

## 300COM / 303COM Detailed Project Proposal

The detailed project proposal is a graded component of the Final Year Project and is worth 10% of the overall project mark. **Deadline:** Upload your completed form to Moodle by 23:55 pm on 10/11/2014. using the filename convention: Lastname\_firstname.doc

**Please complete all sections.**

First Name:	
Last Name:	
Allocated Supervisor Name:	

### SECTION ONE: DEFINING YOUR PROJECT

#### 1.1 Detailed research question

**Help:** Your detailed research question is a refinement of the research question you proposed on the project allocation form. You must do this even if you selected a 'suggested project'. Refining the research question involves narrowing down the initial question until it is answerable using a primary research method(s) that you conduct during the six months of your project. The refined research question must not be so general that it is answerable with a yes or no answer. It must not be so broad that you would be unable to achieve a solution during your project. The key to this is BEING SPECIFIC: Narrow down the method or technology you will use, narrow down the group that the question refers to. Avoid using words that cannot be measured, by you, without a huge research budget e.g. 'effects on society', 'effects on business'. *Example:* The initial question "Does cloud computing effect business" needs narrowing down (*for a start the answer is yes*) What is meant by cloud computing? or 'effect'? or 'business' in this question? Refining this first question will involve narrowing it down to something you, personally, can measure. A refined version of this question might be: "Does implementing a cloud based voting system improve the speed of decision making in a small company in Coventry?" This refined question is implementable: You can now identify a small company to work with, document their current decision making processes, implement a cloud based voting system, compare decision making speeds over a limited time period (say 1 month) and evaluate your findings. *A small piece of genuinely new knowledge is produced.*

How does a training booking system interface (under development) enhance Cummins Daventry workflow with a focus on effectiveness and usability?

#### 1.2 Keywords

**Help:** Include up to 6 keywords separated by a semi-colon ; What keywords are appropriate to describe your project in an online database like Google Scholar? Keywords should include the general research area and the specific technologies you will be working with. *Example.* a project that proposes a novel way of visualising large amounts of twitter feed data may have the keywords: Data visualisation; twitter; hashtags; database design; graphics libraries. For further help take a look at the ACM keywords list <http://www.computer.org/portal/web/publications/acmtaxonomy>

Usability; ethnography; process improvement; workflow; UI design; business systems

### 1.3 Project title

**Help:** The project title is a statement based on your detailed research question. For example, The research question 'to what extent does a mobile application reduce the number of errors made in class registers at Coventry University in comparison to current paper based registers' may be stated in the project title: *"A wifi driven mobile application for large group registers"*.

A study of workflow and usability analysis to enhance booking system deployment at Cummins Service Training Daventry.

### 1.4 Abstract

**Help:** An abstract is a short summary of a research project that enables other researchers to know if the report is relevant to them without reading the whole report. It is usually written retrospectively so that can include findings and results. It is fully expected that you will rewrite your abstract when you come to write your final report. For now however you should write an abstract of about 250 words that define the project. Before writing your abstract you **MUST** read some abstracts from conference or journal papers on *Google Scholar* or from *portal.acm.org* (to understand their style) and then provide your own abstract that outlines what your question is and what you 'did' to answer it.

This project focuses on a specific global system deployment at Cummins Service Training involving an internally and externally facing booking system. It aims to show how such a system fits in with the workflow of the department to create an effective way of interacting with customers booking courses. An initial focus group of staff and key users of the system will allow for main issues or achievements with the system to come forward with the view to a deeper study of the interface and how the current workflow is managed. Within this work an ethnographic study will examine the effectiveness of the new system with these stakeholders central to the process. From analysing key members of the team and their usage of the system it can be defined in terms of successfulness in comparison to the old methods utilised.

From the outcomes of the study the report will show how the new system could fit into the Cummins Service Training workflow and how this improves the way in which key stakeholders work and make interactions with customers who wish to book on a course. This work has a focus on usability for the administration team and how they deal with customer interactions and processing the information the system provides.

