ByteXpress - Team 9
ByteXecom E-commerce System

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ITERATION - 1

Project Proposal - This document consists of the project proposal of the ByteXecom E-commerce system. The main points discussed in this proposal include the client's information which describes the business and the client in more detail, the project request which includes a description of the project request, the preliminary investigation which will be used to determine the problems identified in the current system, elicitation techniques used throughout the deliverable.

The document also addresses the problems based on the current system and requirements identified for the proposed system.

Client Information - Jannes Janse van Rensburg is the co-owner of Natuurlik. He is currently working as a Business Area Manager for DSV - Global Transport and Logistsics.

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1. Iteration Introduction

This project proposal aims to provide a brief introduction about our client and background information on the business our client manages daily. Identified problems in the current business environment and potential solutions will be addressed which was derived from conducting a thorough analysis of the current system. The proposal includes important client information, details about the current business environment as well as the preliminary investigation, problem analysis, requirements analyses and decision or feasibility analysis which has been conducted by the ByteXpress team. Additional client documentation as well as a complexity matrix checklist has been included in this document as appendices.

The main purpose of this deliverable is to provide a clear overview of the client's requirements for an information system that has been requested, a firm understanding of the current business environment and finally a motivation for why our proposed system is the best solution compared to various other alternatives available to our client.

2. Client Information

Introduction

This section of the project proposal document will provide contextual information on our client, Natuurlik (Pty) Ltd, and will include a brief introduction of the company's history and background, the organizational structure, area of business as well as a high-level overview of the current business environment. This section is then concluded with details about the system owner who initially requested the system, including their contact details, position within the organization and additional background information.

2.1. History and Background

Natuurlik is registered as a private company and was founded by three like-minded entrepreneurs and friends in the year of 2020. Natuurlik's goal is to provide products to the community that is sourced from suppliers who operate in an environmentally sustainable manner and who uses only natural ingredients and materials. The company lays a lot of emphasis on the preservation of the planet we share and the well-being of their customers. Hence, all products that they offer are healthy, natural and free of preservatives and artificial colourants. Natuurlik firmly believes that there is limited access and consumer knowledge of healthy food alternatives available to the general public and would like to spread the word about why consumers should support environmentally sustainable practices and how their own health can benefit from this.

Natuurlik only support suppliers who utilize regenerative agricultural practices that minimizes soil disturbance, maintains living root systems and maximizes the utilization of native plant which are more natural and healthy alternatives compared to commercial products made available to the public at large. The company believes that we should respect nature while also enjoying the benefits that naturally sourced goods provides consumers.

The co-owners decided not make use of any employees as they operated on a very small scale, but they still managed to make the business profitable within the first few months of making their products available to the general public. Venison products was their main focus initially, but due to the logistical complications involved with mainly selling perishable goods the co-owners collectively decided to start only procuring goods with a longer shelf life to limit losses for the co-owners. Examples of products currently being sold include olive oil, balsamic vinegar, various types of coffee, wine and biltong to only name a few. It is believed that their competitive advantage originated from their neat and visually appealing branding strategy. Every product offered on their product catalogue has a different design in terms of the stickers and other packaging materials used.

2.2. Organisation

2.2.1. Organisation Description

Natuurlik is a South African based business that focuses primarily on selling goods to health-conscious customers who also support businesses that emphasizes the importance of sustainably sourced products and that aim to operate in an environmentally sustainable manner. Natuurlik makes use of only a select few suppliers for procurement of goods to be sold to end customers. It also leverages a variety of social media platforms to advertise their products and to help build the company's brand. Orders are placed either on these social media platforms or via email, where a representative of Natuurlik can manually capture and follow up on orders.

The managing director of Natuurlik, Jannes janse van Rensburg, is responsible for finding suitable resellers, maintaining relationships and procuring inventory as and when needed. Supplier orders are currently placed via email or making a call and goods received from suppliers are noted in an Excel-based inventory management spreadsheet. Natuurlik does not have any full-time employees as most of the staff are family members or close friends that have a direct stake in the business and a similar vision for the company. Most of the order preparation activities are currently carried out by the managing director and the administrative assistant as they are closest to the distribution centers where inventory is stored.

Inventory of the company is managed manually on an Excel-based system. Sales reported by the administrative and sales assistants have to be reported to the relevant authority so that the inventory levels can be amended.

Resellers are also used by Natuurlik to help increase the size of their customer base and in attempt to drive sales. The managing director, Jannes, will usually first have to approve of who can be a reseller since these individuals can request goods to be kept on hand for potential sales without paying upfront. Goods handed over to resellers are always tracked using either a paper-based system or it is tracked on an Excel Reseller spreadsheet. As soon as a sale has been made, the reseller has to report it to their authority and make the payment and/or hand back unsold goods if there are no more potential end customers. Resellers can make profits using this approach by marking up the products sold by Natuurlik. Prices are usually confirmed by Natuurlik for the different goods before the reseller can take possession thereof and add their additional mark-up. Resellers are usually other small businesses like coffee shops, garages and cross-fit gyms.

2.2.2. Organisation Structure

Natuurlik's organizational structure resembles that of a hierarchical organizational structure where positions at the highest level have the highest level of responsibility and they also have to make the strategic decisions to steer the company into the right direction. The co-owners make important decisions, determine the vision and mission of the company and oversee the main business operations. The administrative and sales assistants mainly handle orders received, package orders and report sales transactions to the managing director, who acts as their supervisor. The resellers report all sales made to the administrative assistant.

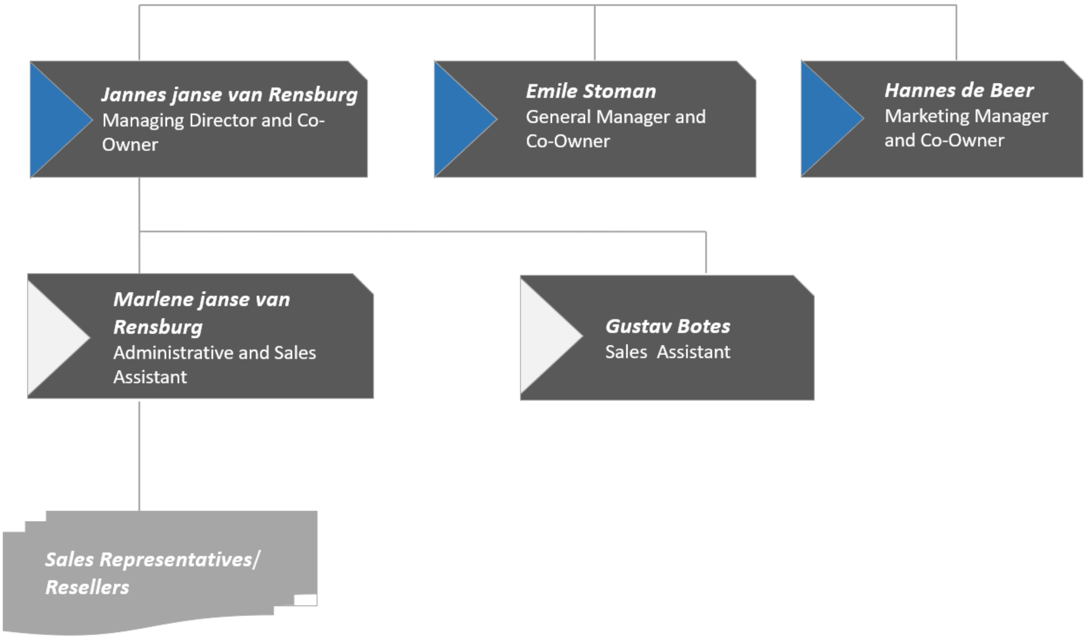

Figure 1 – Natuurlik organizational Structure

2.2.3. Business Environment

Natuurlik is a tightknit organisation which depends on the input and collaboration of its shareholders. The organisation is passionate about the preservation of the environment and the healthy living of individuals. Each shareholder works to ensure that the products are packaged and delivered to the customers. The synergy between these stakeholders ensures that the business functions smoothly and ensures the production of quality products.

2.3. Contact Person

Jannes Janse van Rensburg is the co-owner and managing director of Natuurlik. He obtained a BEng (Industrial) from the University of Pretoria in 2011. He previously worked at BCX as the Senior ERP Implementation Consultant using Oracle Supply Chain technology and is currently working as a Business Area Manager for a multinational logistics company.

Jannes has a vast amount of experience in logistics, supply chain management and implementing ERP systems for large multinational organizations. He has a firm understanding of the role that Information Technology plays within a business and will be the system owner for the project to be undertaken for Natuurlik.

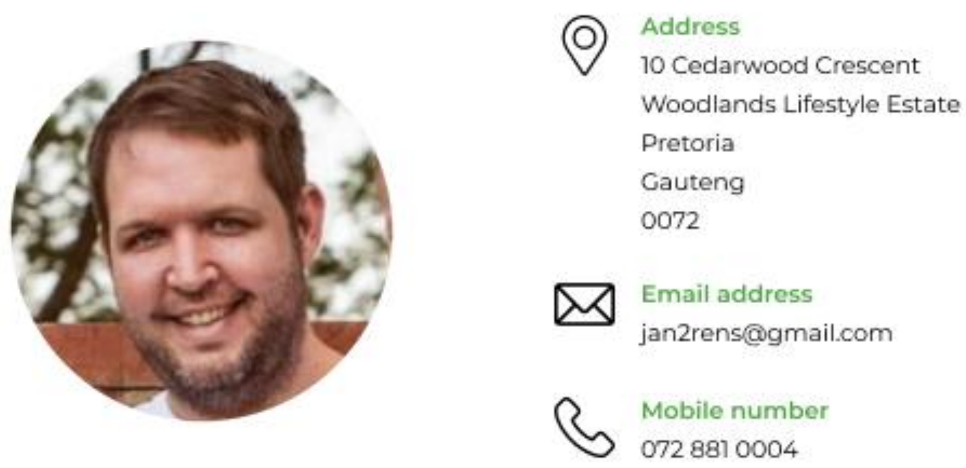

Figure 2 – Contact details

Conclusion

In conclusion, this section addressed all the necessary information needed to understand our client. This included their background, organisation, area of business, business environment and contact person.

3. Project Request

Introduction

This section will showcase the current system functionality and the problems the client experienced while using it. Furthermore, details regarding the proposed new system, which will be implemented and that focuses on meeting the client's requirements, will be given.

3.1. Background

3.1.1. Current System Functions

Natuurlik is currently run by a group of three owners who wish to establish an online brand presence for the company. It is managed through various social media platforms as customers can place their orders via platforms such as Whatsapp or Instagram. The entire process of sharing online banking details for payments as well the delivery address of the customer is provided using this manner. Customer service levels vary across the social media platforms and no data is captured and stored in a digital format which can enable for the analysis of business processes and operations. The owners do not have a unified and comprehensive view about the performance of Natuurlik and little to no data-driven decision-making capabilities.

Resellers are currently utilized to help drive sales and get the name of the brand out to the general public through social media marketing. Resellers usually take inventory from Natuurlik if they have found a potential customer and will add a small mark-up on top of the cost price. The cost price of the total amount of inventory taken has to be paid to Natuurlik. The amount of items taken per reseller was sometimes captured by hand on paper or even sometimes as a note on the owner's phone. The owner of the system wishes to keep the resellers but feels that they can be managed more effectively going forward like tracking which resellers took how much quantity of what products.

Furthermore, probably the biggest current limitation is lack of transparency about inventory levels. There are often stock-outs or oversupply of certain products and has cause Natuurlik to slowly back away from fresh meats as a way to try and prevent losses from stock write offs. Deliveries are also made either via courier services or an order is delivered in person depending on how far the delivery address is.

3.1.2. Current System Problems

- The current B-2-C sales channel is proving to be inefficient according to the owner as they are having trouble with establishing an online presence. Social media are the only channels currently used and service quality varies significantly depending on which platform the customer is interacting with Natuurlik.

- No inventory control system. Inflow and outflow of inventory is not tracked whatsoever. This often results in delayed orders which has a negative impact on customer satisfaction.

- Natuurlik currently sells fresh meats and an oversupply of stock can be difficult to store and often, the near expiry date items are written-off and used personally. Lack of basic supply chain management strategies could possibly be caused by having no quality information to help decision making relating to the procurement process.

- Manual invoice generation using pre-defined templates is extremely time-consuming when there is a sudden surge in demand or if the owner is already over-burdened with his full-time job.

- Natuurlik has no way of knowing if inventory has been stolen, lost or misplaced. They just take the physical count as the source of truth.

- The owner of Natuurlik feels that the current processes and systems in place would prove to be inadequate in the event that there is a big surge in demand for their products. This would inevitably lead to dissatisfied customers as orders are delayed.

- Reseller activities are tracked and managed using WhatsApp and MS Excel, but the owner feels this needs improvement as omissions happen often and the owner or other personnel of Natuurlik has to continually follow up with resellers on sales, payments etc.

- No centralized database where valuable data about daily operations can be stored for future access, reviewing or analysis.

- Difficulty establishing an online presence. Hence, the request for a streamlined e-commerce experience that also helps automate some mundane business processes that currently are time consuming and considered ineffective by management.

- No B-2-B sales channel through which resellers and respective activities can be managed.

- “Disjointed application”

- Inability to have more resellers for Natuurlik since the manual administrative processes prove to be very time consuming, error prone and poses an overall burden for management.
- No reporting capability currently as there is little to no data captured on daily business transactions.

- Natuurlik sometimes has to deliver orders to their customers directly. Management wishes to outsource this activity to courier services or resellers.

- Difficulty making informed decisions as management has limited to no information to work with.

- Customers can currently pick-up orders where Natuurlik is physically located and this can lead to schedule complications as the owner has full-time commitments elsewhere as well. Owner feels this option should be removed entirely as it can become very burdensome.

- Difficulty in capturing all customer feedback on orders in one place as various social media platforms are utilized and data is extremely scattered.

- Information about Natuurlik is not very accessible without having a website. Social Media leads are not currently managed optimally and customer service and experience can differ substantially across different platforms.

- Inability to flexibly manage products and pricing without substantial efforts and costs as digital as well as paper-based flyers have to be adjusted and redistributed.

- No way of accepting online payments through the current sales channels. EFT's require additional check-ups and/or following up.

- The order picking process is error-prone and straining. No standard implementation of the order picking process as the order information is displayed differently across different platforms in the respective sales channels.

- Order management on a daily basis using social media platforms can interfere with the owners' carreers.

- Lack of access to key metrics, measures and KPI's for managerial decision-making since no data is captured with a formalized process which can be used for performance analyses.

- With the main goal being to create an online presence, it is clear that the current order processing capabilities will be insufficient to deal with the desired increase in demand. Furthermore, administrative burden will be put on the current management team who carries out the regular day-to-day operations.

- Natuurlik currently lacks an online website that can be accessed through various social media platforms which they use for marketing.

- Inefficient communication between managers as there is no data that can back up a certain proposals or suggestions relating to how the business should be operated. Having three owners, who operate and manage Natuurlik jointly, this can lead to conflicting opinions.

- Manual capturing of orders on disparate, disjointed platforms which makes it difficult to reconcile order information as it would be prone to human-error as well as a timely task.

- There is no consistency in how business operations are carried out on a daily basis. A lack of standardized processes poses an administrative burden for those responsible for overseeing and carrying out the core business activities of the current system.

- No way of currently making data-driven decisions as little to no data is generated from business activities and operations which is accurate, stored securely and easily accessible.

3.1.3. Proposed System

An information system has been requested by Natuurlik that will enable the automation of business transactions, operations and administration-related tasks. The primary objective of the information system required by the owner is to allow for effective and efficient processing, tracking and storage of all business processes in order to operate the business in a more streamlined manner daily. All data on important business events are to be captured with the intent of allowing an in-depth analysis of business performance across different time frames as to enable the management team to make better informed decisions. Besides the need for real-time reporting functionality, a detailed executive summary is required that will give management easily accessible, and detailed insights into overall performance of business processes that are of interest to the management team (the owners). All interactions with the proposed system are important from the system owner's perspective and should be captured and stored in such a manner that the data maintains high integrity, is of high quality and could therefore be used to derive key insights that aims to support more informed decision-making and transparency for all the key stakeholders identified.

With our client having a wide variety of different products to offer customers and resellers, effective inventory management is essential to ensure that shortages and excess inventory are kept at an absolute minimum. Management requires complete visibility over inventory levels and should be notified as soon as inventory items reach a specified level. Effective communication and sharing of accurate information should be placed at the core of the information system's design as highly valued relationships with customers, resellers and possibly suppliers are at stake if requirement are not carefully analyzed. The owner of the system also requires a blog for their e-commerce store as it helps contribute toward the main goal of establishing an online presence and to also allow for the sharing of recipes and other related content with customers in order to encourage them to register and share their reviews, experiences, stories or recommendations.

Natuurlik is determined to raise awareness about responsibly sourced foods that is natural, preservative-free and healthy for the human body. This group of like-minded entrepreneurs came together with the vision to share the notion that the preservation of the planet, the human race and the body is our responsibility. It also emphasizes how these beliefs and guiding principles are core to how they run the business in an ethical and sustainable manner. An online blog was identified as the best possible technological driver alongside social media marketing to help achieve this goal and also in establishing the desired level of online presence required for future growth. No other alternative solution investigated could cater for such a wide range of requirements without incurring substantially more costs than that of our team's proposed solution.

Our client aims to establish an online presence through a web-based app that is easily accessible for the target market of the business and an addition helps with the automation and/or reengineering of previously inefficient business processes. Upon having conducted our analyses, the ByteXpress team agreed that a flexible, dynamic and streamlined e-commerce experience aided with a simple, yet insightful end-to-end business intelligence solution would be the best fit for our client's needs above all other other alternatives available

The information system is to be administered as a web-based application that is accessible to the general public on the most commonly used contemporary devices to access the web. The system is to incorporate the following core functionality in order to address the needs our client:

Order Management:

- The scope of this core functionality is limited to orders placed by individual customers and resellers. They are to be logically separated within the context of the information system to be implemented to enable custom order workflow implementations that support business rules.

- Forms will be utilized for the capturing, processing and storage of customer and reseller orders. Information to be captured include order summaries, details of ordered items, order invoices generated and payment reminder emails to be generated for reseller orders where payment is outstanding.
- Items that can be ordered is restricted to what is available on the online website's product catalogue for both customers and resellers.
- Order confirmation emails are to be sent to the customers and resellers.
- Online payment processing services will be utilized for online orders made by individual customers.
- The pick order functionality will require administrators to check if picked order items match a specific order record's details before being able to indicate that a package has been handed to the courier for delivery. Additionally, a tracking number will be captured on the system for every shipped order.
- Resellers will not make an online payment for orders, but will use other means of payment such as EFT or using a card machine reader on premises and therefore, payment received should be captured on the system by a system administrator.
- No order returns will be processed through the system. Returns are to be provisioned for by allowing functionality for system administrators to manually update inventory levels.
- Interactive reporting on order data captured such as current monthly sales amount, total orders for the month and top customer for the month by order sales amount.
- System administrators should have the ability to replicate ad-hoc sales that were not captured through the system as the business event occurred.

Reseller Management:

- The management of resellers are to be enabled so that the system owner can manage which individuals or companies can be trusted to receive the benefit of making a delayed payments.
- Capturing, validation and storage of reseller information.
- Reporting features should be available for the system owner in the form of a detailed summary of which resellers have not paid for orders received.
- Outstanding payment reminder will be sent via email to the relevant resellers based on specified business rules.

Inventory Management:

- A perpetual inventory management system would be the best fit for the Natuurlik e-commerce web application as the company makes purchases from the same trusted suppliers as and when deemed necessary, and inventory is stored in the same premises from where the business is operated so that the system owner can control the in- and outflow of inventory.

- Ad-hoc purchases from suppliers should be easily captured and should update the inventory levels accordingly.
- Each transaction where inventory is logically affected should capture the in- or outflow of inventory automatically by incrementing and decrementing the correct amounts for the affected inventory item(s).
- The ability to capture stock-write-offs and to update the inventory levels correctly in a streamlined manner.
- Order returns are not to be tracked but administrators should be able to update inventory accordingly for refunds and returns which is managed outside the system boundaries whilst using accurate data captured and persisted from transaction processing module.
- The system owner or any administrator on the system can check real inventory on hand and use the stock write—off process when physical count is less than that of the digital inventory records to indicate a loss of inventory due to a valid business reason.
- Administrators on the Natuurlik system require the necessary privileges to create a physical storage unit as model and to have newly acquired inventory assigned to a physical storage location.
- The total inventory count for various inventory items has to be distributed across storage locations as new inventory is procured and assigned to a physical storage. It is essential that
- Natuurlik’s management should know where inventory is physically located by type and count since management has to be able to access it easily for picking and packing related activities.
- Ability to track inventory items that are associated with pre-defined inventory categories.

Supplier Management:

- Suppliers should be easily managed on the system by administrators and essential supplier information has to be captured as required for use by Natuurlik. This includes capturing, storing and accessing supplier details and sending supplier order emails from the web-application to the supplier specified as the recipient for a specific order.
- Effective communication with the supplier regarding procurement orders are to be enabled by a feature that allows management to specify the products they need to procure and in what quantities. The capturing of supplier orders received is done by using the ad-hoc purchases process for updating inventory levels based on the real amounts procured from suppliers.

Customer Feedback Management:

- Natuurlik needs an effective away to monitor order feedback after an order has been fulfilled.
- An online blog has to be utilized to allow customers the ability to express themselves and provide feedback on the quality ratings of the products, and on recipes provided.

- Management requires functionality for reporting in the form of tables, reports and/or graphs to create a graphical representations of important customer feedback information that is essential to maintaining high customer satisfaction. It is important that all customer feedback reporting be generated in a timely manner and presented to management in an easily digestible format.

Documentation Management:

- The proposed information system is to store all documentation generated regarding the order placement and order picking business processes
- Audit reports based on transaction processing activities captured should be exportable to a desired format for backing up and external storage purposes.

System Content Management:

- The ability to flexibly manage system entities and their properties that can change over time such as VAT percentage, products, categories as well as inventory item and respective categories.
- Administrators should be able to control supported delivery addresses for orders and will at first be implemented in such a manner as to support locations within South Africa only. But administrators should be able to update supported regions or locations for shipping as per the business rules to be identified.

3.2. Motivation for Accepting the Project

Upon meeting with the owner of Natuurlik, the ByteXpress team has an opportunity to have Natuurlik as our client for the INF 370 project in 2022. The team explained the purpose of the project, the possible outcome and what it means for us as the team. We also discussed the benefits the business will be exposed to on completion of this project, not to mention that it is free of charge.

The owner became aware that this project would not only bring change in terms of her business but will also add practical experience to the team's set of skills. The project has been accepted with enthusiasm and our client looks forward to seeing the final system.

