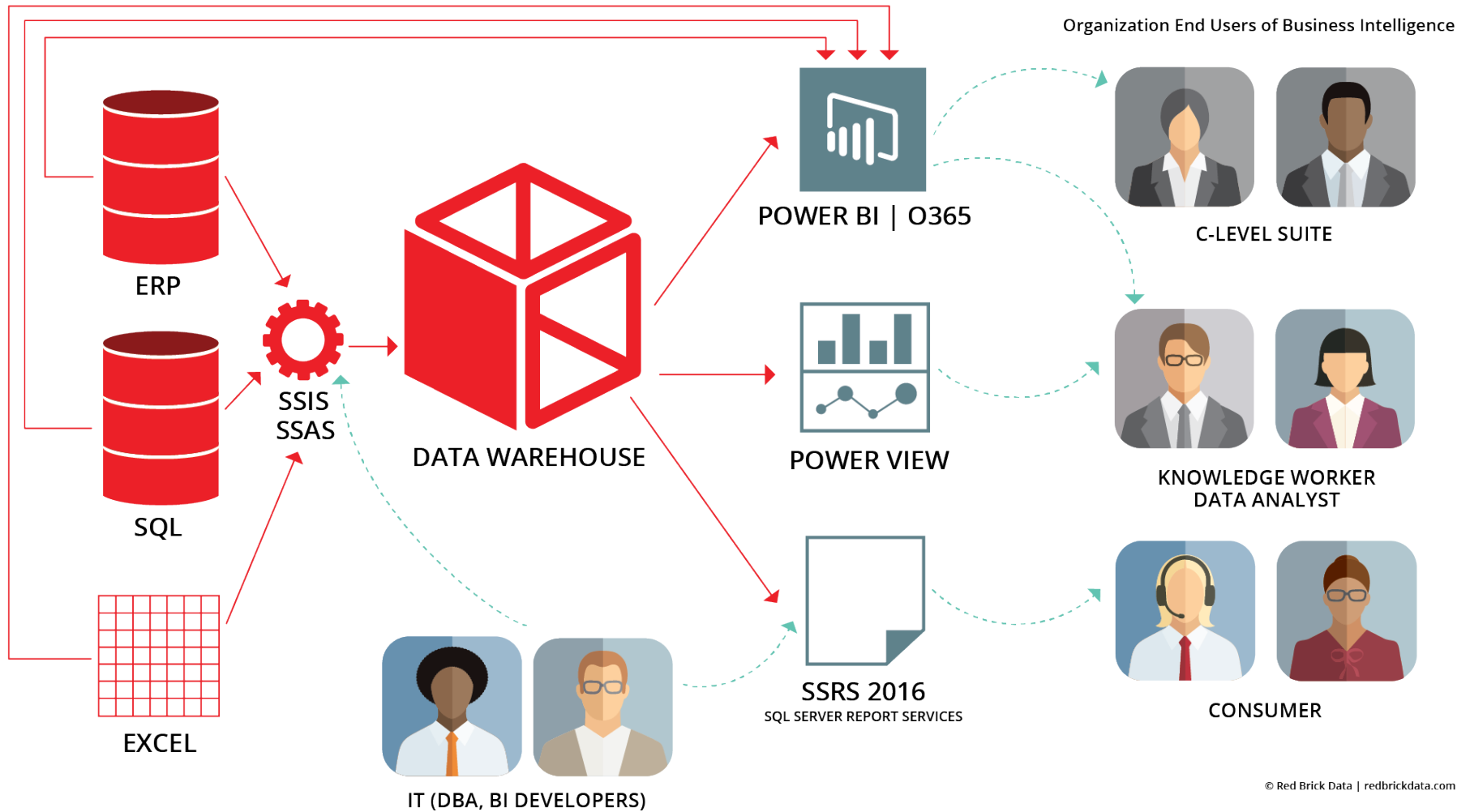


# What is BI?



**Business intelligence (BI)** is a set of theories, methodologies, architectures, and technologies that transform raw data into meaningful and useful information for business purposes.

