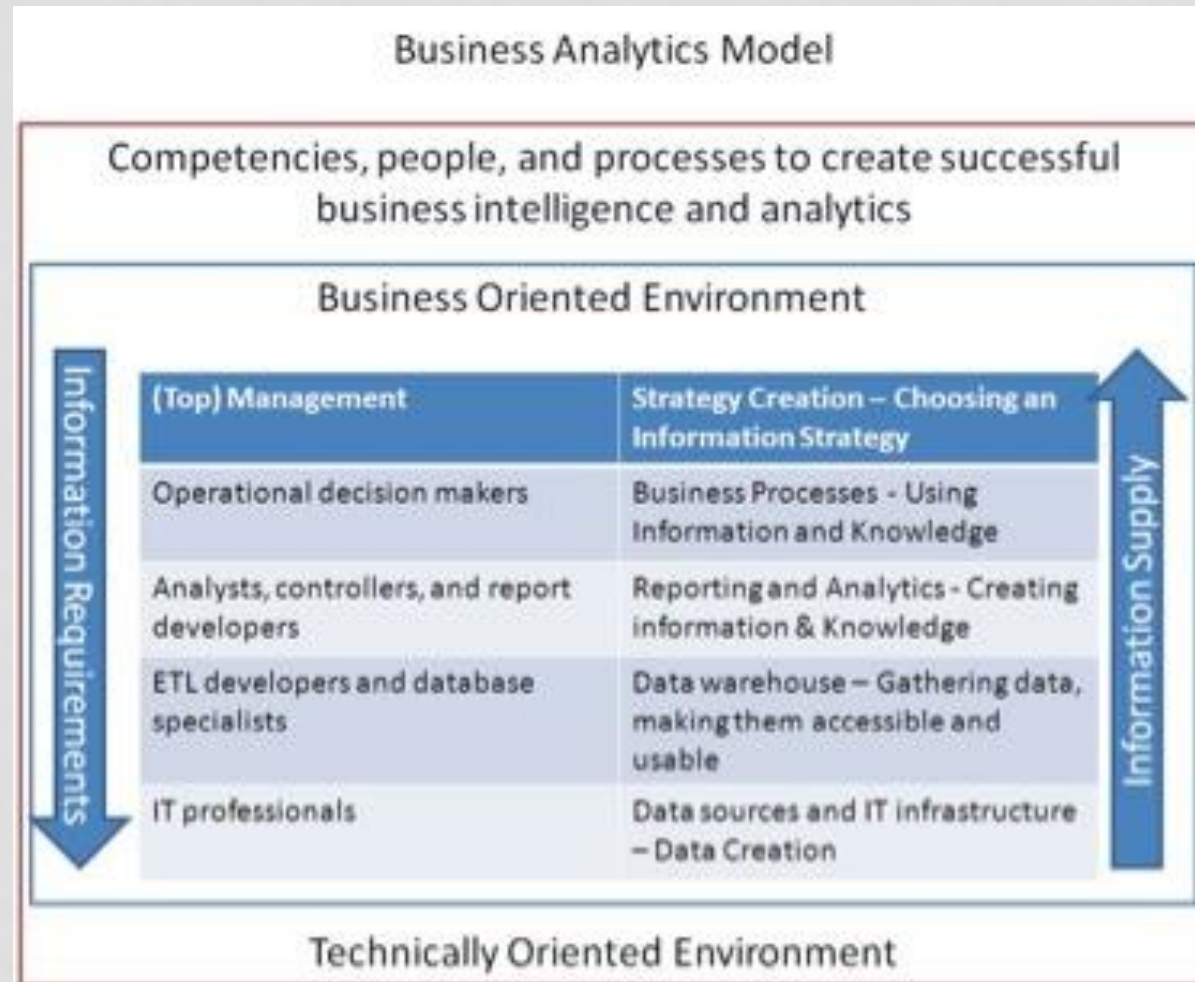# DATA ANALYTICS

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1

BUSINESS ANALYTICS

- Business analytics model
  - Outline for understanding and creating successful business analytics in an organisation.
  - Purpose:
    - Gives a single frame of reference for an overall structure in the creation of successful BA .
    - Clarifies the roles of the individual contributors
    - Shows the interaction in the information generation and information consumption.

  BA is a large cross organisational activity, only as strong as its weakest link, if knowledge handover between departments fail, the project may fail.