Conclusion

In conclusion, an in-depth explanation has been given regarding Natuurliks's current system and its shortcomings, together with the proposed system that will meet the requirements of the company. Lastly, a motivation of acceptance was also given by the ByteXpress team.

4. Preliminary Investigation

Introduction

In this section, we will investigate the problems that Natuurlik currently faces, the goals and objectives that the business has, and discovering the problems, opportunities and directives that come with it. We will also elaborate on the possible assumptions and constraints the team experienced while retrieving this information. Lastly, the elicitation techniques and the reasons for choosing them will be discussed in detail.

4.1. Problem/Vision Statement

Table 1 - Problem /Vision Statement

Problem Statement	
The Problem of	Lack of a centralised system
Affects	Natuurlik management team, customers, and resellers
The impact of which is	• Negatively affects the revenue of Natuurlik as the orders of customers cannot be immediately captured and responded to. Taking too long to correspond to orders placed on various social media platforms drives customers away. • Natuurlik's staff struggle to keep track of the orders placed since they come from various sources and have to be managed on various social media platforms. There is a lot of potential for mixing up orders and sending the wrong products out to a particular customer which in turn leads to increased operating costs • Customers and resellers can unknowingly place orders for which Natuurlik do not have stock at the moment the order is placed. The leads to increased waiting times and difficulty retaining customers. • Inventory flowing out of the business is often not tracked due to the manual systems being completely disconnected • Critical data not captured and stored in a central repository – No single source of truth • Time consuming and poses burden on management
A successful solution would	• Allow for the effective capturing, management, and storage of business operations in a streamlined manner and on a single platform. • Have automated processes reduce the risk human-error and omissions poses to data quality and/or integrity. • Allow for automated communication with customers regarding their orders and any other business operations that depend on accurate and timely information to be carried out proficiently. • Ability to store all important information captured on business operations and events in a single repository/database, which can be accessed only by individuals with the necessary permissions Be able to prevent data loss or mismanagement of customer and business information

4.2. Business Goals and Objectives

4.2.1. Goal 1 – Inventory management

Table 2 – Inventory management goal

Goal 1

The inventory management is to be moved from a completely paper-based platform to a more manageable and efficient system. The current system relies heavily on the management of their inventory to avoid delays in orders due to a high demand especially from their resellers, who usually order in bulk. The ByteXcom system aims to achieve this goal by allowing for seamless inventory updates as well as the tracking of the source of inventory items (suppliers).

4.2.2. Goal 2 – Order management

Table 3 – Order management goal

Goal 2
The order management is to be moved from a completely paper-based platform to a more manageable and efficient centralized system. The ByteXcom system aims to achieve this goal by allowing customers and resellers to place orders on the system with little interference from the Natuurlik management team, this also reduces the time in which order fulfilment takes. Improving the order management of the system will significantly reduce the time in which the management team takes filtering through their multiple social media platforms to fulfil orders.

4.2.3. Goal 3 – Supplier management

Table 4 – Supplier management goal

Goal 3
The suppliers used by Natuurlik are to be managed on the system through the automation of supplier orders and traction of orders through the inventory management. The administrator will be able to place orders to their suppliers through the system. They will be able to specify their required quantities, and this will automatically send an email with the order to the supplier. This small functionality will decrease the time it takes to type out each inventory item with its quantity and to insure it gets received by the right supplier. Natuurlik uses suppliers to keep track of their inventory management therefore the automation of this process will ensure faster inventory orders which will ensure that products are regularly in stock.

4.2.4. Goal 4 – Provide information regarding Natuurlik’s Products

Table 5 - Improve online presence goal

Goal 4
Natuurlik has noticed that a lot of people are not well-informed regarding sustainably sourced products and are not able to differentiate Natuurlik’s products from the rest. This will be achieved through the implementation of blogs written and published by Natuurlik’s staff as well as videos. The business currently does not have a lot of online presence therefore allowing users to view their content could have their presence reach more of their target audience since their content aims to educate users on how to best enjoy their products.

4.2.5. Goal 5 – Reporting

Table 6 – Reporting goal

Goal 5
Natuurlik is to have an improved reporting tool through the system. This will assist the management team in detecting current and future trends. The ByteXcom system aims to achieve this goal by allowing Natuurlik's management team to be able to interact with the reporting functionality on the system. They can detect trends, which product is not doing well and the reasons why (through the order query functionality). Upon the implementation of the ByteXcom Ecommerce system, the management team will be able to get insightful data from the reporting functionality which play a part in the business' future success.

4.3. Preliminary Assumptions and Construction

4.3.1. Preliminary Assumptions

Table 7 - Preliminary Assumptions

Preliminary Assumptions	
1	Natuurlik's customers and resellers have access to stable internet connection
2	Natuurlik customers and resellers are computer literate
3	Natuurlik customers and resellers will have the technology required to make use of the website.
4	The Natuurlik staff has the technical savvy to make use of ByteXpress's newly implemented system to carry out their day-to-day tasks
5	Customers are comfortable with making payments using the online payment gateway
6	Customers will log their returns on the system

7	All resellers will pay for their purchased stock within the stipulated 30 days
8	Natuurlik will update payments from resellers
9	Every user has a valid email address
10	Natuurlik will update inventory levels regularly

4.3.2. Preliminary Constraints

Table 8 - Preliminary Constraints

Preliminary Constraint	Description
Time	The team will need to develop a fully functional information system by the end of November 2022. Many of the team members have other modules and responsibilities therefore, time will be the biggest constraint for the team.
Client Availability	The client is very busy and has quite a tight schedule, acquiring information from them will be quite a challenge. The team will have to wait for extended periods of time before receiving feedback from them.
Costs	Project expenses will need to be covered by the team as this is not a paid project.
Skills	The team will need to build up on their coding skills for them to fully develop the required information system.

4.4. Elicitation Techniques and Motivation

Table 9 – Elicitation Technques and Motivation

Elicitation Technique	Justification for using the technique
Brainstorming	Brainstorming allowed the team to discuss the information gathered and come up with ideas on the way forward in a comfortable setting, where members could voice their opinions. It also helped the team to understand each other and see each one's level of understanding of the system and fill in any missing gaps.
Interviews	We held client interviews over Google Meets, as an in-person interview was not possible at that time. The client was able to express himself freely and give the team a better understanding of what they wanted and expected from the team, and we were also able to clear up any

	misunderstandings or uncertainties we had regarding the client and system. This technique helped acquire information in a timely manner and allowed the client to get to know the team a bit better.
Questionnaires	This technique was the first form of contact with the client as their availability was very limited. The questionnaire allowed the client to answer the questions in an honest way without our interference or influence. The responses helped the team get an idea of who the client is, what their business offers and a brief explanation on what problems they are currently facing.
Requirements Workshop	The requirements workshop was used to get a better understanding of what the client required and what the team would be able to develop. This technique helped the team draw up a preliminary list of requirements which would be used as the base of the project.

4.5. Elicitation Technique Checklists

4.5.1. Technique 1 – Questionnaire

Preparation checklist

No	Task	Done
1	Define objective	X
2	Define target survey group	
3	Select survey or questionnaire type	X

4	Select sample group	
5	Select distribution methods	X
6	Select collection methods	X
7	Set target level	
8	Set timeline for response	X
9	Determine if individual interviews are needed	
10	Write survey questions	X
11	Test survey or questionnaire	

Table 10 - Qustionnaire preparation checklist

Detailed explanation of the preparation checklist

1. Select Questionnaire type

   We decided on a formal questionnaire that consisted of eight sections

2. Define the objective of the questionnaire
   - To provide ByteXpress with a better understanding of the Client's background
   - To gain information on Natuurlik's daily operation
   - Offer more insight on Natuurlik's organizational structure
   - To gain a better understanding of Natuurlik's current system

   ByteXpress's questionnaire was targeted at the Founder Jannes so that we could gain a better understanding of our client to satisfy their needs hence the certain questions in the checklist are not applicable to our questionnaire. These questions are:

- Select survey or questionnaire type
- Select sample group
- Set target level
- Determine if individual interviews are needed
- Test survey or questionnaire

5. Select distribution methods

   ByteXpress concluded that sending the questionnaire to our client via an email is the most appropriate distribution method.

6. Select collection methods

   Since the ByteXpress team used google forms for the questionnaire the client's responses will be captured on google form then sent back to the ByteXpress team via email.

8. Set a Timeline for response

   We hoped to hear back from the client within a week.

10. Write survey questions

- When was Natuurlik founded?
- Please tell us a more about Natuurlik's history and the reasons for starting your company?
- What does Natuurlik aim to achieve in the short-to-medium term? And please indicate whether it would be possible without the use of a good Information Management System
- Is the company registered?
- What type of company is Natuurlik registered as AT THIS TIME?
- How will the ownership of Natuurlik look in the very near future, and will this change the type of company it is currently registered as?
- Who is your current target market, and will this change in the near future?
- How broad is your market, are you national or international?
- What are your business hours?
- How many clients do you usually get in a day?
- Is it difficult to manage the current demand without having some business processes automated or supported with the use of an Information System?
- What goals has the business accomplished thus far?
- Briefly list some shortcomings with the current way of running the business on a day-to-day basis.
- Do you have any employees?
- Do you have any other people working for the business currently? – Part time, on contracts etc. (E.g. Resellers or delivery personnel)
- Who oversees the main business processes on a day-to-day basis? - Who procures or makes the products, does branding and packaging, and sends them out for delivery?

- Please list the main business activities (High-Level Overview)
- Who delivers the products?
- Have you every considered making use of courier services? If not, please list the identified challenges associated with using courier services for delivery activities.
- Please select some examples of Natuurlik Users which will definitely be using the system in the future
- Does Natuurlik run promotions of any kind?
- Would Natuurlik like to provide discounts or promotions for their products?
- Should bulk purchases from customers be discounted based on quantity ordered? (E.g. Biltong List Price is R100/Kg, but if ordered at quantities of 10+ Kg, price will be reduced to R X amount specified by Natuurlik Admins)
- Where is the business physically located?
- Do you currently have a pick-up location where customers directly collect orders from the physical premises?
- Should there be a pick-up option in the future, or is the focus only placed on convenient and timely deliveries to customers?
- Is the current location of Natuurlik benefiting the business in terms of how easily deliveries can be made to customers? (Assuming no delivery services are used)
- Are the products sold online or can customers only purchase directly from you or Resellers?
- List the current ways that customers can place an order (E.g., Through Social Media platforms, call-ins etc.)
- How accessible is information regarding the products Natuurlik offers?
- What sets Natuurlik apart from similar businesses in terms of its product offerings?
- Is the business scalable given the way it is currently organized/structured?
- Do you currently give order invoices to customers?
- Do you know exactly how much inventory you have at this moment in time?
- Has it ever happened that you could not meet customer demand for certain products? Causing a delay in delivery times.
- If there were a major spike in demand suddenly for your products, would Natuurlik be able to cope with delivering to customers in a timely manner?
- Do you procure goods form one or many suppliers?
- Do Resellers keep inventory on hand?
- How do you keep track of what quantities of various products Resellers have on hand? (If Applicable)
- How are Reseller activities currently managed?
- How are supplier orders placed currently? (Select all valid options)

During Elicitation checklist		
No	Task	
1	Distribute survey or questionnaire	X

2	Communicate objectives	X

Table 11 – Qustionnaire during elicitaion checklist

Detailed explanation of the during elicitation checklist

1. Distribute the questionnaire

   The Questionnaire was sent to the client via email on the 23rd of January

2. Communicate Objectives

   Prior to sending the questionnaire the client was informed on the objectives of the questionnaire

After Elicitation checklist		
No	Task	Done
1	Document results	X
2	Share results with survey group	X
3	Share results with stakeholders	

Table 12 – Qustionnaire after elicitation checklist

Detailed explanation of the after-elicitation checklist

1. Document results

   The ByteXpress team formally captured the information on the team drive.

2. Share results with the ByteXpress Team

   The ByteXpress team had access to the survey responses via the team email. A team meeting was then held to assign various aspects of the information to the appropriate ByteXpress member.

4.5.2. Technique 2 - Interview

Preparation checklist		
No	Task	Done
1	Establish interview type	X
2	Identify Interview goal	X
3	Compile questions to achieve set goal	X

4	Determine how answers will be captured	X
5	Arrange meeting platform	X
6	Send meeting link to interviewee and interviewers	X

Table 13 – Interview preparation checklist

Detailed explanation of the preparation checklist

1. Establish interview type

   This interview will be a casual discussion between the client and the team members. Each member of the team will collaborate and come up with relevant questions which they will take turns asking.

2. Identify interview goal

   What type of information does the team expect to receive from the client? This question will be answered by the questions the team will formulate. Whatever uncertainties members have about the client and their business will be catered for by achieving the interview goal.

3. Create list of questions

   1. *May you kindly confirm Natuurlik's target market?*
   2. *What is a short-term goal of Natuurlik?*
   3. *Is it likely that Natuurlik will achieve the desired short-term goal without having an information system implemented that will address current shortcomings of the business?*
   4. *Please provide a high-level overview of the current day-to-day processes that Natuurlik uses to operate.*
   5. *What does Natuurlik offer its customers currently?*
   6. *Name the biggest problems Natuurlik is experiencing with its current way of operating the business on a daily basis.*
   7. *Name some of the job descriptions occupied within the business currently. (E.g. Sales Assistant)*
   8. *What is each co-owner responsible for in order to be running the business currently?*
   9. *Will there be new job opportunities in the near future? If so, give a general description of the responsibilities that will come with the job.*
   10. *Has Natuurlik ever captured data on its daily business operations? If so, please elaborate on what method was used to capture and store the business-critical data.*

11. *Has Natuurlik ever made use of reporting in any way to gauge how well the business is performing compared to the goals it set out to achieve?*
12. *Will reporting on KPI's, metrics and measures help management make more informed decisions?*
13. *Was Excel ever used for the capturing of any data related to Natuurlik in any way? If so, please provide an example.*
14. *Name and describe examples of business rules currently being used by Natuurlik to operate on a daily basis.*
15. *Should new business rules be identified for the new business processes to be established with the implementation of the Information System?*
16. *What specific functionality do you require from an Information System to operate the business optimally and address the shortcomings of the current system (high-level and bullet list)?*
17. *Is there another company representative who has a good understanding of the current business environment as well as the needs of the system to be implemented?*
18. *Which business users will be playing a part in the acceptance or rejection of the Information System to be implemented?*
19. *What is the biggest concern with the way that inventory is currently being managed?*
20. *What specific business operations currently become difficult to manage without having an Information System to support them?*
21. *Is it difficult to determine the current inventory on hand at this moment in time?*
22. *Is it at all possible that customers can order a product that is out of stock within the current business environment?*
23. *Does management require full control over the mark-up of each type of product sold?*
24. *How can orders be picked and packed more efficiently?*
25. *Name all current sales channels through which an order can be placed.*
26. *Will Natuurlik provide refunds or returns under any circumstances?*
27. *How are customer inquiries and complaints currently received?*
28. *Is customer feedback captured in any way with the current system and would it be to the benefit of management to be able to capture and store customer feedback in a streamlined manner?*
29. *Briefly walk us through how an order is currently handled from the placement to the fulfilment thereof.*
30. *Are customers kept up to date on how far their order is after having ordered from Natuurlik?*
31. *Would a ticket support system help management and/or other company personnel handle issues regarding orders more effectively?*
32. *How does management keep track of the cost price of goods procured?*
33. *How are orders placed with suppliers currently?*
34. *Are multiple suppliers used to procure different goods?*
35. *What is required to help increase the online brand presence of Natuurlik apart from just having a streamlined e-commerce store?*
36. *Has any of the current business operations been automated in any way?*
37. *Would you want to control the areas to which deliveries are to be supported in the future (Flexible management of supported regions)?*
38. *Will Natuurlik only support orders in South Africa for the near future?*
39. *Describe how resellers are currently managed.*
40. *How can the system help manage resellers of Natuurlik more effectively?*

41. *Can resellers buy on credit from Natuurlik given that the owner can choose who can be trusted as a reseller and accurate information is tracked on reseller orders?*
42. *If resellers can purchase on credit, how long do they have until their account should be settled?*
43. *If resellers can purchase on credit, how often should they be reminded of the amount payable?*
44. *Can emails be used to help streamline communication in terms of orders, inventory and other critical business operations?*
45. *Would an end-to-end business intelligence solution help Natuurlik's decision makers to make better informed decisions?*
46. *Which individuals within Natuurlik should be able to access an Executive Summary Dashboard used for reporting on business performance?*
47. *Will Natuurlik be able to provide us with some supporting documentation such as reports, invoices, or excel spreadsheets?*

4. Determine how answers will be captured

   Relaying the output from the conducted interview is very vital as there can be many misunderstandings. We ensured that the client understood the questions being asked and prior to the meeting, we requested the client's permission to record the interview. This was because not all team members could attend the meeting and we wanted to have a video to refer to if there are any uncertainties in the future.

5. Arrange meeting platform

   The team suggested we have the interview on Google Meets. The client agreed as it was convenient for all parties involved and we all have a busy schedule.

6. Send meeting link to interviewee and interviewer

   A meeting with the client was scheduled on Google Calendar. Through this platform we were able to invite all of the team members as well as the client. An email automatically gets sent to the people invited and if any changes are made to the meeting, an email gets automatically sent to the invited individuals.

Preparation checklist

No	Task	Done
1	Explain purpose of interview	X
2	Confirm crucial information	X

3	Clarify issues interviewee may have	X
4	Ask formulated questions	X
5	Ensure that all questions are answered	X

Table 14 – Interview preparartioin checklist

Detailed explanation of the during elicitation checklist

1. Explain purpose of interview

   The team explained to the client that the purpose of the interview is to gather information to aid the completion of the information system. This information is required to ensure that all team members have a solid understanding of the current business processes.

2. Confirm crucial information

   Prior to the beginning of the meeting, the team required the client's approval to record the meeting for future referral. Upon agreeing, the team requested for information crucial to completing the first iteration (Iteration 0).

3. Clarify issues interviewee may have

   This includes questions the client may have, such as the date of completion of the system and other important information such as data integrity and the protection of certain business information.

4. Ask formulated questions

   This is when the questions formulated prior to the interview will be asked in an interview-like style. Any questions the client has during this process are answered accordingly.

5. Ensure all questions were answered

   Upon the completion of the interview, the team went through skipped questions which the client could not answer on the spot. This is to ensure that all required information is received and documented.

After Elicitation checklist		
No	Task	Done
1	Organise received information	X
2	Share information with members	X
3	Request an additional interview	X

Table 15 – Interview after elicitation checklist

Detailed explanation of the after-elicitation checklist

1. Organise received information

   The information received from the interview is then organised under the iteration for which it is relevant. The information received after this interview will mostly be used for the project proposal (iteration 1).

2. Share information with members

   The information received and organised from the interview is now available on the team drive, which every member of the group has access to and can utilise for the remainder of the project.

3. Request an additional interview

   After the interview, there were still a few uncertainties which is why the team scheduled a follow up meeting with the client in order to progress with the project proposal.

Interview write up

The interview began and two members of the ByteXpress team conducted the interview with their client, Jannes van Rensburg.

Discussions regarding information that was previously communicated with the team gets clarified by the interviewee as some things may have been unclear in the beginning. The team does this to ensure they do not make any mistakes during the interview process. This included information regarding the background information of the client and the business itself.

The team then asks questions regarding the business, which were formulated beforehand to ensure that the information expected is well received. The client states that the current organisational structure consists of three directors who are all involved in the daily business processes. The business also employs a sales representative and plan on employing a driver and a packing/branding employee.

The client went to discuss the problems they currently face as their system is paper based. The interviewers noted this down as they will need to discuss which of these problems the proposed system will address.

The client was then asked what he expects from the proposed system, and he stated that the order management and inventory management of the business must be aligned. There are different directors who carry out orders and at times orders are accepted when the inventory on hand is not sufficient.

The meeting concluded with the interviewers informing the interviewer that they will need to schedule a requirements workshop in future.

4.5.3. Technique 3 – Requirements Workshop

Preparation checklist		
No	Task	Done
1	Discuss the purpose of the workshop	x
2	Take note of the information required	x
3	Request a meeting date and time	x
4	Draft an agenda for the meeting	x

5	Discuss the agenda talking points	x
6	Send the agenda	x
7	Send the meeting link	x

Table 16 – Requirements Workshop preparation checklist

Detailed explanation of the preparation checklist

1. Discuss the purpose of the workshop

   The team members decided to conduct a requirements workshop in order to ensure that the client understands the proposed system and what it entails. The team also wanted to use this workshop to draw up the functional requirements list for the system.

2. Take note of the information required

   The team discussed which questions to ask in order to receive their required information. The team had drafted a provisional list of requirements from which they drew their questions which assisted the team solidify the information required.

3. Request a meeting date and time

   Due to the client's busy schedule, the team sends an email requesting a date and time suitable to the client's needs. The client agreed to have a google meets meeting on the 4th of March 2022.

4. Draft an agenda for the meeting

   The project manager drafted an agenda for the workshop agenda [See attached] which was approved by the team members and then sent to the client prior the date of the meeting.

ByteXpress

Requirements Workshop
Meeting Agenda
2022/03/02

1. Welcome and meeting introduction
2. Discussion of functionality specifically requested
3. Discussion of project scope
4. Brief walkthrough proposed system requirements
5. Questions regarding the proposed system
6. Closing

Figure 3 - Requirements Workshop meeting agenda

5. Discuss the agenda talking points
   The team discussed the agenda and who would be discussing which points on the list. The team assigned the relevant points to themselves and discussed the general manner in which the meeting would be conducted. The team leader drafted presentation slides which were used during the requirements workshop.

6. Send the agenda
   The drafted agenda was sent and received by the client the day before the scheduled meeting.

7. Send the meeting link
   A google meets invite was sent to the client and all of the team members in order to access the meeting.

During Elicitation checklist		
No	Task	Done
1	Request permission to record workshop	x

2	Conduct workshop	x

Table 17 - Requirements Workshop during elicitation checklist

Detailed explanation of the during elicitation checklist

1. Request permission to record workshop

   Prior the start of the requirements workshop, the team asked the client to record the meeting as some of the team members were unable to attend. The client agreed and the meeting commenced.

2. Conduct workshop

   The team continues to go through the agenda of the workshop, ask the relevant questions and stay within the availability indicated by the client. All of the points and the uncertainties the team had were addressed and the workshop was successful.

After Elicitation checklist		
No	Task	Done
1	Adjust relevant documents	x

2	Complete meeting minutes	x

Table 18 - Requirements Workshop after elicitation checklist

Detailed explanation of the after-elicitation checklist

1. Adjust relevant documents

   After the successful requirements workshop, the team adjusted the initial requirements list according to the information received from the workshop. The team then discusses the changes and agrees on which subsystem the relevant use cases fall under.

