KC5014
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Peter's Pharmacies Group Central Warehouse Project

PROJECT INITIATION DOCUMENT

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1. Project Definition

1.1 Background

We are a business project group, which provides IT solutions to a range of different businesses. We have been approached by Peters' Pharmacy Group to plan a feasibility study of implementing a central purchasing process system.

Peters' Pharmacy Group is a group of chemists with 15 shops across the North East of England. The shops operate as a dispensing chemist (totaling 65% of the business) and as selling non-prescriptive products, which completes the other 35% of the business.

The organization has already identified that they want to centralize the purchasing process where stock will be held at a central warehouse from which each shop will be resupplied with stock frequently based on the previous day or couple of days' sales. A reason identified for this change is the increase of "stock-outs" which the company is experiencing. The vans the business currently has are expected to have the capacity to regularly restock each store.

1.2 Objectives and Desired Outcomes

Objectives	Priority
Produce a more efficient method of ordering and replenishing stock	**H**
Create an SAP ERP system	**H**
Migrate existing data records to database	**H**
Staff trained to use the new technology	**H**
Have a central warehouse	**H**

1.3 Project Scope

The scope of this project will include the following:

- Migrating data from existing records to the database within SAP.
- The creation of a server room which will allow all the systems to run efficiently.
- Installation of SAP ERP system.
- Purchasing a warehouse where stock will be resupplied from.
- Hiring and training staff on the new IT system.
- Purchasing IT equipment for the stores, warehouse and IT department.
- Calculating costs and budgets associated with the project.

1.4 Exclusions

The project will not deal with the following:

- We will not be responsible for actions made by IT staff provided by Peters' Pharmacy Group.
- We will not be responsible for the quality and amount of work provided by the IT staff given by Peters' Pharmacy Group.
- We will not be responsible for the hiring process of warehouse workers and person(s) that will oversee the purchasing process from wholesale suppliers of Peters' Pharmacy Group.
- Creating a database that will hold stock level records.
- Designing and developing the backend of SAP.

1.5 Assumptions

- There are enough vans currently owned by the business, so we will not have to procure more vans.
- Current staff have basic IT literacy.
- The deliverables aid the corporate strategies of the organization.
- The company already has some IT staff that has some server management experience.
- IT staff also has some offices at company HQ and in that office we can place our server.
- Each pharmacy already has some form of a digital system that they use for stock management, and they have data inserted in it (and the system is able to export them).
- Each pharmacy currently has an identical POS.
- Each pharmacy has outdated computer equipment that will need upgrading and they have one POS each (i.e. each pharmacy will need one computer).
- We will use SAP as POS (so that we do not have to integrate current POS into SAP).

1.6 Constraints

- Turnover is down 40% in the non-prescription business, meaning there will be less investable capital for Peter's pharmacy to spent on the project.
- They will be time constraints on the length we have to complete the project.
- Data protection acts will have to be adhered to.
- As we are in the middle of a world-wide pandemic, the following constraints have risen:
    - Demand for computer products has risen significantly, which has caused a world-wide shortage of computer chips. This may have an impact on delivery times.

- The demand for flights has lowered, meaning fewer commercial flights are taking place, which can affect delivery times.

1.7 Project Interfaces

We have studied Peter's Pharmacy Group activities and searched other projects happening in the organization and we have concluded that no other projects will interact or interfere with this project. For that reason, we conclude that we will only be working on this project and therefore, there are no project interfaces to consider.

1.8 Project Approach

The project approach will take several approaches that will be adhered to. We have come up with some questions that will categorize our project approach for the various deliverables that are needed.

Will parts of our solution be 'off the shelf'?

Warehouse

- We have decided that we will purchase the warehouse because this is a long-term investment and, if the warehouse is owned, modifications to it can be made more easily if necessary. More reasons for purchasing a warehouse will be identified in later parts of this document. We do not however provide real estate services, so the purchase will need to be handled by a third party (some real estate agencies have been mentioned in resources part within the timescale part of this document).

IT infrastructure

- The make-up of our IT infrastructure will be bought off the shelf. That includes servers, endpoint machines, internet access and storage, which makes up our network and will be purchased from suppliers.

ERP

- We will be using the SAP ERP system to monitor and control stock levels. We will not be modifying the architecture of the backend; it will be fully 'off the shelf'.

Will some products be developed in-house?

Staff training

- Yes, staff training will all be done in-house. Our team will produce training materials such as user manuals, an SAP simulator and user tests to train current but also new employees that join Peters' Pharmacy Group in the future.

Front-end GUI for pharmacies and warehouse

- The GUI shipped with SAP software won't be generally accessible to warehouse and pharmacy employees, so we'll be developing this internally to suit our needs specifically.

Testing

- Testing will be done by our team; no external testers will be needed. This is because we have the necessary people employed for this at our group.

1.9 Project Organization

Project Manager (PM)

- The project manager is responsible for leading the project team. They must supervise, lead and delegate responsibility to the project team when necessary. In addition, they must set goals, define roles and set timelines for project activities in accordance with the needs of Peters' Pharmacy Group. However, although responsible for all PRINCE2 processes, the PM is not responsible for directing a product or managing product delivery process. They report directly to the project board.

Project Board

- They are ultimately responsible for the success of this project. Their role is to provide funding and resources to the project manager for the project.

Managing Director

- This is the managing director of Peter's Pharmacy Group, who is Dianne Peters. She will be briefed on project progress on a regular basis through meetings whether that be online or face-to-face. This will be done to prevent scope creep, as if there are new specifications Peters' Pharmacy Group want to add, then they can be identified quickly and added to project products within the defined timescale. She will present to us the group's requirements for the solution.

Team Managers (TM)

- A team manager will be needed because we will have teams that specialize in different areas. For example, there will be team manager to manage the team of SAP programmers for building and implementing the SAP ERP. The TMs will provide regular status reports to the project manager, so project progress can be monitored.

SAP front-end developers

- The SAP front-end developers will be responsible for creating our specifically designed GUIs for the pharmacies and the warehouse. A team manager will be needed to supervise this team, as this will be a large group.

Data Analysts

- They will be responsible for transferring the current data records to the already built-in database within SAP using the SQL standard.

Network administrators

- Their responsibilities will include anything related to the network. For example, installing and configuring the computer network, resolving any issues with the network and testing the network.

Staff training team

- After the successful implementation of the new system, employees of Peters' Pharmacy Group will need training to use the ERP system, so there are no issues related to staff being unable to use the new software. They will produce training manuals and programs to help train the current staff.

2. Business Case

2.1 Business Options

Option 1 – Carry on as normal

Peter's pharmacy could continue working the same way. This would be a low-cost approach because no money or time would need to be spent implementing the new system. However, with this strategy the risk of "stock-outs" would continue to happen which could possibly lead to a loss of customers and ultimately a decrease in sales.

Option 2 – Complete the minimum requisites

While option number 1 would be the easiest to do, as there is no requirement to change anything, the problems the company is facing would still be present.

Option number 2 presents a solution that would form of completing the minimum requisites to address the company's problems. That would include implementing central ERP system (SAP is the system of choice) as the heart for the whole project without custom development of front-end solution for warehouse and individual pharmacies, no integration with whole-sale suppliers for automatic stock ordering and the warehouse would be rented, rather than purchased, which only makes sense if the products of the projects would be needed for less than 8 years and 10 months.

Seeing as everyone needs some medication every now and then, the likelihood of Peter's Pharmacy going bankrupt or closing business in the future is very unlikely. For that reason, we believe that purchasing the warehouse is the better option.

