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INF2011S – Systems Design & Implementation

This document describes the Poppel Case Study which we will be using regularly for our design tasks.

Poppel Case Study

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Poppel is a manufacturer and importer of confectionary and soft drinks based in the Western Cape. The organisation has been growing rapidly over the last 5 years with the introduction of branded products for the large retail chains.

Poppel was started by Sipho Nkosi and Bertus van Heerden in 2003. Sipho was a merchandising buyer for a retail chain and saw an opportunity to re-introduce confectionary that was popular whilst he was growing up. After securing funding he and his business partner, Bertus, started manufacturing confectionary. After growing the business steadily, they were able to introduce more products, mostly imported from China, as well as grow the local manufacturing component. Two major additions in the last three years have driven significant growth:

1. They purchased a struggling soft drink manufacturing company that has seen good growth and is able to take advantage of the existing sales and distribution capability.
2. After an overhaul of their aging manufacturing processes, they signed a deal to create a range of branded products for one of the major retail chains.

The company is starting to exceed the manufacturing capacity for confectionary. The Operations Management team are looking to purchase or build additional manufacturing, warehousing and bottling capacity in Gauteng. This will be closer to the biggest and fastest growing market and help offset some of the escalating transportation costs and lead time from Cape Town.

Customer Registration

Poppel has a large number of trade customers, cafe's, spazza shops, local bars and retail chains. Any potential customer must go through the customer registration process before they are able to place orders. The Marketing department captures the customer details from the customer registration forms that are received via email and fax. It is then handed over to the Debtors Clerks in the Finance department who perform an optional credit check to determine if the customer qualifies for credit terms. Once the financial checks are complete the Ordering department must capture the delivery details for the branches that the customer has. They also set up the customer with the region and local sales representative who will assist them.

Recently, the Marketing Manager, Nomfundo, has been sending out welcome packs to the newly registered customers explaining the ordering process and providing them with a product catalogue, together with pre-printed order sheets that customers can complete and fax or email through.

The customers are issued with a customer number and each branch is issued with an account number that they should use when ordering. This account number may entitle the customer to special pricing or trade discounts.

Manufacturing

The investment that Poppel made last year in upgrading the manufacturing capability has shown dramatic improvements in all major key performance indicators (KPIs). Poppel worked very closely with a local production and operations consultancy to upgrade the processes and reduce waste. Both Anton and Mohamed, the Operations Directors, are very happy with the visibility, improved quality and efficiency of the new manufacturing operations. There is room for improvement in demand management which will lower manufacturing costs by allowing better planning. Even an extra few days will allow the factory to reconfigure and reduce panic buying of raw materials when warehouse stock levels run low.

All manufacturing output from both the bottling plant and the confectionary factory should be delivered to the warehouse. However, there have been instances where the warehouse stock levels have been too low and the time taken to capture the stock into the warehouse would have taken too long. They distributed directly from the factory which is not designed for picking and packing. A mishap resulted in an entire pallet of soft drinks being destroyed by a forklift trying to manoeuvre whilst under delivery pressure.

Product Maintenance

The Marketing department creates and maintains the product catalogue. This is currently a spreadsheet that they update with the barcode, stock code, packaging and pricing levels. Most of the products are sold in packs. For example, the soft drinks are available as packs of 6, cases of 18 and pallets of 72. Each of these is a different product line so that when the customers place their order, they order the quantity of the pack size that they want. The specially branded products are only available to specific customers.

There is a manual process to take the master list of products and create the handful of variations to the catalogue for the various customers. This happens every 4 to 6 weeks. There have been instances where products were incorrectly exposed to the wrong customers resulting in some embarrassment.

New products that are introduced are explained to the regional sales representatives who then promote the products with the customers.

Order Entry

The wide range in the sophistication of the customers means that Poppel must maintain a number of different ordering mechanisms:

- Customers can phone into the Sales Order capture department and order directly. To save time, the customers are asked to complete one of the pre-printed ordering sheets so that they can just read it out. For those products that they have low stock levels, they are able to inform the customer and

they are often able to substitute for different pack sizes.

- Customers can email or fax the orders through. These are then captured by the ordering staff. However, there have been instances where the orders have been incorrectly captured and the incorrect stock has been shipped.

- Recently the large retailers have built systems that allow Poppel to log in and view and print already priced purchase orders for delivery to their branches. Poppel has set up manual processes to check these websites twice during the day.

