



National College of Ireland  
BSc Honours in Technology Management  
2015/2016

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# REQUIREMENTS FOR A NCI STUDENT MOBILE APP DEVELOPMENT

Technical Report

**Supervisor**

**Eugene O 'Loughlin**

## Table of Contents

1. Executive Summary.....	4
1.1 Aims.....	4
1.2 Technology Used.....	5
2. System.....	5
2.1 Requirement .....	5
2.2 User and Functional Requirement.....	5
2.3 User Requirements Definition .....	6
2.4 Usability Requirements.....	7
2.4 Environmental Requirements .....	8
3. Further Development or Research .....	8
4. References .....	9
5. Appendix .....	9
5.1 Project Proposal.....	10
3 5.2 Project Plan .....	13
5.2 Project Specification .....	14
5.2.1 Introduction .....	15
5.2.2 Project Scope .....	15
5.2.3 Business Case and Needs .....	16
5.2.4 Stake Holders List.....	17
5.3 Monthly Journals .....	18
6. Requirement Elicitation Techniques.....	24
6.1 Interviews.....	24
6.2 Focus Groups.....	26
6.3 Brainstorming.....	26
6.4 Survey/Questionnaire .....	27
6.5 Benchmarking .....	28
6.6 Requirement Workshop.....	31
6.7 Stakeholder list, Map and Personas.....	32
6.8 Documents Analysis .....	34
6.9 Prototype .....	34
6.10 Observation .....	35
6.11 Functional Specification .....	36
6.12 Functional Decomposition .....	37

6.13	MoSCoW Analysis .....	38
6.14	Organise Requirements .....	40
6.15	Non-Functional Requirements Analysis .....	41
7.	Literature Review .....	43
8.	Project Meetings .....	45
9.	Project Showcase .....	45
10.	Results Evaluation .....	46
11.	Conclusion.....	52
12.	References .....	53
13.	Other Materials Used.....	54

## 1. Executive Summary

The overall problem being addressed is to develop an improved platform compared to the old existing technology of using internet browser to access the college website to help both new and current student of national college of Ireland integrate better with their university lives, the proposed software technology development will assist student in getting up to date or last minute information with campus latest news, event and activities regarding the college environment on their personal handheld mobile device. The problem arisen according to my client is that student don't have a collective one for all application made only for internal student or a learning tool while on the move for current student why by an information or message can be passed down by sending push notifications that alert students on their personal smart mobile devices helping each individuals to monitor, manage and maintain their student life experience in college for example by notifying and providing poor records of students attendance in the class will create awareness and helps students monitor their absence in class. The problem is being address by carrying out a variety of requirement elicitation techniques to collect information, record data, and evaluate user's requirement from different perspective of potential stakeholders interested in the project to achieve a common goal for the benefit of all users. I also will be creating a website to be used as a personal journal to document all my findings, reports and results. The purpose of this technical report is to provide an overview or project scope for user's requirement in the development national college of Ireland mobile application

The elicitation requirement for the mobile application is basically to provide user providing with the most up to date information, search directory, activity or social event, library, bookshops to support students in the education, social links, and student discounted websites & codes etc.

### 1.1 Aims

Aim of the project is to carry out a detailed requirement and produce a form of report towards the development of building a NCI Student mobile app.

- Provide a friendly user mobile application
- Encourage collaboration
- Provide new and improved key features for users in the development of the new college mobile application
- Offer instant information update e.g. email, timetable
- develop a free easy and mobile software installation and download

## 1.2 Technology Used

### Hard ware

- ✓ iPhone 6
- ✓ Laptop: Toshiba
- ✓ Computer: Dell OptiPlex 755
- ✓ BABOK (Business Body of Knowledge)

### Software

- ✓ Clou9.io
  - WordPress
  - Online Server and Database
- ✓ Dropbox
- ✓ Citrix
- ✓ Google forms, drive, Gmail
- ✓ Microsoft Word, PowerPoint, Project Paint
- ✓ YouTube
- ✓ Soundcloud









## 2. System

The mobile application is intended to be made available through the Apple app store and Android Play box app store

### 2.1 Requirement

Since the start of the project my project proposal has changes from producing a detail requirement for a personality gift mobile app to producing a requirement towards the development of National college of Ireland mobile application (NCI), providing different elicitation techniques and results that will take place over during the progress of the report

### 2.2 User and Functional Requirement

-  Directory
-  News
-  Campus Events
-  Courses
-  Library/Bookshops
-  Podcast/Videos
-  Employment
-  Maps

## 2.3 User Requirements Definition

User requirements for the proposed system was achieved through a progression of discussions and dialogs with the clients, students and other stakeholders using a variety of elicitation techniques, I have attached necessary detail of requirements requested by the users beneath:

### Profile

- Students, as a user want the ability of a login framework to access content, using allocated username and authentication. The usefulness of this functionality is critical and essential based on the requirement, one account for one user only for security purposes to prevent personal data and loss of Information.
- Students require the college news feed on the mobile app
- Students want the ability to send and receive emails, permitting instant alert or notifications from the student board, lectures, and other stake holders within the college on the portable mobile devices. This requirement will keep the client and users educated of any vital happenings within the college framework amid times when they are away from their Personal Computers (PC) whereby messages are produced after certain activities and the appropriate users are educated of the new information on the device.
- As a user, I want to be able to reset my password should in case I can't remember my old password
- Users wants to able to create, manage, edit, update and delete information on their account using their smartphone devices
- The client wants students to be able get instant alert regarding any changes in the college work structure and activities
- User wants to be able to use the NCI mobile app as a search directory to find information such as names, email, numbers, address etc.
- User want the ability to create, design and manage their profile
- The user wants the capacity to explore and have access to the college services at any time.
- As students, I should be able to check my grades
- A platform for providing lecturer feedback to students
- The clients, wants the mobile app to display a map of the college
- The software application must be easy to understand for example activities should be simple, basic and clear
- The user wants to be able to access the college library and search for books
- The user simply does wants the application to do what's its intended to do and not to be overloaded with too many information
- The user wants the mobile app to provide a video and podcasts of class notes and pre-recorded lectures
- The mobile app most be user friendly

- As a client, I should be able to view other users profile
- User will like to be able to top up their student account using the mobile app
- As a IT Support and maintainer, I want to be able to make adjustment to any users profile
- The client wants new student to be able to utilize the app to find classrooms around the campus
- As a user , student wants to be able to use the map to find free classrooms, especially for final year students

## News

- As a Student, I want to be able subscribe to college RSS news feed and events
- As a User, I should be able to obtain information on my course
- To display information on the canteen food and drinks menu on a daily basis
- As a IT support and maintenance I should be able to prioritise items for students

## Courses and Events

- Course and their specific module Information
- As a user students, I will like the app to display a list of my courses, and upcoming events
- As a student, they would like their profile to produce a list of upcoming schedules and classes such as course time tables, exam time tables curriculum assignment times and assignment deadlines dates
- As a lecturer I should be able to set dates and deadlines for assignments
- As a lecturer I will like to be able to upload files, upload and videos
- User wants to be able to register and pay for college fees on the mobile device

The above recorded necessities will help in prioritizing and fulfilling users' requirement likewise for demonstrating and creating complete user requirement documentation to be handed over to the developer in order to build the software application.

## 2.4 Usability Requirements

This includes all the essential requirement of the software application to function properly to boost and enhance user experience. The following are some of the fundamental usability requirements to be incorporated during the requirements:

**Ease-of-use:** The usability of the proposed system must be very easy to use and navigate for user interface enabling them to interact with the application

**Learnability:** The proposed software application should be developed in a way to improve user learnability and knowledge with access to various course content and documents

**Attractiveness:** The simplicity of the application development is to provide accommodations to suits several user and other stakeholders. Its usability should make it easier to attract

colour blindness users through using different colour coding to distinguish various area of software.

**Operability:** the mobile web application for users should be develop to operate on Microsoft, Apple IOS, software platform that are compatible with smartphone devices to be made available on every phone marketplace for download.

## 2.4 Environmental Requirements

Environment requirement refers to the concerns of user and software application environment which implies those things that needs to be set up to enable the user to have the capacity of utilizing the NCI mobile application successfully. Should in case the environmental requirement is not met, the mobile software application will not work adequately or effectively and the user might not be able to use the mobile app by any means.

The most essential requirements for the mobile software application to function:

- The user must have a mobile device capable of accessing a web application through the phone.
- The mobile device must be capable of connecting to the internet or Wi-Fi preferably higher data transmission.
- An identity number is required by the user to be able to login to the mobile app

The most essential requirements for the mobile device to function:

- The user must have a smartphone powered by Android, Apple IOS or Windows operating system.
- The user must have access to download the app from any of the online app stores such as Android, Apple IOS or Windows store or market place
- Internet connection or network provider data plan on the device must be available.
- The user must have created an account through the college web application to sign in.

## 3. Further Development or Research

I am currently carrying out a literature review on the top used college application functions and features for example the mobile application used at the TEXAS A&M University. The purpose is to compare and see how I can improve, and be innovative using the modern technology when developing the mobile application.



## 4. References

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## 5. Appendix

## 5.1 Project Proposal



# Project Proposal

## Requirements for a Personality Gift Mobile App

BSc (Hons) in Technology Management  
2015/2016

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Specifications: Software systems

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## Objectives

The main purpose of this project is to create a user friendly mobile app based on a personality trait questions, creating a website for end users that takes in a person character or personality traits as inputs and output a potential gifts to buy for them for example Christmas, birthday, wedding, graduations or during special occasion,.

The personality gift mobile app and website will serve as an information gathering database which will allow anyone to visit by providing a detailed unique traits about an individual characteristics or behaviour on who the gift is intended for, by displaying to the consumer the 5 big five factors of identifying an individual personality traits available , together with any other request or inquires of additional features they might want to add on to their loved ones background information as input. The goal of the mobile application is to be able to predict and result of potential gift for the distinct person after processing the data providing a list of suitable gift, and location of where to buy the product, price, including discounted offers etc. depending of amount information that has been provided. The user will be requested to fill in the answer to some questions for example is he/she is very decisive, whether he or she is socially active and easy to get along with, does he/she like surprises

The overall objective of the project is to help consumers make the right judgement when making decision of a gift by suggesting various potential products as gift ideas based on human traits limiting the amount of time, cost and stress of buying the wrong product for the wrong individual.

