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## ***Trainee Accountant Workshop Series***

**24 November 2017**

## ***F2 – Information Systems Presented By: Danielle McConville***

# Purpose of the session

## Preparation

- Provide guidance on preparing for this exam
- Clarify the importance of syllabus and 'core' / 'important' topics for your preparation

## Content

- Direct your learning on **enterprise applications and systems** (core)
- Direct your learning on **role of IS in today's competitive business environment** (core+ imp.)

## Exam Technique

- General guidance
- Specific guidance on completing case study questions, using April 17 paper



# Preparation

## ...from the syllabus

The aim of this subject is to enable students to develop an understanding of the role and application of Information Systems (IS) and Information Technology (IT) in the management and control of organisations.

Students will develop their understanding of selecting and advising on the implementation of appropriate systems, processes, controls and solutions in a business environment.

## What do you need to know?

- Syllabus content
- 'Core' and 'Important' areas from the Educators' Briefing (**unique to this paper**)
- Core/Important tied to specific questions e.g. case study 'primarily' core, Section B approx. 1/3 'important' or 'other' (see Educators' Briefing)
- Importance of Laudon & Laudon text

# What do you need to know?

1. Knowledge about specific technologies (e.g. cloud computing, ERP, CRM, SCM, business intelligence and analytics)
2. Knowledge about information systems and how these relate to operation and strategy (e.g. knowledge management, ESS, DSS, TPS, competitive advantage, strategic objectives)
3. Ability to apply these to real-life business situations (not just in case study)



## Enterprise applications and systems

# ERP systems

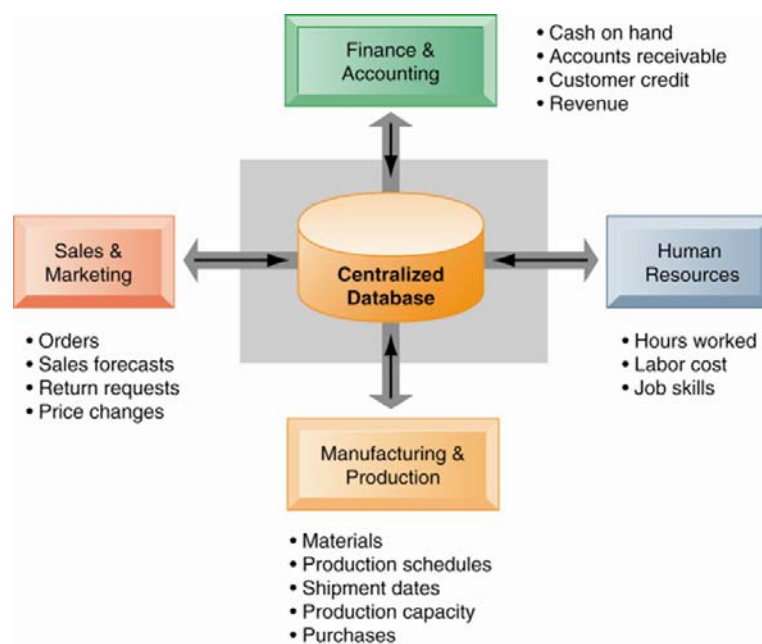
ERP systems integrate business processes in manufacturing and production, finance and accounting, sales and marketing, and human resources into a single software system.

Collects data from many divisions of firm for use in nearly all of firm's internal business activities

Specifically, there are a range of integrated software modules and a central database

Information entered in one process is immediately available for other processes

# ERP systems



Laudon & Laudon 2015 Figure 9.1

# ERP Systems – business value

- Breaking down internal barriers
- Better overview for management decisions
- Efficient capturing of data
- Better access controls
- Improved customer service
- Improved productivity/value added
- Increase operational efficiency
- Enable rapid responses to customer requests for information or products
- Include analytical tools to evaluate overall organizational performance

## Challenges – all enterprise applications

### Enterprise application challenges

- Highly expensive to purchase and implement enterprise applications
- Technology changes
- Business process changes
- Organizational learning, changes
- Switching costs, dependence on software vendors
  - Integrating cloud applications
- Data standardization, management, cleansing