2. Complete meeting minutes

   The project manager completed the meeting minutes for the requirements workshop and uploaded them the team's ASANA for all collaborators to access.

4.5.4. Technique 4 – Brainstorming

Preparation checklist		
No	Task	Done

1	Define area of interest	☒
2	Define time limit	☒
3	Identify participants	☒
4	Identify facilitator	☒
5	Invite participants	☒
6	Invite facilitator	☒
7	Meet with participants to explain expectations	☒
8	Establish evaluation criteria	☒
9	Book venue/meeting room	☒

Table 19 – Brainstorming preparation checklist

Detailed explanation of the preparation checklist

1. Define area of interest

   To find the best solution to improve Natuurlik business operations and identify specific user roles for the introduced system.

2. Define time limit

   One hour will be used during the brainstorming session.

3. Identify participants

   All group members will be present including the business owner Mr. Jannes van Rensburg.
4. Identify facilitator

   Mr. Jannes van Rensburg.

5. Invite participants

   Thenjiwe Ntsonda (Project Manager) scheduled a google meeting and sent out invites.

6. Invite facilitator

   Mr. Jannes van Rensburg.

7. Meet with participants to explain expectations

   Prior preparation was held on Whatsapp.

8. Establish evaluation criteria

   Allow any idea that can help to improve the current system and identify user roles based on the way users are going to interact with the system

9. Book venue/meeting room

   The discussion was held on Google meets.

During Elicitation checklist		
No	Task	Done
1	Share new ideas	X

2	Record all ideas	X
3	Build on ideas	X
4	Elicit as many ideas as possible	X

Table 20 – Brainstorming during elicitation checklist

Detailed explanation of the during elicitation checklist

1. Share new ideas

   Ideas on the new system were shared with Mr. Jannes van Rensburg and specified on who will be engaging with what part of the system.
2. Record all ideas

   User roles and possible subsystems were identified and recorded.
3. Build on ideas

   Team members gave their input to improve on the recorded ideas.
4. Elicit as many ideas as possible

   All ideas from the session were noted and considered.

After Elicitation checklist		
No	Task	Done
1	Discuss and evaluate ideas	X

2	Create list of ideas	☒
3	Rate ideas	☒
4	Distribute final list of ideas	☒
5	Schedule follow-up if needed	☒

Table 21 – Brainstorming after elicitation checklist

Detailed explanation of the after-elicitation checklist

1. Discuss and evaluate ideas

   The team shared their ideas and every idea was evaluated depending on its feasibility and team strength.

2. Create list of ideas

   - Create ERP/POS system for inventory management and sales management.
   - Create food recipe blog with videos for customers.
   - Register reseller to the system.
   - Allow live tracking of orders.
   - Geolocation to track delivery person.
   - Mobile app for delivery drivers.
   - Email invoices to clients and suppliers.
   - Inventory tracking (item location and quantity).
   - Payment method using EFT/cash.
   - Order ratings by customers.
   - Business partners have super admin rights.
   - User roles of customer and the administrator.
   - Create food recipe blog with videos for customers.
   - Register reseller to the system
   - Create a chat bot with help information.
   - Login every user and showing specific interface depending of the role of the user.

3. Rate ideas

   Ideas were great and the group worked together to improve the chosen ideas.

4. Distribute final list of ideas

   Ideas taken after consideration:

- Create an ERP/POS system for inventory management and sales management.
- Business partners have super admin rights.
- User roles of customer and the administrator.
- Register resellers into the system but only the business owner can register them on their behalf.
- Have only EFT as a payment method, no cash allowed.
- Mobile app for delivery drivers.
- Not going to be geolocating the drive but rather send updates through the system.
- Login every user and showing specific interface depending of the role of the user.

5. Schedule follow-up if needed

   Follow up is not necessary.

Conclusion

In conclusion, adequate information was gathered in the form of client questionnaires, interviews, requirements workshops and brainstorming sessions, to give an in-depth look at the current problems the company faces and the effect it has on the business.

5. Problem Analysis

Introduction

In this section we will be outlining the daily operations for the current system in a form of a rich picture, analyzing its capabilities and recommending solutions to bridge the capability gap on the current system. Thereafter we illustrate a rich picture of the proposed system showing how daily operations will occur in the new system.

5.1. Rich Picture of Current System

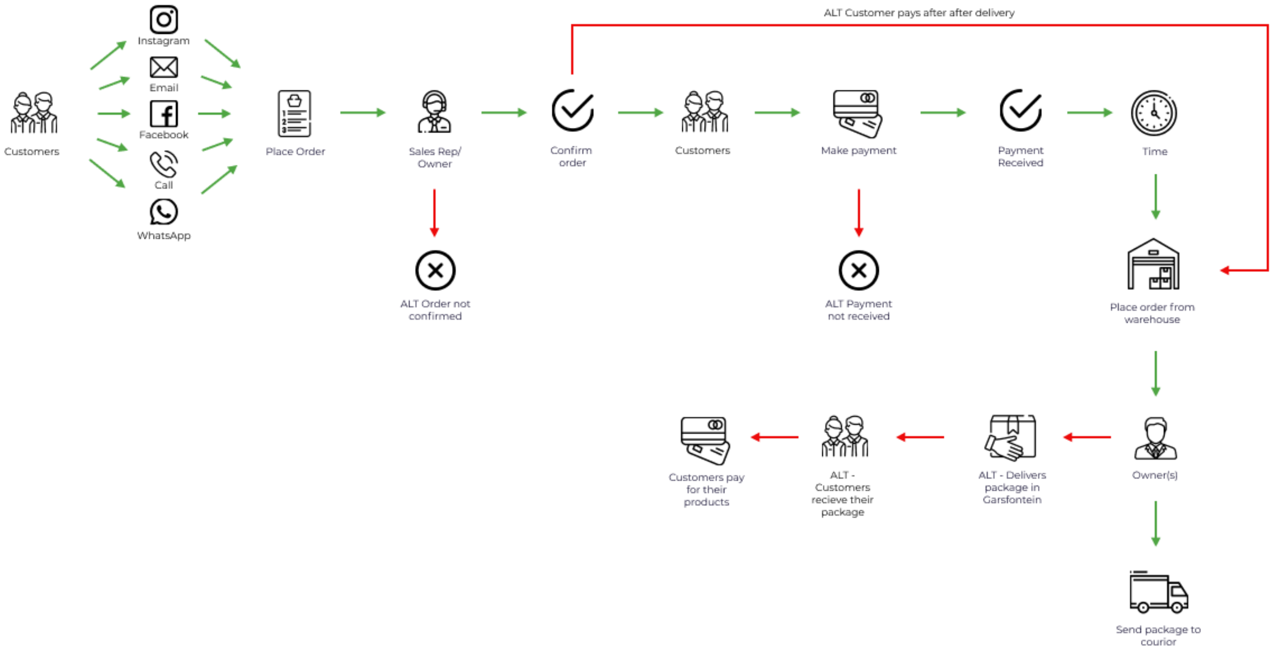

Figure 4 - Current System Rich Picture – Customer

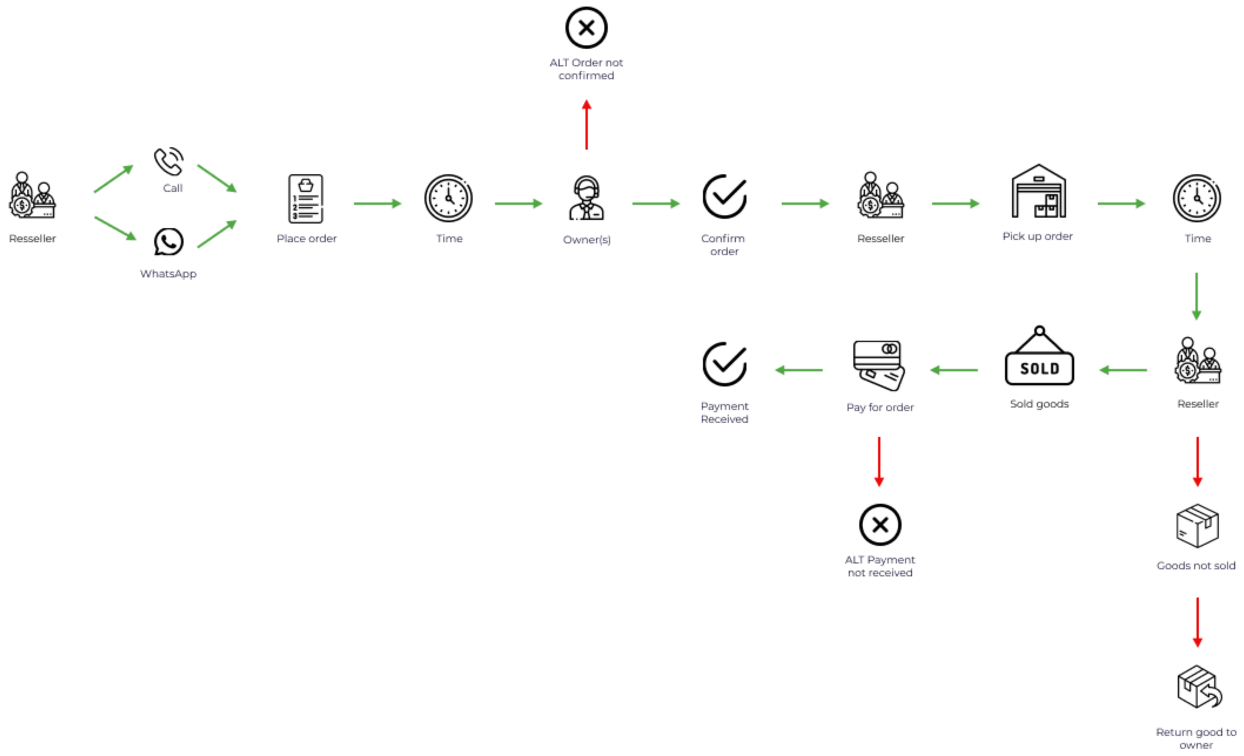

Figure 5 - Current System Rich Picture – Reseller

Figure 6 - Current System Rich Picture – Owner(s)

5.2. Analysis of Capabilities

Table 22 – Analysis of capabilities

Current system capabilities	Required system capabilities	Capability gap	Recommendation to address each gap
Introduction: the current systems capabilities are very limited and fail to adequately satisfy all the needs of the company. The current system hinders the company's ability to successfully operate efficiently and effectively. Below ByteXpress has provided more specific details on the capabilities of the current system	Introduction: The system that ByteXpress will provides will directly combat the shortcomings of the current system	Introduction: Below we have provided a list of gaps that ByteXpress have identified between the current system and the proposed system	Introduction: The recommendations for each gap will be listed below and will briefly describe how the required system designed by ByteXpress will cater to the shortcomings of the current system
Customers and resellers place their order by personally contacting the founder of Natuurlik through various social media platforms such as WhatsApp, Instagram and Facebook	The required system will provide Natuurlik with an efficient order management process that will allow the client to effectively manage their Business-to-customer orders as well as their business-to-business orders	The gap between the current system and the required is that it has separate processes for orders placed by customers and order placed by resellers	In order to place an order on the required system customers and resellers have to create and log their respective user profiles on the required system prior to placing an order. From their onwards customers and resellers have to log on to their user profiles for future orders
Currently customers and resellers can place an order for an item even if that item is out of stock. If an order is placed for an out-of-stock item, then the founder Jannes has travel to the Natuurlik warehouse and prepare the item for the order	The required system will keep a stock count of Natuurlik products and notify the Client when the stock levels of a certain item is low giving Natuurlik enough time to replenish their stock prior to customer orders	The Gap between the current system and the required system is that the current system lacks an inventory management system that notifies Natuurlik about low stock levels or block order placement on items that are out of stock	To address this gap ByteXpress' required system will allow Natuurlik to Capture the product items on the system and the system will decrement the product items with every successful purchase. The system will monitor Product item levels and notify Natuurlik when a particular product is low prior to it going out-of-stock

The current system makes use of excel spreadsheets to help generate important business data. This includes but is not limited to information on the business's income and expenditures	The Required system will allow Natuurlik to monitor and manage the important business documentation that the client needs to make decisions	The gap between the required system and the current system is that is does not effectively cater to information management needs of the business.	ByteXpress hopes to address this gap by providing a system that captures and manage important business information such as supplier invoices and receipts for example as well as generate the necessary business reports for the client such as an Inventory, Sales, Order, product, and customer reports.

5.3. Rich Picture of the Proposed System

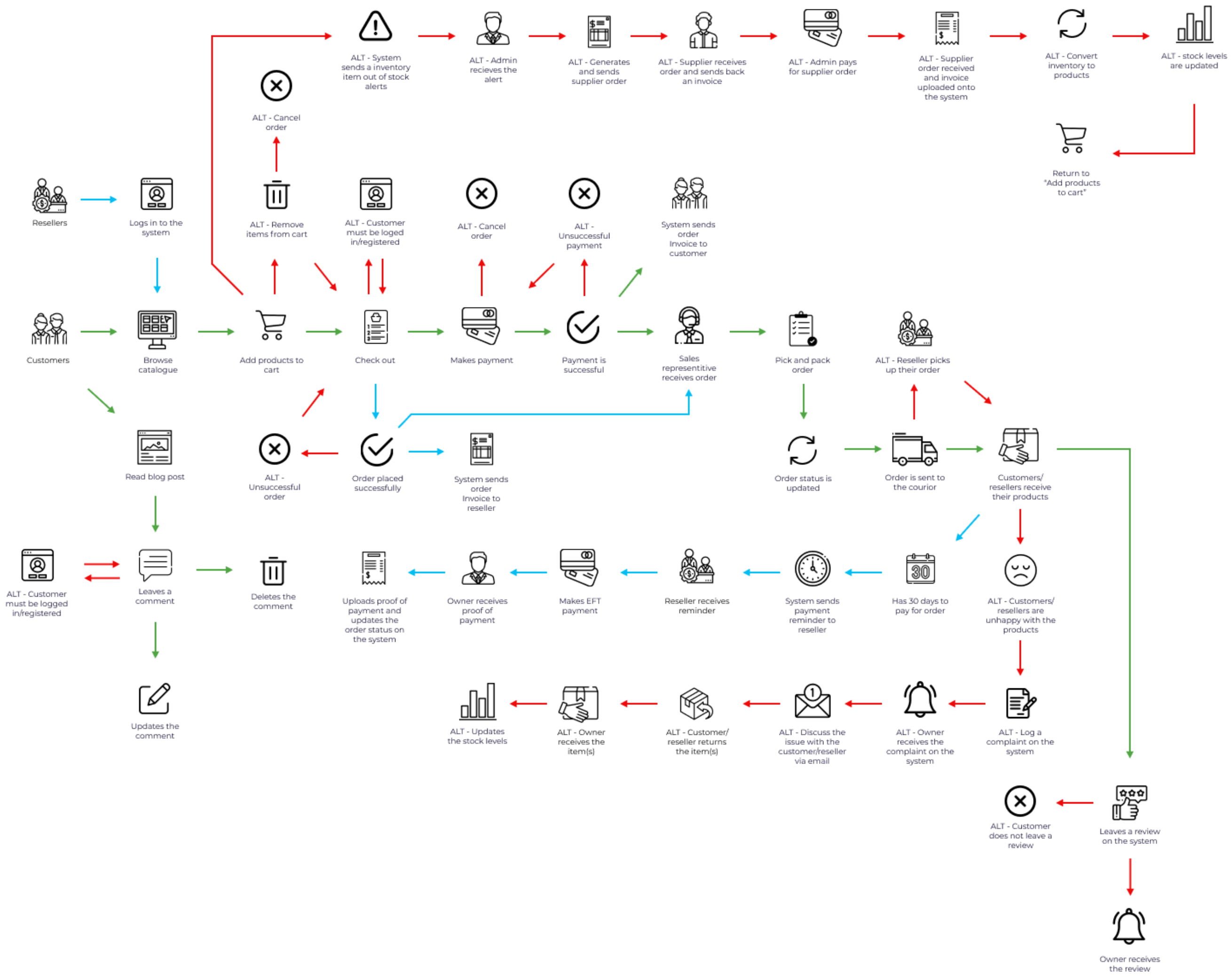

Figure 7 - Proposed Rich Picture – Client side

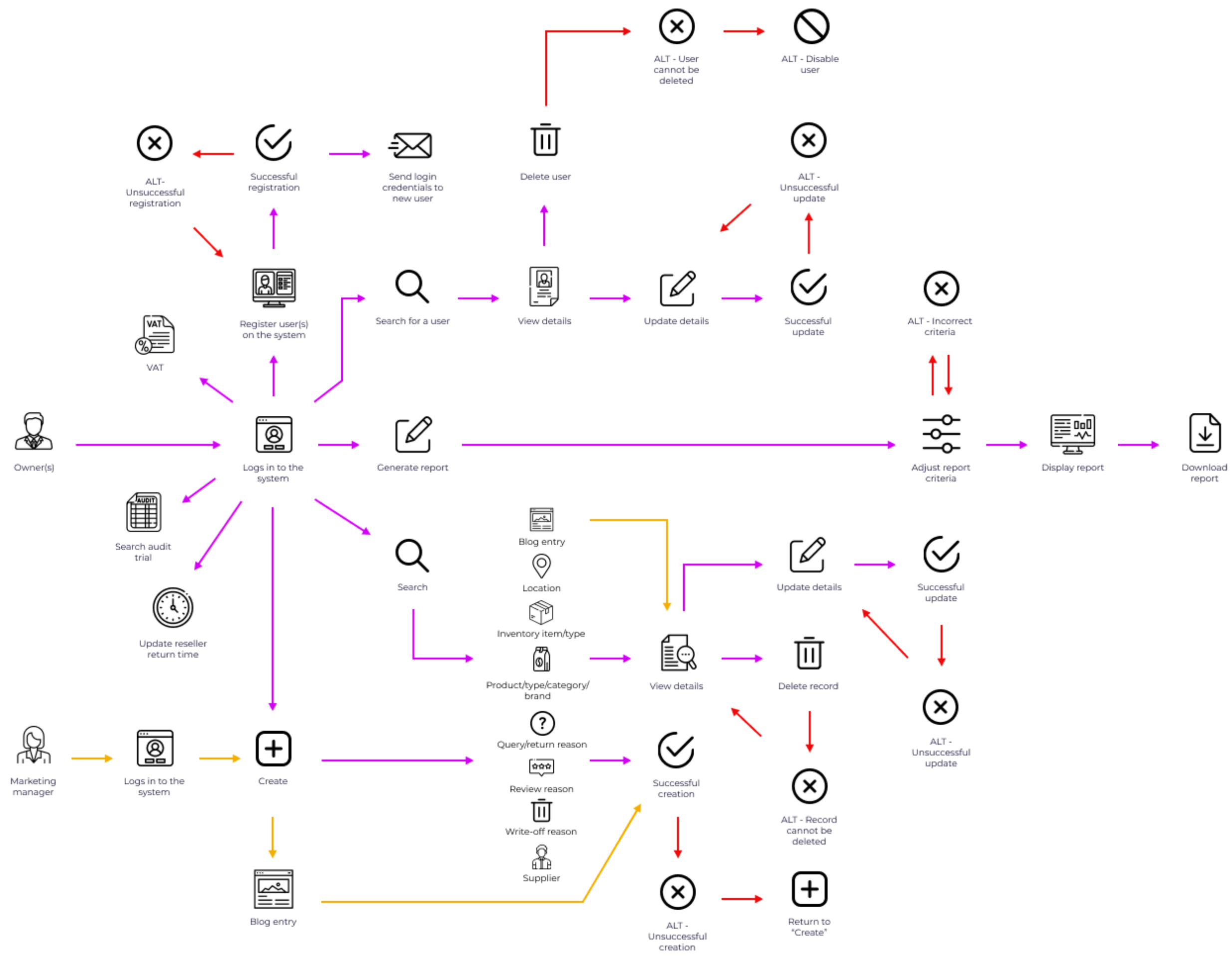

Figure 8 – Proposed Rich Picture – Admin side

Conclusion

In closing this section, it is clear on which capability gaps the current system is experiencing and how the proposed new system will help into mitigating these gaps.

6. Requirements Analysis

Introduction

This section includes the requirements analysis of the ByteXpress team. The functional requirements include the use cases which are to be included in the final system's operations. The non-functional requirements were conducted according to the PIECES framework and are SMART.