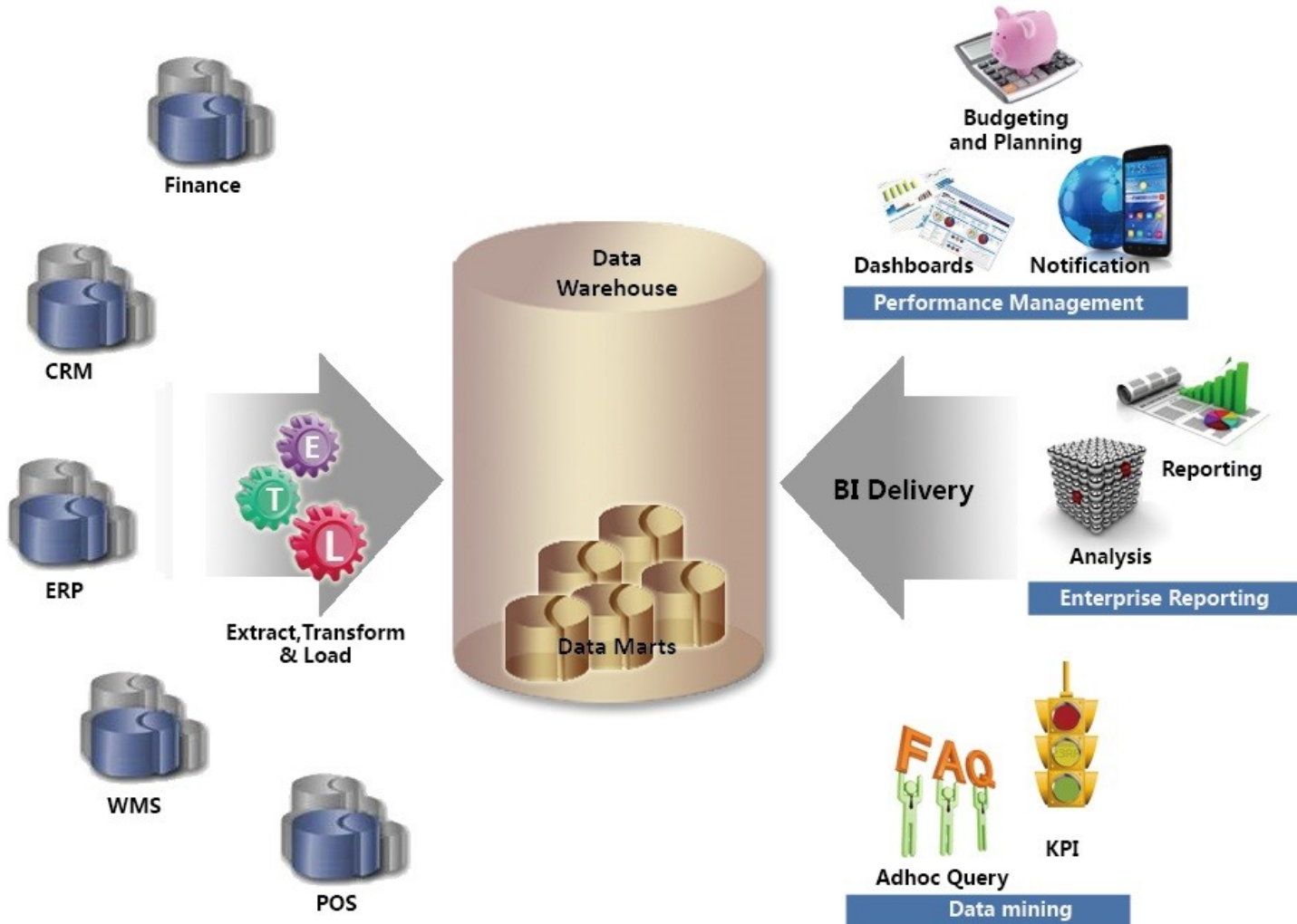
# BI Consulting



# BI Applications



# BI Applications



# Business Intelligence Applications

Dashboards & Scorecards

