Fundamentals of Business Intelligence

by Mark Peco
Module 0. About the Course (9 min)

Module 1. Introductory Concepts (73 min)

- **Definitions**
  - Business
  - Intelligence
  - Business Intelligence – Early Days
  - Business Intelligence – Modern View
  - Data Warehouse – Early Days
  - Data Warehouse – Late 90’s
  - Data Warehouse – Modern View

- **System**
  - Definition
  - Properties
  - General Structure
  - Example
  - Systems Thinking
  - Thinking Styles

- **Architecture**
  - Definition
  - Purpose
  - Business Intelligence Architecture
  - From Architectures to Systems

- **Systems View of Business Intelligence**
  - BI System Components
  - The Business System
  - The Decision Making System
  - The Work Execution System
  - The Participation System
  - The Information System
  - The Measurement System
  - The Analytics System
  - The Technology System
  - The Stakeholder System
  - The Governance System
  - Example

Module 2. Generating Business Value (70 min)

- **Introduction**
  - Setting the Context
  - Defining Value
  - The Basic Idea of Value Generation
  - Extending the Basic Idea of Value Generation
  - Completing the Basic Idea of Value Generation
  - Components of the Business Intelligence System

- **The Business System**
  - Purpose
  - Components
  - Inputs and Outputs
    - Input 1 – Mission
- Input 2 – External Drivers
- Input 3 – Resources
- Input 4 – Capabilities
- Output 1 – Results
- Output 2 – Value

- **The Decision Making System**
  - Context
  - Purpose
  - Components
  - Inputs and Outputs
    - Input 1 – Problems
    - Input 2 – Opportunities
    - Input 3 – Options
    - Input 4 – Constraints
    - Output 1 – Decisions
    - Output 2 – Recommendations

- **The Participation System**
  - Context
  - Purpose
  - Components
  - Inputs and Outputs
    - Input 1 – Understanding
    - Input 2 – Skills
    - Input 3 – Capabilities
    - Input 4 – Motivation
    - Output 1 – Roles
    - Output 2 – Roles

- **The Work Execution System**
  - Context
  - Purpose
  - Components
  - Inputs and Outputs
    - Input 1 – Decisions
    - Input 2 – Roles
    - Input 3 – Responsibilities
    - Output 1 – Assets
    - Output 2 – Services
    - Output 3 – Completion Results

- **Case Study**
  - Background and Context
  - Solution Overview
  - The Business System
    - Inputs
    - Outputs
    - Throughput
  - The Decision Making System
    - Inputs
    - Outputs, Constraints, and Feedback
  - The Work Execution System
    - Inputs
    - Outputs
Module 3a. Monitoring and Learning—Part 1 (60 min)

- Introduction
  - Context
  - Monitoring
  - Learning
  - Information Building Blocks
  - Generating Information
  - Generating Insights

- The Information System
  - Context
  - Purpose
  - Components
  - Component Details
  - Inputs and Outputs
    - Input 1 – Event and Reference Data
    - Input 2 – Unstructured Data
    - Input 3 – Business Rules
    - Input 4 – Business Context and Objectives
    - Output 1 – Integrated Data
    - Output 2 – Information

- The Measurement System
  - Context
  - Purpose
  - Components
  - Components – Functional View
  - Inputs and Outputs
    - Input 1 – Qualitative Data
    - Input 2 – Quantitative Data
    - Input 3 – Usage Profile
    - Input 4 – Measurement Rules
    - Output 1 – Measures
    - Output 2 – Metrics and Indicators
    - Output 3 – Business Metrics and KPI’s

Module 3b. Monitoring and Learning—Part 2 (53 min)

- The Analytics System
  - Context
  - Purpose
  - Components
  - Components – Functional View
  - Inputs and Outputs
    - Input 1 – Integrated Data
    - Input 2 – Measures and Metrics
    - Input 3 – Business Objectives
The Technology System
- Context
- Purpose
- Components
- Inputs and Outputs
  - Input 1 – Raw Data
  - Input 2 – Technology Objectives
  - Input 3 – Business Objectives
  - Input 4 – Capabilities and Skills
- Output 1 – Integrated Data Storage
- Output 2 – Information/Metrics Delivery and Presentation
- Output 3 – Insight Delivery and Presentation
- Output 4 – Automation

Case Study Continued
- The Information System
  - Inputs
  - Outputs
  - Throughput
- The Measurement System
  - Inputs
  - Outputs
  - Throughput
- The Analytics System
  - Inputs
  - Outputs
  - Throughput
- The Technology System
  - Inputs
  - Outputs
  - Throughput
- Case Study Summary
- Review

Module 4. Leadership and Control (39 min)
- Introduction
  - Setting the Context
  - Leadership
  - Control
- The Stakeholder System
  - Context
  - Purpose
  - Stakeholder Roles
  - Components
  - Inputs and Outputs
    - Input 1 – Expectations
    - Input 2 – Understanding
    - Input 3 – Priorities
    - Input 4 – Education and Experience
    - Output 1 – Satisfaction
• Output 2 – Maturity
• Output 3 – Investment and Sponsorship

• The Governance System
  o Context
  o The Building Blocks
  o Definition
  o Concepts
  o Purpose
  o Components
  o Inputs and Outputs
    ▪ Input 1 – Investment
    ▪ Input 2 – Capability
    ▪ Input 3 – Objectives and Constraints
    ▪ Output 1 – Vision
    ▪ Output 2 – Strategy
    ▪ Output 3 – Standards

• The Case Study Continued
  o The Stakeholder System
    ▪ Inputs
    ▪ Outputs
    ▪ Throughput
  o The Governance System
    ▪ Inputs
    ▪ Outputs
    ▪ Throughput
  o Case Study Summary

Module 5. Putting the Pieces Together (34 min)

• The Business Intelligence System
  o BI Perspective and Alignment
  o Stakeholder Perspective and Alignment
  o Governance Perspective and Alignment
  o BI System Review
  o Leadership and Control
  o Value Generation
  o Monitoring and Learning
  o Maintaining a Balance
  o Managing Alignment Gaps
  o Components and Alignment

• Summary
  o Key Concepts
  o BI is Often Misunderstood
  o Components and Alignment
  o Value Creating Systems
  o Monitoring and Learning Systems
  o Leadership and Control Systems