Department of Information Systems

Systems Analysis (INF2009F)

BUSINESS CASE: The Poppel Computerisation Project

TEAM MEMBERS

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Declaration

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2. This Business Case Document is our own work.
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1. BUSINESS OVERVIEW

Poppel is a soft drink and confectionary manufacturer and importer located in Atlantis, Western Cape. The company is relatively small at present, employing approximately 50 employees and has a product range of about 300 products in over 40 different brands. The company was established in 2003 by Angus McClaren and Bertus van Heerden. Angus identified an opportunity in the market to bring back confectionary that was well-liked and popular during his childhood. After obtaining sufficient funding he and his business partner, Bertus, embarked on manufacturing confectionary. Over the last 3 years, they purchased a soft drink manufacturing company and signed a contract to produce a range of branded products for one of the major retail chains - both which played a significant role in substantial growth for the company. One of the objectives of the Operations Management team is to either purchase or establish extra manufacturing, warehousing and bottling capacity in Gauteng. However, the main goal of the company is to improve and computerise the complex, manual and labour intensive internal systems they have at present, as well as to streamline and upgrade their existing processes to achieve further growth for the company.

2. BACKGROUND

Introducing new technologies and improved systems to address the large number of inherent problems in the company's current systems and processes, as well as dealing with business expansion, has given rise to the Poppel computerisation project. Unless the company invests in these new systems and streamlined processes, and increase manufacturing capacity, there is a big possibility of losing customers due to increasing customer dissatisfaction, as well as allowing other market competitors an opportunity. By improving the current internal systems and processes, the company hopes to restore and raise customer satisfaction, operate more efficiently and experience additional growth in the company.

3. BUSINESS PROBLEMS AND OPPORTUNITIES

3.1. Overview of current processes

The current ordering system works as follows:

1. The customer completes an order form and submits it to the Poppel Marketing Department – either by fax or email.

- This is a time-consuming process and leaves room for human error if the Marketing Department make a mistake in capturing the order.

2. If it is a new customer, the Marketing Clerk captures their details in the system and they have to submit a Customer Registration Form with their order. If it is for an existing customer, the Marketing Clerk enters the customer number into the system to check their credit status.

    - This is a time-consuming process and leaves room for human error if the Marketing Clerk enters in the wrong details.

3. If the credit status is OK, the Marketing Clerk processes the order. However, if the customer's credit status is not OK, they are requested to make a full or partial payment of their account to continue with their order processing.

4. The marketing clerk processes the order by capturing the product code and quantity of all order items into the system.

    - This leaves room for human error if the Marketing Clerk enters in the incorrect product code and/or quantity of the items.