# ERP Systems – past questions

## **April 17 Question 5**

- Outline the four main types of organisational change enabled by information technology, giving examples relevant to the implementation of ERP systems. (8 marks)
- *Discuss the potential benefits and challenges of implementing an ERP system in a large, growing manufacturing organisation. (8 marks)*
- Briefly outline the systems analysis and design activities that the organisation should undertake before purchasing [ERP] software. (4 marks)

## **Case study example – April 16**

## ERP – Potential Benefits

- Increased operational efficiency by providing managers across business processes with timely, accurate and relevant information to aid in their decision making – important in a growing business
- Business can respond more quickly to customer requests for information or products, e.g. better stock information available or easier/faster production scheduling
- Better information to create more accurate sales and production forecasts, minimising costs and the risks of stock outs – important for a growing business (avoiding overtrading)

## ERP – Potential Benefits

- Better information on manufacturing or procurement processes which will change as the business grows can be used to identify areas for improvement
- With linkages between ordering, manufacturing and delivery information, better decisions can be made about the whether to make or buy products, levels of production, timing of production and stockholding leading to cost savings and greater efficiency.
- Greater sharing of information, standardisation of information and reports can assist senior managers in reviewing performance and taking action as the business grows

## Possible Challenges

- ERP implementation can have fundamental effects on how a business operates - particularly problematic for a business that is growing significantly
- Difficulties in integrating the ERP with existing software – particularly if this is legacy or proprietary software.
- ERP implementation, including conversion, testing, and training of staff is time consuming and costly. Is this where this growing business should focus attention/invest at this time?
- Staff buy-in is crucial – can appropriate consultation and training be achieved at this time?



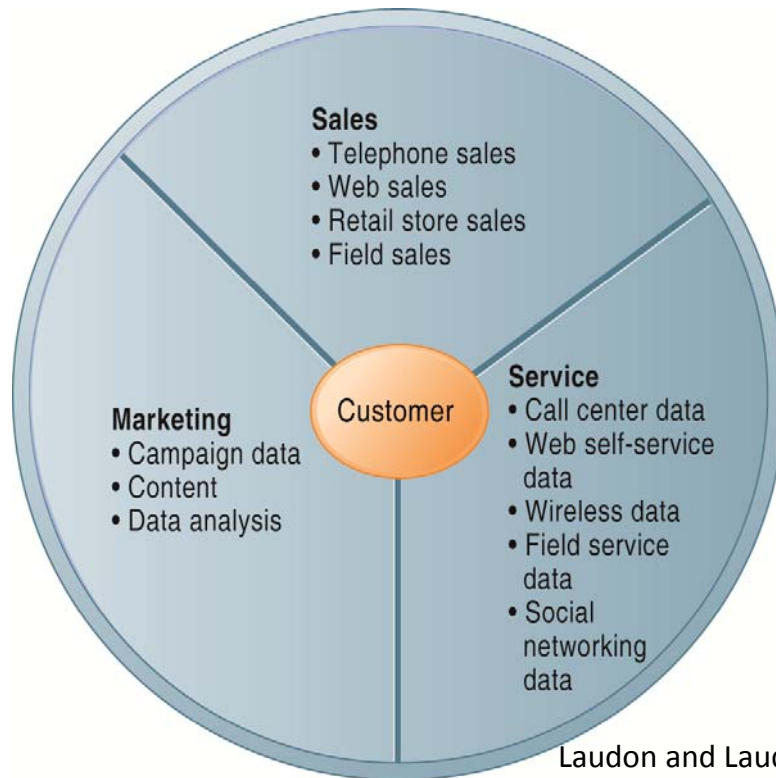
## Possible Challenges

- As a growing company, we do not know the size/expertise of the IT function, it may be unlikely that staff have relevant experience
- ERPs require costly support both in implementation and on an ongoing basis (customer support, updates, adding new modules/software changes as business grows) tying the organisation to the provider – can the organisation commit to these costs now and in the future?
- *8x1 marks for suggesting and briefly outlining challenges/benefits*

## CRM

- CRM systems:
  - Capture and integrate customer data from all over the organisation
  - Consolidate and analyse customer data
  - Distribute customer information to various systems and customer **touch points** across enterprise
  - Provide single enterprise view of customers

# CRM



These systems use a set of integrated applications to address all aspects of the customer relationship, including customer service, sales, and marketing.

