

# **PROJECT MANAGEMENT ASSIGNMENT**

## **ERP Implementation Project**

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## Executive Summary

BBC as a multimedia organization that has over 36 studios and broadcasting to approximately 150 million people. While the organization has a broad scope, it has identified a flaw in one of their processes which is their Paper-based procurement system.

Therefore, the product that the Technology department is introducing is an ERP system that will mainly accommodate a Procurement based solution, moving away from their paper-based system due to the inefficiencies that BBC has faced with their current process.

The purpose of this project is to: Offer convenience by breaking away from the traditional ways of supply chain by using technology at its maximum potential.

The report is a project plan that sets specific tasks, roles and constraints to proceed to the execution and closing phase. It includes key project management methods that details this plan. It has been initiated by the business case and need for the project.

Then a stakeholder management lifecycle has been created to identify and classify key stakeholders. The project then goes to planning which includes the Work Breakdown Structure, Cost Breakdown Structure, then key roles and tasks have been identified through the RACI Matrix.

In summary, the estimated cost of this project is £57,960 and will have a duration of 6 months.

### Note to Employer:

This university assignment aims to showcase comprehension of Project Management Principles, with the hypothetical scenario of utilising the BBC as an illustrative company, and only assumes the absence of an ERP system within the organization for the purpose of analysis.

## Introduction

Procurement refers to the process of obtaining and finding goods and services from external sources, which can also be done through a bidding process(Investopedia, 2020). Acquiring goods that are at the best quality is vital for BBC as a multiorganization; they broadcast to over 200 countries(BBC, 2021), meaning that the quality of equipment of their newsrooms and offices must be at the highest standard for their viewers to see but maintained at reasonable prices.

They currently use a paper-based procurement system, and it has been assessed that the system is inefficient because processes are much longer, documents have been misplaced due to the over-reliance on paper. The lack of customer to supplier engagement has inflated prices and limits the variety of quality items with competitive pricing in the market thus, an Electronic Procurement System will replace this process (Dawson Consulting, 2016).

In full transparency, the report is inspired by an Enterprise Resource Planning(ERP) System. Fundamentally, ERP is the automation of business processes. The system is a centralized database that collects data from different departments such as Procurement, Finance, HR, and Sales. The full visibility of real time data enables all departments an advantage to improve their financial analysis and decision making(Oracle, ND)

By the end of this project, BBC will have a new and improved system that will:

1. Automate the Procure to Pay Cycle
2. Reduce Procurement Life Cycle
3. Reduce Manual Labour and Signatures
4. Improve efficiency

**Project mission statement:** Offer convenience by breaking away from the traditional ways of supply chain by using technology at its maximum potential.

The aim of this project is to enhance the supply chain and procurement process for BBC by initiating a digital transformation and switching to an ERP based procurement system for BBC.

Figure 1

OBJECTIVES	IMPACT
To increase employee satisfaction and wellbeing by 20% by providing them access to higher quality items.	Employee layover will decrease while reputation will increase, making BBC more attractive for talents to be acquired.
To increase the data visibility to 50%, showing real time data and interactions within the system	The transparent data will be sent to other departments such as Finance and Technology in order to better create data-driven decisions.
Improve relationship with suppliers through the use of an automated bidding system by 2 <sup>nd</sup> month of deployment.	Better prices for goods and services and resulting in less costs for the organization
Reduce time spent on signing papers, manual labour, and outsourcing suppliers by 40%	Allow Procurement Department to spend less time procuring and utilize their time to strategically optimize costs.
Deploy project by 6 <sup>th</sup> month of the year and hire employees that can design and build the system.	Successfully implement the procurement process into a paper-less system.

## Stakeholder Expectations and Engagement Management

### Stakeholder Classification and Identification

The first step of the Stakeholder management cycle is to classify then to identify. We first identified these stakeholders and gave them unique ID's which we will later refer to in the Impact section.

Afterwards, we have segregated these stakeholders through “External” or “Internal”, “Beneficiary” or “Actor” to further consider their influence of this project. Our Actors are mainly the Technology and ERP Department that will deploy the system and the beneficiaries will be the Finance, Procurement and Editorial Department.

Figure 2

Stakeholder ID	Internal Stakeholder	External Stakeholder	Beneficiary	Actor	Power(1-10)	Interest(1-10)	Constraint
S1	Technology Department/Managers			✔	10	9	Q - T
S2	Finance Department		✔		5	7	C
S3	Procurement Department		✔		7	8	T
S4	Software Engineers			✔	8	6	Q
S5	General Manager		✔		10	10	C
S6	Editorial Department		✔		4	8	Q
S7	Project Manager			✔	9	8	T
S8		Vendor/Supplier		✔	0	9	Q
S9		Viewers/Customers	✔		0	0	NONE

Our main “Actors” that are directly involved in creating the app are the Technology Department, Software Engineers and the Project Manager. The other departments will be beneficiaries and the main end-user is the Procurement Department.

The entire organization will benefit in the system therefore, the (S6) General Management will be convinced to approve this concept and to allocate the required resources to initiate the project. At the end of this project, the General Management will see the actual value of ERP to the organization as presented by the Project Manager.

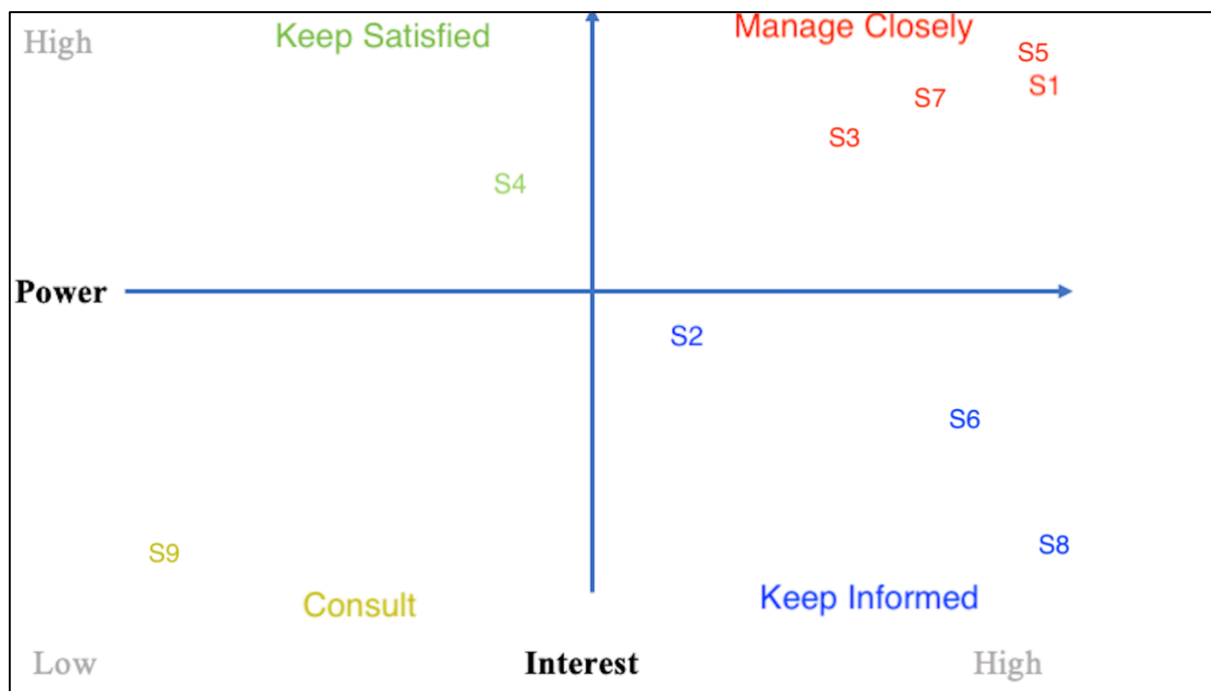
After identifying the stakeholders, they were given scores of their Power and Interest of the project, which also helped to identify/ their concerns

and constraints. This was further visualized in a Power/Interest Grid and helped to determine their role in this project.

Figure 3 also reflects on how stakeholders are successfully prioritized and allow certain approaches for the stakeholder communication plan.

The developers are mostly in “Manage Closely” therefore they will be actively engaged in the project and will inform other departments.

