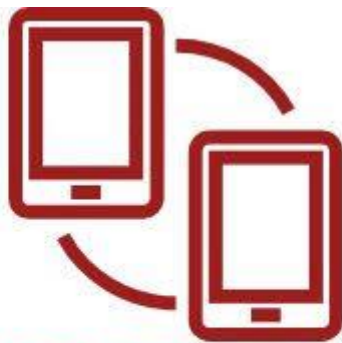# National College of Ireland

The college for a
learning society

CommsApp

IEEE Document
This document is to forecast the planning and
specific requirements of making the project

Student Name: Aoife Lynam
Student Number: x12475152
Project Supervisor: Ron Elliot
Course Specialisation: Business Analysis, BSc
Technology Management

1 DECLARATION COVER SHEET FOR BSHTM4 PROJECT SUBMISSION

SECTION 1 Student to complete

Name	Aoife Lynam
Student ID	X12475152
Supervisor	Ron Elliot

SECTION 2 Confirmation of Authorship

The acceptance of your work is subject to your signature on the following declaration:

I confirm that I have read the College statement on plagiarism (summarised overleaf and printed in full in the Student Handbook) and that the work I have submitted for this assessment is entirely my own work.

Signature: Aoife Lynam

Date: 25th April 2017.

NB. If it is suspected that your assignment contains the work of others falsely represented as your own, it will be referred to the College's Disciplinary Committee. Should the Committee be satisfied that plagiarism has occurred this is likely to lead to you failing the module and possibly to you being suspended or expelled from college.

Complete the sections above and attach it to the front of one of the copies of your assignment.

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The following is extracted from the college's formal statement on plagiarism as quoted in the Student Handbooks. References to "assignments" should be taken to include any piece of work submitted for assessment.

Paraphrasing refers to taking the ideas, words or work of another, putting it into your own words and then crediting the source. This is an acceptable academic practice provided you ensure that credit is given to the author. Plagiarism refers to copying the ideas and work of another and misrepresenting it as your own. This is completely unacceptable and is prohibited in all academic institutions. It is a serious offence and may result in a fail grade and/or disciplinary action. All sources that you use in your writing must be acknowledged and included in the reference or bibliography section. If a particular piece of writing proves difficult to paraphrase, or you want to include it in its original form, it must be enclosed in quotation marks and credit given to the author.

When referring to the work of another author within the text of your project you must give the author's surname and the date the work was published. Full details for each source must then be given in the bibliography at the end of the project.

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If it is suspected that your assignment contains the work of others falsely represented as your own, it will be referred to the college's Disciplinary Committee. Where the Disciplinary Committee makes a finding that there has been plagiarism, the Disciplinary Committee may recommend:

- That a student's marks shall be reduced.

- That the student be deemed not to have passed the assignment.

- That other forms of assessment undertaken in that academic year by the same student be declared void.

- That other examinations sat by the same student at the same sitting be declared void.

Further penalties are also possible including:

- Suspending a student from college for a specified time.

- Expelling a student from college.

- Prohibiting a student from sitting any examination or assessment.

- The imposition of a fine.

- The requirement that a student to attend additional or other lectures or courses or undertake additional academic work.

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3 ACKNOWLEDGEMENTS

I would like to thank my family and friends for their patience and support.

I would like to thanks my brother Stephen Lynam for his support and diverse technical capabilities.

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I would like to thank any individual that has assisted me with the project and provided me with information and support.

4 ABSTRACT

This is a report for my final year project based on business analyst findings on how and why a mobile application is needed for communication within a retail domestic environment. The report discusses requirements analysis, gathering and results for the real mobile application. After that, the report discusses a specification of the requirements for the website and a mobile application prototype that was made. The project was achieved by using IEEE template and the BABOK style to elicit requirements gathering. Also a MOSCOW analysis was conducted to outlay the requirements that should go into the real mobile application suited for the chosen company. The company that was chosen was Dixons Carphone Ltd, a retail company. The demand came from so many different operations and changes going on in the environment that weren't being communicated to the employee, which fundamentally caused confusion and setbacks as a result. The application prototype was a proof of concept to show investing parties what to expect to be in the application and the design layout.

5 EXECUTIVE SUMMARY

This project was discovered because there was a need for communication and clear understanding of day-today on-goings of operations within retail companies, to result in better productivity. It was abundantly clear within the company of choice Dixons Carphone was lacking in communication. It was requested by staff of Dixons Carphone to make some changes in regards to that element but it was unknown as to how this would be achieved. Managers want the best out of their employees and in order to achieve a high working standard they knew that by effective training, acknowledgement of sales, understanding of company status and daily updates would enhance the staff's productivity.

Dixons Carphone is a multinational electrical and telecommunications retailer and services company, which bases their headquarters in London, United Kingdom. [1] They have retail stores all over Ireland and the UK. Their main objectives are to supply the right product that has the latest technology with great satisfaction to the customer. To accomplish this a high amount of reliability lies on the sales assistant or any of the frontline staff. Which means that they need to know the on-goings of the business, therefore making an application for communication provides a real-life business need, whilst also matching the necessity for me to undertake a business analysis type project. I decided I would undertake this for my 4th year final project and lay out the foundations for investing in an app like this then proceed with the right stakeholders and enhance the competitive advantage.

This document discusses a variety the requirements elicitation and gathering of requirements and concept of the application for management, in retail, to use for staff. All the research and findings are stated and an in-depth analysis and a proof of concept will be discussed in order to clarify the business need. I used the BABOK to support me with constructing a detailed specification of requirements for Dixons Carphone's Comms App.

These techniques consisted of a survey, a brainstorming session, four interviews, a focus group, a prototype, a requirements workshop, and an interface analysis. Then a MOSCOW analysis was completed for the gathering of requirements. Followed by a specification of requirements for the prototype of the website and mobile application. An extensive list of the project stakeholders was amalgamated for the foundational setting of the project. An Onion Diagram was illustrated to determine each person's importance relative to their impact. Also an outline of a comprehensive matrix. Once the key project stakeholders were identified, the requirements elicitation and analysis planning phase of the assignment was introduced, the results of these requirements were later documented.

In addition, an IEEE requirements specification was done for the prototype of the website and the mobile application. Followed by a conclusion, references and an appendix.

6 REQUIREMENTS ELICITATION AND ANALYSIS PLANNING

6.1 INTRODUCTION

For the project, the plan is to collect the requirements then analyse a summary of findings to implement the discovery of the application called Comms App. The usage of the application is going to be by the target audience who are the managing team and the employee team as a new way of collaborating for the retailer. The behaviour of the app will be seen as a reliable resource for instant go-to information on the day to day operations that necessarily handle retail outlets. The company picked, as a sample client, to show how the app works best and how it can be used optimally is Dixons Carphone seen as they are a retail store. Retail companies are the target buyer/user of the app as they have an issue with communication.

Dixons Carphone obtain a wide range of devices and equipment such as kitchen appliances, laptops, tablets, TVs, any form of PC hardware, house phones and now with the addition of Carphone Warehouse, mobile phones and accessories! Never mind the fact that the Computer Superstore supply such a wide range of products but it's products are IT related and they sell software so they obtain expensive/valuable products in the store. It also connects with the IT aspect of this module. They require vast amounts of security tags, protective packaging and key sales assistance to introduce and build on the product for the customer to acquire them effectively. So above all the workers are a vital endowment to the business. Which is why we want to highlight the exchange of ideas from the managers and the inspire the staffs to work well as a result of identifying more about the enterprise and its everyday functional tasks of the store.

Another intention of the app is to give appreciation and acknowledgement when it is owed from an employee meeting their targets or offering good customer service even helping out their fellow colleagues. Plus, training modules were incorporated to add efficiency.

A significant outcome of the app is to enhance flexibility by allocating the roster for visibility purposes and to allow employees to request changes. Subsequently a calendar was added to show up and coming events. Also stock reporting was investigated to complement the app. Followed by a live chat messaging service and an announcement board. There are other features discovered in the document and some were implemented when making the app.

The overall outcome is employee engagement.

6.2 BUSINESS NEED

The business need was to develop and to implement an interaction device to be utilised by management body and the general staff for communication and informational purposes. The device may be used as a communicational resource to provide useful information for any new developments, rosters, payslips, live chat and other functions in order to improve the productivity of the company. The business analysis is obligated to be understood and investigated in this procedure. The manner is to understand the business goals better by articulating the Dixons Carphone strategic direction and to capture any of the business's key concerns connected with the business's success, challenges, risks or problems. They'll need to dissect the capabilities and improvement needs to ensure any changes made will be in alignment with the application and it's beneficiary to the company's investment. This business need aims to be profitable and productive for business usage and progression. For example, Dixons Carphone needs to improve on their communication abilities so they can interact proficiently but on a chain of command scope. There are a number of reasons for the app's business need this is there are a low number of managers ranging from 5 to 10 and a high number of employees starting from 70 to 100 and this is just frontline staff. So, ensuring that all staff are aligned and made aware of the corresponding essentials or needs of the establishment, which the problem is that it isn't always properly carried out. This is a fundamental requirement missed out by retail companies in all sectors of the retailing industry.

The head office was not in contact with the frontline staff and the managers were the 'middle men'. As previously discussed the managers have many tasks to take on and many employees to lead and sometimes it's not always feasible to communicate efficiently. As a result, catastrophic mistakes were made daily in regards to staff not being made aware of current operations or any changes made. One thing that is used for easier communication are social media apps such as Viber or WhatsApp. These can only do certain functions such as share photos and send texts via the internet. So it's useful as a back-up but doesn't quite penetrate the communication parameters fundamentally required in a retail environment. Retail is fast-moving and product line, prices and brand collections are continuously changing. This is where a massive amount of correspondence is demanded among the members of association.

Not having training demonstrations readily available reduces the possibility of employee's being able to act with initiative and provide up-to-date information about new technologies and also wastes time for the employee having to go to external resources to find this relevant information.

Also on-boarding new inexperienced employees who join Dixons Carphone who are put on the floor on their first day then left to deal with customers and are expected to be able to provide customer service and satisfaction at the same level as the experienced employees. This app would be a good foundation for them to start and catch up with the same level of knowledge as the other employees. [2]

6.3 BUSINESS CASE

What is the Business Case?

This business case will be applied to run down a dependable amount of allegiance and income for the development of the app. This Business Case for the app will analyse and conduct evidence, together with cost evaluation and technical solution, elaborating why the app is significant to the essential investment from the stakeholders founded by all departments but mainly the company and other investors. It will be analysed by managerial and directing staff, i.e. the decision makers of the project to evaluate whether or not to authorise the project and the investment going into the project.

Need for Business Case

The initial idea came about from noticing some consisting communication breakdowns and the effect it had on staff at work and customer service. Sometimes important notices may not be portrayed to all members of staff and too often this was revealing to the customer which reflected badly on the company image. Communication is key in any corporation and with Dixons Carphone being a multi-national corporation it was abundant that all staff members are made aware of the regular day-to-day vicissitudes. As modifications are rampant and since customer's desires and needs alter continuously it is essential to align business operations but more importantly the employees. This is often mismanaged as management are too overwhelmed with collaborating the occurring variations. Not forgetting all the other day-to-day tasks, they need to fulfill to keep the outlet running. The various gaps that the app can cover are announcements, roster changes, live chat messaging, payroll, emailing, training sessions, stock reporting and sales targets. These are simple undertakings each employee does in the course of their working day. This would maximise the work done and lift the amount of drudgery place on the management.

The main contributor for the interest in the app is that current frontline staff have requested for better communication. This is one of the leading factors making the business need.

Benefits

- The benefits associated with this app vary and some of them are difficult to quantify. However, if this app is to be implemented the daily and weekly sales targets that are going to be added in are one that could be quantified.

- Since the employees can see such information it gives them a sense of ownership when the targets are high and if the targets are low it gives them the understanding and adheres them to act upon it when they are in work next. This applies to employee engagement.

- Reduction in the amount of work that needs to be done by having the stocking report readily available on the person of the employee via their mobile phone device. This also looks efficient in front of the customer.

- Enabling the staff member to see announcements as they come can raise workplace productivity as they know what going on around them from the outset and throughout. Enabling a live chat increases communication and reduces confusion and consumption of time.

- Having the payroll on the app is environmentally friendly as it decreases the amount of paper that has to be expended.

- A training session can be helpful for the new employee as they are not aware of all the inventory and Dixons Carphone way of customer service and other types of operations.

- The employee engagement for any company is essential for success as it enhances a strong workforce. Improving employee engagement produces better company results for organizations. These results are not only financially beneficial for example higher revenue and profit making, but also it tunes into making things better for the employee for example less stress, less absence among employees and higher customer satisfaction and another input to realise is it's augments quality related attributes such as higher quality standard and security of job related tasks completion.

By improving employee engagement, the app should:

a. Help focus to be applied on the employees' relationship with their line manager.

b. Create a line-of-sight – The scope to which an employee can understand how their job role contributes to the organisation as a whole.

c. Include employees – So that they know their opinion counts and is received.

Risks Involved:

- This risks of investing in the app will be time consumed for making the app but since the investor aren't going to be thoroughly involved in the prototype application development they won't have invested too much of their time.

- Another risk would be cost, the cost will only lie on the resources used and time invested by other employees since the app will still lie on the prototype version before any real investment is made.

- Resistance: some employees have been working at Dixon Carphone for over 10 years and are used to working in their own way and some might resist the app at first and revert back to the old method but once they see the change benefitting their other colleagues they may change their mind.

Cost Evaluation

The initial spending of the app is going to be on gathering requirements and setting the foundations of the project. Then a website to market the app will be added to expenditure and after that the actual making of the app, which will initially be on android studio. All the stakeholder's wages and their time will need to be allocated to the spending. Also all fundamental resources that will be used for requirements

elicitation and analysis will need investment. Then accommodating expenditure for actually developing the application. Because Dixons Carphone is a multinational corporation, they would have the extra funds to accommodate this. Whether it is profitable to them or not is the basis on how well they integrate it their company.

Technical solution:

Although a website will be produced to market the app. The main solution is the mobile application. The data that will be input, processed and output will be stored better and easier to access than the relevant methods used.

Impact on operations:

The operations of the company will follow through as it usually would the app will merely act as an addition to how they go about their daily activities.

Organisational Capability to deliver outcome:

Since Dixons Carphone is the retail supplier of technical solutions and the latest technology for many manufacturing companies, it should be no complication to them to integrate the mobile app to their everyday undertakings. This is because the staff at the retail outlet already have a sufficient amount of technological knowledge so not much training would be needed. [2]

6.4 STAKEHOLDER LIST

The core stakeholders are going to be heavily immersed in the app making process so a brief explanation of their involvement in the app is given. So, to give a clarification as to who is responsible with what area of decision making and implementation of the app and who they are acknowledged as:

- **The CEO:** This person will obtain a great deal of power and authority in the influencing and direction of the app. They will sway correctly the integration of the app to the company by forecasting the expected requirements. They should be a verdict of the app as this person is most affected if the outcome app isn't successful.
- **Managers:** Managers will be in assistance with the requirements elicitation phase by giving their feedback to the inventors on the development. They work in the store so they would have a good awareness of the top-line structure of the continuing sales and daily operating of the store. In addition, they'll understand best as to who reserves the right to what information and any restrictions or access given to which participants.
- **Staff/Support staff:** They are the users of the app. They are the target audience who desire the app for their awareness and capabilities
- **Team Leaders:** These guys will be using the app the same way as the staff but will also be using it a lot for editing purposes, for example: messaging, uploading images and documents.
- **Developers/Designers:** Will be responsible for creating the app. They will create an app that is robust and 100% reliable adding all requirements gathered from stakeholders. Also they'll give training to support staff on the app before the rollout starts. They must provide a service after the rollout to help with any errors that come after the app goes live.
- **HR Department:** They will be involved in uploading and updating the announcements also sending out payslips to each account user. They will be giving requirements to developers on which formats they use for sending out payslips such as PDF's, excel, Hotmail and other software's they may use to carry out their end of the workload.
- **IT Department:** will be giving requirements to the developers on how the app can be best integrated into the company and how or if it can integrate with other IT systems already in use in the company such as Eclipse which is the software Dixons Carphone use on their terminals in the shop. The IT manger will have a big influence on the budget they have for this project to go ahead.
- **Customer:** These as a party are necessary to mention since the company as a retailer they imply importance to the point that without them there would be no company. They are fundamental requirement for sales and profit making. What they need is necessary to supply and what they want is importance to satisfy. However, they won't be eliciting requirements but requirements will be elicitated around them.
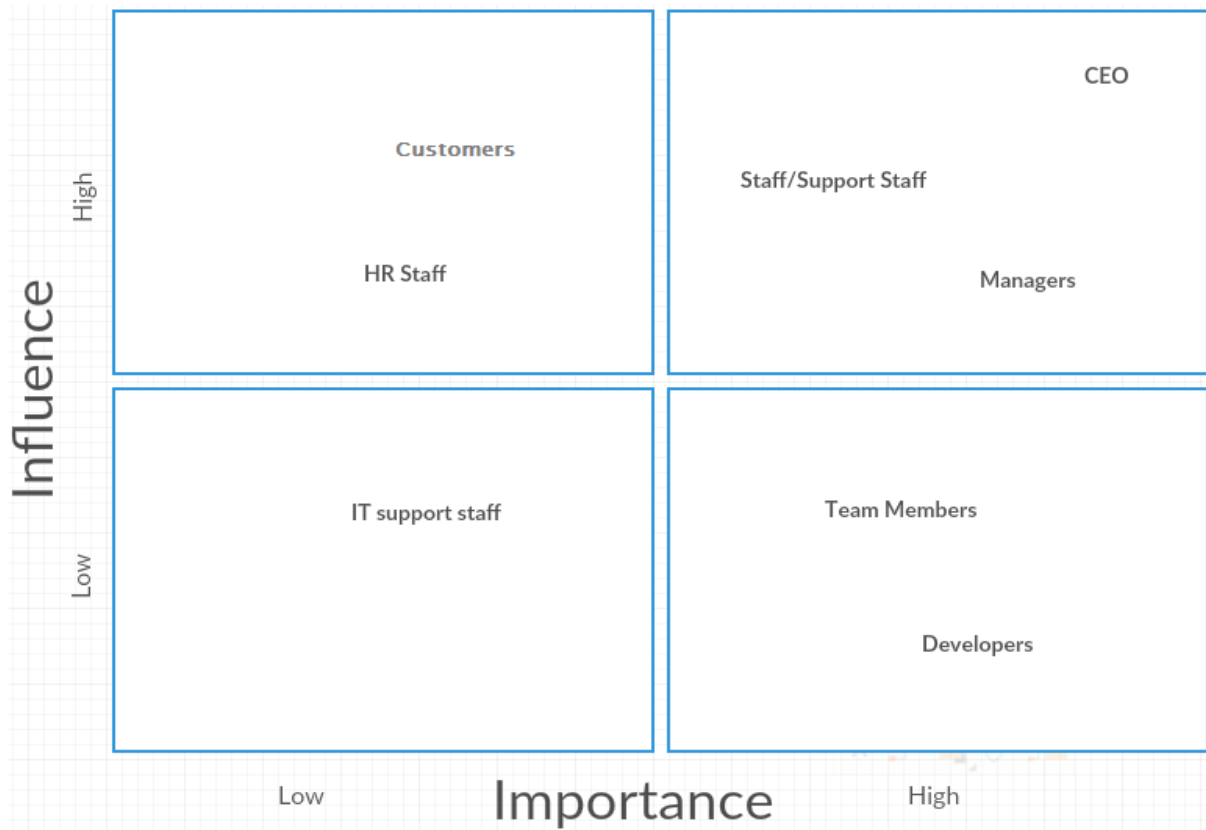
6.5 THE IMPORTANCE/INFLUENCE MATRIX

Figure 1 the importance/influence matrix

6.5.1 Importance/ Influence Matrix Explained

This tool maps the stakeholders according to their influence and power in relation to the application development. The influence has the power that stakeholders take over the app so to regulate what choices are made, simplify its execution, or apply inspiration that moves the project adversely. The scope which the stakeholder is able to influence or compel the other into assembling conclusions, and succeeding a confident course of action. As illustrated above the HR Staff lie closely with the influence as they have an overall understanding and influence of staff members and are able to lead them to decision making. The importance is the significance given by the app to fulfilling the stakeholders' requirements and interests from end to end of the project. Typically, to be most observable when stakeholder's interests in the application join closely with the objectives. As illustrated above the Team Members and Developers lie intently within the importance ratio as they would impact the objectives of how the application will be made. The CEO, Managers and Staff are both highly influential and lie with great importance of the app development as they will make changing decisions and have coerce inputs that will impact the overall design of the app. IT Support staff are important and influential as if the app runs into any difficulty they would be the team that the other stakeholders would fall back. [3]

