

IS1105 Lecture 8: Business Intelligence Components

2. Business Analytics to Support Decision Making

Business Analytics

- augments BI using predictive analysis
- heavily dependent on statistical models and their underlying assumptions

supports organisational decision making

Decision Support Systems (DSS)

what-if analysis

sensitivity analysis

interactive decision making aids - simulations, forecasting, optimization

uses models to calculate - eg. average

AI

Expert Systems

gives advice

match responses with facts and rules

fuzzy logic: where info is incomplete

relies on ability to acquire knowledge from experts and gather and compile it into a consistent form, expertise is rare and expensive

Intelligent Systems

Neural Networks

Intelligent Agent Systems

User Agent

Buyer Agent

Monitoring and Sensing Agents

Data Mining Agents

Web Crawlers

Destructive Agents

Knowledge Management Systems

1. Info and Knowledge Discovery

Ad Hoc Queries and Reports

scheduled reports, drill-down reports, exception reports, Key-indicator reports - produced at prespecified intervals

ad hoc queries - for unforeseen info needs

online analytical processing (OLAP)

chief component: OLAP server, understands how data is organised and has special functions for analysing the data

complex, multidimensional analyses of data stored in DB optimised for retrieval

Measures and Dimensions

Cubes, Slicing and Dicing - OLAP cube

Data Mining

complements OLAP

provides capabilities for discovering 'hidden' predictive relationships in the data

data mining algos search for patterns, trends, or rules that are hidden in the data. eg: characteristics of profitable customers

association discovery

sequence discovery

clustering and classification

Unstructured data analysis

Text and web content mining

web usage mining

3. Information Visualisation

Digital Dashboards

used for KPI and other summary info

Visual Analytics

Geographics Information Systems (GIS)

system for creating, storing, analysing and managing geographically referenced information