Figure 3



## Stakeholder Communication

Figure 4

<b>What Information</b>	<b>Target Audience</b>	<b>How often?</b>	<b>Method of Communication</b>	<b>Provider</b>
Timeline(Gannt Chart)	General Management, Technology Department	Biannual	E-mail, MS Teams Meeting	Project manager
UI/UX Design Specification	General Management, Procurement Department, Project Manager, Studio Team	Monthly	In-person meeting	Technology Department
System errors and issue logs	General Manager, Project Manager	Bimonthly	In-person meeting, E-mail	Procurement Department, Editorial Department
Risk Assumption Issues and Dependencies	General Manager, Procurement Department, Studio Team	Monthly	MS Teams Meeting, In-person meetings	Project Manager, Technology Department, Software Engineers
Newsletter and updates	Suppliers	Weekly	Email, SMS	Project Manager
Financial Statements and Budget	General Manager, Project Managers, Technology Department	Bimonthly	MS Teams Meeting	Finance Department

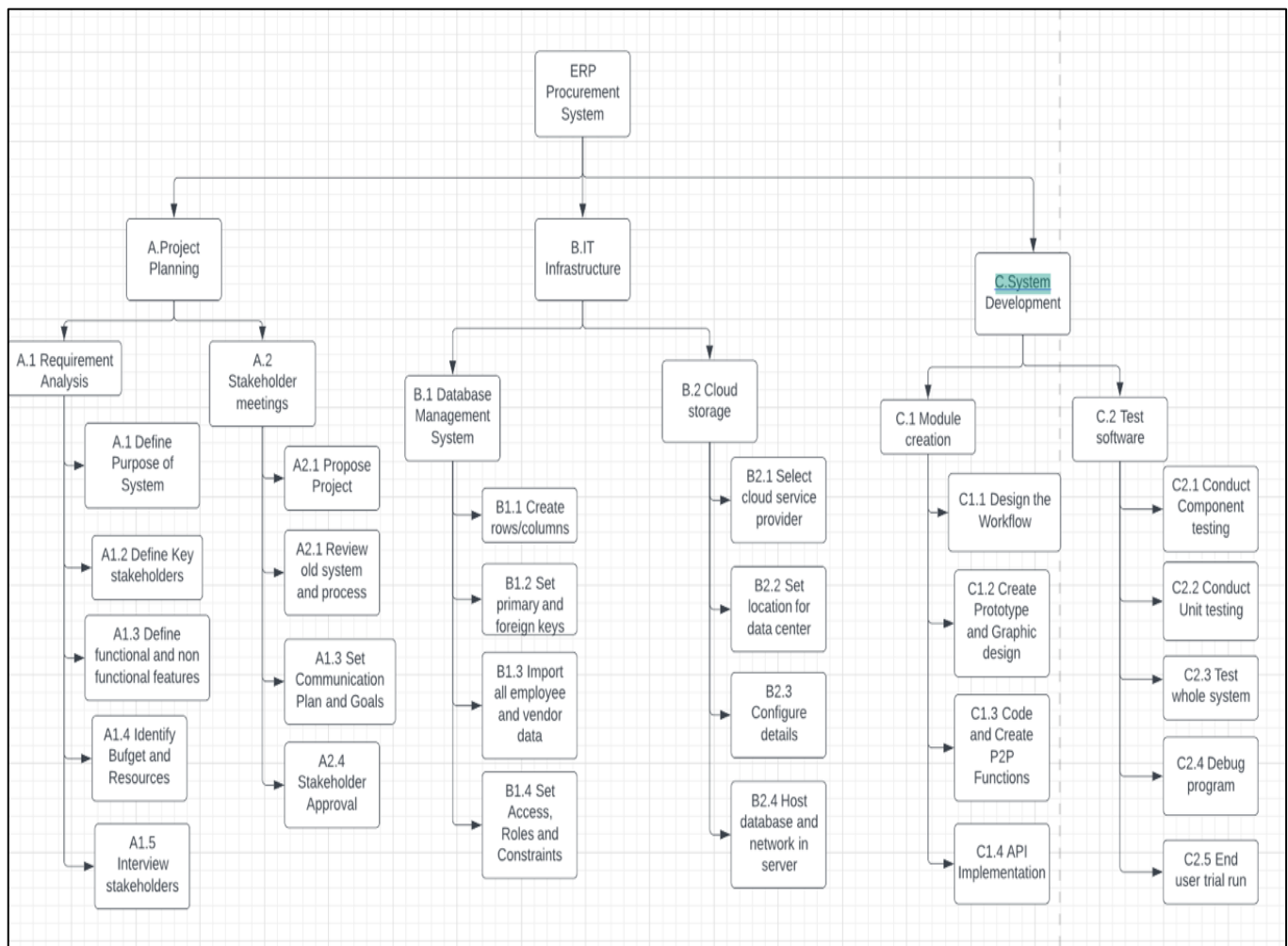


Supplier and Employee data including Purchases	Technology Department, Project Manager	Weekly	E-mail	Procurement Department
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## Planning, Scheduling, Cost Estimation and Resource Utilisation

### Work Breakdown Structure

Figure 5



The Work Breakdown structure for the ERP Procurement System has 3 major tasks which are (A)Project Planning, (B)IT Infrastructure and (C)Development. All of which are considered as major tasks in order to complete the procurement system. It is considered at Level 1 of the hierarchy WBS Hierarchy

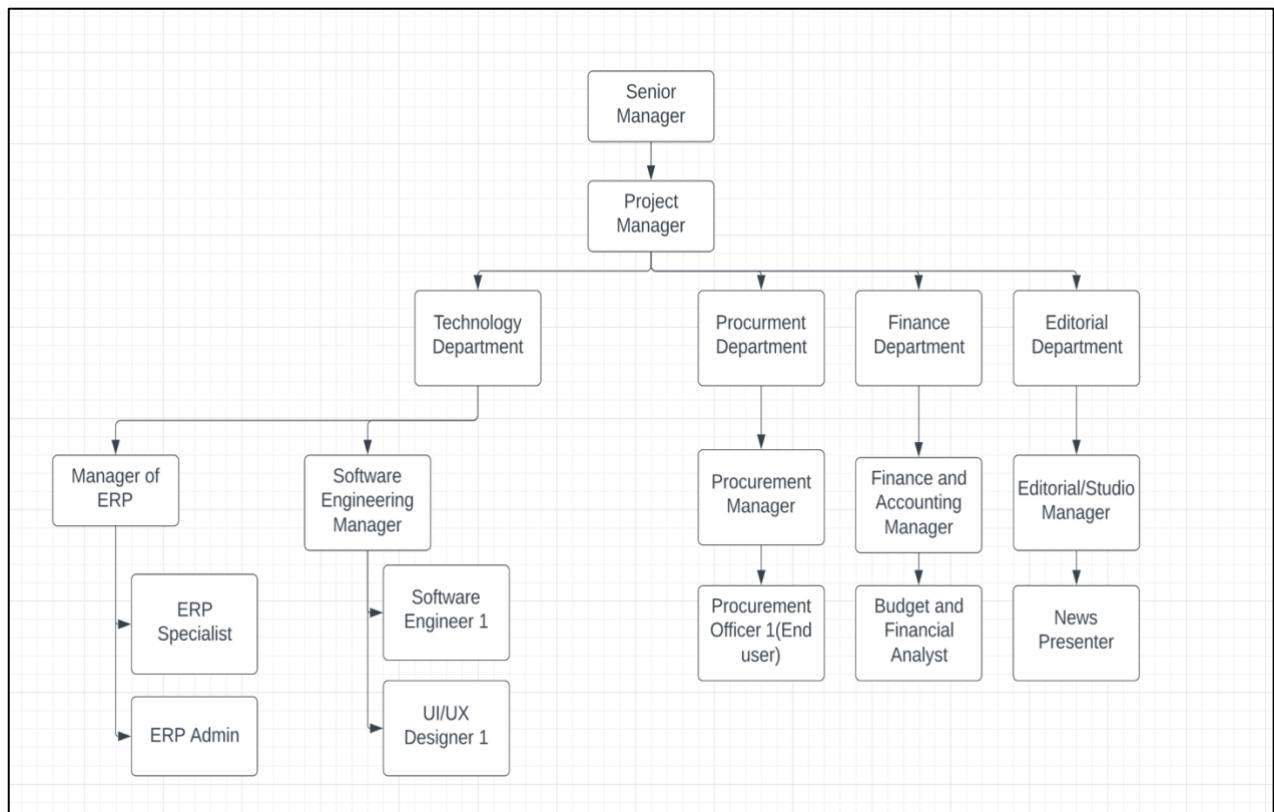
In order to complete project planning, Requirement Analysis and Stakeholder Meetings need to be held(Level 2). The application will not be able to move forward because the collection of the requirements and approval of different stakeholders are the reason why we are creating this project.