Poppel Ordering Form

Customer Number	882746	Order Date	10/08/2013
Customer Name	Laz's Spazza Shop	Order Number	009928
Delivery Address	Unit 15B Flamingo Rd Atlantis	Order placed by:	Lazola Mbotho
Telephone Number	(021) 572 3321		

#	Product Code	Qty	#	Product Code	Qty
1	ML0021	30	11		
2	HE003	10	12		
3	NI093	15	13		
4	PP830	12	14		
5	LR062	8	15		
6	FR093	5	16		
7	FD405	12	17		
8			18		
9			19		
10			20		

Figure 1: Sample pre-printed ordering sheet.

The order process is time consuming. Items are identified only by their codes and often the wrong code is on the order. Customers can make mistakes generating their list, numbers can be corrupted during the fax transfer and sometimes the numbers are poorly written and misread. With codes rather than descriptions, customers and clerks are often not aware of their mistake.

Pricing is also a problem. Prices are displayed in the catalogue, but soon becomes outdated. This happens more frequently with the imported products where exchange rate fluctuations can have a dramatic effect on the prices.

The big retailers provide priced purchase orders. These have the prices that the retailers are expecting to pay based on the pre-negotiated discounts. These priced orders became problematic when the prices in the catalogue were different to the prices the retailers were expecting and they refused to accept the stock. The Operations Director, together with the Finance Director, Lauren Manuel, have agreed that if they receive a priced order where there was a price deviation of less than 3%, they would accept the ordered price. Otherwise, the sales representatives will need to inform the customer of the correct prices.

Credit authorisation is also rather cumbersome. Orders are often captured only to find that customers do not pass the credit sanctioning process and their order must be rejected. Poppel would like to introduce alternative payment options, like direct EFTs or credit card sales. The Finance Director is concerned about the impacts on refunding customers if Poppel is unable to fulfil the orders resulting in additional corrections to the Debtors book. She is also concerned about the additional overhead in manually checking the bank statements to allocate direct EFT's to the Debtors outside of the monthly manual runs that they do currently.

Credit Sanctioning

Credit orders that have been captured are sent to the Accounts department to be approved. If the customer is over the credit limit, the order is rejected and the customer is informed via email or telephone. This is a time-consuming, manual process and results in cancelled orders and lost sales.

Credit customers are given 30 days after the monthly statement date to pay the total of their outstanding account and interest is charged on late payments. Customers must pay within 60 days of statement or their purchasing privileges are suspended. The list of customers who are barred from purchasing is currently received weekly from Lauren who receives weekly debtors ageing reports.

Order Assembly

The approved order is submitted to the warehouse picking bay. They manually export the order from the Accounting package and use a custom application to print the picking list with barcodes. Picking Clerks take each list and pick the items from the shelves, putting them into a basket or trolley much like those in traditional supermarkets.

The shopping list is unfortunately not in the sequence of the goods in the warehouse but experienced Pickers are able to browse the list and memorise a "sequenced list" to pick from. While this method

improves picking time considerably, it occasionally results in items on the list being missed. Items that cannot be supplied are crossed off the list, creating a part delivery. Some customers will not accept a part delivery as their receiving rooms must match the whole order. The experienced Picking Clerks know which customers require their whole order to be fulfilled and send these orders to the Warehouse Manager to contact the reps for guidance.

Four years ago, they ran a pilot project to investigate the effectiveness of using barcode scanners to reduce errors in the picking process. Although it was only implemented for the locally manufactured items, it helped to reduce errors. The application was written by the previous financial director's son. It receives a text file that is manually imported and then generates a printed picking list with a barcode for the locally manufactured stock items. Pickers scan the barcode on the picking list and the barcode on the shelf beeps if they are the same, verifying that the correct products are picked. The application was never completed.

Once the list has been completed the goods are left at the dispatch bay for packing and the picking list with handwritten adjustments, is posted through a slot in the office door to be retrieved by the Dispatch Clerk.

Data Capture and Invoice Generation

The Dispatch Clerk captures the adjustments to the order into the Accounting package from an office in the warehouse. The Dispatch Clerk is responsible for:

- collecting the picking lists

- updating the orders

- printing both the delivery notes for the customer

- printing the courier dispatch note for the logistics company

There is often a backlog of orders to be adjusted and mistakes are made in capturing the poorly handwritten notes made by the pickers resulting in inaccurate delivery notes sent to customers.