Operations Reports

Financial Reports

Ad Hoc Analysis Tools

Predictive Analytics Applications

## Data Warehouse

General Ledger

Leasing

Employee

Renewal Offers

Customer Actions

Utilities

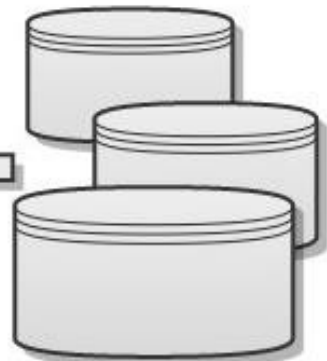
Capex

Marketing

Data Integration

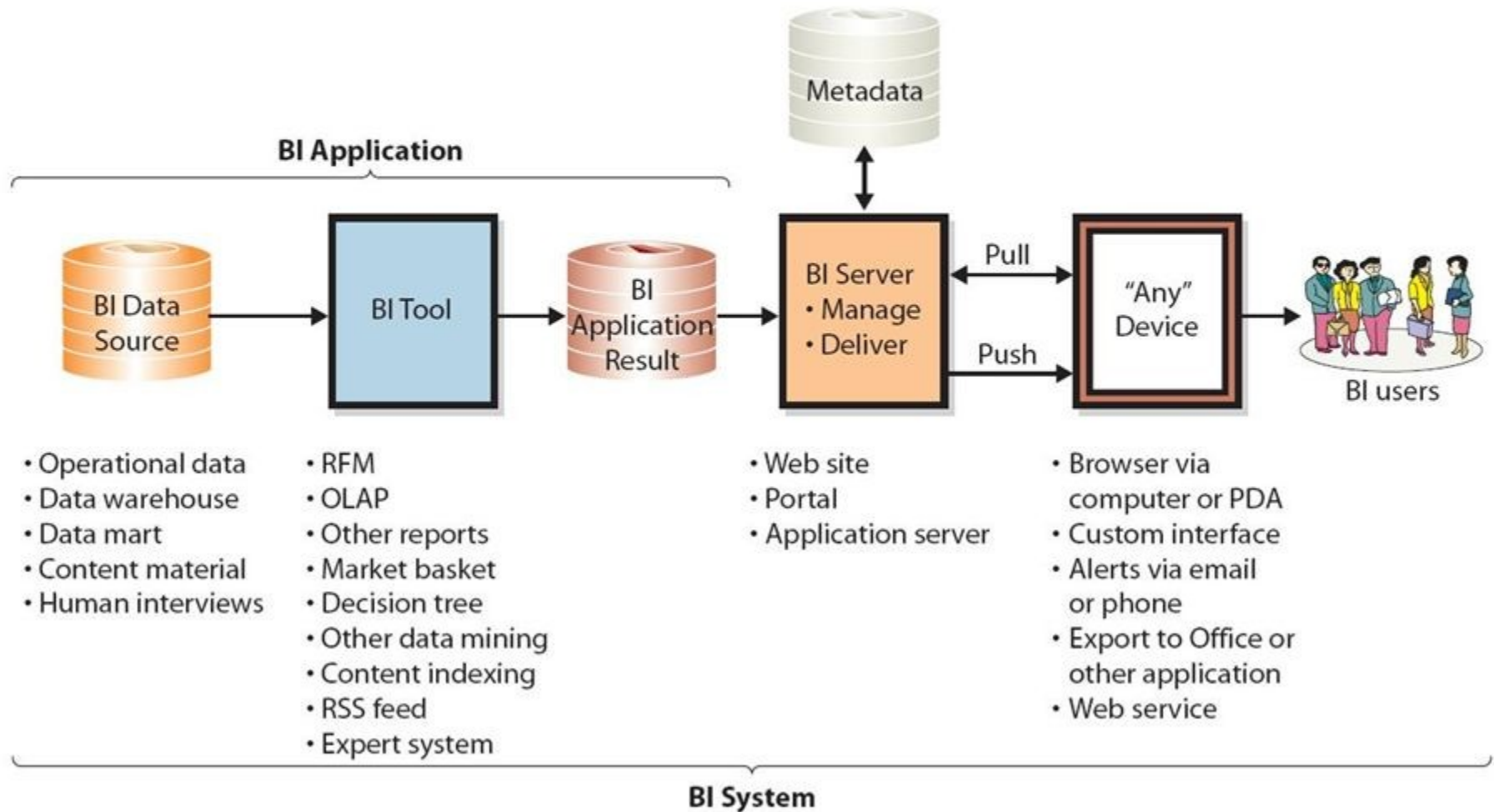


Data Sources