Laudon and Laudon, 2015, Fig. 9.6

# CRM

- **Operational CRM:**
  - Customer-facing applications such as sales force automation, call center and customer service support, and marketing automation
- **Analytical CRM:**
  - Based on data warehouses populated by operational CRM systems and customer touch points
  - Analyzes customer data (OLAP, data mining, etc.)

# CRM

May include purchased software or cloud-based software (e.g. Salesforce)

Often effectively an ***integrated database\****

Will manage information including:

- Customer profiling information
- Transaction activity information
- Market segmentation information
- Customer response/behaviour prediction

## CRM – Business value

- Increased customer satisfaction
- Reduced direct-marketing costs
- More effective marketing
- Lower costs for customer acquisition/retention
- Increased sales revenue

# CRM – past questions

## August 17 Question 5

- Explain the term ‘customer relationship management (CRM)’ systems. In your answer, you should describe the potentially different elements and functions of CRM systems that an organisation might use. (4 marks)
- *Discuss the potential benefits and challenges of implementing CRM systems in a professional services firm. (10 marks)*
- Using the example of CRM in professional services firms, explain the role of end users in developing and implementing new systems. (6 marks)

[April 17 – Case study question]

## CRM – Possible Benefits

- Data on client interaction (e.g. planning information, site visits, contacts, time recording, billing, client feedback) is consolidated in one place, for access by relevant staff (e.g. partner or manager level), even across different functions (e.g. in tax and audit business units)
- Improved response time to client queries with easy access to information
- Increased client satisfaction from more informed interactions
- Reduced client churn/ improved loyalty

# CRM – Possible Benefits

- Greater efficiency in client service, reducing time taken on administration/responding to queries, increasing profitability
- Ability to identify profitable and high lifetime value clients
- Ability to respond to opportunities to deliver additional services to clients, including by different business units (e.g. advice on restructuring)

## CRM – Possible Challenges

- CRM software requires fundamental changes in the way that businesses operate – for example, the requirement for each employee to record each interaction on the CRM system so that other staff see a comprehensive record of interactions
- these changes can lead to resistance (and ultimately to the failure of the CRM system) if not handled appropriately
- complex pieces of software that are expensive to purchase and implement, and often involve a lengthy implementation time
- while specific software packages for professional services firms are available, many will require some level of customisation (requiring in-house expertise or consultancy)

## CRM – Possible Challenges

- The organisation becomes dependent on the provider to upgrade and maintain the software provided
- CRM systems may introduce 'switching costs' – once applications are installed it becomes very costly to switch providers
- CRM systems require a very clear understanding of exactly how data is used in the organisation and how it would be used in the CRM system. Some data cleansing work may be required

*5 marks each for benefits and challenges – which must be relevant to the context*



## IS in a competitive business environment

# IS and strategic business objectives

From Laudon & Laudon, 2015, Chapter 1:

Information systems can help to achieve six strategic business objectives:

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

## IS and strategic business objectives

- Operational excellence:
  - Improvement of efficiency to attain higher profitability
  - Information systems, technology an important tool in achieving greater efficiency and productivity
- New products, services, and business models:
  - Business model: describes how company produces, delivers, and sells product or service to create wealth
  - Information systems and technology a major enabling tool for new products, services, business models

# IS and strategic business objectives

- Customer and supplier intimacy:
  - Serving customers well leads to customers returning, which raises revenues and profits.
  - Intimacy with suppliers allows them to provide vital inputs, which lowers costs.
- Improved decision making
  - Without accurate information:
    - Managers must use forecasts, best guesses, luck
    - Results in: overproduction/underproduction; misallocation of resources; poor response times
    - Poor outcomes raise costs, lose customers

# IS and strategic business objectives

- Competitive advantage\*
  - Delivering better performance
  - Charging less for superior products
  - Responding to customers and suppliers in real time
- Survival
  - Information technologies as necessity of business
  - Industry-level changes
  - Governmental regulations requiring record-keeping



## Past question

August 17 Q1a

Discuss the Director of Operation's claim that an upgraded Supply Chain Management (SCM) system can assist Valtex in maintaining competitive advantage. In your answer, you should clearly explain your understanding of SCM systems and competitive advantage. (14 marks)