When it comes to custom SW development – it is technically possible to use the standard SAP interface both within pharmacies and warehouses, however that is meant more for power users, rather than end-users with no high technical knowledge. Having to teach users all the functionality SAP provides in order to understand it, would only bring more problems down the line. The training would take much longer and in our experience, users forget how to use stuff if they don't use it frequently enough, so they would then do mistakes on the job which would create data discrepancies and the total time of customers visiting pharmacies would increase, as SAP would take longer to load all the different views needed to finish a transaction.

For reasons stated above, we believe that it is not feasible to go with option 2 but option 3 is preferable.

Option 3 – Do the ideal solution

To improve Peter's Pharmacy Group stock management, the ideal approach would be to implement a centralized ERP system (we've chosen SAP) that would be connected to a central warehouse and all the individual pharmacies. Each shop would then be resupplied on daily basis from the warehouse based on the sales from previous days and stock would be delivered from wholesale suppliers into the shared warehouse, rather than directly to each shop.

To make the transition process to the new system easier, we would also custom develop a front-end solution for employees that would be using it on a daily basis – one for warehouse employees and another one for pharmacies. Both these front-end solutions would be built on the same core, however they would have access to different parts of the SAP system, as they fundamentally need different functions. With these, the training process of employees for the transition to the new system would be much faster and easier and we can choose to include interactive guidance and links to internal knowledge base explaining all problems further in case there is a new employee or current employees forget how to perform a certain task.

Furthermore, as we'll be developing custom front-end and integrating it into SAP, we'll also implement auto-ordering feature that will integrate with wholesale suppliers. This will take one more duty off the procurement employees at the company, as all they need is to set the level of auto-ordering for certain stock once and the system will make sure there is never a lower amount of stock than set.

As a long-term solution, the approach presented will bring the most benefits to the company and will have a positive impact in reducing the number of "stock outs", creating a better customer service that would please regular customers and attract new ones, making overall revenues grow not only grow to numbers similar to 2 years ago, but even surpass them. For these reasons we feel like option 3 is the one we should go with and this document further explains it.

2.2 Benefits

	Quantifiable/Tangible	Non-Quantifiable/Intangible
Positive Benefits	• Reducing the possibility of the branches having "stock outs" • Increased sales in the long run • Decrease of product purchasing prices	• Improved lead times • An improved customer response • Improvements in purchase analytics

Reducing the possibility of the branches having "stock-outs"

- Some branches are experiencing "stock-outs" and the implementation of the new IT system would minimize the possibility of this. If this problem is eradicated, then there will be a reduction in loss of sales.

Increased sales in the long run

- Having a centralised system between a central warehouse and the branches would mean a better response to the customer needs, meaning a better service which in the long run will increase sales.

Decrease of product purchasing prices

- As all the stock procurement is now being done centrally, rather than it being distributed across branches, wholesale suppliers will offer better prices as we'll be stocking higher numbers of products at one point.

Improved lead times

- With a centralized system, all the branches will be resupplied in a more timely and efficient manner, which will help to protect the business from losing out on sales.

An improved customer response

- Using the new system will provide the branches with a more efficient way of responding to customer needs. This in turn would create better communication with the customer and improving in this way would improve the service provided to the customer, thus creating loyalty with Peter's pharmacy group.

Improvements in purchase analytics

- As all the purchase data from all branches are now inputted into one system, the company can then do better analytics to predict sales. That can be beneficial for many reasons, main one being that they can prepare better for i.e. seasonal shoppers.

	Quantifiable/Tangible	Non-Quantifiable/Intangible
Negative Benefits	• Training costs • Time spent on training • Maintenance costs	• Staff might struggle with the new system

Training costs

- Training material will be required, which will add costs to the project. Simulations, tests and manuals will need to be produced for effective training as well as paying people to do the training which will be costly.

Time spent on training

- An SAP ERP system is a complex system, therefore, to fully utilise the functionality of the system, a lot of time will be needed to be spent on training the current employees. As a result, this will increase project duration, meaning the system will take longer to be implemented.

Maintenance costs

- The new system will require an IT team to work on the servers and make sure the system's network is running smoothly, so no problems occur that may be detrimental to the ordering system. Therefore, costs associated with maintenance will be incurred.

Staff might struggle with the new system

- Some staff may not be comfortable with the new system and may take more time than expected to get used to it.

2.3 Costs

IT-Infrastructure – Hardware and Network

WI-FI

Full Fibre 900 + Digital Phone Line for £935 (incl. VAT). We need this connection 16 times, for 15 stores and one warehouse. The total cost for this position is £14,957.

- Speeds (up to) 950Mbps download and 194 Mbps upload
- Hybrid Connect
- 1 free Expert Setup
- 1 free static IP
- Enhanced IT Support
- BT Business Smart Hub 2
- Fixed Price Promise
- Digital phone line
- Minimum speed guarantee
- Unlimited broadband data
- Guest Wi-Fi
- 5 million UK Wi-Fi Hotspots

Server

Dell Precision 5820 Tower £2,127 incl. VAT

- Processor 1 x Intel Xeon W-2235 / 3.8 GHz (4.6 GHz) (6-core)
- RAM 16 GB (installed) / 256 GB (max) - DDR4 SDRAM - ECC
- Storage Controller
- Hard Drive SSD 512 GB - PCI Express - M.2

Server OS

Windows Server 2022 Essentials costs $501 (appx. £373). We just need 1 license for our server.

SAP Business One

- Professional User licencing costs €2,700, appx. £2,267 we need 16 licences for 15 shops and one for the warehouse. The total cost for this position is €43,200, appx. £36,260 incl. VAT.
- The integration costs will be included in the operating costs.

Endpoint machines

HP ELITE All in One Computer. We need 16 of them. 15 for the shops and 1 for the warehouse. Each one costs £1,379. The total position for this cost is £22,061 incl. VAT.

- Windows 10 Pro – free upgrade to Windows 11 when available
- Intel® Core™ i7-10700 (2.9 GHz base frequency, up to 4.8 GHz with Intel®
- 16 GB DDR4-2933 MHz RAM (1 x 16 GB)
- 512 GB PCIe® NVMe™ TLC M.2 SSD
- 60.5 cm (23.8") diagonal, FHD (1920 x 1080), touch, IPS
- Intel® UHD Graphics 630

Warehouse

Property

The property is located in Samson Close, Newcastle Upon Tyne NE12. It is near to all stores. This position costs £399.000 incl. VAT

- Two storeys property
- 1.577 sqm (16.976sqft)
- Established industrial location
- Industrial/office use

Shelves

Racking Warehouse Shelves costs £50 each. We need 50 shelves. This position costs £2,500 incl. VAT

- 90D x 45W x 180H
- Floor Mount
- 5 Shelves, each shelf has a weight tolerance of 280 kg

Pallet truck

The warehouse will have 6 warehouse workers and each of them needs a pallet truck. Each pallet truck costs £350, so we need in total £2,100 incl. VAT

Forklifts

Each Forklift costs £26,125 incl. VAT. We ordered 2. This position costs in total £52,250 incl. VAT

- Capacity: 3,000 kg
- Lift Height: 4,800 mm
- Mast Type: 3 Stage Full Free Lift

- Closed Mast Height: 2,220 mm
- Dimensions (L x W): 2,840 x 1,220 mm

Warehouse scale

We need a warehouse scale to weigh the delivered goods. This position costs in total £1,980 incl. VAT

- 1,500 kg scale

Operating Costs

The operating costs includes costs for three main positions. The total costs are £61,000 incl. VAT.

All these positions include the workhours and costs of our staff.

Preparation takes the first position. The preparation costs are £24,845 in total. That includes costs for the information acquisition process.