## Background

The project proposal will explain the meaning of the five personality traits of an individual, find out what people really know about friends, partners, family, and colleges, explain the ways different ways of measuring traits individually and in return produce list of potential gifts for an example wristwatch, books, mobile phones.

The idea of the project came about days after brainstorming, carrying out an online research, and meeting with my project co-ordinator, asking for feedback of class mates and friends on a genuine idea that will interest me or create another opportunity. After days of deliberating, the idea came to me after personal experience of choosing the wrong gift when it comes to buying the right gift for my siblings. The questions that will to be asked on the mobile application may vary testing individuals. Monitoring and controlling every process towards the app development.

## Technical Approach

I will be targeting my stake holders using questionnaire, surveys, focus groups, student organisation board, Face to Face meetings for gathering the necessary requirement to build the mobile application together with decision making analysis to validate requirement for completing the project.

**Special resources required**

(Books, software, equipment etc.)

I've settled on using WordPress because it is user friendly and easy to use when it comes to designing and creating graphics. Joomla is another brilliant website and text editor I may exploit.

I will be using XPSS, w3schools.com for online support and tutorials for creating a website regarding the project.

The book I will be using as a guidance for project will be Business Analysis Body of knowledge (BABOK), Microsoft word to type up the proposal and any relevant document including reports and personal journals, Microsoft project for creating a time line Gantt chart, the use of survey monkey or google drive to create my survey, using twitter and Facebook account to distribute the survey along with my student email address targeting end user. My iPhone 6 will be used in recording some of my interviews, start a journal for recording reports.

**Technical Details**

Implementation language and principal libraries

For this project I will be using Joomla and WordPress even though I don't have knowledge about the open source for managing the progress.

**Evaluation**

I will be testing the website to see if they have meet the requirement I have set out for the project, the website I intend to create is meant to collect an individual information relevant to a personal data such as for example Age, sex, hobbies, gift occasion checking using key word features to see if the data outputs are being displayed correctly

**Consultation**

Proposed Supervisor

I will evaluate the proposed personality mobile app with my assigned mentor Eugene O'Loughlin and one or two academic staff member for support whenever I run into any difficulty or quarries

I will also evaluating the app development myself together with my fellow classmates

Akeem Mulero

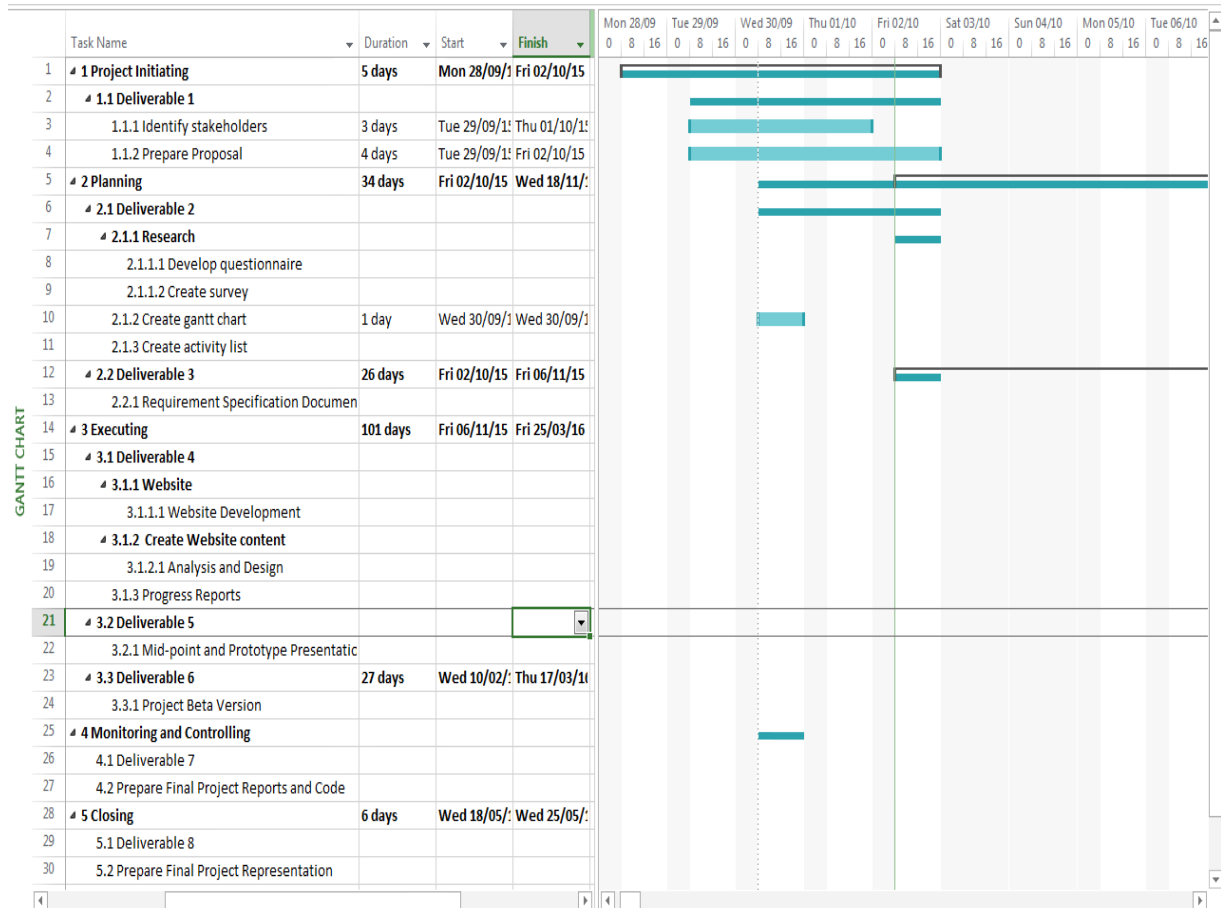
\_\_\_\_\_

Signature of student and date

### 3 5.2 Project Plan

Please find attached project plan document in Zipped folder

Gantt chart using Microsoft Project with details on implementation steps and timelines



5.2 Project Specification

# PROJECT

## Requirements Specification

### NCI Student Mobile App

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BSc (Hons) Technology Management

2015/2016

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## 5.2.1 Introduction

The purpose of this report is to gather information, which includes the necessary requirement using elicitation techniques and discuss the process involved in the development of building a NCI Student mobile app. The app is basically designed for the use of current student only providing with the most up to date information, activity or social event that is currently taking place within the college. Some of the basic functionality of the mobile app includes accepting a student number and login details, in order to display relevant information such as attendance, assessment date, timetables, and alert student with any changes to change of class rooms or cancelled class, newsfeed forum and as also a message director. The mobile app objective is to be used emailing tool through which information can be accessed or exchange between students, lecturers, student unions or any stake holders involved.

## 5.2.2 Project Scope

The idea is to collect requirement needed in the development of the NCI student app project using the IEEE requirement specification document to as a support towards the final year project, it's a standard document use as a guidelines for providing a scope of all the requirement used to assist in the step by step activities process involve in the process to produce, test, measure, market or provide any other information used to assemble the product

I aim is to carry out a detailed requirement specification towards the development of the app by using elicitation requirement and techniques such as brainstorming, document analysis, focus group, observation, requirement workshops etc. interviews etc. and finally give a presentation or showcase my overall findings on the project

## 5.2.3 Business Case and Needs

**Date: 11/08/2015**

**Project Name: NCI Student mobile App**

### **1.0 Introduction/ Background**

For this project I have decided to create a student mobile app, to help keep current student informed with the latest information and activities happening within the college by bringing the campus to the tip of users hand whenever or wherever they are on their personal mobile device

### **2.0 Business Objective**

The objective of this business idea is carryout a requirement elicitation process and technique used in the development of a student mobile app that provide current student with the most up to date information, activity or social event that is currently taking place within the college. Some of the basic functionality of the mobile app includes accepting a student number and login details, in order to display relevant information such as attendance, assessment date, timetables, alert student with any changes to change of class rooms or cancelled class, serve a forum for newsfeed, message director. The NCI mobile app objective is to be used emailing tool through which information can be accessed or exchange between students, lecturers, student unions or any stake holders involved

### **3.0 Current Situation and Problem/Opportunity Statement**

Finding the time to complete different parts of the final Project document and deliverables while working on assignment for other module is proving to be a tough challenge. I have made plans by organizing a timeline for myself to complete certain document e.g. organizing a meeting with my client before the deadline

### **4.0 Critical Assumption and Constraints**

If there are no changes made by my client or supervisor to my best ability and understanding of the project then there are no constraints or critical assumptions.

### **5.0 Analysis of Options and Recommendation**

I was recommended by my supervisor to use Joomla and WordPress as opposed to other internet tools for creating websites as for my personal journal



**6.0 Preliminary Project Requirements**

Personal computer, WordPress, Citrix, Microsoft Office tools, video and voice recording tool e.g. iPhone 6, camera.

**7.0 Budget Estimate and Financial Analysis**

No budget. All finances will be covered by the project sponsor Eugene O'Loughlin

**8.0 Schedule Estimate**

The Schedule Estimate of this project will be approximately 22 weeks.

**9.0 Potential Risks**

Lack of effective communication between my client and other stake holders, Inadequate planning, poorly defined tasks, lack of leadership, poor cost and time management,

## 5.2.4 Stake Holders List

This section contains the list of all stake holders interested in the NCI Students mobile application

- Lecturers
- Mobile developer
- Tester
- Student Union (service board)
- Minister of Education
- IT Support and Maintenance
- Project Manager
- Government
- Student Universal Support Ireland (SUSI)

## 5.3 Monthly Journals

# Reflective Journal

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Student name: Akeem Mulero

Programme (e.g., BSc in Technology Management):

Month: September 2015

### My Achievements

This month, I was able to make a final decision on the idea for my project. I was away on holidays in Belfast with my friends during the summer period so I did not spend enough time thinking about anything specific or chosen topic for my final year project before the 4<sup>th</sup> year semester starts but Since the first week I receive the project introduction brief from my tutor Eamon Nolan I have had sleepless night and days worrying on how to come about the idea for my final year project. At the start I was unable to think of anything because I wasn't so sure if I would be capable of coding or programming to a certain extent but I wanted to challenge myself.