Delivery

The logistics of getting the stock to the customer is the most problematic part of the business. For most of the products they are only able to distribute locally to the Western Cape. The branded products for the retailers are required to be delivered to the stores nationally and the volumes ordered make it feasible to outsource these logistics to another company.

When the driver gets to the customer site, the correct package is off loaded and the customer has to sign the delivery note indicating that the order has been delivered. Due to part orders, this is a time consuming process of confirming the ordered items and the delivered quantity.

Month-end Procedures

At month end, customer payments are captured into the firm's computer and customer statements, debtors and stock reports are produced. Lauren is particularly interested in the aged analysis and bad debts report as she knows how important it is to follow up delinquent debtors as soon as possible.

Inventory Management

Bertus has 2 buyers, a Stock Control Supervisor and 4 Stock Control Clerks but he still maintains a watchful eye over this function. He realises that Poppel must provide service to their customers while ensuring that the costs associated with carrying too much inventory are minimised.

For imported stock, buyers negotiate with suppliers and arrange bulk orders for fixed periods of time to ensure the maximum supplier discounts are obtained. Occasionally sales are miscalculated resulting in stock-outs or excess stock. This may also result in the loss of favourable discounts from the supplier and often excess stock is passed on to the customer at a lower price to clear. Most of the stock is semi-durable with a shelf life around 9 months, but some of the lines have a 3 month shelf life and they require a careful eye.

For imported stock in the warehouse, they have reasonably accurate stock levels, but in order to make delivery targets and satisfy rush ordering, the locally manufactured stock levels are not very accurate. Lauren suspects that there has been an increase in shrinkage (stock levels decrease as a result of theft) and spoilage in the warehouse, but they don't have the systems to support it.

Manufactured stock has a shorter lead time than the 4 weeks of the imported stock. The factory has a fairly regular set of processes and can produce many products at the same time. However, there is a set of products that require reconfiguration of various factory lines in order to produce. For example, the boiled sweet line takes two days of downtime to reconfigure between flavours or moulds.

The warehouse systems can generate the current stock holding and this is manually compared with the expected sales to generate the quantities that are needed for ordering. Purchase orders are generated by the Stock Control Supervisor and posted to the relevant supplier. Supplier deliveries to the warehouse are checked against a copy of the purchase order before being accepted. Details of the delivery are entered into the computer via a workstation situated at the receiving bay.

Payments to suppliers are authorised by the Warehouse Manager and actioned by the Creditors department.

Finance Department

The Finance department is responsible for debtors and creditors, the general ledger, financial statements and Human Resources (see the organisation chart attached). Poppel has no IT department and relies on a consultant for general computer-related advice and software maintenance. The accounting package that they are using is called MDManager and was purchased when the business started in 2003. At that stage the company was much smaller and the functionality was sufficient. They have not updated the version that they are using since 2005 and their version is no longer supported. Furthermore, the local distributer shut down. Poppel hired one of their technicians who has been supporting the MDManager application and the general network for the last 4 years. Local support for the product is not available and the technician's ability to keep the application running is questionable.

Customer Service

Apart from being both inefficient and labour intensive, there are a number of inherent problems in the current system. A customer response form was included in the latest catalogue mailing and a sample of the more typical complaints follows:

- "I'm fed up with part orders and incorrect invoices."

- "We need to know as early as possible if there are stock shortages so that we can ensure sufficient stock of substitute products."

- "I never really know how much I owe. On two occasions my monthly statement has charged me for someone else's deliveries."

- "When our Accounting Clerks call for an accurate account balance, the balance is often out of date resulting in expensive reconciliations between our two systems."

- "Why does it take so long to get orders delivered? My other suppliers get the stock to me within 4 days and you take almost double that!"

From these responses it is obvious that there are improvements needed in the ordering, picking and invoicing procedures. Sipho has discussed the problems of customers receiving part orders with the Warehouse Supervisor. He admitted that stock-outs were quite common as it was difficult to know what products were on order and what the forecasted demand was. With over 250 different stock items across international, local and the in-house manufacturing, the manual inventory ordering systems were not coping.

Future Directions

After weathering the recession in late 2000, Sipho' business is picking up the demand where other suppliers have failed and there are fantastic opportunities for further growth. However, many of the internal systems are complex, manual and labour intensive. Unless the company invests in these systems

and streamline the processes, there is a real possibility of losing customers and allowing other market competitors an opportunity.

Sipho has approached your company, one of Cape Town's leading computer consulting firms to provide guidance as to how he should proceed.