6.6 ONION DIAGRAM
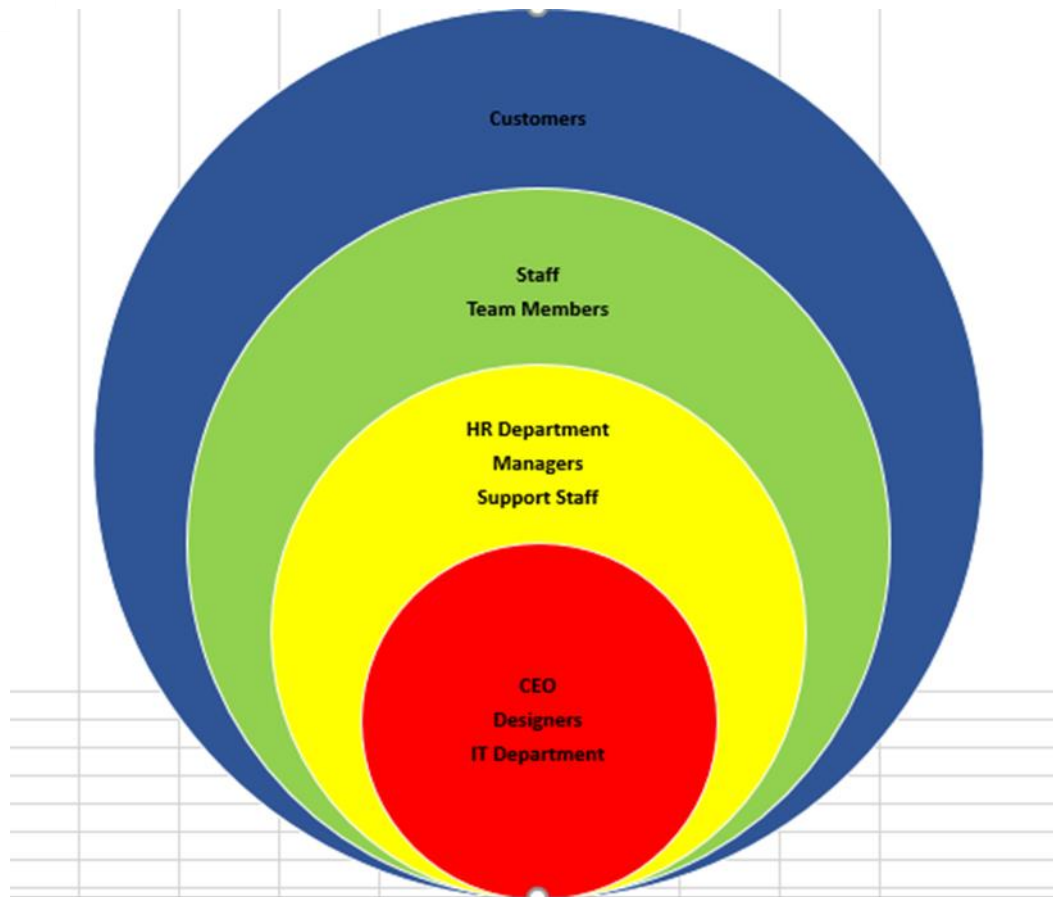
Figure 2 Onion Diagram

6.6.1 Onion Diagram Explained

A well-known saying from the Disney movie Shrek that is "Onion have Layers", This diagram is a style of graphic representation which displays the domination among the layers of an organisation or series of stakeholder that reaches an outcome. This Diagram establishes foundations within the circles, where the components in one ring above another ring is subject to the stakeholders in the smaller rings.   This chart shows the dependencies among the process. The Stakeholder Onion Diagram is valuable in that it plots stakeholder's relationship to the final deliverable of the app, it's an alternative to the basis of the matrix diagram. It's useful in that it can help illustrate the importance of stakeholders that have less effect, but who will be imperative to the accomplishment of the application. As you can see above the customers are the main influencer of how the company achieves its sales. Which is why they're at the top, their satisfaction is most important. This is why the frontline staff are important to invest in. [4]

7 IDENTIFYING THE BABOK ELICITATION TECHNIQUES

One of the main objective as a business analyst is to guarantee that requirements are recognised, visible, worked out and understood by all surrounding stakeholders. The primary effort is to extract information from stakeholders. This elicitation is a set of techniques applied, suitably, in the duration of the requirements phase. The approach is more deliberate and proactive in its planning. Here are the chosen elicitation techniques defined by the BABOK, I acquired to proactively plan application:

- Survey/Questionnaire
- Brainstorming
- Focus Groups
- Interviews
- Prototyping
- Requirements Workshops

The idea is to conduct these topics for the creation of the application and to better facilitate the infrastructure on the requirements techniques and gathering. Without these techniques there would have been no defined view of how to go about making the project. The more concrete topic that provided more insight and was fundamentally useful to the project was prototyping. This technique provided a worthy proof of concept as to how the application should look and feel for the user. Also it gives a tangible indication as what the investor is buying into. This also gives the application a better chance of being endowed.

The survey is outlined in chapter 6.1, the questions were hosted on google docs and any person who works in retail were allowed to take part in the survey.

The questions that were asked in the brainstorming session are below in chapter 6.2. This session provided an amalgamated opinion of the managers and sales staff about the app's functionality and style.

The Focus Group was to elicit information from a select group or criteria of people. The questions are discussed in chapter 6.3 This consisted of more people as the technology developers were involved and as well as the assistant manager

The interviews were to uncover information by asking question individually. Based upon the willingness and experience of the person being interviewed determined the success of the interviews productivity. Four interviews were carried out for the project purposes. The interview is outlined in chapter 6.4

The prototype was a visual representative of the applications design. It contains the wireframes for purpose of the project elicitation. It provided clarity.

Requirements Workshop was an effective technique, as it has an agenda, purposely selected attendees, myself as a facilitator. It elicits all information of the app within a short period of time which is why it was so effective. It combined all the techniques established above and recognized a lot of outcomes. [5]

7.1 SURVEY

Participant: Anyone who works in retail.

Objective: The main purpose was to elicit a description and business need for the application. It was to show proof of why the application was actually needed. Majority of the questions were clear and concise and enabled the participant to give their opinion. A strong focus on the business objective, this was kept throughout the questions and at the end of the survey, the participant was able to add their suggestions. I followed up this survey with one interview for a sales assistant of Dixons Carphone.

Duration: JANUARY 20TH TO MARCH 3RD

Delivery Method: Sending the URL on social media platforms and emailing to retail outlets.

7.1.1 Survey Questions
https://docs.google.com/forms/d/e/1FAIpQLSdLofzr7Q2RdjRypogmNfrAGiKI5FBQgwstbYIeyUTKheNpzg/viewform

What do you work as?

- Sales Assistant
- Manager
- Tills Operations
- Warehouse Operations
- Customer Helpdesk (knowhow bar)
- Cleaning
- Other:

I am satisfied with the level of communication with the various chains of command? *

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

I am happy with the level of knowledge and skills that was given to me in order to perform well in my workplace

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

Having a roster on my mobile and accessibility to request changes would improve productivity

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

My organisation ensures I know about the products through valid training and daily briefs

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

My organisation ensures I know how to treat customers through valid training and daily briefs

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

My organisation ensures I know about business goals and daily tasks through valid training and daily briefs

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

My organisation tries to gratify the work I do and acknowledge my daily achievements

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

I am motivated to meet my goals at work

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

Having up-to-date training modules section readily available to do in my own time will help me adapt well in my workplace

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

The employees are given the accessibility to identify future changes and developments

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

Announcements of daily occurrences and important changes would prove to be a useful asset in my productivity throughout my day at work

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

Communication between leaders and employees is good in my organisation

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

I am satisfied with the work place flexibility within my organisation

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

I understand how my work impacts my business's goals and evidently the success of the business

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

It would be helpful to have push notifications on my phone to remind me of my shift

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

It would save time to be able to swap shifts on my phone with other employees, given the managers permission

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

It would help me to communicate with all employees to have a live chat for work purposes

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

Do you have any other input to add in relation to the app or communication within the workplace, that you feel would make the app better?

[6]

7.2 BRAINSTORMING

Brainstorming Overview:

The brainstorming session took 1.5 hours to productively complete. The group consisted of 6 people, 2 managers and 4 staff members. Some visuals were produced to give an idea to the group to kick off the project. This is shown in the figure below. Although it was fun, more importantly, it was productive. As it established some ground rules for evaluating and creating ideas in regards to the criteria. Criticism was not invited as it was only going to be time consuming and ineffective. Myself, as the business analyst, was the facilitator.

Objectives of the Brainstorming Session:

This session was conducted to provide and overall view of how the app should be laid out. As a group, the objective was to give a comprehensive layout and voluntary inputs of opinions for the features and functions of the app. Any inputs made by the participants were elaborated in details and documented as the session went on. This helped contribute a clear indication of the features that will actually be used and why they will be used.

Participants:

Four Sales Assistant:

Mirabela Mindru, Conor Farrell, Codi Long and Aaron Keogh

Two Managers: Damien Jackson and Karen Somerville

Facilitator: Aoife Lynam

Meeting Location: Meeting room at the back of Dixons Carphone, Liffey Valley Retail Park, Fonthill Road, Dublin.

Date of Meeting: 11th of November 2016

Time of Meeting: 1.30pm – 3pm

Brainstorming Session Rules:

1. Participants were not allowed to know who else would be attending the meeting.
2. Each participant was allocated time to give an input for every question. Other members weren't allowed to talk while it was their time to speak.
3. No other distractions were allowed while the meeting went on i.e. mobile phones on silent, external bodies weren't allowed enter the meeting.
4. Criticism of the app or the company was not invited, although alternate opinions of solutions were allowed.
5. An overview be given at the beginning.

7.2.1 Brainstorming Topics

- What is your understanding of the purpose of the app?
- What do we want the outcome of the app to be?
- How do you as an employee want to see the app?
- How often do you think you will use it?
- How should management portray the app to on boarding employees?
- How will the overall user experience affect the workload, will it be good or bad and why?
- What kind of job duties do we want achieved in the app and how do you recommend we achieve this?
- What are the fundamental features that should be in the app?
- What are the features we can leave out or are not as important?
- If you were to imagine the app what would be the main features, would you rather push notifications, payslips?
- Should stock reporting be added and why?
- What kind of targets will we add in the app and why?
- Should we add a calendar dates and up and coming events?
- Would you like to add emailing into the app and why?
- What kind of log on should we use and how protective should it be and why?
- How much security do you think should go into the app?
- What will be in the main menu contents, what should be prioritise?
- What kind of permissions or restrictions do you think should be applied and why?

7.3 FOCUS GROUP

Focus Group Overview:

The Focus Group was more formal than any other technique. It promotes a discussion and engages all members. Each member is neutral and open questions are permitted. The plan is to saves time and costs from not asking individual stakeholders the same questions. It took from 1 hour to complete as the application is relatively new and it was just the designs and features and functions and rules that needed discussion. It was important as these need to be ironed out from the beginning.

Objectives of the Focus Group:

To get a clear view of the application functionalities. The rules and restrictions were discussed. The non-functional and functional requirements were discussed. Privacy is discussed.

Participants: Two Technology Developers, one IT Support Staff, one Manager, one team leader, one Sales Assistant, one Facilitator, two Customers

Facilitator: Aoife Lynam

Meeting Location: Meeting room at the back of Dixons Carphone, Liffey Valley Retail Park, Fonthill Road, Dublin.

Date of Meeting: 18th of November 2016

Time of Meeting: 6pm-7pm

Focus Group Rules:

1. Every individual is neutral and their opinion is valuable.
2. No individual was to know each other in the group and who was attending.
3. No other distractions were allowed while the meeting went on i.e. mobile phones on silent, external bodies weren't allowed enter the meeting.
4. Criticism was allowed and open views were discussed and not hindered.
5. Main objective to be focused on at all times.

7.3.1 Focus Group Topics:

- What do you think about adding gamifying to the app or should we add this at a later stage or incorporate it immediately and why?

- How will the overall user experience affect the workload, will it be good or bad and why?

- The design of the app, will it add the Dixons Carphone marketing style or make it neutral and why?

- How should we go about making announcements on the app, both urgent and regular? Should they have a push notification function?

- What kind of funding do we want to invest in the app? Go large or keep it to a minimum and see how the app fares out?

- What kind of log on should we use and how protective should it be and why?

- How do we set up accounts? Do we have the manager do it or the sales assistant and why?

- What kind of security systems should we use? Standard or very high?

- 02How do we want the payroll forms to be displayed? Individually or grouped into one online forum

- What sort of permissions or restrictions will be allocated to the sales team members? Then for managers the same question.

- How should we design the roaster? What sort of restrictions should we have on it? Can users make changes to the roaster or should they have to request changes?

- When making the live chat, who can see the live chat? Should it be as a group or be able to have them individually?

7.4 INTERVIEWS

Interview Overview:

Although interviews can be both formal and informal, I chose both styles in regards to the people or stakeholders being interviewed. The formal interview was with a HR Manger; this was over the phone. Another two interviews were with the technology developers. These were informal as I knew them on a friendly basis and they were being helpful. The second interview could be looked at like a second opinion. Then a fourth and final interview was carried out and this was with a Sales Assistant in Dixons Carphone, this was also informal but focused as it was a follow-up of the survey questions. This was an opinion based interview that consisted of all open-ended questions. With the formal interview the questions were all open ended also because it was someone I wasn't going to get much time from. The Technology interviews were a mixture of open and closed ended questions as the time allocated was free. Once there was a maintained focus on the goal at hand the interviews went smoothly.

Interview Objectives:

These interviews are a form of qualitative research and the objective was to get opinions and valuable insight off the each of the stakeholders selected. It gives the chance to discern the possible abilities the app could have and whether the app is going to be useful and to what degree. The goal is to get an in-depth meaning of the venture and to further investigate the possible areas of success the app could avail of. [6]

Interview Rules:

1. All answers are open to interpretation and given a chance for the interviewee to explain.
2. Disagreeing to the question or opinion is allowed once there is a follow-up explanation.
3. Notes will be taken of the interview.
4. One question will be asked at a time.
5. Interviewee should ask for a further explanation if they do not fully comprehend the question.

7.4.1 **Interview one:** HR Manger

Participant: Louisa

Interviewer: Aoife Lynam

Meeting Location: Over the phone

Date of Interview: 30th November 2016

Time of Interview: 2.30 pm

Interview Questions:

1) Do you think an app like this would be frequently used and why?
2) What do you think is the biggest factor in communication breakdown?
3) Do you think having an online chat meet the staffs needs and solve confusion and miscommunication?
4) What are the biggest challenges a HR have when communicating with the store staff and how would you suggest we can solve this with the app?
5) How do you want an app like this to look and navigate? What functions would you like to see? Try to be imaginative
6) What type of research is needed to make the app specifically tuned to Dixons Carphone's style?
7) Features that the HR stakeholder will be expected to apply information to the app are payslips, contracts, announcements and discussions box, is there anything else you would like to see in the app?
8) In relation to the question above, does that cover all necessary communication needed between frontline and head office?
9) What do you think should be tracked in an app like this? In other words, what kind of information should be kept in an external file or private source.
10) From a HR perspective is privacy an issue and to what extent will privacy be an issue, what should we look out for?
11) What other changes can you talk about that are happening in Dixons Carphone that could impact this project in any way?

7.4.2 **Interview two and three:** Technology Developer

Participant: Benjamin & Stephen

Interviewer: Aoife Lynam

Meeting Location: Meeting Room 3.02 National College of Ireland & Lucan, Dublin

Date of Interview: 30th January 2017 & 15th February 2017

Time of Interview: 7.30 pm 8.30pm

Interview Questions: [7]

1) What challenges do you think we would face with an app like this?
2) What outcomes can we expect and what outcomes can we not expect to happen?
3) Describe a typical framework we should use to design the app?
4) What can you see being the biggest setback for the app?
5) What typical research should we do for the app?
6) What's the general funding should we allocate? How can we analyse or predict the funding better and highlight it to the investors?
7) What components do we need to make the app?
8) How can we make a logo?
9) Where do we go to store data? What software should we use? i.e. MySQL
10) How do we make the app compatible to various type of Operating Systems on mobile phones?
11) How can we market the app to other vendors?

7.4.3 **Interview Four:** Survey Candidate

Participant: Sales Assistant at Dixons Carphone

Interviewer: Aoife Lynam

Meeting Location: Meeting room at the back of Dixons Carphone, Liffey Valley Retail Park, Fonthill Road, Dublin.
Date of Interview: 7th March 2017
Time of Interview: 2.30pm

Interview Questions:

1) What do think is the biggest factor contributing to communication breakdown?
2) What would you like employees do to communicate better?
3) Are the employees are given the accessibility to identify future changes and developments? How?
4) How are you motivated to meet your goals at work?
5) Are you able to adapt quickly to difficult situations at work given your current training and experience and how?
6) Do you think an app would be useful in this working environment and why?
7) Would it be helpful to have push notifications on your phone to remind you of your shift? If not, why?
8) What type of research do you think is needed to create an app like this?
9) Does Dixons Carphone enable accessibility to the right information you need to perform well on your job and how?
10) Are you satisfied with the flexibility in your workplace? If not, why and how do you think it can be made better?
11) Is communication between frontline staff and manager or team leader well interpreted and why?
12) Are you happy with the current method of daily briefs and training? If not, how can it be made better?
13) Do you think your hard work is being noticed and gratified?
14) What kind of research would help gather information on communication within this working environment?
15) Do you think having miniature learning outcome tutorials in the app would be beneficial?
16) What function would you like to see in the app?
17) What would expect the outcome to be from having an app like this?
18) How can it assist in lifting the work manager have to do in a retail environment? Would you like more trust and responsibility to be in your hands instead of the manager?
19) Do you feel your work is challenging and if so can you see the opportunity outcome?
20) Do you have any other input to add in relation to the app or communication within the workplace, that you feel would make the app better?

7.5 PROTOTYPE

Objectives of the Prototype:

The aim is to give the investor and stakeholders something to go off when elicitating requirements and analysing the usage for the app to their work environment and whether it is a good investment. It gave a partial solution to the requirements and enabled the stakeholders see and interact with the application. It was significant for validating the requirements and uncovering any gaps the application or project might be leaving out. However, it was kept in mind that by going down the root of making a prototype it could have taken a lot of time and have been tedious so it was kept it entirely non-functional and picture centric.

Resources Required:

1. The results of the survey, the brainstorming session, the focus group and the four interviews will be used to develop the first prototype of the Comms App
2. Android Studio
3. Android mobile phone
4. Personal Computer

Prototype Development Checklist:

✓ Combine requirements based on the finding of the survey analysis.

✓ Construe the views made by stakeholders taken from the brainstorming session.

✓ Study the interview results and integrate features into the prototype.

✓ Transform a comprehensive prototype for the requirements workshop.

✓ Instrument any necessary modifications to the prototype, based on the preferences expressed by stakeholders during the requirements workshop.

Participants:

➢ Business Analyst
➢ Technology Developer
➢ IT Support Team Member

Prototype Due Date: 7th April 2017

Prototype Date of Completion: 4th April 2017

7.6 REQUIREMENTS WORKSHOP

Workshop Preparation Checklist:

✓ Categorize suitable participants that will join the requirements workshop and invite them via phone call, email or text. Ensure they are all able to attend

✓ Send out the agenda, rules, location, date, and time that the workshop will go on.

✓ Organize a narrative of goals and the preferred outcome of the workshop.

✓ Generate the workshop agenda.

✓ Summarise a sketch of the resources required for the workshop and organise them prior to the workshop.

✓ Acceptance and Evaluation Criteria

Participants:

➤ One team leader
➤ One senior manager
➤ Two sales assistants
➤ Two technology developers
➤ Business analyst - appointed facilitator & scribe.

Workshop Location: Dixons Carphone, Liffey Valley, Retail Park.

Date of Workshop: 8th of April 2017.