6.1. Functional Requirements List

Table 23 – User Management Subsystem

No	User Management Subsystem
1.1	Login User
1.2	Logout User
1.3	View Profile Details
1.4	Rest Password
1.5	Forgot Password
1.6	Register Customer
1.7	Update Profile Details
1.8	Update Email Address

Table 24 – Administrative Subsystem

No	Administrative Subsystem
2.1	Register User
2.2	Search User
2.3	Update User Details
2.4	Delete User
2.5	View Audit Trail
2.6	Search Audit Trial

Table 25 – Reseller Subsystem

No	Reseller Subsystem
3.1	Send Payment Reminder
3.2	Capture Proof of Payment

Table 26 – Product Subsystem

No	Product Subsystem
4.1	Add Product
4.2	Search Product
4.3	Update Product
4.4	Delete Product
4.5	Add Product Category
4.6	Search Product Category
4.7	Update Product Category
4.8	Delete Product Category

4.9	Add Product Brand
4.10	Search Product Brand
4.11	Update Product Brand
4.12	Delete Product Brand
4.13	Create Return Reason
4.14	Search Return Reason
4.15	Update Return Reason
4.16	Delete Return Reason
4.17	Browse Product Catalogue
4.18	Configure Product

Table 27 – Order Subsystem

No	Order Subsystem
5.1	Add Item(s) to Cart
5.2	Update Cart
5.3	Remove Item(s) from Cart
5.4	View Cart
5.5	Checkout Cart
5.6	Make Payment
5.7	View Orders Overview
5.8	Search Order
5.9	Query Order
5.10	Review Order
5.11	Create Courier
5.12	Search Courier
5.13	Update Courier
5.14	Delete Courier
5.15	Search Placed Order
5.16	View Placed Order
5.17	Cancel Placed Order
5.18	Cancel Reseller Order
5.19	Approve/Reject Reseller Order
5.20	Dispatch Order
5.21	Log Back Order
5.22	Confirm Order
5.23	Reject Order
5.24	Send Order Confirmation Reminder
5.24	Update Order Confirmation Time

Table 28 – Query Reason Subsystem

No	Query Reason Subsystem
6.1	Create Query Reason
6.2	Search Query Reason
6.3	Update Query Reason
6.4	Delete Query Reason
6.5	Review Order Query
6.6	View Order Query Feedback

Table 29 – Review Subsystem

No	Review Subsystem
7.1	Add Query Reason
7.2	Search Query Reason
7.3	Update Query Reason
7.4	Delete Query Reason
7.5	View Order Query

Table 30 – Invetory Management Subsystem

No	Inventory Management Subsystem
8.1	Create Inventory Item
8.2	Search Inventory Item
8.3	Update Inventory Item
8.4	Delete Inventory Item
8.5	Create Inventory Type
8.6	Search Inventory Type
8.7	Update Inventory Type
8.8	Delete Inventory Type
8.9	Create Write-Off Reason
8.10	Search Write-Off Reason
8.11	Update Write-Off Reason
8.12	Delete Write-Off Reason
8.13	Write-Off Inventory
8.14	Write-Off Product
8.15	Convert Inventory to Product
8.16	Search Procured Inventory
8.17	View Procured Inventory Details
8.18	Capture Procured Inventory
8.19	Capture Returned Product
8.20	Package Order
8.21	Send Low Inventory Alert
8.22	Send Inventory Out of Stock Alert

Table 31 – Location Subsystem

No	Location Subsystem
9.1	Create Country
9.2	Search Country
9.3	Update Country
9.4	Delete Country
9.5	Add Province
9.6	Search Province
9.7	Update Province
9.8	Delete Province
9.9	Create City
9.10	Search City
9.11	Update City
9.12	Delete City
9.13	Add Suburb
9.14	Search Suburb

9.15	Update Suburb
9.16	Delete Suburb

Table 32 - Reporting Subsystem

No	Reporting Subsystem
10.1	Generate Inventory List Report
10.2	Generate Sales (by Top 5 Clients) Report
10.3	Generate Product List Report
10.4	Generate Customer List Report
10.5	Generate Reseller List Report
10.6	Generate Produced Products Report
10.7	Generate Order (by Status) Report
10.8	Generate Order (by Region) Report
10.9	Generate Sales (by Product) Report
10.10	Generate Sales (by Month) Report
10.11	View Dashboard Overview

Table 33 – Supplier Subsystem

No	Supplier Subsystem
11.1	Create Supplier
11.2	Search Supplier
11.3	Update Supplier
11.4	Delete Supplier
11.5	Send Supplier Order

Table 34 – Driver Subsystem

No	Driver Subsystem
12.1	View Deliveries
12.2	View Previous Deliveries
12.3	Confirm Delivery

Table 35 – VAT Subsystem

No	VAT Subsystem
13.1	Create VAT
13.2	Search VAT
13.3	Update VAT Details
13.4	Delete VAT

Table 36 – Reseller Credit Settlement Time Subsystem

No	Reseller Credit Settlement Time Subsystem
14.1	Update Reseller Credit Settlement Time

Table 37 – Video Subsystem

No	Video Subsystem
15.1	Add Video
15.2	Search Video
15.3	Update Video Details
15.4	Delete Video
15.5	View Video

6.2. Functional Requirement Description & Detail

6.2.1. User Management Subsystem

Table 38 – 1.1 Login user requirement

Requirement	Explanation
Requirement number:	1.1
Requirement name (use case name):	Login user
Requirement short description:	The system must allow users to login.
Requirement detailed description and constraints:	The user wishes to login to the system. Their email address and password are required. Once entered, if the details match the information stored in the database, the system will grant the user access. Constraint(s): None
Business rules applicable to this requirement	• Users must be registered on the system. • All users have access to this function. • An email address is to be used as the username. It should always be in a valid email structure and unique among all users already registered on the system.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 39 - 1.2. Logout user requirement

Requirement	Explanation
Requirement number:	1.2
Requirement name (use case name):	Logout user
Requirement short description:	The system must allow users to logout.
Requirement detailed description and constraints:	The user wishes to logout of the system. They locate the logout option and logout. The logout option must be visible enough for all logged in users to access on every page. Constraint(s): None
Business rules applicable to this requirement	• Users must be logged in to the system to trigger this function. • All logged in users should have access to this function.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 40 – 1.3. View profile details requirement

Requirement	Explanation
Requirement number:	1.3
Requirement name (use case name):	View profile details
Requirement short description:	The system must allow users to view their account details.
Requirement detailed description and constraints:	The user wishes to view their profile. The system will retrieve and display all details relating to the user currently logged in such as their name, surname, email address and phone number. Constraint(s): None
Business rules applicable to this requirement	The user must be logged in to the system.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 41 – 1.4. Reset password requirement

Requirement	Explanation
Requirement number:	1.4
Requirement name (use case name):	Reset password
Requirement short description:	The system must allow users to reset their password.
Requirement detailed description and constraints:	The user wishes to update their password. They are required to enter their current password and the new password they want to use. Once confirmed, the system will update the new password in the database. Constraint(s): None
Business rules applicable to this requirement	• The user must be logged in to the system. The new password can't be the same as the current password.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Medium

Table 42 – 1.5. Forgot password requirement

Requirement	Explanation
Requirement number:	1.5
Requirement name (use case name):	Forgot password
Requirement short description:	The system must allow users to reset their password if it is forgotten.
Requirement detailed description and constraints:	The user wishes to set a new password on the system, as they forgot their current one. They will be required to enter their email address, to which the reset password link will be sent. Once the link has been received and accessed the user will be able to change their password. On completion the user can now login with their new password and access their profile. Constraint(s): None
Business rules applicable to this requirement	• All users have access to this function The email address entered must be the same as the one entered upon registration
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 43 – 1.6. Register Customer

Table 44 – 1.7. Update Profile Details

Requirement	Explanation
Requirement number:	1.7
Requirement name (use case name):	Update Profile Details
Requirement short description:	The system must allow a registered user to update the personal details of their Natuurlik account.

Requirement detailed description and constraints:	The user should be allowed to change their First Name, Surname, Phone Number, and delivery address information on the system. Constraint(s): None
Business rules applicable to this requirement	• The user must be logged into the system and have a registered account.
Revision date and Revision number:	19/08/2022
Criticality/Priority:	High

Table 45 – 1.8. Update Email Address

6.2.2. Administrative Subsystem

Table 46 – 2.1. Register user requirement

Requirement	Explanation
Requirement number:	2.1
Requirement name (use case name):	Register user
Requirement short description:	The system must allow the system administrator to register a new user.
Requirement detailed description and constraints:	The system administrator wishes to add a new user on the system with a specific existing role assigned. Details relating to the user such as their name, surname, email address, phone number, role, main address and provisional password is required to successfully register a new user. On successful confirmation, the details are saved to the database and the

	new user has access to the system after logging in using the password specified by the system administrator. Constraint(s): None
Business rules applicable to this requirement	• The system administrator must be logged into their account. • Only the system administrator has access to this function. • The user must not already exist on the system. • Uniqueness to be checked for of an account based on the value of a user's email address.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 47 – 2.2. Search user requirement

Requirement	Explanation
Requirement number:	2.2
Requirement name (use case name):	Search user
Requirement short description:	The system must allow the system administrator to search for a user on the system using the search functionality provided.
Requirement detailed description and constraints:	The system administrator wants to search for a specific user on the system. Details such as the user's name, surname, email address, phone number and role can be used as a search query. All users matching the search query will then be displayed on the system.

	Constraint(s): System administrator will not be able to search for a user based on any of the address values.
Business rules applicable to this requirement	• The system administrator must be logged in to the system. • Only the system administrator has access to this function.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Medium

Table 48 – 2.3. Update user details requirement

Requirement	Explanation
Requirement number:	2.3
Requirement name (use case name):	Update user details
Requirement short description:	The system must allow the system administrator to update the details of an existing user on the system.
Requirement detailed description and constraints:	The system administrator wishes to update the details of an existing user defined on the system. The system will retrieve and display all details relating to the user, such as their name, surname, email address and phone number. They then enter the updated information and save it on the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator and user must be logged in to the system. • The user must exist on the system in order for their details to be updated. • Only the system administrator and user have access to this function • Email address to be used to uniquely identify user accounts registered on the system.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 49 – 2.4. Delete User Requirement

Requirement	Explanation
Requirement number:	2.4
Requirement name (use case name):	Delete user
Requirement short description:	The system must allow the administrator to delete a user on the system.
Requirement detailed description and constraints:	The administrator wants to delete a user on the system. The administrator searches for the desired user, once retrieved they confirm the deletion and the user is removed. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • The user must exist on the system • Only the administrator can delete a user. • A user can only be deleted if the user is a duplicate entry or if the user does not have any association with another entity. • If a user has an association with another entity, the administrator can disable the user, restricting their access to the system.
Revision date and Revision number:	19/03/2022 Version 2
Criticality/Priority:	Low

Table 50 – 2.5. View Audit Trail Requirement

Table 51 – 2.5 Search audit trail requirement

Requirement	Explanation
Requirement number:	2.6
Requirement name (use case name):	Search Audit Trail
Requirement short description:	The system must allow the system administrator to search for a specific instance in the audit trail.
Requirement detailed description and constraints:	The system administrator wants to search the audit trail for a specific record that has been tracked on the system. Details such as the user, date and type can be used as a search query. The record matching the search query will then be displayed on the system.

	Constraint(s): None
Business rules applicable to this requirement	• The system administrator must be logged in to the system. • Only the system administrator has access to this function
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Medium

6.2.3. Reseller Subsystem

Table 52 – 4.1. Send payment remider requirement

Requirement	Explanation
Requirement number:	3.1
Requirement name (use case name):	Send payment reminder
Requirement short description:	The system must send out a payment reminder to the resellers who have not paid for orders placed on the system.
Requirement detailed description and constraints:	If a reseller has placed an order on the system and their payment has not yet been received, the system will send them a payment reminder. Constraint(s): None
Business rules applicable to this requirement	• Resellers have to pay for their orders within 30 days from having placed it on the system. • Only resellers should receive payment reminders. • Reminders to be sent via email.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Low

Table 53 – 4.2. Capture proof of payment requirement

Requirement	Explanation
Requirement number:	3.2
Requirement name (use case name):	Capture Proof of Payment
Requirement short description:	The system must allow the administrator to capture the payment for Resellers with orders that have outstanding payments
Requirement detailed description and constraints:	This use case describes the process in which the administrator wishes to capture a resellers proof of payment on the system. For resellers with orders that have an order status of “processing” and payment status “payment outstanding”, the reseller can capture the resellers proof of payment on the system once the reseller has paid thus updating the order status of the order to “paid” Constraint(s): None
Business rules applicable to this requirement	• Only resellers can make payments after placing an order • Only the administrator can capture a proof of payment
Revision date and Revision number:	21/07/2022
Criticality/Priority:	High

6.2.4. Product Subsystem

Table 54 – 5.1. Add product requirement

Requirement	Explanation
Requirement number:	4.1
Requirement name (use case name):	Create product

Requirement short description:	The system must allow the administrator to add a product on the system.
Requirement detailed description and constraints:	All product's required details such as the product name, description, price, product type and image must be added and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add a new product. • The product will have two prices, one for resellers and one for customers
Revision date and Revision number:	10/03/2022
Criticality/Priority:	High

Table 55 –5.2. Search product requirement

Requirement	Explanation
Requirement number:	4.2
Requirement name (use case name):	Search product
Requirement short description:	The system must allow the administrator to search through all existing products on the system.
Requirement detailed description and constraints:	The administrator wants to search for a specific product on the system. The product's details such as the product name, description, price, product type and can be used as a search query. The product matching the search query will then be displayed on the system. Constraint(s): None

Business rules applicable to this requirement	• The administrator must be logged in to the system.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	Medium

Table 56 – 5.3. Update product requirement

Requirement	Explanation
Requirement number:	4.3
Requirement name (use case name):	Update product
Requirement short description:	The system must allow the administrator to update a product on the system.
Requirement detailed description and constraints:	All product's required details such as the product name, description, price, product type and image can be updated and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can update a product.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	High

Table 57 –5.4 Delete product requirement

Requirement	Explanation
Requirement number:	4.4
Requirement name (use case name):	Delete product
Requirement short description:	The system must allow the administrator to delete a product on the system.

Requirement detailed description and constraints:	The administrator wants to delete a product on the system. The administrator selects the required product, confirms deletion and the product is removed from the product catalogue. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can delete a product. • A product that has been ordered before cannot be deleted entirely on the system.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	Medium

Table 58 – 5.5. Add product category requirement

Requirement	Explanation
Requirement number:	4.5
Requirement name (use case name):	Add product category
Requirement short description:	The system must allow the administrator to add a product category on the system.
Requirement detailed description and constraints:	All product category's required details such as the product category name and description must be added and saved onto the system. A product category can then be assigned to the relevant product upon the addition of the product. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add a new product category.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 59 – 5.6. Search product category

Requirement	Explanation
Requirement number:	4.6
Requirement name (use case name):	Search product category
Requirement short description:	The system must allow the administrator to search through all existing product categories on the system.
Requirement detailed description and constraints:	The administrator wants to search for a specific product category on the system. The product's details such as the product name and description and can be used as a search query. The product category matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	The administrator must be logged in to the system.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	Medium

Table 60 – 5.7. Update product category requirement

Requirement	Explanation
Requirement number:	4.7
Requirement name (use case name):	Update product category
Requirement short description:	The system must allow the administrator to update a product category on the system.
Requirement detailed description and constraints:	All product's required details such as the product name description and can be updated and saved onto the system. Constraint(s): None

Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can update a product category.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 61 – 5.8. Delete product category requirement

Requirement	Explanation
Requirement number:	4.8
Requirement name (use case name):	Delete product category
Requirement short description:	The system must allow the administrator to delete a product on the system.
Requirement detailed description and constraints:	The administrator wants to delete a product category on the system. The administrator selects the required product, confirms deletion and the product is removed from the product category list. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can delete a product category. A product category which has product(s) attached to it cannot be deleted.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	Medium

Table 62 – 5.9. Add product brand requirement

Requirement	Explanation
Requirement number:	4.9
Requirement name (use case name):	Add product brand
Requirement short description:	The system must allow the administrator to add a product brand on the system.

Requirement detailed description and constraints:	All product brand's required details such as the product brand name and description must be added and saved onto the system. A product brand can then be assigned to the relevant product upon the addition of the product. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can add a new product brand.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 63 – 5.10. Search product brand requirement

Requirement	Explanation
Requirement number:	4.10
Requirement name (use case name):	Search product brand
Requirement short description:	The system must allow the administrator to search through all existing product categories on the system.
Requirement detailed description and constraints:	The administrator wants to search for a specific product brand on the system. The product's details such as the product name and description and can be used as a search query. The product brand matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	The administrator must be logged in to the system.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	Medium

Table 64 – 5.11.Update product brand requirement

Requirement	Explanation
Requirement number:	4.11
Requirement name (use case name):	Update product brand
Requirement short description:	The system must allow the administrator to update a product brand on the system.
Requirement detailed description and constraints:	All product's required details such as the product name description and can be updated and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can update a product brand.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 65 – 5.12. Delete product brand requirement

Requirement	Explanation
Requirement number:	4.12
Requirement name (use case name):	Delete product brand
Requirement short description:	The system must allow the administrator to delete a product on the system.
Requirement detailed description and constraints:	The administrator wants to delete a product brand on the system. The administrator selects the required product, confirms deletion and the product is removed from the product brand list. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can delete a product brand.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	Medium

Table 66 – 4.13. Create Return Reason requirement

Requirement	Explanation
Requirement number:	4.13
Requirement name (use case name):	Add Return Reason
Requirement short description:	The system must permit all system administrators to add a new return reason for products returned.
Requirement detailed description and constraints:	The system administrator role should be allowed to add a new product return reason. This return reason is used to capture the reason why customers or resellers are returning goods to the business. The following details are to be captured for all return reasons defined on the system: • Name • Description Constraint(s): None
Business rules applicable to this requirement	• All return reasons should be unique on the system. • Only the system administrator(s) should be permitted to add new return reasons. Return reasons are needed by business for reporting purposes as it will indicate to management which products was returned for what reason.
Revision date and Revision number:	25/03/2022 Version 1.0
Criticality/Priority:	High

Table 67– 4.14. Search Return Reason requirement

Requirement	Explanation
Requirement number:	4.14
Requirement name (use case name):	Search Return Reason
Requirement short description:	The system must allow the administrator(s) to search the details of a specific courier that has already been defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to search for a return reason defined on the system by using the name of the return reason. All return reasons which have matched the search query should be displayed on the interface. The system should also allow the administrator to view the particular details of a return reason for possible modifications. Constraint(s): None

Business rules applicable to this requirement	• The interface should clearly indicate when no return reason have matched the search operation performed. • Only the system administrator(s) should be allowed to search for a specific return reason existing on the system. The system administrator(s) should be allowed to search for a return reason by its assigned name.
Revision date and Revision number:	25/03/2022 Version 1
Criticality/Priority:	High

Table 68– 4.15. Update Return Reason requirement

Requirement	Explanation
Requirement number:	4.15
Requirement name (use case name):	Update Return Reason Details
Requirement short description:	The administrator(s) should be allowed the functionality to update the details of any or all return reasons already existing on the system.
Requirement detailed description and constraints:	A user with the system administrator role assigned should be allowed to update the specific details of any existing return reason defined on the system. Details to be updated include: • Return Reason Name Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator(s) should be allowed to update the name of an already existing return reason. • A return reason should always have a unique name and cannot be null. Administrators require the ability to modify return reasons according to what the business considers valid return reasons.
Revision date and Revision number:	25/03/2022 Version 1
Criticality/Priority:	High

Table 69– 4.16. Delete Return Reason requirement

Requirement	Explanation
Requirement number:	4.16

Requirement name (use case name):	Delete Return Reason
Requirement short description:	The system must allow the administrator(s) of the system to delete the details of a specific return reason that has already been defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to delete a return reason after having searched and viewed the specific return reason they wish to remove from the system. The interface should prompt the system administrator to confirm the removal of the specific return reason existing on the system. Constraint(s): None
Business rules applicable to this requirement	• The interface prompt the administrator(s) to confirm the deletion of a return reason. Only the system administrator(s) should be allowed to remove return reasons from the system.
Revision date and Revision number:	25/03/2022 Version 1
Criticality/Priority:	High

Table 70 – 4.17. Browse customer products catalogue requirement

Requirement	Explanation
Requirement number:	4.17
Requirement name (use case name):	Browse product catalogue
Requirement short description:	The system must allow users to browse the product catalogue available on the system.
Requirement detailed description and constraints:	Users can access Natuurlik's product catalogue on the system. They are able to browse the product names, picture, and prices on the system Constraint(s): None
Business rules applicable to this requirement	None
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 71 – 4.18. Configure Product requirement

Requirement	Explanation
Requirement number:	4.18
Requirement name (use case name):	Configure Product
Requirement short description:	The system must allow the administrator or inventory manager configure a finished product's production requirements.
Requirement detailed description and constraints:	The administrator or inventory manager wishes to create or update the production details for a finished product created on the system. The system will prompt entry of the following details: • Inventory Item Name • Inventory Item Quantity The administrator will be able to view the current production configuration details if already configured for a finished product. Once the validation passes for the entered details, the system will save the production configuration details and display a confirmation alert. Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system. • The product to be specifically configured for production must exist on the system.
Revision date and Revision number:	19/08/2022
Criticality/Priority:	High

6.2.5. Order Subsystem

Table 72 – 5.1. Add item(s) to cart requirement

Requirement	Explanation
Requirement number:	5.1
Requirement name (use case name):	Add Item(s) to Cart
Requirement short description:	The system must allow customers and resellers to add items to their cart on the system.
Requirement detailed description and constraints:	The system should allow a customer or reseller to add the desired items available on the product catalogue to their cart. The customer or reseller should be able to specify the quantity of a particular product they wish to add to their cart. The system should visually indicate on the interface that an item has been added to the user's cart. Constraint(s): A product that is out of stock cannot be placed in a cart
Business rules applicable to this requirement	• Only the customer and reseller roles should be allowed to add items to their cart. • Customers must be logged into the system before adding items to their cart. • An unauthenticated user should be redirected to the login interface if they request to add an item (product) to their cart. • Customers and resellers should be allowed to specify the desired quantity of a product they wish to add to their cart.
Revision date and Revision number:	06 /03/2022 Version 1.1
Criticality/Priority:	High

Table 73 – 5.2. Update cart requirement

Requirement	Explanation
Requirement number:	5.2
Requirement name (use case name):	Update Cart.

