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School of Computing

JANUARY 2018

COMP344101

Business Issues in Computing

Answer THREE questions

Time allowed: 2 hours

Question 1

(a) Moore's Law may have run out. Why should this worry politicians around the world?
[1 mark]

(b) In May 2017 the WannaCry virus inflicted serious damage on many organisations around the world. WannaCry targeted old Windows-XP operating systems and the UK NHS was particularly badly affected because it still had a large number of PCs running Windows-XP. Why are older operating systems more vulnerable to virus attacks? What good practice would help protect against such attacks? **[2 marks]**

(c) The boss of a Law Firm has asked students what technologies and business models might disrupt the legal sector in the next 10 years. Thinking about how Uber has disrupted the taxi industry what three pieces of advice would you like to offer?
[3 marks]

(d) Using the Application Portfolio Matrix, an information systems may have started its life as a High Potential application, then become Strategic before dropping to Key Operational and then transitioning to Support before being withdrawn completely. What changes must have happened to the application at each stage in its life including being withdrawn? **[4 marks]**

(e) The Royal Armouries Museum at Leeds was used as a case study in a classroom exercise. Use the frameworks from systems theory to describe the micro and macro environment, boundary, emergent properties, component subsystems, inputs, process, outputs, feedback and control of the museum. **[5 marks]**

(f) The Welsh Valley Foods (WVF) scenario was used in several classroom exercises. Write a letter to the new owners of WVF summarising your assessment of the business issues caused by the state of the computing and information technology used by WVF at the time it was acquired. Your letter should draw on, but not reproduce, the various evaluation methods used in these exercises and your own reflections. **[5 marks]**

[Question 1 total: 20 marks]

Question 2

(a) The owner of a cinema has just bought a new cinema management system which includes 4 EPOS tills for ticket and snack sales, a fully programmable stock management software solution and advanced ticket sales though a Web service controlled by the supplier. She was delighted that she got the whole system for a low price but wasn't impressed by the supplier's technician who spent three days struggling to set up the EPOS tills correctly. She had to sign a ten year contract and is now worried about the cost of ownership. She is going to read through the contract more carefully now. What advice can you give her to help her judge the total cost of ownership and what questions should she be asking about the support contract?
[5 marks]

(b) A large multi-storey car park has been fitted with number plate recognition cameras. Cars can enter freely without a barrier but, in order to exit, the driver must enter their registration number and pay by credit/ debit card. One driver is very angry – he had driven in, couldn't find a suitable parking spot, but was then unable to leave without paying for the ten minutes he had spent driving around looking for somewhere to park and, in any case, he only had cash with him. He caused some damage to his car and broke the camera system as he was trying to reverse back out through the entrance. He is now threatening to sue the car park owners. Identify separate Legal, Ethical, Business, Information Systems and Information Technology issues and for each explain briefly what the problem and potential solution might be. **[5 marks]**

(c) A Project Manager of a software development project has been giving positive reports of progress to his Managing Director. The company is under extreme pressure if the project fails. They are paying a team of Programmers and Testers based on a fixed price, fixed duration contract. The Programmers however feel they have been set impossible to achieve deadlines and as a result they are upset and under pressure. The code they have produced has therefore been late and full of bugs. The Testers have had little time to test before passing to the Users for Acceptance and the Users are very unhappy with the large number of bugs. Because of this the Users have made a series of strong complaints to the Managing Director and she has now decided to suspend the project. She is upset, angry and very concerned about the company's future. Outline your ideas for restarting the project with a better project management approach. **[5 marks]**

(d) A School of Computing at a large University used to have its own IT team but has now transferred all its IT staff to the central University team. Describe five potential advantages or disadvantages of centralising the IT function with reference to some of the frameworks covered on this course (you may for example draw on outsourcing/ insourcing, Asset based vs Service based, ITIL, Economies/; Diseconomies of scale, Service Level monitoring, Federated structures, the digital divide, and competency frameworks). **[5 marks]**

[Question 2 total: 20 marks]

Question 3

(a) Draw an example of a Benefits Dependency Network for a hospital implementing a new staff scheduling software package assuming that the Investment Objective is to reduce staff costs. You should only include one example of each of an Investment Objective, a Benefit, an IT Enabler, an Enabling Change and a Business Change. Be careful to get the dependencies between the elements of the network correct.

[5 marks]

(b) You have been asked to develop an Information Systems strategy for an organisation of your choice. You may use the organisation that you used for your coursework but may choose to use a different one if you wish. Draw a future Application Portfolio Matrix and matching IS Architecture Diagram for your proposed strategy assuming you have three years to deliver it. Briefly summarise the strategic benefits this will deliver.

[10 marks]

(c) An employer has come up with a novel plan for using technology to increase its employees' fitness, health and productivity. Staff can opt in to receive an additional £5,000 salary per year if they agree to 24/7 265 day 100% constant monitoring by Fitbit device and tracking via movement sensors, cameras and smartphone location tracking. This will be linked to performance monitoring of their work output, keystroke speed, number of emails sent, number of complaints caused etc. The employer's idea is to gather as much surveillance data using as many devices as possible and link this to multiple measures of performance using advanced data mining and machine learning techniques. Top performers would be rewarded with promotion and, secretly, the employer is also planning to get rid of the worst performers. What are the current technical and computer science challenges with this approach? What are the ethical arguments for and against such an approach? Given your understanding of emerging future technology how likely do you think something like this scenario might become in the future?

[5 marks]

[Question 3 total: 20 marks]

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