Time of Workshop: 7pm - 9pm

Objectives of the Requirements Workshop:

The workshop was arranged to elicit all information of the app within a short period of time combining all the techniques established above and distinguish majority of the outcomes. The aim is to primarily discuss layout and design elements of the app. The purpose is to attain a perception and unanimous agreement of the layout and design needed by important stakeholders. One particular way this will be done is by investigating any other competitors we have at present and seeing how we can in-corporate their key functions into the prototype. Another strategic element of the workshop is by re-evaluating the prototype of the app. Also the plan is to indulge some more time into the app features that weren't discoursed in former elicitation sessions and to cultivate the requirements in the prototype. The acceptance and evaluation criteria will be the final stage of the workshop and the plan is to have a concise evaluation and harmonised settlement of the criteria applied.

Agenda:

i. Give an overview of the agenda and list the topics to be discussed and outlay the purpose of the session and the key focus.
ii. Set out the define rules that must be adhered to.
iii. Discuss the final deliverables and the premeditated execution to be expected.
iv. Go through the current prototype with the partakers.
v. Explore any competing mobile applications at present.
vi. Pinpoint additional features which are required on the mobile device.
vii. Attain a unanimous agreement relating to the applications design, layout, and the desired features amongst key stakeholders.

Resources Required:

➢ Meeting room at the back of Dixons Carphone, retail park, Liffey valley.

➢ Mobile phones, tablet devices and/or laptops.

➢ Stable internet connection.

➢ Microsoft Word for documentation of minutes.

➢ Clipboard to spit ball idea, topics and areas of discussion.

➢ A seating area.

Workshop Rules:

1. All participants are expected to give a valuable input to the workshop
2. Participants are expected to give their focus at all times and donate their suggestions whenever they see fit.
3. Use of all networking devices and mobile devices are purely for the workshop alone and not for any other use for the duration.
4. Participants should listen to the facilitator and adhere to what is being asked of them
5. No distractions or disruptions are allowed.

Workshop Final Deliverables:

1) A documented analysis of the desired outcome with a unanimous agreement of functions, design and layout.

2) A documented evaluation of competitors features and functions to their apps.

3) A concise documentation of detailed requirements for the prototype in line with perceptive new ideas to add into the app.

4) Acceptance and Evaluation Criteria

7.7 Interface Analysis

Objectives of Interface Analysis:

The idea is to implement a procedure and system to validate what the contributions of the inputs and productions of the outputs of the mobile application called Comms App. The UML use case diagram defines a coherent distinct structure that indicates outputs, inputs, and data of the framework arrangement. Utilization of the outcomes for the previous sessions such as the requirements workshop and the prototype development were configured to transform interface types that are related to the app.

Resources Required:

1) Mobile phone with android studio.

2) Large screen to show the app features and functions in line with the UML.

3) Personal computer to construct the UML use case diagram.

UML Use Case Diagram Development Checklist:

✓ Document all changes made and analyse further implementations

✓ Identify prospective interface types from the elicitation.

✓ Evaluate the possible inputs and output of the app

✓ Observe the user's interactions and allocate them in

✓ Develop a UML use case diagram for the Comms App.

✓ Produce the UML and open a discussion for reactions, advice and criticism.

✓ Instigate any essential modifications immediately.

UML Use Case Diagram Name:

Comms App

UML Use Case Diagram Participants:

➢ One team leader

➢ One senior manager

➢ Two sales assistants

➢ Two technology developers

➢ Business analyst - appointed facilitator & scribe.

UML Use Case Diagram Due Date:

9th of April 2017

UML Use Case Diagram Date of Completion:

9th of April 2017

Interface Analysis Rules:

1. All participants are expected to give feedback and criticism to the interface analysis.
2. Participants are expected to give their focus at all times and donate their suggestions whenever they see fit.
3. Use of all networking devices and mobile devices are purely for the interface analysis alone and not for any other use for the duration.
4. Participants should listen to the facilitator and adhere to what is being asked of them.
5. No distractions or disruptions are allowed.

7.8 Moscow Analysis

The Moscow is laying out the priorities of the requirement and defining what they mean to the project. This a method of agreeing the solutions and the definitions of them to the users and the stakeholders. It is effective as it gives clarity before the requirements are set.

Must Have

This offers the Minimum Usable Subset (MUS) of requirements that the project is based off and is guaranteed to deliver. i.e. the rosters or the live chat system. By posing the question of 'what will happen to the project there isn't a roaster allocated in?' or stating 'the project is useless without a live chat!' then it a sure result that the requirement is a 'must have'.

During this analysis, it became clear that if there would be a workaround then it can be downgraded to a should have or could have. In this instance, we did not mean it won't be delivered just that it is not guaranteed.

Should Have

Essentially the 'should have' is important but not imperative. It was agreed that in this case it may be a misfortune to dismiss of, but the solution should still be feasible. It would involve alternating to another method to achieve as it as best as possible as it would enhance the apps experience and usage. In this we would need to evaluate the effect it would have by not adding it in or value it has then derive from that whether it is integrated to the app.

Could Have

This is often compared with 'should have' as it is wanted but fundamentally less important. It is a desire but than a need. The choice here is does it impact the app if it's left out. Wanted or desirable but less important.

Won't Have this time

These are requirements that was agreed that it will not be delivered. Although they are recorded is a documented list called 'prioritised requirements' to help avoid confusion and clarify all necessary scope of the application. It helps with managing expectations of the investors as they would know what is not being added.

 [8]

8 REQUIREMENTS ELICITATION AND ANALYSIS RESULTS

8.1 SURVEY

8.1.1 Survey Results
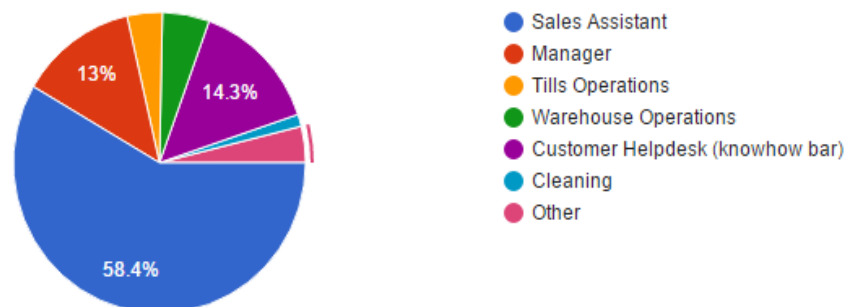
What do you work as?

77 responses

Figure 8.1.1.1 survey result

I am satisfied with the level of communication with the various chains of command?
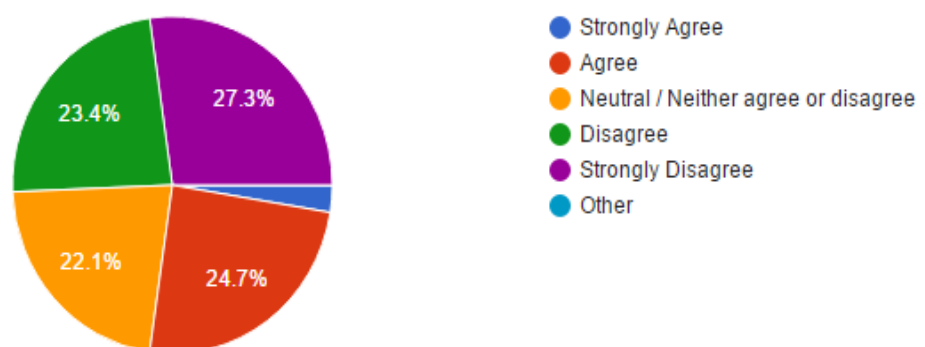
77 responses

Figure 8.1.1.2 survey result

I am happy with the level of knowledge and skills that was given to me in order to perform well in my workplace

77 responses

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

31.2%

14.3%

16.9%

7.8%

Neutral / Neither agree or disagree
13 (16.9%)

.9%

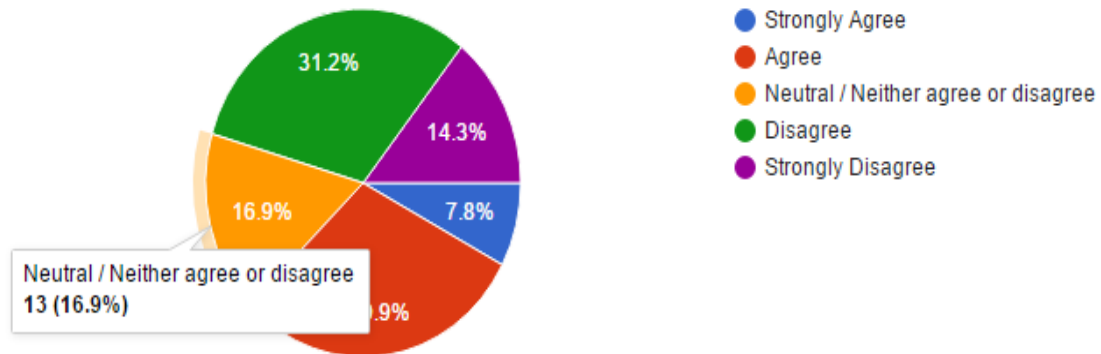*Figure 8.1.1.3 survey result*

Having a roster on my mobile and accessibility to request changes would improve productivity

77 responses

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

46.8%

13%

29.9%

Figure 8.1.1.4 survey result

My organisation ensures I know about the products through valid training and daily briefs
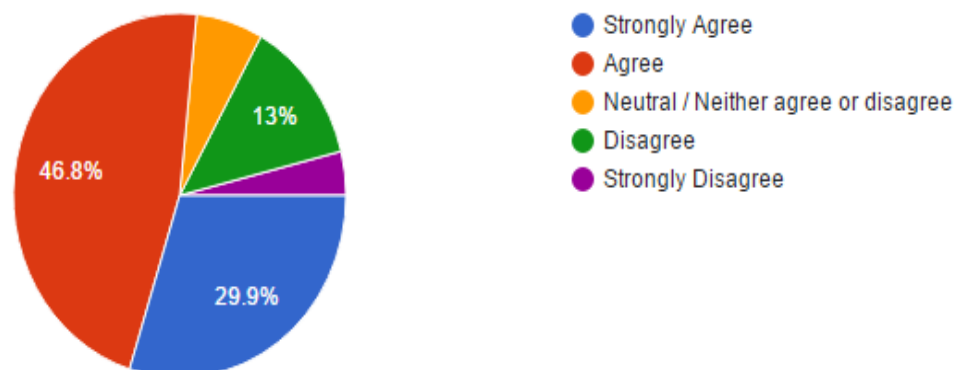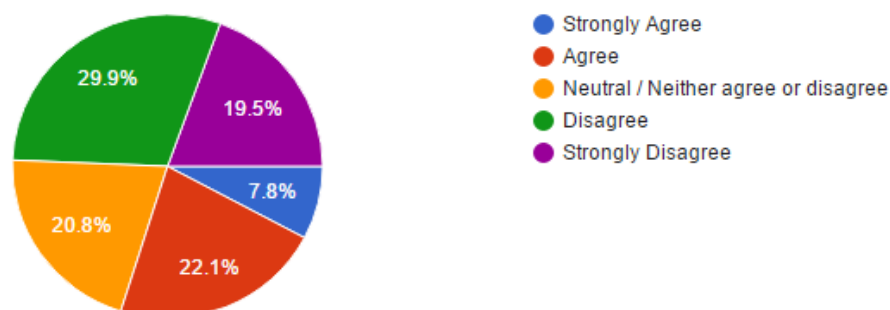
77 responses

Figure 8.1.1.5 survey result

My organisation ensures I know how to treat customers through valid training and daily briefs
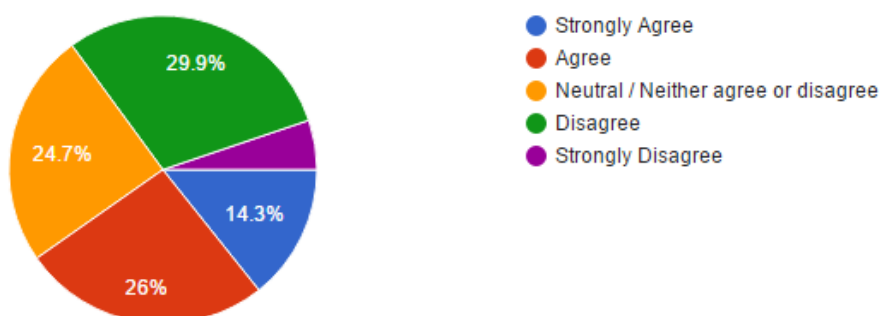
77 responses

Figure 8.1.1.6 survey result

My organisation ensures I know about business goals and daily tasks through valid training and daily briefs
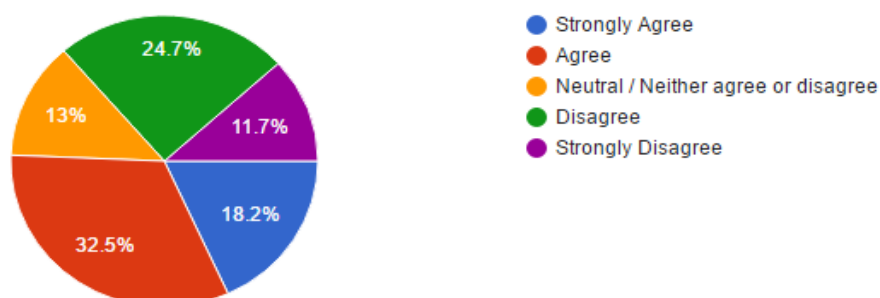
77 responses

Figure 8.1.1.7 survey result

My organisation tries to gratify the work I do and acknowledge my daily achievements

76 responses
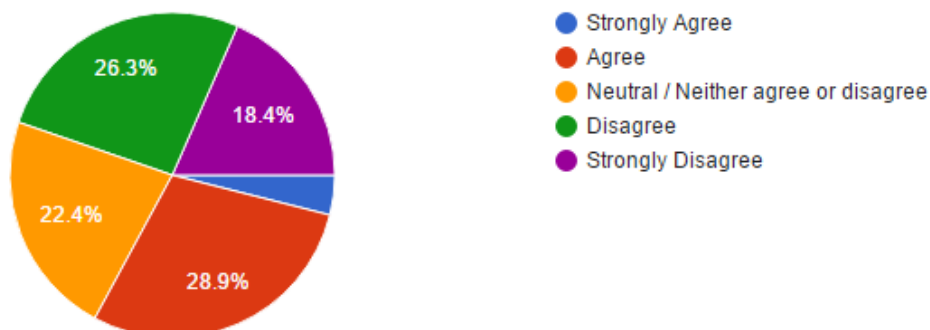
Figure 8.1.1.8 survey result

I am motivated to meet my goals at work

76 responses
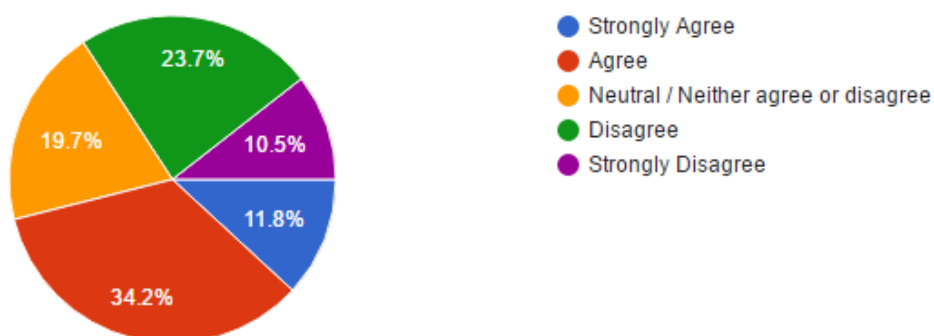
Figure 8.1.1.9 survey result

Having up-to-date training modules section readily available to do in my own time will help me adapt well in my workplace
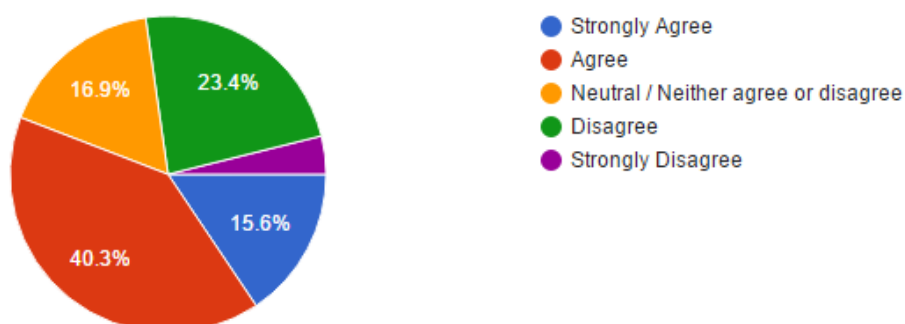
77 responses

Figure 8.1.1.10 survey result

The employees are given the accessibility to identify future changes and developments

76 responses
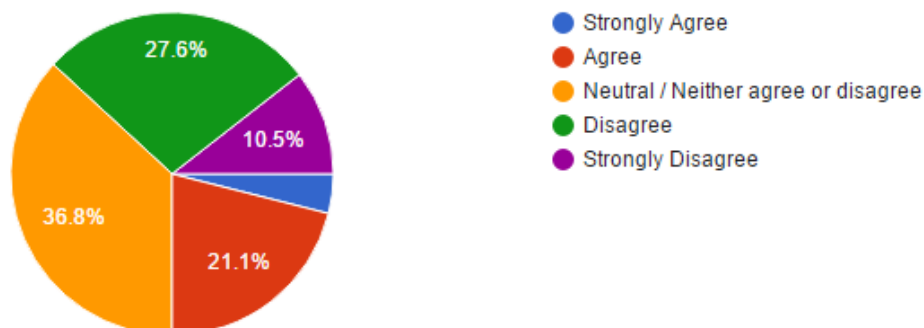
Figure 8.1.1.11 survey result

Announcements of daily occurrences and important changes would prove to be a useful asset in my productivity throughout my day at work

76 responses
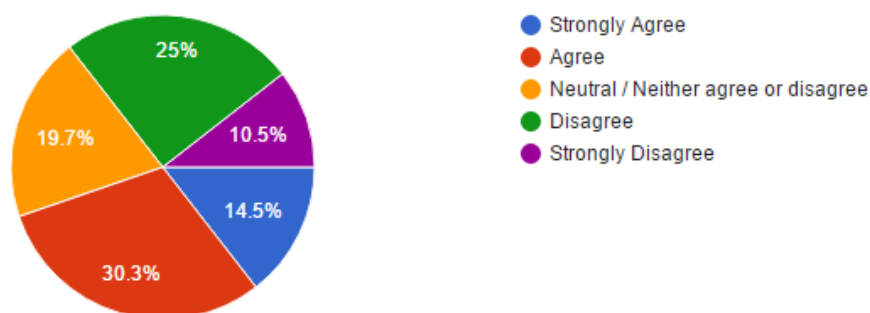
Figure 8.1.1.12 survey result

Communication between leaders and employees is good in my organisation

77 responses
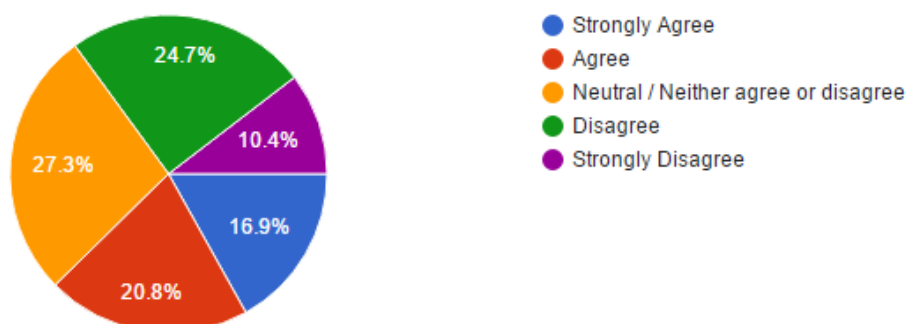
Figure 8.1.1.13 survey result

