FIT 3138
Real-Time Enterprise Systems

Lecture 12

Unit Summary and Exam Preparation

Unit Outline

Week	W/C	Topic	Deadline:
1	25/07	Introduction to FIT3138; Introduction to Enterprise Systems	
2	01/08	Systems Integration - Role of ERP in Business Functions and Processes	Assignment 1 handed out
3	08/08	The Development of ERP Systems	
4	15/08	ERP in Sales and Marketing & CRM	
5	22/08	ERP in Production and Supply Chain Management	
6	29/08	Accounting in ERP Systems	
7	05/09	Process Modelling & Improvement	Assignment 1 due Assignment 2 handed out
8	12/09	ERP Implementation – Life Cycle & Strategy	
9	19/09	ERP Implementation – Risk Management	
Mid-semester Break (26 Sep – 30 Sep 2022)			
10	03/10	ERP Implementation Issues: Managing Change	
11	10/10	Technologies supporting real-time enterprise	
12	17/10	Exam Review	Assignment 2 due

Lecture 1

What is an Enterprise System?

What is Real-time Enterprise?

What are the functions of enterprise systems?

What are the drivers for enterprise systems?

What are the benefits of enterprise systems?

What is the "Sense-Analyse-Response" framework?

What are the characteristics of real-time enterprise systems?

Lecture 2

- **Marketing and Sales, Supply Chain Management, Accounting and Finance, and Human Resources**
- **Marketing and Sales:**
  - Sets product prices, promotes products through advertising and marketing, takes customer orders, supports customers, and creates sales forecasts
- **Supply Chain Management:**
  - Develops production plans, orders raw materials from suppliers, receives raw material, manufactures products, maintains facilities, and ships products to customers
- **Accounting and Finance:**
  - Financial accounting to provide summaries of operational data in managerial reports, controlling accounts, planning and budgeting, and cash-flow management
- **Human Resources:**
  - Recruits, hires, trains, and compensates employees, ensures compliance with government regulations, and oversees the evaluation of employees

Lecture 2

Differentiate between a business process and a business function

Define integrated information systems, and explain why they are essential in today's globally competitive business environment

Employees working in one functional area need data from employees in other functional areas

- **Functional area information systems should be integrated, so shared data are accurate and timely**

Managers think in terms of business processes that integrate the functional areas

- **Need to share information between functions and functional areas**
- **ERP software provides this capability by means of a single common database**

Lecture 3

Systems Architecture

Identify the factors that led to the development of Enterprise Resource Planning (ERP) systems

- Increasing speed and power of computing hardware
- Early client-server architecture provided the conceptual framework for multiple users sharing common data
- Increasingly sophisticated software facilitated integration
- Growth of business and competition made businesses demand more efficient and competitive information systems

Discuss the management's impetus to adopt ERP

- Hard economic times caused many companies to downsize and reorganize
- Inefficiencies caused by the functional model of business organization
- Functional model led to top-heavy and overstaffed organizations incapable of reacting quickly to change
- Requirements of the Sarbanes-Oxley Act of 2002

Lecture 3
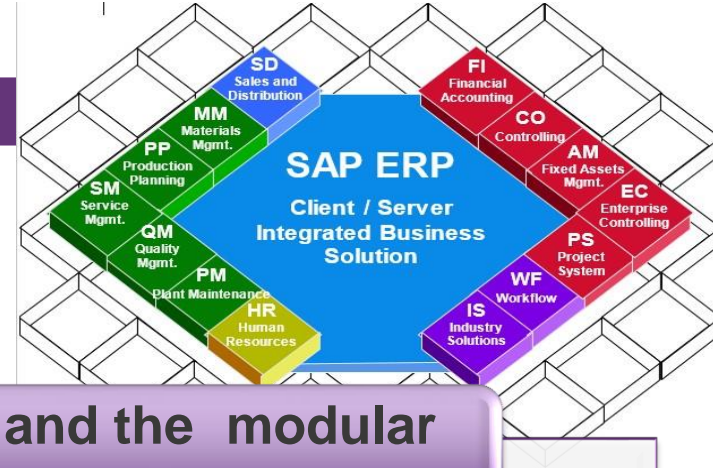
**Describe the features of ERP (eg SAP) and the modular characteristics of ERP software**

- Enables a company to support and optimize its business processes
- Real-time environment; Scalable and flexible, etc
- The modular design of SAP ERP is based on business processes

Discuss the various ERP architectures

- The related benefits and drawbacks of each architecture.
- Service-oriented architecture and its impact on ERP systems.
- Cloud architecture and its impact on ERP systems.