Requirement short description:	The system must allow customers to update their cart on the system.
Requirement detailed description and constraints:	The customer or reseller is able to keep a cart with items on the system when they logout and they are able to update their initial cart without creating a new one when they login again. The system must allow customers and resellers to update the products in their cart by either updating the quantity of the product or removing it entirely. Constraint(s): None
Business rules applicable to this requirement	• Only registered customers can update items in a cart. • Items in the cart can only be retained for 30 days, after 30 days the system will erase the customer's cart. • Customers must be logged in to the system. • An unauthenticated user should be redirected to the login interface if they request to add an item (product) to their cart.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	High

Table 74 – 5.3. Remove item(s) from cart requirement

Requirement	Explanation
Requirement number:	5.3
Requirement name (use case name):	Remove Item(s) from Cart
Requirement short description:	The system must allow the customer or reseller to remove a cart item (product) completely. A cart item is to be removed once its quantity is specified as 0. The system should visually indicate that the cart item quantity has been removed from the cart. Constraint(s): None
Requirement detailed description and constraints:	• Only registered customers and resellers can update the quantity of and delete items in a cart. • Customers must be successfully logged in to the system.
Business rules applicable to this requirement	06 /03/2022 • Version 1.1

Revision date and Revision number:	High
Criticality/Priority:	5.3

Table 75 – 5.4. View cat requirement

Requirement	Explanation
Requirement number:	5.4
Requirement name (use case name):	View Cart
Requirement short description:	The system must have the ability to allow customers and resellers to view their cart's contents.
Requirement detailed description and constraints:	Customer and reseller roles should be able to view their current cart's details. Cart details to be stored on the system include product and count. The interface should allow the system user to select the option to view their cart, then the system should return the last stored details on the system for the specific customer or reseller account making the request.
Business rules applicable to this requirement	• Only registered customers can view items in a cart • Customers must be logged in to the system. • Persist cart details per customer and reseller user for 15 days from when the cart is initially created.
Revision date and Revision number:	06 /03/2022 Version 1.1
Criticality/Priority:	High

Table 76 – 5.5. Checkout cart requirement

Requirement	Explanation
Requirement number:	5.5
Requirement name (use case name):	Checkout Cart
Requirement short description:	The system must allow the customer and reseller users to checkout with their current cart details and delivery details needed to complete order fulfilment.
Requirement detailed description and constraints:	The system will allow the customer or reseller roles to perform checkout by using their desired cart's contents and providing their delivery details for the order they wish to place on the system. The system auto-populates the delivery details from the account details retrieved on the system and that has made the request to check out. Constraint(s): None
Business rules applicable to this requirement	• Only registered and logged in system users with either a customer or reseller role should be allowed to check out a cart on the system. • An unauthenticated user attempting to perform checkout should be redirected to an interface that allows the system user to login or register if they do not already have an account registered on the system. • Account details of an authenticated user that has requested to perform checkout on the system will be retrieved from the database and is to populate the delivery details fields upon displaying the interface. • System users should be allowed to update all or any of the delivery details which have been automatically populated by the system as it may be outdated or incorrect upon attempting to perform the checkout process. • Cart details should not be allowed to change while checking out a cart on the system and the quantities of each product should be visible on the interface. • Order totals are expected to be displayed in ZAR currency.
Revision date and Revision number:	06 /03/2022 Version 1.1
Criticality/Priority:	High

Table 77 – 5.5. Make payment requirement

Requirement	Explanation
Requirement number:	5.6
Requirement name (use case name):	Place Order
Requirement short description:	The system must allow the customer or reseller to place an order on the system which needs to be fulfilled.
Requirement detailed description and constraints:	The customer or reseller will select the “Place Order” option which will navigate the user to the payment details page. Options with which customers or resellers can be pay will be displayed along with necessary fields to perform the online payment. Once payment has been confirmed through the online payment service provider, the system should proceed to store the captured order details on the system. A system generated order confirmation should be sent via an email to the user’s registered email address. Constraint(s): None
Business rules applicable to this requirement	• Only registered customers or resellers can place orders on the system. • Customers or resellers must be logged in to the system in order to place orders. • Visa and Mastercard payments should be allowed on the system. • ZAR currency is to be used for the implementation of the system and all totals are to display with this currency format applied. • Payment has to be confirmed before the system commits the order’s details to the database. • The system should be able to indicate to the customer or reseller when payment was unsuccessful so that they are able to verify the correctness of the details entered on the system.
Revision date and Revision number:	09/03/2022 Version 1.1
Criticality/Priority:	High

Table 78 – 5.7. View order overview requirement

<table>
<tr><th>Requirement</th><th>Explanation</th></tr>
<tr><td>Requirement number:</td><td>5.7</td></tr>
<tr><td>Requirement name (use case name):</td><td>View Order Overview</td></tr>
<tr><td>Requirement short description:</td><td>The system must allow all authenticated users on the system to access to all the orders they are authorized to view based on their role.</td></tr>
<tr><td>Requirement detailed description and constraints:</td><td>The system should display all the orders the user is permitted to view and based on their role in the system. Essential order details to be retrieved from the database and displayed on the interface include:
Order Number
Full Name
Phone Number
Email Address
Order Status
Order Total
System users should also be allowed to view the details of a particular order's details they are able to access based on their role. The user should be able to select an option on the interface to view a specific order's overview. The following details will be displayed on the interface:

Order Details:
User's personal details and delivery address information.
Order Summary:
Order's current status
Order total
Details on the product(s) ordered</td></tr>
<tr><td>Business rules applicable to this requirement</td><td>Authenticated users should be displayed only orders they are permitted to view on the system based on the role they have assigned.
Resellers and customers should only be able to view the orders which they have placed using their registered account.
Administrators, assistants and managers should be allowed to view all orders on the system to support with order preparation activities and order inquiries.
All totals are to be displayed in ZAR currency.</td></tr>
<tr><td>Revision date and Revision number:</td><td>09 /03/2022
Version 1.1</td></tr>
<tr><td>Criticality/Priority:</td><td>High</td></tr>
</table>

Table 79 – 5.8. Search Order requirement

Table 80 – 5.9. Query oder requirement

Requirement	Explanation
Requirement number:	5.9
Requirement name (use case name):	Query Order
Requirement short description:	The system must allow customers and/or resellers to query an order they have placed on the system.
Requirement detailed description and constraints:	Customers will be able to inquire about an order where it is either late, damaged products have been received or incorrect items were received. A valid reason for the order inquiry has to be specified and the query is sent as an email to the appropriate authority. Constraint(s): Further communication and collaboration is expected to take place via email and is not captured and managed by the system.
Business rules applicable to this requirement	• Only registered customers or resellers can inquire about an order which they have placed on the system. • Customers or resellers must be logged in to the system and have an order already placed on the system to raise a query on it. • Order query details is to be sent to the company's official email account. • Multiple representatives of the company should access the company email account in order to attend to queries raised on the system.
Revision date and Revision number:	09 /03/2022 Version 1.1
Criticality/Priority:	Query Order

Table 81 – 5.10. Review order requirement

Requirement	Explanation
Requirement number:	5.10

Requirement name (use case name):	Review Order
Requirement short description:	The system must allow customers to review orders which they have placed on the system.
Requirement detailed description and constraints:	Customers and resellers should be able to review a specific order by selecting the option to review and then specifying whether they were satisfied with the quality of service received. Constraint(s): None
Business rules applicable to this requirement	• Only authenticated customers and administrators should be allowed to review orders which they have placed on the system. • Only one review can be left per order. • The system should provide a pre-defined selection of valid options to select from. • The customer or reseller user should be allowed to elaborate on why they chose the particular option.
Revision date and Revision number:	09 /03/2022 Version 1.1
Criticality/Priority:	High

Table 82 - 5.11 Create Courier requirement

Requirement	Explanation
Requirement number:	5.11
Requirement name (use case name):	Add Courier
Requirement short description:	The system must allow the administrator to add a new courier to the system.
Requirement detailed description and constraints:	The system administrator role should be allowed to add a new courier along with their required details. The following values are required for a courier to be added: • Courier Name • Shipping Fee • Expected Delivery Time (in Days) Constraint(s): None

Business rules applicable to this requirement	• All couriers defined on the system should be unique. • Only the system administrator will be allowed to add a new courier. • The name of the courier, shipping fees and expected delivery times should captured on the system.
Revision date and Revision number:	28/03/2022 Version 1
Criticality/Priority:	High

Table 83 -5.12. Search Courier requirement

Requirement	Explanation
Requirement number:	5.12
Requirement name (use case name):	Search Courier
Requirement short description:	The system must allow the administrator to search the details of a specific courier that has already been defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to search for a courier by name or the shipping fee of a specific courier service used. All of the existing couriers will be returned if the Courier Name or Shipping Fee matched the search performed by the administrator. Constraint(s): None
Business rules applicable to this requirement	• The interface should clearly indicate when no couriers have matched the search performed. • Only the system administrator(s) should be allowed to search for a specific courier existing on the system. • The system administrator should be allowed to search for a courier by name or shipping fee.
Revision date and Revision number:	28/03/2022 Version 1
Criticality/Priority:	High

Table 84-5.13. Update Courier requirement

Requirement	Explanation
Requirement number:	5.13
Requirement name (use case name):	Update Courier Details

Requirement short description:	The system must allow the administrator to update the details of the courier service to be used for shipping of all orders.
Requirement detailed description and constraints:	The administrator role should be allowed to update the specific details of the single courier service used for delivery of orders. Details to be updated include: • Courier Name • Shipping Fee • Expected Delivery Time (in Days) Constraint(s): None
Business rules applicable to this requirement	• Only one courier will be used on the system at a time. • Only the administrator role should be allowed to update the details of the courier to be used for shipping orders. • Shipping Fee should be in ZAR currency. • An expected delivery time should be captured to let customers and resellers know how long the delivery is expected to take from the moment the order is marked as "dispatched to courier". • Expected delivery time for a courier should be measured in Days and is used for order delivery date estimations.
Revision date and Revision number:	28/03/2022 Version 2
Criticality/Priority:	High

Table 85 -5.14. Delete Courier requirement

Requirement	Explanation
Requirement number:	5.14
Requirement name (use case name):	Delete Courier
Requirement short description:	The system must allow the administrator to delete the details of a specific courier that is already defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to delete a courier after having searched for the specific courier they wish to remove from the system. The interface should prompt the system administrator to confirm the removal of a specific courier existing on the system. Constraint(s): None

Business rules applicable to this requirement	• The interface prompts the administrator to confirm the deletion of a courier. • Only the system administrator(s) should be allowed to remove couriers from the system.
Revision date and Revision number:	28/03/2022 Version 1
Criticality/Priority:	High

Table 86 -5.15. Search Placed Order requirement

Requirement	Explanation
Requirement number:	5.15
Requirement name (use case name):	Search Placed Order
Requirement short description:	The system must allow customers and resellers to search through orders that they have placed
Requirement detailed description and constraints:	When the customer or reseller wants to search for a specific order on the system, details such as their order number, date, recipients name, surname, phone number, status and order total can be used as a search query. The order matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	• The customer or reseller must be logged in the system
Revision date and Revision number:	18/08/2022 Version 1
Criticality/Priority:	High

Table 87 -5.16. View Placed Order requirement

Requirement	Explanation
Requirement number:	5.16
Requirement name (use case name):	View Placed Order

Requirement short description:	The system must allow customers and resellers to select to view the details of an order they have placed on the system
Requirement detailed description and constraints:	This use case describes an event where the customer/reseller wants to view their orders on the system. The use case begins when the user requests to view their orders and the system responds by retrieving the details. The use case concludes when the details are displayed on the screen Constraint(s): • The user cannot view their order details without an internet connection
Business rules applicable to this requirement	None
Revision date and Revision number:	24/05/2022
Criticality/Priority:	High

Table 88 -5.17. Cancel Placed Order requirement

Requirement	Explanation
Requirement number:	5.17
Requirement name (use case name):	Cancel Placed Order
Requirement short description:	The system must allow customers and reseller to cancel the order(s) they have placed on the system
Requirement detailed description and constraints:	This use case describes the process where the reseller cancels their order on the system. The reseller will search for the required order and then cancel their order. The use case concludes when the system notifies the reseller that the order has been cancelled. Constraint(s): • The system is offline, or the reseller does not have access to the internet, and they are not able to cancel their order at that time. • The system should not allow resellers the option to cancel an order if it does not have a status of “Pending” assigned.
Business rules applicable to this requirement	• Only resellers should have access to this functionality. • Only orders with a “Pending” status can be cancelled

Revision date and Revision number:	12/07/2022
Criticality/Priority:	Medium

Table 89-5.18. Cancel Reseller Order requirement

Requirement	Explanation
Requirement number:	5.18
Requirement name (use case name):	Cancel reseller order
Requirement short description:	The system must allow the administrator to cancel an order placed by a reseller on the system.
Requirement detailed description and constraints:	The administrator wishes to cancel an order placed by a reseller on the system. The reseller who placed the order will then receive an email informing them of the cancellation. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system • The status of the order must be on processing
Revision date and Revision number:	18/08/2022
Criticality/Priority:	High

Table 90-5.19. Approve/Reject Reseller Order requirement

Requirement	Explanation
Requirement number:	5.19
Requirement name (use case name):	Approve/Reject Reseller Order
Requirement short description:	The system must allow the administrator to approve or reject a reseller order

Requirement detailed description and constraints:	When the administrator wants to accept or reject an order, they will search for the order and then confirm its approval or rejection. The system will then update the order status and send an approval/rejection email to the reseller. Constraint(s): The order status must be "Pending"
Business rules applicable to this requirement	• The administrator must be logged in the system • The reseller is notified by email of their order status
Revision date and Revision number:	18/08/2022 Version 1
Criticality/Priority:	High

Table 91 -5.20. Dispatch Order requirement

Requirement	Explanation
Requirement number:	5.20
Requirement name (use case name):	Dispatch order
Requirement short description:	The system must allow the administrator to dispatch an order placed on the system.
Requirement detailed description and constraints:	The administrator wishes to dispatch an order placed on the system. The administrator will provide the tracking number and the client who placed the order will receive an SMS informing them of their order dispatch. The order status will then change to "Dispatched" Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	High

Table 92 -5.21. Log Back Order requirement

Requirement	Explanation
Requirement number:	5.21
Requirement name (use case name):	Log Back Order
Requirement short description:	The system must allow the administrator to add a reseller order that cannot be fulfilled due to insufficient stock to the orders backlog. The reseller who placed the order must be informed that their order will be delayed.
Requirement detailed description and constraints:	• The administrator should be allowed to add a reseller order to the orders backlog if there are insufficient stock available to fulfil the order at the time. • The reseller's order status should be updated to reflect that it will be a delayed order. • The reseller must be informed that their order will be delayed via an email that is sent from the system. Constraint(s): The reseller's order should have a pending or processing status assigned in order for the administrator to indicate the order as being delayed.
Business rules applicable to this requirement	• Only administrator users should have access to this functionality. • The reseller order must be in a "Pending" or "Processing" status in order for the administrator to request the system to add it to the orders backlog.
Revision date and Revision number:	30/08/2022
Criticality/Priority:	High

Table 93 -5.22. Confirm Order requirement

Requirement	Explanation
Requirement number:	5.22
Requirement name (use case name):	Confirm Order

Requirement short description:	A reseller should be allowed to indicate on the system whether they wish to accept their order which has been added to the orders backlog.
Requirement detailed description and constraints:	• The reseller who has placed the backlogged order should be allowed to accept the order on the system. • This functionality can only be used if the order has been captured as "Delayed" on the system. • An order confirmation email has to be sent to the reseller's email address once they have indicated that they wish to accept the delayed order. • The reseller should be allowed only 7 days to confirm the order. • Once accepted by the reseller, the order's status should be updated to a state which reflects that the order is being processed. Constraint(s): • The system is offline or the reseller does not have access to the internet, resulting in the reseller not being able to accept/confirm the backlogged order. • The reseller is not able to confirm the delayed order once 7 days have passed from the date and time the order has been backlogged.
Business rules applicable to this requirement	• The order to be confirmed must be in a "Delayed" state and only the reseller who has placed the order should be allowed to accept it using this functionality. • An order confirmation email has to be sent to the reseller's email address to indicate that the order has been confirmed and that it is being processed.
Revision date and Revision number:	30/08/2022
Criticality/Priority:	High

Table 94 -5.23. Reject Order requirement

Requirement	Explanation
Requirement number:	5.23
Requirement name (use case name):	Reject Order

Requirement short description:	A reseller should be allowed to indicate on the system that they wish to reject a delayed order they have placed on the system.
Requirement detailed description and constraints:	• The reseller who has placed the backlogged order should be allowed to reject the order on the system. • This functionality can only be used if the order has been captured as "Delayed" on the system. • Once rejected by the reseller, the order's status should be updated to a state which reflects that the order has been rejected. Constraint(s): • The system is offline or the reseller does not have access to the internet, resulting in the reseller not being able to reject the backlogged order.
Business rules applicable to this requirement	• The order to be rejected must be in a "Delayed" state and only the reseller who has placed the order should be allowed to reject it.
Revision date and Revision number:	30/08/2022
Criticality/Priority:	High

Table 95 -5.24. Send Order Confirmation Reminder requirement

Requirement	Explanation
Requirement number:	5.24
Requirement name (use case name):	Send order confirmation reminder
Requirement short description:	The system must send out an order confirmation reminder to the resellers if their order has been modified.
Requirement detailed description and constraints:	If a reseller has placed an order on the system and their order has been modified, the system will send them an order confirmation reminder to accept or reject the modified order before it gets automatically cancelled. Constraint(s): None

Business rules applicable to this requirement	• Only resellers should receive order confirmation reminders. • Reminders to be sent via email.
Revision date and Revision number:	03/09/2022 Version 1
Criticality/Priority:	Medium

Table 96 - 5.25. Update Order Confirmation Time requirement

Requirement	Explanation
Requirement number:	5.25
Requirement name (use case name):	Update order confirmation time
Requirement short description:	The system must allow the administrator to update the order confirmation time on the system.
Requirement detailed description and constraints:	All time required details such as the time value can be updated and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can update a time.
Revision date and Revision number:	03/09/2022 Version 2
Criticality/Priority:	Medium

6.2.6. Query Reason Subsystem

Table 97 – 6.1. Create query reason requirement

Requirement	Explanation
Requirement number:	6.1
Requirement name (use case name):	Create query reason
Requirement short description:	The system must allow the administrator to add a query reason on the system.
Requirement detailed description and constraints:	All query reason's required details such as the query reason name must be added and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can add a new query reason.
Revision date and Revision number:	11/03/2022
Criticality/Priority:	High

Table 98 – 6.2. Serach query reason requirement

Requirement	Explanation
Requirement number:	6.2
Requirement name (use case name):	Search query reason
Requirement short description:	The system must allow the administrator to search through all existing query reasons on the system.

Requirement detailed description and constraints:	The administrator wants to search for a specific query reason on the system. The query reason's details such as the query reason name can be used as a search query. The query reason matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	The administrator must be logged in to the system.
Revision date and Revision number:	11/03/2022
Criticality/Priority:	Medium

Table 99 – 7.3. Update query reason requirement

Requirement	Explanation
Requirement number:	6.3
Requirement name (use case name):	Update query reason
Requirement short description:	The system must allow the administrator to update a query reason on the system.
Requirement detailed description and constraints:	All query reason's required details such as the query reason name can be updated and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can update a query reason.
Revision date and Revision number:	11/03/2022
Criticality/Priority:	High

Table 100 – 7.4. Delete query reason requirement

Requirement	Explanation
Requirement number:	6.4
Requirement name (use case name):	Delete query reason

Requirement short description:	The system must allow the administrator to delete a query reason on the system.
Requirement detailed description and constraints:	The administrator wants to delete a query reason on the system. The administrator selects the required query reason, confirms deletion and the query reason is removed from the query reason catalogue. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can delete a query reason. A query reason that has been used on the system before cannot be deleted entirely on the system.
Revision date and Revision number:	11/03/2022
Criticality/Priority:	Medium

Table 101 – 6.5 Review Order Query requirement

Requirement	Explanation
Requirement number:	6.5
Requirement name (use case name):	Review Order Query
Requirement short description:	The system must allow the administrator and sales assistant to provide feedback to an order query
Requirement detailed description and constraints:	This system must allow the administrator or sales assistant to view and provides feedback to customer's or reseller's order query on system system Constraint(s): None
Business rules applicable to this requirement	• Only the administrator or sales assistant can provide feedback to an order query.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 102 – 6.6. View Order Query Feedback requirement

Requirement	Explanation
Requirement number:	6.6
Requirement name (use case name):	View Order Query Feedback
Requirement short description:	The system must allow the customers and resellers to view their query feedback on the system.
Requirement detailed description and constraints:	The customer or reseller will be able to view the feedback of a query they submitted on the system. The system retrieves the selected order query details from the relevant tables and displays the feedback provided by the administrator. Constraint(s): None
Business rules applicable to this requirement	• Only the logged in customer or reseller should be allowed to view their submitted order queries.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

6.2.7. Review Order Subsystem

Table 103 – 8.1.Add review reason requirement

Requirement	Explanation
Requirement number:	7.1
Requirement name (use case name):	Create Review Reason
Requirement short description:	The system must allow the administrator to add review reason on the option list.
Requirement detailed description and constraints:	The administrator will be able to add appropriate reasons for product reviews including a return order option for customers to choose from when they want to review their products. Constraint(s): None

Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add new review reason.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	High

Table 104 – 8.2. Search review reason requirement

Requirement	Explanation
Requirement number:	7.2
Requirement name (use case name):	Search Review Reason
Requirement short description:	The system must allow the administrator to search for reviews reasons.
Requirement detailed description and constraints:	The administrator wants to search review reasons for different products and filter by review reason on the system. The system will retrieve the search results and display them on the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can search for review reason.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	8.2

Table 105 – 8.3. Update review reason requirement

Requirement	Explanation
Requirement number:	7.3
Requirement name (use case name):	Update Review Reason
Requirement short description:	The system must allow the administrator to update the reviews
Requirement detailed description and constraints:	The system can allow the administrator to change a review reason by change the wording or adding more information to the review reason. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can update review reason.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	Medium

Table 106 – 8.4. Delete review reason requirement

Requirement	Explanation
Requirement number:	7.4
Requirement name (use case name):	Delete Review Reason
Requirement short description:	The system must allow the administrator to delete a review reason.
Requirement detailed description and constraints:	The administrator will be able to select a review and delete it if the review is inappropriate or irrelevant to the products. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can delete a review reason.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	Medium

Table 107 – 8.5. View order review requirement

Requirement	Explanation
Requirement number:	7.5

Requirement name (use case name):	View Order Review
Requirement short description:	The system must allow the administrator to view all order reviews sent by customers.
Requirement detailed description and constraints:	The system administrator will have a choice to display all order reviews where the system will group all orders and their reviews and display them. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can review a review reason.
Revision date and Revision number:	06 /03/2022 Version 1
Criticality/Priority:	Medium

6.2.8. Inventory Management Subsystem

Table 108 – 8.1.Add inventory item requirement

Requirement	Explanation
Requirement number:	8.1
Requirement name (use case name):	Add Inventory Item
Requirement short description:	The system should allow authorized personnel to create new inventory items on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager role should have the necessary permissions to add new inventory items on the system as our client might expand their list of suppliers and therefore the different inventory items which can be procured. Details to be captured include: • Inventory Item Name • Inventory Type • Quantity On Hand • Minimum Quantity (Used to trigger low inventory level alert) Constraint(s): Cost price for new inventory item(s) to be added will not be captured and tracked.