I am satisfied with the work place flexibility within my organisation

76 responses
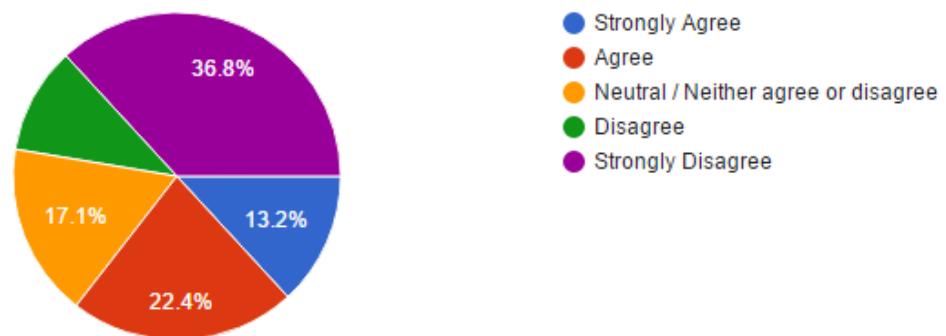
Figure 8.1.1.14 survey result

I understand how my work impacts my business's goals and evidently the success of the business

76 responses
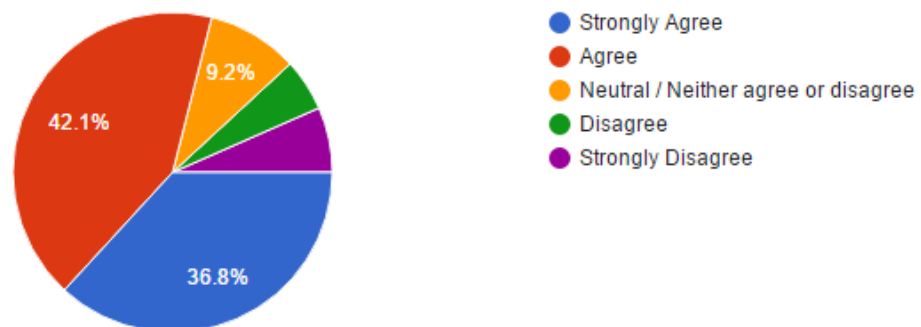
Figure 8.1.1.15 survey result

It would be helpful to have push notifications on my phone to remind me of my shift

71 responses
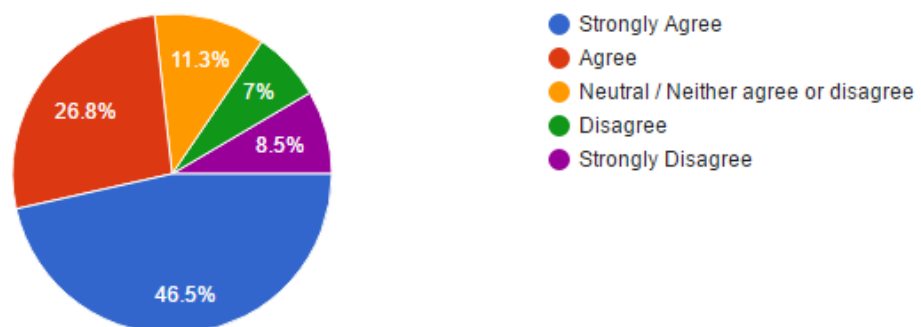
Figure 8.1.1.16 survey result

It would save time to be able to swap shifts on my phone with other employees, given the managers permission

71 responses

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

25.4%

8.5%

64.8%
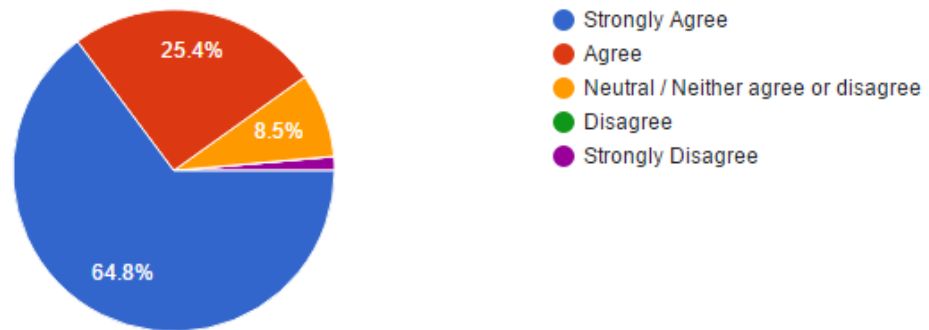
Figure 8.1.1.17 survey result

It would help me to communicate with all employee's to have a live chat for work purposes

71 responses

- Strongly Agree
- Agree
- Neutral / Neither agree or disagree
- Disagree
- Strongly Disagree

33.8%

60.6%
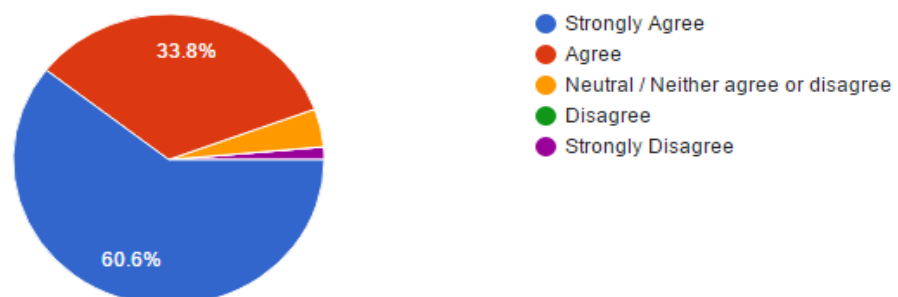
Figure 8.1.1.18 survey result

Do you have any other input to add in relation to the app or communication within the workplace, that you feel would make the app better

4 responses

no

To have a 'suggestions' service to submit to managers. To have a service to book a ten minute chat with a manager or HR in order to discuss payroll/tax forms or any other minor issues that may arise

Also to have an option to access files i.e. payslips

More incentives for goals profit margin percentages of goals

Figure 8.1.1.19 survey result

8.1.2 Survey conclusion

As the survey was being filled out initially the results weren't looking like what they were expected to. The people who were surveyed picked options that went against the idea of the app although they did say it would be useful they expressed they didn't show a misdemeanour in communication as was originally thought. The prospectus of people varied from sales assistant, manager, warehouse staff, cleaning staff, IT staff (customer helpdesk) and tills operation. Since the app is still at concept phase and this business solution is proposed for all retail companies, people who worked in retail outside of Dixons Carphone filled out the survey. This also added to mixed views on communication and whether there is a major downfall in that area. At first, it was conceived whether communication was the point of obstruction in productivity at work and that it might be something else. Such as appraisal or effective training and resource providing. As more surveys were being filled out and results were coming through it seemed to go the way it was planned. It appeared to be in agreeance that effective communication was needed by all parties harmoniously.

A significant number of people approved that more accessible training was needed for adaptability purposes. It showed that it would better their skills to work in difficult situations and/or take initiative in their job. This feature was then decided to be incorporated to the application. On the other hand, push notifications weren't taken to by majority of the people this could be because they don't want to be disturbed by work duties outside of their workplace. As a result, this was put into the 'could have' category. Adding gamifying in the app was seen be was an open to concept but not needed essentially, this was put into the 'could have' category. This was surely a good thing as it would be too difficult a feature to augment at the beginning phase. One overall perspective was that the current trail of communication certainly lacked in transparency and needed fixing.

Majority of the voters thought live chat messaging was a fundamental need as 60.6% strongly agreed that it would be help for communication purposes. Therefore, it was put into the 'must have category. Also 64.8% of the voters strongly agreed that being

able to swap shifts on their roaster through the app would save time and confusion. Once more, this was slotted into the 'must have' category. Then 36.8% combined with 27.4% strongly disagreed and disagreed that flexibility was not apparent within their workplace. This was interesting at the voters were external mixture of retail employment and had all experienced the same treatment. So the requirement pulled from here was to enable flexibility by requesting updates on the roster in advance and being able to request holidays and time off. To further flexibility a calendar for up and coming events related to the business to show staff when there's a sale on or times that extra staff may be needed. 29.9% joined with 26% of retail workers felt they didn't have the necessary skills to satisfy customers which is an alarming result as that is the foundations of their trade. So training and news updates on important articles for customer service was added as a requirement. 46.8% shared with 29.9% felt they needed more guidance for giving back to their company and taking the initiative. This could result in having a set job duty list of the day in the app and to implement gamifying stars can be added to the list and the employee to completes the task can click the star.

The comments suggested within the additional comments section also highlighted some requirements that could be added into the applications. This led to the addition of accessing payslips files being added into the app. Then also incorporating Human Resources by having a suggestion service for feedback. Then being able to book a 10-minute live chat messaging service with Human Resources to discuss minor issues such as tax forms, payroll, on boarding and further training or even customer issues. These suggestions proved to be very valuable in were then merged into the following requirements elicitation sessions for further viewing.

8.2 BRAINSTORMING

What is your understanding of the purpose of the app?

(The first few questions were just an ice-breaker questions to start the ball rolling.)

Managers Input

They specified that it was a support tool to encourage a more comfortable interaction with their staff as an additional means.

Staff Input

Each stated the app was a means to engage further with the company, to revolutionise with the establishment, to enrich productivity within the working environment and that it was a means to increase efficiency with the primary practices of the workplace.

What do we want the outcome of the app to be?

Managers Input

To lighten the load of work place on them every day. To ease the stress of ensuring everyone received the message.

Staff Input

To ensure there's no confusion anymore. To pass the message quicker so that when people start their shift they know what happening around them. To give a detailed update of new changes. To make rostering more flexible.

How do you as an employee want to see the app?

Managers Input

A place to put all the important material of Dixons Carphone.

A way to explain that things were corresponded in case something goes wrong.

Staff Input

An accessible platform for training purposes.

An interconnecting online hub for employees.

Cross-functional display program.

Social Media for work.

How often do you think you will use it?

Managers Input

Only when they are at work also when they need to check something.

Staff Input

Only when a staff member is at work and at all times to keep up with what's happening at work. Also before the start the shift to get an update.

How should management portray the app to on boarding employees?

Managers Input

A platform management can tell you what happening at Dixons Carphone.

A device to find out everything you need to know with Dixons Carphone.

Staff Input

A fun way to interact with Dixons Carphone.

Alternative method to aid in attaining work goals.

How staff can tell what's going on at Dixons Carphone day-to-day.

How to keep up-to-date with your surroundings at work.

What kind of job duties do we want achieved in the app?

Managers Input

A section in the app must elicit the sales targets with their KPIs and strike rate. Since the move with Carphone, not many of the customers yet know that they can avail of the Carphone shop situated in the store. So it is essential that Dixons staff help them out and refer their customers at the end of their sale on to Carphone by recommending the deals they have for mobile network, TV satellite service and broadband. Referrals is going to be added into the daily sales reporting and each staff member needs to achieve at least one referral a day to hit their target. So it is vital to incorporate this into the sales reporting.

Also, if there are any request changes on the roaster, it is important that the app can send a push notification for that as management need to know this information straight away.

Staff Input

A suggestion box for any new ideas or solutions that any staff member can contribute to which Head Office or HR can have access to as well as store management.

A push notification for any changes made to the roster for staff too so they know immediately.

If push notifications are going to be added, it is necessary to be able to turn off the notifications for members who aren't at work or on their holidays.

Training for sales techniques and demonstration for new products is a central element to the app, as the staff consider they would be unserviceable to customers without this knowledge.

What are the fundamental features that should be in the app?

Managers Input

A significant feature could be to solicit editing of the app. For example, being able to delete or save items on the chat or roster or sales reporting for sustainability and quality resolutions.

Having an announcement clip board to secure relevant notices are recognized.

Showing who is online at the current time they are and when they were last active to see if they are availing of the investment.

Staff Input

Incorporating the policy handbook as a go-to source for any domestics needing clarification or for an exploratory method.

The live chat is necessary for on-the job messaging

Being able to check sales is vital for target succeeding to see how well or not well staff are doing.

Have an appraisal board for anyone who has done exceptionally well in their shift for that day.

What are the features we can leave out or are not as important?

Managers Input

Stock reporting can be left out, after the current stock audit and the movie from 3 stores to one store, Dixons are still amending all the errors in the stock file so for the moment is it something that would be preferably left out until it is resolved.

The option to have push notification of when an employee's shift starts can be somewhat unconventional since they should be prepared enough and know before their shift starts. Also we don't want them to end up being dependant on it in case if the app needs to be temporarily shut down for any reason.

Staff Input

The push notification before the shift starts is not important and would be preferably left out.

Having sales transaction in the app doesn't seem to be feasible, for the simple reason that it can make customers feel uneasy handing their card details over on another person's phone and it might have some inaccuracies or miscalculations down the road so it can be excluded.

Gamifying the app is not imperative for the purposes of what the app is currently trying to achieve.

Should stock reporting be added and why?

Managers Input

Stock reporting is seen as too complicated to incorporate at the moment from the point that there are many errors in it at the moment and nothing is authorised to be done with it until they are amended.

Staff Input

It would be extremely useful from the sales staff point of view as they all expressed that it would save them a lot of time from having to leave the customer, finding a free computer in the store and logging on to search stock. This would also make a sale look more seamless to the shopper.

If not having the stock reporting added in, for the moment, maybe have the Curry's website coded in as a temporary solution.

What kind of targets will we add in the app and why?

Managers Input

The referrals should now be opted in, primarily. Then augment the net sales amount, the number of coverplan's achieved by each sales staff, the discount they used, the knowhow net sales, the attachments to each base product (for example installation, cables and brackets for TVs and antivirus, cloud and Microsoft office for laptops also delivery and installation for kitchen appliances) and instant replacement plans for products under €200. Additionally, the store footfall, the emails taken for each sale, the scan rate, the customer satisfaction vote aka 'happy or not', overall store sales and weekly sales.

Staff Input

The equivalent was asked and they would also like this ordered from top to bottom.

Should we add a calendar dates and up and coming events?

Managers Input

This isn't an essential requirement but if it is possible then they would like to see it. If it were to be allocated in they would like to be able to highlight the important week for sales and blocked off times for holidays. If it can be colour coded would also be a phenomenal for them.

Staff Input

This was seen as a nice to have idea but not a must by all members. If it was at all possible if the application could section these calendars for each user, with the highlighted weeks added in by managers as a pre-setting, then allow them to make alterations to each of their weeks to fit in their schedule for each account.

Would you like to add emailing into the app and why?

Managers Input

This idea was accepted but once there was privacy boundaries within the emailing service. It was suggested to code the outlook. It was requested that not all members have access to emails, only senior staff have email address to head office.

Staff Input

This idea wasn't seen as a ground breaking idea since sales staff don't often use emailing and once they can avail of the live chat and the suggestion board they were happy.

Another member went on to say that the IT staff and some senior sales would need to avail of the email since they send regular emails every day.

What kind of log on should we use and how protective should it be and why?

Managers Input

The logon should have a password unique to each user. It was suggested that administration should be able to access their accounts whenever management need to. The credentials should only be username and password, since management are to set up the user profiles.

Staff Input

The log in idea was accepted once it was easy and quick to log into. It was also suggested that once the person was logged in they would not be logged back out unless they manually done it themselves. This was to save time, if they were using it on the shop floor. Another suggestion was if they were able to keep their passwords private and be able to choose their passwords.

How much security do you think should go into the app?

Managers Input

Administration should be able to access all areas of the app; no restrictions should adhere to them. It was specified that sales need some restrictions in regards to emailing. Also all information on the app should not be shared with any person who does not work for Dixons Carphone. Any information leaked will default to a dismissal of the employee. It is permitted that any staff member is allowed to use the app outside of the workplace once it was for work purposes.

Staff Input

It was asked for there to be no advertisements. Also for no virus to come onto their phone from it. Also for the app not to not be able to access any of the user's files or images or any other content of the users mobile.

What will be in the main menu contents, what should be prioritised?

All members of the brainstorming session agreed the main menu to have:

Live chat

Suggestion Board

Roster

Emailing

Sales store targets

Calendar events

Announcements

Clipboard

8.3 FOCUS GROUP

What do you think about adding gamifying to the app or should we add this at a later stage or incorporate it immediately and why?

Is it agreed that it was best to add this after all the components of the application was set in place. This is a very vague feature and until an appropriate prototype was made it is unclear to how to go about gamifying. It was suggested that maybe setting it into the training and offering reward stars for every training session completed would be an opening feature to begin with. It was also proposed that announcing the best sales person of the day and giving them a sectioned off announcement added into the clip board.

The design of the app, will it add the Dixons Carphone marketing style or make it neutral and why?

This was almost expected to have the Dixons Carphone style tailored the application throughout the whole groups feedback. Which was to incorporate the logo and the colour and font they use. The primary colours are the purple, blue and red colours and the secondary colours are white and black. There is no specified font other than Comic Sans MC.

How should we go about making announcements on the app, both urgent and regular? Should they have a push notification function?

Push notifications should be able to be turned on and off for all users. They should be always on for roster changes for all users. But for calendar event, announcements and live chat messages they should be able to be turned off. Announcements that are important should be on the header of the app and in a format of a slide down box. The less important announcements should be in the clipboard but a notification should be set on the icon to alert the user.

What kind of funding do we want to invest in the app? Go large or keep it to a minimum and see how the app fares out?

We should allocate the minimum amount of funding that is sufficient to get the app in working order. Nothing too high but enough to allow for all resources necessary. The technology developers would know how much they need to produce the application then should request this off the HR who will then transfer this to finance if they approve. HR will work closely with the Finance director to allocate funding appropriately.

What kind of log on should we use and how protective should it be and why?

It needs to be on the front page when the user opens the app. The group agreed that administration department are the only department who have access to all user profiles

but will only enter the accounts when there is a necessary reason to do so. After that no user is allowed to show people outside their workplace what's inside the app and all authorised users are expected to keep their accounts safe with a strong password. Having a strong password will be a requirement.

How do we set up accounts? Do we have the manager do it or the sales assistant and why?

Only the manager is allowed to set up accounts for protection reasons. Staff cannot set up accounts, they can only log into them.

What kind of security systems should we use? Standard or very high?

High secure system. Fire walls should be equipped and standard data protection procedures into place. HR and IT department will work closely on this.

How do we want the payroll forms to be displayed? Individually or grouped into one online forum?

Payrolls are confidential and they need to be distributed carefully to each user's profile individually ensuring data protection and maybe an internal log in should be coded in for further protection.

What sort of permissions or restrictions will be allocated to the sales team members? Then for managers the same question.

The sales team are allowed to access the live chat, announcements, sales reporting, suggestion box and rosters. Payrolls are individual.

The senior staff, it staff, management and above are permitted to access the emailing, user accounts and payroll.

How should we design the roaster? What sort of restrictions should we have on it? Can users make changes to the roaster or should they have to request changes?

User will have to request all changes and mangers should be notified immediately as these requests are submitted. Users can only view the rosters. Managers can make changes when they need to and on their own discretion.

When making the live chat, who can see the live chat? Should it be as a group or be able to have them individually?

The live chat should be a group chat. It should be made that all members of the store are able to see it as soon as they become a user. Individual chats should be for the suggestion box. They are only send through to head office.

8.4 INTERVIEW

8.4.1 HR Interview

What are the biggest challenges a HR have when communicating with the store staff and how would you suggest we can solve this with the app?

Not being able to contact all members of the organisation in one place. Basically, not having a place to go to connect to all members and having to default on the middle man to pass on messages who would normally be the management who then pass it onto their team leaders.

It was suggested that if the app would have a private messaging chat service from HR to whoever they need to contact. Also, another idea was to have the announcement box to cover important notices.

How do you want an app like this to look and navigate? What functions would you like to see? Try to be imaginative

HR would like to see the profiles of staff members, with a biography, a photo and their KPIs next to them to get to know their staff and become familiar with them.

What type of research is needed to make the app specifically tuned to Dixons Carphone's style?

For the app to be more tuned to the organisations style having the logo plastered where fit would be a good start. Then to have story boards of the company background and the director's stories in an about page to give the members of our organisation a record of who we are and what Dixons Carphone is about.

Features that the HR stakeholder will be expected to apply information to the app are payslips, contracts, announcements and discussions box, is there anything else you would like to see in the app?

The profile account is something HR would certainly like to see. If there could be a live video podcast setting to engage live broadcasts and/or involve staff into meetings we are having when we want to.

In relation to the question above, does that cover all necessary communication needed between frontline and head office?

HR suggested that having some criteria to see who's online or in work to enhance transparency when deciding to link in with them.

What do you think should be tracked in an app like this? In other words, what kind of information should be kept in an external file or private source.

The emailing should have privacy settings. The payrolls should be private to each individual user. The contracts should be private if they were to be situated in.

What other changes can you talk about that are happening in Dixons Carphone that could impact this project in any way?