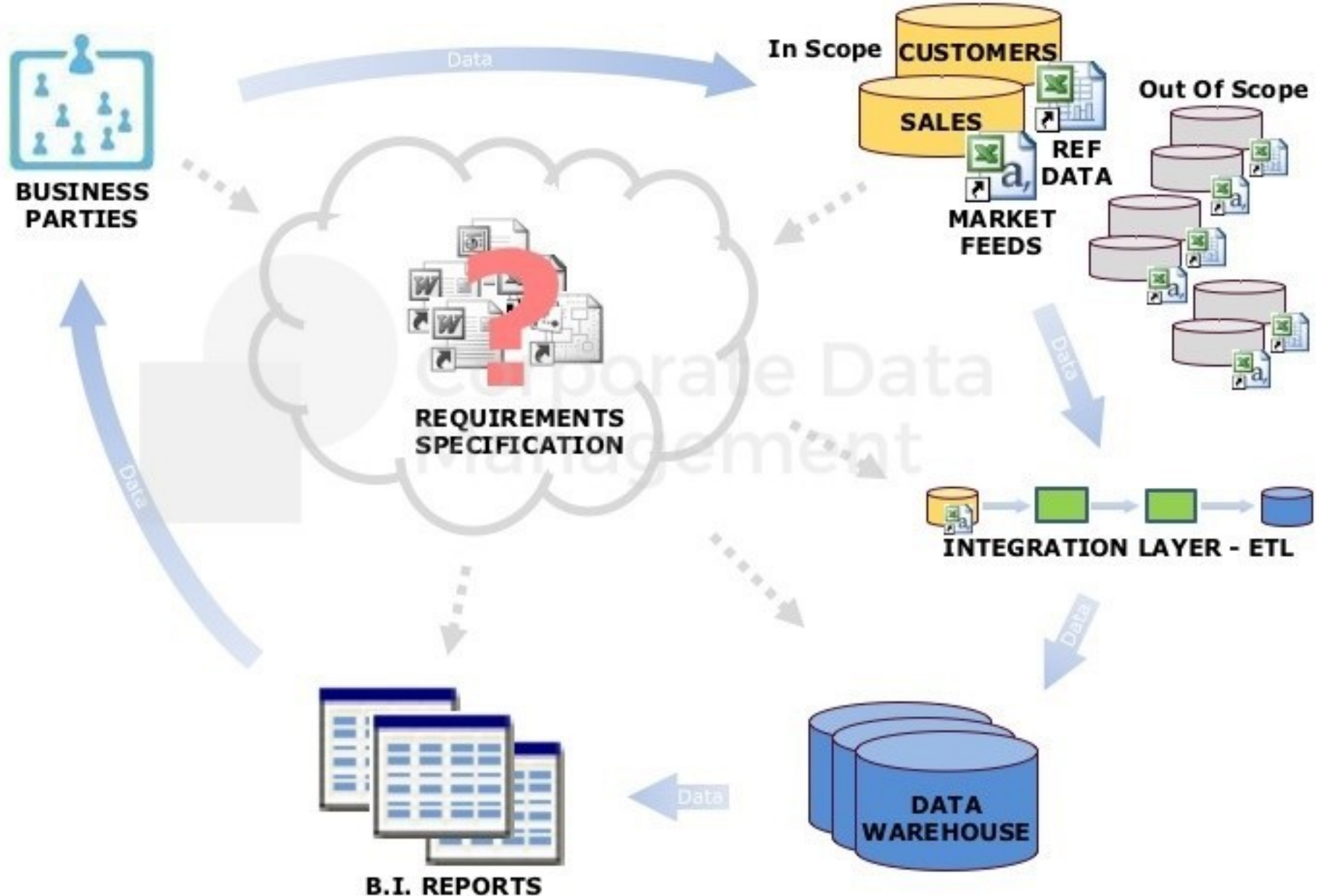




# Delivery of Business Intelligence Applications

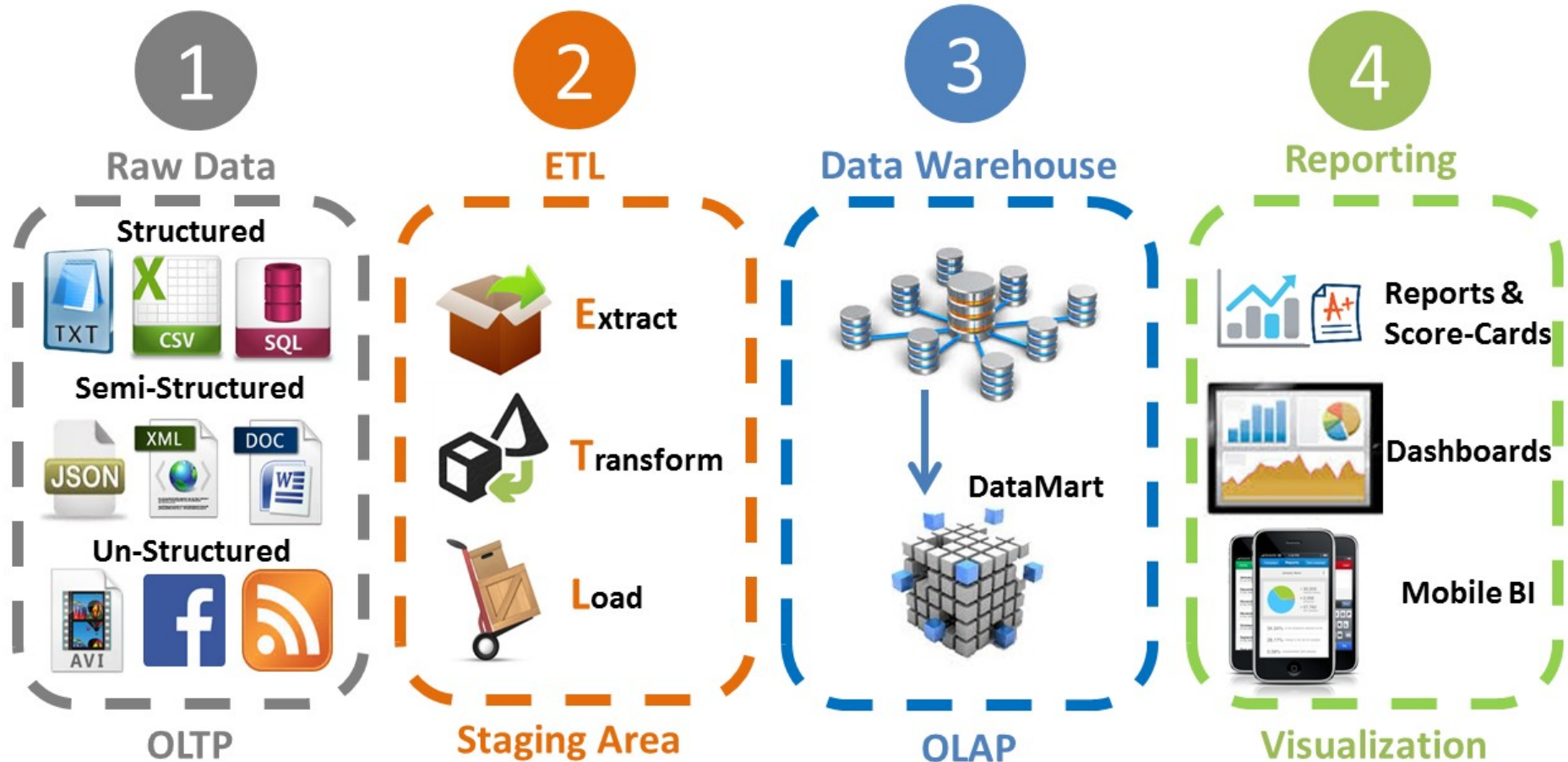