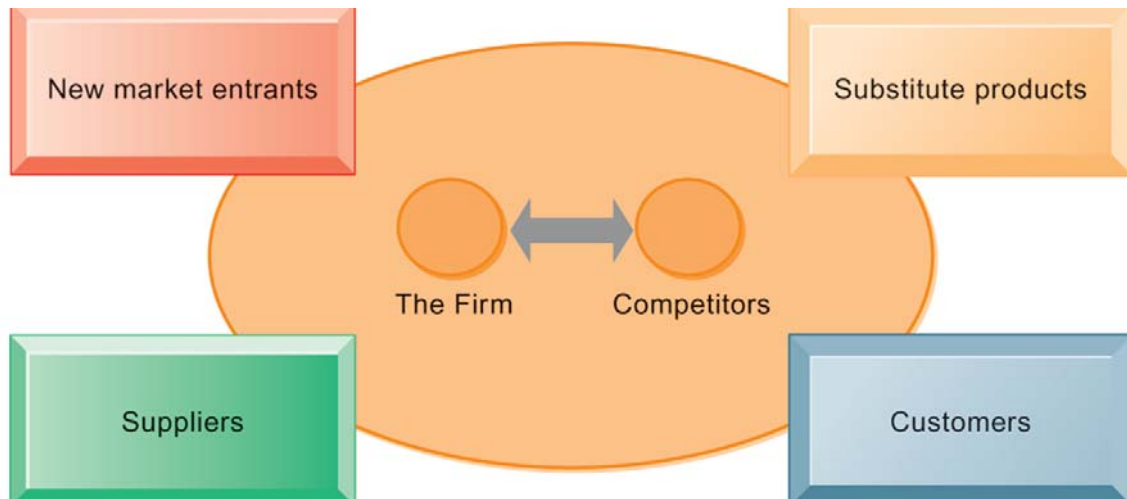
## IS and competitive strategies

From Laudon & Laudon, 2015, Chapter 3:

Information systems can help a firm develop competitive strategies:

1. Focussing externally, in response to competitive forces (Porter's competitive forces model + generic strategies – 'important')
2. Focussing internally, in order to achieve operational excellence (value chain – 'important')

# Porter's Competitive forces model



Laudon & Laudon, 2015 Figure 3.8

## Generic strategies vs. competitive forces

- Four generic strategies for dealing with competitive forces, enabled by using IT:
  - Low-cost leadership
  - Product differentiation
  - Focus on market niche
  - Strengthen customer and supplier intimacy

## Past Question

August 15 Q 3a

Porter.... Assess the extent to which IS can support the generic strategies used to address such competitive forces. (6 marks)

- Low-cost leadership: securing competitive advantage by keeping costs low. IS can assist in a range of ways, including: providing real-time, accurate information that facilitates cost monitoring and control; reducing processing times with increasing automation; minimising stock-holding by enabling better forecasting and replenishment.

## IS and Generic Strategies

- Product differentiation: securing competitive advantage by differentiating products from the offerings of competitors. IS can assist by, for example: using stored information to develop a more personalised, or faster, shopping experience for customers; using proprietary technology to enhance the product/buying experience.
- Focus on market niche: securing competitive advantage by serving a target market better than competitors. IS can assist by using (perhaps data mining) stored information on the target market to: develop a more personalised, or faster, shopping experience for customers; facilitate targeted marketing; utilise CRM software; engage in customer profitability (or risk) analysis.