Referrals was something that could be discussed. This is another KPI that is going to be added to the sales reporting. It is expected of every sales member to refer their customer onto Carphone Warehouse for either a TV satellite, Mobile Network or Broadband. This was something was requested to be added in the sales reporting as it is now required of each sales person to get at least one referral a day. Also, a new manager is coming to the store, it was requested to have a declaration about him and give some background of his experience and why he would be a great addition to the store.

8.4.2 Technology Developer Interview 1

What challenges do you think we would face with an app like this?

➔ Implementing the communication aspect of the application and integrating the live chat functionality.

What outcomes can we expect and what outcomes can we not expect to happen?

➔ On the completion of the application, users of the application should be satisfied with the application and its functionalities.

Describe a typical framework we should use to design the app?

➔ Depending on your preference, you could use android studio for Android only application or X-code for apple iPhone only application.

What can you see being the biggest setback for the app?

➔ Integrating the payslip functionality as this add security threats to users work information.

What typical research should we do for the app?

➔ Investigate other plugins and SDK extensions which you could add to build your application. Along with the cost of using those plugins and SDK.

What's the general funding should we allocate? How can we analyse or predict the funding better and highlight it to the investors?

➔ You should look into the cost of each of the necessary needed features for your application and if outsourcing some of those features, the cost of those would vary significantly.

What components do we need to make the app?

➔ You would need either Android Studio IDE for both Mac and Windows (If making Android Apps) or X-Code IDE for Mac only (If making iPhone Apps)

How can we make a logo?

➔ You can outsource the logo and have an artist design the logo for you to save you a lot of time.

Where do we go to store data? What software should we use? i.e. MySQL

➔ If the company doesn't have an internal database system, you can opt in for an external database hosting site to cater your needs.

How do we make the app compatible to various type of Operating Systems on mobile phones?

➔ If you choose to have the application work on multiple devices running different operating systems, you should consider creating a cross platform application.

How can we market the app to other vendors?

➔ Depending on the operating system you chose to build your application for, the marketplace would vary as with Android, you would have "Play Store", Apple has "Apple Store" and Windows has "Windows Store".

8.4.3 Technology Developer Interview 2

What challenges do you think we would face with an app like this?

➔ Part of app building is out of the creators control, and that is getting it accepted into the respective app store, Google Play, Apple App Store, or Amazon etc. The app needs to meet certain requirements, such as security needs, and can get removed or rejected at application from the stores without notice or sufficient reason, therefore careful research would need to go into that. Another challenge would be ensuring the Android version and Apple version sync together well, because of the major differences in how each platform is each app may not look or act identical and may not communicate well with each other if not done properly.

What outcomes can we expect and what outcomes can we not expect to happen?

➔ We can expect to get an app made that acts as a feasibility study, that functions to show its proposed features. What we cannot expect to happen is get the app with all proposed fully functioning services without some funding or someone with advanced programming expertise working on it yet.

Describe a typical framework we should use to design the app?

➔ For the android app we will use the Java framework, iOS uses Objective C framework. So for this project Java, coupled with HTML/CSS and javascript will be used.

What can you see being the biggest setback for the app?

➔ Compiling errors are the biggest setback, the app could be working perfectly and then a small change in the code can cause the app to not work after it's compiled. This may not even be noticed until a while after the app is compiled for unknown reasons to the developer. This is especially a problem when a part of the code doesn't work because it's incompatible with a different part of code and which part isn't obvious.

What typical research should we do for the app?

➔ Finding out how to advertise the app is the most important aspect of app's creation. An app is no use unless people find it and download it. Find out how to get it into the Google Play Store and get it in front of users.

What's the general funding should we allocate? How can we analyse or predict the funding better and highlight it to the investors?

➔ A well-made app can be done for a few thousand euro, and a separate budget for advertising costs should be put aside also. 10,000 euro divided 50/50 into app development and advertising, along with a talented director with sufficient coding knowledge to make edits and changes to the app and ad program would be sufficient to bring it to success.

What components do we need to make the app?

➔ Android Studio is a great 'what you see is what you get' editor. This means the app can be viewed on the computer and edits made to it in real time, so if an image was off center for example it can be clicked and dragged to where it should be, it makes app development a lot easier than it used to be.

How can we make a logo?

➔ Either a graphic designer could be hired to make a custom logo, or squarespace.com or other such logo creators could be employed to make one using text fonts and wide array of arts combined. This would only cost about 10 euro as opposed to 100 euro plus to hire a designer.

Where do we go to store data? What software should we use? i.e. mySQL

➔ mySQL is perfectly suited for this app for any databases that store information that is to be accessed or edited by multiple users using app on different phones. All other data should be stored on web servers by reputable companies such as Digitalocean.com which is cheap and reputable, or Amazon web services which is more expensive but more reliable but really only for much larger projects.

How do we make the app compatible to various type of Operating Systems on mobile phones?

➔ Converting the app from Android to iOS for example is not a simple process and may even need to be redone from the ground up. The same can be said for Windows Phone apps. Because Android and iOS use different programming languages for their apps, there is no way to copy and paste the code from one to the other and it could only be used as a reference to rebuild the app. Google have created an open source program called J2ObjC which helps convert java code to objective c but it has many limitations.

How can we market the app to other vendors?

➔ Google Adwords is a good tool for advertising to a broad audience, however if you are looking to advertise to a specific person or company direct contact is best

8.4.4 Survey Interview

What do think is the biggest factor contributing to communication breakdown?

Not having a platform or an accessible means to connect with management, other than the social media app which is what's app. When the shift of any employee starts it doesn't give the person any time to stop and talk to their manager and explain any matters of concern or topic needing some attention.

What would you like employees do to communicate better?

They need to have a means to speak up and explain in a professional manor if there is something of concern.

Are the employees given the accessibility to identify future changes and developments? How?

The participant said the only platforms of communication are notice boards on the wall at the back of the office and online resources. The notices on the wall aren't always checked, only the employees who decide to come in early or stay late from their shift are the ones who check it. Then it's up to the employee to check the online resources available on Google to see if there are any changes in new products lines of leading markets or ongoing changes in the retailer itself.

How are you motivated to meet your goals at work?

The participant said it was up to their own initiative they are working at Curry's PCWorld for over 3 years now, she has a routine of job she does daily. She explained how she confirms the targets she's intends to hit that day and remains to have a positive outlook at the start of her shift.

Are you able to adapt quickly to difficult situations at work given your current training and experience and how?

She said from the experience of having to deal with various situations throughout her time at the store she learned herself but there were no sources to go to for to go when she began so she states she was completely thrown in the deep end with no inclination of how to behave on the job or what was required of her.

Do you think an app would be useful in this working environment and why?

She expressed it would have a major benefit, especially for the roaster changes because it is such an issue to balance work life and home life and a lot of the time unexpected occurrences happen outside of work that obtain time off so being able to attain a feature such as this to amend the roster would be very helpful. Even if you needed to request having less hours or more hours this would be an extremely valuable way to achieve this. She also added that the live chat would be extremely useful for saving time.

Would it be helpful to have push notifications on your phone to remind you of your shift? If not, why?

The participant said she didn't think having push notification was necessary, she said she has set hours for her contract and she knows when her shift starts. She doesn't need to know about work when she's not in and being reminded of it is not appealing to her and thinks it would be over the top.

Does Dixons Carphone enable accessibility to the right information you need to perform well in your job and if so how?

The participant said that there's no set way to be with customers, she said in her previous job there was a dialect and a manner to adhere to with all customers who walk into the shop. She explained that with this job the employees are left to their own intuition and experience to deal with customers. She went on to say there was no training involved on how to treat customers other than being told to guarantee customer satisfaction. Furthermore, she explained that it would be a good investment to pursue a training method on customer satisfaction.

Are you satisfied with the flexibility in your workplace? If not, why and how do you think it can be made better?

The participant explains that when the shift starts there are no lunch rosters readily available and people have to come to their manager to ask. She requested that if a lay out of the lunch roster would be added in it would be a good advancement. She then said that when someone needs to swap shifts there is a huge ordeal and it can get very unorganised. So having a structure to do that on the roster would be helpful in that case.

Is communication between frontline staff and manager or team leader well interpreted and why?

She stated that is sometimes is and sometimes isn't. This was due to the lack of time they have to take to tell staff what's going on. Even though sometimes there can be daily briefs not everything is covered, only the sales targets are. There could be a lot more said but it would take too much time to cover and customers have already entered the shop at that stage and they need assistance.

Are you happy with the current method of daily briefs and training? If not, how can it be made better?

As she previously mentioned, daily briefs can only go on for so long. Generally, they take from 5-10 minutes a day. This isn't enough time to go through the operations, product/stock intake, customer satisfaction overview, sales targets and any other minor issues that are going on that need to be discussed.

Do you think your hard work is being noticed and gratified?

The participant explained that she mostly keeps track of her sales and majority of the time she is one of the top sales people. Sometimes the team leaders or manager can pass comments about them standing around and talking or not fixing up the shops as if there has been no work done. Which is a sure sign they haven't noticed the sales

that have been made. She explained that sometimes they have incentives where they would raffle off the clearance stock left over. These aren't always great products to have or particularly liked but at least it's some incentive to look forward to. Otherwise there is not much of a solid gratitude regularly made and she expressed having a better form of recognition upgraded.

What kind of research would help gather information on communication within this working environment?

She suggested that by looking at the various tasks every staff member takes on and making observations on the points of any job task that need communication and possibly documenting that. Then seeing what is more important and is slowing down productivity and looking on how a solution can be implemented to repair that and integrating that solution to the mobile application.

Do you think having miniature learning outcome tutorials in the app would be beneficial?

She specified that training should be a major aspect of the application. It was one of the main features she's looking forward to when the app goes live. She requested that the tutorials are new and up-to-date relevant information on current products and methods of customer service.

What function would you like to see in the app?

Contact information of staff, managers and head office would be very useful, so if you could have a place for that. Or even allocate this onto their user profiles. She would also like to see a lunch roster added in as a separate function to the main roster. She also stated that having a notice board to be edited by other staff members so they can share important content that is relevant to the company.

What would be expected the outcome to be from having an app like this?

That all members are well informed about the operations and on goings of the company. She believes that customer service would become a lot more defined and product knowledge would be advanced for all the members.

How can the app assist in lifting the work load a manager has to do in a retail environment? Would you like more trust and responsibility to be in your hands instead of the manager?

She suggested that maybe picking one person a day and giving them the permissions to fill in the lunch roster would be one way to help out. Also by giving permissions to write up announcements on new products or handy tips to deliver customer services and share important content about work would also be a good permission to avail of.

Do you have any other input to add in relation to the app or communication within the workplace, that you think would make the app better?

She stated that once the app is available at all times and that content is secure and won't be leaked it would be helpful. Also she said if the app was easily navigable and decorative too.

8.4.5 Interview Conclusion

Based on the evidence from the interview the feedback was mostly that the use of this project would be extremely beneficial. People are already starting to see how it will impact the business and imagine how it will be integrated. They have already been seen to be optimistic of the outcome and hopeful that the changes it will make will be effective. They seem to have a current issue with interconnecting and networking within the industry. The view is that the application will amend that. There are a few requirements gathered from these four sessions that will be discussed in the MOSCOW Analysis.

8.5 PROTOTYPE

8.5.1 Prototype Wireframes
Main Page
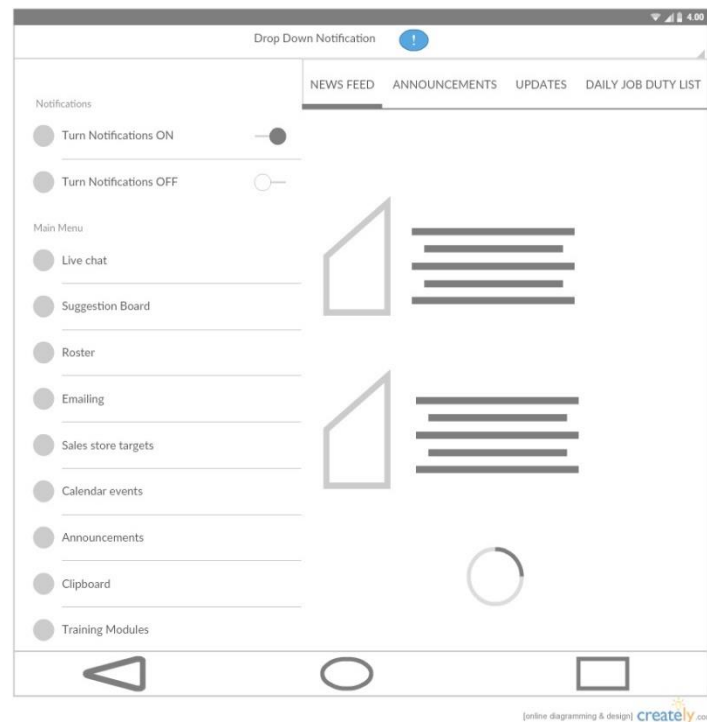
Figure 7.5.1 Mobile Application Wireframe Main Page with News feed

Live chat
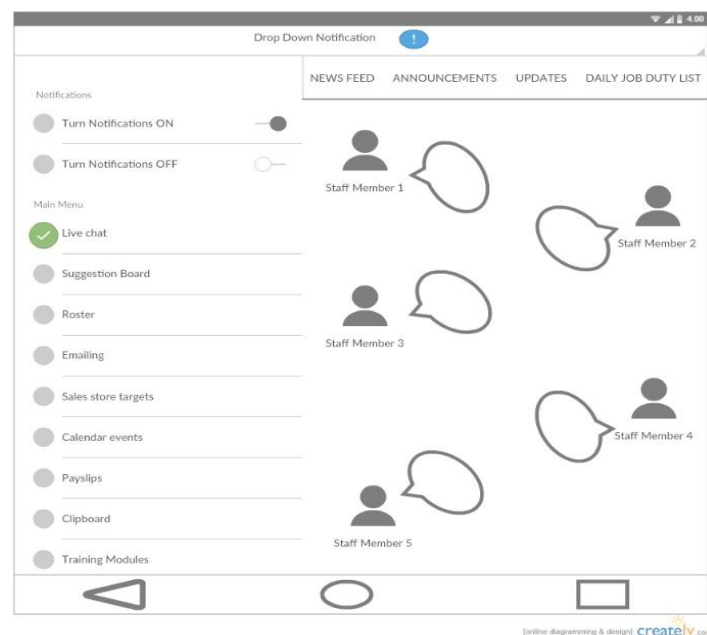
Figure 7.5.2 Mobile Application Wireframe Live Chat Messaging Group

Suggestion Board
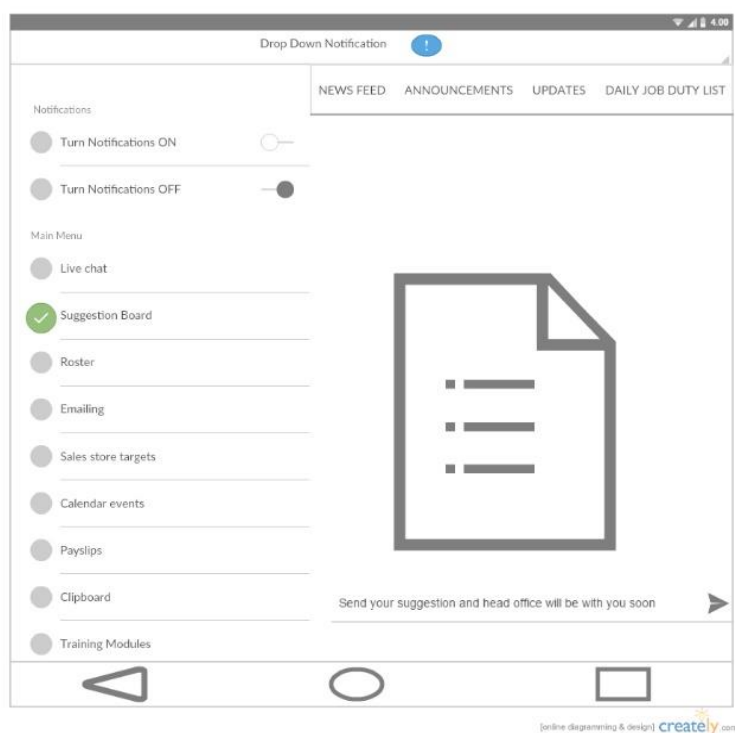
Figure 7.5.3 Mobile Application Wireframe for Suggestion Board
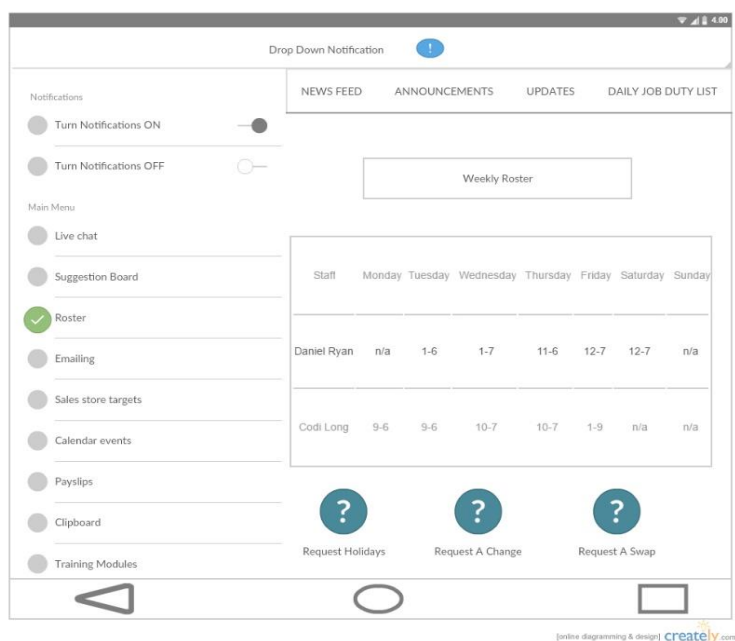
Roster

Figure 7.5.4 Mobile Application Wireframe for Roster

Emails
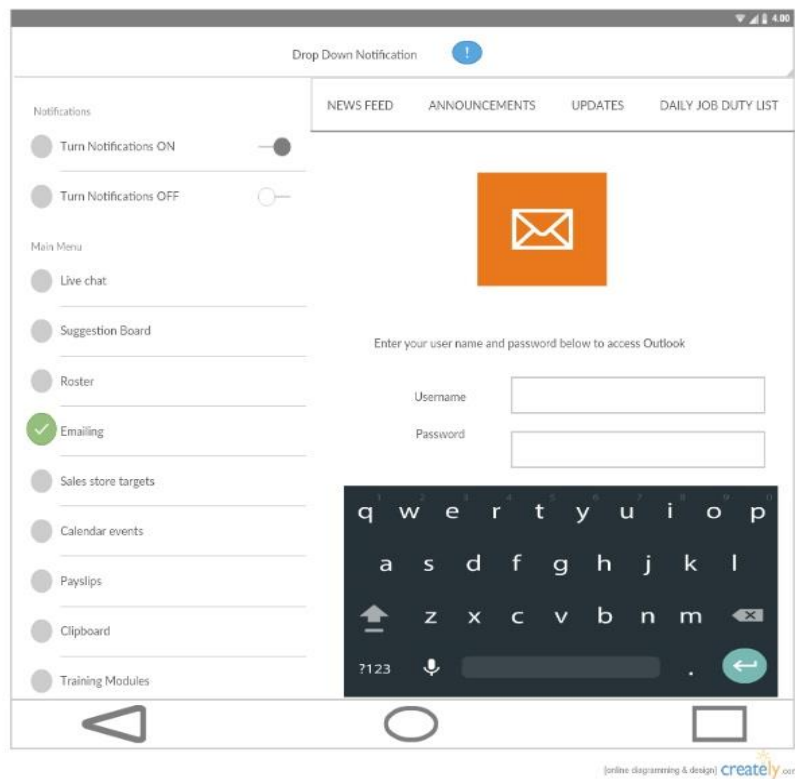
Figure 7.5.5 Mobile Application Wireframe for Emailing

