CA4004 - Software Engineering (PPM) – Assignment 2

Continuous Assessment value: **20%** of overall module mark. To be completed in teams of 4 persons.

Purpose of Assignment:

To demonstrate an understanding of the role of individual situational contexts in informing the software development process. This will be achieved through a detailed examination of two industrial organisations and their respective software development processes.

Overview:

Two industrial speakers will deliver guest lectures during our regular class timeslots as follows[1]:

- Thursday 23rd February 2017
  - Mr. David Solan, Head of Product Engineering at the FINEOS Corporation. More on David here: https://www.linkedin.com/in/davidsolan.
- Monday 6th March 2017
  - Mr. Peter Elger, CTO, nearForm Limited. More on Peter here: https://www.linkedin.com/in/peterelger/?locale=en_US

Each speaker will provide information on their organisation and on their software development process. In your paper, you will be required to profile the situational context of each of the organisations and to describe their software development process. You will also be required to discuss why their chosen process is appropriate for their context, and to compare and contrast the two different companies and process approaches.

** Do not miss the opportunity during the invited talks to ask questions and try to get as much information as you can obtain towards helping you to produce a thorough paper. A second opportunity to query the speakers will not arise.

Assessment Criteria:

Marks will be awarded for quality of information, analysis, discussion, background research as well as for the basic quality of written materials according to the following general scheme:

- Quality of essay-style written English: 10%
- Extent and correctness of citation and referencing: 10%
- Adherence to the paper structure guidelines: 10%
- Technical correctness: 30%
- Informed and Appropriate Argumentation: 40%

Paper Structure:

The report must be submitted in the form of a research paper, of **not more than 12 pages using the Springer-Verlag CCIS publication guidelines**:
ftp://ftp.springer.de/pub/tex/latex/svproc/guidelines/Springer_Guidelines_for_Authors_of_Proceedings.pdf

An example CCIS formatted paper is available here: http://doras.dcu.ie/21404/1/Published.pdf

[1] Note that the exact dates for the talks are subject to change depending on the availability of the speakers. Sometimes, Industrial speakers may have to reschedule at short notice, but we will try our best to avoid this happening. Any change to dates will be notified via Loop.

The paper title should read "Comparing the Software Development Process in Two Different Situational Contexts". The Introduction section should briefly discuss what a software development process is, leading to a description of software development situational contexts, and on to a high level discussion on the relationship between a software development process and its situational context. The Introduction should then briefly introduce the remainder of the paper, highlighting that it will examine the software development process and situational context in two different companies.

Section 2 should present the software development process and situational context of Company 1, with Section 3 providing details for Company 2; in both cases adopting the general structure:

- Company Name
- Profile (i.e. Situational Context, incl. customer profile, market, number of employees, etc.)
- Current Software Development Process
- Examination of the suitability of the Software Development Process for the Situational Context.

Section 4 should Compare and Contrast the two different situational contexts, identifying major differences and similarities, with Section 5 Comparing and Contrasting the two different software development processes, again identifying major similarities and differences. Section 6 should include a combined conclusion and discussion, identifying the major learning outcomes from the examination, ideally including a philosophical discussion on the role of situational context when selecting a software development process. Difficulties and challenges associated with process selection and implementation may also be introduced, but only at a high level.

Teamwork is an important aspect of this assessment:

This is a group project, meaning that high levels of interaction are expected between the team members. One possible approach to completing the assessment would be to tackle each company as a pair, with one person describing the company profile and the process approach; and the second person focusing on the benefits and limitations analysis for the approach. The second pair in the team could repeat this process for the second company. Finally, together as 4 team members, you should compare and contrast the two organisations and their processes, and put the final coherent finish on the paper.

*** You should select your team online in loop not later than Friday 3rd March.

*** Students who are unable to self-organise into teams of 4 persons need to alert me not later than Friday 3rd March so that I can attempt to identify a team for you.

Cover Page Mandatory Inclusions: (failure to include mandatory info may result in a 0% mark)

A separate cover page must be provided with the research paper, as follows:

1. Identify all four student names and IDs on your submission.
2. The Plagiarism Statement, signed by all team members (further information below).

Research

You will need to conduct research beyond what you will find in our course materials. You should conduct a search of work related to the assignment that is being published in current journals and conferences, and on-line. The DCU Library has excellent on-line resources to help with your research. The best databases to search are: **ACM Digital Library** the **IEEE Xplore Digital Library** and **Science Direct**. The best peer-reviewed research papers are often found in top ranked journals such as: Journal of Systems and Software, Information and Software Technology, Journal of

Software Evolution and Process, IEEE Transactions on Software Engineering, IEEE Software and ACM Transactions on Software Engineering and Methodology. Grading will favour peer-reviewed references over non-peer reviewed references since the former are typically more reliable.

Your background reading / research forms an input to your paper and you can reference items of relevance that were discovered as part of your research. Take care to cite related works appropriately. As an example, it is not appropriate to simply offer an opinion "situational context is an important informant for software development process selection." Rather you should support such statements with citation, e.g. "situational context is an important informant for software development process selection [1]" (where reference 1 supports the statement). Similarly, in discussions related to particular software development process approaches, you should provide references to the process approach (this may often be a published book or paper) and where you make statements about benefits and limitations of approaches, these too should be supported with references (or otherwise identified as being your own opinion).

Plagiarism

See both the School statement and University statement on plagiarism. All cases or suspected cases of plagiarism will be referred to the Disciplinary Committee. You are required to work on your own project and produce your own work. Submissions may be subject to text matching analysis.

ALL projects must contain the following statement (along with ALL signatures) on the cover page:
We the undersigned declare that the project material, which we now submit, is our own work. Any assistance received by way of borrowing from the work of others has been cited and acknowledged within the work. We make this declaration in the knowledge that a breach of the rules pertaining to project submission may carry serious consequences.

Strict Deadline for submission: **Monday 3rd April 2017**

All assignments must be submitted to the class lecturer in print out form at the start of the lecture on Monday 3rd April 2017, with an exact electronic copy in MS Word format also being submitted by Loop in advance of our class on Monday 3rd April 2017.