



FACULTY/COLLEGE	College of Business and Economics
SCHOOL	Johannesburg Business School
DEPARTMENT	Transport and Supply Chain Management
CAMPUS(ES)	APK
MODULE NAME	Supply Chain Management
MODULE CODE	LMA8X02
SEMESTER	Second
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Final Summative Assessment Opportunity November 2019

ASSESSMENT DATE	November 2019	SESSION	08:30 -11:30
ASSESSOR(S)	Mr A Nieuwoudt Dr P Kilbourn		
MODERATOR(S)	Prof MJ Naude		
DURATION	3 hours (180 min)	TOTAL MARKS	120

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	3
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INFORMATION/INSTRUCTIONS:

- This is a closed-book assessment.
 - There are two sections of questions, Section A and B. Answer all questions. **Answer Section A and Section B in different exam books.**
 - Number your answers clearly and correctly as per the question paper.
 - Write neatly and legibly on both sides of the paper in the answer book, starting on the first page.
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SECTION A – 60 MARKS

This case study is about Asian Paints, an Indian paints company.

Since its inception in 1942, Asian Paints has come a long way to become India's largest and Asia's third largest paint company, with a turnover of INR 141.83 billion. Asian Paints operates in 19 countries and has 26 paint manufacturing facilities in the world servicing consumers in over 65 countries.

Asian Paints has always been a leader in the paint industry, pushing new concepts in India like Colour Worlds, Home Solutions, Colour Next, and Kids' World.

For its Indian operations, Asian Paints sources its raw materials from local vendors (65%) and international vendors (35%). The 25% of raw materials are packaging materials that are primarily locally sourced. Some of these local vendors are situated next door to the factories. There are four factories in India that produce more than 3000 SKUs to be distributed countrywide. There are two channels of distribution, one via Regional Distribution Centres to Depots (RDCs, 35% of the total distributed volume) and the other, directly to the Depots. There are total 52 depots that the company owns. The lead time of the products from factory to RDCs is 1-2 days and from RDCs to Depot is 2-3 days. However, a direct shipment from factory to Depots takes 2-4 days. Asian Paints serves two sets of customers – Consumer and Industrial, which follows different order patterns.

The paint production is very simple, however scheduling is a key challenge. One of the Asian Paints production plant caters to roughly 200 different customer orders in a month. The plant uses a technology jointly developed with Kansai Paints of Japan. The production plan follows a batch process, with first stage being mixing of base ingredients. This is a batch process that takes between 2-4 hours to complete. The mixed ingredients are then moved into a large tank, where additives and colouring pigments are added, which takes between 5 and 10 hours to complete. The next step is packaging, where the ready paint is packed into different pack sizes. The packs are then kitted together into layers, which further makes a pallet. The pallets are then tagged with batch details and shipped to the factory warehouse. The shop floor monitoring and management is key to optimise production efficiency.

Last financial year 2014-15, Asian Paints had annual sales of INR 103 billion (Indian operations). Average inventory of the year was INR 25 million, with cost of goods sold at INR 314 million. Asian paints, for the same financial year, has account receivables of 33 days and payable of 25 days. This financial year 2015-16, forecast for sales is INR 111 billion.

Answer the following five questions based on the above case study:**Question 1 [10 marks]**

Draw a supply chain diagram for Asian Paints' supply chain. Indicate all the supply chain flows.

Question 2 [15 marks]

As indicated, shop floor scheduling is key to Asian Paints success. Draw a SCOR level 2 process flow diagram for its production process.

Question 3 [10 marks]

In your view, explain the challenges faced by Asian Paints in its production process.

Question 4 [10 marks]

How do you propose should the performance of Asian Paints' production process be measured?

Question 5 [15 marks]

Discuss supply chain management. In your view, how should it be defined? Explain the core objectives of supply chain management and apply the answer to Asian Paints.

SECTION B – 60 MARKS

Instruction: Answer this section in a different answer book.

Question 6 [20 Marks]

One of the business model design trends of the last few decades as identified by business analysts, is that of relationship integration replacing vertical integration. In the context of this statement:

6.1) Do a comparative analysis between the concepts vertical integration and relationship integration including reference to a detailed explanation, advantages and disadvantages of each, and examples of past or current business organisations employing such designs. (15 marks)

6.2) Is the concept of vertical integration irrelevant to the modern-day business environment? Motivate your answer (5 marks)

Question 7 [20 Marks]

A core principle of supply chain management is that “not all relationships are equal – nor should they be”. Critically analyse, explain and contest this statement

Question 8 [20 Marks]

Identify typical supply chain performance metrics used by companies in the modern day business environment. Then, differentiate between those which are focused on a single organisation's processes and those focusing on dyadic buyer/supplier relationships. Define and explain those you consider most relevant to improve supply chain performance rather than just individual company performance

TOTAL [120 MARKS]

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