

## MI 703 CIS Session #6

- ◆ Business Analytics Intro
- ◆ Harrah's Entertainment Inc.
- ◆ Databases and Datawarehouses
- ◆ Mid Term exam review

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## Business Analytics

- ◆ Business Analytics:
  - Using detailed **transaction level** data on some **entity** (customers, suppliers, products, processes) to build sophisticated **mathematical models** that **categorize and/or predict** things about that entity
- ◆ Why is analytics becoming so hot? What are the drivers and enablers?

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- ◆ Business Analytics Intro
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  - Goals of the case
  - Thinking systematically
  - Davenport revisited
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## Goals of the Case

- ◆ Understand what business analytics looks like “on the ground”
- ◆ Understand what it takes (beyond data and technology) to create an analytic capability
- ◆ Understand how the value created by analytics can be evaluated
- ◆ Develop insights into the role of IT and analytics in (potentially) creating a sustainable competitive advantage

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## Thinking Systematically: Transforming an Organization to Compete Based on Analytic Capabilities

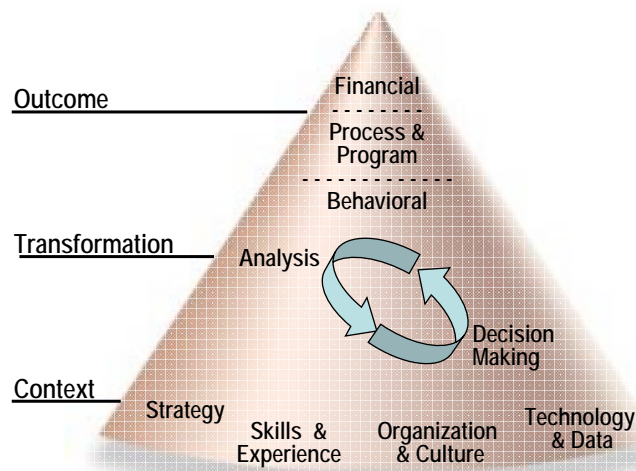
1. How important is it to have an analytic capability?
  - Does it/could it align well with your strategy?
  - How information intensive is your business?
  - What are competitors doing
2. What information assets do you (or could you) have?
  - How valuable are they?
  - What kind of models can you build?
3. Do you have what it takes to build an analytic capability? (Davenport Article)
4. If you could build an analytic capability, how sustainable would the advantage be?
  - Do competitors have incentive to copy? Ability? Would they get as much value if they did?

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## From Data to Knowledge to Results – Building an Analytic Capability [Davenport et al 2003]



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## Data Management Infrastructure

### Evolution

1960s, 1970s	Flat files, Rigid Database Management Systems (DBMS)
1980s	Relational DBMS
1990s	Integrated DBMS (ERP)
Today	Data warehouses, Business Intelligence, Analytics (OLAP, Datamining, Modeling, Dashboards)

### Goals

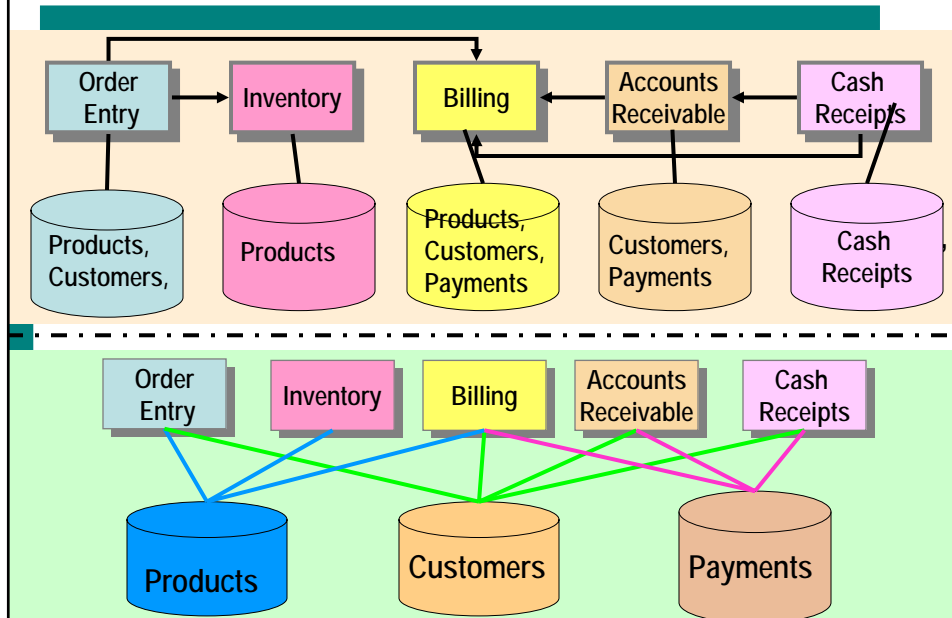
- ◆ Consistency & security
- ◆ Flexibility (to change the structure)
- ◆ True integration
- ◆ Accessibility