The key points are:

- Project management
- Distribution network
- Server Hardware
- Central Warehouse
- Central IT department
- Current IT status
- Software
- Business practices/processes
- Network
- Training
- Testing

Execution takes the second position with total costs of £34,618

We use the collected information from the preparation to execute the project. The key points are the same. We provide the client with the software, staff training and the documentation. This does not need to be handled by an external agency service, and so will save costs. The client will find short guides for the features in the front-end.

The last position of our operating costs is the monitoring with a total cost of £1,500.

The key points for the monitoring are:

- Project management
- Hardware
- Network

We need to pass the client the documentation, cancel supplier contracts, release the staff and inform stakeholders of the closure of the project. We also need to set up alerts to prevent hardware usage over the allowed limit and finally, we need to set up automatic tests for the network connections.

Total Costs

The total costs are approximately £595,000. We also need approximately 10% tolerance on the budget, which would bring the total project costs to £655,000.

2.4 Timescale

Considering all the work activities that need to be done in order to achieve the outlined project objectives, we expect this project to take approximately **5 working months (154 man-days** to be exact). That includes hardware ordering, delivery times, software development and integration, hardware installation into individual locations, business processes analysis, preparation of project management documentation, building & configuring a network and connecting devices, testing, training and data analysis and insertion.

2.5 Investment Appraisal

Peter's Pharmacy Group is expected to invest approximately £595,000 to cover the expenses for their centralized warehouse project. We currently know that the group operating profit is £2,100,000 and that it is approximately down 40% from the numbers from two years ago. The cause of this is the number of stock-outs, which this project would solve. That tells us that the problem of stock-outs has caused a profit loss of approximately £1,400,000 a year. Considering we also need approximately 10% tolerance on the budget, that would bring the total project costs to £655,000.

If we will be conservative in our calculation and expect it will take 3 years to get back to numbers of 2 years ago (and after surpassing that point any growth will be considered as new) we can expect the project will pay for itself in approximately 1 year and 6 months. That calculation pans out if we use (for simplicity's sake) the fact that the growth will be linear, rather than exponential. Any money this project brings back to the company after this point is a net profit for the company and can be considered as profit generated by this project, as all project costs will be accounted for.

Profit 2019	£ 3,499,671		How long it will take to get to 2019 numbers	3	years		
Profit 2021	£ 2,100,000						
Difference (%)	40%		Profit increase 1 year after project finish	£ 466,557			
Difference (£)	£ 1,399,671		Profit increase 2 years after project finish	£ 933,114	project costs will be covered in year 2		
			Profit increase 3 years after project finish	£ 1,399,671			
Project cost	£ 655,000						
			Company profit in year 1 after project finish	£ 2,566,557			
It will take 1.40390156938468 years for the project to pay for itself			Company profit in year 2 after project finish	£ 3,033,114			
			Company profit in year 3 after project finish	£ 3,499,671			
(that is 1 year and approximately 5 months)							

2.6 Major Risks

There are many potential risks that must be considered for this type of project. The table below identifies the risks and details the impact of the risk and it also gives detail on how we would go about managing the identified risks.

Risk Identifier	Risk	Risk Category	Risk Description	Likelihood (1-10) with 10 being the most likely	Impact (1-10) with 10 having the highest impact	Score (likelihood * impact)	Risk Response
R1	Staff illness	Health and safety	Project may need to be delayed due to staff illness	7	5	35	Hire staff if staff absence is causing great strain on the successful completion of the project and if their skills cannot be easily substituted by other staff members.
R2	Number of vans are insufficient	Operational risk	Delays in restocking the branches and increasing the probability of “stock-outs”.	5	8	40	Daily reports will be created for the branches to review the restocking process. If the restocks are not efficient, new vans will need to be purchased and new drivers will be employed.

R3	Suppliers failing to meet the contractual commitments	Compliance risk	More expenses or delays on the project due to failure of the suppliers.	5	8	40	Thorough research will be carried out to find what products will be supplied by outside companies and for more important materials have a backup supplier in mind.
R4	Hardware malfunction or other possible failures with it	Operational risk	Costs and duration will increase and the search for a new supplier could be required.	3	10	30	Stress test the hardware after it is assembled and in addition do more stress testing after the implementation of the software.
R5	Insufficient Staff training	Technical risk	In case the staff members do not get the proper training, they could potentially not be able to correctly use the resulting system, possibly leading to human errors and therefore reduce the	2	8	16	The staff members could receive more training as well as the proper system documentation before the delivery of the final product. There could also be on-the-job training along

			final product's quality.				with a test that the workers must pass.
R6	Lack of funding / Sponsor disengagement	Financial risk	The stakeholders could lose the project's interest, without noticing a good return on the investment and consequently there could be no funds available to complete the project.	2	9	18	The project manager should make sure that the funding from the stakeholders is sufficient, the budget for each stage is correct, and stage regular meetings with stakeholders to show the progress happening on the project.
R7	Functionality issues with the SAP software	Technical risk	Software issues will cause the whole system to not function as expected.	3	10	30	Regular testing of code and integration with other systems will help prevent a malfunction with the SAP software.

R8	Employees taking out holidays	Operational risk	The project is being partially carried out over the end of the year so people need to take out unused holiday time and they would usually take out holiday time anyway to be with their families during Christmas time.	9	3	27	We will move tasks that can be handled by different employees over to them and where not possible, we will have to reschedule the task at hand.
R9	Damage on the vans	Operational Risk	The delays on restoking would be inevitable, and the higher change of happening a “stock-out” as well. An increase in the expected costs would happen too.	5	8	40	Weekly van reports made by the drivers to notice if something needs to be changed or fixed before it breaks or stops the van. More frequent maintenance on the vans.
R10	Delayed deliveries	Operational Risk	Due to Covid, there is a shortage of planes resulting in delivery delays	7	8	56	We need to calculate the financial impact this would have on the project and include it in the agreement as a penalty

R11	Not enough components	Operational Risk	Because of covid, there is increased demand for computer components, resulting in shortage of silicon chips which only a handful of companies in the world can create, resulting in shortage of components we may need for the project	6	7	42	We need to calculate the financial impact this would have on the project and put it into a penalty clause of the agreement with the supplier. We should also try and have a look at other suppliers that might have this stock already in their warehouse.

3. Project Plan

3.1 Project Product Description

Title: Peters' Pharmacies Centralized ERP system

Purpose

- Design and implementation of a centralized ERP system for Peters' pharmacies group that would automate and centralize the purchasing process where stock will be held at a central warehouse from which each shop will be resupplied with stock frequently based on the previous day or couple of days' sales. This type of system would minimize the possibilities of "stock-outs" and increase the sales in the long run.

Composition

- ERP System
- Database
- Servers
- Network
- Warehouse
- Storage
- Distribution procedure
- Training
- Testing
- Documentation

Derivation

- A design of all the different branches of the group provided by Peters' Pharmacies Group.
- Prepared pharmacies with a good network and provided good IT equipment.
- An analysis of the data in each pharmacy's system.
- An inventory of all the products that are currently sold in the pharmacies made by the group.
- The staff of the group has the basic IT knowledge and is trained to work with Point of Sale systems.

Format and Presentation

- The project must be presented as a fully functional centralized system, easy to use for the customer, capable of fulfilling the needs of Peter's Pharmacy group, demonstrating the improvement, usefulness and convenience of this new implementation in contrast with the old one.

Development Skills Required

- Programming skills (web development, database development)
- Project Management skills
- Financial reporting expert
- IT/Hardware team

Quality Criteria

- The system, including both hardware and software, is always available to use properly even when overloaded.
- The system is reliable, ensuring that every branch of the group is connected to the central warehouse and every time a purchase is made, the transaction is transmitted through the system.
- The new system is secure, and all the data being stored by the group is stored securely without any potential of a possible breach/hack or leak of information.
- The proper documentation of distribution, development, testing and deployment will be accessible to use whenever is necessary by any staff or member of the group.
- All staff should have received a proper amount of training and be fully capable of using the new system correctly.