5. For each order item, the system checks if the product code is correct and that there is item of the stock available.

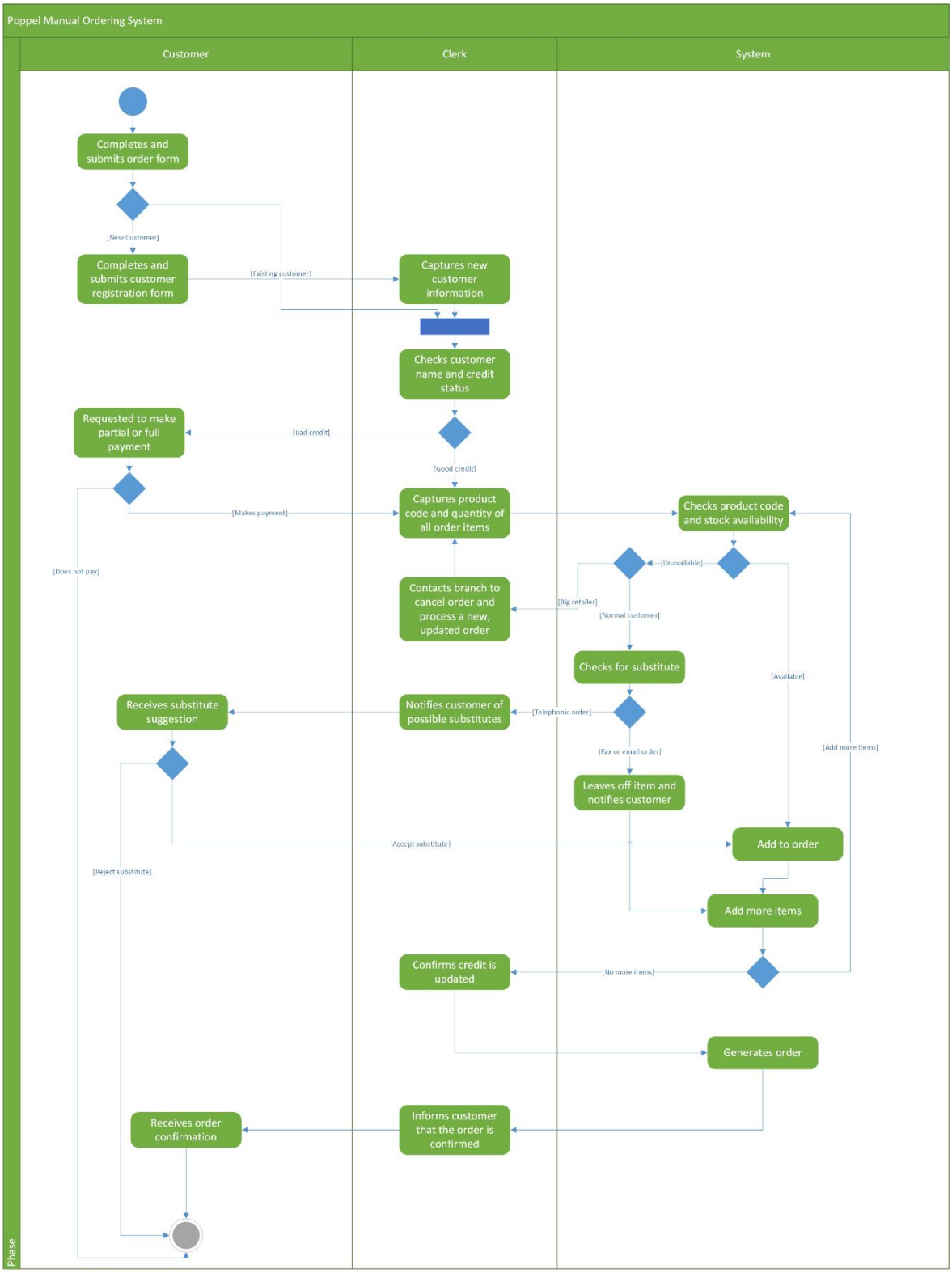
    - The system might not be up-to-date with the stock levels.

6. If the item is available, the system adds the item to the order and returns to step 5 for another item to be entered. If the item is not available, the system will suggest possible substitute items for the customer to consider. For telephonic orders, the customer can then accept the substitute. For fax'ed and emailed orders, the item is left off and the customer is notified. For the large retailers, the Marketing Clerk is required to contact the branch and cancel the order and process a new order with updated details.

    - This process is time-consuming as there is a lot of back-and-forth between Poppel and the customer.

7. When the last item has been entered, the Marketing Clerk confirms that the credit status has been updated in the system, after which the order is generated and the Marketing Clerk informs the customer that the order has been confirmed.

An activity diagram of the current ordering system:



3.2. Problems

- Order process is time consuming
    - Saves time during order processing
    - Reduces errors from tiredness
    - Saves money
- Catalogue becomes outdated quickly
    - More competitive pricing
    - Up-to-date product information
    - Broaden customer base
- Credit authorisation system is cumbersome
    - Better system management
    - Time efficient
    - Ease-of-use will encourage customers to purchase from Poppel
- Manual checking of bank statement
    - Reduces human error
    - Saves money
    - Time efficient
- Manually process variations to the main catalogue
    - Saves Poppel from embarrassment
    - Improves customer satisfaction
    - Efficient ordering system
- Manual process of credit sanctioning
    - Less cancelled orders and loss of sales