# Business Intelligence Data Cycle

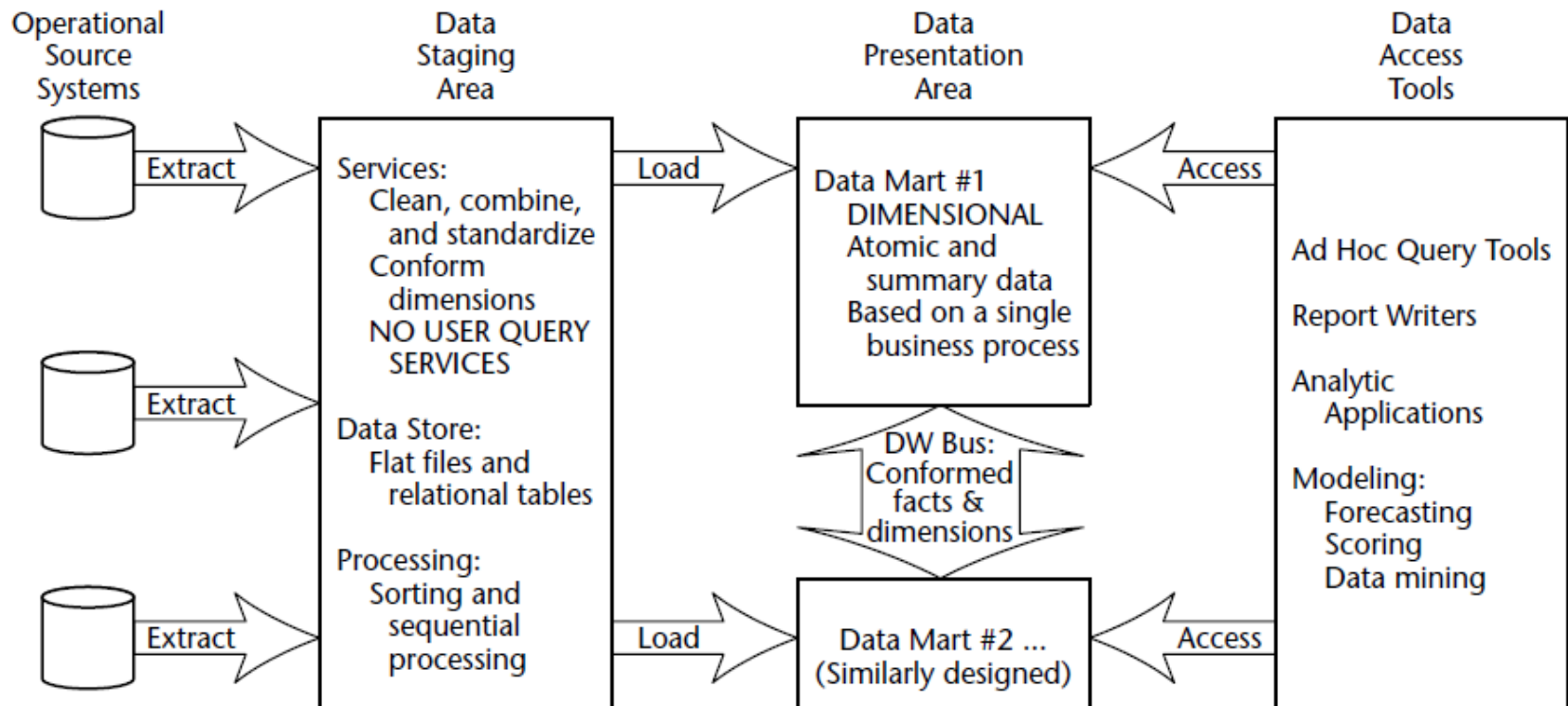




# BI Data Cycle

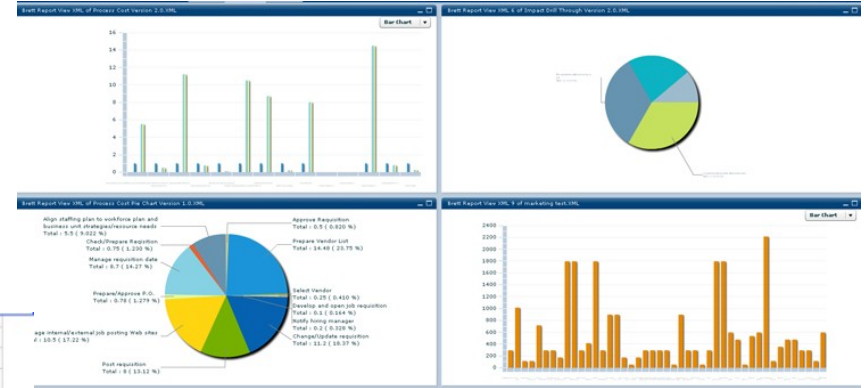
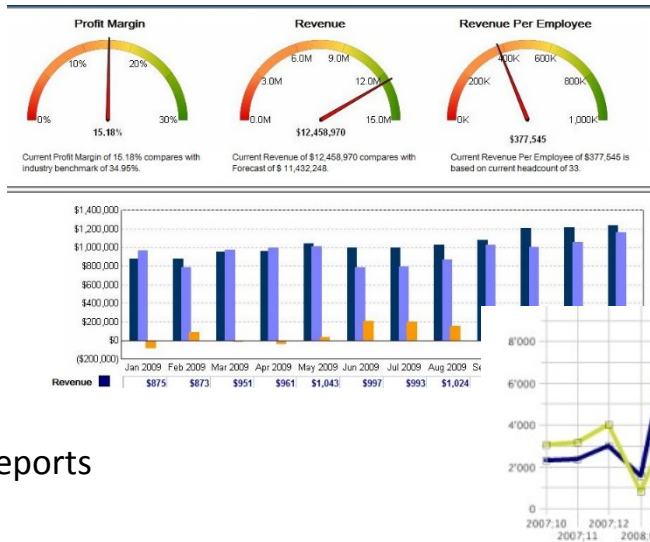


