CSE300 Advanced Software Engineering: Coursework Assignment - Off-Campus

Module Learning Outcomes Assessed.

a. Critical awareness of the practice in quality and process improvement, including the current ISO standards and SEI programmes (CMMI), and their impact on software engineering.

b. Critical awareness of the state of the art in project management, risk assessment models and management, of the software development process.

c. A critical appreciation of the duties and responsibilities of a professional Software Engineer.

and the ability to:

e. Determine appropriate criteria against which to select development strategies for specific circumstances.

Assignment Requirements.

You have been recruited as a consultant to produce a report investigating and recommending the adoption of a software development approach for the company "OF-FACsystems Ltd.
The case study for this company on the following sheet.

In your report the systems manager expects to see that the different issues he has raised have been considered. He expects to understand why you make the final recommendation you do, which of his issues will be supported and the reasons why any aspects that are not catered for can be given a lower level of priority (or dismissed).

You must justify your recommendations and show you understand the field by reference to appropriate evidence.

The report should be clearly and logically structured. It should be between 2,500 and 4,000 words. The marking pro-forma is attached so that you can be clear about how you are being assessed.

Notes:
1. This is **not** a research style paper and therefore should not be submitted as such.
2. Do not simply cut and paste others' material into your work: the module assessors are looking for your insight.

Submission.

1. Your report must be submitted in hardcopy to your specified centre by the scheduled date.
2. You must also submit an electronic copy through turnitin **before** the due date and provide the originality report with your work.
   - The turnitin class has been set up within www.submit.ac.uk as class: **84153** with password **Sept08**.
   - You must register for the class using your sunderland email account (format xxx.yyy@sunderland.ac.uk) any other account in the class will be deleted.
   - You must name your submission as "yourstudent No-centre-cohort" (e.g. 05941728-CECOS-2).
   - You can resubmit your assignment as you work on it since the previous version will simply be overwritten. But the final version **must** match the hardcopy version submitted for marking.

Case study

Since 2002 a small specialist software house (OF-FACsystems Ltd) has been developing an "off-the-shelf" integrated office and factory system for companies in the bulk envelope manufacturing business. The initial software was developed by a three inexperienced but talented software engineers, and was used within a small number of organisations. By their own admission the software engineers concerned did not adhere to any formal process or standards.

The company has been expanding for the last three years as more organisations have wanted to buy the software and have identified new requirements and new technology platforms to run on and systems to interface with.

There are now fifteen people in the development team and a systems manager (Mr Bond) and they are expected to add another eight staff over the next eighteen months.

The company has recently been taken over by an engineering entrepreneur (Mr Widget) who, because of his background is insisting that the company identifies an explicit documented process for their work.

Therefore, Mr Bond needs to identify the way forward for the organisation in terms of what type of systems development approach to use.

Factors that he is aware of include (in no particular order):

- The current clientele have had a relationship with them for several years and have seen their ideas and requirements being fed intothe revised versions of the products. Therefore these clients have been quite happy to be used a beta-test centres. The indications are that clients in their new overseas markets (particularly the USA) are looking for assurances abot the quality of the product.
- Mr Widget's belief in the value of documented processes, and formal quality assurance processes,
- A small number of new team memebrs have arrived with experience in agile approaches and are keen to adopt these: they have given some informal presentations to the team about test-driven development.
- The senior tester in the team (Ms Pertsel) has had experience of formal heavyweight processes and used to work in an organisation at level 4 of CMM: she believes that if the company continues to expand a heavyweight process is necessary – and that having CMMi level 3 or more is critical.
- The core system will continue to evolve and needs to be: dependable, reliable, portable, web-based.
- The previous senior tester left the company to set up his own business, it took time to recruit a suitable replacement and in the meantime there were a number of problems as a results in ineffective testing in some aras. This has highlighted that the copmany was reacting to problems rather than managing risks.
- "Software as a service" is being talked about but he is not sure if the product and its future development can or should be fitted into that model
- Two staff members have joined a professional body (IEEE(CS)) and want to see the company becoming a recognised as a flagship company in its field.

The case study provided is fictional but is based on a company with whom the module leader has worked and therefore its issues can be seen as realistic.

Student Name:	**Marker:**
Student No:	**Mark: %**

Note for the markers: tick the appropriate box and use profile to generate component mark

Quality practices, process improvement							**Mark: /20**
Awareness of QA/QMS	No evidence						Critical Awareness
Understanding of impact on SE	No evidence						Critical Awareness
Linked with case study scenario	Not done						Insightful links

Project and Risk Management in software development.							**Mark: /20**
Awareness of PM/RM	No evidence						Critical Awareness
Understanding of impact on SE	No evidence						Critical Awareness
Linked with case study scenario	Not done						Insightful links

Duties and responsibilities of a professional Software Engineer.							**Mark: /20**
Awareness of professional issues	No evidence						Critical Awareness
Understanding of impact on SE	No evidence						Critical Awareness
Linked with case study scenario	Not done						Insightful links

Selection of an appropriate development strategy.							**Mark: /30**
Criteria used	Not provided						Clearly identified
Criteria used	Not provided						Clearly justified
Recommendations	Not provided						Clearly identified
Recommendations	Not provided						Clearly justified

Report							**Mark: /10**
Structure	Muddled						Logical construction
References	Not provided						Cited well
Relevance of References	Poor						Excellent
Reference List	Not provided						Full Harvard Style

***Overall Comments**:*