After weeks of research and brainstorming I came up with the idea to develop a mobile application that takes in individual personality traits as input and output a potential gift as a result, the mobile app can be used to suggest gift ideas for several occasions. The idea occur to me after thinking deeply

My contributions to the projects includes, listing out who the main target end user of the mobile app, the information I would like to display on the app. I wrote and completed the project proposal that was due for submission on the 2<sup>nd</sup> of October and also created a work base structure (WBS) for my project plan using Microsoft project which will help me keep control of my deliverables setting the durations.

### Intended Changes

Next month I will start working on my third deliverable which is to gather all the necessary requirements specification details including, contents, functionality by caring out a thorough research. I will be looking at other similar mobile app to see how they were constructed and designed when developing mine

### Supervisor Meetings

Date of Meeting: 30 October 2015

Items discussed: Project, project ideas

## Reflective Journal

---

Student name: Akeem Mulero

Programme (e.g., BSc in Technology Management):

Month: October 2015

### My Achievements

This month, I started working on the third deliverable for my project which is the project specification. I carried out a lot of investigation and look into the process of the best possible way of achieving my goal and put a lot of thinking into the project before making plans in developing a friendly easy personality mobile app during the first week of the month and made some significant changes. I decided not to go with my initial project proposal which is the elicitation requirement in the development of a personality mobile app, but instead to develop a national college of Ireland mobile app used by current student only. The idea came about after arranging a meeting with the student experience co-ordinator Deryck Tormey came up the business idea. I made contact with Deryck because I feel like my original idea wasn't good enough and I don't have enough detail information going into my final year after brainstorming

Deryck agreed to be my client, which I had to discuss the situation first with my tutor Eamon Nolan to give me a final sign off before switching my idea. This month I was also assigned to my supervisor Eugene O'Ologhlin, who is also my programme co-ordinator, I was able to arrange a meeting with him also to discuss my project idea and also get some advice for him on how to improve

My contributions to the projects includes, brainstorming, taking important notes, listing out who the main the main stake holders of NCI student, functionality of the app, planning, organising an interview and recording with Deryck, started working on the deliverable document

### Supervisor Meetings

Date of Meeting: 20 October 2015

Items discussed: Project brief, layout, detailed list of document

Deryck Tormey

Date of Meeting: 4 October 2015

Items discussed: Mobile App requirement and functionality

## Reflective Journal

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Student name: Akeem Mulero

Programme (e.g., BSc in Technology Management):

Month: December 2015

### My Achievements

This month, my progress on the project started slowly because I was too focus on completing and making the deadline date for my other Moodle assignments which where all due around the same time, my final year 1<sup>st</sup> semester exam was also a focal point of distraction because I was too busy collecting notes, studying and preparing for the five exams I have coming up in January.

For the sake of the Final year project I started making plans on how to gather detailed information using a set out of possible requirement techniques for elicitation that will help me achieve my goal in the development of NCI mobile app and website development , using the internet and A Guide to the Business Analysis of body of Knowledge book (BABOK) as a guideline, I was able to follow the step by step procedures when to use when eliciting information such as brainstorming and developing a questionnaire for my stake holders. Using google docs I was able to plan ahead, creating a survey list of questions and make decisions on what sort of question to ask my stake holder in the next coming of weeks, the questions will have to be revealed by my project supervisor before the actual interview meeting takes place in January. My contributions to the projects includes, listing out who the main target end user of the mobile app, the information I would like to display on the app. I wrote and completed the project proposal that was due for submission on the 2<sup>nd</sup> of October and also created a work base structure (WBS) for my project plan using Microsoft project which will help me keep control of my deliverables setting the durations.

### Intended Changes

For Next month I will start working on my forth deliverable which is thee mid-point and prototype presentation

### Supervisor Meetings

I met with my current supervisor Eugene O 'Loughlin three times this month to discuss the progress of my final year project. the lasts meeting was held on the 10<sup>th</sup> of December 2015 we had a discussion on issues such as how elicitation techniques needs to be reviewed, analysed, reports and documented properly using the right tool clearly laying out what activities needs to be done and how to go about it.

Date of Meeting: 8 December 2015

Items discussed: interviews, questionnaires

## Reflective Journal

---

Student name: Akeem Mulero

Programme (e.g., BSc Honours in Technology Management):

Month: January 2016

### My Achievements

This month after the Christmas and New Year holiday break of 2016. I spent my time engaging in different activities and making the most of my spare time while enjoying myself. I started off the year with prayers thanking God for everything he has done for me and seeing me through the year as well as guiding me through my difficult times in 2015.

For the beginning first half of January I was more preoccupied studying for my final year exams which I was a bit worried about didn't really pay too much attention to the final year projects but after the exam period was over I got straight back into it. I commenced by carrying out a couple of research and investigation into the development of the mobile app procedure. Produced a technical report for the NCI mobile app

I created a WordPress account through cloud9.io instead of using wordpress.com to be used as a personal website journal for my final year project where all my requirement elicitation and document will project will be documented and displayed. I was able to set up an online SQL database, added a Cloud server to run the application platform on

### Intended Changes

I intend on making several changes to mid-point PowerPoint presentation document for example adding images, uploading voice notes and results that was taken during elicitation with my client and stakeholder

### Supervisor Meetings

I got in contact and set up a meeting with the school of computing assistant lecturer Sam Cogan, which has been really helpful and patience working alongside with me giving me some guidance and tips on how to develop an effective personal website journal. I also book a meeting with my supervisor Eugene o 'Loughlin twice this month to discuss the list of questionnaire and survey that I have prepared to ask my stakeholders during requirement elicitation

Date of Meeting: 19<sup>th</sup> of January and 2nd of February 2016

Items discussed: interviews, survey, questionnaires, and mid-point presentation

## Reflective Journal

---

Student name: Akeem Mulero

Programme (e.g., BSc in Technology Management):

Month: February 2015

### My Achievements

This month, I successfully continue working on my final year project, I was prepared for my mid-point presentation which took place early February, I have always found it difficult and nerve wrecking for me personally when it comes to face to face confrontation or when doing interviews or in class presentation especially when it's over 30mins long , I made some progress last month by carrying out two requirement techniques as part of my IEEE requirement specification which where benchmarking and Functional Decomposition. I use the elicitation benchmarking technique to investigate the proposed development of the national college of Ireland (NCI) mobile app main competitors looking into both best in practice mobile application features for both international and local such as Texan A&M university TAMU mobile APP and UCD university college of Dublin. I also did a some work on my personal website, added more content and designs to my website trying out different plug-ins and appearance

### Supervisor Meetings

Date of Meeting: 2 February, 3 March 2016

Items discussed: Midpoint Presentation, Techniques

## Reflective Journal

---

Student name: Akeem Mulero

Programme (e.g., BSc in Technology Management):

Month: March 2016

### My Achievements

This month, I had little work done on my final year project reason because I was working on two of my other module assignment, the agile project management and the business process assignment which were both due around the same time and I was also preparing for my final year exams coming in early April

I continued in gathering more information and build on my requirement elicitation techniques for the development of NCI mobile app also did a bit of work and make some adjustment to the overall website development. I met and discuss my project goals with potential stake holders and consulted with my client.

### Intended Changes

For next month I need to be more focused, I will start by working on having a complete final documentation reports for the project deliverable by analysing and reviewing the result of acquired information. I will also be looking on how to create and achieve an appealing final year postal design for my showcase presentation. Finally I will start preparing my final presentation for my completed IEEE requirement for the development of an NCI mobile app

## 6. Requirement Elicitation Techniques

### 6.1 Interviews

#### Overview

An interview is a methodical way for drawing out or producing information from one individual or gathering of stakeholders either in an informal or informal meeting. It's usually performed by companies to ask relevant questions to the person or groups of individuals being interviewed by talking and recording the feedbacks.

#### Questions Example

- To find out what students or main stakeholders biggest challenges
- To understand each stakeholder's expectations from the project?
- To find out what user requirement they will like to be incorporated in the student mobile app development project

#### Purpose

I will be using this technique as an opportunity for the purpose of obtaining answers such as eliciting requirements from each stakeholder by directing relevant questions towards my stakeholders asking open-ended questions

I plan on holding a one on one meeting with my project manager, student and hopefully hold a group meeting with my potential stakeholders list. I will try not to meet numerous individuals together for such a variety of reasons because nobody gets sufficient consideration and the nearness of others frequently constrains what individuals will say. I will be using both structured and unstructured type of interview technique to gather information. The unstructured interview involves setting a predefined set of questions to ask my list of stakeholders e.g. client and the unstructured questions will not involve a predetermined set of questions, whereby the questions will be asked based on participant response, as I have identify at the start of this project. I intend on performing four or more interviews with my stakeholder. The time and location of the interview will be arranged over the period through email or telephone as I progress in my quest of having a completed documentation. The interview phase will be recorded using the latest technology on my mobile device and evaluated

#### Reason

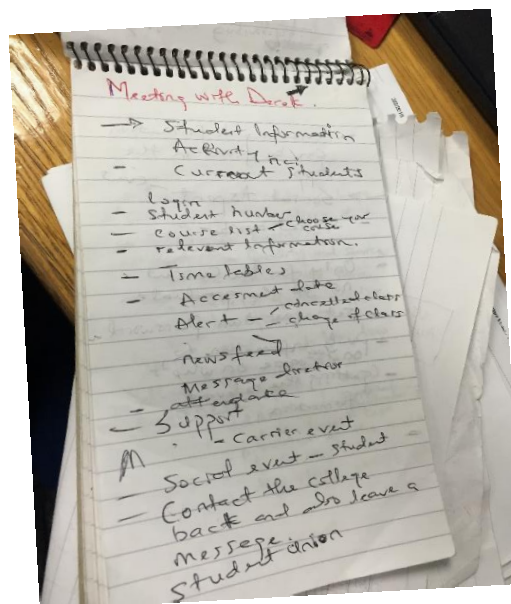
The reason for choosing to use this technique is because it's simple and direct. It allows me to perform a face to face interview contact with my interviewees, it provided me with an opportunity to engage in a question & answer interaction/discussions with the participant. It allows me to have a clear objective and mutual understanding during the interview.



