EX0012

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

MAR 2024

DEPARTMENT: ECONOMICS

PROGRAMME: BCOM. PURCHASING AND SUPPLY CHAIN MANAGEMENT DEGREE

COURSE CODE SCM 201: SUPPLY CHAIN RISK MANAGEMENT

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. **Section A is compulsory**
2. **Answer any three (3) questions from section B.**
2. **Begin a new question on a fresh page.**
3. **Credit will be given for the use of appropriate examples**
4. **No cell phones are allowed in the examination room.**

Section A: Case study

Case of SupaRail

SupaRail is the national rail operator in Norway. The organization owned approximately 150 mainline locomotives, but much of its fleet was considered underpowered and outdated by modern standards. A project was undertaken in 2009 to replace some of the older locomotives.

The government initially supported the idea of building the replacement locomotives in Norway as a way of creating jobs at a time when the economy was entering a recession and unemployment was rising. Critics of the idea pointed out that Norway did not posses the necessary skilled labour in sufficient quantity for such a project to proceed. A review also found that locally built locomotives were seen as the quickest and cheapest way to upgrade the fleet.

New locomotives were eventually ordered from the China based Dalian Locomotives and Rolling Stock Co Ltd, the first batch of 20 costing approximately $75 million. It was the first order for a Chinese built locomotive from Norway. Critics at the time questioned the reliability of the locomotives, citing Dalian built locomotives were only 50% as reliable as others.

The level of corrective work resulted in the second batch of 20 locomotives being postponed pending resolution of design issues. For a period of time one locomotive was taken out of service to spare parts for the rest of the fleet.

Reliability eventually improved and by 31 July 2012 SupaRail announced that the whole new fleet had achieved its highest rating for average distance between failures.

In February 2014, SupaRail took all 40 its Dalian locomotives out of service after asbestos (a dangerous material) was discovered in soundproofing and packing materials in the doors. The presence of asbestos was breach of contract specification. Wayne Butson, general secretary of the rail and maritime Transport Union, said that SupaRail had taken 'a short sighted view of procurement with these Dalian locomotives and went for the cheapest possible option, regardless of the consequences and, in the process, have put the safety of their workforce at risk.

SupaRail chief executive Peter Reidy said 'we are clearly very disappointed with the situation and are working closely with the manufacturers to understand how this could possibly have occurred. They have taken full responsibility for this and have undertaken to do whatever is necessary to rectify the situation as quickly as possible for us'.

An operational plan was drawn up by SupaRail that included a comprehensive set of risk management measures for safe operation, ongoing mitigation of asbestos risk and eventual removal of materials containing asbestos. Reidy said the reduced rail capacity was causing 'supply chain issues for many Norway industries and businesses'. 'The Dalian locomotives are the workhorse (core element) of our fleet and without their pulling power all customers are feeling that lack of capacity' he said.

Questions

a) Analyse the operational risks for SupaRail that resulted from the purchase of the locomotives from China based Dalian Locomotives and Rolling Stock ltd. **[7 marks]**

b) Discuss contractual aspects that SupaRail might have included in its contract with Dalian Locomotive and Rolling Stock Co ltd in order to minimize potential risk associated with the supply of the locomotives. **[12 marks]**

c) Discuss risk management strategies that could be applied by SupaRail to reduce future risks within its supply chain. **[6 marks]**

SECTION B

2 (a) Define the following terms in relation to supply chain risk management:

i. Risk and uncertainty **(3 Marks)**
ii. Risk and hazard **(3 Marks)**
iii. Risk and vulnerability **(3 Marks)**
iv. Risk and exposure **(3 Marks)**
v. Risk events **(3 Marks)**

(b) Using practical examples, state and explain at least five benefits of effective supply chain risk management **(10 Marks)**

3. Using an organisation of your choice, explain how SWOT analysis and PESTEL analysis can be used as internal and external sources of risk respectively. **(25Marks)**

4. (a) Highlight and explain the risk matrix by Norrman and Lindroth, (2002) **(10 Marks)**

(b)Outline and explain the Kraljic matrix as a qualitative technique of assessing supply chain risk. **(15 Marks)**

5. (a) Risk mitigation is designed to create an acceptable level of residual risk. Identify and explain four risk mitigation strategies. **(10 Marks)**

(b) With the aid of practical examples, outline and explain at least five types of supply chain risks. **(15 Marks)**

6. Using any organization of your choice, discuss its business continuity plan and how it may be used to mitigate against risks for a supply chain. **(25Marks)**

END OF PAPER