



**QUALIFICATION** : BCOM HONOURS  
**MODULE** : CORE ASPECTS OF LOGISTICS MANAGEMENT  
**CODE** : LMA8X01  
**DATE** : JUNE EXAM 2016  
**DURATION** : 3 HOURS / 180 MINUTES  
**TOTAL MARKS** : 180 MARKS

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**EXAMINERS** : MS AA D'AMATO  
**MODERATOR** : DR K LAMBERT  
**NUMBER OF PAGES** : 6

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**INSTRUCTIONS TO CANDIDATES:**

- Question papers must be handed in.
- This is a closed book assessment.
- Read the questions carefully and answer only what is asked.
- Number your answers clearly.
- Write neatly and legibly
- Structure your answers by using appropriate headings and sub-headings.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.
- Answer all questions in separate answer books

**QUESTION 1****(30 Marks)**

Inventory costs represent a significant component of logistics costs in Willworths.

Elaborate on the costs that Sarah should consider when making inventory policy decisions in Willworths.

**QUESTION 2****(20 Marks)**

Historically in Willworths managing inventory involved two fundamental questions: how much and when to order. To improve availability in stores discuss the fundamental approaches to managing inventory.

**QUESTION 3****(20 Marks)**

Discuss the principles Sarah should consider in the warehouse layout design.

**QUESTION 4****(30 Marks)**

Elaborate on e-Procurement in the Willworths environment and how this concept will impact on the overall organisation. Further discuss e-commerce models.

**QUESTION 5****(20 Marks)**

The effective and efficient management of reverse logistics requires careful analysis of various issues. Discuss the various issues Sarah should consider in reverse logistics for Willworths.

**QUESTION 6****(20 Marks)**

In presenting to the Board Sarah would prefer to “educate” her colleagues before submitting her findings. Discuss the principles of supply chain management within the Willworths environment.

**QUESTION 7****(40 Marks)**

There are various high-priority areas in which it is imperative for Sarah to develop effective logistics and supply chain strategies at Willworths – discuss.

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## Case Study – Willworths (WW)

### Introduction

Willworths (WW) operates within the South African market (goals for the expansion into SADC are planned for the next few years). The organisation targets the higher LSM retail market. Current market share comprises of approximately 20% including clothing, home, beauty and food products, however the business has the capacity to increase market share to 30%.

Sarah has been appointed as the new Supply Chain Director for WW. She has a Masters degree from the University of Johannesburg and has specialised in Supply Chain Management. Previous experience includes Director of Operations for three international retailers along with involvement in various supply chain councils.

On her first month of her appointment at WW she has discovered various factors that cause major concern that will be included in her brief to the Board of Directors. The area where she will be directing her focus is on the Foods, and Clothing and General Merchandise supply chain as various performance gaps and associated opportunities have been identified due to her experience in benchmarking international supply chains.

John (CEO of WW) has advised Sarah that the strategic objective is to double the amount of sales by 2020 – the Board has developed the “SC2020 Strategy” (Supply Chain 2020) to ensure the achievement thereof, which Sarah will be ultimately responsible. She will be responsible to support the business plan and ensure the supply chain is capable of achieving the SC2020 strategy.

### Store Network

Currently the network of stores consists of 450 brick and mortar stores. The selling operation also includes an online component which consists of 5% overall sales – there are four various models utilised in procurement regarding e-commerce which are available to Sarah to explore. The 450 stores include Foods and Clothing and General Merchandise (C&GM) offerings. The foods strategy regarding convenience shopping has opened a channel for petrol station stores offering a range of quick and convenient food products.

### Supply Chain Network

In terms of the above-mentioned targets within the SC2020 Strategy (doubling the sales in the next 4 years) Sarah has a few challenges to address in realising John's business strategy.

Logistically the network capacity utilisation is at 90% - however due to numerous manual processes this number is not necessarily accurate – visibly the network is estimated @ 96% utilisation. In either situation the supply chain is operating at a sub-optimal level, and is governed by chaos and reactive response to demand.

