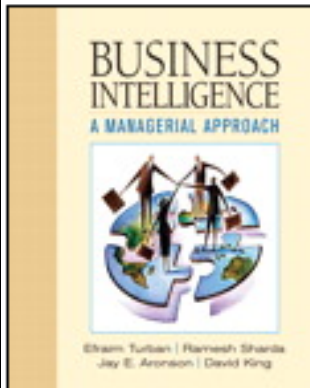


Business Intelligence

Understanding Business Intelligence Part I

Reference

- Materials used in this presentation are extracted mainly from the following texts, unless stated otherwise.



Business Intelligence

Efraim Turban

Ramesh Sharda

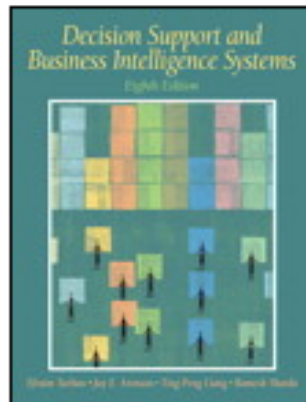
Jay E. Aronson, *University of Georgia*

David King

ISBN-10: 013234761X

ISBN-13: 9780132347617

Publisher: Prentice Hall



Decision Support and Business Intelligence Systems, 8/E

Efraim Turban

Jay E. Aronson, *University of Georgia*

Ting-Peng Liang, *National Sun Yat-Sen University*

Ramesh Sharda, *Oklahoma State University*

ISBN-10: 0131986600

ISBN-13: 9780131986602

Publisher: Prentice Hall

Objectives

At the end of this lecture, you should be able to:

- Critically discuss problems faced by today's business and ways they are being addressed
- Discuss the need for computerized support of managerial decision making
- Explain the concept of Business Intelligence
- Understand the major issues in implementing business intelligence

Changing Business Environment

- The environment in which organizations operate today is becoming more and more complex
- The complexity creates **opportunities** on one hand and **problems** on the other.
- Business environment factors are divided into **four** major categories:
 - markets,
 - consumer demands,
 - technology,
 - societal
- The intensity of these factors increases with time, hence more pressures, more competition, **more management problems**

Business Environment Factors

<u>FACTOR</u>	<u>DESCRIPTION</u>
Markets	Strong competition Expanding global markets Blooming electronic markets on the Internet Innovative marketing methods Opportunities for outsourcing with IT support Need for real-time, on-demand transactions
Consumer demand	Desire for customization Desire for quality, diversity of products, and speed of delivery Customers getting powerful and less loyal
Technology	More innovations, new products, and new services Increasing obsolescence rate Increasing information overload Social networking, Web 2.0 and beyond
Societal	Growing government regulations and deregulation Workforce more diversified, older, and composed of more women Prime concerns of homeland security and terrorist attacks Increasing social responsibility of companies Greater emphasis on sustainability

Organizational Responses – managerial approach

- In handling the complexity of today's business environment, managers are expected to respond quickly and be agile
- Be Reactive, Anticipative, Adaptive, and Proactive
- Managers may take actions, such as
 - Employ strategic planning
 - Restructure business processes
 - Participate in business alliances/Improve partnership relationships
 - Improve corporate information systems
 - Encourage innovation and creativity ... and many more
- Many if not all of the actions , have now implemented computerized support

Decision Making in Business

- Management $\cong$ Decision Making
- Decision making means selecting **the best solution** from two or more alternatives
- Management **was** considered an art because a variety of individual styles could be used in addressing problems
- Often based on creativity, judgment, intuition, experience rather than on a scientific approach.
- Studies suggest that managers roles can be classified into 3 major categories:
 - **Interpersonal** – figurehead, leader
 - **Informational**- spokesperson, disseminator
 - **Decisional**- negotiator, resource allocator

Decision Making in Business

- Making decision has become a complex tasks in management, due to :
 - IT has resulted in more and more alternatives to choose from
 - Government regulation, political climate makes it difficult to predict results
 - Need to make fast decisions, insufficient time to weigh decisions, errors may cost the business negatively
- Intuition and trial-and-error approaches to managerial decision making may not be as effective and applicable in today's business environment

Get the computers to help!