Sales Store Targets
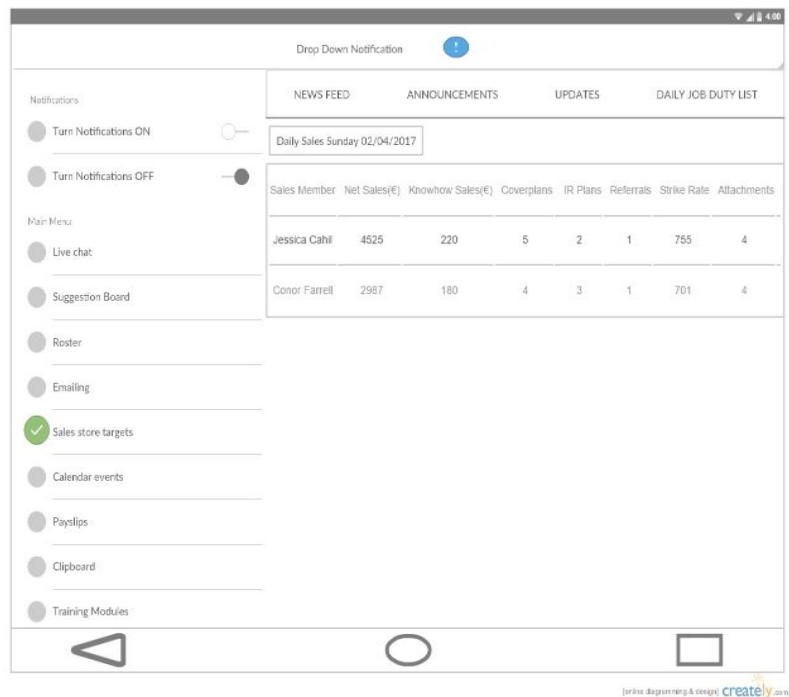
Figure 7.5.6 Mobile Application Wireframe for Sales Targets

Comms App   Aoife Lynam
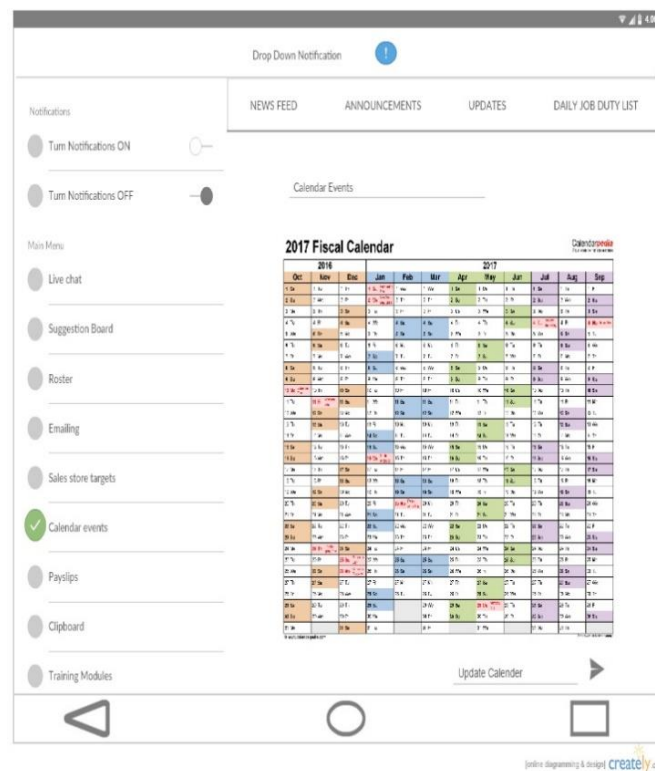
Calendar Events [9]

Figure 7.5.7 Mobile Application Wireframe for Calendar Events for the Fiscal Year

Payslips
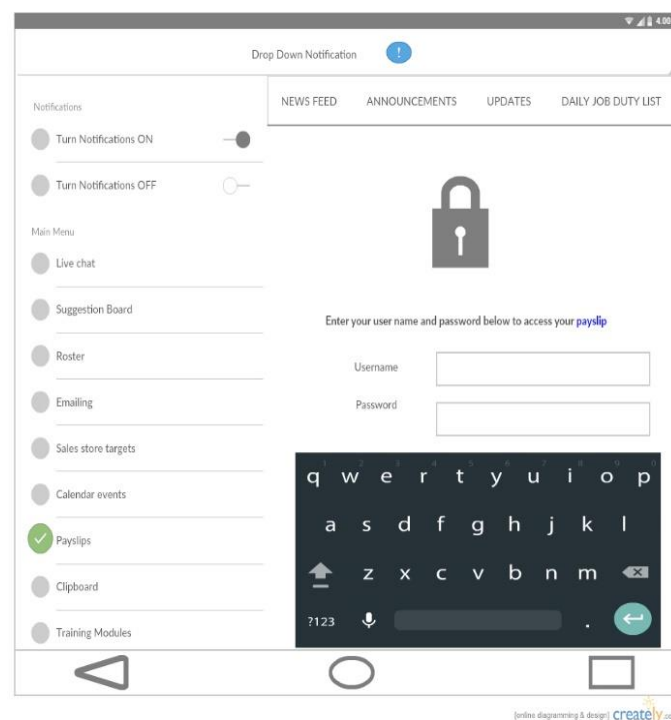
Figure 7.5.8 Mobile Application Wireframe for Payslips

Clip Board
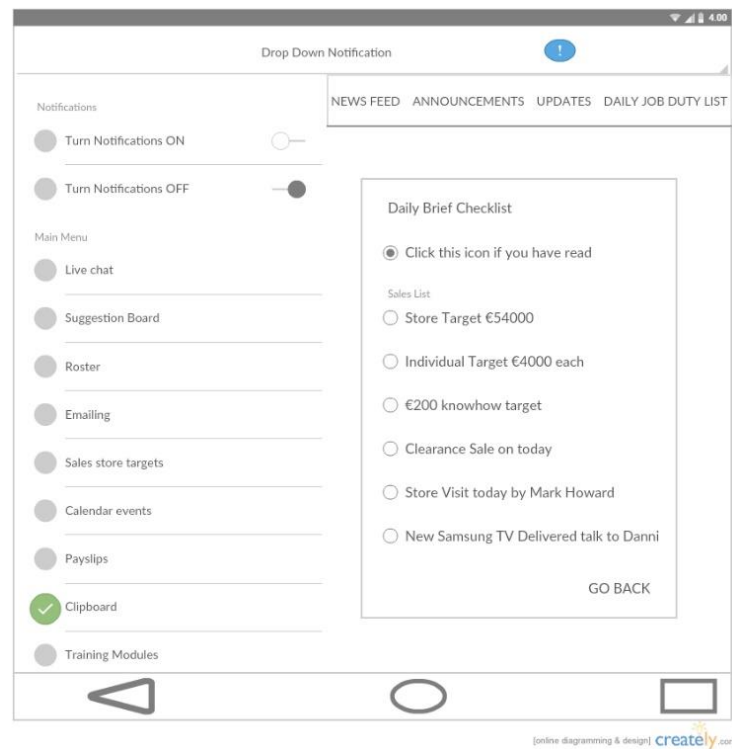
Figure 7.5.9 Mobile App Wireframe for Clipboard

Training Modules
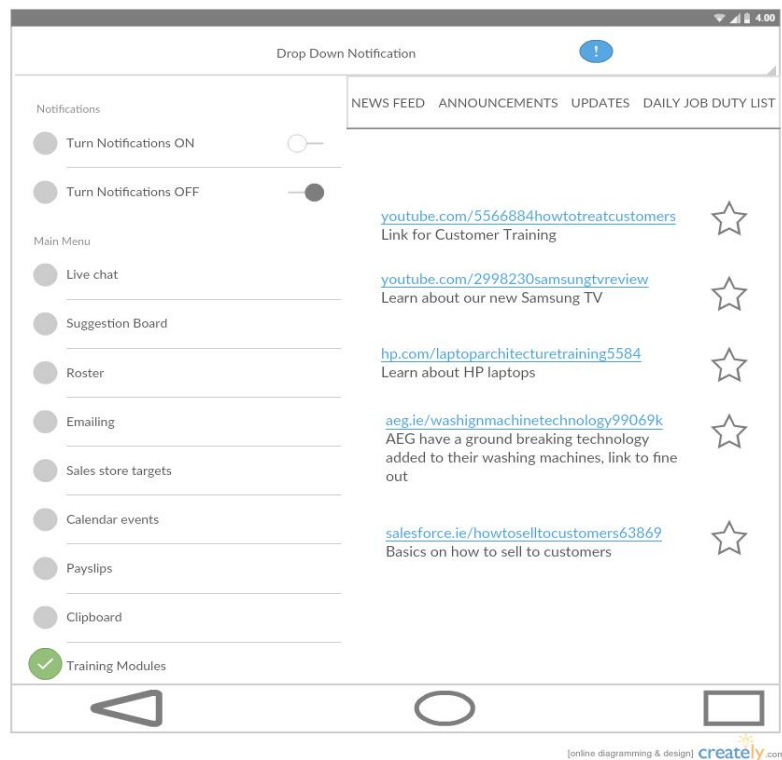
Figure 7.5.10 Mobile Application Wireframe for Training Modules

Comms App   Aoife Lynam
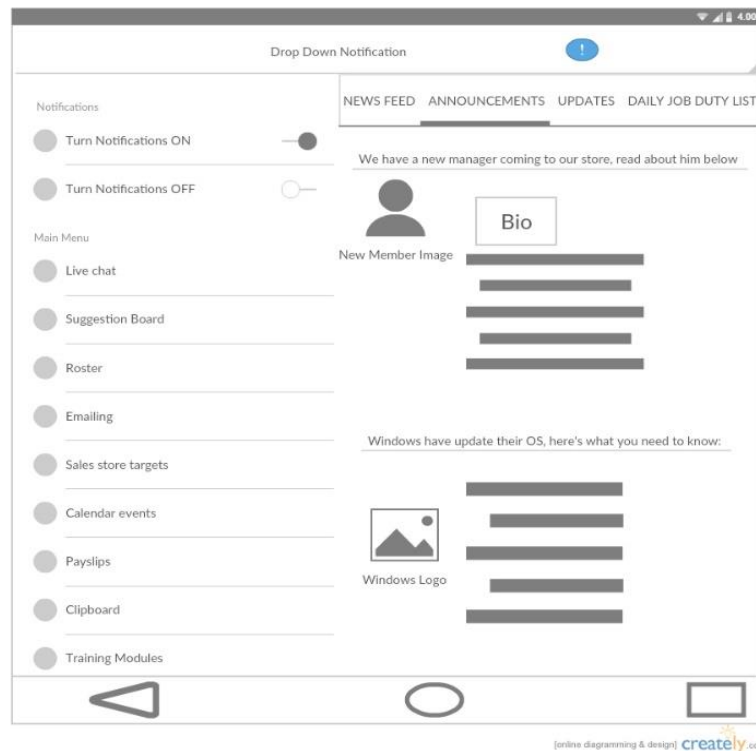
Announcements

Figure 7.5.11 Mobile Application Wireframe for Announcements

Updates
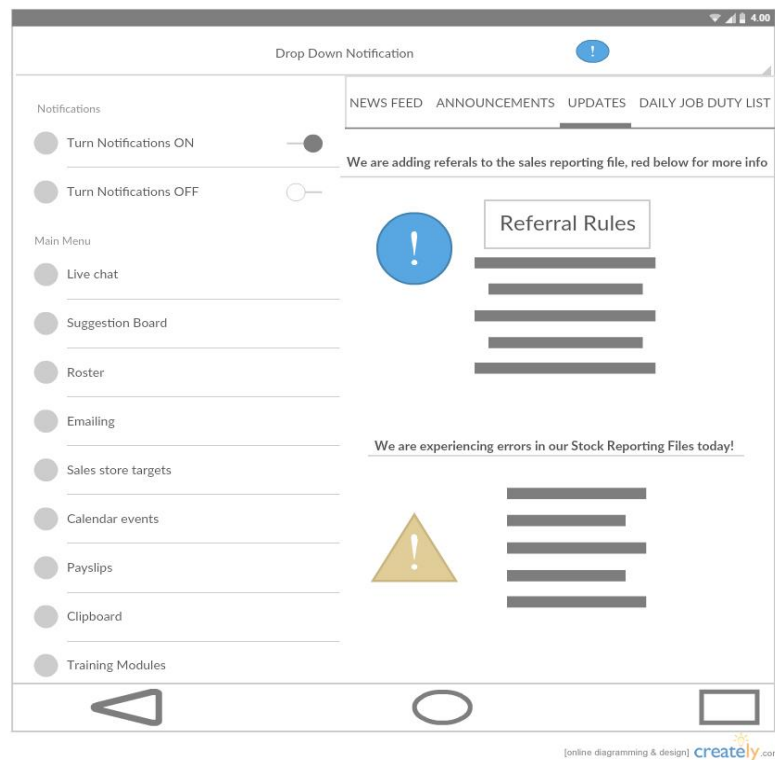
Figure 7.5.12 Mobile Application Wireframe for Daily Updates

Daily Job Duty List
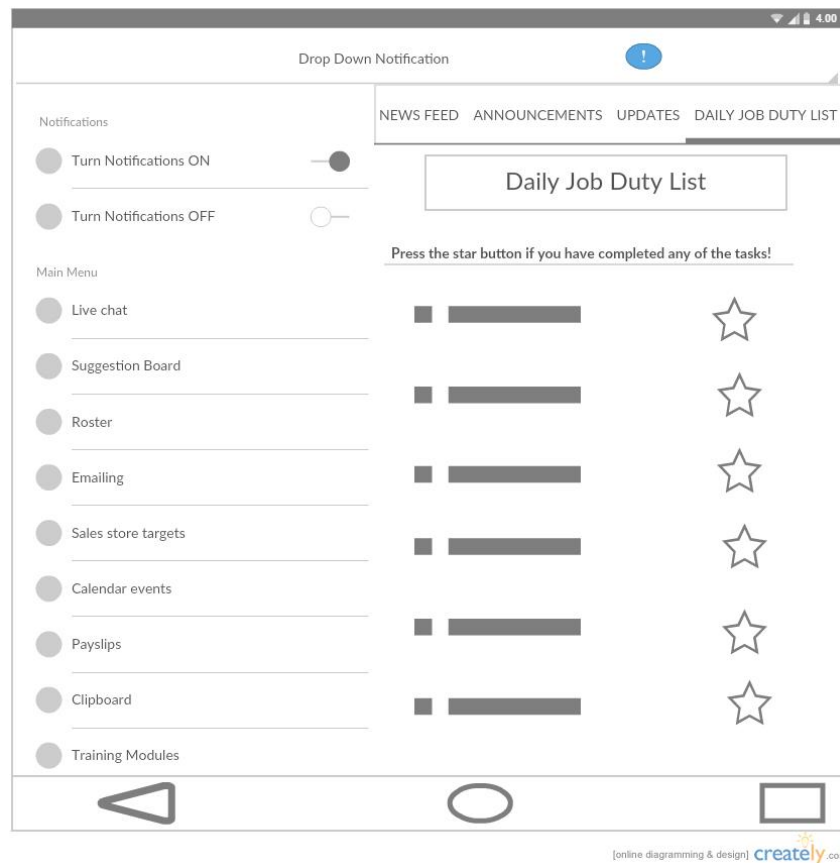
Figure 7.5.13 Mobile Application Wireframe for Daily Job Duty List

8.5.2 Prototype Conclusion

This prototype was built from the analysis and research of the four requirements elicitation techniques. These were made up of the survey, brainstorming session, focus group and four interviews, this was carried with a range of carefully selected stakeholders who were very helpful and made themselves available throughout this process. The prototype is going to act as a proof of concept for the stakeholder to work with while participating in the requirements workshop. It is going to be analysed and further research will be on the detail that of the design. Then it will be used to increase accuracy of the inputs, the users and the outputs. Only then when all analysis is taken from the requirements workshop and the interface analysis the amendments will take place to physically design the mobile application. This should be more of a precise preference of the stakeholders so it is expected that they be satisfied with the product outcome. If they aren't then they state the features that need alterations at that point those alterations should be modified, updated and corrected.

From the results of the survey, the data collected showed that there was a preference for a live chat. 60.6% strongly agreed to have a live chat. And 33.8% agreed, this was

a positive result and effectively proved that it needed to be modified into the prototype so that stakeholders can share their opinions on the design of the chat and who will see it and who will be able to talk in and how responsive it should be. 64.5% of respondents agreed to have an announcement board would improve productivity. So this was also developed into the prototype to enhance accuracy of the design. 76.7% agreed that having a roster they can check daily and make amendments to would improve productivity. Also approximately 62.8% of employee agreed that having training modules would increase their adaptability within the workplace. These responses were very useful and were developed into the prototype to allow for a further analysis of the designs, permissions and restrictions of Comms App.

The prototype consists of 13 pages that adhere to a proof of concept for stakeholders to further investigate. The fulfill the significant needs of the interested party. To further explain, Human Resources would like to see the user profiles, how much they use the app and if they are presently active. This is to get to know the employees background and to see if they can converse them while they are online therefore increasing professionalism. In addition, having a profile of who's active and online will aid others in knowing who to talk to while they are at work. Showing the active users and who's is available at work is a new concept for the app and people at work and it appeals to all employees. This prototype was cultivated on the 4th of April 2017. Then from the requirements workshop the new features and amendments were made. The Comms App logo and the Dixons Carphone logo will be put into the app. For the prototype purposes and because this concept will be marketed to business outside of Dixons Carphone it was kept neutral. There was a massive amount of positive feedback that received when conducting other elicitation sessions alongside the numerous interested parties. [11]

8.6 REQUIREMENTS WORKSHOP

This requirements gathering and validation workshop comprised of one team leader, one senior manager, two sales assistants and two technology developer, which was hosted by a facilitator who was the business analyst. These stakeholders gave some valuable recommendations through their comments and interpretations to the facilitator. These recommendations were documented and further appointed into the application development.

The stakeholders were utterly satisfied with the concept of the application and were optimistic about the features and what it was going to achieve. They were happy with the layout since it proved to be clear and easy to navigate. All the menu content was on the left and important announcements and daily newsfeed were highlighted in the middle. Announcement/ Notification box drop down from the top and was able to swiped back up. A number of requirements were discussed during this session. Some were about the layout and others were about the functioning. Also permissions and restrictions were also discussed by the managing partners who attended the session. Also the website was discussed, in this gathering.

The sales assistant proactively discussed having a lunch roster added to the menu list, this was to be updated daily and maybe to have a staff member appointed to this job, preferably someone from the tills operation. They discussed that by having an algorithm that positions the staff that are working that day from the main roster, placing them into a prescribed layout and just putting in the times they are on would be very effective.

The managers had an outstanding notion to have announcements on the main page to look like a daily news feed, since there is so many changes going on it would prove useful for clipboards of notices and news to be instantaneously available for any user when they log on. Also to add in an acknowledgment of leading sales person of the month.

The requirements workshop partakers articulated their gratification with the navigational list of options in the prototype. They also requested to have a dropdown notification hovering a few inches over the top of the newsfeed announcing anything important from roster changes or email updates or even calendar events.

The technology developers probed for answer of minor features from the group. They asked if the app would need a notification alert in a numerical format on the image of the app icon to let users know that something has changed and they might want to check it. Additionally, they asked if they wanted to be able to turn off notifications and to what extent. They mentioned that HR were interested in having a place to show what users were currently logged on and active so HR know when they can talk to them. The developers were able to discover that this was something widely accepted by the group and to go code that into the application.

It was also discussed whether there should be a page for external links for training modules, instead of having an internal program for training as that would take up so

much space and slow down he functionality of the app. People were enlightened by the idea and stated that it would be easier to update the content for training sessions online then just update a link in the app and send out a notification of new training sessions for users.

The team leader then added that he would like to see a score board for people who click the link for training and completed it to give them some appraisal. The adding a competition or an incentive for anyone who completes all or any training session within a certain timeframe.

It was also discussed that announcing the sales and special offers or deals of the day to be added to the news feed or on a clip board so it is ensured that it is updated every day.

Later on in the session, it was discussed as to what contact information should be added in. The contact information that should be added in are the general managers and assistant managers for every store in the region, the knowhow delivery team number, the head office contacts such as HR. Finance and IT staff, then all members of management for the store and all members of staff for the store. Also whether there should be brief discussion of the daily sales target that need more attention for the day and rest the accruing week.