## 1<sup>st</sup> Interview

### Prepare

I prepared by setting a structured interview question with my client Deryck Tormey to gather his requirement, I sent out an email to Deryck to check for his availability while confirming the time and location of the meeting at the same time, on the day of the meeting I decided to record the interview to identify the goals and aim of the project. After the meeting was over I thanked him for taking his time out to participate in the meeting, assuring to be in touch with him again to make appointment in the near future should in case any matter arises. After couple of meetings with my client Deryck Tormey, a voice note and a paper note was used to record the session on occasions. You can find a copy of my note on the right hand side of the page.



The following link below will direct you to an audio recorded interview discussion that took place between me and my client Deryck Tormey uploaded on Sound cloud

<https://soundcloud.com/akeem-mulero/nci-mobile-app/s-KrvmG>

## 2<sup>nd</sup> Interview

I also used the technique to carry out a second interview to collect user requirements, I set a time and location for the meeting with my participant. The meeting this time occurred between me and a class member who is considered to be one of the main stakeholders (Student) of the proposed software development for the college mobile app, the meeting took place in an empty classroom on the 2<sup>nd</sup> floor within the national college of Ireland building. I used an unstructured method of asking question for the interviewee during the interview I was able to observe my fellow classmates non-verbal behaviour. I recorded the interview using my mobile device technology as a tool (iPhone 6), a copy of the interview can be found on the link below which I have uploaded to soundcloud.

<https://soundcloud.com/akeem-mulero/student-users-requirement-interview>

## Issues

The interview techniques was successfully completed, it provides an opportunity for my interviewees to express their opinions and thoughts verbally. The downside of the technique involves planning and organising which was very time consuming, it took me a while to find students who finally agree to participate in one-to-one face interview. I found out in the end that I was lacking experience in conducting an effective interview.

## 6.2 Focus Groups

### Purpose

I plan on using this the technique to elicit a number of students viewpoints, thoughts and requirements to gain some insight knowledge based their attitudes and opinion toward the project development of the student mobile app, the objective is to create an interactive environment among the number of individuals or stake holders of the mobile app.to allow participant to effectively share, communicate, and voice out there, needs, opinion and impressions on the proposed software development.

**Prepare** a focus group Consisting of 6 - 10 current student in national college of Ireland which will be monitored by a moderator, who could possibly be myself or my supervisor Eugene O'Loughlin to facilitates interaction during the session, promote discussion and engage members on the NCI mobile app development for up to an hour in length

Run the focus group using elicitation techniques form to gather requirements

- Traditional focus groups to gather information in the same physical room
- Qualitative research (Analysing of results, reports as themes and perspective)
- online focus group (where members are located remotely through online connections)

**Produce Report:** The focus group documents, comments and discussion will be capture and recorded by the moderator.

### Issues

I encountered problems executing this technique, I was having difficulty in organising groups of students together to conduct a focus group research, setting a date and time where all students are available to take part in data gathering about my project was tough to achieve.

## 6.3 Brainstorming

### Purpose

It used as a problem-solving technique to produce and generate new form of ideas or options between individuals or within a group. It will be as a creative thinking approach for finding some solution to problems towards the development of the proposed system. It aim is to provide possible answer to questions that may arise when gathering information on the requirements of the development of this mobile app

- its intended to provide different type of options or ideas available
- it will help to identify what factor is preventing the group from progressing ahead
- to indicate what the delay could possibly be

## Prepare

The brainstorming preparation process will begin by setting out a clear definition on the objective of the student app is about, determining a time limit to set for all stake holders which could consist of 4- 6 member when they are thinking and putting forward there requirement for the student app, with the help of a facilitator using a set of criteria checklist for evaluating the needed requirements During the brainstorming session I intend to be open minded and take as many ideas down as possible ,not to limit any ideas or requirement from any members, encouraging contribution and participation from all stake holders in the session, clearly recording and take note of all requirement needed toward the development of the app .

An example of a brainstorming section drawn out on a white sheet after booking a meeting with my consultant and project supervisor Eugene O'Loughlin can be found in the appendix and Sam Cogan from the School of computing assisted and gave me extra classes on how to approach the project. The technique proved to be a form of collecting

## 6.4 Survey/Questionnaire

It's a technique used for gathering large amount of information from a variety of different individuals over a short period of time to obtain peoples response or obtain feedbacks. The survey/questionnaire will enable me to ask a numerous structured type of question based on client/user requirement for the proposed development of NCI software mobile application. The method is a very quick and effective way of collecting information for example from students in the universities. Survey/questionnaire will consist of standardised questions directed towards students and other stakeholders of the NCI mobile app, it will enable me to easily analyse and evaluate response scientifically. I was able to use google forms tools to easily create and organised an online standardised survey questions that was approved by my supervisor before the invite for respondents were sent out to students through social media links such as Facebook and twitter, snapchats and emails. It allowed me to collect enormous responses and statistical data from a variety of students For the sake of this project I used a closed ended questionnaire because it is simply clear, straightforward, understandable to people and easy to analyse. The online software tool I have used to assist me in creating and sharing the questionnaire is Google forms. It allowed me to create custom forms, organise, store and analyse feedbacks e.g. Bar charts and Pie Charts. Survey questions can be found in the Appendix

## 6.5 Benchmarking

### Purpose

The reason for using bench marking as part of my elicitation techniques is to compare the strength and weakness of National college of Ireland (NCI) against other colleges. Its competitors such as Dublin Institute of Technology (DIT), Dublin City University (DCU), University college of Dublin (UCD) and other American universities. The basic objective for performing a benchmarking technique is to improve the performance, development and operations of proposed software development of NCI student mobile app to other college's best in practise use of the proposed software development (student mobile app)

Benchmarking is focused on process, operations and strategies. Techniques involves

- Identifying the area to be studied
- Identifying the firms or colleges that are leaders in using student app in the organisation
- Conducting a survey on the chosen colleges to apprehend their best practise
- Organising a visit to one of the colleges
- Developing a project proposal to implement the best practise

### Dublin Institute of Technology (DIT)

The DIT mobile app is a competitor for the proposed software development of the NCI App, it's one of the best in practise app use for campus students around Ireland. The university already has its mobile application up and running providing similar services and idea since September 2010. The app is available for student and users to download through the Apple IOS app store and Android playboy store. The DIT mobile allow student to obtain college events, news and information, get directions on the map features, check their calendar for courses and also view Medias. Students make uses of the app for the following

- News
- Maps
- Email
- Calendar
- Courses
- Media



## University College of Dublin (UCD)

The university mobile application is used by UCD staffs, students and visitors, the software application allow students to stay connected with the college and their education through personal owned mobile/smart phones devices. The app is available, free to download to all students at a free cost. It provides a large number of services, offering real time information and updates on the go. Students benefits from the app by using the campus latest news, obtain course information notice board directory, events and maps features. Updates on current event taking place within the college, sports, lectures voice notes etc. it can be use by university students from various programme backgrounds



## Texas A&M University

The Texas A&M America university offer one of the best mobile applications for college student worldwide it has almost everything a university could ever ask for in the palm of their hands. The application provides different variety of information and services to student about the university with top class reviews by students, lecturers etc. This include

- Directory
- Athletics
- News
- Maps
- Events
- Bus Schedules
- Courses



The Texas A&M university mobile app allows student to search the university directory services using advanced filter when searching contacts for a particular course or module, timetables maps to easily find location around the campus. Athletics purpose for receiving sport news, scores on football, schedules, university galleries and dinning events. News, articles at just one tap of the finger tips. It solves the problem for students frequently checking the website for results, the app notify students when there grade is available. TAMU mobile Apps are available for the iPhone

, Android and Blackberry

### **AU Campus Connect**

The AU Campus connects mobile software application was developed through business enterprise collaboration with other organisation such as the Rave Wireless and Sprint for students at the American University in Washington DC to offer individuals all the whole things the universities has to offer, The mobile app provides students with information wherever or whenever they are needed, encouraging a risk-free and safeguarded community for the users. It permits students to acquire discount package for customised phone plans, it provide information such as news, social media, Events calendar, library, campus map, faculty/ staff search, campus store, email, class schedules, Dinning , academic calendar, Athletics, student AU portal account , bus tracker , updates of course work status`. The application allow students to enrol themselves in a variety of courses they choose or subscribed to, student can check for their class prospectus and grades, it provides a platform forum where university student can interact and engage in classroom conversations, read, check and send messages or emails posted by lecturers or the student board .

### **Duke Mobile**

Duke Mobile app belongs to the Duke University. It provides users with the most recent up to date data about the Duke University anywhere they are. It provides new students together with their families with a quick access to orientation information for upcoming occasions

The Duke Mobile Features

- Directory: users can use the app function to find students, lectures, staffs and contacts with the college store within a few taps, and also make use of the email or telephone facilities to contact desirable individuals
- Maps: to guide and direct users to locate buildings while utilizing the multi-touch interface
- Athletics and Transport : check the sports news, schedules, last minutes scores, and book transport vans

- Social Media: it allow users to get updated news feed through the Facebook, Instagram and Twitter created account called Duke channel
- Places: capable of allowing user to find opening times of the universities most loved eating venue, Duke Card workplaces, Duke Gardens and different areas of the university
- Courses and Events: it provide a quick access entrance for student Course and Course Catalogues
- E-print: to help users locate and find all printing stations within the university print network

Performing a benchmarking technique on other colleges against national college of Ireland was very time consuming. It involves carrying out several research on both American and local universities mobile app, understanding how the students service solution that has been provided from using the technology to help me identify areas on the proposed software development which needed improvement so as to generate and present a complete advantage for users on the NCI mobile app

## 6.6 Requirement Workshop

A technique used in an organised way to capture requirements for this type of requirement workshop, it an effective way to distribute high value requirement such as the scope, rank , determine and outline and reach an agreement on requirement quickly.