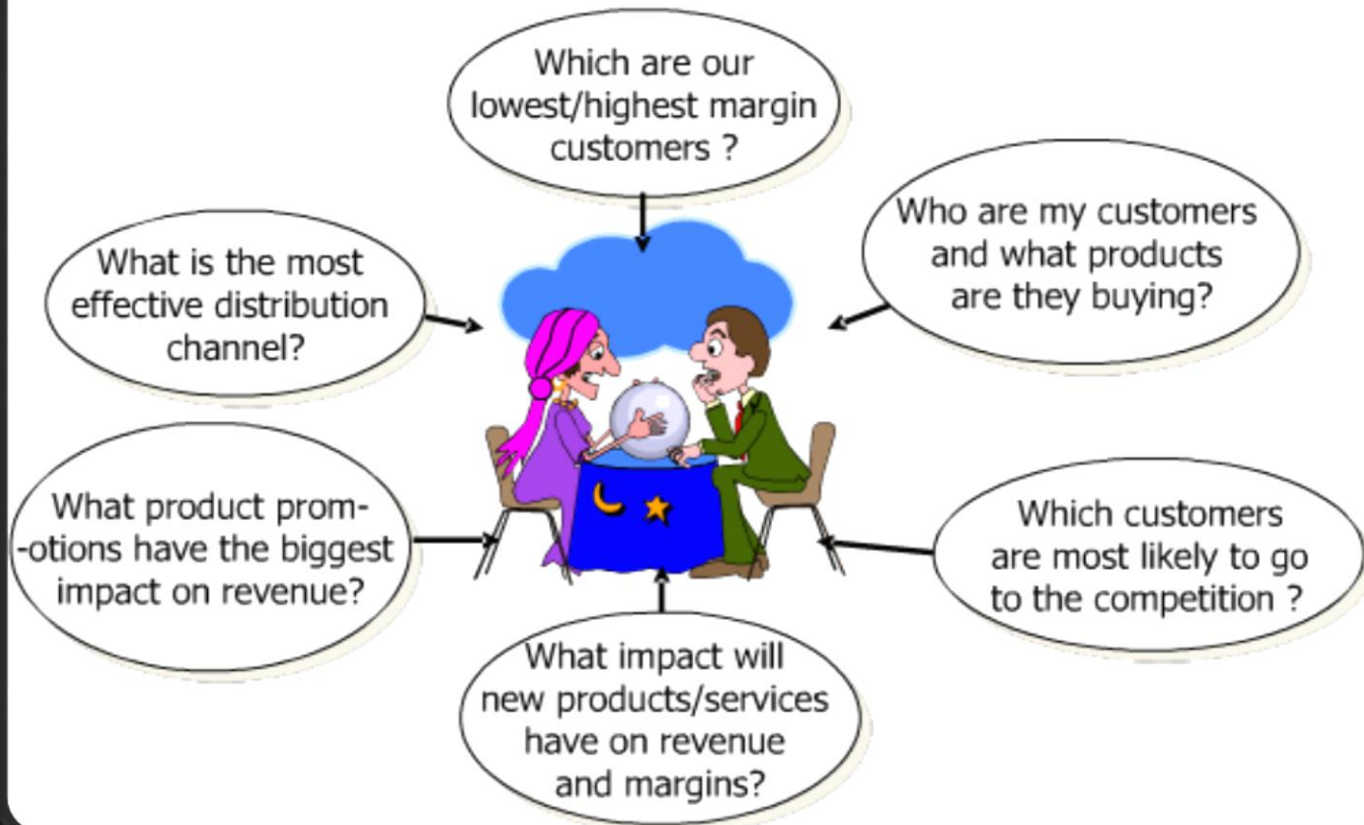
- Today's computerized systems offer capabilities to facilitate decision support through:
 - Speedy computations
 - Improved communication and collaboration
 - Increased productivity of group members (automated processes)
 - Improved data management (easy retrieval of data)
 - Quality support
 - Ubiquity