Lecture 4
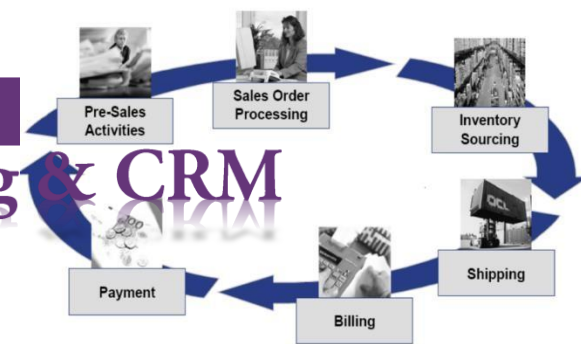
- Explain why unintegrated Marketing and Sales information systems lead to company-wide inefficiency and other problems

- Explain how integrated data sharing increases company-wide efficiency

- Describe the sales and distribution process in the ERP system (eg SAP)

- Discuss the core CRM activities

- Describe the benefits of customer relationship management (CRM) software

Lecture 5 - ERP in Production and Supply Chain Management

Understand the integrated process of fulfilment, procurement and production

Describe the steps involve in a generic production planning process

Discuss some production and materials management problems in an unintegrated system

Discuss how an ERP system can improve the efficiency of production and purchasing processes and to aid decision making

Describe how production planning data in an ERP system can be shared with suppliers to increase supply chain efficiency

Describe an integrated procurement process and why it is important to streamline the procurement process