The IT Infrastructure refers to “the system of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes”(Gartner Glossary, ND). BBC’s Infrastructure will include a new cloud-service platform to host the data and the network information in order to improve security and efficiency for data storage as they will not have to create a server room. The database is the fundamental core of the system as it contains all the necessary information, and the rules surrounding of who can access this information.

The Development is the major task to create the Procurement System and involves the testing and module creation phases. There are similarities with the work packages and the software development life cycle.

## **Organisational Breakdown Structure**

Figure 6



While completing the project is essential, the organizational structure of BBC is the most important aspect of any business as it is needed to connect the information. It “provides guidance to all employees by laying out the official reporting relationships that govern the workflow of the company”(Small Business Chron, 2019)

BBC follows a flat organizational structure, where the top of hierarchy is the General Manager then the Project Manager. The departments who are involved in the project are Editorial, Finance, Procurement, and the Technology; they will be under the Project Manager who will ensure fluid communications between all departments and align them in order to make the project succeed.

Under the Technology Department, there are two (2) managers who will their respective team namely the ERP Manager, and the Software Engineering Manager.

The role of ERP Manager is very essential because they both have the understanding of the business process and the necessary technological skills. While the procurement department has knowledge of their business process, they will not be able to translate it to technology which is why they remain as the beneficiaries.

RACI MATRIX

**Figure 7**

Code Activity Description	Senior Manager	Project Manager	ERP Manager	ERP Specialist	ERP Administrator	Software Engineering Manager	Software Engineer	UI/UX Designer	Procurement Department	Editorial Department
A1.1 Define purpose and goals	C	R/A	I			I			I	I
A1.2 Define stakeholders	C	R/A	C			C				
A1.3 Define functional and non functional requirements	I	A	R	I	I	R	I	I		
A1.4 Identify budget	I	A	C			C				
A1.5 Hold stakeholder interviews	I	C	R	I	I	R	I	I		I
B1.1 Create rows/columns			A	C	R	I	C			
B1.2 Set primary and foreign keys			A	C	R	I	C			
B1.3 Define access, roles, constraints			A	C	R	I	C		I	I
B1.4 Import employee data			A		R					
B2.1 Purchase Cloud service		A	R							
B2.2 Set location for server		A	R							
B2.3 Configure details		A	R							
B2.4 Host system and database in server		A	R	I	R		I	I		
C1.1 Design Workflow		I	A	R		I	I	R	C	
C1.2 Create Prototype and Wireframe		I		C		A	C	R	I	I
C1.3 Create Procurement(P2P) Functions			A		R	I	R		C	
C1.4 API Implementation						A	R			
C2.1 Component Testing						A	R			
C2.2 Unit testing						A	R			
C2.3 Test whole system						A	R			
C2.4 Debug program						A	R			
C2.5 Trial run		I	I	C		A	C		R	R

As mentioned earlier, the Project Manager will align all departments together, which is why he is actively accountable for much of the work regarding the project plan. The RACI Matrix reflects the stakeholder management cycle in a much more detailed manner and the acronyms below will explain the meaning of these letters.

- R = Responsibility
- A = Accountability
- C = Consulted
- I = Informed

In this case, accountability will be upon the managers, and responsibility will be given to employees reporting directly under them. For example, Software Engineers will write the program, but the Manager will be accountable for their work.

In many cases, the ERP Team consults and informs the Software Engineering team due to the fact that they are the main “Actors” of this project. The ERP Manager and Supply Chain Specialist are responsible for tasks that involves the implementation of the procurement process as they understand and specialize the process of Supply chain. Software Engineers contribute to the project by creating the functions, writing programs, and designing the system itself.

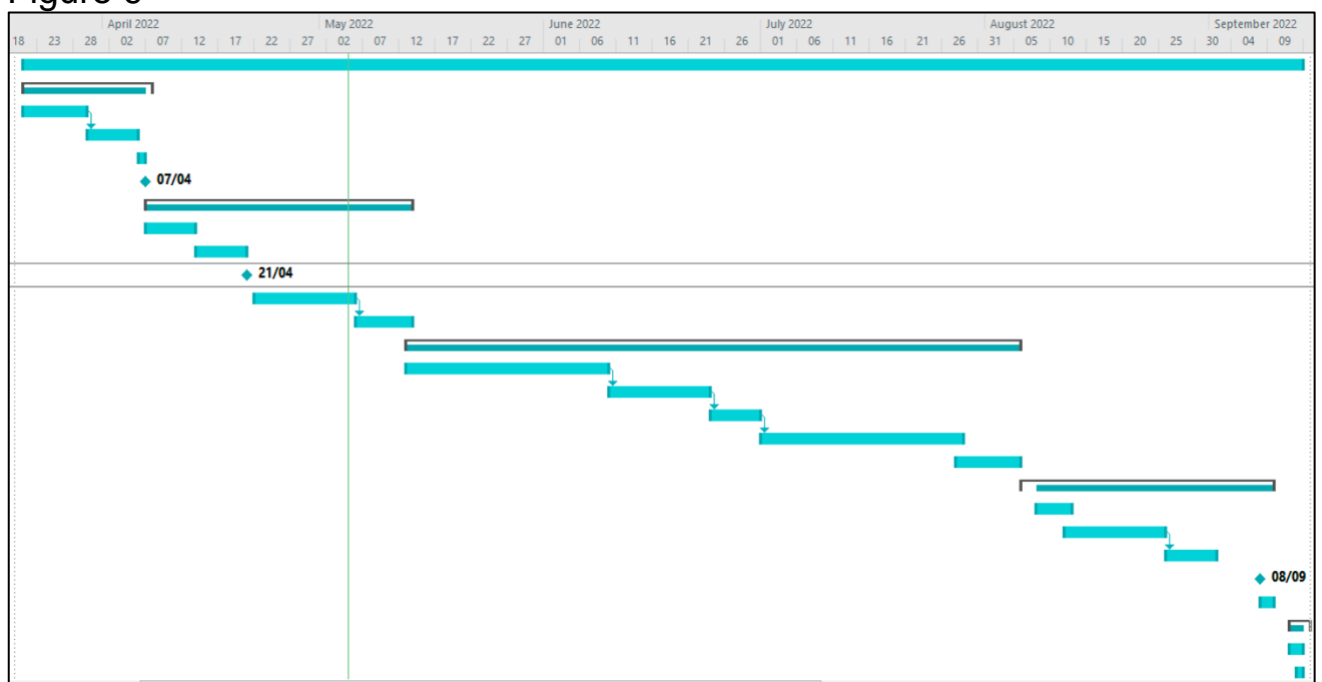
As the process owner, the Procurement Department will have a significant role throughout the project; they will be consulted in key development areas of the software, and post go-live.