Structured Decision and Unstructured Decision

- Decision-making processes depends on the degree of structuredness
- Structured processes are routine and typically repetitive problems – standard solution exists. **E.g. rule based solution, if only 70% on the seats on a flight from LA to NY are sold three days prior to departure , offer a discount of x % to non-business travelers.**
- Unstructured processes are complex, no fixed solution – necessary to develop customized solutions. Such solutions will require intuition, judgment, communication and collaboration in manpower and technologies **E.g. How to decide on advertising and promotions**

Decision Making in Business

A producer wants to know....



How/Where can he obtain the answers for those questions?

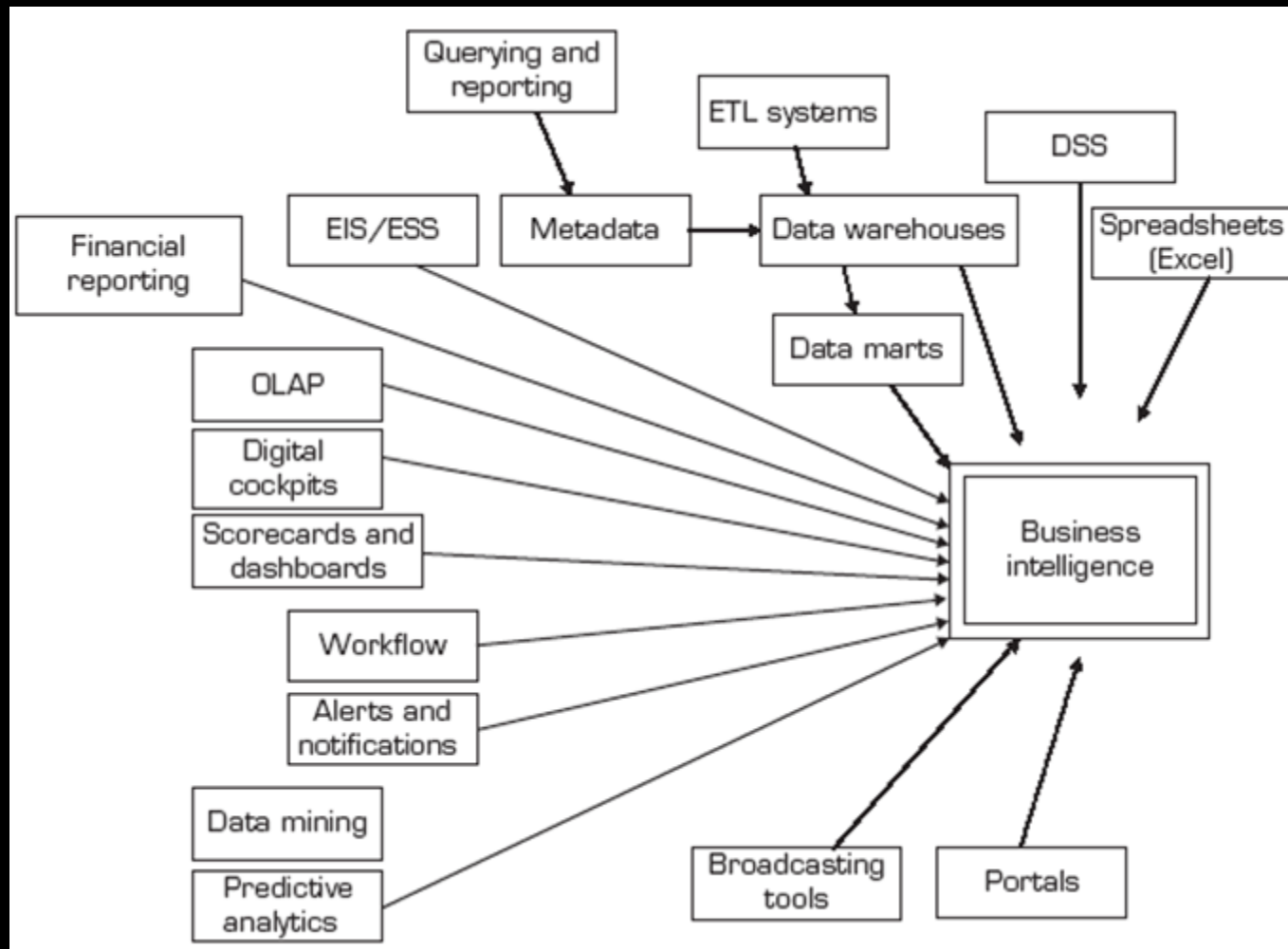
What is Business Intelligence?