Quality Method

- Every component of the project must pass a testing process. The testing will be done by our project team, who will test specific components. For example, the Graphics User Interface for the pharmacies and warehouse will be subject to testing by the testing team including the user .Based on the results of these tests, the team would adapt the implementations to improve the overall quality and solve the remaining problems to ensure that the final product is a high-quality system fitted to the needs of the company.For example, the Graphics User Interface for the pharmacies and warehouse will be subject to testing by the testing team including the end users. Based on the results of these tests, the team would adapt the implementations to improve the overall quality and solve the remaining problems to ensure that the final product is a high-quality system fitted to the needs of the company.
- The hardware and software of the system would also be submitted to stress tests to make sure that they will function properly even when the system is overloaded.

Quality Tolerance

- **Tolerance Cost:** We are expecting this project to cost £595,000. The project has a cost tolerance of 10%, so it should cost a maximum of £655,000.
- **Tolerance Time:** We are expecting this project to take total of 154 working days. Industry standard is 10% tolerance time, so including this, the project might take appx. 170 workdays.
- **Tolerance Quality:** The product should fit the purpose of using the centralized system for all the products sold on the branches, but we have defined a tolerance of 10% of those items to be only sold locally.
- **Tolerance Scope:** The mandatory requirements for the centralized ERP system are that the system can connect to and communicate with all the different branches and central warehouse to register the items sold daily, so they can be resupplied when certain stock levels are low.
- **Tolerance Benefit:** With the implementation of the new system, the group goal is to reduce the number of “stock-outs” by 80%.
- **Tolerance risk:** The tolerance level for any risk is a score of 40; any score above that should be notified to the Project Board.

3.2 Prerequisites, Dependencies and Assumptions

This section details the steps and the things that will need to be in place before the work of a plan can begin. It will also show the products that will need to be produced before the plan or sequence can move onto the next stage.

Before we can create the configured network, we must have ordered all the network components and they must have arrived to us along with the completion of the procurement documentation, so that we can assemble the network and create our desired outcome.

Furthermore, the procurement documentation needs to be completed before we can install part of our IT infrastructure in the warehouse because we will obviously need to buy the warehouse before we can install anything in it.

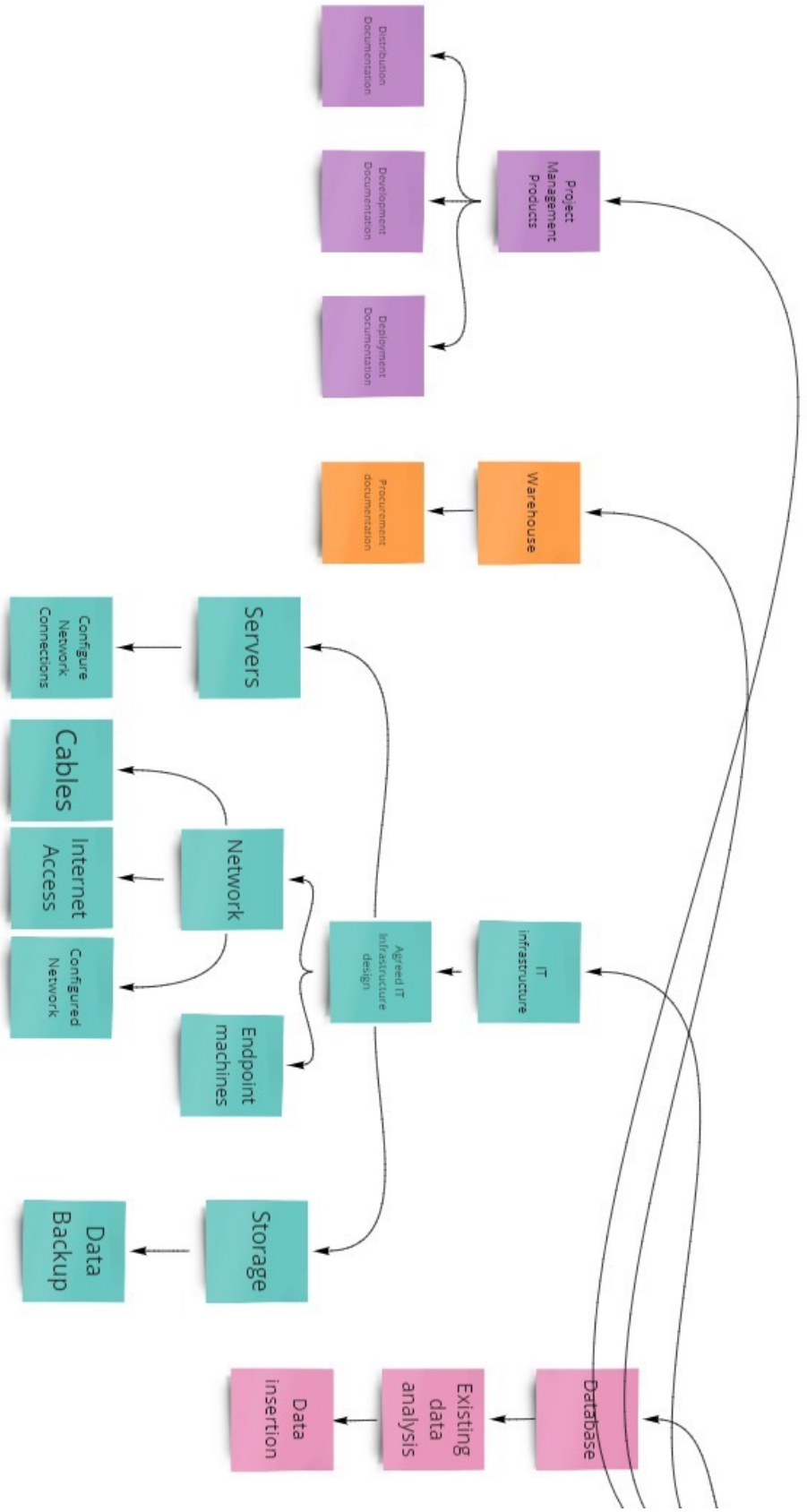
We also need to wait for the front-end to be developed until we can begin to integrate functions of SAP into it. That also means that SAP installation process can run simultaneously at the same time as front-end development, considering it is not being done by the same person. That being said, we cannot finish front-end development until the online training materials are developed, as they are being incorporated into the front-end in case the employees forget how to do a certain action – this way they can quickly see what to do and also how.