Integrated Processes
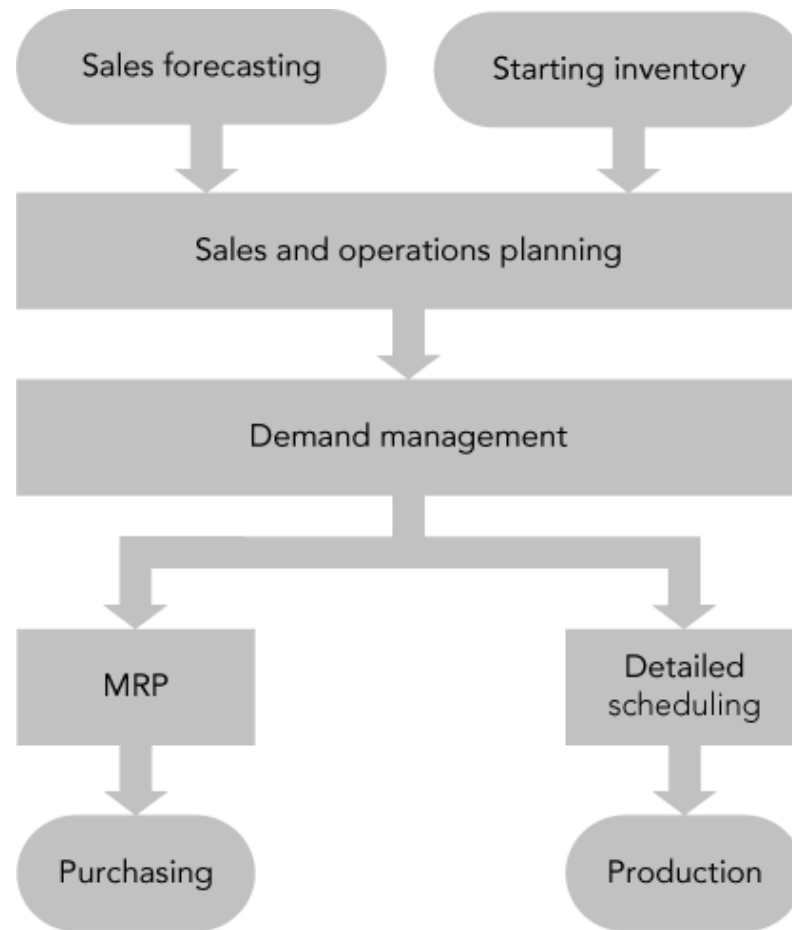# Fulfillment + Procurement +Production
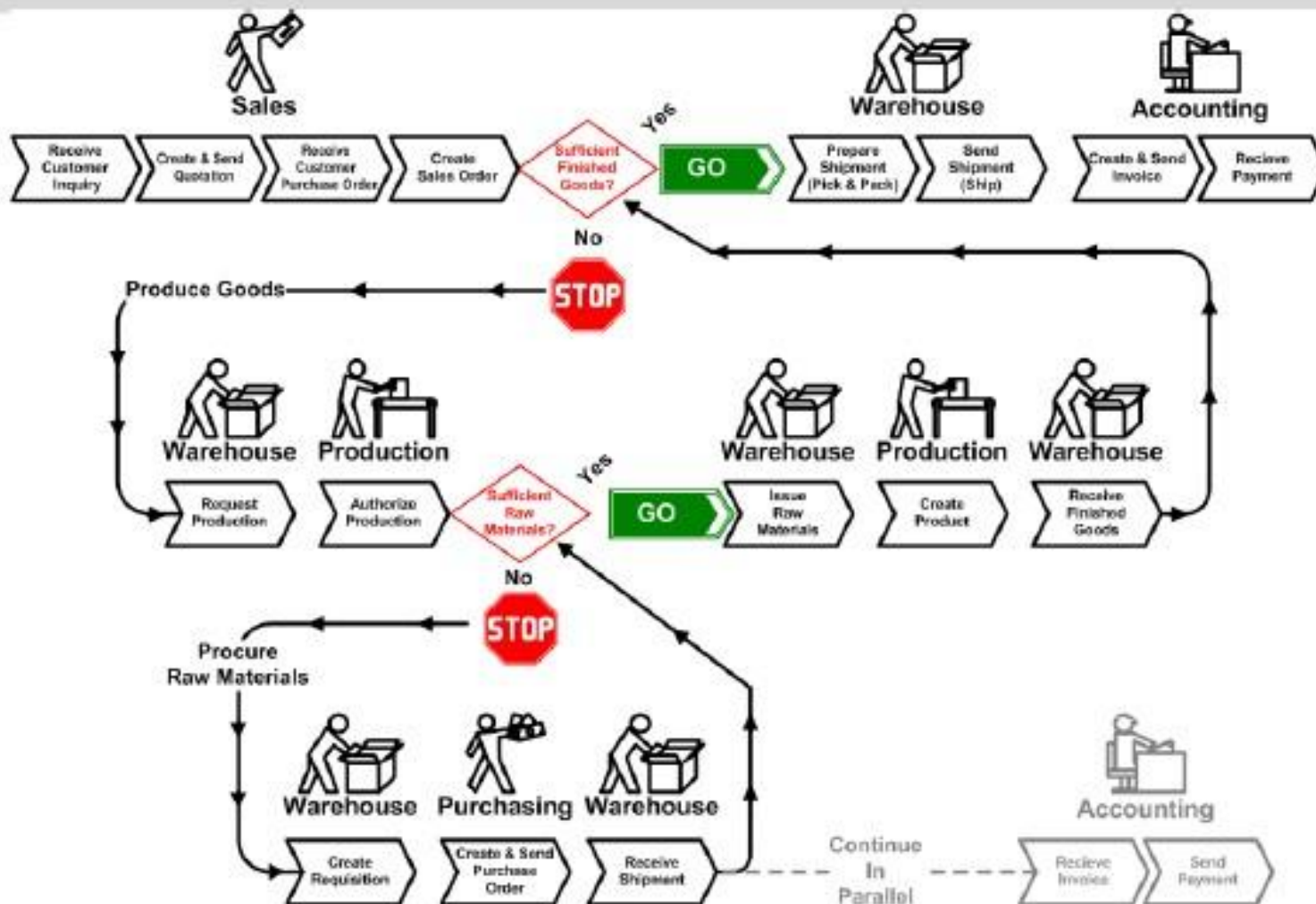
Scenario

