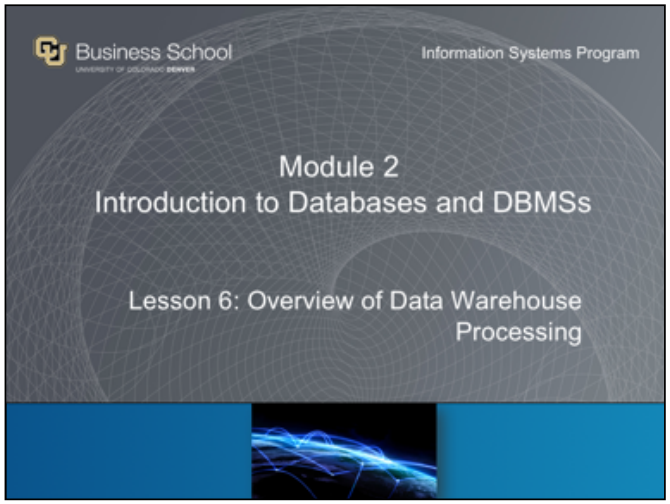
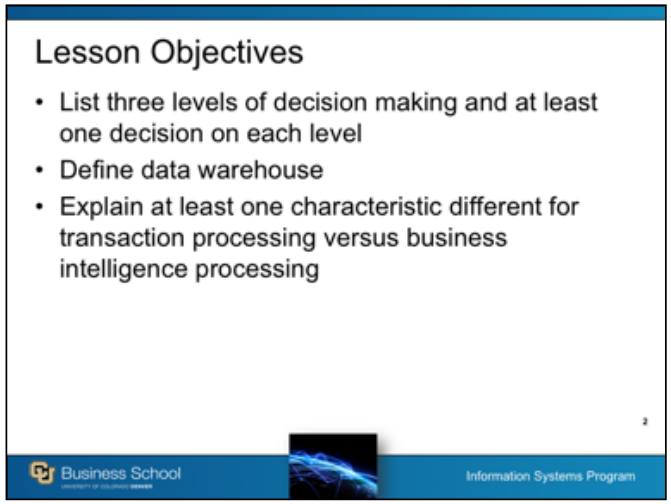
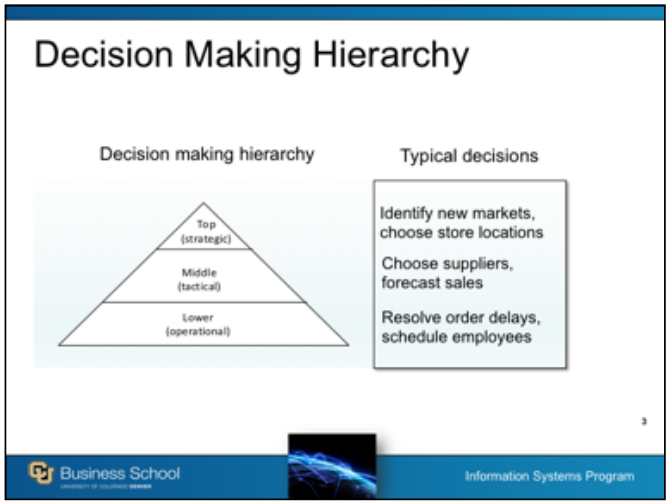


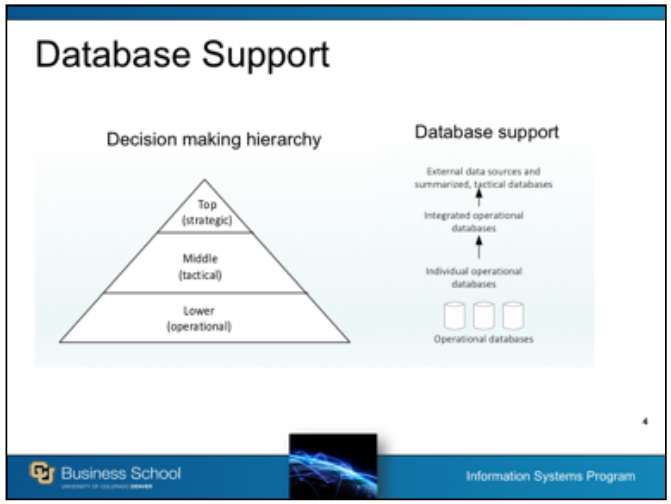
Welcome to Lesson 6 of Module 2 on the Introduction to Databases and DBMSs
-Covers basic concepts of data warehouse processing
-Database management systems are vital technology to modern organizations

How do data warehouses affect your life?



