MIS2502: Data Analytics

The Things You Can Do With Data

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Why Business Intelligence?

- Of decisions by managers are made by using their “gut” — 40%
- Say this is because there is “no good data” — 61%
- Want to increase their organization’s use of business intelligence — 72%

Source: http://advice.cio.com/thomas_wailgum/to_hell_with_business_intelligence_40_percent_of_execs_trust_gut
It all starts with data

Gathering
Storing
Retrieving
Interpreting

Almost every business action requires at least one of these!
Data versus information

Data: Discrete, unorganized, raw facts

Information: The transformation of those facts into meaning
Examples of Data

Data

• Quantity sold
• Course enrollment
• Star rating
• Customer name
• Discount

Information

?
So then how do you turn data *into* information?
• Social Genome project
  – Increase effectiveness of advertising on social networks
  – Predict what people want to buy, based on their conversations with friends

• Own search engine Polaris
  – Use sophisticated semantic analysis to work out what a customer wants

https://www.linkedin.com/pulse/big-data-walmart-future-retail-bernard-marr
Example: Netflix

– Predict viewing habits
– Find the next smash-hit series.
  • e.g. *House of Cards*, *Orange is the New Black*
– Personalize promotions
– Account for 1/3 of peak-time internet traffic in the US.

“The foundation of the streaming business was analytics.”
– Dave Hastings

http://knowledge.wharton.upenn.edu/article/how-data-analytics-is-shaping-what-you-watch/
https://blog.kissmetrics.com/how-netflix-uses-analytics/
Two types of data

**Transactional**
- Captures data describing and event
- An exchange between actors
- Real-time

**Analytical**
- Captures data to support analysis and reporting
- An aggregated view of the business
- Historical

Explain the role of transactional and analytical data in the examples on the previous slides.
The Information Architecture of an Organization

Data entry → Transactional Database

Stores real-time transactional data

Data extraction → Analytical Data Store

Stores historical transactional and summary data

Called OLTP:
Online transaction processing

Called OLAP:
Online analytical processing

But this is changing rapidly....
Components of an information infrastructure

**Transactional Database**
- Supports management of an organization’s data
- For everyday transactions

**Analytical Data Store**
- Supports managerial decision-making
- For periodic analysis

This is what is commonly thought of as “database management”

This is the foundation for business intelligence
Proceed with Cautions!

Data is a complement to “intuition” or past experience – Not a substitute

“Analytics cannot replace execution. If you can’t deliver a good experience, analytics are irrelevant.”

—Bill Franks, Chief Analytics Officer at Teradata