- Sequenced list is not the same as shelf sequence
    - Easier to find items
    - Time efficient
- Pickers memorise sequence list to pick from
    - Less items will be missed
    - Less human error
    - Time efficient
- Invoice capturing errors due to handwriting
    - Reduces errors in monitoring sales transactions
    - Improves customer satisfaction
    - Easier to read invoices – less confusing
- Sales are miscalculated because accurate stock levels are unknown
    - Less stock-outs or excess stock
    - Less part orders and cancelled orders – improves successful sales
- No IT department
    - Better system management
    - Problems solved faster
- Unsupported out-of-date accounting package
    - Up-to-date accounting software
    - Less accounting errors
    - Accurate customer balances
- Part-orders affects delivery time – have to make changes to original order and sometimes more than one delivery

    - Reduces delivery time
    - Saves money
- Limited areas of delivery
    - Expands customer base
    - Increases income
- Finances are only managed at month end
    - Real time financial information
    - Reduces calculation errors
    - Deters theft and fraud
- There is only one person in charge of data capture and invoice generation – inefficient and possibility of fraud
    - Reduce errors in data capturing and order processing
    - Deters fraudulent behaviour

3.3. Opportunities

- Internet access supported ordering system
    - Reduces human error
    - Improves order processing speed
    - Improves customer satisfaction
    - Reduces costs of hiring and paying marketing clerks
- Set up an IT department
    - System problems solved faster
    - Improves customer service
    - Software is up-to-date

- Mobile integration
    - Improves customer satisfaction
    - Ease-of-use and ease-of-access
- Implement barcode scanners
    - Faster and less errors when picking items
    - Improves customer satisfaction
    - Don’t have to memorise – less human error resulting in less incorrect orders
- Open manufacturing plant locally in a central city such as Johannesburg
    - Increases income
    - Broadens customer base
    - Faster delivery time
- Update accounting package
    - Better software functionality
    - Easier to track and monitor customer accounts
- Customer relationship management – procedures that interact with customers
    - Improves customer service
- Orders captured before credit authorisation
    - Reduces number of rejected orders
    - Reduces number of lost sales
- List of bad debtors received weekly
    - Stay up-to-date with bad debtors
    - Easier to follow up on outstanding payments

- Improve manufacturing machinery
    - Greater output of stock
    - Time efficient
    - Lowers manufacturing and importing costs
    - Allows for better planning
- Marketing needs to analyse sales against campaigns
    - Improves decision making

4. SYSTEM OBJECTIVES

4.1. Goal

To make a more efficient system and to improve customer satisfaction.