## Scheduling

Figure 8

Task Name	Duration	Start	Finish	Predecessors	Milestone
Total project duration	127 days	Mon 21/03/22	Tue 13/09/22		No
▣ Initiation	14 days	Mon 21/03/22	Thu 07/04/22		No
Define Project scope and business case	7 days	Mon 21/03/22	Tue 29/03/22		No
Define requirements and stakeholders	5 days	Wed 30/03/22	Tue 05/04/22	3	No
Project Proposal	1 day	Wed 06/04/22	Wed 06/04/22		No
Project Approval	0 days	Thu 07/04/22	Thu 07/04/22		Yes
▣ Design	27 days	Thu 07/04/22	Fri 13/05/22		No
Comparative Market Research	5 days	Thu 07/04/22	Wed 13/04/22		No
Designing the workflow and process	5 days	Thu 14/04/22	Wed 20/04/22		No
Stakeholder approval	0 days	Thu 21/04/22	Thu 21/04/22		Yes
Prototype and Wireframe	10 days	Fri 22/04/22	Thu 05/05/22		No
Design specification	6 days	Fri 06/05/22	Fri 13/05/22	11	No
▣ Development	61 days	Fri 13/05/22	Fri 05/08/22		No
API Integration	20 days	Fri 13/05/22	Thu 09/06/22		No
Database Creation and Design	10 days	Fri 10/06/22	Thu 23/06/22	14	No
Implement supplier and employee data	5 days	Fri 24/06/22	Thu 30/06/22	15	No
Create procure to pay cycle(write code)	20 days	Fri 01/07/22	Thu 28/07/22	16	No
Cloud server integration	7 days	Thu 28/07/22	Fri 05/08/22		No
▣ Testing	26 days	Sat 06/08/22	Fri 09/09/22		No
Component and Unit Testing	5 days	Mon 08/08/22	Fri 12/08/22		No
Test whole system	10 days	Fri 12/08/22	Thu 25/08/22		No
Debug code	5 days	Fri 26/08/22	Thu 01/09/22	21	No
All errors resolved	0 days	Thu 08/09/22	Thu 08/09/22		Yes
End User Trial Run	2 days	Thu 08/09/22	Fri 09/09/22		No
▣ Deployment	3 days	Fri 09/09/22	Tue 13/09/22		No
Release all specification and present project	2 days	Fri 09/09/22	Mon 12/09/22		No
System release	1 day	Tue 13/09/22	Tue 13/09/22		No

Figure 9



While the Gannt Chart that has been developed has specific attributes for the procurement system, it follows the Software Development Lifecycle, a process which is utilized by Software Engineers and developers in order to create a high-quality product. Likewise, the cycle

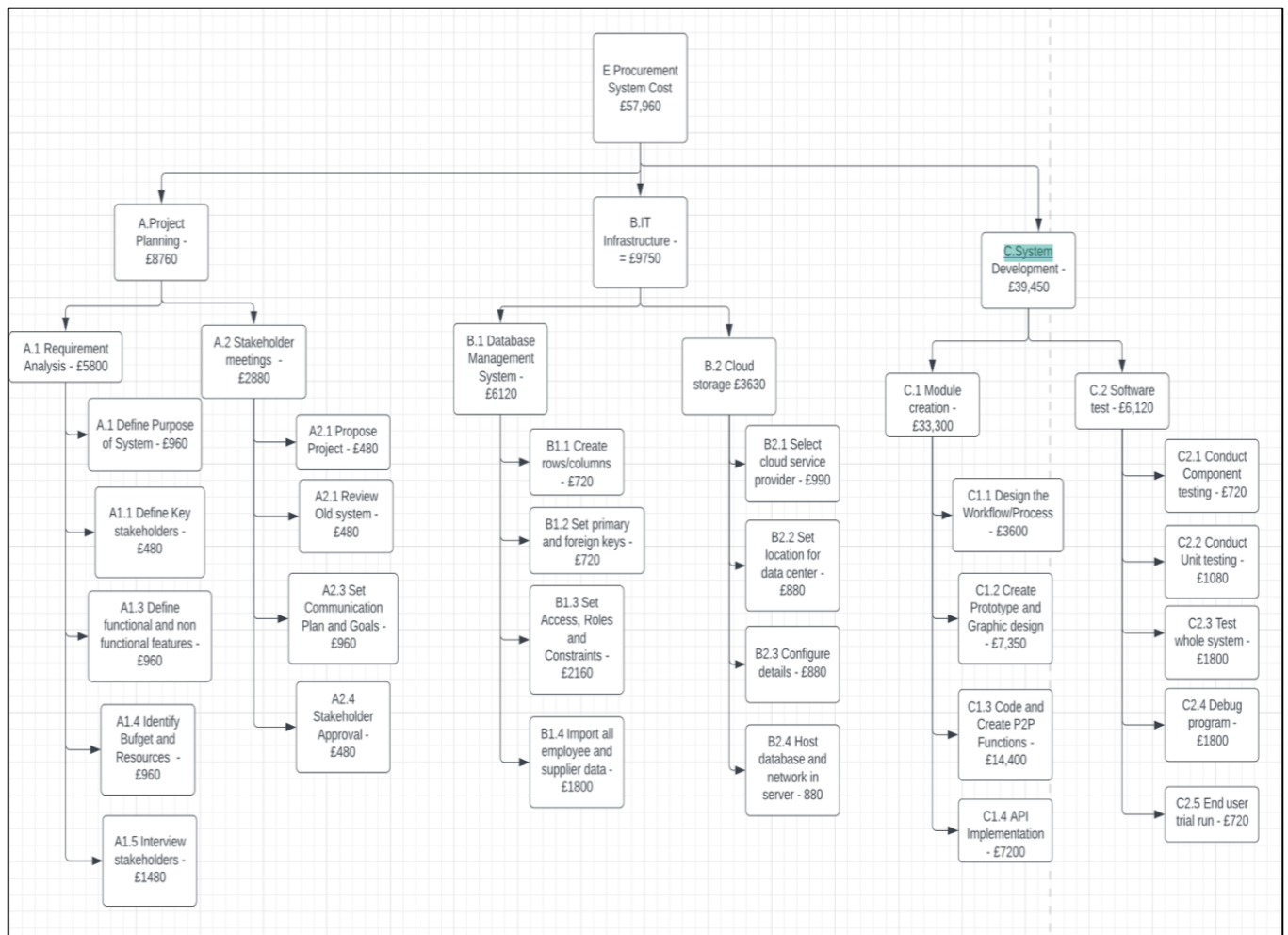
in the Gantt Chart starts from Initiation/Requirement Gathering, Design, Development, Testing then Deployment.

The duration of this project is exactly 6 months (127 days), lasting from 21<sup>st</sup> March to 13<sup>th</sup> of September. Due to the large timespan that was provided by the Project Manager, the employees developing the system will be using the Waterfall Methodology, which is a “sequential development process that flows like a waterfall through all phases of a project” (Adobe Experience Cloud, 2019).

Moreover, the Gantt Chart in this report is essentially the Work Breakdown Structure but displayed in a schedule. Elements of Planning, IT Infrastructure and System Development and their Work Packages are present throughout.

## **Cost Breakdown Structure**

Figure 10



The Estimated value for the project is £57,960. Labour is calculated per day in the CBS in order to create simplicity for the reader. Above is a simplified version of the whole procurement system cost estimation.

Project Planning, IT Infrastructure and System Development and their sub-tasks and deliverables were individually calculated to create this bottom-up calculation.

$$(\pounds 8760 + \pounds 9,750 + \pounds 39,450) = \pounds 57,960$$

Each sub-task is then summed to create the total cost for the major task. each work package consists of costs such as Labour, Materials, Equipment etc which will be summed to get the total cost of the work package. The process is then repeated with every work package to get the total sub-task cost.

The figures below display the detailed bottom-up estimations from the subtasks of these major deliverables.



