Chapter 01: Section 03

Data-Related Developments in Management Accounting

Big Data and Analytics Integration

1. Big Data and Analytics Maturity Model

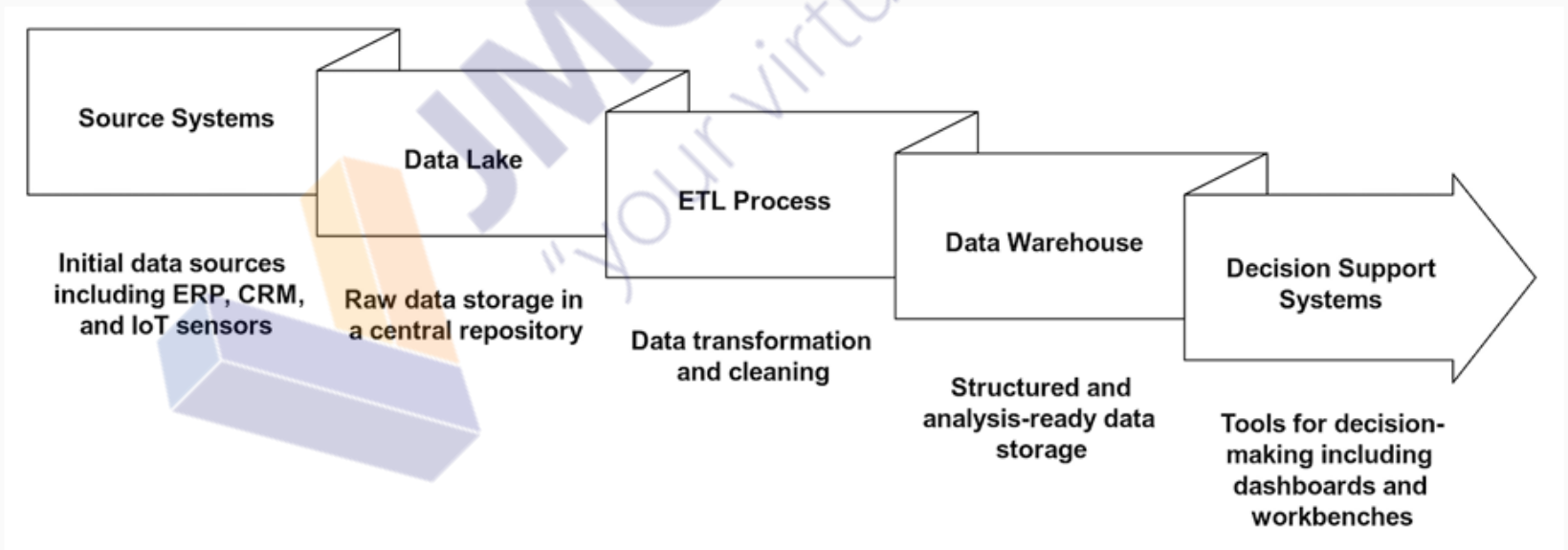
- Big Data: High-volume, high-velocity, and high-variety information assets that demand cost-effective, innovative forms of information processing
- Analytics Maturity Model: provides a framework for organisations to advance from basic descriptive analytics to sophisticated prescriptive capabilities. This progression represents a fundamental shift from understanding what happened in the past to actively shaping future outcomes.

2. Impact from Big Data in Management Accounting

- Understanding big data that could benefit the company
- Progressing big data through analytics maturity model
- Applying Data Visualisation for Stakeholder Value **(Interactive dashboards using tools such as tableau and Power BI)**
- Implementing Predictive Analytics

2. Data Driven Decision Architecture

- Understanding how to design the data infrastructure that serves as the foundation for all analytical activities.
- is the process you use to **build the technological and governance backbone for analytics**. The goal is to create a reliable, scalable, and secure environment for systematic decision support.



2. Strategic Value Creation Through Analytics

- Building on a solid architectural foundation, this section focuses on the ultimate goal of anyanalytics program: creating and measuring strategic value.
  - Identifying Value Opportunities
  - Embed the opportunities into operations
  - Measuring Analytics Return on Investment

    ROI = Net Benefit / Investment
  - Building Risk-Responsive Capabilities

$$\text{MAPE} = \frac{1}{n}\sum_{t=1}^{n}\left|\frac{A_t - F_t}{A_t}\right| \times 100\%$$

MAPE: Mean Absolute Percentage Error

Practice Questions: 25, 26 and 27

Machine Learning and Optimisation

1. Data Driven Business Strategy Optimisation

- Using machine learning models - **tools that can identify complex patterns in business data**
- Financial Forecasting Applications
- Cost Optimisation Algorithms – **Identifying hidden inefficiencies** that exist within complex operational data that manual analysis cannot detect effectively
- Strategic Recommendation systems - Complex strategic decisions require **balancing multiple variables, constraints, and potential outcomes simultaneously**.

2. Intelligent Process Automation

- This is the process used to combine robotic, cognitive and analytical technologies to create **integrated operational workflows**
  - **Robotic Process Automation**: Software robots **mimicking human** interactions
  - **Cognitive Automation**: using artificial intelligence to **process unstructured data** like emails, contracts, and scanned documents
  - **Autonomous Decision Systems**: **make operational decisions** with minimal human intervention
  - **Process Intelligence Development**: Analayse **actual** processes performance **against the design**

3. Predictive Vs Prescriptive Analytics

- Predictive: Use historical data to predict the future outcome
- Prescriptive: recommend specific actions that achieve desired outcomes