4.2. Objectives

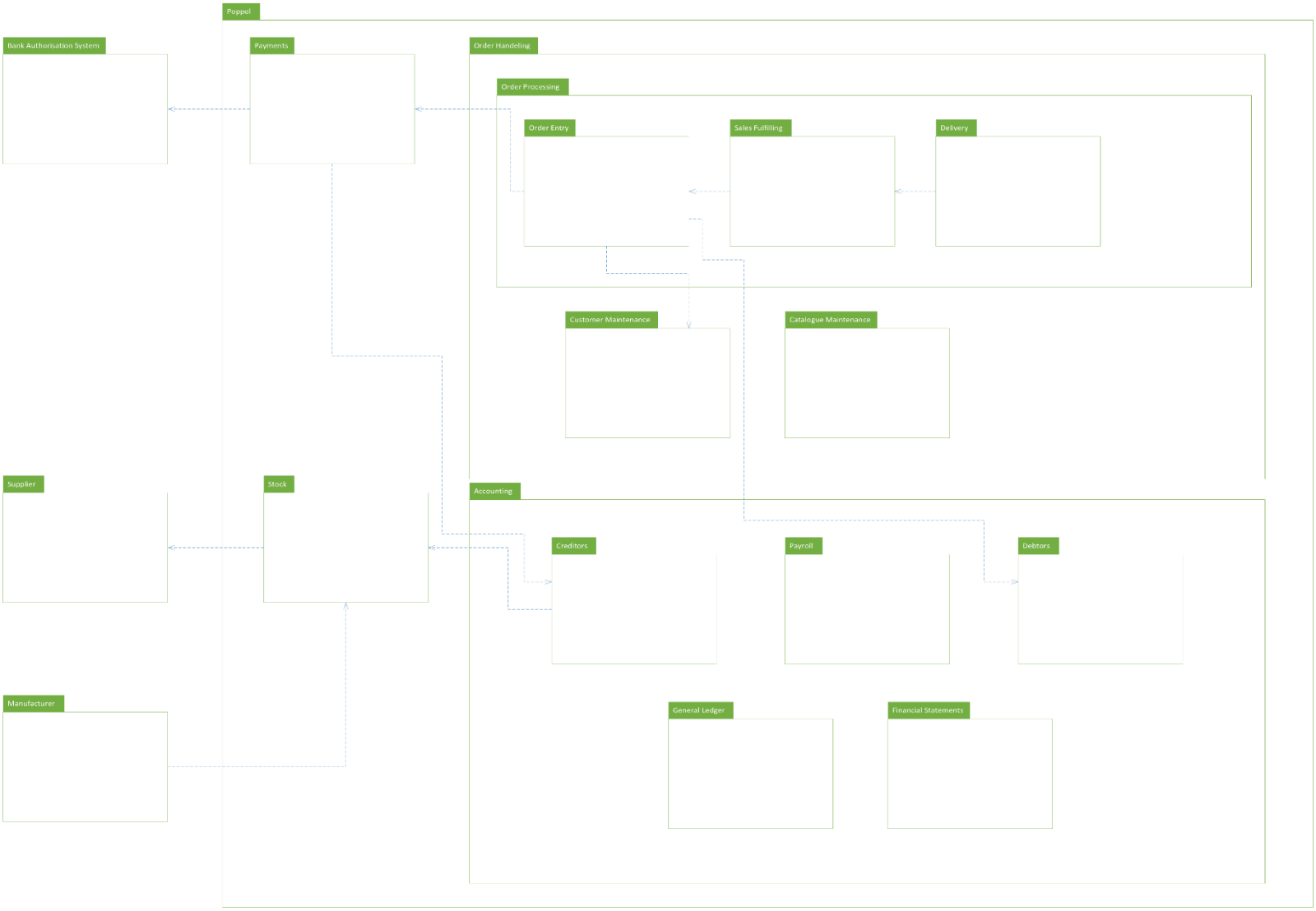
1. Improve the ordering catalogue:
    - Automate the catalogue
    - Update it automatically for price fluctuations
    - Update stock levels
    - Update product list
    - This will improve the ordering process efficiency by 20% in 1 year
2. Improve the ordering system:
    - Automate the system
    - Reduce the different ordering methods to just online
    - Include product description and price
    - This will increase sales by 25% in 1 year and by 10% per year thereafter
3. Implement an IT department:
    - Hire IT personnel
    - Outsource the building of a tailor-made system
    - This will improve efficiency by 60% in 4 months
4. Improve credit authorisation process:
    - Introduce online/direct EFT payment options

- Real-time credit sanctioning
- Enforce stricter credit policies
- Introduce a weekly updated list of bad debtors
    - This will reduce false processing of orders that cannot be paid by 70% in 6 months