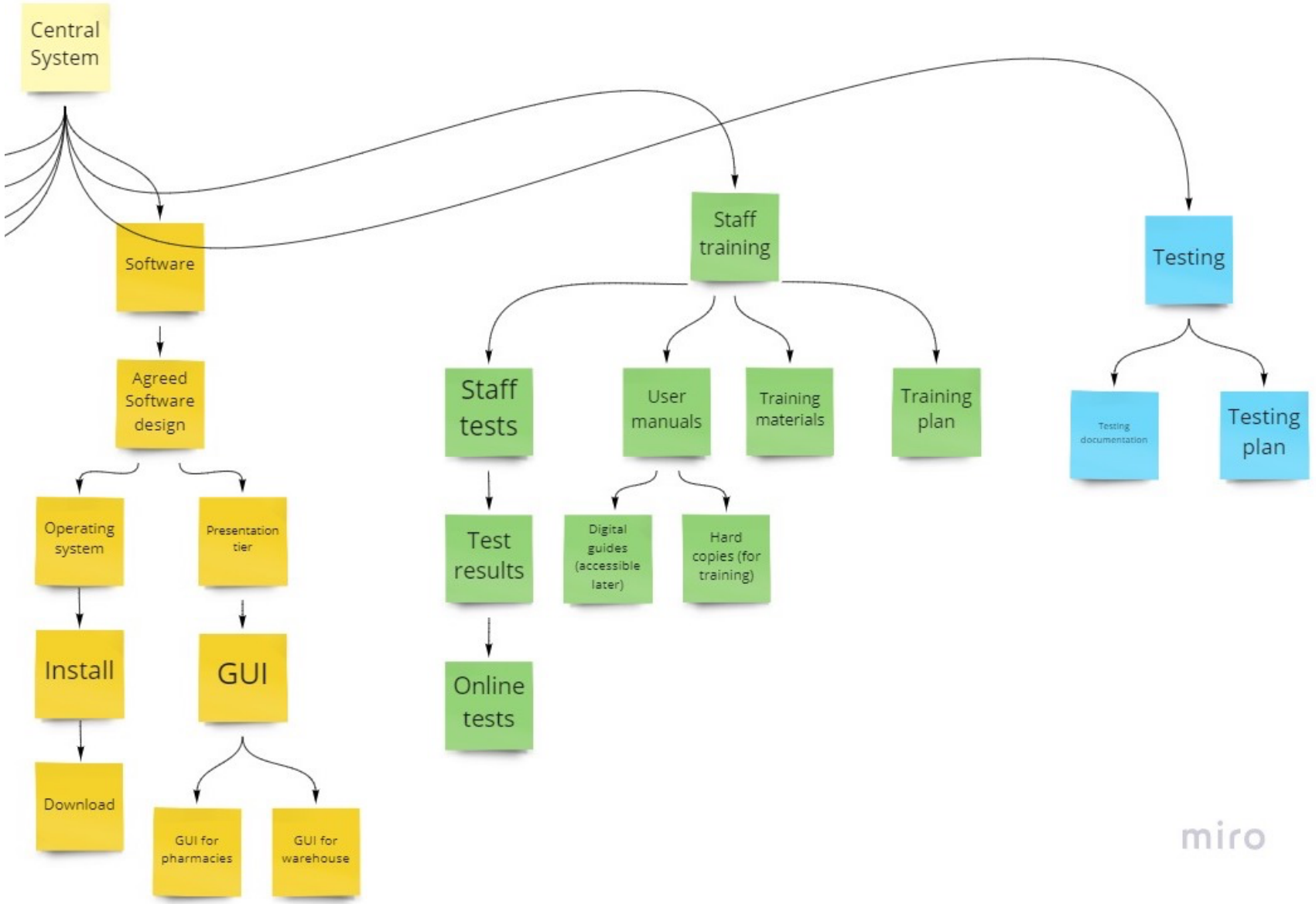
While it is possible to build and install the central server (and corresponding software) without the new network existing already, we cannot connect the individual pharmacies and warehouse together, meaning we cannot begin with the network tests and we also cannot finish the network and HW documentations.

Major aspect is also the data analysis and insertion, which, until completed, is blocking the training part. We cannot start with the trial sessions, until data is inserted, as employees wouldn't be able to try out all the functions of the training. Without the data being collected and analyzed, we also cannot integrate and enable the automatic ordering part of the system, as we need to set parameters as to when to order a certain amount of stock from wholesale suppliers.

There are many more dependencies between individual work activities within the project, but it is impossible to name and explain all of them as there is a relation between almost every task in the project file.

3.3 Product Breakdown Structure




Central System
Software
Agreed Software design
Operating system
Presentation tier
Install
GUI
Download
GUI for pharmacies
GUI for warehouse
Staff training
Staff tests
Test results
Online tests
User manuals
Digital guides (accessible later)
Hard copies (for training)
Training materials
Training plan
Testing
Testing documentation
Testing plan
miro

3.4 Product Descriptions

Distribution Documentation- All the documentation related to the distribution of the products from the warehouse to the branches.

Development Documentation- All the documentation related to the development of IT infrastructure, Software and Database.

Deployment documentation- All the documentation related to the deployment phase, where the data will be migrated to the new system.

Procurement documentation- All the documentation related to the search of a new warehouse where the products to the branches would be stored to restock the branches.

Cables- The study and purchase of all the cables so the connections that will be needed can work properly and as expected.

Endpoint machines- The study and purchase of how many endpoint machines will be needed on the branches and the warehouse so that the use of the new system is done in the most efficient way.

Data backup- A backup of the current data is needed so no information is lost in this change to the new system. Also needed for when testing starts, doing this will save the data in case something unexpected happens.

Data insertion- Insert the current data in the new database, in order to be ready to use for when the new system is implemented.

Operating system- Study of what OS will be better to install in the endpoints on the branches and warehouse.

Install- Install the new operating system on all the new endpoints.

GUI for pharmacies/warehouse- Implementation of the new graphical user interface on all the branches and warehouse.

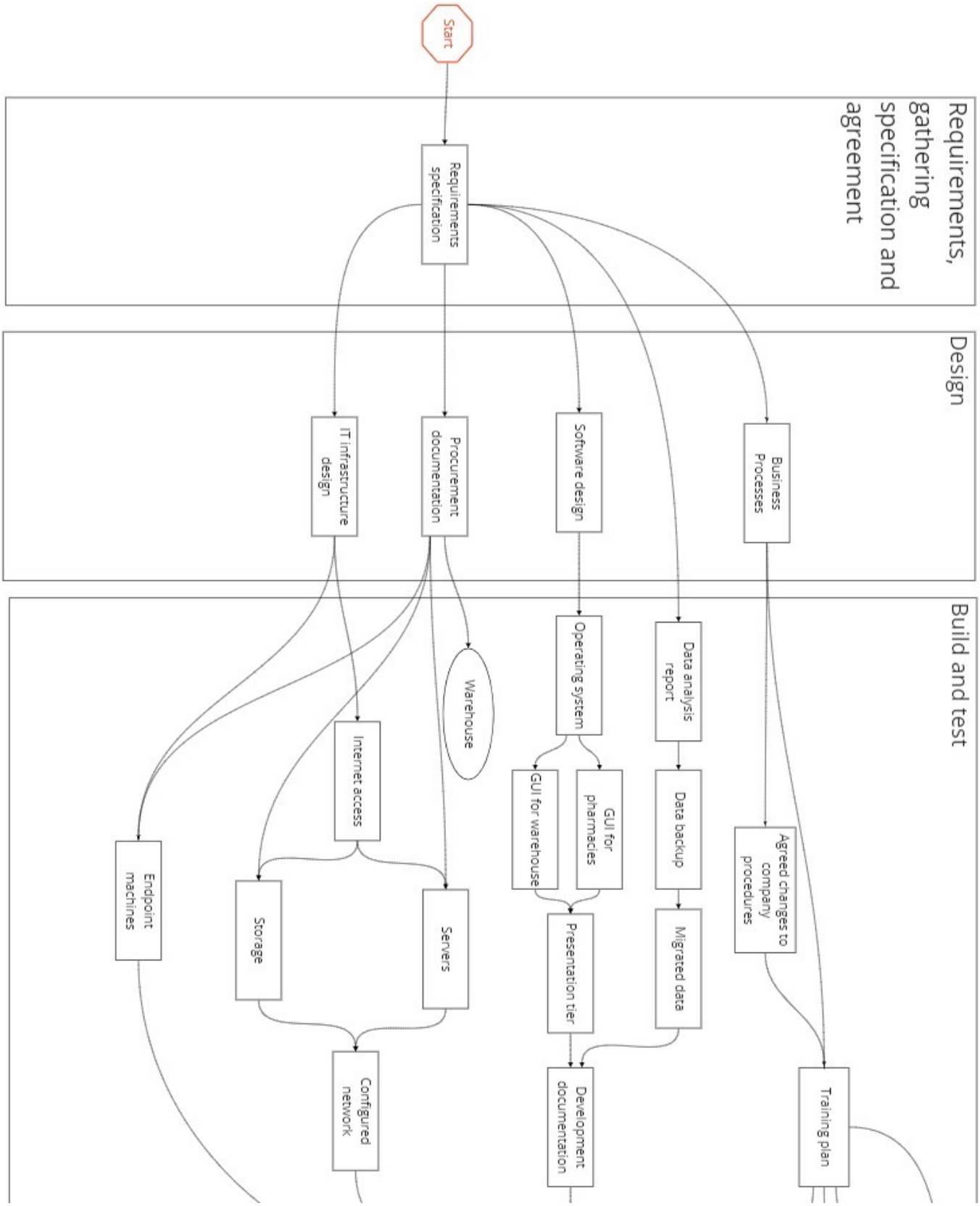
User manuals- Both physical and online materials that will be provided to Peter's pharmacies staff for them to learn how to use the new system in the expected way.