# Basic Elements of the Data Warehouse



**Figure 1.1** Basic elements of the data warehouse.

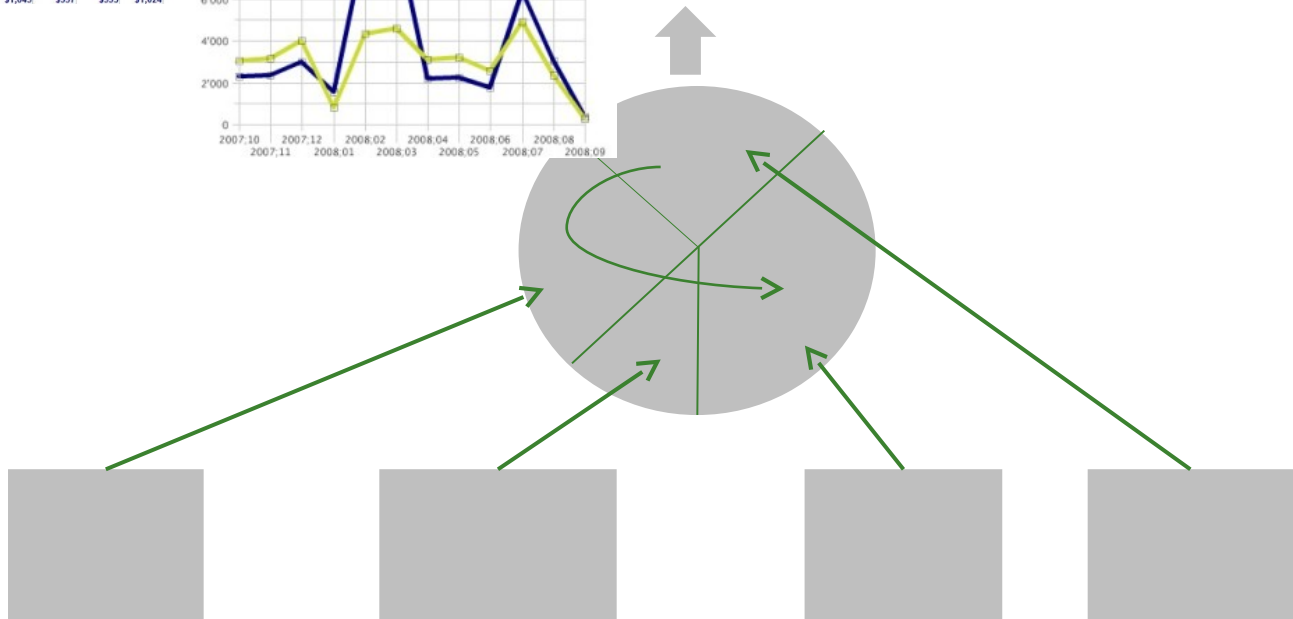
# Business Intelligence



Reports

Data repository

Different systems



### Information Delivery

**Reporting**  
**Dashboards**  
**Microsoft Office integration**  
**Ad hoc report/query**  
**Mobile BI**

### Analysis

**Interactive visualization**  
**Search-based data discovery**  
**Geospatial and location intelligence**  
**Online analytical processing (OLAP)**  
**Embedded advanced analytics**

BI and analytics  
(Gartner, 2014)

### Integration

**BI infrastructure and administration**  
**Collaboration**      **Metadata management**  
**Business user data mashup and modeling**  
**Embeddable analytics**      **Development tools**  
**Support for big data sources**

# Newsroom

Newsroom \ Announcements \ Gartner Predicts Business Intelligence and Analytics Will Remain Top...