The purpose of using this technique is because of its successful productivity rate to ensure active communication, trust and clear understanding between all the stake holders or members present at the workshop. It will be monitored by a neutral facilitator or team member, the approach will be documented and recorded

## 6.7 Stakeholder list, Map and Personas

High

<b>Importance</b>	<b>Protect</b> This group will require special initiative to protect their interests	<b>Good Relation</b> A close and good working relationship must be established with this group
	<b>Low Priority</b> May have some involvement, But relatively low priority	<b>Monitor</b> This group may be a source of risks, and will require careful monitoring and management

Low

**Influence**

High

<b>Importance</b>	S10  S6 S1	S2 S3 S4 S11 S8
	S5 S12 S9	S12 S7 S5

Low

**Influence**



Lecturers	S1
Mobile Developer	S2
Tester	S3
Student Union (Service board)	S4
Minister for Education	S5
Project Manager	S6
Data Analyst	S7
Finance Department	S8
Government	S9
Students	S10
IT Support	S11
Student Universal Support Ireland (Susi)	S12

The Important/Influence matrix above is a stakeholder map that gives us an idea of the type of relationship I will have with each stakeholder based on the importance or the power they have on the project and how much they can influence the project. The matrix gives each stakeholder either high or low importance and influence and then maps the level of stakeholder influence against the level of stakeholder interest. For example, if a stakeholder has a high level of importance as well as a high level of influence on a project, the matrix will identify which stakeholder I should have a close and good working relationship with this stakeholder.

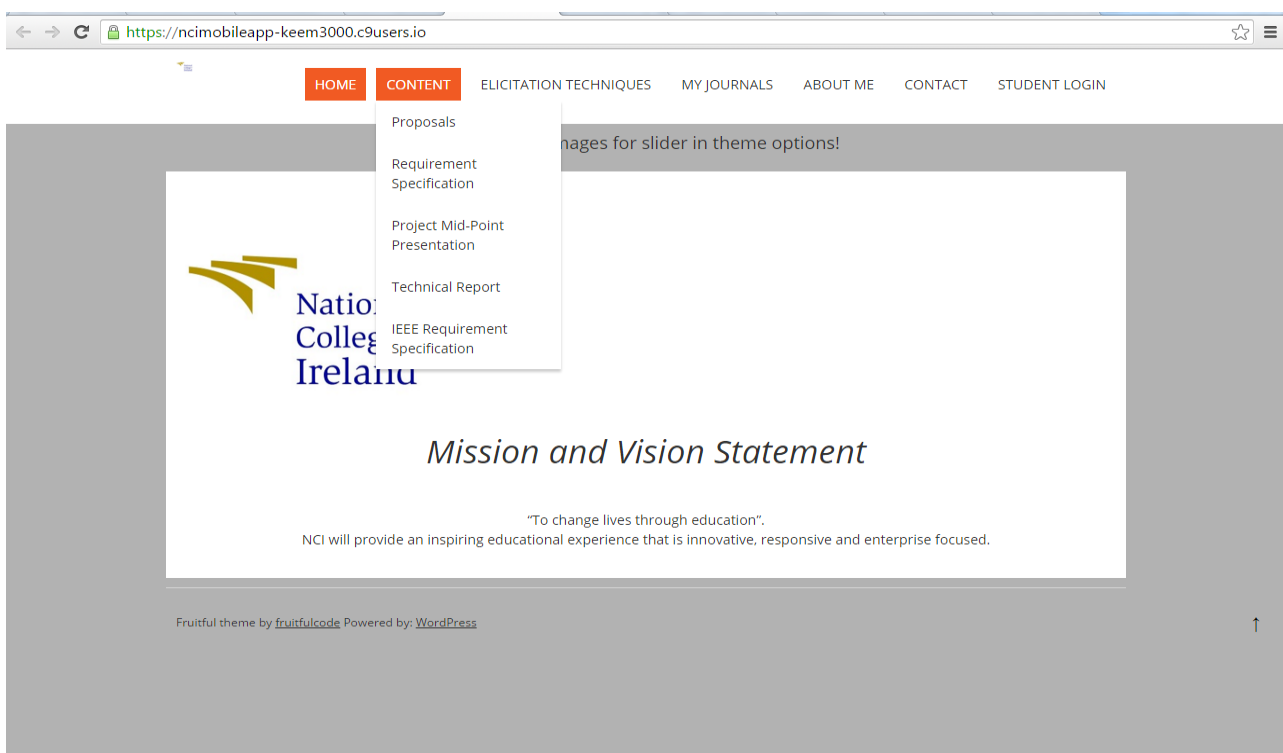
## 6.8 Documents Analysis

Document analysis will be used to gather requirements by studying relevant materials and reviewing existing documents with similar existing solutions and finding out related information in developing a student mobile app project. The document may consist of data from literature reviews, library resources, attributes and business plans, it involves researching for articles online, documentation, recording and evaluating my findings of current existing mobile application use by other universities or development guidelines that could provide an opportunity for change in the new development of NCI student app. The information gathered from carrying out this elicitation technique was used to validate and verify and other techniques used to collect user requirements. It will support in reporting gaps of missing information throughout the development process of the proposed software.

## 6.9 Prototype

Concept involves designing and developing an early user interface product for interested users of the student mobile app model or sample to test and validate requirements needs of stakeholders towards the final completed product visually identifying the system functionally. I have developed a prototype for my website project using WordPress on Cloud9.

The image below is a screenshot of my personal website I'm developing through Cloud9.io using WordPress.org.



The Prototype example above will enable me to rapidly display and demonstrate my findings on my website journal, it helps to illustrate and provide a walkthrough framework consisting of documents, designs, requirements and collected reports towards the research and development of the national college of Ireland mobile application for a developer or any other stakeholders that could possibly be interested. It is simply used to provide an insight or overview of information that has been collected from users through a variety of elicitation techniques such as benchmarking etc. Prototyping guarantees that the arrangement of the proposed development does what it should do and not what the developer supposes it should do, or how it should be done. The reason for using a prototype technique is to eradicate any doubts or uncertainties of user's requirements and help improve the functionality of the intended software application on the website. Prototyping involves an iterative process used for identifying early setbacks, difficulty and problems. The following link will direct you to my personal journal website where the progress of my project is being recorded <https://ncimobileapp-keem3000.c9users.io/>

## 6.10 Observation

The technique is one of the most common direct methods of gathering information by closely paying attention, studying, monitoring and observing human behaviour. It will assist in improving exactness of the research results. It will be used for carrying out research on individuals and other stakeholders environment on how they response to users requirement for the proposed software development which will enable me to collect information accurately. The technique is a reliable source of reporting and recording document visually through verbal understanding of response for example their reaction and body language.

I started the observation by planning ahead on who I am going to be observing in this case was my classmate Leah Weston. I explained to my participant the reason behind the observation and why it was being conducted. During the process of the observation technique I maintained eye contact with the participant while taking notes and watching various activity that was been performed, finally I intend on documenting my findings

## 6.11 Functional Specification

### **Purpose**

The Purpose behind this report is to analyse the functional and non-Functional necessities of user's requirement towards the development and continuously improvement of the NCI mobile App which is very important. The details provided will be based on the functional requirement specification that can be found on the portable device of the mobile applications. The potential users of the software development of the application are third level student at national college of Ireland.

### **Functional Requirements**

The intended mobile application 4 major functional requirements that will cause the most impact of the system to the users. The functional requirements are listed below:

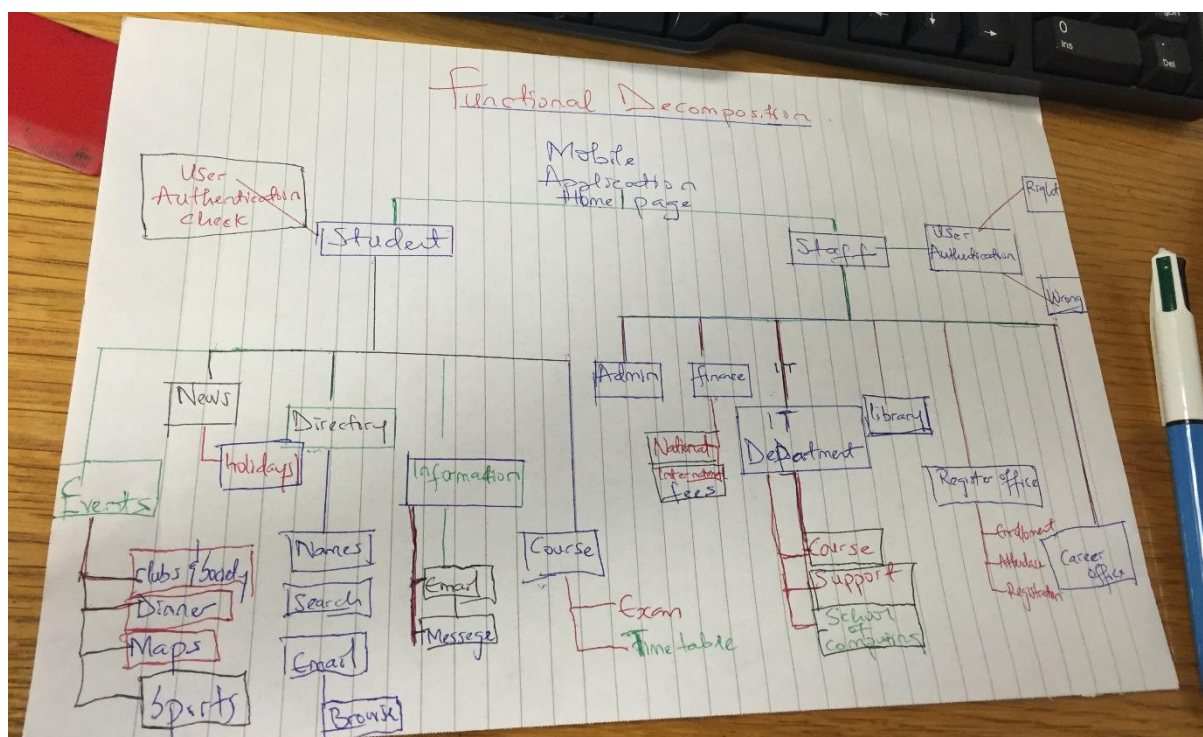
- ✓ Personal student login account
- ✓ Manage files/documents
- ✓ Real time update and alert of college activities
- ✓ Obtain and Read documents

This section lists the functional requirements in ranked order. The functional requirements will define how the Student mobile app will function

1. Student/staff login
2. Home page
3. Attendance content
4. Email content
5. Timetable content
6. News Forum content
7. Event content
8. Podcast and Video
9. Campus Map
10. About the college
11. Terms and condition
12. NCI privacy

## 6.12 Functional Decomposition

Functional decomposition can be described as a process of breaking down large complex process or functional areas of a system into smaller and simple parts so that they can be easily analysed. It involves scaling down and grouping of related components together. It provides business analysts the ability to verify and validate results that will eventually be used to solve other tasks. A range of different diagramming techniques are usually used to denote functional decomposition. For the sake of this project I will be using a flow diagram to represent the process of activities on the mobile application



The Image above shows a Function decomposition of NCI Mobile app complex process that has been carefully broken down into smaller parts.