Figure 11 – A.1

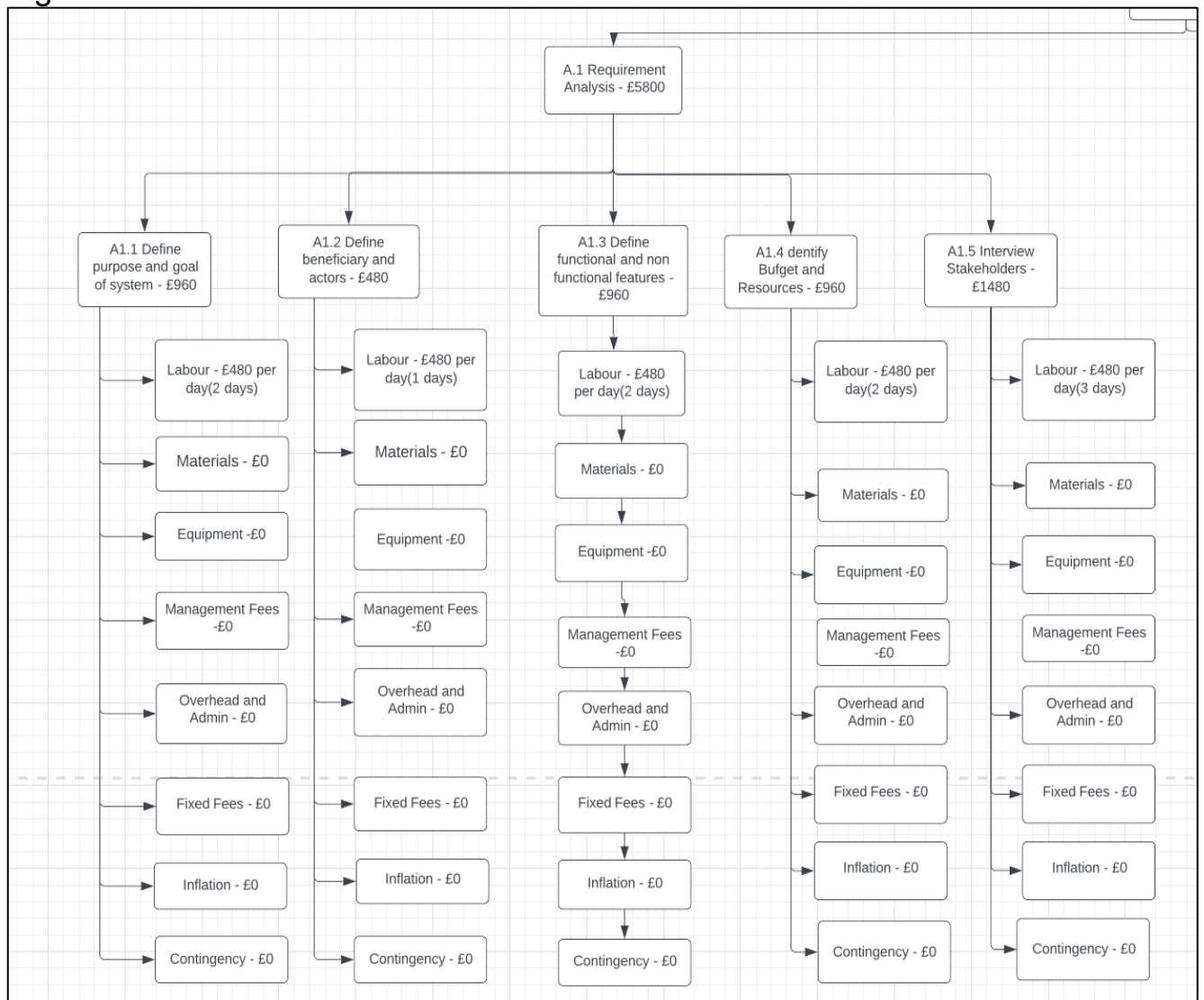


Figure 12 – A.2

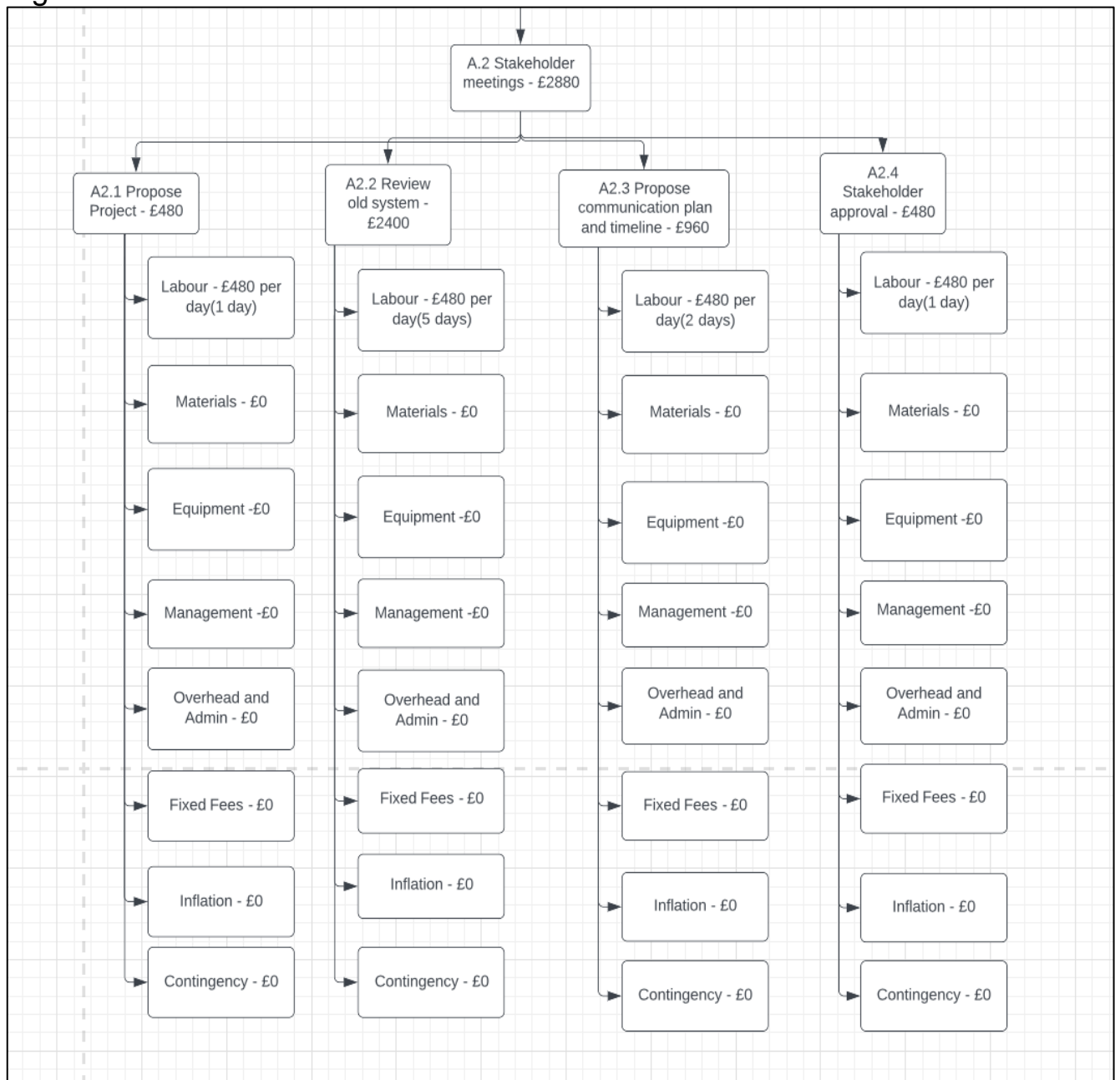


Figure 13 – B.1

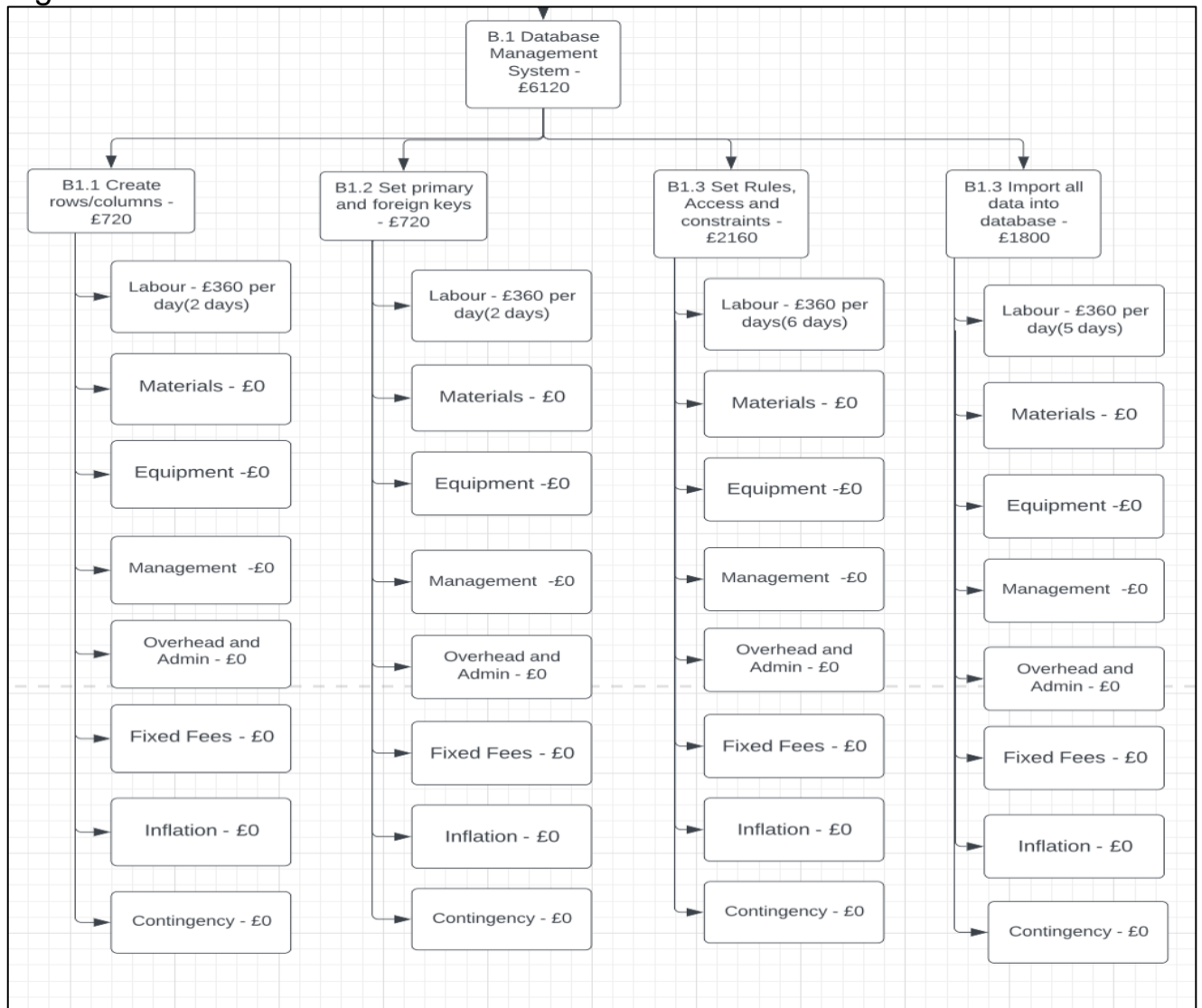


Figure 14 – B.2

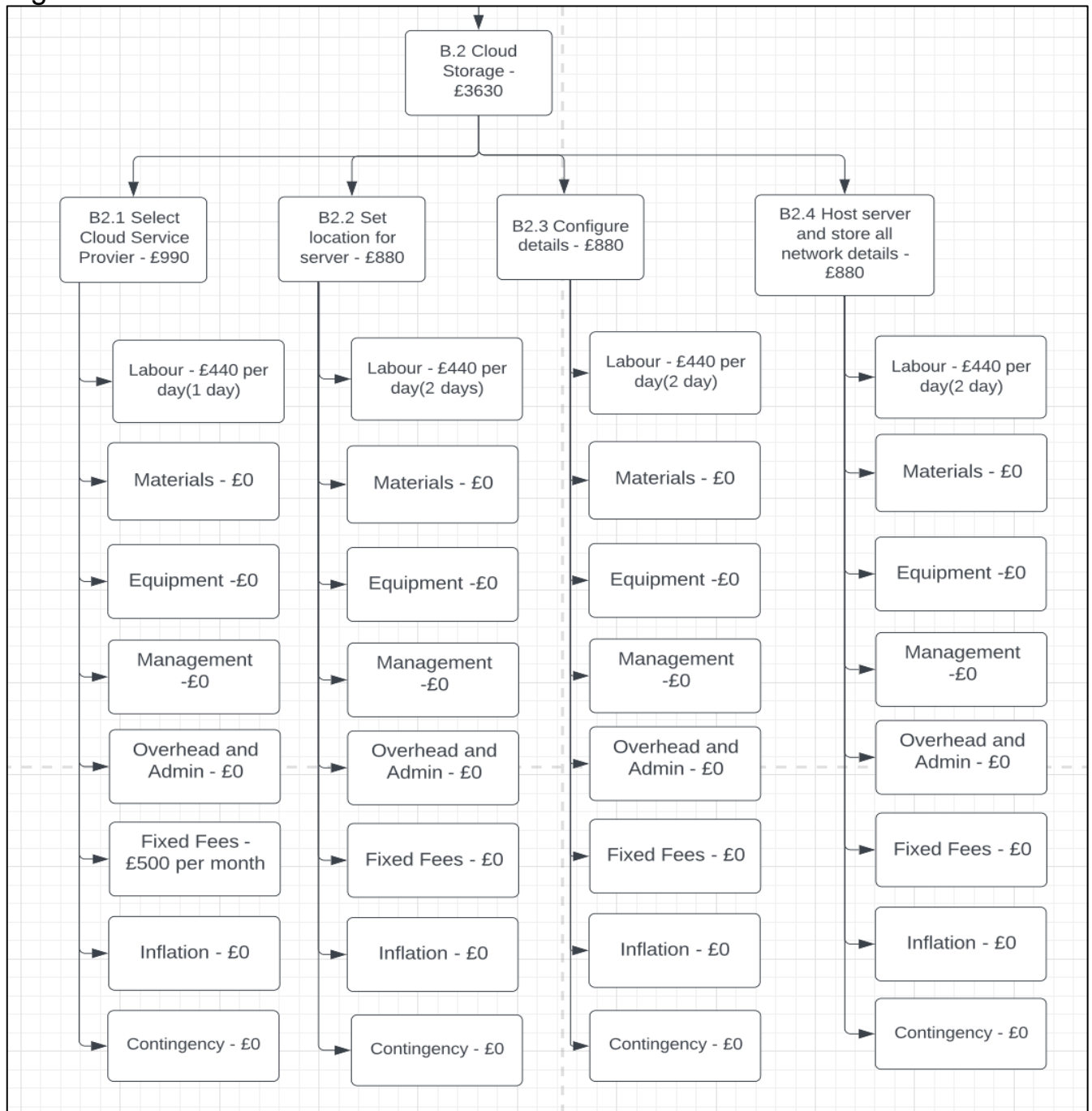


Figure 15 – C.1

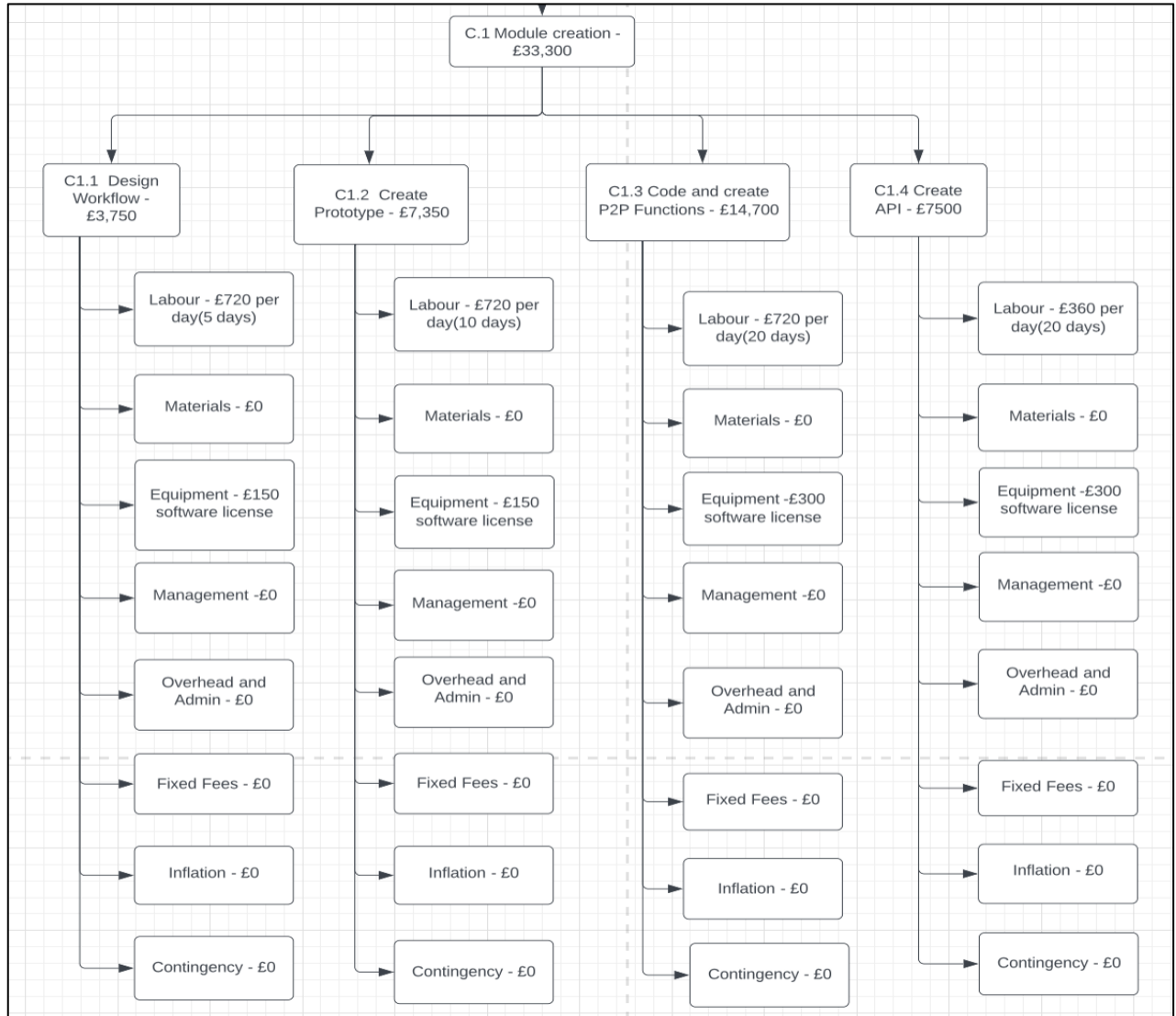
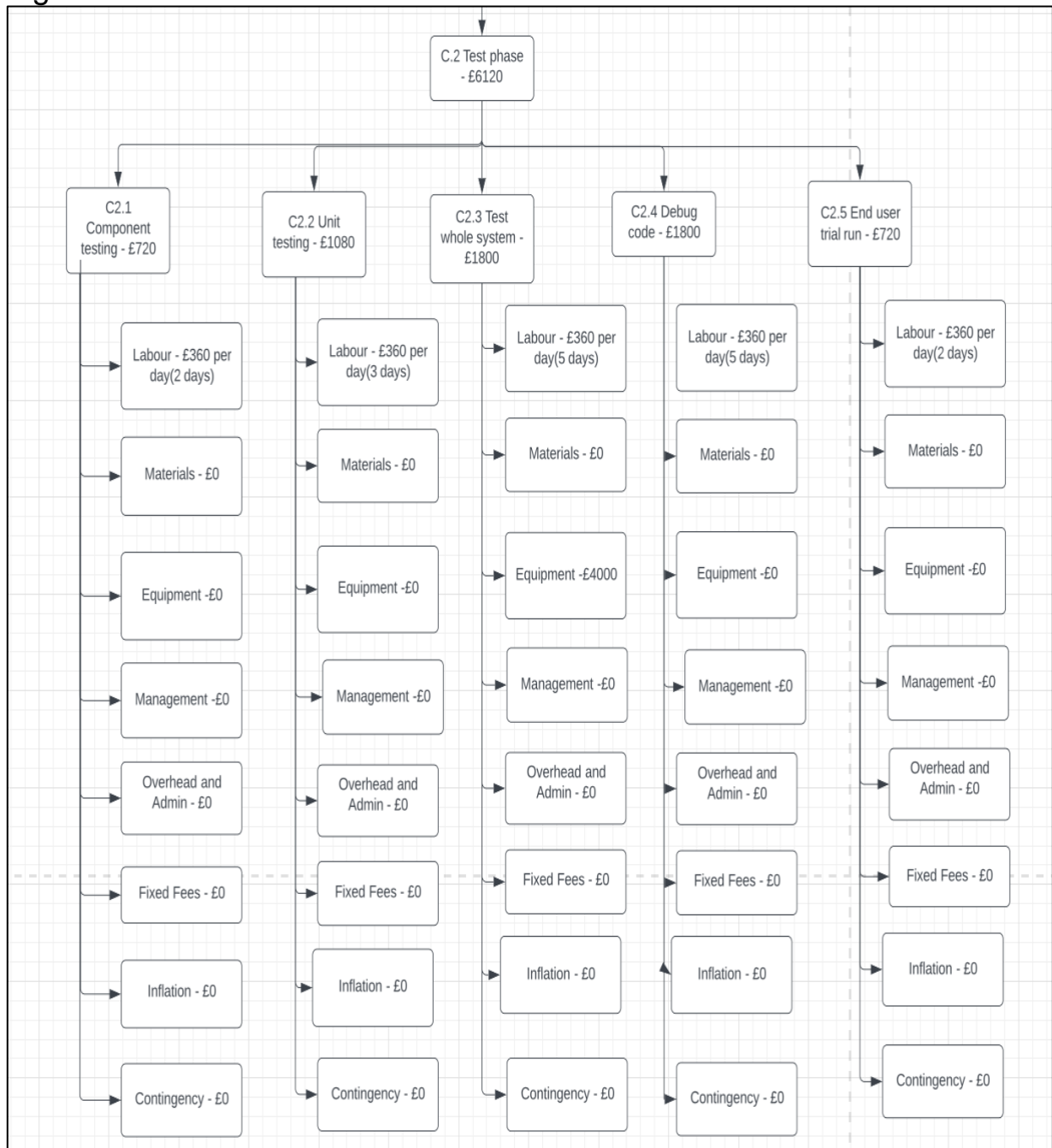


Figure 16 - C.2



The cost of each box in the CBS is dependent on the task, the person responsible and the duration. If there is a person in a higher position assigned to a task in the RACI Matrix, there will be a higher cost due to their wages.

In the Organizational Breakdown Structure, employees who report under their managers are given a salary of £360 per day (£45 x 8 hours per

day). Meanwhile, all managers are given a salary of £440 per day[Refer to Figure 6]. The Project Manager who is responsible for the other departments will be paid £480 per day, which is why many costs under Project Planning are similar.

As previously stated, because many of these tasks in the CBS and WBS are present in the Gantt chart, they are aligned so that the days of working on these tasks are the same. For example, the Work packages