



School of Informatics

## Scientific Theory in Informatics

### CASE STUDY

#### Overview

The goal of the case study is to assess how well two or more candidate modelling methodologies, core theories, or fundamental techniques might contribute to the effective and efficient development of an information system, software application or digital artefact. Specifically, the goal is perform a critical appraisal and comparative analysis of two or more competing models or theories drawn from the material covered in class, or related topics extracted from either the computational, cognitive, or socio-technical aspect of that application area. The information system, software system application or digital artefact to be developed (hereafter called the application scenario) should be defined by the student, normally in relation to their own research or project work. Thus it can be a spin-off from a research-oriented project that the student is currently undertaking, an early design for some aspect of a project that might be undertaken later, or a reappraisal of an earlier project. We encourage students to independently select their application scenarios. However, for students unable to find their own, project ideas will be provided.

#### Case Study Details

- Each case study will be undertaken individually.
- Application scenario - it is the responsibility of each student to define a relatively complete specification of the problem to be addressed and the information system, software system application or digital artefact to be developed and deployed.
- Students should use as much material from the course as possible in the investigation, drawing on course notes and supplementary reading.
- The investigation should address *at least* the following.
  1. A specification of the application scenario focused on developing an interesting and useful information system.
  2. Identification of the specific phase of the development life-cycle that the theory addresses.
  3. Identification of the perspective – computation, cognition, or socio-technology – that the theory addresses.
  4. A survey of possible modelling methodologies, core theories, and fundamental techniques that are relevant to this particular aspect of the information system.
  5. Identification of two or more candidate methodologies, theories, or techniques and a justification for the selection of each one.
  6. Comparative analysis of the strengths and weaknesses of each the methodology, theory, or technique.
  7. An example of how each methodology, theory, or technique could be used, addressing, e.g., development strategy, design decisions, system performance, user acceptance, and organizational & social impact.
  8. Guidelines for the deployment of the methodology, theory, or technique in this application domain.

9. Conclusions regarding the relative merits of each methodology, theory, or technique and its applicability in the chosen domain.

The case study should be submitted as a .pdf file at the assignment page at Canvas.



School of Informatics

## Scientific Theory in Informatics

### CASE STUDY MARKING SHEET

Student Name: \_\_\_\_\_

Student Id. Number: \_\_\_\_\_

Title of Case Study: \_\_\_\_\_

Advisor: \_\_\_\_\_

Second Marker: \_\_\_\_\_

Completed by: ☐ Advisor ☐ Second Marker

	Maximum Mark	Assigned Mark
<b>Report</b>		
Specification of the application scenario	5	
Phase of the development life-cycle that the approach addresses	5	
Identification of the perspective that the approach addresses	5	
A survey of possible approaches	10	
Identification and justification of two or more candidate approaches	5	
Comparative analysis of strengths and weaknesses of each approach	30	
Example of how each approach could be used	20	
Guidelines for the deployment of each approach	10	
Conclusions regarding the relative merits of each approach	10	
<b>Total</b>	<b>100</b>	

**Assessment Procedure**

The case study advisor marks the case study using the marking sheet provided. The marks and comments are checked by the course director for completeness and accuracy

**Procedures for Resolving Problems**

In cases of doubt, or where the student may fail the assignment, the course director may appoint a second marker. The final mark will usually be the average of the two marks.