## 6.13 MoSCoW Analysis

Moscow analysis is one of the easiest method and most common technique used by Business Analysts for prioritizing requirement. It will assist in reaching a mutual or common understanding between the developers and the stakeholders of the proposed software application. MoSCoW analyses are usually performed to ensure the most important requirement from stakeholders are ranked or placed in order of development of each requirement. MoSCoW analysis can be explained as the following below

### **M: Must**

Must Requirement are usually considered as mandatory and non-negotiable for the project to succeed, the software development project is subject to failure if this requirements are not met to an agreed satisfaction. Prioritization is mainly for high requirement

### **S: Should**

This requirement should be implemented to the software development if it can be possible at all, they are the next high requirement after the must requirement

### **C: Could**

These are the desirable requirement that will nice or charming to have by the stakeholders, not necessarily important but would be pleasant to have if there is time, capacity, resources or budget available to implement this requirement

### **W: Won't**

They are the requirement that has been agreed that won't be included before the pre-arranged release but will be implemented at a future time or updated version of the product

### **MoSCoW Analysis for Proposed Software Development (NCI Mobile App)**

	<b>Requirements</b>	<b>MoSCoW</b>
<b>A</b>	User can only log in to the software app using registered assigned number and password	<b>Must</b>
<b>B</b>	User must have a smartphone or mobile device using Android, Apple IOS or Windows software platform with the capacity of accessing the internet	<b>Must</b>

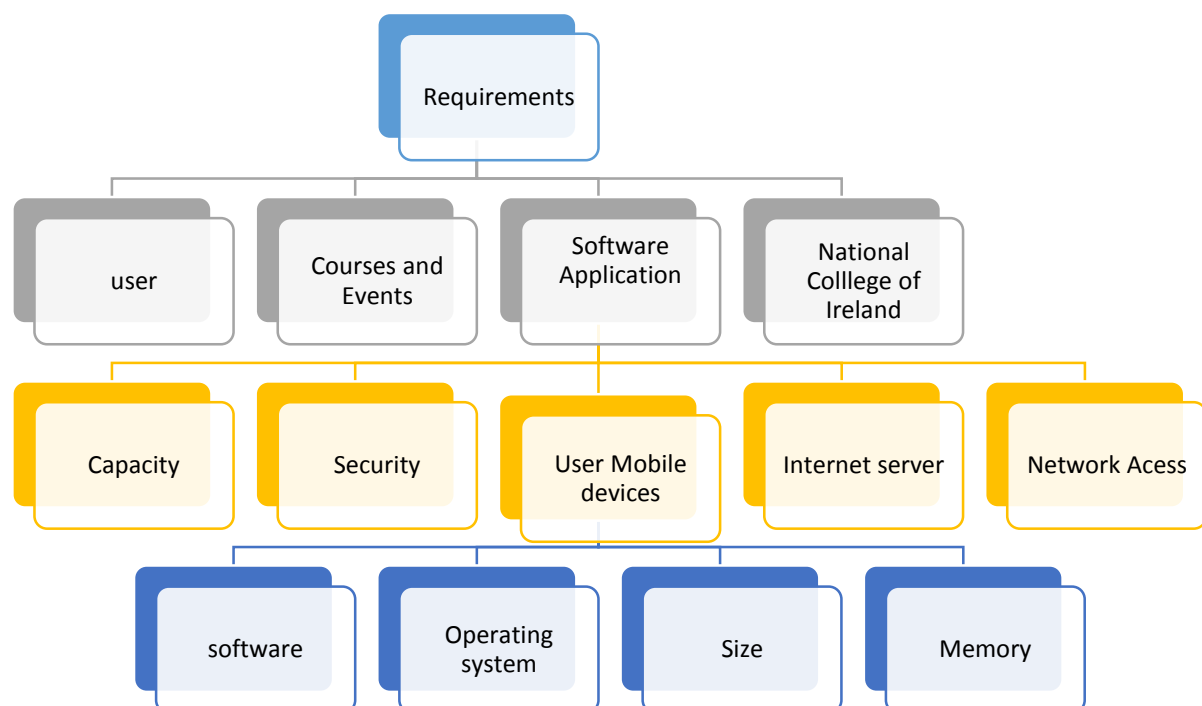
<b>C</b>	User wants the ability to send and receive emails, with instant alert or notifications on their portable devices. They should be able to view chosen courses with specific modules details. Students should be able to obtain or download files through the mobile app and save documents on the device to be used during offline hours. Information, news and changes regarding their course work for example if a class has been cancelled should be alert the users on the device.	<b>Should</b>
<b>D</b>	User must be able to reset password and update account details	<b>Must</b>
<b>E</b>	Users can top up their student account or pay for tuition fees from their portable devices	<b>Won't</b>
<b>F</b>	Users can request for support on their account concerning any difficulty that may occur on the mobile device	<b>Could</b>
<b>G</b>	The user wants the mobile app to provide a video and podcasts of class notes and pre-recorded lectures	<b>Won't</b>
<b>H</b>	Students require the college RSS news feed , events on the mobile app	<b>Should</b>
<b>I</b>	The mobile app must be available, reliable and user friendly for everyday use	<b>Must</b>
<b>J</b>	The client wants students to be able get instant alert regarding any changes in the college work structure and activities	<b>Must</b>
<b>K</b>	User wants to be able to use the NCI mobile app as	<b>Should</b>

	a search directory to find information such as names, email, numbers, address etc.	
--	--	--

The Moscow analysis above contains six requirements that has been prioritise for users for the proposed software application development. The results shows that requirement A, B, J, I and D are high importance requirement which must be fulfilled to satisfied both client and user requirement, requirement C ,K are also high priority requirement which should be executed well if accessible while requirement D will be charming or desirable to have when the capacity for it becomes available and finally requirement E and G are considered to be at the bottom of the priority list because they are not reckon to be as important other requirement but can be contained within the latest updated version of the software product.

## 6.14 Organise Requirements

The purpose of using this technique is to categorise/structure a complete wide range of user requirement document and create an arrangement of perspectives that will be understood by all stakeholders for the proposed software development based on views of their relations and dependencies.





## Numbered List for Proposed System Features

### 3.0 User Mobile Device

#### 3.1 Operating System

##### 3.1.1 Personal Mobile device/Smartphones

###### 3.1.1.1 Windows

###### 3.1.1.2 Android

###### 3.1.1.3 Mac OS or later

##### 3.1.2 iPad series / Tablets

##### 3.1.3 Personal computers

#### 3.2 Software

##### 3.2.1 Web browser software

###### 3.2.1.1 Google Chrome later version

###### 3.2.1.2 Safari

###### 3.2.1.3 Mozilla Firefox

###### 3.2.1.4 Internet Explorer

##### 3.2.2 Microsoft Office Application

###### 3.2.2.1 Word

###### 3.2.2.2 PowerPoint

###### 3.2.2.3 Excel

###### 3.2.2.4 Project

#### 3.3 Memory

#### 3.4 Size

The numbers list for the proposed system requirements above has been carefully organized by using a simple text base requirement model so that it can be easily understood by every stakeholders interested in the software development project. The numbered list will assist in tracing back each requirement.

## 6.15 Non-Functional Requirements Analysis

### **Availability Requirement**

The mobile app is required to be constantly available with minimal server downtimes. Information is expected to be available 24hours every day, 7 days a week as it will be using the cloud to store its data. The mobile phone application must be available in the Apple store, Androids and Windows app market place where by it is readily available for downloads by users.

**Response time and Performance Requirement**

The mobile application response time and performance is one of the key requirements for this application framework to succeed. Providing live updates and instant information, right at the fingertips of users convenient mobile phone It keeps the users more involved while using the application on the move, due to the mobility of the device in nature, the users require instant access to files and documents stored on the cloud. The mobile app should be able to decrease file downloads and waiting times. Maximum performance can be achieved with a high speed Wi-Fi internet connection.

**Recover Requirement**

The mobile software is expected to recover from any disruption, bug or error preventing the application from loading which may have arisen through the network or on the user device in such that the issue can be resolved when accessed through another device or re-installed. It should allow student work to be saved and sync automatically online to a save location when having difficulty such as problem with the operating device or connection with the internet

**Robustness Requirement**

The NCI mobile app should be developed using recent technology innovations and latest cutting edge mobile system to improve the robustness of the software to perform well under unexpected conditions. The cloud technology being utilized for the storage will also provide an extra layer for robustness which means that the stored documents and user details will always be available and accessible.

**Reliability and Security Requirement**

The user information and personal details such as name, age, email, fees, results etc. should be stored in a secured remote area and not saved on the software system or device. A secured good place will be the cloud storage

**Mobile Requirement**

The mobile application should be able to satisfy all user requirement mobility functions, versatility and portability needs. It should provide on-the-go information and encourage learning education for users

**Extendibility Requirement**

The mobile application should be developed in a way that it can extendable to include different varying stakeholders requirement on the mobile platforms availing the current website services and making use of additional features being incorporated into the client applications.

## 7. Literature Review

### 1. **Apps Move up on Campus: Colleges' mobile apps become more robust, incorporating campus information and safety alerts**

A wide range of colleges, universities and campus are now using mobile apps to create the next generation level for students who depend on their smartphones to do almost everything on college owned mobile platforms, from looking up their grades, to using the app for checking their laundry in larger universities. According to Amp Boyd the Texas state mobile app project manager "Everything seems to be going mobile, and if you don't have that, you're really falling behind the times,"

Majority of college mobile developers are facing fast and continuous rapid challenges from student demanding a flexible mobile app that will enable them to pay for their meals using their smartphones that also permits them to join online discussion board exchanging messages. **Emergency** function is one of the progressing and growing features on college mobile apps that will enable officials to send out alerts to their desire universities, providing an alternative safety button that link students with crimes authorities e.g. college or city Police and other emergencies

University of Alberta use the emergency function on the mobile app to create awareness of emergency and weather changes by sending alert or push notifications to any individual who has chosen to receive the information on their mobile device. They assume sending push notices is quicker than sending instant messages to 40,000 students because it takes just under 10 minutes to send 44,000 push warnings than an hour and a half to convey 18,000 instant messages. They are becoming part of a learning process because an average student spent at least 3.6 hours a day on their smartphones.