Business rules applicable to this requirement	• No duplicate entries for inventory items may exist on the system at any point in time. • An inventory item to be created must have an existing inventory type assigned. • Cost price of inventory items is not to be captured. • The inventory item to be added must have a starting quantity value assigned and it cannot be a negative number. • Only the system administrator and inventory manager should be allowed to add new inventory items for use on the system.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 109 – 8.2. Search inventory item requirement

Requirement	Explanation
Requirement number:	8.2
Requirement name (use case name):	Search Inventory Item
Requirement short description:	The system must allow authorized system users to search for a particular inventory item among all that are defined on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager should have the necessary permissions to search for the details of a particular inventory item by name. The list of inventory items displayed should be filtered according to what search value has been specified and inventory items can only be searched by the name or inventory type associated with each instance. Constraint(s): Search inventory item functionality will only exist for the Name and Type of the inventory items.
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to use this functionality. • Allow search functionality based on the name of an inventory item.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 110 – 8.3. Update inventory item details requirement

Requirement	Explanation
Requirement number:	8.3
Requirement name (use case name):	Update Inventory Item Details
Requirement short description:	The system must allow authorized system users to update a particular inventory item currently existing on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary role permissions to update the Name, Type and Quantity values of each existing inventory item. The name must always be unique across all existing inventory item instances and quantity can never be specified as being less than zero. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to update the details of inventory items defined on the system. • The client requires the ability to update the name, inventory type and quantity on hand for each existing inventory item. • No duplicate inventory item names may exist at any time on the system. The system should validate this before committing the changes.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 111 – 8.4. Delete inventory item requirement

Requirement	Explanation
Requirement number:	8.4
Requirement name (use case name):	Delete Inventory Item
Requirement short description:	The system must allow authorized system users to remove a particular inventory item's details from the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary role permissions to remove an inventory item that is no longer required for use on the system. Constraint(s): None

Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to delete an existing inventory item that is no longer relevant. • An inventory item cannot be deleted if it is assigned to a finished good.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 112 – 8.5. Add inventory type requirement

Requirement	Explanation
Requirement number:	8.5
Requirement name (use case name):	Create Inventory Type
Requirement short description:	The system must allow for the classification or categorization of inventory items by type.
Requirement detailed description and constraints:	The system administrator and inventory manager should have the necessary role permissions to create a new inventory type that does not already exist on the system. The inventory type to be created will be always have to be unique and is to include the name of the inventory category only. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be permitted to add new inventory type instances. • The inventory item instance to be created has to be unique and should not already exist.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 113 – 8.6. Search inventory type requirement

Requirement	Explanation
Requirement number:	8.6
Requirement name (use case name):	Search Inventory Type
Requirement short description:	The system must allow authorized system users to search for a particular inventory type among all that are defined on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager should have the necessary permissions to search for the details of a particular inventory type by name. The list of inventory types displayed should be filtered according to what search value has been specified and inventory types can only be searched for by using its name. • System administrator and inventory manager roles should be allowed to view a specific inventory type's details by selecting it from the search results displayed. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to use this functionality. • Allow search functionality based on the name of inventory types.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 114 – 8.7. Update inventory type details

Requirement	Explanation
Requirement number:	8.7
Requirement name (use case name):	Update Inventory Type Details
Requirement short description:	The system must allow authorized system users to update a particular inventory type that has already been defined on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary permissions to update the details of a particular inventory type existing on the system. The system is to check whether the updated name value is unique before committing the change. Details to be updated include:

	• Inventory Type Name Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to use this functionality. • Validate whether the updated inventory type instance's name value is unique across all instances existing on the system before saving updated details to the system's database. • Null values are not to be permitted when attempting to update an inventory type.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 115 – 8.8. Delete inventory type requirement

Requirement	Explanation
Requirement number:	8.8
Requirement name (use case name):	Delete Inventory Type
Requirement short description:	The system must allow authorized system users to remove a particular inventory type's detail from the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary role permissions to remove an inventory type that is no longer required for use on the system and which is not currently assigned to an inventory item. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to delete an existing inventory type that is no longer relevant. • The system should validate whether the inventory type is assigned to any inventory item(s) on the system and prevent the deletion if the inventory type has been assigned.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 116 –8.12. Add write-off reason requirement

Requirement	Explanation
Requirement number:	8.9
Requirement name (use case name):	Create Write-Off Reason
Requirement short description:	The system should allow authorized personnel to define a new write-off reason on the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary permissions to add new write-off reason on the system. The details to be captured include: • Name Constraint(s): None
Business rules applicable to this requirement	• No duplicate entries for write-off reason names may exist on the system at any point in time. • The system should only have to capture the name of the new write-off reason instance to be created.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 117 – 8.13. Search write-off reason requirement

Requirement	Explanation
Requirement number:	8.10
Requirement name (use case name):	Search Write-Off Reason

Requirement short description:	The system must allow authorized system users to search for a specific write off reason by name.
Requirement detailed description and constraints:	The system administrator and inventory manager should have the necessary permissions to search for the details of a particular write- off reason defined on the system by name. The system should retrieve all search results that matched the search query specified and the system administrator or inventory manager can select the option on the interface to view the selected write-off reason's details. Constraint(s): Search functionality will only support for the searching of a write-off reason by name.
Business rules applicable to this requirement	• Only the system administrator and inventory manager roles should be able to use this functionality. • Allow authorized users to search for a write-off reason by name among all existing records by name.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 118 – 8.14. Update write-off reason details requirement

Requirement	Explanation
Requirement number:	8.11

Requirement name (use case name):	Update Write-Off Reason Details
Requirement short description:	The system must allow authorized system users to update a particular write-off reason's details.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary role permissions to update the name of a write-off reason currently defined on the system. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to update the details of an existing write-off reason. • The write-off reason's name should always be unique among all existing write-off reasons on the system and the system is to validate this before committing changes to the database.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 119 – 8.12. Delete write-off reason requirement

Requirement	Explanation

Requirement number:	8.12
Requirement name (use case name):	Delete Write-Off Reason
Requirement short description:	The system must allow authorized system users to remove a particular write-off reason's details from the system.
Requirement detailed description and constraints:	The system administrator and inventory manager roles should have the necessary role permissions to remove a write-off reason that is no longer required for use on the system. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be able to delete an existing write-off reason.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 120 – 8.13. Write-off inventory requirement

Requirement	Explanation

Requirement number:	8.13
Requirement name (use case name):	Write-Off Inventory
Requirement short description:	The system must allow the administrator to write-off an inventory item.
Requirement detailed description and constraints:	The administrator will be able to the administrator wishes to write off an inventory item out of the system by adjusting the quantity on hand using the write-off quantity. Constraint(s): None
Business rules applicable to this requirement	• Only the administrator can write off an Inventory Item.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 121 – 8.14. Write-off Product requirement

Requirement	Explanation
Requirement number:	8.14
Requirement name (use case name):	Write-Off Product
Requirement short description:	The system must allow the administrator to write-off a product.
Requirement detailed description and constraints:	The administrator will be able to the administrator wishes to write off a product out of the system by adjusting the quantity on hand using the write-off quantity. Constraint(s): None

Business rules applicable to this requirement	• Only the administrator can write off a product
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 122 – 8.15. Convert Inventory to Product requirement

Table 123 – 8.16. Search Procured Inventory requirement

Requirement	Explanation
Requirement number:	8.16
Requirement name (use case name):	Search procured inventory
Requirement short description:	The system must allow the administrator or inventory manager to search for procured inventory items.
Requirement detailed description and constraints:	The administrator or inventory manager wishes to search for an inventory item procured on the system. Details such as the inventory item, date logged, and quantity received can be used to search for a procured inventory item. Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	Medium

Table 124 – 8.17. View Procured Inventory Details requirement

Requirement	Explanation
Requirement number:	8.17

Requirement name (use case name):	View procured inventory
Requirement short description:	The system must allow the administrator or inventory manager to view the details of a procured inventory item.
Requirement detailed description and constraints:	The administrator or inventory manager wishes to view the details of a procured inventory item on the system. Details such as the inventory item, invoice number, date logged, can be viewed. Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	Medium

Table 125 – 8.18. Capture procured inventory requirement

Requirement	Explanation
Requirement number:	8.18
Requirement name (use case name):	Capture Procured Inventory
Requirement short description:	Allow the system administrator and inventory manager roles necessary permissions to capture items inventory received from suppliers on the system.
Requirement detailed description and constraints:	The system should allow the system administrator and inventory manager roles to capture inventory that has been received from suppliers on the system along with the quantity of each inventory items received. The following details are to be captured for inventory received: • Supplier Name • Supplier Order Invoice Number • Inventory Item • Quantity Received Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager should be allowed to capture inventory on the system which has been procured from suppliers.

	• Allow ability to upload Supplier Order Invoice when procuring inventory • A supplier order number should be specified for all inventory being captured as procured from suppliers to serve as a reference when auditing transactions reports. • Allow functionality to enable optionally uploading physical documentation such as the supplier order invoice.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 126 – 8.19. Capture Returned Product requirement

Requirement	Explanation
Requirement number:	8.16
Requirement name (use case name):	Capture Returned Product(s)
Requirement short description:	Allow the system administrator and inventory manager roles necessary permissions to capture products returned from customerand resellers on the system.
Requirement detailed description and constraints:	The system should allow the system administrator and inventory manager roles to capture products that has been received from customers and/or resellers along with the quantity of each productreceived. The following details are to be captured for product returns received: • Order Number • Product Name • Quantity Returned Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager shouldbe allowed to capture products returned by customers and resellers. • The quantity of returned products specified should updatethe count of the affected products returned accurately. • A return reason has to be specified. • An order number has to be captured for every return logged on the system.
Revision date and Revision number:	06/03/2022 Version 1
Criticality/Priority:	High

Table 127 – 8.20. Package Order requirement

Requirement	Explanation
Requirement number:	8.17
Requirement name (use case name):	Package Order
Requirement short description:	Allow authorized users to capture the amount of finished goods to be allocated in the preparation and packaging process of an order.
Requirement detailed description and constraints:	The system should allow the system administrator, employees and the inventory manager(s) to allocate finished goods to orders. A particular order will be prepared based on the quantity of various finished products ordered. The sales activity can be logged manually to confirm the order has been prepared with the right quantities of finished goods for each order respectively. The systemis to update the quantity of finished goods on hand accordingly the moment an order is packaged. The following details will be captured when using this activity: • Sales Order Number • Products • Quantity Constraint(s): Only one type of finished product along with its quantities can be captured at a time.
Business rules applicable to this requirement	• The system should be able to support picking and packingactivities to ensure that orders are prepared correctly. • All finished products allocated for the preparation of an orderhas to be captured along with the specific quantity of each finished good. • The system should update the count of products on handaccordingly the moment an order has been packaged. • Order Number should be captured for each order packaged. • The system administrator, employee and inventory manager roles should be authorized to use this functionality.
Revision date and Revision number:	06/03/2022 Version 1
Criticality/Priority:	High

Table 128 – 8.21. Send low inventory level alert requirement

Requirement	Explanation
Requirement number:	8.21
Requirement name (use case name):	Send Low Inventory Level Alert
Requirement short description:	The system should notify the system administrator and inventory manager(s) of when an inventory item reaches a specific quantity.
Requirement detailed description and constraints:	The system should send an email to the system administrator and inventory manager(s) of the system once an inventory item reaches a pre-defined quantity to inform them that new inventory has to be procured from a supplier. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator and inventory manager roles should be notified of low inventory count. • Low inventory alerts have to be sent via email. • Low inventory level should be set to a count of 50 initially for all inventory items defined on the system.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	High

Table 129 – 8.22. Send Inventory Out of Stock Alert requirement

Requirement	Explanation
Requirement number:	8.22
Requirement name (use case name):	Send Inventory Out of Stock Alert
Requirement short description:	They system should notify the administrator and inventory manager when an inventory item has run out of stock
Requirement detailed description and constraints:	The system sends an email to the administrator and inventory manager once an inventory item has reached the value of zero. This will inform them that new inventory needs be procured from a supplier. Constraint(s): None

Business rules applicable to this requirement	• Only the administrator and inventory manager will be notified • The alert will be sent by email • The inventory item quantity must be equal to zero foe the alert to be sent
Revision date and Revision number:	18/08/2022 Version 1
Criticality/Priority:	High

6.2.9. Location Subsystem

Table 130 – 9.1. Add country requirement

Requirement	Explanation
Requirement number:	9.1
Requirement name (use case name):	Create Country
Requirement short description:	The system must allow the administrator to add their country on the system
Requirement detailed description and constraints:	All the necessary Country details need to be added on the system. The countries that are added are country that the client sells to. Constraint(s): none
Business rules applicable to this requirement	• Only the administrator can add a new country to the system • The administrator must be logged into the system
Revision date and Revision number:	06/03/2022

Criticality/Priority:	High

Table 131 – 10.2. Search country requirement

Requirement	Explanation
Requirement number:	9.2
Requirement name (use case name):	Search Country
Requirement short description:	The system must allow the administrator to search through existing countries on the system
Requirement detailed description and constraints:	The administrator wishes to search through the existing countries on the system. The administrator can use the countries details for a search query and the system will retrieve the country that matches Constraint(s): the query must be spelt correctly
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 132 – 10.3. Update country requirement

Requirement	Explanation
Requirement number:	9.3
Requirement name (use case name):	Update Country
Requirement short description:	The system must allow the administrator to update the existing countries on the system
Requirement detailed description and constraints:	The administrator can update various details on the existing countries on the system such as the country name Constraint(s): updates can only be done on existing countries
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 133 – 10.4. Delete country requirement

Requirement	Explanation
Requirement number:	14.4
Requirement name (use case name):	Delete Country
Requirement short description:	The system must allow the administrator to delete an existing country or countries on the system
Requirement detailed description and constraints:	The administrator can delete a country and remove it from the system Constraint(s): only existing countries on the system can be deleted
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 134 – 9.5. Add province

Requirement	Explanation
Requirement number:	9.5
Requirement name (use case name):	Add Province
Requirement short description:	The system must allow the administrator to add provinces on the system
Requirement detailed description and constraints:	All the necessary Province details need to be added on the system. The administrator can add details such as a provinces name Constraint(s): only province with countries that are already in the system can be added to the system
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022

Criticality/Priority:	High

Table 135 – 9.6. Search province details requirement

Requirement	Explanation
Requirement number:	9.6
Requirement name (use case name):	Search Province
Requirement short description:	The system must allow the administrator to search through existing countries on the system
Requirement detailed description and constraints:	The administrator wishes to search through the existing provinces on the system. The administrator can use the province details for a search query and the system will retrieve the province that matches Constraint(s): the query must be spelt correctly
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 136 – 9.7. Update province details requirement

Requirement	Explanation
Requirement number:	9.7
Requirement name (use case name):	Update Province details
Requirement short description:	The system must allow the administrator to update the existing provinces on the system
Requirement detailed description and constraints:	The administrator can update various details on the existing provinces on the system such as the province name Constraint(s): updates can only be done on existing provinces on the system
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022

Criticality/Priority:	High

Table 137 –9.8. Delete Province requirement

Requirement	Explanation
Requirement number:	9.8
Requirement name (use case name):	Delete Province
Requirement short description:	The system must allow the administrator to delete an existing province(s) on the system
Requirement detailed description and constraints:	The administrator can delete a province and remove it from the system Constraint(s): only existing provinces on the system can be deleted
Business rules applicable to this requirement	The user must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 138 – 9.9. Add city requirement

Requirement	Explanation
Requirement number:	9.9
Requirement name (use case name):	Create City
Requirement short description:	The system must allow the administrator to add provinces on the system
Requirement detailed description and constraints:	All the necessary City details need to be added on the system. The administrator must add details such as a city name Constraint(s): only cities with provinces that are already in the system can be added to the system
Business rules applicable to this requirement	The administrator must be logged into the system

Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 139 – 10.10. Search city details requirement.

Requirement	Explanation
Requirement number:	9.10
Requirement name (use case name):	Search City details
Requirement short description:	The system must allow the administrator to search through existing countries on the system
Requirement detailed description and constraints:	The administrator wishes to search through the existing cities on the system. The administrator can use the city details for a search query and the system will retrieve the city that matches Constraint(s): the query must be spelt correctly and only existing cities on the system can be retrieved
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 140 – 9.11. Update city details requirement

Requirement	Explanation
Requirement number:	9.11
Requirement name (use case name):	Update City details
Requirement short description:	The system must allow the administrator to update the existing cities on the system
Requirement detailed description and constraints:	The administrator can update various details on the existing cities on the system such as the city name Constraint(s): updates can only be done on existing cities on the system
Business rules applicable to this requirement	The administrator must be logged into the system

Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 141 – 912. Delete city requirement

Requirement	Explanation
Requirement number:	9.12
Requirement name (use case name):	Delete City
Requirement short description:	The system must allow the administrator to delete an existing city(s) on the system
Requirement detailed description and constraints:	The administrator can delete a city and remove it from the system Constraint(s): only existing cities on the system can be deleted
Business rules applicable to this requirement	The administrator must be logged into the system
Revision date and Revision number:	06/03/2022
Criticality/Priority:	High

Table 142 – 9.13. Add suburb requirement

Requirement	Explanation
Requirement number:	9.13
Requirement name (use case name):	Add Suburb
Requirement short description:	The system must allow the administrator to add a suburb on the system.
Requirement detailed description and constraints:	All required suburb details such as the suburb name and city must be added and saved onto the system. Constraint(s): None

Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add a new suburb.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 143 – 9.14. Search suburb requirement

Requirement	Explanation
Requirement number:	9.14
Requirement name (use case name):	Search suburb
Requirement short description:	The system must allow the administrator to search through all existing suburbs on the system.
Requirement detailed description and constraints:	The administrator wants to search for a specific suburb on the system. The suburb's details such as the suburb name and city can be used as a search query. The suburb matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	The administrator must be logged in to the system.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Medium

Table 144 – 9.15. Update suburb details requirement

Requirement	Explanation
Requirement number:	9.15
Requirement name (use case name):	Update suburb details
Requirement short description:	The system must allow the administrator to update a suburb on the system.
Requirement detailed description and constraints:	All required suburb details such as the suburb name and city can be updated and saved onto the system.

	Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can update a suburb.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	High

Table 145 – 9.16. Delete suburb requirement

Requirement	Explanation
Requirement number:	9.16
Requirement name (use case name):	Delete suburb
Requirement short description:	The system must allow the administrator to delete a suburb on the system.
Requirement detailed description and constraints:	The administrator wants to delete a suburb on the system. The administrator selects the required suburb, confirms deletion and the suburb is removed. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. Only the administrator can delete a suburb.
Revision date and Revision number:	05/03/2022
Criticality/Priority:	Medium

6.2.10. Reporting Subsystem

Table 146 – 10.1. Generate Inventory List Report requirement

Requirement	Explanation
Requirement number:	10.1
Requirement name (use case name):	Generate Inventory List Report
Requirement short description:	The system should allow the administrator or the inventory manager to generate and export an inventory list report on the system
Requirement detailed description and constraints:	This use case describes an event where the administrator or the inventory manager wishes to generate an inventory list report on the system. The administrator or the inventory manager wishes to generate an inventory list report and the system will retrieve the details regarding the company's inventory and generate a list report to display on the screen. Constraint(s): None
Business rules applicable to this requirement	Only the administrator and the inventory manager can generate an inventory list report
Revision date and Revision number:	07/08/2022
Criticality/Priority:	High

Table 147 – 10.2 Generate Sales (by Top 5 Clients) Report requirement

Requirement	Explanation
Requirement number:	10.2
Requirement name (use case name):	Generate Sales (by Top 5 Clients) Report
Requirement short description:	The system must allow the administrator or sales assistant to generate sales report showing the top five clients.

Requirement detailed description and constraints:	The system must allow the administrator or sales assistant to generate a sales report with a detailed graphical representation of the top five clients. Constraint(s): The administrator or sales assistant cannot generate sales report without an internet connection
Business rules applicable to this requirement	• None.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 148 – 10.3 Generate Product List Report requirement

Requirement	Explanation
Requirement number:	10.3
Requirement name (use case name):	Generate product list report
Requirement short description:	The system must allow the administrator or inventory manager to generate a product list report.
Requirement detailed description and constraints:	The administrator or inventory manager wishes to generate a product list report on the system. The generated report includes all products existing on the system, including the product name, product quantity and the customer and reseller prices.

	Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	High

Table 149 – 10.4. Generate Customer List Report requirement

Requirement	Explanation
Requirement number:	10.4
Requirement name (use case name):	Generate Customer List Report
Requirement short description:	The administrator must be able to generate a customer list report on the system
Requirement detailed description and constraints:	When the administrator wants to generate a customer's report, the system will display the report results and provide the option for it to be downloaded onto the administrator's device.

	Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in the system
Revision date and Revision number:	18/08/2022 Version 1
Criticality/Priority:	High

Table 150 – 10.5. Generate Reseller List Report requirement

Requirement	Explanation
Requirement number:	10.5
Requirement name (use case name):	Generate Reseller List Report
Requirement short description:	The administrator must be able to generate a reseller list report on the system
Requirement detailed description and constraints:	When the administrator wants to generate a reseller report, the system will display the report results and provide the option for it to be downloaded onto the administrator's device. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in the system
Revision date and Revision number:	18/08/2022 Version 1
Criticality/Priority:	High

Table 151 – 10.6 Generate Produced Products Report requirement

Requirement	Explanation
Requirement number:	10.6

Requirement name (use case name):	Generate Produced Products Report
Requirement short description:	The system must allow the administrator to generate a transactional report containing all the produced product records.
Requirement detailed description and constraints:	The administrator or inventory manager wishes to generate a report containing all the production records on the system. A date range filter criteria can be specified to view only transactions within a specific timeframe. Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system • The administrator must be allowed to filter the report details by Start Date and End Date
Revision date and Revision number:	19/08/2022
Criticality/Priority:	High

Table 152 – 10.7. Generate Order (by Status) Report requirement

Requirement	Explanation
Requirement number:	10.7
Requirement name (use case name):	Generate Orders (by Status) Report
Requirement short description:	The system must allow the administrator or sales assistant to generate a report that contains all order details which is grouped by order status and payment status.
Requirement detailed description and constraints:	A report can be viewed which contains all orders details, which is grouped according to status and payment status. The report also counts the amount of orders within a particular status to give a brief overview, and the running totals per status and per payment status is calculated and displayed with the generation of the report. Constraint(s): The system is offline and the system administrator will not be able to view the Orders By Status Report details.

Business rules applicable to this requirement	• Only the administrator of the system should be allowed to view the Orders By Status Report.
Revision date and Revision number:	19/08/2022
Criticality/Priority:	High

Table 153 – 10.8. Generate Order (by Region) Report requirement

Requirement	Explanation
Requirement number:	10.8
Requirement name (use case name):	Generate Order (by Region) Report
Requirement short description:	The system must allow the administrator to view and export the order by region report
Requirement detailed description and constraints:	The administrator wishes to view and export the order by region report. The order, province and city entities are sent to Power BI in order to generate the report. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system • The administrator must be logged in to the Power BI Service
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

Table 154– 10.9. Generate Sales (by Product) Report requirement

Requirement	Explanation
Requirement number:	10.9
Requirement name (use case name):	Generate Sales (by Product) Report
Requirement short description:	The system must allow the administrator or sales assistant to generate sales report by product.

Requirement detailed description and constraints:	The system must allow the administrator or sales assistant to generate a sales report with a detailed graphical representation of product sales performance per product. Constraint(s): The administrator or sales assistant cannot generate sales report without an internet connection
Business rules applicable to this requirement	• None.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 155 – 10.10. Generate Sales (by Month) Report requirement

Requirement	Explanation
Requirement number:	10.10
Requirement name (use case name):	Generate Sales (by Month) Report
Requirement short description:	The system must allow the administrator or sales assistant to generate sales report by month.
Requirement detailed description and constraints:	The system must allow the administrator or sales assistant to generate a sales report with a detailed graphical representation of monthly performance of sales. Constraint(s): The administrator or sales assistant cannot generate sales report without an internet connection
Business rules applicable to this requirement	• None.
Revision date and Revision number:	18/08/2022 Version 1.0
Criticality/Priority:	High

Table 156 – 10.11. View Dashboard Overview requirement

6.2.11. Supplier Subsystem

Table 157 – 12.1. Create supplier requirement

Requirement	Explanation
Requirement number:	11.1
Requirement name (use case name):	Create supplier
Requirement short description:	The system must allow the administrator to add a supplier on the system.
Requirement detailed description and constraints:	All supplier's required details such as the supplier's name, description, inventory type as well as the relevant contact details must be added and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add a new supplier.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	High

Table 158 – 12.2 Search supplier requirement

Requirement	Explanation
Requirement number:	11.2
Requirement name (use case name):	Search supplier
Requirement short description:	The system must allow the administrator to search through all existing suppliers on the system.
Requirement detailed description and constraints:	The administrator wants to search for a specific supplier on the system. The supplier's details such as the supplier's name can be used as a search query. The supplier matching the search query will then be displayed on the system. Constraint(s): None
Business rules applicable to this requirement	The administrator must be logged in to the system.
Revision date and Revision number:	03/06/2022
Criticality/Priority:	Medium

Table 159 – 12.3. Update supplier requirement

Requirement	Explanation
Requirement number:	11.3
Requirement name (use case name):	Update supplier
Requirement short description:	The system must allow the administrator to update a supplier on the system.
Requirement detailed description and constraints:	All supplier's required details such as the supplier's name, description, inventory type as well as the relevant contact details can be updated and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can update a supplier.