It is important to see how changes in the workflow can affect the staff within the department and how 'workarounds' to bugs or issues are resolved internally to improve the process. This work will be done in order to show how large scale changes to business processes can be made effective by clear interface design and the system meeting the team's requirements.

## SECTION TWO: YOUR RESEARCH PLAN

### 2.1 Primary Research Plan

**Help:** This is plan as to how you will go about answering your detailed research question - It must include a primary research method (an extended literature review is not an acceptable primary method). Think and plan logically. Example: In the class register example above "to what extent does a mobile application reduce the number of errors made in class registers at Coventry University in comparison to current paper based registers" - the research plan may involve: 1) Collecting and analysing paper based registers in a given class on five occasions. 2) Identifying the error rate average on these occasions 3) Designing and implementing a mobile application that automatically records attendance in class. 4) deploying the application in the class on five occasions. 5) Identifying the error rate average of the mobile application on these occasions. 6) comparison of data and summary of findings.

Focussing on a training booking interface under development at Cummins Daventry, this project aims to assess how far usability analysis can be used as part of the development of this system and how it fits into the workflow, to help steward the process and enhance effectiveness. Therefore a primary research method needs to ensure that the system is comprehensively assessed.

Work packages (WP) will allow for easier management of the project and to gauge when primary research can be delivered upon. This will also help give timescales to the key stakeholders involved in the research. The main areas of focus are delivered below:

WP1 (September 2014 – December 2014)

Initial analysis of workflows, and how the structure of the primary research will take place in terms of planning questions and setting up appropriate meeting times with the organisation and key stakeholders. This work will plan ahead to the main aspect of the study once ethical approval has been gained. Initial background into the project will also be undertaken in terms of research and methodology.

WP2 (January 2015 – February 2015)

An analysis of the existing workflow at Service Training Daventry looking into how business processes were completed before the new system became the standard process. This will be completed by a focus group study of 3 key users of the new system and how they dealt with previous methodology of booking courses. This will be followed up with an ethnographic study focusing on the issues raised and how key users interact with the system in real time. This work will lead onto a comparison to the new online booking system and how this fits into the workflow of the business. It is important to follow this type of work as the system needs to be assessed in house during its usual working environment to get a clear picture of pitfalls and successes in terms of effectiveness.

WP3 (February 2015 – March 2015)

UI concept evaluation will take place in terms of research findings and how this could lead to future iterations of this currently emergent design. This will be done in conjunction with the key stakeholders. This will form the basis of the report and what improvements to workflow and UI interfaces could be suggested as found from previous research. This will allow for a clear pathway of future development of the system to be found.

WP4 (March 2015 – April 2015)

This will then be analysed as to the effectiveness of the new system within the department's workflow and how this could be improved in the future. A summary of the findings will be provided to show the improved areas and future changes required with the work also given to Cummins as evidence of the project work carried out so that future iterations could benefit from the research carried out.

## 2.2 Secondary research sources (key texts for your literature review)

**Help:** Please provide references, in correct Harvard style, to three key texts that are addressing similar research questions to yours in other contexts. If you are implementing an application, select texts which demonstrate how other researchers have tackled similar implementations? The references should be recent and sufficiently technical or academic. Your markers will be looking for you to identify technical reports, conference papers, journal papers, and recent text books. Avoid *Wikipedia* entries, newspaper reports that do not cite sources, and general or introductory texts.

Brahe, S., Schmidt, K. (2007) 'The Story of a Working Workflow Management System'. *GROUP '07* [online] 1 (1), 249-258. available from <<http://dl.acm.org/citation.cfm?id=1316624.1316661>> [8 November 2014]

Crabtree, A., Rodden, T. (2002) 'Ethnography and Design?'. *The School of Computer Science and Information Technology, The University of Nottingham* [online] available from <<http://www.crito.uci.edu/noah/design/Ethno3CrabtreeDesignEthno2.pdf>> [1 November 2014]

Frøkjær, E., Hornbæk, K. (2008) 'Making use of business goals in usability evaluation: an experiment with novice evaluators'. *CHI '08* [online] 1 (1), 903-912. available from <<http://dl.acm.org/citation.cfm?id=1357054.1357197>> [1 November 2014]

Jonathan, L., Jinjuan, H, F., Hochheiser, H. (2010) *Research Methods in Human-computer Interaction*. Chichester, West Sussex, UK: Wiley.