### 2. **Efficiency in Motion: How Mobile Apps Are Changing the College Campus**

The Clemson and Ohio state university use orientation guide app feature on mobile devices to help welcome new students to the universities. The application helps the college reduce cost, number and size of handing out information on orientation guides to new student. The app is continuous improving development with the aim that students that it will allow student and their family members obtain a decreased sized book, the app allows wanted information to be retrieved through links to the college website on the smartphones increasing downtimes on orientation tours. According to Stephen fisher, web and mobile director the mobile app empowers students to get access to all context information from college news, schedules and timetables, track down bus times, to checking the amount of cash they have left over for meal plans to grades explanation all through the semester at whatever place the information is needed, the Ohio state app permit student to quickly fill and complete assessment within the last couple of minutes of class

### **3. College Professors Create Mobile Apps for students**

Now that technology companies and textbooks business enterprise has submerged the education environment, few university teachers are developing their own custom-built application for specific courses to involve students supporting them with their day to day educational lives. A New York University's Stern School of Business professor Aswath Damodaran joins forces with Anant sundaram a lecturer at Dartmouth College's Tuck School of Business to create a value mobile app for students in the business when they deliberated on writing a textbook. The objective was to assist students convert from consumers of the materials into content creators according to visconsi. The mobile app provides students with a touch of feeling or something in their hand which they can have instantaneous direct access to instead of being part of a long queue of students waiting to get access to textbooks. It support in delivering instructions during class, encouraging a collaborative working atmosphere facilitating learning

### **4. Mobile apps giving disabled students more academic independence**

Mobile application such as Be My Eyes apps is helping students with disability to create suitable and appropriate way of learning on a daily basis with live video connections among individuals who have a lessened visualisation to normal sighted individuals. The software application acts as a set of paired eyes called helpers within the universities, by tapping a button on the mobile app, students with visual disability can get help from anyone nearby willing to help regarding any problems such as help finding & translating a book, support with laundries etc. all with a tap of a button. According to the mobile developer Hans Jorgen Wiberg about 11,500 sightless people and 129,000 helpers listed on the Be My Eyes the software application has been incredibly successful.

### **5. The App Impasse: College Students Love Apps, but Should Colleges Invest?**

Universities lecturer doesn't really have to train students when introducing educational activities to student on the mobile devices. Recent survey carried out at the Purdue University among over 1500 students on mobile device usage before introducing EDUCASE mobile app to student shows that almost 85% of university student already owns a smartphone which they considered themselves as being intermediate or advanced users. The bring-your-own-device (BYOD) programs during class lectures are evolving and growing not to mention without the permission of the universities. The use of mobile apps provide the simplest ease of use platform for students to avail of services such as collaboration and communication tools e.g. emails, and learning management systems for getting information across to enhance college educational experience. Mobile is the future way of learning

## 8. Project Meetings

For this project I intend on booking several meeting with key stakeholder such as my client, project manager, and supervisors occasionally. I have attended a both group meeting and one- one meeting with my supervisor engaging in interactive discussion towards the progress deliverable

## 9. Project Showcase

A final year showcase of the project containing a completed documentation of user requirement specification will be presented after the end of the second semester. On May 25<sup>TH</sup> to be specific

## 10. Results Evaluation

This section evaluates the 73 results gathered from the Survey/questionnaire that has been completed by students on the proposed software development of the NCI mobile app, with the help of google docs, I was able to use google forms tools to easily create and organised a standardised survey questions online, approved by my supervisor before the invite for respondents were sent out to students through social media links such as Facebook and twitter, snapchats, messages and emails. It allows me to collect large responses and statistical data from a variety of students at their own convenient time. The information collected was carefully reviewed, translated and assembled together for a more detailed user general requirement effectiveness of the mobile software development. The study was utilized to survey the considerations, thoughts and sentiments of students and other stakeholders towards the proposed development. The questions asked test the client's considerations and feelings on the new mobile application

### Question 1: What is your gender?

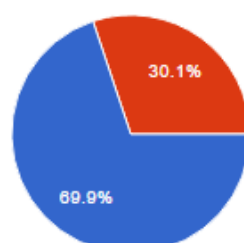
The question was asked to identify the sex of the 73 student respondent to understand whether they male or female taking the survey without revealing anyone true identity. Identifying people gender could provide an understanding on how majority of either sex think alike or understand the reason for user feedback on the questions being asked before evaluation.

## 73 responses

[View all responses](#)

### Summary

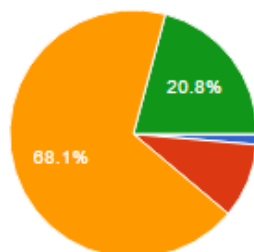
What is your gender?



Male	51	69.9%
Female	22	30.1%

## Question 2: Which of the following age brackets do you belong to?

Which of the following age brackets do you belong to?



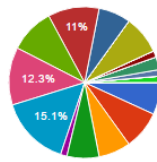
Under 18	1	1.4%
18 -20	7	9.6%
21 -24	49	67.1%
25 - 35	15	20.5%
40+	0	0%

The reason why I ask this question from participant is to understand and gain insightful information based on the different age categories that has been specifically chosen by me in the questionnaire. The categories range from under 0-18 to over 40 plus and above in order to know recipients user demographics, using google forms I was able to provide participants a checkbox list of 5 options so they can easily choose their age brackets . According to the results 67.1% majority of the people surveyed are between the age group of 21-24, 20.5% are between the age group of 25-35, 9.6% are between the age gaps of 18 -20. This means most of the people surveyed are young adults who already have knowledge on the benefit of using apps on their smart phones

## Question 3: What course are you studying?

This question was asked particularly to know what the user is studying and to identify the most common courses being studied by people at the national college of Ireland so as to match prioritize user's requirement accordingly from the highest to the lowest. Among the 73 participant that took their time in taking part in my survey, the top three highest courses being studied by the surveyed students is BA Honours in Psychology with 11.5%, BA Honours in computing with 12.3%, followed by BSc Honours in technology management with 11%.

What course are you studying?

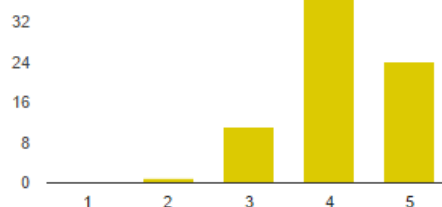


BA (Honours) in Accounting and Finance	5	6.8%
BA (Honours) in Business	6	8.2%
BA (Honours) in Human Resource Management	5	6.8%
BA (Honours) in Marketing Practice	5	6.8%
BA (Hons) Psychology - Evening	1	1.4%
Bachelor of Arts (Hons) Psychology	11	15.1%
BSc (Honours) in Computing	9	12.3%
BSc (Hons) in Business Information Systems	7	9.6%
BSc (Hons) in Technology Management	8	11%
Higher Certificate in Business	5	6.8%
Higher Certificate in Science in Business Computing	0	0%
Higher Certificate in Science in Computing Applications and Business Support	0	0%
MA in Human Resource Management	6	8.2%
MSc by Research	0	0%
MSc Entrepreneurship	0	0%
MSc in Cloud Computing	1	1.4%
MSc in Data Analytics - full time	0	0%
MSc in Finance	2	2.7%
MSc in International Business	1	1.4%
Msc in Management	0	0%
MSc in Marketing - full time	0	0%
MSc in Mobile Technologies	1	1.4%
MSc in Web Technologies	0	0%
MSc International Business - part time	0	0%

### Question 4: How would you rate the new mobile application idea?

The questionnaire/survey results brought to light many factors from users and other stakeholder’s reaction when evaluating the development of the application. Out of the 73 students surveyed 50.7% liked the NCI mobile application idea of the mobile application with a rating of 4 out of 5, 32.9% like the idea a lot and rated the proposed software idea 5 out of 5 . 15.1% of the student surveyed average the result and 0 % of users against the idea. This results show a wide range majority of users are excited and are in favour of the new application

How much do you like the NCI mobile application idea?



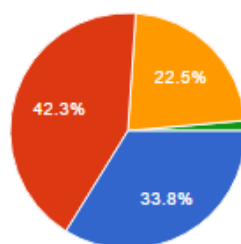
Do not like: 1	0	0%
2	1	1.4%
3	11	15.1%
4	37	50.7%
Like a lot: 5	24	32.9%



### Question 5: What software platform does your mobile device run on?

The question was asked to find out what the most popular software platform used by students on their personal smartphones or mobile device out a provided list of common options so that the new mobile application can be compatibly built and tested during the software development process, to ensure it will successfully run on selected mobile application platforms. From the 73 respondents who took part in the survey the most common platforms were the Apple IOS and Android platform. 33.8% of potential users such as students have apple IOS software platform, 42.3% use the android platform and finally 22.5% of students use the windows platform. Therefore I will recommend the software developer to focus on making sure the application is available on the 3 platforms (Apple IOS, Windows, and Android) likewise made available for download to students at the appropriate stores for the project to be successfully accomplished

What software platform does your mobile device run on?