8.7 INTERFACE ANALYSIS

8.7.1 UML Use Case Diagram Illustration
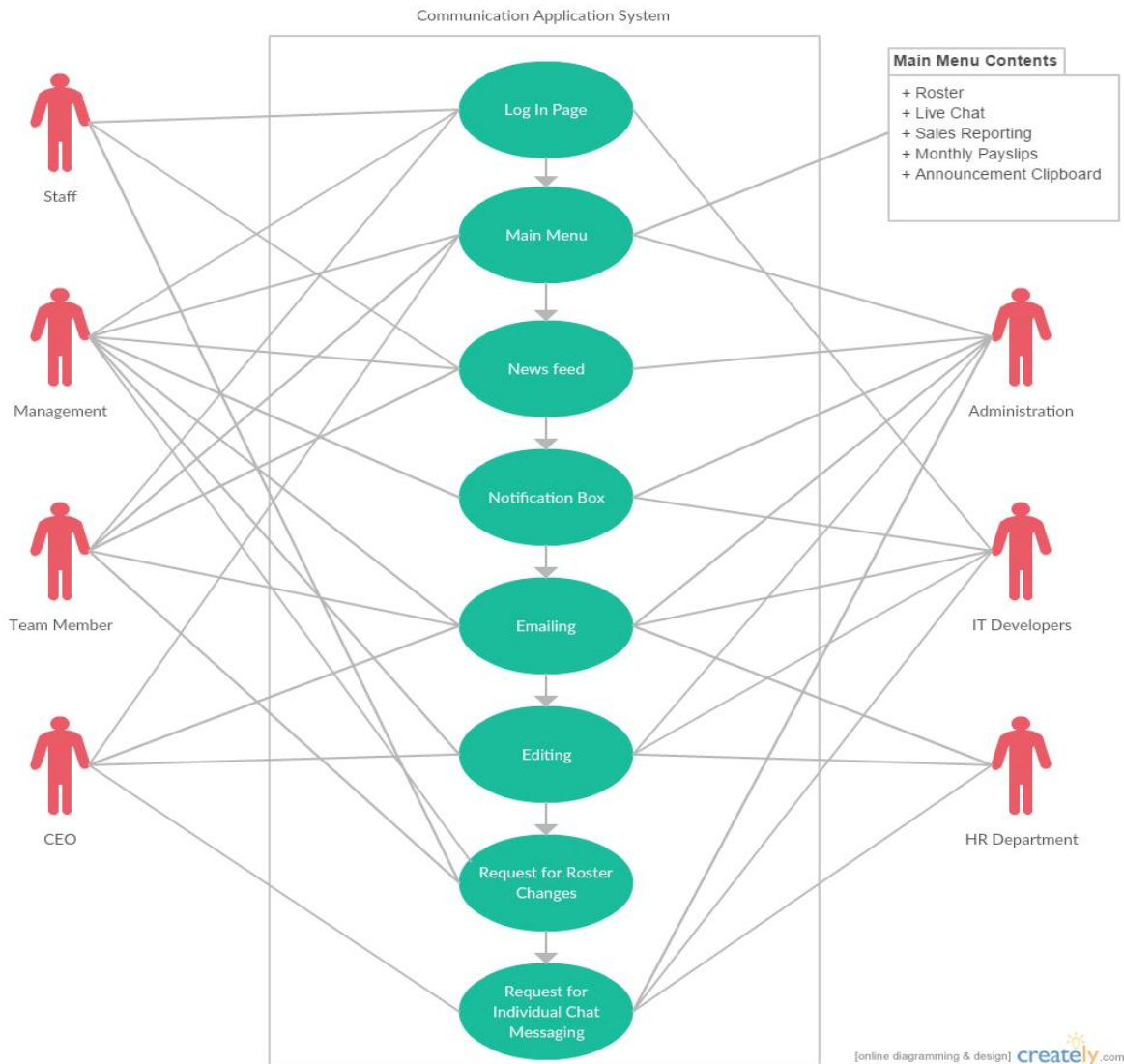
Figure 7.1 Illustration of UML Use Case Diagram

8.7.2 UML Use Case Diagram Conclusion:

This illustration visually depicts the affiliations that will exist within project participants on behalf of the communications application itself. The actors are positioned in the outer border of the figure. Then there are arrows to denote the numerous use cases that all of the participants are linked with in the application. The individual actors obtain an affiliation with at least one of the objects in the illustration. For example, the sales staff can only make requests they cannot edit the app and managers are allowed to edited the app alongside make notifications. Adversely, HR, IT, Admin and the CEO are allowed to request an individual chat messaging to staff but staff or management cannot use this.

9 MOSCOW ANALYSIS

No.	Requirement	Session	Stakeholder	MoSCoW
1.	Roster must enable a request to change shift	Survey	Survey Participant	(M)
2.	Roster should enable swapping of shifts	Survey	Survey Participant	(M)
3.	Training Modules need to be up-to-date	Survey	Survey Participant	(M)
4.	Push Notifications for updates and news	Survey	Survey Participant	(C)
5.	Payslips to be formatted in	Survey	Survey Participant	(C)
6.	Percentages of goals on a graph to be presented in app	Survey	Survey Participant	(W)
7.	Gamifying job duties and training modules completed	Survey	Survey Participant	(C)
8.	Calendar of Events and Sales	Survey	Survey Participant	(S)
9.	New Updates of any changes to be in the news feed	Survey	Survey Participant	(M)
10.	Articles for training staff on customer service	Survey	Survey Participant	(M)
11.	List of job duties to fulfill throughout the day	Survey	Survey Participant	(S)
12.	10 minute live chat services	Survey	Survey Participant	(S)
13.	Sales Target of Strike Rate and other KPIs added including referrals	Brainstorming	Manager	(M)
17.	Be able to turn off push notification for the app	Brainstorming	Staff Member	(C)
17.	Roster changes must have notification for any changes.	Brainstorming	Staff Member	(M)
18.	Have demonstrations for new products or links to them	Brainstorming	Staff Member	(S)
19.	Suggestion Box to send to head office for HR issues	Brainstorming	Staff Member	(S)
20.	Have an announcement clipboard added into the menu	Brainstorming	Manager	(M)
21.	Have an online bar for users who are currently active	Brainstorming	Manager	(M)
22.	Allow the mangers to edit the app	Brainstorming	Manager	(M)
23.	Having the Policy Handbook available on the app	Brainstorming	Staff Member	(C)

9.1.1 Moscow Analysis Continued…

No.	Requirement	Session	Stakeholder	MoSCoW
24.	Allow staff to check sales updates	Brainstorming	Staff Member	(M)
25.	Having an appraisal board for top sales or good employees	Brainstorming	Staff Member	(C)
26.	Stock Reporting to be in the menu for the app	Brainstorming	Manager	(W)
27.	Sales Transaction to be on the app for staff and customer	Brainstorming	Staff Member	(W)
28.	Gamifying on tutorials	Brainstorming	Staff Member	(C)
29.	Push Notifications on all changes made to the app	Brainstorming	Staff Member	(W)
30.	Order the sales from who's on top to bottom	Brainstorming	Staff Member	(M)
31.	Calendar to highlight sales or events in store	Brainstorming	Manager	(C)
32.	Staff are able to edit the calendar for their own individual usage.	Brainstorming	Staff Member	(C)
33.	Code in Outlook html instead of making up an entire new emailing service	Brainstorming	Manager	(M)
34.	Allow only senior members, IT Staff and above to access emailing	Brainstorming	Manager + Staff Member	(M)
35.	Log In to have just user name and password	Brainstorming	Manager + Staff Member	(M)
36.	App doesn't automatically log you out when you click out of it	Brainstorming	Staff Member	(S)
37.	When entering the password, it should be hidden.	Brainstorming	Manager	(M)
38.	Administration has access to all accounts and will only look into them with reasonable discretion	Brainstorming	Manager	(M)
39.	Password has to be unique	Brainstorming	Staff Member	(S)
40.	Information should not be leaked externally	Brainstorming	Manager	(M)
41.	Fire walls and anti-viruses coded in	Brainstorming	Manager	(M)
42.	No advertisements allowed in the app	Brainstorming	Staff Member	(S)
43.	Gamifying to be added in after all the components of application are set	Focus Group	Manager	(W)
44.	Best sales person of the day to be put on the news feed	Focus Group	Staff	(S)

9.1.2 Moscow Analysis Continued...

No.	Requirement	Session	Stakeholder	MoSCoW
45.	Incorporate the Dixons Carphone style & colours for design	Focus Group	HR	(M)
46.	Announcements should be on the header and easy to swipe out of	Focus Group	Staff	(S)
47.	Having a strong password to log in with.	Focus Group	Management	(S)
48.	Only Managers are allowed to set up accounts for security	Focus Group	Management	(M)
49.	Staff are only able to log into accounts	Focus Group	Management	(M)
50.	Staff can edit the lunch roster	Focus Group	Staff	(S)
51.	Payrolls need to be distributed individually and have an internal log in to access them	Focus Group	HR	(M)
52.	When requests to the roster are made managers should be notified immediately.	Focus Group	Management	(M)
53.	Live chat should be visible to all users	Focus Group	Group	(M)
54.	The should be able to see the profiles of staff and they should have a bio and images next to them	Interview	HR	(M)
55.	Private messaging should be allowed open from head office to a staff member if needed.	Interview	HR	(M)
56.	Suggestion Box allowed to be submitted to us from staff member	Interview	HR	(M)
57.	Having an Organisational Chart to give a background of the manager directors of the company	Interview	HR	(W)
58.	Live video podcast of meetings for up and coming changes	Interview	HR	(W)
59.	Online contracts for staff members to be coded into the app	Interview	HR	(W)
60.	Push notifications not needed	Interview	Survey Participant	(W)

61.	Training Modules on Customer Satisfaction	Interview	Survey Participant	(W)
62.	Lunch Roster Added in the menu	Interview	Survey Participant	(W)
63.	Menu Content on the left	Requirements Workshop	Group	(S)
64.	News feed in the middle	Requirements Workshop	Group	(S)
65.	Announcement drop down from the top	Requirements Workshop	Group	(S)
66.	App to have an numerical notification on the image icon	Requirements Workshop	Technology Developers	(M)
67.	A separate page for external links	Requirements Workshop	Technology Developers	(S)

9.1.3 Moscow Analysis Summary

This was a priority list to clearly display the requirements that were discussed and probed from all elicitation techniques. The number order does not have any indication to the requirements importance other than to list them in a correct manner. The content after the number order describes the requirement. The session that inflicted the requirement is in the next box. The stakeholder who suggested the requirement is named in the box after that. Then the MoSCoW prioritisation is listed in the last box.

Only some of these requirements are going to be put into the prototype app as it's just a demonstration of the concept. Also because the app is supposed to appeal to any retail store

10 IEEE WEBSITE REQUIREMENTS SPECIFICATION

10.1 INTRODUCTION

10.1.1 Purpose
The purpose of the website is to have an online presence for Comms App that is not the Google Play Store for example. The website acts as a sales page, demonstrating features and functions, and encourages the user to download. The website could also function as a non-mobile base for the features of the app, connecting to it by a database.

10.1.2 Scope
The website would have on its main page, images of the app and descriptions of what it performs. It would also possess a user login portal for database connection to the app itself. Considering the scope of this project the app and website will not be connected by a database but act instead to view feasibility of the project. The website will place Google Play Store and Apple App Store links to the app, but these will not function. However, the website will have a link to download Comms App to your phone, and the app will be stored locally on the website servers.

10.1.3 Definitions, Acronyms and Abbreviations
CSS - Cascading Style Sheets

HTML - Hypertext Markup Language

IP – Internet Protocol

MB - Megabyte

PHP – Hypertext Preprocessor

SEO – Search Engine Optimsation

SSD- Solid State Drive

TB - Terabyte

SQL – Stuctured Query Language

TLD – Top Level Domain

URL – Unicode Trasmission Format

XML – eXtensible Markup Language

VPS – Virtual Private Server

CMS – Content Management System

10.2 FUNCTIONAL REQUIREMENTS

The website is hosted on a VPS provided by Digitalocean.com. The server is located in New York and possesses 512MB ram, a 1 core processor, 20GB SSD disk, and about 1TB of bandwidth. It is an Ubuntu Linux server, and therefore mainly requires command line inputs to create folders for example. The website also can have a dedicated IP, which can be inputted into an internet browser to view the website as opposed to a domain name.

The domain name aoifelynam.com uses the TLD .com and is provided by namecheap.com, the nameservers needed to be changed to NS1.DIGITALOCEAN.COM, NS2.DIGITALOCEAN.COM, and NS3.DIGITALOCEAN.COM so it pointed to the location of the VPS.

The website is coded in HTML and CSS for its visual format and PHP, XML, and javascript for its functions. The functional parts of the website were code for the login portal, the contact page, and app download section.

Wordpress was used as the content management system for the website. This was chosen for ease of use and because templates are common place for Wordpress. It also provides an admin backend for a user-friendly environment for basic changes to the website.

FR1
Title: Download link for the app

Description:

This link allows all users to download the app onto their Android smartphone.

Location: on the main page

Reason:

The purpose for this is there is one domain place for the user to gain accessibility to the application.

Priority: Must Have

FR2
Title: Login portal

Description:

Only the manager has a login to this page as they are the stakeholders who can edit the page. The data input by the manger is sent to the server as a request and if it matches the dataset then the user is permitted access to the websites files.

Location: Main page

Reason:

This functional requirement was to enable authorisation of the manger to gain access into the Application itself. So, there are no unauthorised users having access to the files inside.

Priority: Must Have

FR3
Title: Contact page

Description:

This is a page for users to go to for contact information of various stakeholders.

Location: Contact Page

Reason:

The purpose for this is to increase communication and open interaction between stakeholders.

Priority: Must Have

FR4
Title: Wordpress access

Description:

Wordpress is a free open source CMS to create customised hosted websites for users to publish their content.

Location: https://wordpress.com/ [10]

Reason: to host a website and publish content for Comms App

Priority: Must Have

10.2.1 User Class One – User

The user would enter in aoifelynam.com into their browser or provided the SEO works out, either 'Comms App' or 'Aoife Lynam' into a search engine and would be met with the main page of the website. Here they would see images of the app, a description of its functions, an ability to login with a provided username and password, a contact form to email the developer, and a link to download the app itself. Ideally the user would appear on the website from a mobile phone as the app download function would download the app directly to their mobile device in that case.

10.2.2 User Class Two – Administrator

The administrator can access the website through Putty or Filezilla and edit the contents there. Putty gives command line access to the operating system after inputting the IP, port, username, and password. In the command line, linux commands, such as 'rm' for remove/delete or 'mkdir' for make directory to create a folder, are used as opposed to a Windows like explorer with a mouse. Filezilla is an 'administrator friendly' way to have a Windows like explorer to the server. It is a convenient way to upload website files, such as images or html files, or the app file itself.

10.3 NON-FUNCTIONAL REQUIREMENTS

A template was purchased with a licence for its use, and it was edited to suit Comms App for the visual portion of the site. The website does not store cookies on the user's computer so it does not need a disclaimer. The server needed to be fast in order to facilitate a quick app download and loading of the website itself, and also provides an email alert if the website goes down or crashes unexpectedly to ensure reliability. The website also provides an automatic backup every month which is downloaded to a personal computer in case of data loss.

The website also importantly needed to be mobile friendly as users would need to download the app directly to their phone from the website. Any time code was edited, or placed in from elsewhere, it needed to be responsive. For example, if an image was placed in using the html tag <img>, the width tag could not be 400px for example, it should have marked at 80% for example. The percentage being of the 'viewport', that is the user's computer or mobile screen. Freely available open source code was used for the functional parts.

NFR1
Title: Download is fast

Justification:

The purpose for having the website to download fast is so that the person accessing the page doesn't have to wait too long and use up their internet data.

NFR2
Title: Mobile friendly

Justification:

The reason for the website to be mobile friendly is so that the user is going onto the webpage to download the app from the link provided on their mobile phone. It would be very difficult to ensure the user download without this feature.

NFR3
Title: Multiple users can use the website at once

Justification:

Multiple users can source the website at one time because it is expected that when the app is being marketing there will be a large volume of users availing the website at the same time. The objective is that the server will not shut down in this event.

NFR4
Title: Displays images and descriptions of the app and logo

Justification:

When the app is being marketed and people are going on the website they have a visual as to what to expect when they obtain the mobile app.

10.3.1 Security Requirements

A SQL database creates security concerns as it is often targeted by 'hackers'. One workaround is to create a 'bind address' which ensures that only a certain IP address can edit or view the databases.

The Ubuntu server itself can be secured in a number of ways, the password ideally is not a combination of letters numbers and exclamations marks for example but rather four words together provide higher security, such as 'horsetablephoneprinter' over 'horse1!'. The latter password is actually more easily broken by brute force programs than the longer winded four-worded password (which is also easily remembered). Changing the Ubuntu default port from 22 to something else also aids in preventing an attack as does changing the default username from root to something else.

Wordpress also creates security concerns, as many of the plugins used in Wordpress are created by different users which can create security holes if they are not programmed correctly. 'Wordfence' is a great Wordpress plugin that creates a firewall and malware protection for Wordpress without sacrificing too much performance.

10.3.2 Performance Requirements

The website is hosted on a VPS provided by Digitalocean.com. The server is located in New York and possesses 512MB ram, a 1 core processor, 20GB SSD disk, and about 1TB of bandwidth. A VPS was chosen over a shared hosting platform for performance reasons. Shared hosting is a VPS which many different users share, and then if another user's website is using too much processing power, your website slows down. A VPS ensures that the website has its own processor and space. The downside of a VPS is that it is more expensive, usually doesn't have a user friendly control panel such as cPanel (unless it is purchased separately) and also must be monitored and managed by the administrator. If the website started to get many visitors or if the database connection to the app was created, this VPS would not suffice for performance reasons. However, to show a static page, along with some functional uses and an app download option, these specifications are more than sufficient provided the user count is not over about 2,500 users a month.

11 IEEE APPLICATION REQUIREMENTS SPECIFICATION

11.1 Introduction

11.1.1 Purpose

The purpose of the app is to demonstrate the concept of Comms App. It will show the logo, features, and design of Comms App such as the roster and payroll functionality. It can be installed on any Users Android phone, and can be scrolled through, and different menus used are used to demonstrate the apps features with information and images place holder where the functions would appear.

11.1.2 Scope

The app is a concept of Comms App; it does not perform the functions but rather demonstrates a beta version. It has a visual function, and is used as a feasibility study much like the website.

11.1.3 Definitions, Acronyms and Abbreviations

API – Application Programming Interface

APK – Android Application Package

HTML - Hypertext Markup Language

iOS – iPhone Operating System

Android OS – Android Operating System

MB - Megabyte

SDK – Software Development Kit

UI – User Interface

WYSIWYG – 'What you see is what you get'

11.2 FUNCTIONAL REQUIREMENTS

The application is developed for Android OS phones and not yet for IOS phones. An APK file was developed to be downloaded onto the user's smartphone and would be installed on the phone and an app would appear in their app drawer among their other apps. When this app was opened, it would display the Comms App logo and a login page. It would have a menu that would showcase the apps features and this menu could be scrolled through and each item clicked that would bring the user to a new section of the app.

The app was developed using Android Studio, and SDK developed by Google. This has a WYSIWYG editor for app development. An app template was purchased and loaded in the SDK. The functionality of the app allowed the user to browse through the features of Comms App and it would showcase its capabilities. A logo was developed using Squarespace.com, which was quick and easy, and the app icon was sourced online as a generic C icon.

FR1

Title: Login Portal

Description:

The user is supposed to enter their username and password supplied to them by their manager when their account is initially set-up. The data input by the user is sent to the server as a request and if it matches the dataset then the user is permitted access to the application files.

Location: Opening page i.e. the first page

Reason:

This functional requirement was to enable authorisation of the users access into the Application itself. So, there are no unauthorised users having access to the files inside.

Priority: Must have

FR2

Title: Drop Down Menu

Description:

This is a list of all the pages and files sorted into the app that the user can pick from when they enter.

Location: Left side of the main page

Reason:

The purpose of the menu is to maintain easier navigation and visibility for the User

Priority: Must have

FR3
Title: Displays HTML from website

Description:

The pages are coded from HTML, CSS and JAVA on the website then downloaded onto the APK.

Location: APK

Reason:

Seen as the app is only a 'proof of concept' and not fully functioning, the most adapt way to implement it as a prototype was to embed html files into the API.

Priority: Must have

FR4
Title: Linked to SQL database hosted online

Description:

The SQL database where all data is stored was hosted from an online server which linked to the app for I/O information.

Location: Online Server

Reason:

To store data so that the app can remember files and users within the app and then access them.

Priority: Must have

FR5
Title: Can display images

Description:

For each page of the app there is an image to illustrate what's happening in the selected page. For example, in the Live Chat page there is an image of two people talking in the format of a live chat.