for the DBMS is 10 days, and in the Gantt Chart, the database design has the same duration. API Implementation has a duration of 20 days, and the Software Engineer is responsible for this task, which totals the total Labour cost to  $£360 \times 20 \text{ days} = £7,200$

Many costs in the Module Creation Subtask [Refer to Figure 13] consist of costs of £720 per day. This is because two (2) employees who report under management working on these specific work packages(mainly the Software Engineer, UI/UX Designer and ERP Employees)

## **Risk Management**

Figure 17

COLUMN	Process Step/Input	Potential Failure Mode	Failure Effects	S	Causes	O	Controls	D	RPN	C
1	Developing the system	Poor UI/UX Design	Difficult navigation and usability for end user	7	Weak understanding of user requirements	5	Consultation with stakeholders	8	280	
2		Wrong or poor functionalities in the system	Stakeholders cannot procure items affecting the relationship with vendors	10	Lack of skill	5	Training	7	350	
3			Slow loading speed, loss of time and users will be reluctant to use the product	8	Lack of skill	5	Time allocation	7	280	
4									192	
			Errors and bugs present in system	8	Lack of testing	6	Time allocation	4		
5	Database rules	Organizational data not implemented	Data will not match within all stakeholders	8	Lack of understanding of the organizational structure	7	Inspection	5	280	
6		Database rules and access not applied to the system	Misuse of control within the system	10	ERP Admin creating mistakes on granting access	4	Inspect individual employee access	4	160	
7			Wrong employees will be able to see sensitive information i.e. salaries	10	ERP Admin creating mistakes on granting access	4	Inspect individual employee access	5	200	
8		Complex database management system	Poor database structure and access to data	8	Lack of skill	4	Testing	4	128	
9		Data Migration failure	Limited or incorrect data for stakeholders	8	Lack of skill	7	Train Employees	5	280	
10		Lack of server space	Poor access to data for all stakeholders	7	Small database	5	Funding	8	280	
11	Equipment for employees	Unsuitable computers (slow, outdated)	Poor quality end-product due to unsuitable equipment	7	Lack of funding and consideration	3	Funding	8	168	
12			Decreased efficiency and confidence for employees	8	Lack of funding and consideration	3	Funding	8	192	