- Business Intelligence (BI) adalah sekumpulan teknik dan alat untuk mentransformasi dari data mentah menjadi informasi yang berguna dan bermakna untuk tujuan analisis bisnis. Teknologi IB dapat menangani data yang tak terstruktur dalam jumlah yang sangat besar untuk membantu mengidentifikasi, mengembangkan, dan selain itu membuat kesempatan strategi bisnis yang baru. (Wikipedia,2010)
- Business Intelligence (BI) helps business people make more informed decisions by providing them timely, data-driven answers to their business questions. BI analyzes data stored in data warehouses, operational databases, and/or ERP systems (i.e. SAP®, Oracle, JD Edwards, Peoplesoft) and transforms it into attractive and easy to understand dashboards and reports. BI delivers the insight needed to make strategic planning decisions, improve operational efficiencies, and optimize business processes. (Microstrategy.com)

Business Intelligence main objectives

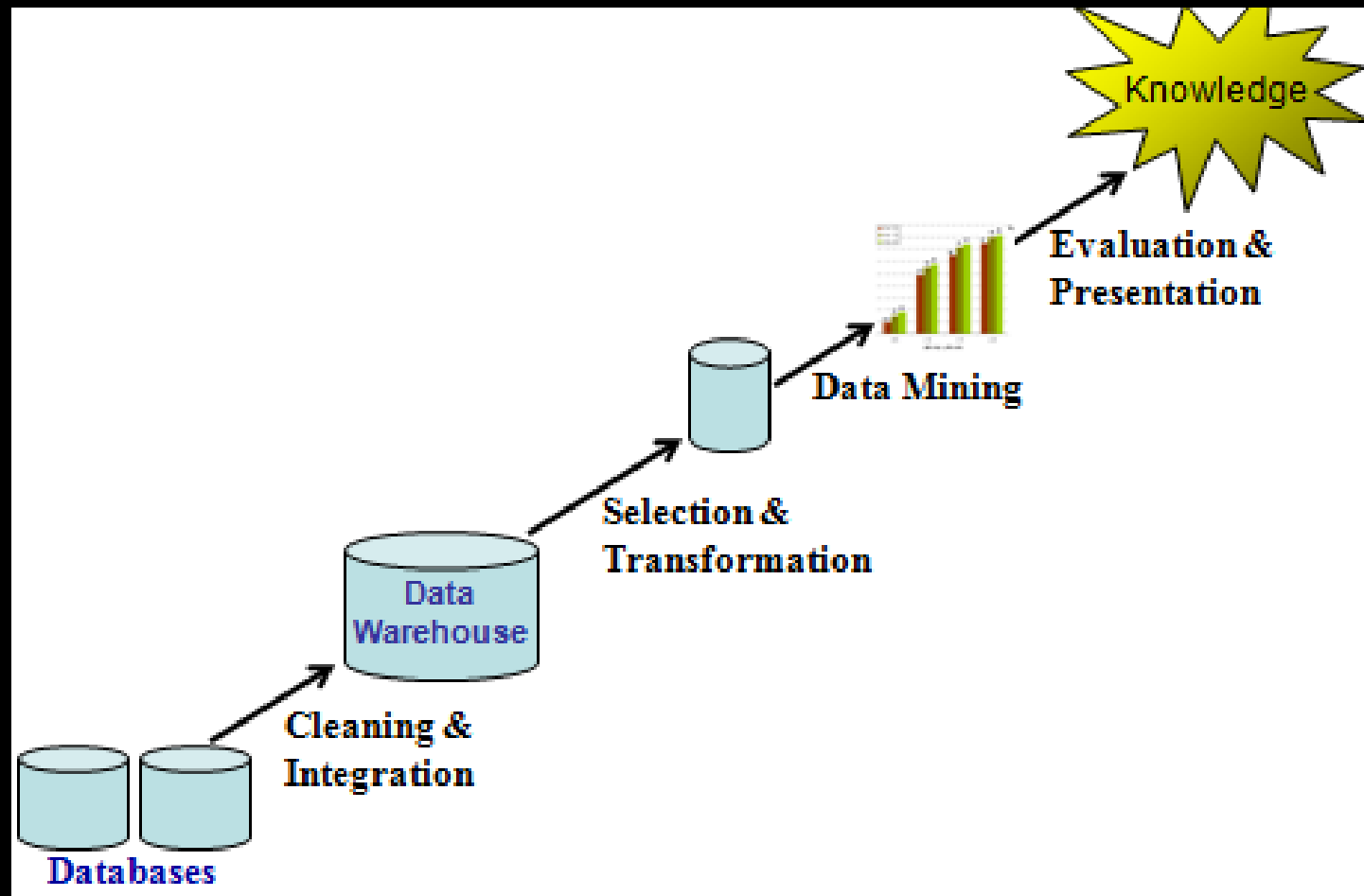
- Enable **interactive access** to data (sometimes in real time)
- Enable manipulation of data to **allow appropriate analysis** by **managers**
- Provide valuable insights to **produce informed and better decisions**
- The process of BI is based on transformation of data to information, then to decisions and finally to actions
- **Facilitate closing the strategy gap of an organization**