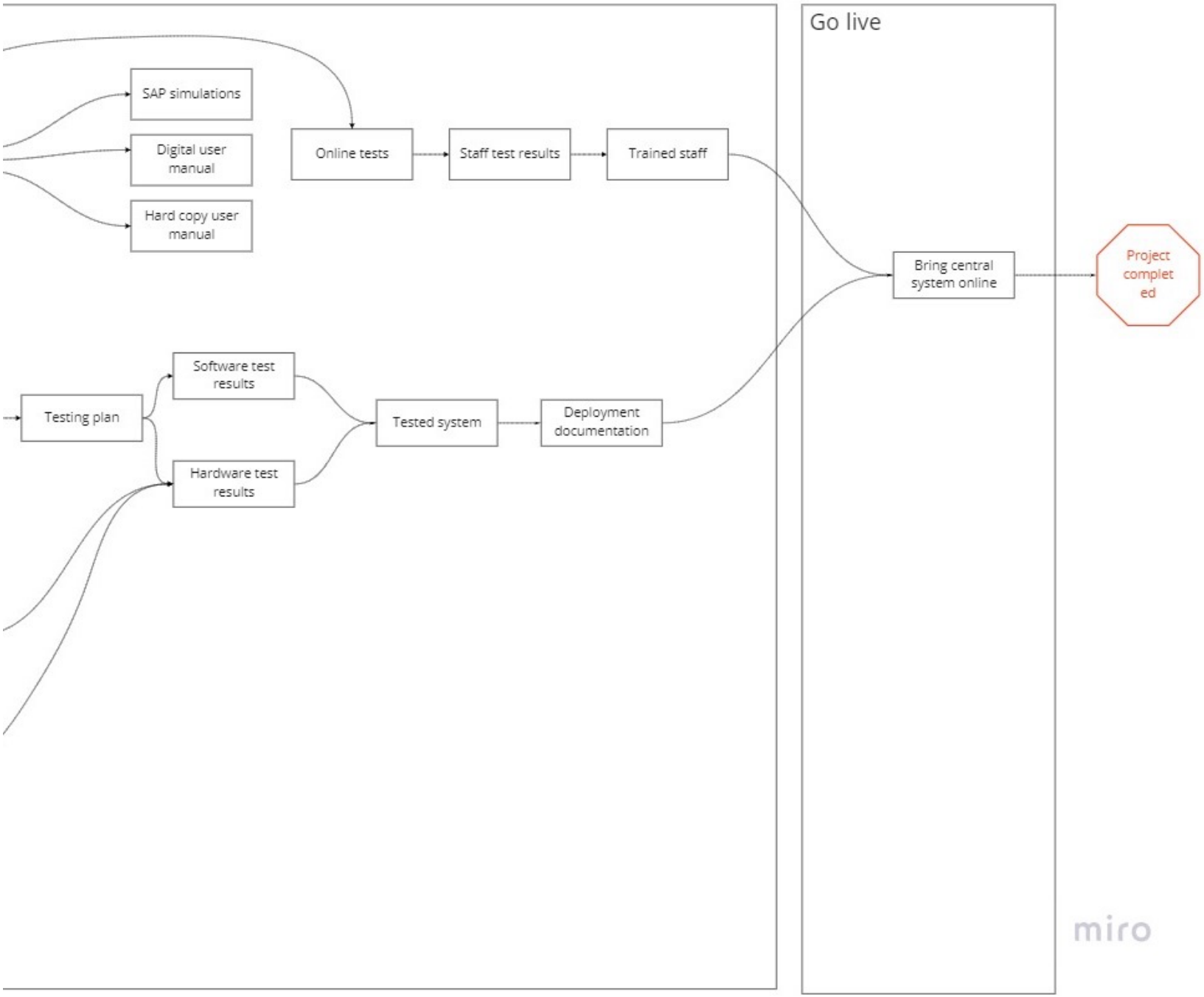
Title	Existing Data Analysis
Purpose	To map the data and make sure the new IT system has all the existing products in order to the staff on the branches being able to work efficiently
Composition	• We provide our own Data analyst • Obtain a Data Mapping Software
Derivation	• Existing data on the database • Study the data integration
Format and Presentation	This product will be pivotal for the data migration into the new central database
Development Skills Required	• Data analyst must be hired
Quality Criteria	• Configuration will be made by the Data analyst • Is the Data analyst knowledge to understand if the data is already on SAP desired format or if a data transformation is needed
Quality Method	• Stress testing after the data is migrated and the system is implemented • Testing will be made by a team composed of the Data analyst and other IT staff that are working on the system

Title	Configure Network Connections
Purpose	Connect all branches and warehouse to the new central server with the IT system
Composition	• Cable connections on all branches and warehouse • Same configuration to all the points of connection • Electricity connections
Derivation	• A computer with the expected software to use the new IT system on each branch and warehouse
Format and Presentation	This product is needed for the use of the new centralized database and the new IT system. All the branches will have to be connected to the database and this product assures that.
Development Skills Required	• IT staff that understands the new IT system and has knowledge on configuring a network
Quality Criteria	• All the endpoints of the network can use the IT system properly • Endpoint of the network can communicate with the database
Quality Method	• Stress test with all the endpoints to see if the network works as expected • IT staff that implements the network and have all the needed knowledge of the IT system and the network

Title	Staff tests
Purpose	To ensure knowledge of employees that will be using the system on day-to-day basis is high enough for there to be no problems while customers may be in the shops
Composition	• Tests that will evaluate the staff comprehension on the new IT system • Personnel with knowledge on both the new IT system and the tests that will be provided to the staff
Derivation	• Staff with basic IT literacy
Format and Presentation	In order to see if the staff have the expected understanding on how to use the new IT system in an efficient and appropriate way. This will develop into a greater and well-organized response to the customer needs
Development Skills Required	• Personnel that do the tests have knowledge with the new IT system and how the tests work
Quality Criteria	• Written tests to evaluate the capability and understanding on the subject • A test on the system itself to assess if the staff is operating well with it • If a staff member fails the testes, he can get comfortable with the new system for a week and be submitted to tests again
Quality Method	• Personnel that provide the tests and have knowledge on them evaluate the staff and give expected feedback

3.5 Product Flow Diagram




Go live
SAP simulations
Digital user manual
Hard copy user manual
Online tests
Staff test results
Trained staff
Testing plan
Software test results
Hardware test results
Tested system
Deployment documentation
Bring central system online
Project completed
miro

3.6 Schedule

Using a project management tool, we have concluded that the implementation of a centralized stock management system will take approximately **5 working months** (**154 man-days** to be exact) from the day it starts, until finished. That includes developing a custom front-end solution, sourcing of IT equipment, training, writing tests and documentation, network upgrades, updating of business processes, data analyses & insertion and integration with wholesale suppliers.