Passos, C., Cruzes, D S., Dybå, T., Mendonça, M. (2012) 'Challenges of applying ethnography to study software practices'. *ESEM '12* [online] 1 (1), 9-18. available from <<http://dl.acm.org/citation.cfm?id=2372251.2372255>> [9 November 2014]

## SECTION THREE: IMPACT AND PLANNING

### 3.1 Client, Audience and Motivation:

**Help:** Why is this project important? To whom is this project important? A research project must address a research question that generates a small piece of new knowledge. This new knowledge must be important to a named group or specific client to make it worthwhile carrying out. This is the motivation for your project. In this section you should address who will benefit from your findings and how they will benefit. Example: If you intend to demonstrate that a mobile application that automates class registers at Coventry University will be more efficient than paper based registers - the group who would be interested in knowing/applying these findings would be both academic and administrative staff at Coventry University and they would benefit by time saved and a reduction in their administrative workload. If you are making a business case for an organisation explain how the organisation will benefit from your findings.

The project has significance to the department in question at Cummins as it is a large scale change of business process for not only the company but for its customer's interactions. It is the primary way of gaining revenue into the business and is the new interface for future interactions with the training department. The previous methodology of booking courses was a more manual and call centre driven approach with the new web interface taking over much of the administration. It is important to see how the effectiveness of the new system compared with the older version of processing the information and how this can inform future iterations of the software to improve effectiveness for the administration team.

This research will show a business impact to the department in terms of workflow and how savings could be made in time and finance. It is important that in the early stages of the project bugs or faults are discovered while the initial versions of the software are in use throughout test sites including Service Training Daventry.

This will then allow for an academic impact to give a clear case study of evaluation carried out on a live business process to gauge real reaction from users and to put forward a new approach for interface design and how effectiveness can be achieved in the workflow of the business. These findings can add to the larger body of knowledge in the human computer interaction field as a real world project set of results. The final report will be given to Service Training Daventry to look at when deciding upon future iterations of the interface and how the workflow could best be structured to give an effective system.

### 3.2 Evidence of project management

**Help:** How will you plan and manage your time? How will you evidence that you have managed the project successfully and have responded to supervision and feedback? Your final project report will contain a mandatory chapter evaluating and reflecting on how successfully you managed the project, predicted and mitigated against risks, and responded to feedback and supervision. You should discuss in this section what artifacts you will create to evidence this project management. Time plans, log books, records of supervisor meetings, version tracking systems, etc.

All weekly meetings will have minutes taken with the project supervisor and notes or documents will be put into an online repository (shared Dropbox with main supervisor) for evidence and as a guide for the work being undertaken. This will allow for clear understanding at each meeting and what was achieved. It will be important to make sure there are key goals set at each meeting and these will be addressed at each following meeting or during other contact with the project supervisor so that work can flow during the life of the project and feedback can be gained at key milestones. Emails and other communications can also be saved and recorded for reference during the project.

The work packages defined for the primary research methodology also show a clear path for management of the project and research timeline which will be implemented. The allotted timeframes allow for a degree of change that projects could encounter when dealing with people and companies. Clear deadlines from the module documentation will also be followed.

A risk analysis will also allow for problems during the project to be dealt with in a timely and effective manner without affecting the outcome or deadline of the overall project. This will be important so that difficulties can be quickly addressed with the company and stakeholders using the system. Contingencies will be thought about in advance of primary research so that a clear process can take place.

**Please upload your completed form to Moodle by the deadline of 23:55 pm on 10/11/2014**

**Please ensure you send a copy to your supervisor.**

**Thank you for completing this form**