5. Improve delivery system:
    - Automate tracking system
    - Electronic links to suppliers
    - Introduce electronic delivery notes
    - Combine part-orders
    - Outsource delivery of orders
    - This will improve delivery time by 25% in 1 year
6. Enhance warehousing/picking procedure:
    - Introduce electronic delivery notes
    - Implement bar-code scanners
    - Make the sequenced list the same as shelf sequencing
    - This will reduce the cost of sales by 3% in 3 months
7. Implement a backend system database:
    - Provide relevant information to all stake holders of the business, therefore increasing efficiency and simplifying processes
    - This will improve efficiency by 10% in 6 months.
8. Improve demand management:
    - Check stock levels and provide substitute suggestions during order capture
    - Introduce minimum stock levels per item
    - Track inventory to prevent spoilage
    - Track order trends to not overspend on unpopular items
    - This will increase sales by 5% and improve inventory management by 30% in 6 months and reduce the chance of stock-outs by 15% in 4 months
9. Enhance the accounting software:
    - Update the accounting software
    - Enable the software to manage the client list
    - Analyse customer spending to improve purchasing experience
    - This will reduce accounting errors by 20% in 1 year

5. SYSTEM SCOPE

5.1. Major business activities



5.2. Statement of Scope

In scope:

Order Entry

Capture orders

Update orders

Cancel orders

Make order enquiries

Sales Fulfilling

Confirm order

Notify customer

Delivery

Capture delivery details

Update delivery details

Collect order from warehouse

Deliver to branches

Cancel delivery

Customer Maintenance

Register customer

Update customer details

Remove customer

Set up customer with sales representative

Manage customer service

Catalogue Maintenance

Update product catalogue

Promote new products

Creditors

Approve credit orders

Reject credit orders

Follow up delinquent debtors

Suspend purchasing privileges

Submit approved order to warehouse

Pay suppliers

Payroll

Pay employees

Debtors

Perform credit check

Refund customer

Prepare debtors and stock reports

Prepare customer statements

General Ledger

Manage inventory

Financial Statements

Check bank statements

Payments

Capture customer payments

Allocate direct EFT

Allocate credit

Stock

Import stock

Check stock levels

Capture stock

Assemble order

Adjust order

Generate invoice

Out of scope:

Bank Authorisation System

Authorise payment

Supplier

Order stock

Negotiate order discount

Manufacturer

Purchase raw materials

Manage demand

Deliver stock to warehouse

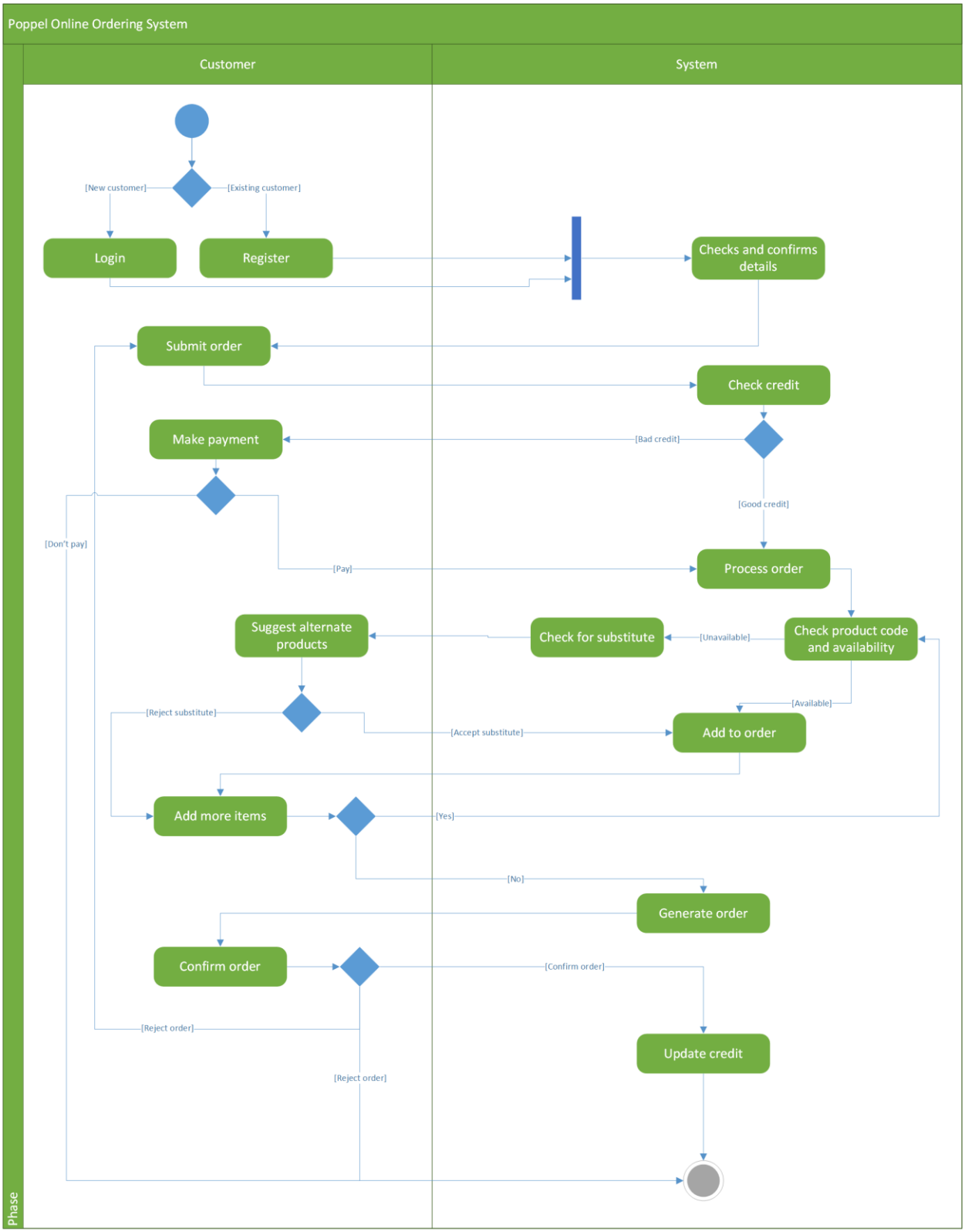
6. ALTERNATIVE SOLUTIONS

6.1. Solution 1

A joint application development session between a few software developers and Poppel to develop a custom-built ERP package in-house in attempt to automate the current systems at Poppel. The package will contain the following systems: online ordering, order processing, customer registration, catalogue maintenance, inventory management, in-house delivery, credit checking, payments, data capturing and invoice generation, warehouse stock and demand management, as well as accounting systems. The implementation of the package will be done in collaboration with Poppel and will be implemented using a phased approach so that the day-to-day business operations at Poppel are not disrupted.

Poppel will be able to finance this solution based on their Net Profit Before Tax figure in 2017 (R36 208). This will also reduce the printing and postage costs of that Poppel incurs of approximately R500 000 a month as the catalogue will now be available online.

An activity diagram of the proposed online ordering process:



6.2. Solution 2

An ERP package will be purchased externally from a software development company in attempt to automate the current systems at Poppel. The package will contain systems to handle all the issues experienced at Poppel. Experts will be outsourced for full implementation and roll-out of the package which will significantly minimise integration time at Poppel. The package will be implemented using an all-in-one approach.

Poppel will be able to finance this solution based on their Net Profit Before Tax figure in 2017 (R36 208). This will also reduce the printing and postage costs of that Poppel incurs of approximately R500 000 a month as the catalogue will now be available online.

6.3. Comparison of solutions

Solution 1 would be the preferred solution as it allows the package to be configured and customised towards Poppel's current needs. Furthermore, the overall cost and development costs would be lower due to the lower level of outsourcing, the joint application development programme (JAD) and business operations can continue as usual with no potential sales lost due to one-time package integration and installation. Although integration time will be longer in this solution, it would allow for more effective employee training with the new systems as it is implemented in phases. It also has lower risk as the package is implemented in phases which allows for possible package integration, implementation and software errors to be detected and resolved more effectively as they appear.