The availability of Foods and C&GM products is below 80% - the target is a minimum of 90%. Processes in stores are manual intensive – the rate of errors is unacceptable in John's opinion. At the DC's it is very difficult to determine supplier fill due to manual receiving processes of over 2,000,000 cases of Foods product alone per week. Forecasts conducted by head office are far removed from the operation and customer sales. The forecasts are also manual and inaccurate – past forecast accuracy is 73%. Marketing operates in a silo which and amend the forecast daily which makes it impossible for various business units to plan into the future.

There are three Foods DC's and three C&GM warehouses within South Africa – all operating at over 90% capacity utilisation. The DC's are however all over-stocked with associated high inventory carrying costs. All product flows enter the DC's without considering larger stores that can receive direct to store deliveries. Rapid growth in volumes required to achieve the sales targets will only create a complex and dynamic supply chain – this will also necessitate the need to readdress the current warehousing options.

The stores receive over 50,000 SKU's from over 300 suppliers – almost 100 of these suppliers are based abroad. The reason for selecting these suppliers was due to more cost-effective global sourcing. Decisions Sarah is required to make over the next few months will impact on the overall supply chain infrastructure. A key aspect she will need to address is the global sourcing.

With specific focus on the Foods supply chain:

- Orders download on the morning of picking for long-life products (to delivery to stores). This poses a major risk as reactive information is utilised to plan for resources the day prior to orders been downloaded. In essence Sarah has included in her brief to the Board of Directors that visibility of orders is required the day prior to orders picked in the DC's to ensure proactive management and allocation of resources is conducted. This will result in the resources allocated as per actual demand and will result in an elimination of waste within the supply chain environment.
- Long-life orders are based on predictions made by head office. No link is fed to Point of Sale (POS) data at a store level. There is no consolidation on a daily basis

of products sold at stores and no link back to suppliers in terms of products ordered. Sarah has also suggested that a Location Planning team is charged with the management of store orders that are customised to a specific store – for example if a certain store is located near the vicinity of a school, over holidays orders for snacks should be decreased. The planners will in essence reduce the orders resulting in a reduction of waste and minimise the impact on that specific stores' profitability.

- Minimal focus is placed on forecasting Foods products into the business. Head office forecasts 100% based on past sales history – no insight is inputted into possible future scenarios.
- Currently a Push approach to inventory management is maintained for the Foods business. As previously indicated products are pushed into stores as per predictions from head office. Sales demand does not drive operations and head office activities. This results in variations in actual demand and predicted demand. Due to this variation inventory is found in various silos within the supply chain – the stock is then pushed into stores and in many cases there is a limited demand for the products. Ultimately the products expire in stores and the stores are forced to discard the stock and take the associated financial losses. The impact of variability in demand is visible on probability statements.
- Currently no collaboration is conducted with store managers, regional managers or the supply chain operations team – in essence head office will dictate to business units which products must be held in the supply chain, and in which quantities (resulting in misalignment of supply/demand). The business functions in silos and visibility across the supply chain is limited. If bulk discounts are obtained from suppliers then products are pushed into the supply chain however the costs of carrying this additional inventory are not considered by head office (the total cost of ownership is not considered) – nor is it considered that high volumes of this particular product may not be sold at store level, resulting in high levels of waste within the supply chain thus impacting profitability. A large component of Sarah's brief to the Board of Directors includes a major focus on collaboration – attending store managers meetings on a weekly basis, understanding the dynamics of stores and sharing of information around promotions.
- Currently no focus is placed on environmental sustainability; no efforts are made to reduce carbon emissions, increase recycling, etc. From a legal perspective WW is somewhat reckless with deliveries to stores, delivering outside legal restrictions.

Sarah has posed this as a major legal risk whereby urgent Top Management intervention is required to ensure compliance. Positive relationships with the environment in which the organisation operates must be cultivated and sustained as these relationships can either cripple profitability or result in organisational financial success.

- The 2,000,000 cases of foods product delivered to stores is delivered in crates which, as per the process, must be returned to the respective DC and re-used for store deliveries. The tracking and management of these crates has become problematic due to lack of visibility within the supply chain. Again, manual processes “govern” the management of equipment. Bear in mind this equipment is regarded as an asset to the business.

Sarah is in the process of completing her brief to the Board of Directors, including areas of opportunity and performance gaps identified in the WW supply chain.

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