It is imperative to mention that this timescale does *not* include the process of hiring central sourcing employees & warehouse workers (as per project exclusions). We also cannot consider legal wait times to take place (namely for purchase of the warehouse). While we do not deal with estate planning, we will provide our guidance on what type of warehouse would be suitable and which way should it be handled (purchase/renting).

The whole project is divided into three stages – preparation, execution and monitoring. The longest stage being the execution stage, taking 103 days, followed by the preparation stage (44 days) and the monitoring stage (7 days).

Peter´s Pharmacy Central Warehouse Project	154 days	Mon 01/11/21	Tue 07/06/22
Preparation	44 days	Mon 01/11/21	Tue 04/01/22
Project management	6 days	Mon 01/11/21	Mon 08/11/21
Distribution Network	4.5 days	Tue 09/11/21	Mon 15/11/21
Server HW	34 days	Tue 09/11/21	Fri 24/12/21
Central Warehouse	13 days	Tue 09/11/21	Thu 25/11/21
Central IT department	13 days	Tue 09/11/21	Fri 26/11/21
Current IT status	27 days	Tue 09/11/21	Wed 15/12/21
SW	33 days	Tue 16/11/21	Tue 04/01/22
Business practices/processes	31 days	Tue 09/11/21	Tue 21/12/21
Network	9 days	Mon 01/11/21	Thu 11/11/21
Training	36 days	Tue 09/11/21	Thu 30/12/21
Testing	22.5 days	Tue 09/11/21	Thu 09/12/21
Execution	103 days	Wed 05/01/22	Fri 27/05/22
Project management	1 day	Wed 05/01/22	Wed 05/01/22
SW	30 days	Thu 06/01/22	Wed 16/02/22
Sourcing	21 days	Mon 10/01/22	Mon 07/02/22
HW	19 days	Tue 25/01/22	Mon 21/02/22
Network	15 days	Wed 05/01/22	Tue 25/01/22
Integration	37 days	Wed 26/01/22	Thu 17/03/22
Data analysis & insertion	102 days	Thu 06/01/22	Fri 27/05/22
Business practices/processes	17.5 days	Thu 06/01/22	Mon 31/01/22
Testing	30.5 days	Thu 10/02/22	Thu 24/03/22
Training	14.5 days	Fri 06/05/22	Thu 26/05/22
Monitoring	7 days	Mon 30/05/22	Tue 07/06/22
Project management	1 day	Tue 07/06/22	Tue 07/06/22
HW	4 days	Mon 30/05/22	Fri 03/06/22
Network	6 days	Mon 30/05/22	Mon 06/06/22

As is visible from the task overview above, if we were to start this project on the 1st of November, the project should be finished on June 7th. That is considering everything goes as planned and no changes to the project requirements are done, no blocking activities are found along the way and all deliveries are done on time. This timeline does take the following three Bank Holidays into consideration:

- Christmas Day
- Boxing Day
- New Year's Day

Within this project, we have set the following milestones (due dates calculated with project start being on November 1st 2021):

- Project kickoff
  - Due: 01/11/2021
- Project initiation
  - Due: 05/01/2022
- Server built & configured
  - Due: 10/02/2022
- ERP system installed
  - Due: 28/02/2022
- Custom components development & integration finished
  - Due: 14/03/2022
- Testing
  - Due: 24/03/2022
- Employee training
  - Due: 26/05/2022
- Project closure
  - Due: 07/06/2022

In regards to resources, as we are a large project management consulting agency, we have plentiful human resources available to us for this project. These resources are being paid on an hourly basis and we can pull them for our project at any point and we are not liable for any time that they don't spend at this project, as they are contractors. The resources we have used for this project are as follows:

Darren Samuels	Business Analysis
Tennyson Seward	Cyber Security
Karrie Blue	Data Analytics
Drake Leavitt	Design
Jorie Sawyer	Design
Nadia Elliston	Human Resources
Irma Cross	Human Resources
Livia Bennett	IT
Seanna Waller	Legal
Cara Harman	Networking
Haze Ashworth	Process Analytics
Elliot Vipond	Project Management
Gillian Hunter	Project Management
Harland Solomon	Public Relations
Pattinson - Commercial	Real Estate
Naylors Gavin Black LLP	Real Estate
Knight Frank	Real Estate
CBRE	Real Estate
Vince Rennold	Sales and Purchasing
Garland Warren	SW Development
Ronnette Willey	SW Development
Louella Irvine	SW Development
Charlie Tanner	Testing

4. Strategies & Controls

4.1 Risk Management Strategy

Risk management strategy is a process that should be followed when risks have been identified. We have identified major risks above within the business case part of this document. The information contained in the text below has been used to identify, assess and plan contingencies for the potential risks. It also describes how the risks will be communicated in the project.

The risk management strategy is generally implemented by the project manager and it is a process of identifying the potential risks that might affect duration, cost or outcome of a project at hand. Therefore, identifying risks is vital to project success and PRINCE2 has numerous possible techniques that we can use to do so:

- Past project review
    - We can check with other projects on similar topic, and see what potential risks have been identified there. Based on that we can easily check if the risks relate and we can use them in planning the current project.
- Risk checklists
    - Similarly to the previous technique, risk checklists arise from past project and they help us to identify risk by checking that all possible bases are covered and nothing gets overlooked
- Brainstorming
    - The brainstorming technique is fairly easy and effortless way to identify risks by talking with people involved in the project (either employees working on the project or stakeholders). This way the project manager will have enough views, opinions and thoughts on what could possibly go wrong. Another way of using brainstorming in risk management strategy is to gather list of risks before, and then present it to the people – that way they could help with categorizing & prioritizing risks that may be more threatening than others.

We will break the risks down into the following categories:

- Health & safety risk
- Operational risk
- Compliance risk
- Technical risk
- Financial risk

When we have successfully identified all the possible risks, we need to assess them to find out potential threats and opportunities they possess for the project. Without doing this, project board would not be able to set risk tolerances (maximum risk that the organization would be willing to take to overcome the risk identified).

After the assessment of risk, we need to prepare a plan for each risk so that there is an outlined procedure to follow in case any of the risks occur. This should minimalize the potential threat that could be done to the project.

In order to be able to properly handle all the risks, we need to communicate information about the risks, threats and opportunities properly between the rest of the team so that everyone is always on the same page. In case one of the risks arises, we will also communicate it with the project management office and stakeholders. Any records of risks will also be kept in the Risk Register and we will also create Risk Management Report, which will be updated by the project manager on a weekly basis.

As it is paramount to account for some risks that could potentially affect the budget, we need to allocate an extra £63,000 (appx. 10% of the overall project costs) into the budget in case any risks actually arise. In case that we do mitigate all the risks, this money will not have to be used and will be returned to the client upon project completion.

