



MACHAKOS UNIVERSITY

University Examinations 2021/2022 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS ADMINISTRATION

FIRST YEAR FIRST SEMESTER EXAMINATION FOR

DOCTOR OF PHILOSOPHY IN BUSINESS-SUPPLY CHAIN MANAGEMENT

BBA 909: THEORETICAL FOUNDATIONS OF SUPPLY CHAIN MANAGEMENT

DATE: 15/12/2021

TIME: 9.00-12.00 PM

INSTRUCTIONS

1. ANSWER question **ONE** and any OTHER **THREE** questions. In total answer four questions
2. Question ONE carries 30 marks, while the rest of the questions accounts for 20 marks each
3. Use of suitable real practical examples and creative thinking is encouraged

QUESTION ONE (20 MARKS)

Read the case below and respond to the questions at the end.

Zara Clothing Company Supply Chain

Introduction

The company was founded in Spain in 1974 by Amancio Ortega and his wife Rosalía Mera. It is the flagship business unit of a holding company called Inditex Corporation with headquarters in Arteixo, Galicia, a city in north western Spain near where Mr. Ortega was born. In 2019 Zara was ranked as the 46th most valuable brand in the world by Forbes.

Company Business Model

Zara changes its clothing designs every two weeks on average, while competitors change their designs every two or three months. It carries about 11,000 distinct items per year in thousands of stores worldwide compared to competitors that carry 2,000 to 4,000 items per year in their stores. Zara's highly responsive supply chain is central to its business success. The heart of the company and its supply chain is a huge, highly automated distribution center (DC) called "The Cube".

Agents for the company are always scouting out new fashion trends at clubs and social gatherings. When they see inspiring examples they quickly send design sketches to the garment designers at the Cube. New items can be designed and out to the stores in 4 – 6 weeks, and existing items can be modified in 2 weeks.

The company's core market is women 24 – 35 years old. They reach this market by locating their stores in town centers and places with high concentrations of women in this age range. Short

production runs create scarcity of given designs and that generates a sense of urgency and reason to buy while supplies last. As a consequence, Zara does not have lots of excess inventory, nor does it need to do big mark-downs on its clothing items.

Zara has 12 inventory turns per year compared to 3 – 4 per year for competitors. Stores place orders twice a week and this drives factory scheduling. Such short term focused order cycles make forecasts very accurate, much more accurate than competitors who may order every two weeks or every month.

Clothing items are priced based on market demand, not on cost of manufacture. The short lead times for delivery of unique fashion items combined with short production runs enable Zara to offer customers more styles and choices, and yet still create a sense of urgency to buy because items often sell out quickly. And that particular item or style may not be available again after it sells out. Zara sells 85 percent of its items at full price compared to the industry average of selling only 60 percent of items at full price. Annually there is 10 percent of inventory unsold compared to industry averages of 17 – 20 percent.

In Spain customers visit Zara stores 17 times per year on average compared to 3 times per year for competitors. Because their clothing designs change often, it is harder for people to see them clearly on the Internet and thus they are encouraged to come into the stores instead and try on the unique fashions that Zara offers.

Zara spends its money on opening new stores instead of spending a lot on ad campaigns. Estimates vary on the number of Zara stores worldwide. An article in the New York Times Magazine (November 2012, “How Zara Grew into the World’s Largest Fashion Retailer” placed the store count at around 5,900. An article in Forbes simply states there are “more nearly 3,000 stores” (June 2019, “The World’s Most Valuable Brands – #46 Zara”). Annual sales for 2018 were estimated by Forbes to be \$21.3 billion. The holding company, Inditex SA, is a public company and Inditex provides annual statements, but it does not break out Zara sales from sales of the other brands owned by Inditex (Pull&Bear, Massimo Dutti, Bershka, Stradivarius, Oysho, Zara Home and Uterqüe). Zara also uses a flexible business model where its stores can be owned, franchised or co-owned with partners. So it is not always possible to find exact numbers for Zara’s business operations and finances.