Location: within various pages

Reason:

To add to the design featuring the purpose of selected page.

Priority: Must have

FR6

Title: Uses Java programming

Description:

Java is a programming language created to allow complied program files to function so they can be implemented and executed. The application will not work without JAVA installed.

Location: Within the code

Reason: The purpose for this is so the application can be developed and applied.

Priority: Must have

11.2.1 User Class One – User

The user would download the app from the website, through their smartphone, and click it in their notification tray to install it. The app would appear in their app drawer and when clicked open it would load, and the Comms App logo would appear. They would be met with a user login portal, and a side menu to scroll through. The side menu is a list of the features of Comms App and each could be clicked through to display a new section with images and a description of the feature.

11.2.2 User Class Two – Administrator

The app is an APK file which was developed on a Windows computer using Google's free SDK; Android Studio. The app is made up of many files which are compiled together to create the final APK, each of these files must be edited for different functions. There is the 'assets' directory, which the APK logo and images are stored. The 'manifest' file which can be edited to change the app name for example. The APK can be edited in a WYSIWYG fashion for ease of use.

11.3 NON-FUNCTIONAL REQUIREMENTS

The app needed to be user friendly above all else, its sections and functions easily found and scrolled through. The performance of the app was important to display the images quickly. Reliability was an issue with the app as during development of the app and new versions were created, it would sometimes not load and the problem not easily apparent. The app was kept as basic as possible to ensure reliability, performance, and responsiveness. The app could be security signed to enable it to be displayed in the Google Play Store.

NFR1
Title: Displays images

Justification:

The application displays images so that it can depict a visual for when interested parties are trying to understand what goes into each of the pages in the app.

NFR2
Title: Small file size

Justification:

This is so when an interested party decides to download the file onto their android phone it takes a minimal amount of space.

NFR3
Title: Responsive loading times

Justification:

Having responsive loading times is for good practice, when an interested party is navigating around the app they can see it's usability and functionality therefore develop an awareness and pursuit for the app.

NFR4
Title: User friendly

Justification:

The app is user friendly so that the user can go onto the various pages with ease.

NFR5
Title: Appears in app drawer with logo

Justification:

When the user downloads the file they can see where it is on the in-app drawer and click onto it.

11.3.1 Security Requirements

The app needs to meet certain security requirements to be displayed in the Google App Store, mainly it needs a digital signature so it is traceable to the developer responsible for it. Otherwise the app needs to be downloaded from the website and the users Android phone has to be enabled to install apks from unknown sources. Generally Android phones and applications are secure and viruses or malware are a non-issue therefore security was easily managed in comparison to the website.

11.3.2 Performance Requirements

The APK is about 4MB in size which is 2MB less than the average app size in the Google Play Store. The main performance benefit arrived in compressing the image files to make them smaller and the app load faster and download faster. However, if the app were to be fully developed and its functions usable and connected to a database it would require more space and performance resources, currently it is not intensive on the Smartphones processor or battery.

12 CONCLUSION

As this project is just at a development phase and it was my first time constructing a comprehensive project of this category considering my experience or lack of, not everything is going to be correct. The real standard for requirements gathering of any software or hardware product would be far more meticulous and the headings I've used and the requirements I've selected would just be sub-elements of the project. They aren't of the standard that any company, real business analyst or software developer would adhere to.

In agile practices this approach would be known as a waterfall method, this a more traditional approach for project planning. This process exists as sequential and non-iterative design procedure. It is outdated and contains many errors such as not being able to go back and change plans already made. Given the gathering and analysis conducted here, there is still a high amount of uncertainty that the app will actually fulfill the business need, which is to improve communication. Furthermore, there is a high risk that the app will have a return on investment. However, this method was convenient since there was a business need, it was a short project and the requirements were not ambiguous, they were carefully selected and analysed.

There is some kind of agile practices within the project when considering an application and website were made during the process of planning and elicitating requirements. This meant that stakeholders were able to have a visual and decide whether they were happy with the model or not. Meaning new changes were made at very little to no cost and less time was spent on the changes. Such as, stock reporting was going to be added in initially but later in the brainstorming session and the focus group it was taken out with no cost involved. Also stakeholders were actively working on the project so they could see the app transform, as well as, taking into account they would also feel a sense of ownership because they were part of the project development.

As previously mentioned, the project is still at the developing phase, so if it were implemented it is hopeful that these requirements are adequate enough to follow through with a functioning-online mobile application.

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14 APPENDIX

14.1 PROJECT PROPOSAL

14.1.1.1 Research

The research involved in this project will mainly be to do with analysing what the project will be for and how to implement the functionalities around the project and what it will look like. How the layout will be created is through what suits best visually for the user. For it to be successful the navigation ought to be fool proof. By fool proof I mean easy to anybody who is not technically savvy. The research will be done through a series of surveys and sitting down with any exemplary manager and asking an array of questions that gratify the app purposes.

Also by interviewing the employee what they would like to see in the app. Having a suggestions box if some employee doesn't feel safe to express themselves openly. Also by implementing a prototype and adding on any changes or better used items for the app. Initially there will be a prototype to give shareholders an idea of what to expect for the app.

Surveying will be another gathering of information technique that will be used to find out what's best for the project.

14.1.1.2 Requirements capture

The requirements capture must entail ways in how to get the functionalities of the app:

- Structures the meeting into particular topic areas by looking over the old system and looking at potential new features and works through them with the appropriate people.
- Writing notes from all the meetings and writing up reports of recommendations.
- Essentially allowing the client to think about their requirements, allowing them to communicate their requirements and the Business analyst hears and documents the requirement

14.1.1.3 Implementation

The most important thing I have accepted is the fact there is a 95% chance I won't get the accuracy of requirements right. So after implementing what I've gathered for requirements I will have to check to see what works and what doesn't and what the user thinks about it.

Next I'll try to spend as much time as possible talking to as many stakeholders and people involved asking them questions. The insight the frontline staff will have will be essential and they would have a lot to say about management and how it's working and operations of the company since everyday they are working on the job and with the customer. After that I'll be asking 'why' and 'how' as many times possible as assuming the answer can block useful information out.

Requirements gathering has to be implemented by as few people as possible. Trying to just have one person with all of the information in their head will be a lot more effective as too many people holding different ideas and different requirements can leave room for too many mistakes.

Having one notebook with all the notes and one place where all the requirements are gathered is important. Dialogue mapping will be implemented as well for better decision making and question answering.

14.1.1.4 Special resources required

Using the books in the library to better understand how to implement this project. The book 'How to Build a Billion Dollar App: Discover the Secrets of the Most Successful Entrepreneurs of Our Time' by George Berkowski is a book I'll be reading. Also 'Zero to One' by Blake Masters is said to be a great book to look into. The hardware I'll be using are notebook to write minutes of the meetings, mobile phones to test the app and surveying paper to get better insight. Also I'll have a hard drive to store and backup all the information onto to ensure it doesn't get deleted. Another way of storage will be Dropbox and the student drive.
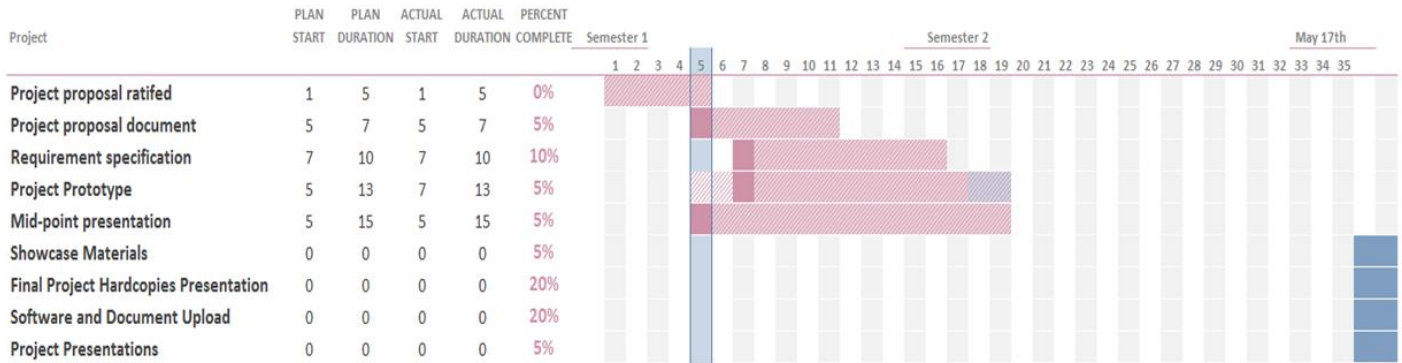
14.1.1.5 Project Plan
My Gantt chart is made using Microsoft Project showing details on implementation steps and timelines of the project.

My understanding of a Gantt chart is a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those stages. At first without any background checks I did one up on excel to see how it would look. Later on I realised that it would be better displayed using the Microsoft project software. Shown below
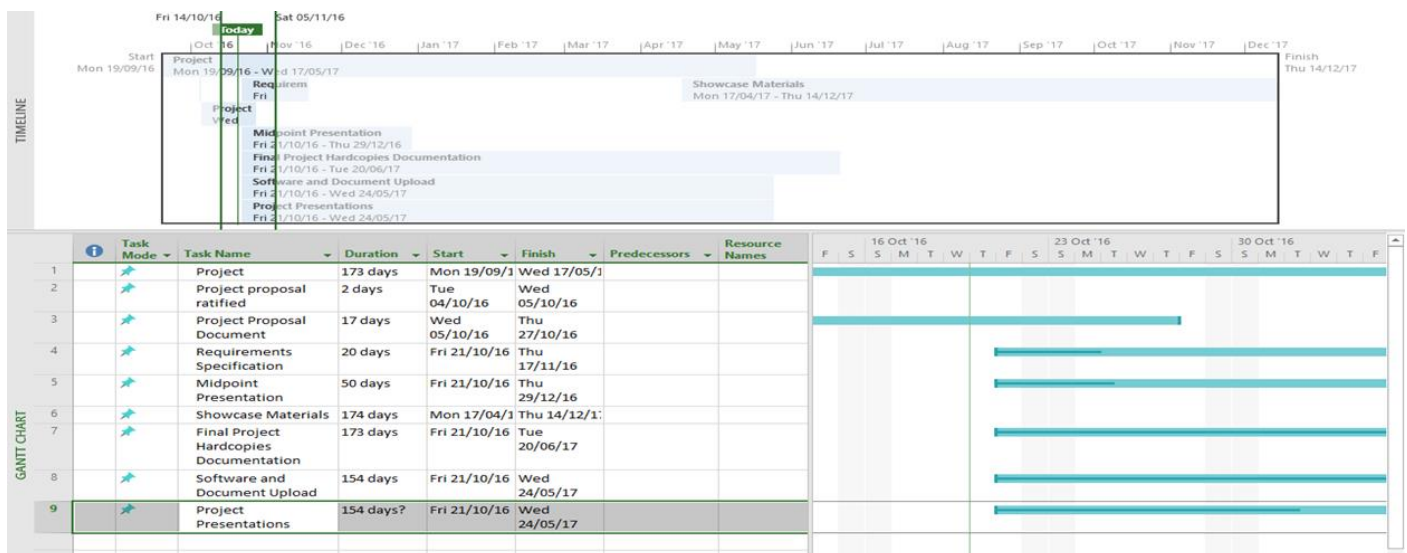
This plan estimates how long it'll take me to implement the project, it shows the fundamental aspects of the project and what needs to be uploaded adding the percentage of the tasks to be done. It's sketches out the steps that has to be done and when they need to completed or uploaded by.

14.1.1.6 Technical Details

The technical details will be to initialise the deliverables, the requirements and analysing the scope for what the app needs to work. The ideal software I would hope would be used if the project were to be made is Netbeans, java and php. Dropbox will be our form of cloud storage and Giffy will be used to make the wireframe. Also any online resources I can use for principal libraries will be another method of making the app work.

14.1.1.7 Evaluation

The evaluation techniques I will use are surveying, interviewing and gathering information through meetings. I hope to be able to draft up what the prototype should look like. Then give the stakeholders a rough idea of a plan of how to integrate it to their daily tasks and to their frontline staff. It is only useful if the ground floor employees are active users on the app. Also if the managers implement the tasks on it which they will since their manager will be checking to see if the investment put in isn't going to waste.

I will be testing to see what other systems are out there like it and see what's the difference about this idea to theirs and if there is some improvement to entice people to use it over any current system out there like it.

By using the stakeholder for sample data and entering what would they possibly use into the app and possible data to give a test of how to use and integrate with the current staff and activities to run the shop will help with testing to see what works and what won't work.

The survey will be designed to gather information from different stakeholders associated with PCWorld. The survey will be used to identify initial requirements and to discover demand levels for certain app features. The survey will also identify viewpoints of both management and staff in relation to both high and low points of the current communication channel. Current managers and staff will be encouraged to state their desired features for the website and to outline if they are interested in participating in further elicitation sessions in the future. Which will hopefully be the contingent plan for figuring out how to specify what will work best for the app and make it useful to the end users.

14.2 MONTHLY REFLECTIVE JOURNALS

Reflective Journal 1

Student name: Aoife Lynam

Programme: BSHTM4

Month: October

My Achievements

This month, I was able to figure the kind of project I wanted to go ahead with. Originally I thought of a few simpler ideas that I thought would suffice and left it until last week when I discussed it with my lecture. Turns out, for a project such as this one, it needed to be more complicated than that. I was lost for an idea at first but it clicked when I was working in my retail job. For low-end jobs such as catering, retail or sales a fundamental part that is missing in each of these frontline staff sectors is communication. It's hard for one manager to keep track of dozens of employees. I thought if there was a way they could have the settings of their daily, weekly, and monthly needs and task that is required that it could take a lot of the troubling away for them. You could even incorporate this in schools for principals but that for later thinking.

My contributions to the projects included figure out who my sole stakeholders are going to be (for example PCWorld). Approaching and asking if they would mind to help.

Next I brainstormed a few ideas myself that would help make a prototype of the app to help other employees get an idea of what it should look like then they can add their own specifications. Such as, adding a roaster that navigate employees changes with restrictions of the hours needed to be met or the contracted hours for every employee etc.

My Reflection

I felt, it'd work well to gamify the app, so that both managers and employees would enjoy using it.

However, I was not successful in fully figuring out how and what to use to make it myself. Which I'm still contemplating doing.

Intended Changes

Next month, I will try to get a picturised layout of the app and more requirements analysed and decided for to make the app prototype.

I realised that I need to learn how to make an app.

Supervisor Meeting

Date of Meeting: n/a

Items discussed: n/a

Reflective Journal 2

Student name: Aoife Lynam

Programme: BSHTM4

Month: November

My Achievements

This month, I was able to clarify what I needed have for the requirements upload due in on the 11th of November. I didn't realise that it's was supposed to be a good chunk of the project. I thought that maybe it would have been about selecting ideas and function and non-functional factors to be added in. It turned out it is a lot more specific than that. I went to Eugene and he displayed and discussed a direction that would be best to follow up on for the project and how to progress better in the project.

Next I went to Ron Elliot, my project supervisor, he explained to me that it would be better to jot down some possible interview questions that can be allocated into an interview with a manger. This is to find out how best to plan the requirements for the project.

My contributions to the projects included proposing useful questions for surveying and interviewing and to ask a focus group. This is for when I organise these meetings and hopefully conduct them.

Also I handed in my project proposal, in which I interpreted a clear view of how to analyse and implement the project to the standard it should be in

My Reflection

I felt, it worked well to plan ahead, start the project early and make a head start on the interview and surveys. However, I was not successful in gathering information for appropriate question making, which can be quite difficult to do when being specific and trying to get good feedback

Intended Changes

Next month, I will try to gather as much information as possible to accelerate this project in the developing it better and being more specific. I realised that I need to be more proactive in getting what's required for the upload due in two weeks' time.

Supervisor Meeting

Date of Meeting: Tuesday, 25th

Items discussed: Style of Questions and requirements gathering

Action Items: Jot up a few questions for the gathering of information and making of the survey.

Reflective Journal 3

Student name: Aoife

Programme: BSHTM4

Month: December

My Achievements

This month, I was able to speak a lot more with my supervisor. From that I got a clearer vision of what expected of me in the midpoint presentation due next week. He was able to lead me in the right direction to which I made sure I was following up on. I wanted to be able to make every step the correct step in this project as it's important for everything to go well. Since the requirement elicitation is one of the hardest parts of the project I thought it would be better to a least analyse every inch of the requirements has them to be clearly advised and recommended.

Also within the month, I was able to decide whether I want a prototype to better explain and demonstrate the app. This decision wasn't made easily. I had to consider the technical knowhow I actually have and whether I'm able to improve on this or if it's enough to be able to independently make a prototype on my own.

My contributions to the projects included writing up project specifications. Also I completed the technical report which was very hard to ensure it was right.

My Reflection

I felt, it worked well to be consistent and to be open to new and exciting ideas such as deciding to develop my own prototype. However, I was not successful in making a start in the prototype just yet.

Intended Changes

Next month, I will try to make a good start on the prototype and have it looking someway decent and presentable.

I realised that I need to make the midpoint presentation soon so I can practise and rehearse presenting the project.

Supervisor Meeting

Date of Meeting: Tuesday, 06/12/2016 + Friday 02/12/2016

Items discussed: Midpoint Presentation

Action Items: To make up a layout

Reflective Journal 4

Student name: Aoife Lynam

Programme: BSHTM 4

Month: January

My Achievements

This month, we had exams so the project was put on the back burner a good bit. But I looked into sending out the survey and conducting meetings. I asked the manager in PCWorld would they mind if I sent out a survey to the employees and see what they're opinions on the app are. I also set up meeting with HR to see if they would give me some pointers on the project. They said they would get back to me on a later date.

My contributions to the projects included setting up an appropriate requirements gathering stage.

My Reflection

I felt, it worked well to look in what employee incentives were and how to be more concise with getting what they need over what they would like. Also I was considering needing the manager's perspective on things.

However, I was not successful in working a good bit on my report as a result of my exams.

Intended Changes

Next month, I will try to work on my overall report. I want to get a lot of feedback on the survey and get opinion off my supervisor about the survey.

I realised that I need to invest more time requirements gathering.

Supervisor Meeting

Date of Meeting: 30-01-16

Items discussed: midpoint presentation

Action Items: survey analyses and

Reflective Journal 5

Student name: Aoife Lynam

Programme: BSHTM 4

Month: February

My Achievements

This month, I was able to get feedback on my survey and questions for my meetings then follow through with conducting my survey to the employee. What I expected and the reality of the opinions of the employees were entirely different. I got back 60 responses from PCWorld. They were all mixed opinions. Then the interview with a manager was very difficult. A lot of information was collected but a lot has now to be analysed.

My contributions to the projects included gathering appropriate requirements. .

My Reflection

I felt, that the employees were either completely satisfied with how things were going already and other were utterly unhappy with the communication. I felt I should have been able to get more reason back for the answer but with careful examination I will be able to make an educated guess as to what was behind the distraught answers.

However, I was not successful in getting a direct response.

Intended Changes

Next month, I will try to get more in depth information and look into interviewing an App developer and tell them my ideas to see if I'm on the right scale.

I realised that I need to invest more time requirements gathering.

Supervisor Meeting

Date of Meeting: 14-02-17

Items discussed: requirements gathering

Action Items: survey analyses and meetings

Reflective Journal 6

Student name: Aoife Lynam

Programme: BSHTM 4

Month: March

My Achievements

This month, I was able to gather the finding of my survey, my focus group, my brainstorming session and my 4 interviews. I out these finding into a MOSCOW analysis list for clear and concise understanding. From one of my technology interviews I was inspired to look into making a prototype. Nothing too complicated but just to act as a demonstration of concept for the showcase.

My contributions to the projects included elicitating the requirements into a Moscow priority and research on making a mobile application for Android.

My Reflection

I felt, not all the requirements I got back from the survey were entirely useful. I probably should have re-phrased the questions better. I was still able to grab some requirements out of them all the same.

However, I was not successful in getting my requirements workshop done this month but I will rearrange it for next month and hopefully I will have a prototype for the group to work off of.

Intended Changes

Next month, I will try to work on making an off line mobile application for design and demonstration purposes.

I realised that I need to get the requirements workshops done and put all this in the document. From this I hope to get the wireframes done.

Supervisor Meeting

Date of Meeting: 28-03-17

Items discussed: requirement elicitation

Action Items: prototype discussion