Revision date and Revision number:	10/03/2022
Criticality/Priority:	High

Table 160 – 12.4. Delete supplier requirement

Requirement	Explanation
Requirement number:	11.4
Requirement name (use case name):	Delete supplier
Requirement short description:	The system must allow the administrator to delete a supplier on the system.
Requirement detailed description and constraints:	The administrator wants to delete a supplier on the system. The administrator selects the required supplier, confirms deletion and the supplier is removed from the supplier catalogue. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can delete a supplier. • A supplier from which inventory has been received or ordered cannot be deleted entirely on the system.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	Medium

Table 161 – 12.5. Send supplier order requirement

Requirement	Explanation
Requirement number:	11.5
Requirement name (use case name):	Send supplier order
Requirement short description:	The system must allow the administrator to send an order to a supplier on the system.
Requirement detailed description and constraints:	The administrator wishes to send a supplier order on the system. Details such as the inventory items required as well as the quantity. There is also an option for an additional message that will be included in the email. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system • There must be an existing supplier on the system • There must be existing inventory items on the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	High

6.2.12. Driver Subsystem

Table 162 – 12.1 View Deliveries requirement

Requirement	Explanation
Requirement number:	12.1

Requirement name (use case name):	View Deliveries
Requirement short description:	The system must allow the delivery to view orders to deliver on the mobile application
Requirement detailed description and constraints:	The delivery driver wishes to views orders to deliver on the mobile application. The system retrieves the orders and display them on the screen Constraint(s): None
Business rules applicable to this requirement	• The system main server should be running • The delivery driver should own an android mobile application
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

Table 163 – 12.2.View Previous Deliveries requirement

Requirement	Explanation
Requirement number:	15.5
Requirement name (use case name):	View Previous Deliveries
Requirement short description:	The system must allow the delivery to view previous deliveries on the mobile application
Requirement detailed description and constraints:	The user wishes to view previous deliveries after completing a delivery Constraint(s): None
Business rules applicable to this requirement	• The system main server should be running • The delivery driver should own an android mobile application
Revision date and Revision number:	04/09/2022

Criticality/Priority:	Medium

Table 164 – 12.3. Confirm Delivery requirement

Requirement	Explanation
Requirement number:	12.3
Requirement name (use case name):	Confirm Delivery
Requirement short description:	The system must allow the delivery to confirm a delivery after delivering an order on the mobile application
Requirement detailed description and constraints:	The delivery driver is able to confirm a delivery after completing it and the system will update the delivery table on the database. Constraint(s): None
Business rules applicable to this requirement	• The system main server should be running • The delivery driver should own an android mobile application
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

6.2.13. VAT Subsystem

Table 165 – 13.1 Create VAT requirement

Requirement	Explanation
Requirement number:	13.1
Requirement name (use case name):	Create VAT Percentage
Requirement short description:	The system should permit the system administrator(s) to add a new VAT percentage to be used on the system.
Requirement detailed description and constraints:	The Value-Added Tax percentage to be used for orders placed on the system should be allowed to be changed over time. The following details will be captured upon creating a new VAT instance on the system: • VAT Percentage • Is Active • Effective Start Date Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator(s) should be allowed to create new VAT percentages on the system. • The system administrator(s) must be logged into the system
Revision date and Revision number:	02/04/2022 Version 1
Criticality/Priority:	High

Table 166 – 13.2 Search VAT requirement

Requirement	Explanation
Requirement number:	13.2
Requirement name (use case name):	Search VAT Percentage
Requirement short description:	The system must allow the administrator(s) to search the details of a specific VAT percentage defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to search for a VAT percentage defined on the system by using the value of the percentage assigned. All VAT instances which have matched the search query should be displayed on the interface. The system should also allow the administrator to view the particular details of a VAT percentage of interest for possible modifications. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator(s) should be allowed to search for a specific VAT percentage existing on the system. • The system administrator(s) must be logged into the system
Revision date and Revision number:	02/04/2022 Version 1.0
Criticality/Priority:	Medium

Table 167 – 13.3. Update VAT Details requirement

Requirement	Explanation
Requirement number:	13.3
Requirement name (use case name):	Update VAT Percentage Details
Requirement short description:	The administrator(s) should be allowed the functionality to update the details of any or all VAT percentages already existing on the system.
Requirement detailed description and constraints:	A user with the system administrator role assigned should be allowed to update the specific details of any existing VAT percentage defined on the system. Details to be updated include: • VAT Percentage • Is Active

	Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator(s) should be allowed to update the percentage value of an already existing VAT instance. • The system administrator(s) must be logged into the system • Only one VAT percentage can be active on the system at any given time.
Revision date and Revision number:	02/04/2022 Version 1.0
Criticality/Priority:	High

Table 168 – Delete VAT requirement

Requirement	Explanation
Requirement number:	13.4
Requirement name (use case name):	Delete VAT Percentage
Requirement short description:	The system must allow the administrator(s) of the system to delete the details of a VAT percentage that has already been defined on the system.
Requirement detailed description and constraints:	The system administrator(s) should be permitted to remove an existing VAT percentage after having searched and viewed the specific VAT instance they wish to remove from the system. The interface should prompt the system administrator to confirm the removal of the specific VAT percentage existing on the system. Constraint(s): None
Business rules applicable to this requirement	• Only the system administrator(s) should be allowed to remove VAT percentages from the system. • The system administrator(s) must be logged into the system
Revision date and Revision number:	02/03/2022 Version 1
Criticality/Priority:	High

6.2.14. Help Subsystem

Table 169 – 16.1. View Help requirement

Requirement	Explanation
Requirement number:	16.1
Requirement name (use case name):	View Help Document
Requirement short description:	The system must allow the administrator to search and view help documents
Requirement detailed description and constraints:	When the administrator wants to view a help document, the system will display all the document titles available on the system. The admin can either search or select the one they wish to view. The system will then retrieve the document and display it. Constraint(s): None
Business rules applicable to this requirement	• Only administrator has access to this function
Revision date and Revision number:	04/09/2022 Version 1
Criticality/Priority:	Low

6.2.14. Reseller Return Time Subsystem

Table 170 – 15.1 Update Reseller Credit Settlement Time requirement

Requirement	Explanation
Requirement number:	15.1
Requirement name (use case name):	Create time
Requirement short description:	The system must allow the administrator to add a time on the system.
Requirement detailed description and constraints:	All time's required details such as the time value must be added and saved onto the system. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system. • Only the administrator can add a new time.
Revision date and Revision number:	10/03/2022
Criticality/Priority:	Low

6.2.15. Video Subsystem

Table 171 – 15.1. Add Video requirement

Requirement	Explanation
Requirement number:	15.1
Requirement name (use case name):	Add Video
Requirement short description:	The system must allow the administrator to add videos which are to be displayed on the about us page.
Requirement detailed description and constraints:	The administrator wishes to add a video on the system and adds the title and embedded link in order to save. The video information is then saved to the Video table in the database. Constraint(s): None

Business rules applicable to this requirement	• The administrator must be logged in to the system
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

Table 172 – 15.2. Search Video requirement

Requirement	Explanation
Requirement number:	15.2
Requirement name (use case name):	Search Video
Requirement short description:	The system must allow the administrator to search for a video they added on the system.
Requirement detailed description and constraints:	The administrator or sales assistant wishes to search for a video on the system. The administrator provides the search query and the system filters the list to retrieve the video matching the given search query. Constraint(s): None
Business rules applicable to this requirement	• The administrator or inventory manager must be logged in to the system
Revision date and Revision number:	18/08/2022
Criticality/Priority:	High

Table 173 – 15.3 Update Video Details requirement

Requirement	Explanation
Requirement number:	15.3
Requirement name (use case name):	Update Video Details

Requirement short description:	The system must allow the administrator to update videos which are to be displayed on the about us page.
Requirement detailed description and constraints:	The administrator wishes to update a video on the system and updates the title and embedded link in order to save. The video information is then saved to the Video table in the database. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

Table 174 – 15.4. Delete Video requirement

Requirement	Explanation
Requirement number:	15.4
Requirement name (use case name):	Delete Video
Requirement short description:	The system must allow the administrator to delete videos that were previously added on the system.
Requirement detailed description and constraints:	The administrator wishes to delete a video on the system and the video information is then deleted from the Video table in the database. The video is also removed form the AboutUs page. Constraint(s): None
Business rules applicable to this requirement	• The administrator must be logged in to the system
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

Table 175 – 15.5. View Video requirement

Requirement	Explanation
Requirement number:	15.5
Requirement name (use case name):	View Video
Requirement short description:	The system must allow a user to view a video on the system.
Requirement detailed description and constraints:	The user wishes to view a video embedded using YouTube on the system and is added by the administrator. Constraint(s): None
Business rules applicable to this requirement	• None
Revision date and Revision number:	04/09/2022
Criticality/Priority:	Medium

6.3. Non - Functional Requirements List

Table 176 – Non-Functional requirement list

Non-Functional Requirements	
1	Data integrity/safety
2	User-Friendly
3	Secure
4	Reliable
5	Performance
6	Web-browser compatibility
7	Access control
8	POPI protection
9	Scalability
10	Maintainability
11	Efficiently
12	Traceability

6.3.1. Non – Functional Requirements Description Details

1. Data integrity and safety

   The data the business requires to operate daily, and the data kept on its users must be kept safe on the business database and is only accessed by the managerial staff of the business.

2. User-Friendly

   The system's interface must be easy to understand and easy for all the users of the system to utilise in order to achieve their goal on the system.

3. Secure

   The system needs to be secure to use by all the users on the system. This will be achieved by the user's passwords being hashed and secure on the database.

4. Reliability

   The system needs to operate efficiently and reliably and run without failure for a given periods of time under predetermined conditions. The system needs to operate with limited critical failure and mean time between failure

5. Performance

   The systems performance is to be measured as how quickly the system responds to its users. The aim is providing a system that runs efficiently with little down time or lag

6. Web-browser capability

   The system we will be providing is a desktop website. It will have web browser capabilities that will enable user to access it so long as they have a stable internet connection

7. Access control

   The system should have access control that regulates who or what can view or use resources on the system.

8. POPI Act

   The system should ensure users that it will retain and process personal information in order to fulfil customers' orders and customers should give consent to Natuurlik for lawful processing of their information.

9. Scalability

   The system should be able to handle user demands and workload without constantly crushing so that users can have a nice user experience.

10. Maintainability

    All data on the system should be maintainable and master data should be easily changed or supported over time without the need for end users of the business to require any coding knowledge or incurring additional costs for development or restructuring of the data structures. The system should stay operational and all data that is subject to change, such as the products, inventory and supported delivery regions should be easily maintainable from the interface of the system. The system's lifespan is expected to exceed 3 years at least and should thus require a high level of maintainability and be flexible enough to adapt according to changes in the external environment for this time period, such as changing customer preferences being indicated with business intelligence reports and being able to change the product catalogue accordingly and/or pricing strategy. VAT should be updatable to comply with South Africa's latest Value Added Tax percentage to be added on the selling price.

11. Efficiency

    The system should make use of data stored on the system in an efficient manner to reduce wasting valuable system resources. This includes auto-completing fields that have already have the required data stored on the system and automating tasks that can be technically implemented. The system should be developed in such a manner that it supports concurrency control by using asynchronous requests to the server. The system has to support asynchronous calls before the system is put into production to ensure maximum efficiency in processing user requests.

12. Traceability

    The system should keep track of changes to data that is important to the system owner and end users. An audit trail is to be implemented before the system goes into production that will track all changes to master data, including inventory, finished products, products rendered on the service catalogue and VAT. The system should capture all changes made to the database where traceability is important to ensure proper governance and to enable proper oversight over core business processes to ensure fraudulent activities do not take pace.

Conclusion

This concludes the requirements analysis conducted by the ByteXpress team. The functional requirements list will be used to conduct the functional specification for the project.

7. Appendixes

7.1. Appendix A

Introduction

This appendix includes the client documentation provided by the client. This section includes the documents used in the daily operations of the business, an indication of how Natuurlik completes their orders, how they keep track of their inventory and etc.

This is an example of an invoice sent to a Reseller by Natuurlik:

NATUURLIK

TAX INVOICE

Reseller [redacted] Olympus
PRETORIA 0081

Invoice Date
25 Feb 2022

Invoice Number
INV-0213

Stromacraft Pty Ltd
10 Cedarwood crescent
Woodlands Lifestyle
Estate
PRETORIA GAUTENG
0072
SOUTH AFRICA

Description	Quantity	Unit Price	VAT	Amount ZAR
Coffee Beans 1 kg	15.00	160.00	No VAT	2,400.00
			Subtotal	2,400.00
			TOTAL VAT	0.00
			TOTAL ZAR	**2,400.00**

Due Date: 25 Feb 2022
Bank Name: Sasfin Bank
Account Name: Stromacraft Pty Ltd
Branch Code: 683 000
Account Number: 30000228020

Company Registration No: K2017245047. Registered Office: 10 Cedarwood crescent, Woodlands Lifestyle Estate, Pretoria, Gauteng, 0072, South Africa.

Figure 9 – Reseller's invoice

This is Natuurlik's pricelist.

Natuurlik Pricelist 2021

Please note that we are not VAT registered and that prices are subject to change.

Product Description	**Reseller Purchase Price**	**Minimum Market Price**
Chilli Sauce 125ml	R30,00	R35,00
Coffee Beans Medium-Dark Roast 1kg	R150,00	R180,00
Coffee Ground Medium-Dark Roast 1kg	R150,00	R180,00
Coffee Beans Medium-Dark Roast 500g	R80,00	R95,00
Coffee Ground Medium-Dark Roast 500g	R80,00	R95,00
Coffee Beans Dark Roast 500g (small batch)	R110,00	R125,00
Extra Virgin Olive oil 500ml	R70,00	R80,00
Balsamic Vinegar 500ml	R70,00	R80,00
Pure Glycerine Soap 150g	R20,00	R25,00
Raw Honey 500g	R70,00	R80,00
Venison Biltong 150g	R40,00	R45,00
Venison Biltong 250g	R60,00	R75,00
Venison Biltong >= 1kg (per kg)	R240,00	R260,00
Venison Drywors 150g	R45,00	R50,00
Venison Drywors 250g	R70,00	R80,00
Venison Drywors >= (per kg)	R260,00	R280,00
Beef Biltong 150g	R40,00	R45,00
Beef Biltong 250g	R60,00	R75,00
Beef Biltong 500g	R125,00	R145,00
Beef Biltong >= 1kg (per kg)	R250,00	R270,00
Beef Drywors 150g	R45,00	R50,00
Beef Drywors 250g	R65,00	R80,00
Beef Drywors 500g	R125,00	R145,00
Beef Drywors >= (per kg)	R250,00	R270,00
Wood biltong/snack board Partridge Wood	R160,00	R190,00
Wood biltong/snack board (Cedar, boekenhout, norfolk pine, oak, beukenhout)	R150,00	R180,00
Empty giftbox (incl woodwool and box label)	R20,00	R20,00
Nuts 100g (Macadamia nuts, Pecan nuts, Wallnuts and Cashew nuts)	R25,00	R30,00
Dried fruit 100g (Mango, Banana, Peach and Cranberry)	R25,00	R30,00

Respect yourself. Respect nature.
10 Cedarwood crescent, Woodlands Lifestyle Estate, 0072 | +27 72 596 3150

Directors
Hannes de Beer, Emile Stoman

Banking details
Account name : Stromacraft PTY Ltd
Bank : Sasfin Bank
Branch code : 683 000
Swift code : SASFZAjj
Account number : 30000228020

Figure 10 – Natuurlik's Procelist

This is an example of how orders are currently placed.

Figure 11 – Order placement process image

This is an example of how inventory is tracked currently.

	A	B	C	D	E	F	G		H
1	*ItemCode	ItemName	PurchasesUnitPrice	Stock on Hand - Cedarwood	Stock on Hand - Achilles	Stock on Hand - Total	Stock Value		
2	BORD01	Wood Snack Board	120	0	4	4	R	480,00	
3	BORD02	Wood Snack Board - Patridge	130	0	3	3	R	390,00	
4	COF001	Coffee Beans 1 kg	130	290	310	600	R	78 000,00	
5	COF002	Coffee Ground 1kg	130	110	95	205	R	26 650,00	
6	COF003	Coffee Beans 500g	70	30	41	71	R	4 970,00	
7	COF004	Coffee Ground 500g	65	5	2	7	R	455,00	
8	COF005	Coffee Beans Dark Roast 500g	85	11	12	23	R	1 955,00	
9	COF006	Coffee Beans 250g	40	0	0	0	R	-	
10	COF007	Coffee Ground 250g	40	0	0	0	R	-	
11	FRT001	Dried fruit 1kg	150	0	0	0	R	-	
12	HON001	Raw Farm Honey	55	37	11	48	R	2 640,00	
13	OIL001	Extra Virgin Olive Oil 500ml	55	115	9	124	R	6 820,00	
14	SAU001	Chilli Sauce 150ml	24	15	23	38	R	912,00	
15	SOAP01	Pure Glycerine Soap 100g	14	103	0	103	R	1 442,00	
16	VIN001	Balsamic Vinegar 500ml	52,5	120	95	215	R	11 287,50	
17						Total	**R**	**136 001,50**	
18									
19									
20									
21									
22									
23									
24									

InventoryItems-20220303

Figure 12 – Inventory tracking on excel image

This is an example of how inventory is currently tracked between suppliers.

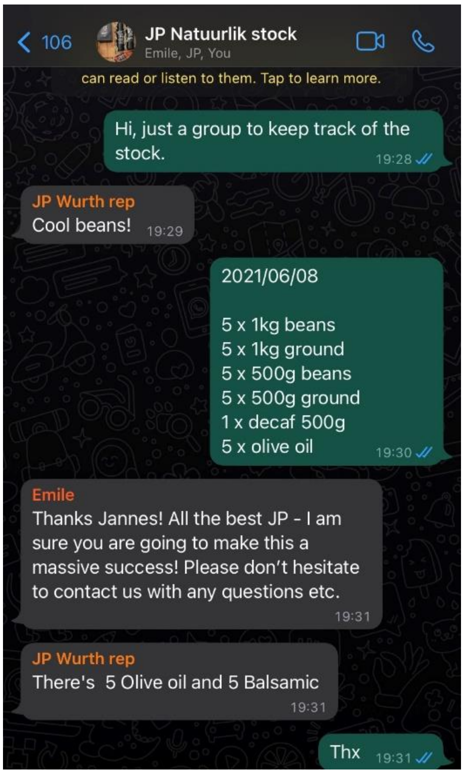

Figure 13 – Inventory tracking between suppliers image

This is a pricelist from Natuurlik's coffee supplier.

Maraba Coffee

THE BARISTA'S CHOICE

(FOR ORDERS OF MORE THAN 10KG) October 2021

1kg	Maraba Dark Italian Blend Beans	R130
500g	Maraba Dark Italian Blend Beans	R70
250g	Maraba Dark Italian Blend Beans	R40
1kg	Maraba Dark Italian Blend Ground	R130
500g	Maraba Dark Italian Blend Ground	R70
250g	Maraba Dark Italian Blend Ground	R40
1kg	Maraba Medium-Dark Roast Beans	R150
500g	Maraba Medium-Dark Roast Beans	R85
250g	Maraba Medium-Dark Roast Beans	R50
1kg	Maraba Medium-Dark Roast Ground	R150
500g	Maraba Medium-Dark Roast Ground	R85
250g	Maraba Medium-Dark Roast Ground	R50
1kg	Maraba GOLD Dark Roast Beans	R170
500g	Maraba GOLD Dark Roast Beans	R90
250g	Maraba GOLD Dark Roast Beans	R55
1kg	Maraba GOLD Dark Roast Ground	R170
500g	Maraba GOLD Dark Roast Ground	R90
250g	Maraba GOLD Dark Roast Ground	R55
500g	Maraba DECAF Beans	R150
250g	Maraba DECAF Beans	R80
500g	Maraba DECAF Ground	R150
250g	Maraba DECAF Ground	R80
500g	Maraba GUATEMALA SINGLE ORIGIN Beans	R150
250g	Maraba GUATEMALA SINGLE ORIGIN Beans	R80

Maraba Coffee

THE BARISTA'S CHOICE

500g	Maraba GUATEMALA SINGLE ORIGIN Ground	R150
250g	Maraba GUATEMALA SINGLE ORIGIN Ground	R80
80g	Maraba Medium-Dark Roast Ground Sachet	R25

SUGGESTED RETAIL: ADD 33%

ALLOW 3 WORKING DAYS TO PROCESS BEFORE DISPATCH

Figure 14 – Supplier pricelist

This section includes information regarding the organisational structure of Natuurlik, pertaining its current owners.