## Press Release

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STAMFORD, Conn., December 16, 2013

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## Gartner Predicts Business Intelligence and Analytics Will Remain Top Focus for CIOs Through 2017

Analysts to Discuss Big Data at Gartner Business Intelligence Summits 2014, February 24-25 in Sydney, March 10-11 in London and March 31-April 2 in Las Vegas

The CIO focus on business intelligence (BI) and analytics looks set to continue through 2017, according to Gartner, Inc. Gartner said that the benefits of fact-based decision-making are clear to business managers in a broad range of disciplines, including: marketing, sales, supply chain management, manufacturing, engineering, risk management, finance and HR.

"Major changes are imminent to the world of BI and analytics including the dominance of data discovery techniques, wider use of real-time streaming event data and the eventual acceleration in BI and analytics spending when big data finally matures," said Roy Schulte, vice president and distinguished analyst at Gartner. "As the cost of acquiring, storing and managing data continues to fall, companies are finding it practical to apply BI and analytics in a far wider range of situations."

Gartner outlined four key predictions for BI and analytics:

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- **Gartner** is the world's leading information technology research and advisory company.

*"We deliver the technology-related insight necessary for our clients to make the right decisions, every day"*



# 2013-15 Top 10 CIO Technology Trends

## Top 10 CIO Technology Priorities (2012-15)

Category	Less than 500M\$	500-1B\$
Mobile technologies	1	2
Analytics and business intelligence	2	1
Cloud computing (SaaS, IaaS, PaaS)	3	3
Desktop, server and storage virtualization	4	7
Collaboration technologies	5	5
IT Management technologies (IT governance, etc.)	6	8
Legacy application modernization	7	4
Customer Relationship Management	8	6
Security technology	9	-
Social media and computing	10	-
ERP		9
Service Oriented Architecture		10

# Business intelligence and analytics vendors:

## Magic Quadrant report for 2014

(Gartner, feb 2014)

Figure 1. Magic Quadrant for Business Intelligence and Analytics Platforms



# Business management issues

- “We have mountains of data in this company, but we can’t access it.”
- “We need to slice and dice the data every which way.”
- “You’ve got to make it easy for business people to get at the data directly.”
- “Just show me what is important.”
- “It drives me crazy to have two people present the same business metrics at a meeting, but with different numbers.”
- “We want people to use information to support more fact-based decision making.”

---

# Operational Source Systems

- capture the transactions of the business
- queries against source systems are narrow
- stovepipe application

# Data Staging Area

- a storage area  
AND
- a set of ETL processes  
(*extract-transform-load*)
- it is off-limits to business users and does *not* provide query and presentation services.



---

# Data Staging Area - ETL

## ■ EXTRACTION

- ❑ reading and understanding the source data and copying the data needed for the data warehouse into the staging area for further manipulation.

## ■ TRANSFORMATION

- ❑ cleansing, combining data from multiple sources, deduplicating data, and assigning warehouse keys

## ■ LOADING

- ❑ loading the data into the data warehouse presentation area

# Data Presentation Area

- where data is organized, stored and made available for direct querying by users, report writers, and other analytical applications
- it is all the business community sees and touches via data access tools
- dimensional data modeling
  - user understandability
  - query performance
  - resilience to change
- detailed, atomic data

---

# Data Access Tools

- tools that query the data in the data warehouse's presentation area
- the variety of capabilities that can be provided to business users to leverage the presentation area for analytic decision making.
  - prebuilt parameter-driven analytic applications
  - ad hoc query tools
  - data mining, modeling, forecasting

---

# Microsoft SQL Server

- SQL Server Integration Services (SSIS)
  - tool for the ETL process
- SQL Server Analysis Services (SSAS)
  - tool for multidimensional modeling
- SQL Server Reporting Services (SSRS)
  - tool for reporting

---

We spend entire meetings arguing about who has the right numbers rather than making decisions.

Filters

Reporting Day & Time



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**The DW/BI system must serve as the authoritative and trustworthy foundation for improved decision making.**

The business community must accept the DW/BI system to deem it successful.