IS1105 Lecture 7: Business Intelligence

Why Organisations need BI?

- Respond to threats and opportunities
  - globalisation
    - increased competition
    - larger market
  - change in consumer dd
  - govt regulations
  - investment decisions
- Big data movement: use external and internal data to learn how gain or sustain CA
- effective planning is continuous
  - real-time management

Online Transaction Processing Systems

- OLTP are operational systems
- used to interact with C and B in real time
- provide fast customer response
- designed to handle multiple concurrent transactions from customers
- which have a fixed number of inputs
- big part of e-commerce - processing speed is crucial
- organisation of data is also impt
- OLTP generate data --> which can be used for BI by feeding to Informational Systems

Master Data Management

- creating a single version of the truth
- uses data warehouses and data marts to store and append data
- extraction - transformation - loading
- Data cleansing
  - removing/correcting corrupt/inaccurate data

Databases

- Enabling interactive web sites using databases
  - two key elements: data and the structure of the data
  - structure of data --> data model
    - data dictionary
      - metadata: explains the pieces of info
      - business rules
  - data type --> nature of data --> stored in structure
- databases: foundation
  - DBMS --> DB --> Record --> Attribute
- Databases: advantages
  - program-data independence
  - minimal data redundancy
  - improved data consistency
  - improved data sharing
  - increased productivity of application development
  - enforcement of standards
  - increased security
- Databases: costs & risks
  - new, specialized personnel
  - installation and management cost & complexity
  - conversion costs
  - need for explicit backup and recovery
  - organisational conflict
- types of DB
  - relational data management systems (RDBMS)
    - efficient storage, ease of retrieval but not easily scalable
  - NoSQL
    - easily scalable, works well with cloud computing but in early development stages
- Entering and Querying Data
  - entering - uses a form
  - report: compilation of data - use report generators
  - search - use query
  - most common language for RDBMS: structured query language (SQL)
    - others: Query By Example (QBE)