- ✓ Make to order
- ✓ Procure to order
- ✓ Customer order triggers fulfillment
- ✓ Lack of inventory of bikes triggers production
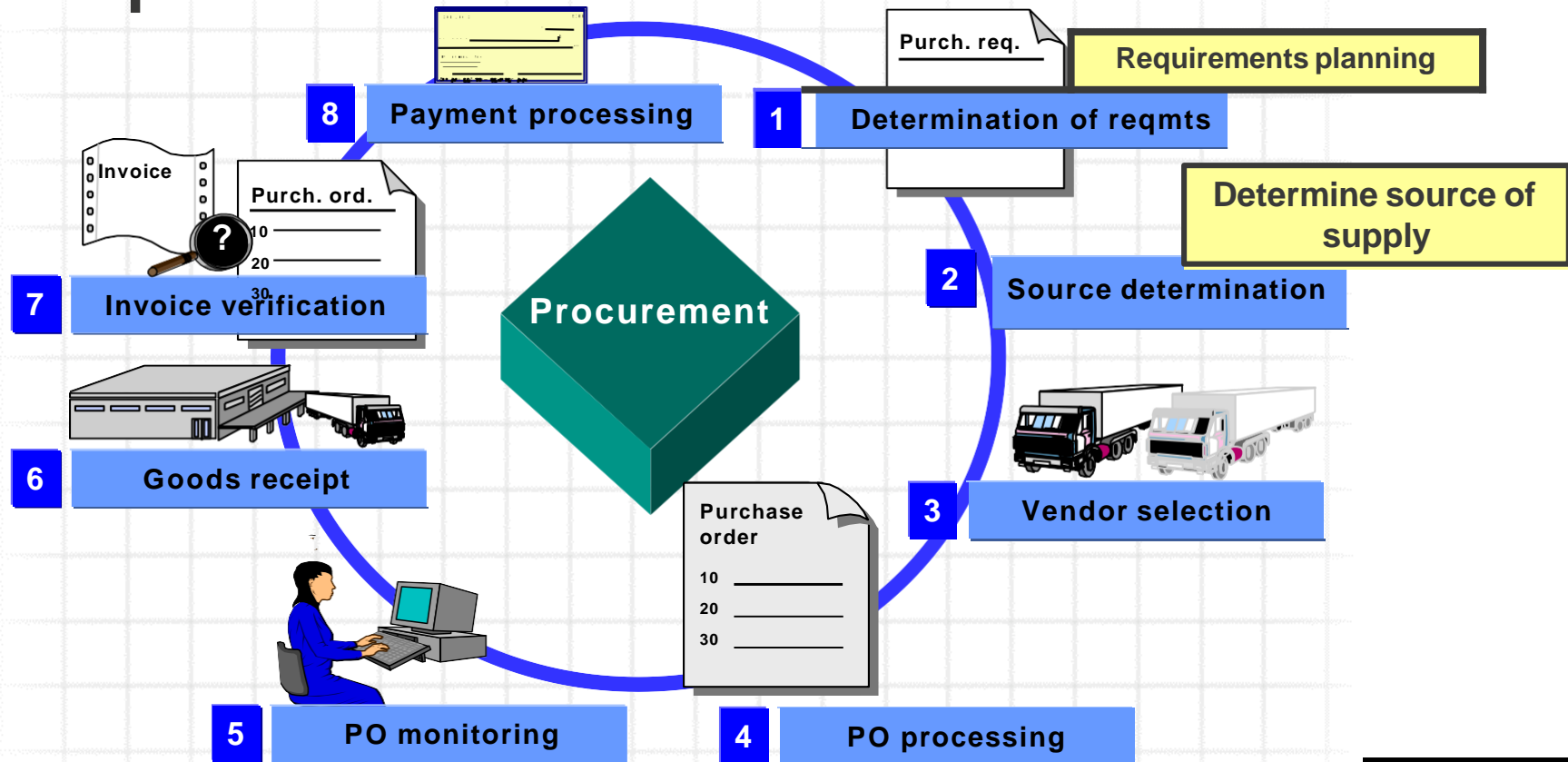- ✓ Lack of inventory of RM triggers procurement

Source: Magal and Word, *Essentials of Business Processes and Information Systems,* **Wiley, 2009**

The Production Planning Process

Understanding Procurement cycle and why it is important

Procurement

Step	Process
8	Payment processing
1	Determination of reqmts
2	Source determination
3	Vendor selection
4	PO processing
5	PO monitoring
6	Goods receipt
7	Invoice verification

Requirements planning

Determine source of supply

Purch. req.