Various tools and techniques in BI

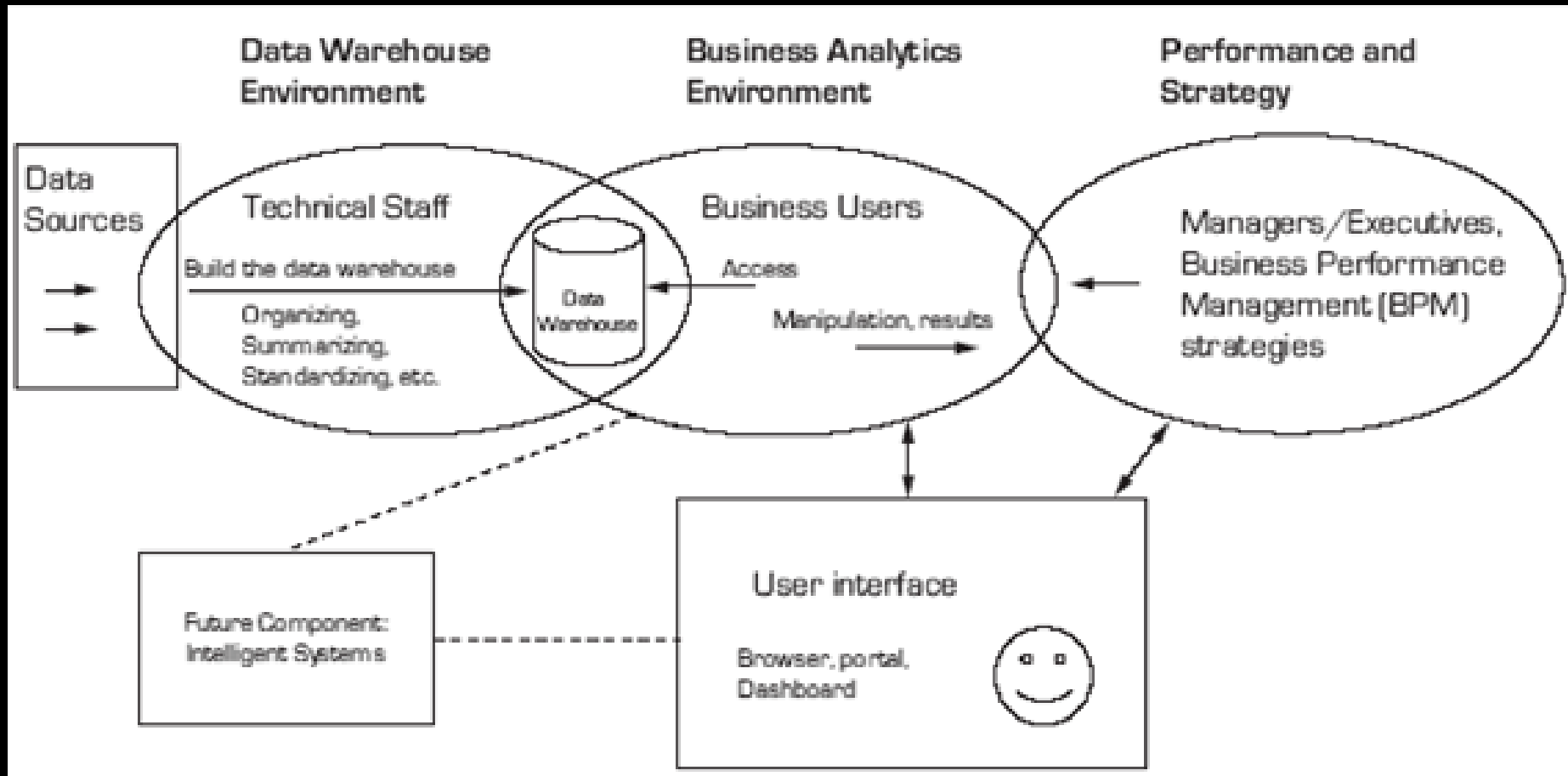


Most sophisticated BI products include most of the above