Figure 18

COLUMN	Action Recommended	Resp.	Actions Taken	S	O	D	RPN
1	Reconsider UI/UX Design and Meet with end-users	UI/UX Designer	More meetings with software engineers and stakeholder groups, and new design has been created	7	4	7	196
2	Hire new or train new software engineers	Software Engineering Manager	Employees have been trained	7	3	5	105
3	Allow other stakeholders in the testing phase	Project Manager	Different stakeholders continuously test the system and interact with software engineers	8	4	7	224
4	Increase time allocation for testing phase	Software Engineering Manager	More time will be allowed during the testing phase of the project	6	7	5	210
5	Increase level of communication and time allocation	ERP Admin	More meetings have been conducted with senior management, HR Department and the Technology Department	8	6	7	336
6	Test different employee accounts	ERP Admin	Different Employee accounts have been inspected and access has been redefined	6	7	6	252
7	Test different employee accounts	ERP Manager	Different Employee accounts have been inspected and access has been redefined	7	5	6	210
8	Train employees to create simplified DBMS	ERP Manager	DBMS now has proper rules, and data has been normalized to reduce redundancy	8	3	6	144
9	Hire new or train employees	ERP Manager	Employees have been trained before database creation phase	7	7	4	196
10	Cloud storage system	ERP Manager	More storage has been purchased in the cloud system	6	4	5	120
11	Provide employees with high quality equipment	Project Manager	Purchased computers that is compatible with many softwares	8	2	5	80
12	Provide employees with high quality equipment	Project Manager	Purchased computers that is compatible with many softwares	8	2	4	64

Undoubtedly, many risks can occur throughout and after the lifecycle of the project. Therefore, it is essential to identify these risks and conceptualize ideas on how to minimize them. The picture above is the FMEA Table which serves that purpose. Figure 17 identifies these risks and Figure 18 recommends actions to minimize them.

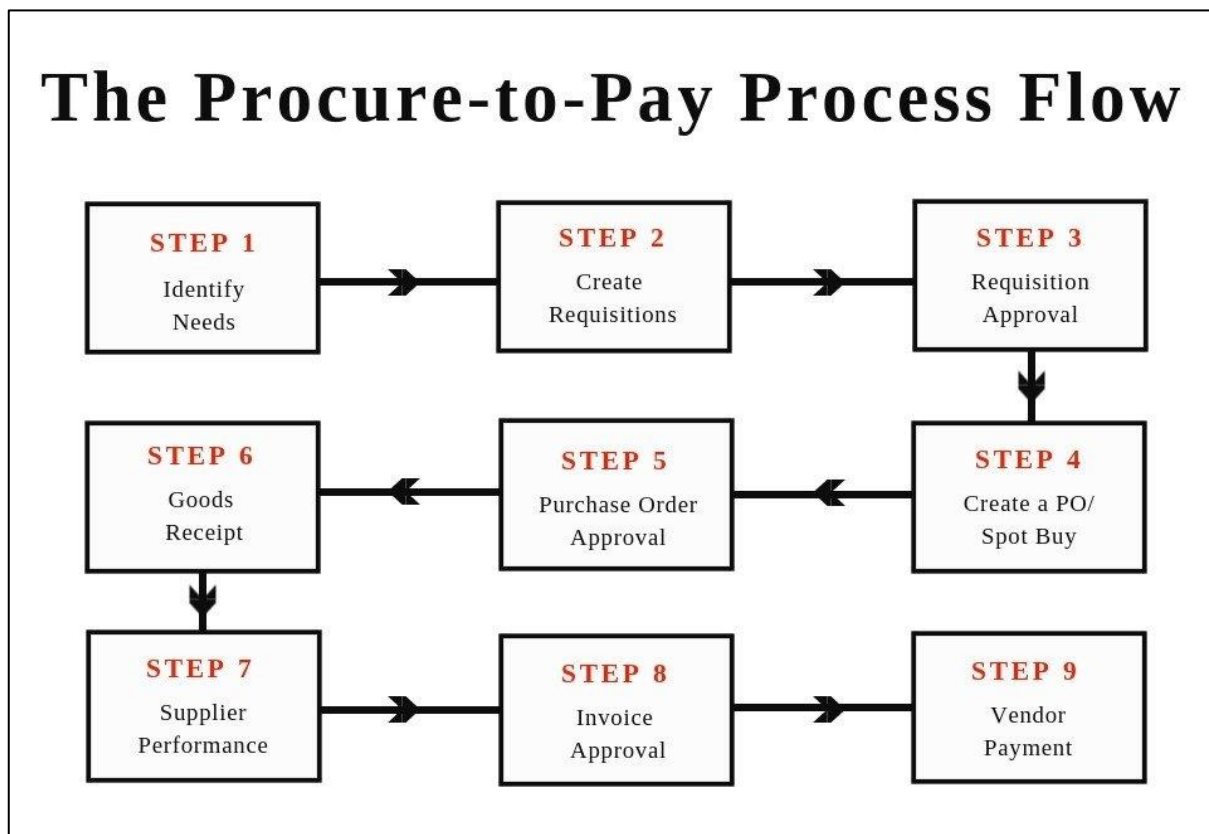
Many of these risks can occur in the work packages of the WBS or the tasks in the Gannt Chart. The project has an estimated total cost of £57,960[refer to Figure 10] however this may increase if the risks identified are not prevented.

In the chart, there are 3 metrics such as S: Severity, O: Occurrence and D: Detection. Each failure effect is given a score and the SOD will be

multiplied and will result in a PRN – define. The higher the PRN score is, the higher the urgency for the risk to be minimized as they can cause project failure. Most risks that have been identified and have the greatest impact are found in the Database Creation Phase.

## Benefits to key stakeholders

The procurement department will be able to benefit from this system by automating their business process, the Procure to Pay Cycle which is shown below:



(Kissflow, 2021)

Identifying needs and selecting the best price at a reasonable quantity is time consuming, therefore the introduced system that will come equipped with a vendor selection that fulfils this task.

The system stores data for all available vendors and the organization will easily be able to view the best prices for the items intended for purchase. The optimized speed and customer to supplier engagement could result in better prices for BBC's Procurement Department and enable them to strategically optimize their costs as they have to work with a new way to utilize their budget.

Naturally, the Finance Department can benefit from the system as they can monitor the expenses that have been procured which can create a more accurate balance sheet for the fiscal year. Therefore, the organization will be interpreting these figures and enhance their data-driven decisions, which can optimize the business overall(Approve, 2020)

As a result of this enhancement, stakeholders such as the Editorial department will have access to advanced equipment such as cameras and lights that have better quality – in essence, their newsroom will be optimized. BBC's Audience can indirectly benefit from this by having an optimized experience which can increase overall viewership and as a result, an increase in revenue and subscribers for the organization.

Because of the value that this project brings to the organization, General managers will be convinced with this project. BBC will be able to defer itself from competitors who share a similar presence as multi-media and international organizations.

## **Considerations in relation to the operational product lifecycle**

### **Closing Phase – Post Project Delivery**

After the deployment of the system/post go-live stage, the end-users(Procurement and Editorial Departments) will be trained to use this product to effectively realize the benefits.

There will be expected maintenance that will be done after the use of the system as errors will be present in the system which will be reported by the end-users[Refer to Figure 4]. The Software Engineers will be able to fix these issues. After the system has satisfied many of the objectives, it will be introduced to other locations and bureaus of BBC to optimize their business model and adopt better practices.

## **Conclusion**

In conclusion, in order for BBC to effectively launch this project, they have to follow this project plan as it allows them to effectively create foresights when reaching the execution phase.

The total cost of this system will be compensated through the increased efficiency of the organization. The facility to purchase items from vendors with ease will not only reduce the procurement lifecycle and increase productivity, but it will enhance the relationships between internal and external stakeholders.

As many of BBC's competitors have already opted for paperless systems, the introduction to this digital transformation will allow BBC to adopt the best business practices in the industry – which will not only defer them but provide them competitive advantage.

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