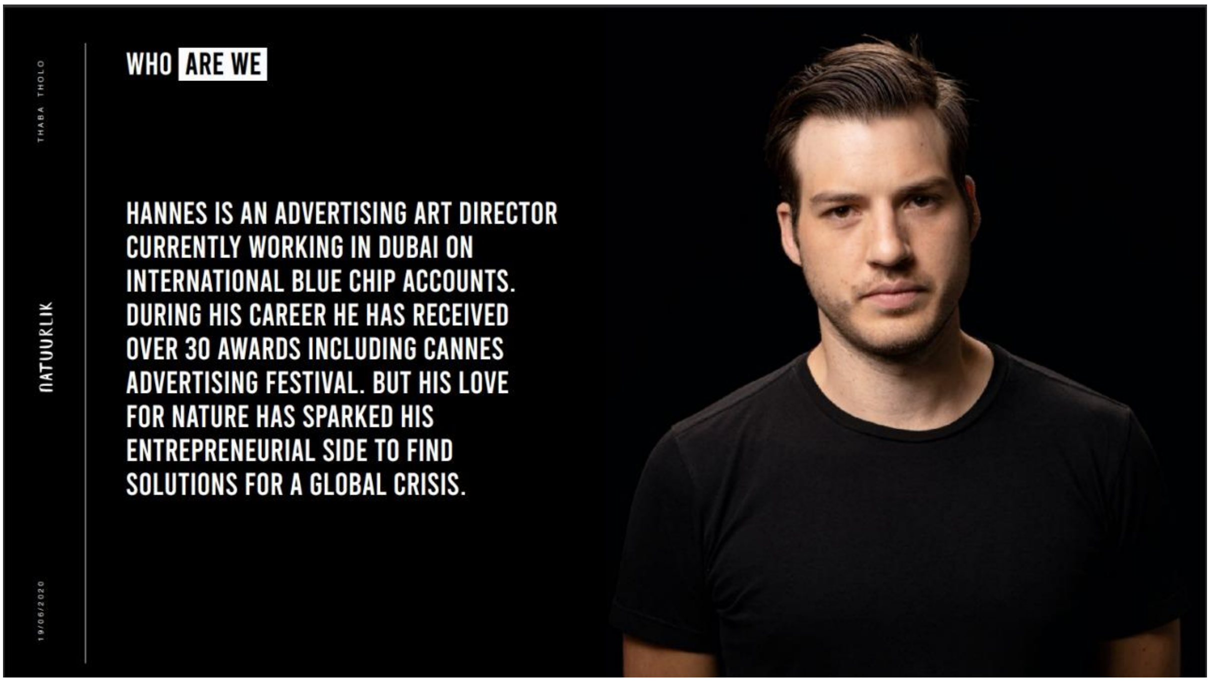

Figure 15 - co-owner image 1

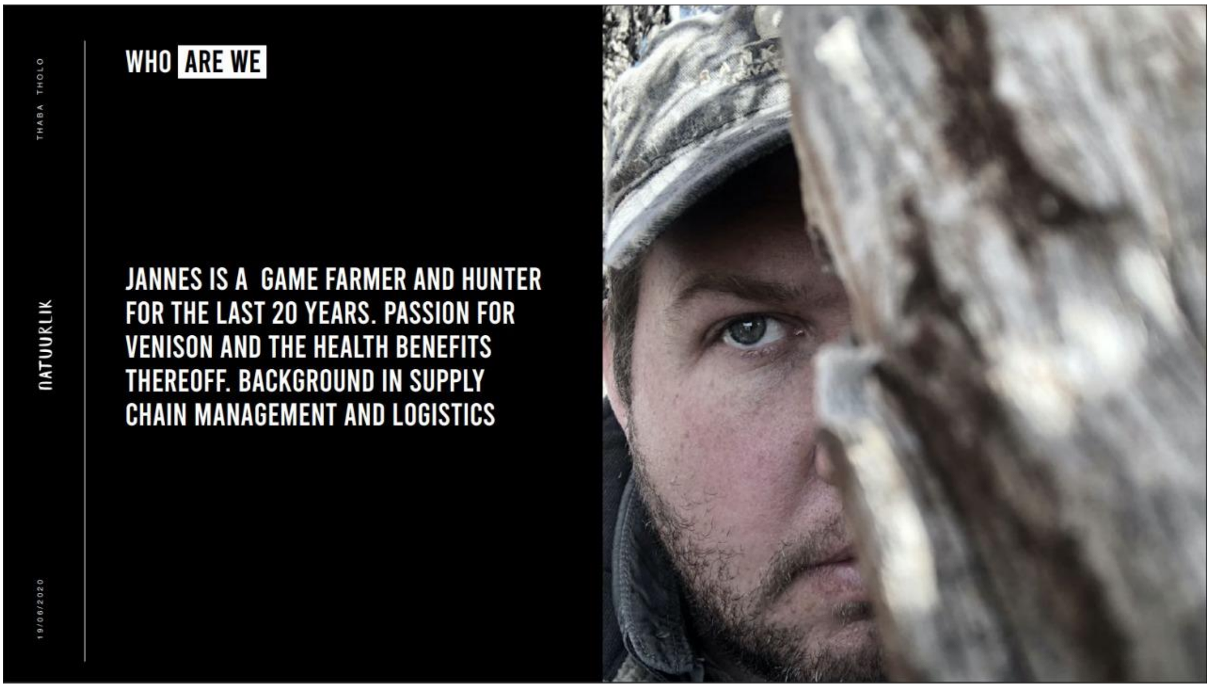

Figure 16 - co-owmer image 2

Figure 17 - co-owner image 3

This section includes Natuurlik's product catalogue images, which are used to advertise the products to customers on their social media pages.

Figure 18 – Product catalogue images

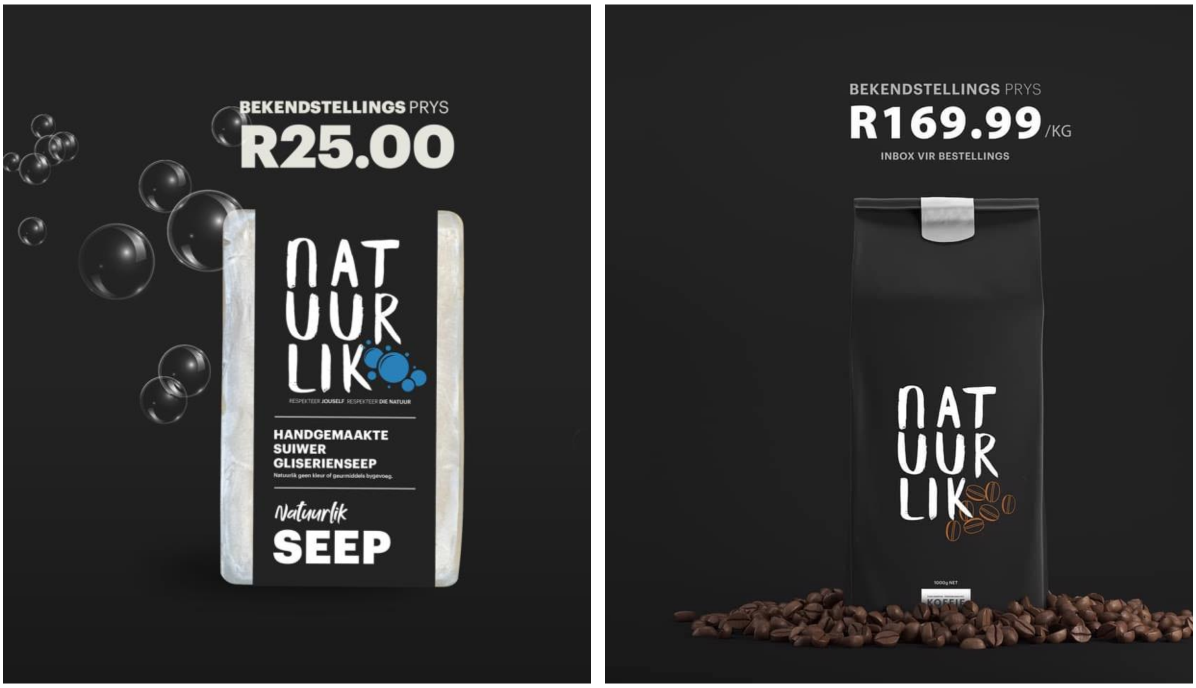

Figure 19 - Product catalogue images - continue

Figure 20 – Packed order image

Conclusion

This concludes the client documentation appendix of this iteration.

7.2. Appendix B

Introduction

An evaluation has been conducted between various alternative solutions to determine what e-commerce system would be the best fit for our client's identified needs. The strengths and weaknesses of other systems will be investigated while focusing on the technical, economic and operational implications of each potential alternative solution. In order to determine whether the proposed system from the ByteXpress team is the best fit for our client's requirements we need to have a firm understanding of the present organizational structure, the problems and limitations with the current system as well as the goals which is to be addressed with the implementation of the proposed information system. The main intent of this section is to clearly indicate why a bespoke solution, tailored to the specific needs of our client would be the best solution compared to other alternative systems.

The alternative point of sales systems for e-commerce that has been considered in our team's literature study include Shopify and Square. To begin with, our team studied the capabilities, strengths and weaknesses of each alternative solution available to the client and then delineated them as follows:

Figure 21 – Shopify logo

Candidate 1: Shopify

What does Shopify provide?

A complete commerce platform with robust virtual features which make it the best POS system for e-commerce on the market today. It provides the ability to oversee online sales from a mobile dashboard. Shopify is a good solution for an already well established e-commerce business or a small company wishing to build a new online shop from the ground up.

Our client does not wish to spend too much on a monthly subscription, hence we have chosen to the review the capabilities of a Shopify e-commerce store on a basic plan.

The Shopify Basic plan provides advantageous features such as:

- ✓ Product management.
- ✓ Order management.
- ✓ Customer profiles.
- ✓ Secure online payment support, i.e. integrated Master and Visa card processing.
- ✓ QR code support.

- ✓ Ability to customize discounts and use discount codes on the system.
- ✓ Abandoned cart can be recovered with every available plan.
- ✓ Not extra transaction fees apart from the interchange fees.
- ✓ Blog functionality included.
- ✓ Reporting functionality supported.
- ✓ Fully hosted platform.
- ✓ Large variety of free yet generic storefront themes.
- ✓ Dedicated support team available 24/7.
- ✓ Search engine optimization to aid in driving more traffic to the online store.

Disadvantages of using Shopify on a Basic plan:

- ⊗ Constrained to only two members who have access to the Basic Plan.
- ⊗ Monthly subscription cost starting at $29.
- ⊗ No advanced reporting capability on the Basic plan.
- ⊗ Credit card processing fees is 2.9% + $0.30 for every online transaction.
- ⊗ Limited selection of free themes available. Extensive theme customization not possible without incurring substantial costs.
- ⊗ Hosted platforms like Shopify tend to gradually become more extensive than having a self-hosted e-commerce store.
- ⊗ Limited customization of the e-commerce store as Shopify only allows certain parts of functionality to be customized. Self-hosted platforms allow for better customization to get a unique look and feel that sets the business apart from generic themes available for free to all other Shopify users.
- ⊗ Not a content management system. Limited capability in terms of what content can be managed on the system as Shopify was optimized primarily for selling products online.
- ⊗ Inability to have full control over data as there are limitations in terms of what kind of data can be stored for a particular use by the business. Not a suitable solution for business intelligence reporting capabilities.
- ⊗ Cannot separate B-2-C channel from B-2-B as only a single ordering process is used along with a single product catalogue. Unable to distinguish Resellers from Customers in the context of the system our client requires.
- ⊗ No inventory and logistics management capabilities with Shopify Basic or Shopify Plus plans.

Overview of Shopify's suitability for our client's identified needs:

Shopify does not seem to be a viable solution for our client's needs as there is limited functionality to manage the store's content, fully manage data stored on the system and integrate it with a reporting and analytics platform so that business intelligence analytics can be performed, and other complex transactional reports can be created. Our client will not have the ability to manage supplier orders separately from that of normal customers and there is no ability to support specific business rules such as where resellers have to pay within 30 days of having placed an order. The Shopify Basic plan has a monthly fee, and only allows two staff members to access the POS system. This is clearly not sufficient as our client requires the ability to effectively manage inventory and logistics as per their requirements, the production of finished goods and transactional reporting capability on finished products and inventory. Our client will also not have the capability to rapidly design a unique store as non-generic themes cost a significant amount and freelancing professional Shopify website designers are expensive. Our client would have to be on the Shopify Advanced plan to benefit from using this to address their needs for an e-commerce system.

	Basic $29 USD /mo	Shopify $79 USD /mo	Advanced $299 USD /mo
FEATURES			
Online Store Includes ecommerce website and blog.	✓	✓	✓
Unlimited products	✓	✓	✓
Staff accounts Staff members with access to the Shopify admin and Shopify POS.	2	5	15
24/7 support	✓	✓	✓
Sales channels Sell on online marketplaces and social media. Channel availability varies by country.	✓	✓	✓
Inventory locations Assign inventory to retail stores, warehouses, pop-ups, or wherever you store products.	up to 4	up to 5	up to 8
Manual order creation	✓	✓	✓
Discount codes	✓	✓	✓
Free SSL certificate	✓	✓	✓
Abandoned cart recovery	✓	✓	✓
Gift cards	✓	✓	✓
Reports	–	Standard	Advanced
Third-party calculated shipping rates Show calculated rates with your own account or third-party apps at checkout.	–	–	✓
Transaction fees	2.0%	1.0%	0.5%

Figure 22 - Shopify price plan

Figure 23 – Square logo

Candidate 2: Square

What does Square do?

Square is a robust platform that allows businesses to create online stores, sell their items online, perform order fulfillment and track inventory. Square allows more flexibility and allows small business to grow more rapidly. One of the best POS systems available for small start-ups.

The square platform has a free account that allows for selling products online while also tracking all inventory and generating sales reports. However, fees apply to online transactions and credit card processing. The ByteXpress team have provided the advantages and disadvantages associated with using Square for setting up an e-commerce store. For the purpose of fairly drawing up a comparison between the Square system and proposed ByteXecom system, we have decided to conduct our research on the free Square plan specifically as our client wants to refrain from committing to monthly subscription fees for paid plans. The salient points of the free Square plan are included below:

Advantages of using a free Square plan:

- ✓ The Square platform is robust as it offers a lot of useful features required for successfully running an e-commerce store.
- ✓ Free option available to small businesses and startups for selling products online using the free Square plan.
- ✓ Allows for the tracking of inventory.
- ✓ Ability to view low inventory as well as visibly be able to see when a company is out of stock.
- ✓ Sales reports can be generated by the Square platform.
- ✓ Instagram selling capabilities supported via integration.
- ✓ Ability to scan barcodes.
- ✓ Able to generate essential documentation such as order invoices.
- ✓ It has an integrated payment system that can be easily used and which is secure.

Disadvantages of using free Square plan:

- ⊗ The processing fees are expensive for online payments using this platform. Transaction fees can be substantial when sales volume is high.
- ⊗ Limited features are available on the free plan and our client might be forced to upgrade from the free plan to a Plus or Premium plan to get access to all the essential features required.

- ⊗ Inability to manage distinct B-2-C and B-2-B catalogues on a free plan. Two distinct online stores will have to be created on a free plan to cater for this which is redundant and all sales data is not captured on a uniform system.
- ⊗ Lack of support for specific business rules.
- ⊗ A credit card processing fee of 2.6% plus $0.10 will be applied for each transaction using a credit card. While other forms of supported online payments will have a fee of 2.9% plus $0.30 per transaction.
- ⊗ Limited control over what data can be stored and how it is stored. This limits the effectiveness of business intelligence reporting as reports and dashboard that can be generated is restricted to what data was captured on the Square e-commerce store.
- ⊗ Main focus in terms of reporting is on sales mostly.

Overview of the Square platform's capability to meet the requirements of our client:

The free plan on the Square platform is extremely feature-rich, but comes at a higher cost. Online payment fees are high and the free plan might not provide enough of the essential functionality required by our client. This is the very reason why the client requested to have a custom or bespoke software system implemented which is self-hosted, and over which they could have influence in terms of the specific requirements it is to address. This platform does not provide sufficient control over how data is managed on the system so that it could be of use for extensive reporting on more than just merely sales data.

Conclusion

The ByteXecom system that has been proposed still remains unrivaled as it aims to do more than support sales and order fulfillment. It aims to support and automate essential business processes and produce reports which can give give insights across all core areas of the business with full control over the data which is to be used for extensive reporting on business performance. None of the systems investigated allows for managing B-2-C and B-2-B channels within a single, uniform e-commerce system.

7.3. Appendix B

Introduction

This section shows the complexity matrix with possible complexity mark we aiming to achieve as a group. We are planning on revisiting some topic sections that are in blank as soon as we have the core of the system up and running.

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Topic	Level		Marks	Indicated by group	Marks given	MAX	Total
1. Special GUI	For online applications: Responsive web design		3	3		42	0
	For desktop applications: Form design according to design principles (Schneiderman's golden rule on navigation applies here)	*					
	Appropriate use of grids/tables		3	3			
	Appropriate use of tabs/links		3	3			
	Use of graphs in an appropriate business context		4	4			
	The storage and display of graphical information, like photos with a good business reason		3	3			
	Working e-mail automatically generated from the database in an appropriate business context		2	2			
	SMS messages automatically generated from the system in an appropriate business context		2				
	Extensive user-friendly search facility		3	3			
	At least one use of a tree to display data from the database		3	3			
	Able to dynamically modify a data tree structure and in doing so adjusting the data in the database		4	4			
	At least one use of a calendar view of data (not a date/time picker; not a plug-in such as Google calendar)		3				
	Uploading a file into the system with appropriate business reason		3	3			
	The use of audio/video in an appropriate business context		3	3			
	At least one use of an administrator configurable timer in an appropriate business context		3				
2. Database access	At least 30 tables used (4 member groups) or 40 tables used (5 member groups)	*	6	6		15	0
	Full referential integrity on all tables	*	6	6			
	At least one use of master-detail table relationships (Schneiderman's golden rule on system status applies here)	*	3	3			
3. Reports	At least 3 simple list reports in a reporting tool (no control breaks, no graphs, single table)	*	3	3		15	0

	At least 2 transactional report with 2 or more control breaks (with heading and calculated values/totals, multiple tables)	*	6	6			
	At least 1 report with adjustable criteria		3	3			
	At least 1 management report using a graph		3	3			
4. Flexibility	All data that can change in future should not be hard coded but maintained in a sub-module of the system (e.g. Lookup tables)		6			**12**	**0**
	Some business rules are not hard coded, but maintained in a sub-module of the system.		6	6			
5. Error handling	**All** system-generated errors are trapped and consistent, user-friendly error messages are displayed		6	6		**12**	**0**
	Appropriate data validation on **all** input fields		6	6			
6. Help	At least one menu item or other control that opens up a complete help document (HTML, PDF, Help-file)		3	3		**15**	**0**
	Extensive context-sensitive help. E.g. calling Help on a specific screen/function will automatically open the specific help for that screen/function.		6	6			
	Search Facility on Help		3	3			
	Extensive use of hints		3	3			
7. Security	Logon screen with user ID and password and fixed user profiles		3	3		**13**	**0**
	Applying two factor authentication with applicable business reason.		3	3			
	Encrypted passwords in database	*	1	1			
	Flexible user profiles (i.e. you can dynamically add user profiles that will enable/disable access to certain parts of the system)		6				
8. Audit Trail	An audit trail of all transactions in the system showing at least date, time, user, transaction type, critical data (such as amount and quantity of transaction)		6	6		**9**	**0**
	Able to search the audit trail on any of the following: date, user, transaction type		3	3			
9. Deployment	For a desktop application: Fully functional installation disks that take care of application installation requirements (install and uninstall)		3			**15**	**0**
	For an online application: Deployment of application to a publicly accessible web server		3	3			
	For a mobile application: Deployment to an App Market place (such as the PlayStore or the AppStore)		6				
	Deployment of the database to a remote database server		3	3			
10. Backup and Restore	A backup and restore subsystem exists that backup/restore all data (system may exit during restore)		3			**3**	**0**
11. Import/Export Data	Able to open Word or Excel and automatically place data in it based on the parameters provided (with a good business reason)		6	6		**9**	**0**

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	XML or JSON: At least 1 XMLor JSON file for Importing or Exporting of data (with good business reason)		3				
12. External INPUT device	Simple Link to an external INPUT device using plug-and-play technology, such as a swipe card reader, bar code reader, etc. or a native component such as a QR reader, a GPS component, etc		3			**18**	**0**
	Loose Link to an external INPUT device using device specific software. Data or images must seamlessly be stored in the database but device specific software is visible to the user. (This could include a digital camera, scanner, voice recording device, thump print reader, etc.)		6				
	Tight Link to an external INPUT device using device specific software. Data or images must seamlessly be stored in the database but device specific software is **not** visible to the user. (This could include a digital camera, scanner, voice recording device, thump print reader, etc.)		9				
13. External APPLICATION / Services	Integrate an existing web service into your application (with good business reason)		3	3		**9**	**0**
	A fully functional link to an installed external application system exists and the interface must be shown to work on the external system. Note that this excludes Microsoft Office Applications		6	6			
14. Multiplatform processing for an appropriate business reason	Appropriate business use of static views on an alternative platform.		3	3		**27**	**0**
	Appropriate use of dynamic views on an alternative platform (i.e. data is displayed from the system's database)		3	3			
	Appropriate use of substantial dynamic views on an alternative platform (i.e. both reading and writing data from the system's database)		9				
	Uploading a file through an alternative platform onto the system's database.		3				
	Substantial processing on a third platform (i.e. both reading and writing data from the system's database)		9				
15. Programming Principles	The use of a data layer to facilitate interaction between your database and your business layer		3	3		**12**	**0**
	The use of an API to facilitate interaction between your business layer and your presentation layer		6	6			
	Comprehensive use of stored procedures and/or triggers and/or jobs.		3	3			
16. Innovative addition to the system	Any very advanced innovative addition to the system (e.g. machine learning, AI, block chain, text mining, IOT, etc.)	#	1-9	1		**9**	**0**
	Complexity Marks Obtained			**153**	0	**235**	**0**
	Maximum Complexity Marks		**235**				
	Complexity Marks Required for Del 5 (5 members in team)		150				

Complexity Marks Required for Del 5 (4 members in team)	120

Conclusion

As shown above this section showcased the amount of complexity marks we aiming to achieve as a group.

8. Client Sign-Off

Introduction

This section serves to indicate the client's agreement with the Project Proposal document and the final sign-off by the client.

I,_________________ , on behalf of Natuurlik, declare that I have read the Project Proposal document presented by ByteXpress and hereby state that I fully understand and agree with the contents of this document.

______________________________	______________________________
Jannes Janse van Rensburg	Date

Conclusion

This section proves the agreeance of the final document upon the expectations and agreement of the client and depicts the final client sign-off.

9. Team Sign-off

Introduction

This section serves to indicate the ByteXpress team's agreement with the final Project Proposal document and the final sign-off by each member.

We as the ByteXpress team agree that the content in this document is our own and we are satisfied with the standard of work produced.

Aphiwe Shozi	Kyle van Eeden
Ofhani Mungani	Nomusa Vumisa
Thenjiwe Ntsonda	12/03/2022 Date

Conclusion

This section proves the agreeance of the final document within the ByteXpress team and proves that each of the members have successfully read through the document in its entirety.

10. Deliverable Conclusion

This concludes the Iteration 01 document. ByteXpress is delighted by the work they were able to produce given the input received from our client. In this project proposal document we briefly went over some essential background information of our client, the preliminary investigation as well as the problem analysis which have been conducted to better understand what type of solution Natuurlik requires. Finally, we provided a list of functional and non-functional requirements which will best suit the needs of our client and which have been signed off by the system owner. Project management was catered for on Asana as we managed the iteration's work using the work breakdown structure to effectively manage the responsibilities and work of all ByteXpress team members.

11. References

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