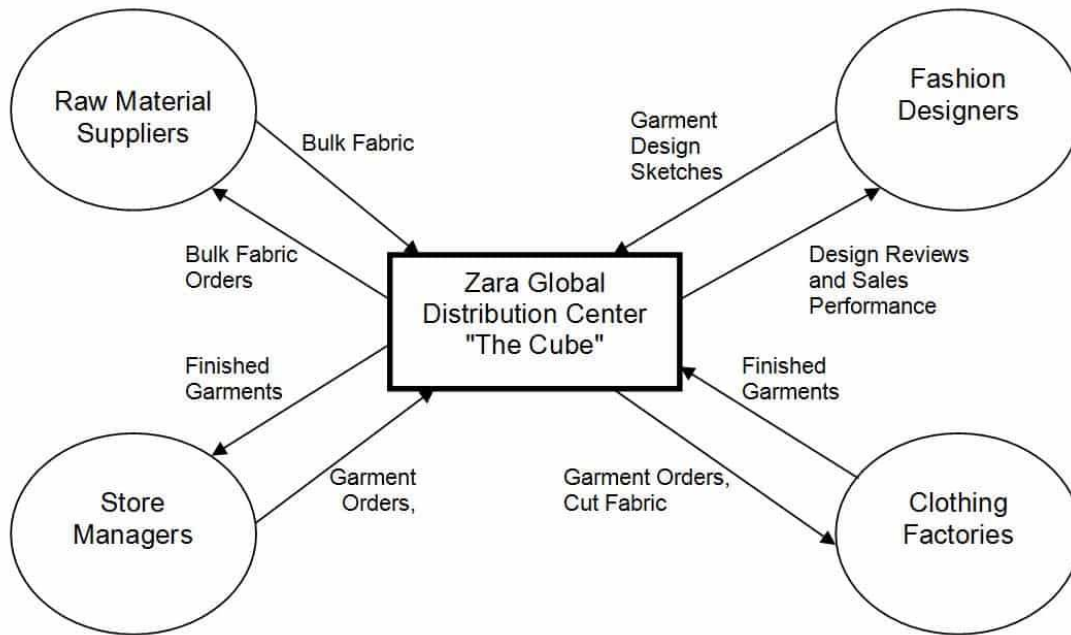
Manufacturing and Supply Chain Operations

Zara buys large quantities of only a few types of fabric (just four or five types, but they can change from year to year), and does the garment design and related cutting and dyeing in-house. This way fabric manufacturers can make quick deliveries of bulk quantities of fabric directly to the Zara DC – the Cube. The company purchases raw fabric from suppliers in Italy, Spain, Portugal and Greece. And those suppliers deliver within 5 days of orders being placed. Inbound logistics from suppliers are mostly by truck.

The Cube is 464,500 square meters (5 million square feet), and highly automated with underground monorail links to 11 Zara-owned clothing factories within a 16 km (10 mile) radius of the Cube. All raw materials pass through the Cube on their way to the clothing factories, and all finished goods also pass through on their way out to the stores. The diagram below illustrates Zara’s supply chain model.

Zara’s factories can quickly increase and decrease production rates, so there is less inventory in the supply chain and less need to finance that inventory with working capital. They do only 50 – 60 percent of their manufacturing in advance versus the 80 – 90 percent done by competitors. Zara does not need

to place big bets on yearly fashion trends. They can make many smaller bets on short term trends that are easier to call correctly.



The Zara factories are connected to the Cube by underground tunnels with high speed monorails (about 200 kilometres or 124 miles of rails) to move cut fabric to these factories for dyeing and assembly into clothing items. The monorail system then returns finished products to the Cube for shipment to stores.

Manufacturing is centered in north western Spain where company headquarters and the Cube are located. But for their main distribution and logistics hub they chose a more centrally located facility. That facility is located in Zaragoza in a large logistics hub developed by the Spanish government. Raw material is sent by suppliers to Zara’s manufacturing centre. Then finished garments leave the Cube and are transported to the Zara logistics hub in Zaragoza. And from there they are delivered to stores around the world by truck and by plane.

Required:

- a) Use **five main points** to critique Zara supply chain’s operational model. (10 marks)
- b) Identify and discuss **five** main unique supply chain management features in the case. (10 marks)
- c) In **five points**, discuss how the “five main unique supply chain management features” in (b) above may be adopted by firms in Kenya to gain competitive advantage. (10 marks)

QUESTION TWO (20 MARKS)

- a) The theory of supply chain flexibility has confounded both academics and corporate players in terms of its applicability and importance in a competitive business space. In **five points**, add your voice to the discussion by bringing out applicability and importance of the concept in firms operating in a competitive market. (10 marks)
- b) Firms aspire to achieve resiliency in their supply chain. Under **five points'** sub-headings, discuss the concept of supply chain resiliency with focus on its relevance in times of pandemic like what has been necessitated by Covid- 19. (10 marks)

QUESTION THREE (20 MARKS)

- a) Seamless supply chain collaboration is an essential component to effective and efficient supply chain management. Discuss **any five ways** it can be used in a corporate as a competitive strategy. (10 marks)
- b) The theory of channel management in Supply Chain is gaining traction in the business world more so with the advent of offshoring and outsourcing practices. However, the discussion as to why has not been conclusive. Use **five strong points** to add your voice to the discussion and conclude it. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Manufacturing sector world over suffers huge losses as a consequence of bull-whip effect. As a supply chain management expert, based on your research, provide a **five points' solution framework** specific to the sector. (10 marks)
- b) In the current global business space, performance of supply chain or any businesses is technology driven. Identify and discuss any **five right technologies** necessary for SC performance in Kenya. (10 marks)

QUESTION FIVE (20 MARKS)

- a) The concept of sustainability has found its way in Supply Chain Management (SCM). Use **five points** to discuss how it is grounded in SCM and why is it increasingly being embraced. (10 marks)
- b) The web like network relationships within and without firms operations have created inter and intra-dependent operational systems within departments of firms and across firms/industries. In **five points**, evaluate this operational situation and justify its sustainability. (10 marks)