# IS and Generic Strategies

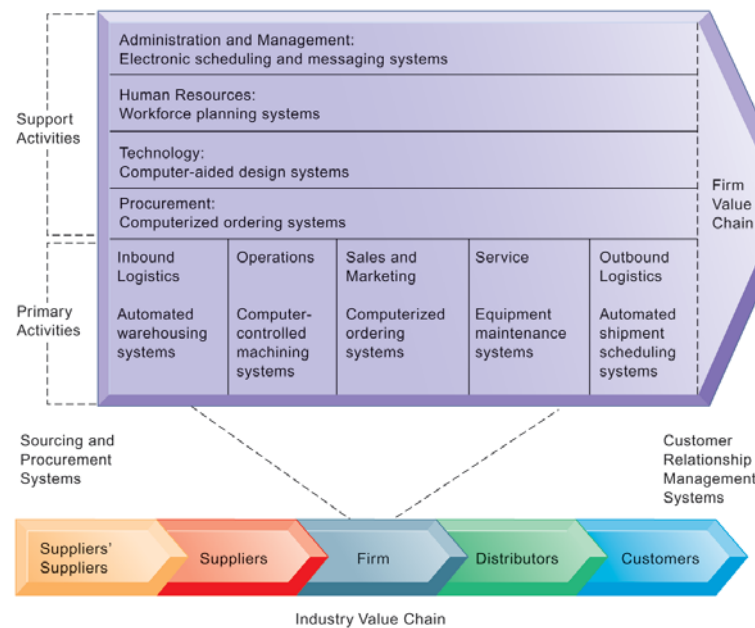
- Strengthening customer and supplier intimacy: securing competitive advantage by developing loyalty with customers and suppliers. IS can assist by: using stored information as suggested above; facilitating Electronic Data Interchange between the organisation and its customers and suppliers (for example, allowing suppliers access to production schedules and stock levels); utilising Customer Relationship Management or Supply Chain Management software (affecting switching costs).
- *2 marks for detailing the four strategies, 4 marks for a clear explanation of how IS can be used in implementing the strategy.*

## Value chain model

From Laudon & Laudon, 2015, Chapter 3:

- Firm as series of activities that add value to products or services
- Highlights activities where competitive strategies can best be applied
  - Primary activities vs. support activities
- At each stage, determine how information systems can improve operational efficiency and improve customer and supplier intimacy
- Utilise benchmarking, industry best practices

# Value chain model



Laudon & Laudon, 2015, Figure 3.9

## Past Question

### August 15 Q 3b

Using the example of an online retailer to illustrate your answer, discuss the impact of IS on the value chain of a business. (8 marks)

Candidates should begin by discussing the value chain model, as a series or chain of basic activities that add a margin of value to a firm's products or services. It allows organisations to highlight the specific activities where competitive strategies can be applied, and in the context of information systems, the specific, critical leverage points where a firm can use information technology most effectively to enhance its competitive position. For an online retailer, it may be particularly important to evaluate business activities and how these may be impacted upon by internet technologies.

## Past Question

- Primary activities include:
- Inbound logistics: receiving and storing materials for distribution to production. Possible IS usage: automated warehousing systems are crucial for an online retailer for efficient stock management and good customer service through accurate inventory levels.
- Operations: transforming inputs into outputs. Possible IS usage: computer-controlled machining systems; manufacturing planning applications; each focussed on producing products in the most time and resource efficient way due to competition on price from other online retailers.

## Past Question

- Primary Activities..
- Sales and marketing: promoting and selling the firm's products. Possible IS usage: computerised ordering systems are essential for an online retailer and can be a source of competitive advantage (Amazon's patented 'one-click' technology). Customer relationship management applications; data mining on existing customer information for targeted marketing also extensively used.....

*2 marks for identifying the supply chain activities, 4 marks for highlighting relevant IS usages, 2 marks for specific examples relating to an online retailer.*

# Exam technique

## General guidance

- Key issue – **application of knowledge**
- 10 mins reading, 3 hour paper – use marks per minute to allocate time/length of answer
- Be clear what is compulsory/optional
- Follow instructions – answer only the questions required (e.g. Section B) and within questions where a number of responses are specified, give that number in appropriate detail
- Don't rewrite the question
- Diagrams/tables can\* be useful
- Be careful of bullets/tables/diagrams for detail

## ...from the learning outcomes

On successful completion of this subject students should be able to:

...

Critically analyse Information Technology-based case studies, thus incorporating their strategic and practical **knowledge of Information Systems** to **real-life business situations**.

## three common issues in case studies

1. Lack of detail/understanding in **knowledge of** the specific aspect of **Information Systems**
2. Getting carried away with the **real-life business situation** and not showing **knowledge of** the specific aspect of **information systems**
3. Writing down all your **knowledge of** the specific aspect of **information systems** but not applying it to the **real-life business situation**



# April 17 Case Study - Arramed