4.2 Quality Management Strategy/approach

Quality Management Procedure

Introduction:	The purpose of the Quality Management Strategy is to define how the delivered products meet the customer's quality expectations and the agreed quality standards made not only by us but that also encounter the quality made by the law
Quality Planning:	To ensure that the quality standards meet the customer needs, we are going to plan quality in a way that every legal regulation is meet. The quality of the way the system works must be effective, working as expected or surpassing what we anticipated. The way restocking will work will also need to meet both legal regulation and effectiveness. With this solution, the products created will meet the expected quality.
Quality Control:	• Ensure that the implementation of the centralized system and the GUI for the branches and warehouse are completed to budget • Ensure that all the implemented products meet the criteria outlined in the scope • Employment Law is met • Feedback from the users using the new system

	• After each milestone tests will be performed to see that the implementation is working as expected • Ensure that the new system is secure and safe to use • Ensure that every staff member is capable of using the new system comfortably
Quality Assurance:	In this project, quality will be assured by testing on each milestone to understand if the implementation is working as expected. Stress testing will be performed as well so we know that the new system can handle any type of problems in the future. By working with the staff from Peters' pharmacies, we will understand if the GUI is user friendly, and use their feedback to assure the software is easy to use. The project team will be responsible for this. Safety testing will also be performed when both the system and GUI on branches and warehouse are implemented.
Tools and techniques:	All the products in the project will be tested and reviewed to know if it is working accordingly. The staff from Peter's pharmacies will help with the testing, for us to understand that the system is user friendly as well, asking for their feedback and working having it in consideration. The staff will also receive training on the new IT system, so they are able to use it as intended with ease.
Records:	Quality register will be produced
Timing:	After every milestone and when both the system and the GUI on the branches and the warehouse are implemented
Reporting:	• Feedback from every staff member that is helping with the testing • Feedback from the testing team
Responsibilities:	**Project team** - Testers, reviewers, developers and quality register. **Staff from Peter's pharmacies** - Testers.

4.3 Configuration Management Strategy

Purpose	The purpose of the Configuration Management Strategy is to maintain control over the project's management and to track, identify how and by whom the project's products will be stored, controlled and protected throughout the duration of the project.
How and where the products will be stored	The products of this project will be stored in a project file structure while they are being created and updated in a secure cloud storage. There will also exist a local Backup of the files in a Hard Drive.
What storage and retrieval security will be put in place	All the products will be protected in a secure cloud storage and will need a password that only authorized personnel would have.
How the products and various version and variants will be identified	We will identify the different versions of each product with an unique Identifier and save them together with the date, in reverse order, that the product is created or update so we can visualize the newest versions first.
Issue and change control procedure	In any project, changes are inevitable and need to be measured and planned carefully so that time, money and products are not wasted, so the project can still run properly within schedule. We will ensure that the scope, assumptions and prerequisites are clear to minimize the changes that can possibly occur whilst the project is being developed. The Issue Register will be used to record all the issues and changes that happen during the project. We will follow the 5 steps to Issue and Change Management outlined by Prince2: capture, examine, propose, decide and implement. The Capture stage is the first one and consists on identifying the change or issue and its type. On the Examining stage, the impact on the project is assessed, and the issue can be compared to the Risk Management Approach to check if a valid solution is presented there.

	Solutions will be developed and in the Propose stage, those will be filtered to find the most suitable one. In case the change or issue was reported by the client, a meeting between the project team and the client should happen to discuss the different possibilities. On the Deciding phase, the Project Manager has the option to approve one of the solutions presented or to escalate the change control to the Project Board in a formal meeting. Finally, in the Implement stage, the recommended solution is put in action into the project, and the Issue Register be updated and reviewed periodically.
Records	Issue Register, Daily Log and Configuration Item Records will be used.
Roles and Responsibilities:	The Project Manager will be responsible for the Configuration Management confirming that the products created are being stored, controlled and protected as they are developed, and he also must ensure that the Issue register, Daily Log and Configuration Item Record are up to date.

4.4 Communication Management Strategy:

COMMUNICATION MANAGEMENT STRATEGY

The Project Manager is responsible for the Communication Management Strategy. The strategy will cover how and when communication will take place throughout the project.

Communication methods, tools and techniques	• The Project Manager decided to set up a project email address. If any stakeholder needed to reach the project management team, they could use the email address help_peters@example.com Microsoft Outlook has been set up on every pc, to use the email address.

	• The project management team is invited to a group in Microsoft Teams. A webcam is required at a meeting for better communication between the team members. They also communicate face to face. • The Project Manager decided to set up an emergency phone for external stakeholders. The phone number is +44 7571 9999999. • The Project Manager decided that the communication between the team and the stakeholders will be in English without using IT language, that all attendees can understand the spoken language
Communication Procedure	• The Project Manager is responsible to check all the communication reports, Contact clients via email or phone number to inform them about updates, issues or reached milestones and setting up face to face meetings
Records	Logging of external correspondence. Logging of internal communication and decisions
Reporting	Performance Indicators.
Roles and Responsibility	The Project Manager is responsible for reporting major updates to the client The project team members are responsible to take notes if the client calls the Project Manager while he is not attending. The client is responsible for reporting their feedback after every meeting.

Information required by each identified party	The project team will require feedback from the client after informing the client about issues, updates or milestone meetings. The client will require feedback from the project team when issues or major updates happen or after reaching milestones.
Information to be provided to the project by each identified party: Identity of the information provider	Testing feedback: Client/customers Progress reports: The project manager Cost reports: The project manager Risk reports: The project manager Changes intolerances: The project manager
Frequency of communication	Face-to-face meeting after every milestone has been reached. Microsoft Teams online meeting for the project team members on Monday at 01:00 pm.

4.5 Project Controls:

Project controls will be crucial because it will allow our team to monitor the progress of the project. The project controls identified below will ensure the right people get the right information at the right time and the right decisions are made by the right people at the right time.

Quality Register

- This quality register describes the planned quality activities for the products that will need to be produced for this project. The product ID and product name identifies what these products are. The quality register will help control the quality within this project.

Product ID	Product Name	Quality Method	Reviewers	Approver	Target Review Date	Actual Review Date	Target Approval Date	Actual Approval Date	Result
P1	List of suppliers	Inspection	Project manager	Project manager	-	-	-	-	-
P2	Selected suppliers	Inspection	Project manager	Project manager	-	-	-	-	-
P3	Network	Stress test	Network administrators	Project manager	-	-	-	-	-
P4	GUI	GUI testing	Team manager	Team manager	-	-	-	-	-
P5	Warehouse purchase to be evaluated	Inspection	Project manager	Project manager	-	-	-	-	-
P6	Existing data analysis result	Inspection	Data Analyst	Project Manager	-	-	-	-	-

Issue Register

Issue ID	Issue Description	Type	Raised by	Severity	Priority	Closure Date

- We have designed an issue register; however as the project is only in the initiation stage no issues have been raised as of yet. The issue register will be updated throughout the project and will allow the project manager to keep track of formal issues.

Checkpoint Reports

- Checkpoints reports will be produced by the team managers of the specialized groups (e.g. the SAP developers' team manager) and will be given to the project manager. This will allow the project manager to be regularly updated on the progress of product development. We have developed a template checkpoint report:

Checkpoint ID	Product Name	Current Status	Expected Status for the next period

Highlight Reports

- Highlight reports will be developed by the project manager, which will be sent directly to the project board. This will report on the stage progress including the current status of tolerances of time, cost, quality, scope, benefits, and risk. Below is the template in which we will be using:

Highlight ID	Product/Work Package	Current Status	Expected Status for the next period

Daily Log

- The daily log will log any informal issues that may arise when the project starts up. We have designed a daily log template which will be used to log any issues we have during the project:

DL ID	Date of entry	Description	Responsible	Target Date	Result

Configuration Item Records

- The configuration item records will record each product's (of the project) single configuration item (sub product). Our template design below:

Product ID	Product Name	Current Version	Date of last update	Status	Owner	Users

In summary, these are the project controls that we have decided to use in order to ensure that progress is tracked and monitored closely, which in turn will ensure the successfully completion of the project with project objectives achieved and requirements met. These project controls will allow us to identify if anything within the project is going wrong and, if there is a problem, then it will be brought to attention immediately and the corrective action can be set into motion to avoid an adverse effect on the project.

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