Business Intelligence Process



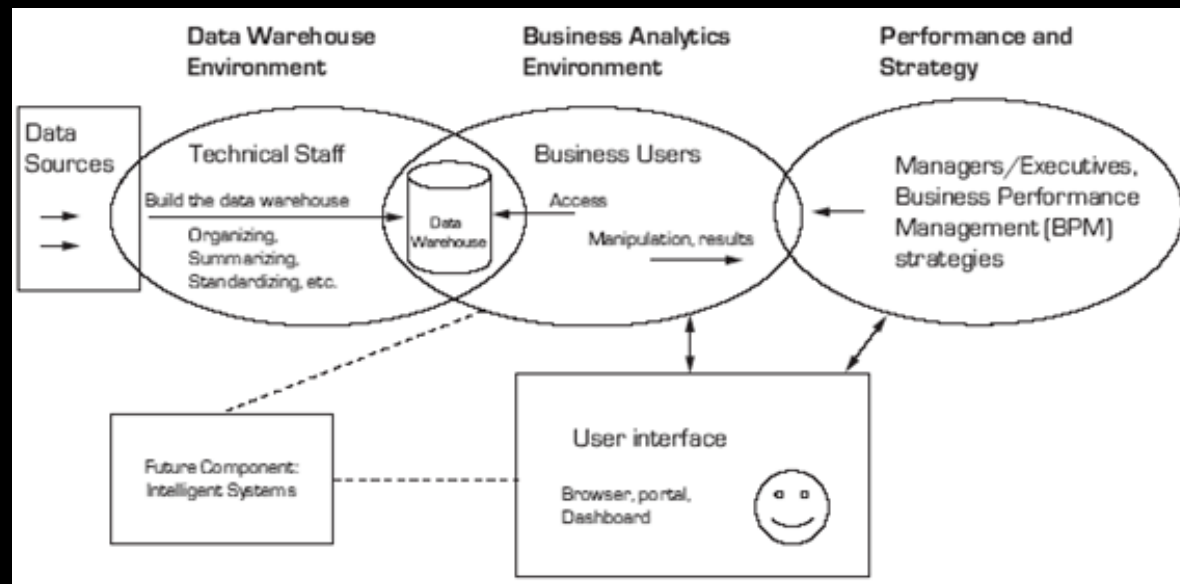
The architecture of Business Intelligence