BUSINESS ANALYTICS MODEL

Business Analytics Model

Competencies, people, and processes to create successful business intelligence and analytics

Business Oriented Environment

(Top) Management	Strategy Creation – Choosing an Information Strategy
Operational decision makers	Business Processes - Using Information and Knowledge
Analysts, controllers, and report developers	Reporting and Analytics - Creating information & Knowledge
ETL developers and database specialists	Data warehouse – Gathering data, making them accessible and usable
IT professionals	Data sources and IT infrastructure – Data Creation

Information Requirements

Information Supply

Technically Oriented Environment

- Top Management/Strategy Creation:
  - Develops an information strategy based on the company or business area overall business strategy (vision, mission, objectives).
  - All underlying contributions and activities must submit to the chosen information strategy.
  - Normally these strategies result in a number of KPI's Key Performance Indicators with the purpose of measuring the degree of progress and success.
  - Content of the KPI's will depend on which underlying business process you want to monitor/control.
  - Eg profitability, return on investment, sales targets.

BUSINESS ANALYTICS MODEL

- Operational Decision makers/Business Processes and Information Use
  - Once the strategy and strategic KPI's are identified, a framework, focus and objectives are established for the operational business processes and initiatives.
  - Management of the business processes must be toward the strategic objectives.
  - Change of business processes and actions so that they aim to achieve the objectives.
  - Optimise daily activities.

BUSINESS ANALYTICS MODEL

- Analysts/Reporting and analytics
  - Analysts specify which information and data are necessary to achieve the desired behaviour of operational managers in the business environment.
  - Information and knowledge are generated concerning analytical and strategic models.
  - Requirements for front end applications, and reporting specified to meet the demands of the higher layers of the model.
  - This layer is between the business and I.T layers, the team members here have both I.T and business competencies (BSA).

BUSINESS ANALYTICS MODEL

- ETL developers/Data Warehouse
  - Database specialists and ETL developers receive requirements from the analytical environment about data deliveries. If the required data is already in the data warehouse, the process will be to make this data accessible to the front end applications. If it is not in the warehouse the process is to retrieve it from one or more sources. Data may also be purchased from an external provider.

BUSINESS ANALYTICS MODEL

- IT professionals/Data sources and IT infrastructure
  - IT operations must meet the data needs in terms of sources to feed into the data warehouse.
  - Maintain and deliver multiple data sources.

BUSINESS ANALYTICS MODEL

- Success/Failure
  - Many people, processes and competencies.
  - If the top layer do not define one overall strategy, operational decision makers will not have a goal to work toward. The analysts then do not know what to analyse.
  - Is the objective to show a profit of 1.3 million or to be the most innovative enterprise?
  - Different analytical approaches and information deliverables.

ASSESSMENT AND PRIORITISATION

- In which order should BA initiatives be implemented?
- Which initiatives should not be implemented?
- How should you prioritised BA initiatives?

- Is it a strategic project or not?
  - When prioritising projects, it's important to decide if the project is strategic. If it is, we don't have to assess whether the project should be carried out. (top down-driven initiative)
  - If it is not specified as part of the company's strategy it means that it is requested based on the expectation that it will render improved business performance. (bottom up-driven initiative from operational level).

ASSESSMENT AND PRIORITISATION

- Typically projects that are not classed as strategic are prioritised in relation to other projects based on a business case approach.
- The business case performs simple maths of relating costs to the financial gains of the project thus assessing the project from a financial perspective.
- BA projects often do not create value themselves. Only when the subsequent improved decision making is experienced is value created at the organisation level.
- It is tempting to list the costs and then list the potential advantages but it can be more complicated than that.

ASSESSMENT AND PRIORITISATION

- Present value (NPV) of a project should be shown in the model, as BA projects can span over several years.
- In many cases it is very difficult to produce sound estimates of future cash flows for investment calculations in terms of revenue from BA projects.
- Investment in stock portfolio easy to measure cash flow.
- Investment in a dashboard for management, KPI's for sales processes, the financial implications can be complex or uncertain in terms of comparing and prioritizing projects.
- Cost benefit analysis is conducted and should indicate whether a project is viable in relation to its costs and risks.

BUSINESS ANALYTICS FUTURE

- Instead of just measuring business results, after they've been achieved which is one of the primary roles of BA today, pervasive analytics will advise and drive the business forward with an arsenal of analyses and tools for real time decision making.

- Internet of things, pervasive computing, IT circle's advises and informs everyone at all times wherever people are. We don't always know this is happening.

- Right decision support: increases complexity and precise.

- Optimising business processes will advance to optimising individual behaviour in the organisation.