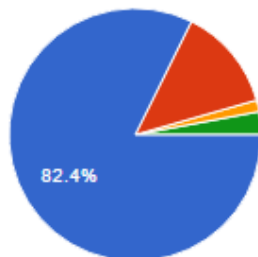
iOS	24	33.8%
Android	30	42.3%
Windows	16	22.5%
Other	1	1.4%

### Question 6:

#### How often do you think you will use the mobile application services?

The question was an extremely important aspect towards the application development in order to gauge the speed, efficient and responsiveness into the development of the new application. Out of the 73 respondents about 81.2% of students or users surveyed recon they will use the application on their mobile device almost every day and 13% of the people said once a week and 2% will either use it monthly or never. The results shows that the NCI mobile app must be reliable and available to access every day to carryout student task and use if it functionality on a daily basis

**How often do you think you will use the mobile application services?**



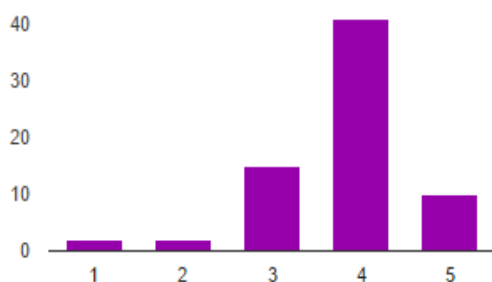
Everyday	56	81.2%
Once a Week	9	13%
Monthly	1	1.4%
Never	2	2.9%

**Question 7:**

**How do you feel about the mobile application confined to NCI student only?**

The reason for the question is to examine the stakeholders’ preference especially for students to understand whether they would strictly like the mobile app to be confined to just NCI student only or to other stake holders such as lecturers, the student union etc. Out of the 70 respondents the results shows about 58.6%% of the people surveyed rated the proposed development 4 which means they strongly approve to the mobile app being confined to student only, 14.3% strongly approve with an average of 21.4% of students undecided or don’t mind the app being confined to student only. Base on the my this result I will recommend the application to be confined to student only

**How do you feel about the mobile application confined to NCI student only?**



Strongly Disapprove: 1	2	2.9%
2	2	2.9%
3	15	21.4%
4	41	58.6%
Strongly Approve: 5	10	14.3%

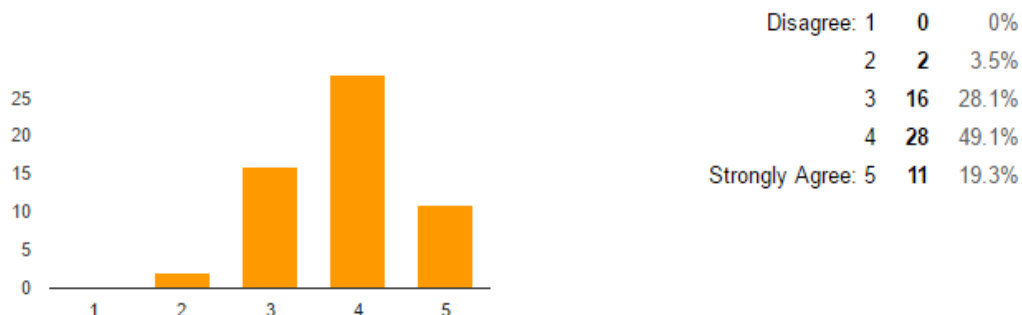
**Question 8:**

**“How do you feel about social media links being included in the NCI app?”**

The question was asked to determine whether adding a social media link to the National College of Ireland mobile app will benefit students in advance, encouraging and enabling people to collaborate more effectively together so that the features can be incorporated

during the software development process or have a downside on their education, distracting users from concentrating on their college work. 49.1% of students with a rating of 4 strongly agree with social media links contained within app. 28.1% neither disagree nor agree with the idea rating the question a 3, 19.3% of people surveyed strongly agree with the social media link being added

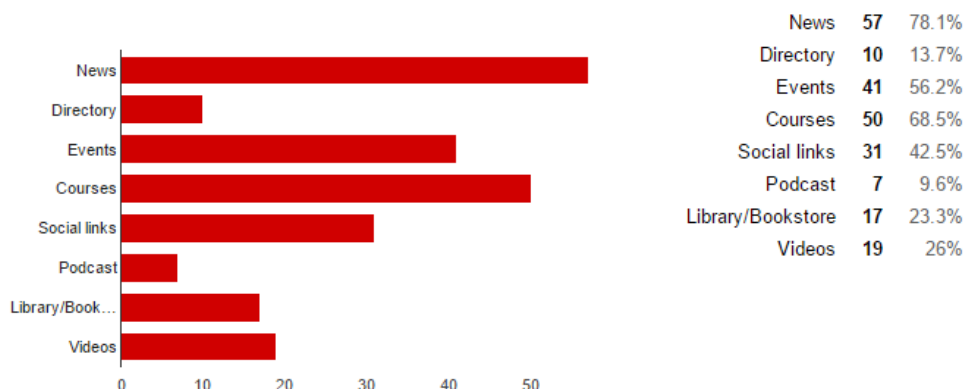
**How do you feel about social media links being included in the NCI app?**



**Question 8: The following are list of NCI mobile Application Features**

The question was asked for the purpose of finding out what the most important features or service users will like to avail on the mobile app. Participants were asked to select their top three features from a provided list of functionality. The news function was rated the most important according to my results with 78.1%, 68.5% for courses, and 56.2% for events followed by 42.5% for social links. This means that students must be able to obtain and access instant information any news that may apply to them, obtain course information using the mobile app etc.

**The following are list of NCI mobile application features**



**Question 9:****Have you any suggestions for item to be included in The NCI app?**

The main motive behind this question is to ask students to leave or write any comment under the message box section for a user requirement that want to be considered or un noticed in the development For example it could be a functional requirement, curious questions, or suggestion they are possibly willing to share for future better performance.

## 11. Conclusion

The NCI student mobile application will help lecturers keep in touch with students and enhance college experience for both new and existing students in the college, the application is intended to assist student in their learning ability making college lives much easier and most significantly improving the way student get access to information by providing a convenient platform where all information can be accessed whenever they want outside the classrooms or away from their personal computers . The new proposed software will be develop to provide some key advantage to user to both users and stake holders environment

Since the future of learning is mobile, the new proposed software application has potential room for improvement and opportunities to grow becoming a vital useful tool for all students throughout their entire course year in national college of Ireland. It will save the college time, reduce cost and reduce recycling waste such as the volume of carbon emission on printing documents.

## 12. References

### Literature Review

- 1<sup>st</sup> source

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- 3<sup>rd</sup> Source

Lytle, Ryan. "College Professors Create Mobile Apps For Students". *US News & World Report*. N.p., 2012. Web. Available at: <http://www.usnews.com/education/best-colleges/articles/2012/10/26/college-professors-create-mobile-apps-for-student>, 28 Apr. 2016.

- 4<sup>th</sup> Source

Castillo, Walbert. "Mobile Apps Giving Disabled Students More Academic Independence". *USA TODAY College*. N.p., 2015. Web Available at: <http://college.usatoday.com/2015/02/13/mobile-apps-giving-disabled-students-more-academic-independence/>, 28 Apr. 2016.

- 5<sup>th</sup> source

Daly, Jimmy. "The App Impasse: College Students Love Apps, But Should Colleges Invest?". *EdTech*. N.p., Available at: <http://www.edtechmagazine.com/higher/article/2013/07/app-impasse-college-students-love-apps-should-colleges-invest> 2016. Web. 30 Apr. 2016.

- "Ecampus - Learning Management System | Texas A&M University - Mobile". *Ecampus.tamu.edu*. N.p., 2016. Web. 6 May 2016.
- *A Guide to Business Analysis Body of Knowledge (BABOK Guide) version 2.0 (2009)*. international institute of business Analysis
- O'Loughlin, E (2009) *An Introduction to Business Systems Analysis*. 3<sup>rd</sup> ed. Dublin: The Liffey Press
- University, Texas and Texas University. "Texas A&M University On The App Store". *App Store*. N.p., 2016. Web. 6 May 2016.

## 13. Other Materials Used

# National College of Ireland Student Mobile Application Survey

Hello, my name is Akeem Mulero and I'm currently a final year student at national college of Ireland studying BSc Honours in Technology Management. As part of my undergraduate degree, I am carrying out a research towards the requirement in the development of a mobile application for national college of Ireland (NCI). The purpose is to gather an IEEE requirement specification for a proposed development of building a collective one for all NCI mobile application for student use only, implementing both existing and introducing new unique functionality for users .you are invited to take part in this survey. If you could please spare a few minutes to complete this survey, Thanks for your time and participation.

**\*Required**

**What is your gender? \***

- Male
- Female

**Which of the following age brackets do you belong to? \***

- Under 18
- 18 -20
- 21 -24
- 25 - 35
- 40+

**What course are you studying? \***

- BA (Honours) in Accounting and Finance
- BA (Honours) in Business
- BA (Honours) in Human Resource Management
- BA (Honours) in Marketing Practice
- BA (Hons) Psychology - Evening
- Bachelor of Arts (Hons) Psychology
- BSc (Honours) in Computing
- BSc (Hons) in Business Information Systems
- BSc (Hons) in Technology Management
- Higher Certificate in Business
- Higher Certificate in Science in Business Computing

- Higher Certificate in Science in Computing Applications and Business Support
- MA in Human Resource Management
- MSc by Research
- MSc Entrepreneurship
- MSc in Cloud Computing
- MSc in Data Analytics - full time
- MSc in Finance
- MSc in International Business
- MSc in Management
- MSc in Marketing - full time
- MSc in Mobile Technologies
- MSc in Web Technologies
- MSc International Business - part time

**Indicate year of study \***

- 1st Year
- 2nd Year
- 3rd Year
- 4th Year
- Post-graduate
- Other:

**How would you rate the existing student service at NCI \***

	Poor	Good	Very Good	Don't Know
Admission Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Registrar's Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Careers' Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exams Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student Services Office	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IT Department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Poor	Good	Very Good	Don't Know
Support Clubs and Society	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**How much do you like the NCI mobile application idea? \***

1 2 3 4 5

Do not like      Like a lot

**How would you rate the new mobile application idea?**

1 2 3 4 5

Very Low      Very High

**What software platform does your mobile device run on?**

- iOS
- Android
- Windows
- Other

**How often do you think you will use the mobile application services?**

- Everyday
- Once a Week
- Monthly
- Never

**How do you feel about the mobile application confined to NCI student only?**

1 2 3 4 5

Strongly Disapprove      Strongly Approve

**How would you prefer to access the NCI app?**

1 2 3 4 5

Without login      With Login

**How do you feel about social media links being included in the NCI app?**

1 2 3 4 5

Disagree      Strongly Agree

**The following are list of NCI mobile application features \***

Choose most important top 3

- News



- Events
- Podcast
- Courses
- Directory
- Videos
- Library/Bookstore
- Social links

**Have you any suggestions for item to be included in the NCI app?**

Submit

100%: You made it

*Never submit passwords through Google Forms.*

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