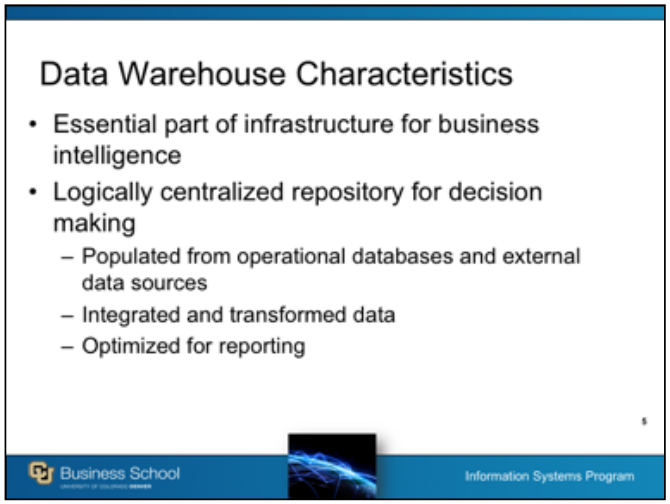


Lower-level management deals with short-term problems related to individual transactions. Periodic summaries of operational databases and exception reports assist operational management. Middle management relies on summarized data that are integrated across operational databases. Middle management may want to integrate data across different departments, manufacturing plants, and retail stores. Top management relies on the results of middle management analysis and external data sources. Top management needs to integrate data so that customers, products, suppliers, and other important entities can be tracked across the entire organization. In addition, external data must be summarized and then integrated with internal data.



Operational databases directly support major functions such as order processing, manufacturing, accounts payable, and product distribution. The reasons for investing in an operational database are typically faster processing, larger volumes of business, and reduced personnel costs.

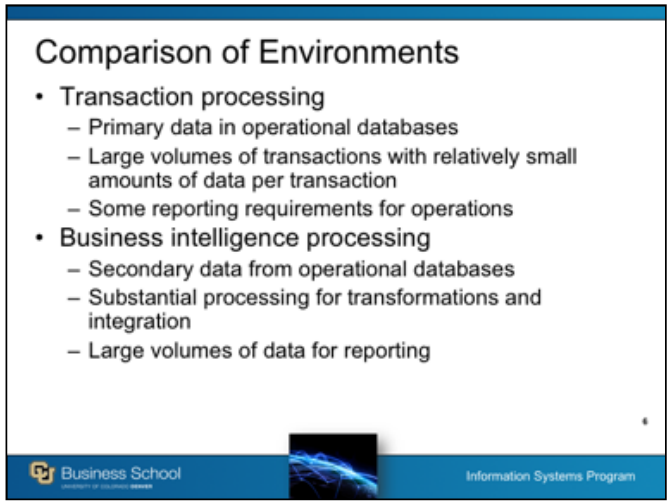
Operational databases provide the raw materials for management decision-making as depicted in the slide. Lower-level management can obtain exception and problem reports directly from operational databases. However, much value must be added to leverage the operational databases for middle and upper management. The operational databases must be summarized and integrated to provide value for tactical and strategic decision-making. Integration is necessary because operational databases often are developed in isolation without regard for the information needs of tactical and strategic decision-making.



Definition:

- Central repository: populated from operational databases and external data sources
- Many transformations to clean, standardize, and integrate
- Summarized: no need to identify individual transactions although transaction details

may be useful for flexible data analysis; summary data for optimizing reporting



Transaction processing:

- Operational databases: for daily business
- Decisions: involve details of products, customers, shipments, manufacturing
- High volumes of transactions with small amounts of data per transaction

Business intelligence:

- Integrated and summarized data: difficult to directly use operational data
- Decisions: broad view of customers, products, production, marketing
- Transformation processing typically offline (non working hours)
- Reporting during the day with large volumes of data per report

This course focuses on databases for operations and skills fundamental to both types of processing.

Courses 2 and 3 cover data warehouse design and DBMS features