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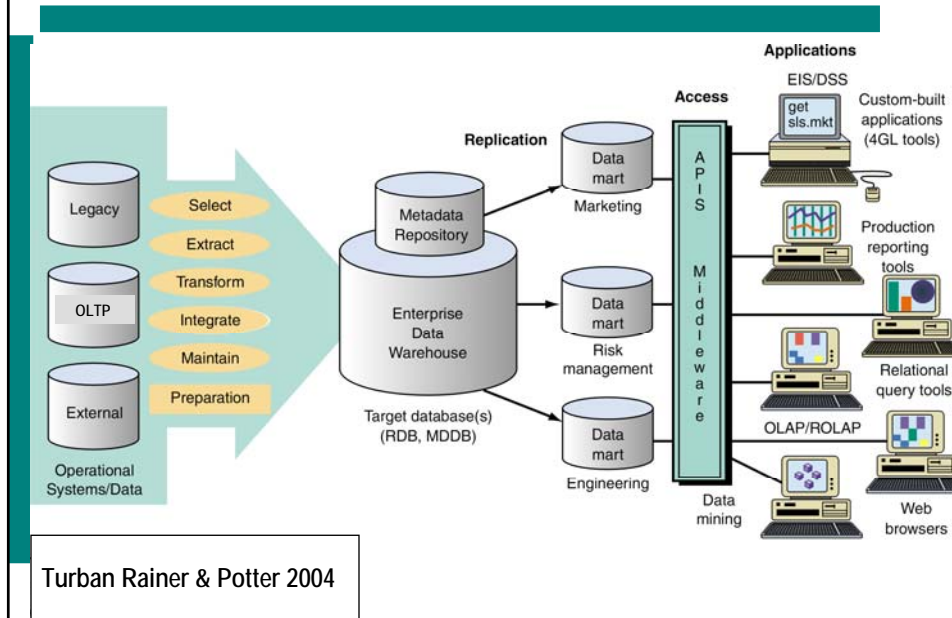
## Interfaced vs. Integrated Database Systems



## Modern attempts to get true integration and accessibility

- ♦ Enterprise Systems (Integration)
  - Integrated sets of online transaction processing (OLTP) applications to support daily business operations
  - Examples: Enterprise Resource Planning, Supply Chain Mgmt, Customer Relationship Mgmt, Product Lifecycle Mgmt
- ♦ Data Warehouses & Business Intelligence (Accessibility)
  - Systems for analysis of historical data from OLTP & elsewhere
  - Examples:
    - Understanding customer behavior in e-commerce
    - Implementing customer relationship management
    - Comprehensive performance measurement (balanced scorecard)

## Data Warehouse Architecture



## Distinctive DW Characteristics

- ◆ **Structured for analysis, not transaction processing**
  - Includes intentional redundancy, summarized data, etc.
- ◆ **Integrated**
  - Combines data from multiple internal & external systems
- ◆ **Timeframes**
  - Covers data for long historical periods
- ◆ **A fixed snapshot of reality**
  - Users can not change or update data

## Business Intelligence Software: Tools for Accessing Datawarehouses

- ◆ Query Tools (User directed)
  - Can return individual records or summaries
  - Requests are formulated in advance (e.g. “show all delinquent accounts in the northeast region during Q1”)
  - The industry standard: Structured query language (SQL)
- ◆ OLAP - Online Analytical Processing (User directed)
  - “Drill down” into the data by selecting variables to summarize on
  - Results are usually reported in a cross-tab report or graph (e.g. “show me a tabular breakdown of sales by business unit, product type, and year”)
- ◆ Datamining
  - “Automatic” discovery tools (Computer directed)
  - Analytics models (User directed)
- ◆ Dashboards – “Business Activity Monitoring”

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## An example “Dashboard” for sales



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