Solution 2 has a much higher level of outsourcing and overall cost, and the package will not be as configured and customised towards Poppel's current needs as Solution 1, as they are not actively involved in the package development process. Business operations and sales may be negatively affected by the one-time package integration and installation. This all-in-one approach has higher risk as possible package integration, implementation and software errors are difficult to detect and resolve effectively. The quicker integration time also makes it difficult for employees to understand and adapt to all the new systems at once.

7. RISK ASSESSMENT

Risk	Probability (1-10)	Impact (1-10)	Factor	Mitigation strategy
Lack of employee software developer and maintenance skills in-house • No IT department, limited expertise among employees	10	8	75	Outsource software developers and IT contactors, in-house training
Data loss and low data integrity • Manual data conversion process into new systems	9	9	80	Internal auditing, extensive checking for correctness
Disruption of business operations • Implementation and integration issues	6	8	70	Phased approach, partial roll-out, extensive system testing
Lack of acceptance by staff and customers • Staff and customers accustomed to old manual systems • Inadequate IT skills, training and experience	5	7	65	Initial staff training course, online tutorials, support centre
Software errors within systems in ERP package • Rushed software development process due to meeting deadlines, unforeseeable errors	4	8	75	Extensive testing before roll-out, run regular maintenance checks

Failure by software development company to develop custom-built ERP package • Software developers not skilled enough, miscommunication, lack of collaboration and understanding of requirements	3	7	60	Company selection process, contract penalties

8. FEASIBILITY ASSESSMENT

We assumed that the preferred solution for Poppel is Solution 1 for the purpose of this feasibility assessment.

Technological and resource feasibility issues:

- No IT department and very limited IT expertise among employees
- Limited computer hardware and software resources
- Package cannot be maintained and updated in-house – reliance on software development company
- Third party system integration (banks, suppliers, manufacturers)
- Excessive employee hours for manual data conversion

Schedule feasibility issues:

- Package phased approach may take a long time to implement causing schedule delay
- No strict deadlines set for package implementation and integration at Poppel
- Completion estimation issues due to lack of IT expertise (no IT department) at Poppel
- Software errors within systems in ERP package could cause large schedule delay
- Package not rolled out in parallel with business operations and not aimed for seamless systems integration to avoid disruption – both causing further schedule delay
- Might be a busy business season (not yet end of financial cycle) when solution is decided to be implemented which could cause schedule delay
- Software developers might not always be available for immediate consultation

Organisational and cultural feasibility issues:

- Resistance to change as in-house employees are already accustomed to old manual systems and have inadequate IT experience and skills
- New automated systems may cause employee fear of job loss
- Possible job loss due to new automated systems
- Work team may lose morale due to employee loss
- Mass integration of package and new systems may put work pressure on employees and current processes
- Lack of employee support to adapt to new systems and manage organisational change

Economic feasibility:

Costs	**Benefits**
One-time costs	**Tangible**
Hardware installation	Reduced staff and labour costs
Software installation	Reduced human errors
Initial staff training course	Increased revenue
Manual data conversion process	Reduced bad accounts
Phased approach implementation and roll-out	Increased sales
Joint application development sessions	Increased customer base
Operational costs	**Intangible**
Software licensing (joint development procedure)	Increased customer satisfaction
System maintenance	Improved staff morale
Data and physical security	Improved decision making

Hiring IT professionals	Increased service levels
System usage (electricity)	Reduced system errors
System security updates	Increased system efficiency

9. PROJECT SCHEDULE AND RESOURCES

Not applicable for this assignment.

10. RECOMMENDATIONS TO MANAGEMENT

As seen in the investigation, we believe that Solution 1 will be the best plan of action for Poppel. It is more cost effective, it can be implemented in phases so as to not interrupt the day-to-day business. This will also increase customer satisfaction and improve the ordering system. One of the major risks would be data loss and low data integrity however these risks can be effectively managed with proper data management. Another major risk would be a lack of acceptance of the new system by staff and customers but this can be mitigated by the phased-in implementation of the software. Improving customer satisfaction will improve customer loyalty and could broaden the customer base. Improving the ordering system will lead to improved customer satisfaction and increase revenue.