DUBLIN INSTITUTE OF TECHNOLOGY

DT228 BSc. (Honours) Degree in Computer Science

Year 4

SUMMER EXAMINATIONS 2016/2017

ENTERPRISE SYSTEMS & ARCHITECTURE [SENG4350]

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FRIDAY 12TH MAY 4.00 P.M. – 6.00 P.M.

TWO HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER **THREE** QUESTIONS OUT OF **FOUR**.

ALL QUESTIONS CARRY EQUAL MARKS.
ONE COMPLIMENTARY MARK SHALL BE AWARDED.

1. (a) Outline what is meant by the term *Value Chain* in the context of an *Enterprise* environment.

[6 Marks]

(b) From a business perspective, outline how an enterprise might utilise a *Value Chain* to gain a competitive advantage.

[6 Marks]

(c) Discuss in detail how IS / IT can be used to support strategies adopted by an enterprise to gain a competitive advantage or reduce a competitive disadvantage. In your answer choose three strategies to discuss.

[3x7 Marks]

2. (a) *Business Process Reengineering* (BPR) involves a fundamental rethinking and radical redesign of business processes which seeks to achieve improvements in cost, quality, speed and service. Outline, in general, the role IT can play in reengineering business processes.

[6 Marks]

(b) An ERP system can be central to the process of BPR. Discuss specifically how an ERP system could be utilised to realise the goals of BPR.

[15 Marks]

(c) Implementing an ERP system from scratch by creating a new IT architecture is uncommon as there are few new companies which start off large enough to implement ERP. Describe four approaches / options an enterprise might consider when implementing an ERP solution.

[12 Marks]

3. (a) A *Supply Chain* can be defined as:

"...a network between a company and its suppliers to produce and distribute a specific product, and the supply chain represents the steps it takes to get the product or service to the customer."

Describe the structure, components and flows of a typical supply chain.

[13Marks]

(b) Managing a supply chain effectively and efficiently so that its activities are optimised is a primary goal of any supply chain management system (SCMS). Using the supply chain management components listed below, discuss how a SCMS could be utilised to support the optimisation of the management activities.

- *Plan*
- *Source*
- *Make*
- *Deliver*
- *Return*

[20 Marks]

4. (a) Describe what is meant by *point to point* in the context of *Message Oriented Middleware*.

[6 Marks]

(b) *Loose Coupling* is a term used at both low level system design and at a high level architectural perspective. In terms of enterprise systems integration, discuss how time independence, location independence and format independence can be achieved through the use of *Message Oriented Middleware*.

[15 Marks]

(c) The *Splitter* and *Router* are two enterprise application integration design patterns. Describe each pattern using a diagram to illustrate your answer. Provide an example of how the two patterns could be used together.

[12 Marks]