A Business Intelligence system has **four major components**

4 major components of Business Intelligence architecture

1. The **data warehouse** is a special database or repository of data that had been prepared to support decision making applications ranging from simple reporting to complex optimization



4 major components of Business Intelligence architecture

2. **Business analytics** are the software tools that allow users to create on-demand reports, queries and conduct analysis of data. Originally they appear under the name online analytical processing (OLAP)

Data Mining - A class of information analysis based on databases that looks for hidden patterns in a collection of data which can be used to predict future behavior
e.g. Amazon.com uses data mining to predict the behaviour of their customers

Automated Decision Systems - Rule-based system that provide solution usually in one functional area to a specific repetitive managerial problems

4 major components of Business Intelligence architecture

3. **Business performance management (BPM)** based on balanced scorecard methodology – a framework for defining, implementing, and managing an enterprise's business strategy by linking objectives with factual measures

Objective is to optimize overall performance of an organization. A real-time system that alert managers to potential opportunities, impending problems, and threats, and then empowers them to react through models and collaboration

The architecture of Business Intelligence

4. **User interface** allows access and easy manipulation of other BI components

Tools used to broadcast information

Data visualization provides graphical, animation, or video presentation of data and the results of data analysis

The ability to quickly identify important trends in corporate and market data can provide competitive advantage

Crazy Bikes

Tuesday, April 25, 2006

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[Orders](#)
[Invoices](#)
[Sales](#)
[Reporting](#)
[Downloads](#)
[Products](#)



Shop floor calendar



Orders Shipping Today



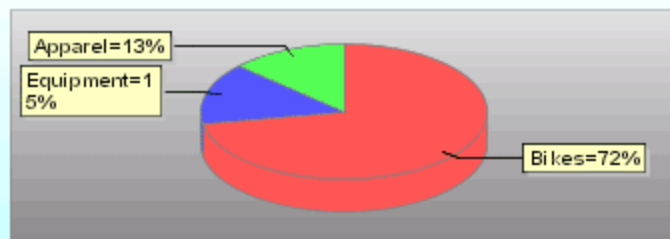
Customer	Order #	Amount
A/B Cycle Shoppe	300129	17,500.00
Bernard's Schwinn Cyclery	300222	6,600.00
Bernard's Schwinn Cyclery	300227	1,700.00
House of Bikes	301699	1,380.00



Top Customers This Month

Customer	Amount
A/B Cycle Shoppe	17,500.00
The Spokesman, Inc.	16,000.00
Town & Country Cycle	13,600.00

Sales by Product Class



Today's Weather at
[Crazybikes](#)
[Headquarters](#)

[Honolulu, HI](#)



Get the 10 day forecast



72°F

Mostly Cloudy

Feels Like: 72°F

Humidity: 78%

Wind: ENE at 9 mph

Enter city/zip

GO!

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Cell Phone Memory Card

What Could I Invest

<http://dashboardspy.com/img/retail-store-dashboard.gif>

Relation between BI and DSS

Their architectures are very similar because BI evolved from DSS

DSS directly support specific decision making, while BI provides accurate and timely information, and indirectly support decision making

BI has an executive and strategy orientation, especially in its BPM and dashboard components, while DSS, in contrast, is oriented toward analysts

Thank You

Review Questions

1. Explain the term BI
2. Identify and briefly describe the major components of BI
3. Discuss 3 reasons why making business decisions today has become a complex task
4. Today's computerized systems offer capabilities to facilitate decision support through ubiquity. Explain this notion.