Purch. ord.
10
20
30

Invoice

?

Purchase order
10
20
30

Process of purchasing materials from Vendors (suppliers)

Lecture 6

Identify and describe problems associated with accounting and financial reporting in unintegrated information systems

Describe how ERP systems can help solve accounting and financial reporting problems in an unintegrated system

Describe how the Enron scandal and the Sarbanes-Oxley Act have affected accounting information systems

Explain accounting and management-reporting benefits that accrue from having an ERP system

Discuss the use of XBRL in financial reporting

Lecture 7

What is Business Process Re-engineering (BPR)

- **BPR principles and how information technology supports BPR**

What is Business Process Modelling (BPM) and its benefits

Process mapping:

- **hierarchical modeling, deployment flowcharting, event process chain (EPC) diagramming, value analysis, and business process improvement**

Discuss the key issues in managing an ERP implementation project

Describe some of the key tools used in managing an ERP implementation project

Lecture 8

Implementation Life Cycle, Strategies & Limitations

- **Discuss the ERP implementation life cycle and strategy**

- **Discuss some pre-implementation tasks to kick off a seamless implementation.**

- **Discuss the ERP implementation challenges**

- **How to ensure a successful ERP implementation**

- **Understand the importance of good project management in an ERP endeavour**

- **Know the components of a project organisation and the roles and responsibilities**

Lecture 9

Discuss IT Project issues and identify critical risks factor

Describe a risk management approach

Discuss the warning signs that indicate an ERP Implementation Project may be in trouble

Elements of risk management – Risk Assessment, Risk Response and Risk Control

Describe a risk matrix and identify how it is used in risk assessment

Lecture 10 - Data and System Integration and Configuration

Integration

Identify the reasons for implementing an ERP system

Explore the key integration issues – data & system integration

Identify the main drivers for Master Data Management

Explore the benefits of data integration

Lecture 10

- Discuss the impact of change management on ERP Implementation

- Discuss the issues around training

- Define organisational change management

- Identify OCM as a critical success/risk factor

- Discuss Kotter's 8 Step Process for Leading Change

Lecture 11 – Technologies Supporting Real-time Enterprise

Digital transformation: Big Data & IoT

Define RFID & business intelligence (BI)

Explain how in-memory computing will change the use of BI

Discuss the importance of mobile applications to businesses

Describe cloud computing and why it is important

Discuss the use of Social Media, Iot, AI, Automation & Additive Mfg

Examine the technology and advantages of SaaS

Exam Preparation: Format of the Exam

Section A: Case Study
**   Answer all questions in this section**
**   Total: 20 marks**

Section B: 6 Questions with sub-parts
**   Choose ANY 4 questions (with sub-parts) from**
**   this section. (10 marks per question)**
**   Total: 40 marks**

Total marks: 60 marks

(Refer to the Sample Exam paper that is uploaded on Moodle)

Faculty Policy - Unit Assessment Hurdles Policy.
To pass a unit which includes an examination as part of the assessment a student must obtain:
- an overall unit mark of 50% or more, and
- 45% or more in the unit's examination, and
- 45% or more in the unit's total non-examination assessment.

- Suggestions for exam preparation: All lectures, all tutorials and readings.
- No questions on SAP software.
- See sample exam paper in Moodle
- Check exam consultation times

Section A (Q1) : *(Answer all questions)*

- A mini case study

- This is the compulsory section and you MUST answer all questions in this section.

- This section is worth 20 marks

- Topics covered:

    - Can be anything we covered in this unit
    - E.g. implementation issues, technology involved…

Section B: *(Choose 4 out of 6)*

Question 2:   Real-time Enterprise & Business Processes and Functions

Question 3:   ERP in Sales and Marketing & CRM

Question 4:   ERP in Production and Supply Chain Management

Question 5:   ERP in Accounting and Process Modelling

Question 6:   ERP Implementation and Change Management

Question 7:   Technologies supporting real-time enterprise systems