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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: Supply Chain Management & Logistics for Aviation **Semester: III**
Program: MBA – AVM **Time: 03 Hours**
Course code: LSCM 8015 **Max. Marks: 100**

S. No.	Section A	Marks	CO
Q 1	**Attempt all the questions. Each question is compulsory.**		
a)	Differentiate Supply Chain from Logistics.	**2**	**3**
b)	Enumerate factors affecting the location decision for an airport.	**2**	**3**
c)	Discuss the significance of KPIs in case of commercial aviation.	**2**	**4**
d)	Differentiate Push Approach from Pull Approach.	**2**	**1**
d)	Briefly explain O-D model of transportation.	**2**	**2**
e)	What logistics challenges 3 PL companies are facing at airports?	**2**	**1**
f)	Enumerate any four MHEs used for airports.	**2**	**2**
g)	Discuss the significance of VMI in aircraft manufacturing.	**2**	**2**
h)	How Porter's Value Chain Model is applicable in logistics industry?	**2**	**4**
i)	Discuss KPIs practiced in case of airlines.	**2**	**4**
j)	How transportation models can be used to optimize the transportation cost?	**2**	**2**
	Section B **Attempt any four questions.**		
Q 2	Differentiate Factor Rating Method from Break-even Method.	**5**	**3**
Q 3	**Destinations** **Factory** **I** **II** **III** **IV** **Supply** **F1** 3 7 6 4 **5** **F2** 2 4 3 2 **2** **F3** 4 3 8 5 **3** **Demand** **3** **3** **2** **2** Determine the initial basic feasible of the following T.P. by using matrix minima method.	**5**	**2**

Q 4	For a specific aircraft spare part 'AS' is to be ordered by a food processing company, following data is available: Monthly Demand= 500 units Purchase cost/unit = $50/unit Ordering costs= $90/ order Holding costs (Ch) = $10/unit/year, fire insurance = 5% of the unit cost, 5% other overheads. Determine optimal order quantity of 'AS' items and how frequently the order should be placed?	**5**	**2**
Q 5	Discuss various factors affecting the location of a retail outlet of any retail chain.	**5**	**2**
Q 6	Discuss the role of CHA in cargo operations.	**5**	**2**
	Section C **Attempt any two questions.**		
Q 7	Attempt the short notes on the following: a) Challenges in designing Route/network for airlines b) Mass Customization Vs Innovation strategy c) Green Supply Chain in aviation sector	**2x7.5= 15**	**3** **3** **3**
Q 8	How Pricing strategies are vital for any LCC? Explain the current pricing strategies of LCC and what changes you suggest to make LCC more profitable?	**15**	**3**
Q 9	Discuss the role of suppliers such as for MRO/Avionics/Commercial Pilots/Catering Services in aviation sector. How 3 PL companies can make use of these services more efficient through KPI and effective in aviation?	**15**	**3,4**
Q 10	**Section D** **Attempt the following case study.**		
	Dynamic Supply Chains Delivering Value through People Author is of the opinion that the new title better makes the point that in supply chains we are dealing with people everywhere in the form of customers, consumers, end-users, suppliers and third parties. Terminology in supply chain management remains controversial as we are searching for more meaningful terms and Gattorna admits he is heading towards 'value networks' in future, as that probably describes the end-game most appropriately. Gattorna starts the book with a profound statement that supply chain design and operations are fundamentally flawed. We have largely ignored special needs and wants of customers and we need to develop a new business model for enterprise chains and networks of these chains, based on what customers want. In fact, we need a change in mindset from functional specialisation to the notion that the principles and practices embodied in supply chain and value networks thinking, should become a philosophy that permeates the enterprise, owned and contributed by all functions. I am of		

the opinion that sourcing and procurement are logistics functions that should be managed as part of supply chain management and it is great to read that Gattorna suggests that sourcing/procurement should be re-connected to the integrated supply chain. Another interesting comment is that for too long, there has been an unhealthy preoccupation with infrastructure and asset utilisation, driven mainly by the obsessive desire to cut costs. Even today, many executives see logistics and supply chain management as areas for cost cutting. Yet it is impossible to grow a company by continually cutting costs. Traditionally, supply chains were seen as a 50/50 mix of infrastructure and information system technology, but Gattorna feels that people play a very important role and that the mix should rather be 45/45/10 – human behaviour, systems technology and asset infrastructure. He continues the argument about the importance of people and suggests that we should "watch the customer, not the competitor". Organisation design is important but Gattorna is of the opinion that an 'ordinary' strategy well implemented is better that a 'brilliant' strategy poorly implemented. He regards confusing terminology and inappropriate organisation design as the two factors that have most inhibited the development of logistics and supply chain management over the past 45 years. Similar to the first edition, he suggests and discusses some generic supply chain types:

- Continuous replenishment supply chain:
  Predictable demand, easily managed through tight collaboration with customers. Focus on retention of customer relationships.
- Lean supply chain:
  Demand predictable (for example from historic off-take) but the loose relationship does not necessitate an extreme service level. Focus on efficiency.
- Agile supply chain:
  Unplanned or unforeseen demand, and a sometimes loose relationship with customers – almost always demands an agile response at higher costto-serve. Focus on the service-cost equation.
- Fully flexible supply chain:
  Respond opportunistically and manage yield. Focus on providing creative solutions at a premium price.

This last type is further split between a business event strategy in an entrepreneurial environment and a humanitarian response strategy in an emergency environment. Gattorna spends ample time in various chapters on each of the supply chain types while admitting that in real life, pure example of particular business models or supply chain types seldom exist.

The answer lies in hybrid models that combine as example, collaborative and lean characteristics,but he cautions against mixing 'oil and water'. The real driver of successful supply chains consists according to Gattorna of vital levers:

- Organization design;
- Positioning ofindividuals within the structure;

- Processes;
- IT systems;
- S&OP process;
- Internal communication styles;

job design; KPIs and their corresponding incentives;
training and development;
role modelling;
recruitment and leadership style.

There is much more to say about this excellent work but suffice to conclude with an updated list of strategic issues facing supply chains of the future:

• Sustainability in supply chains in the light of pressures for ecological, social and corporate responsibility

• Impact of oil prices on cost-to-serve

• Future practice of outsourcing, in all its different forms

• Wider adoption of supply chain'principles' by service organisations

• Vulnerability of contemporary supply chains to sudden disruptions

• Rise of genuine collaboration in enterprise supply chains

• Tapping the talentinside and outside enterprises

• Learning to design and manage multiple organization formats

• Coping with national, regional and global spread of supply chain networks

• Adoption of the whole-of-enterprise and Mindset in managing supply chain

• Collaborating with 'the enemy'

• Innovation (all forms),product design and product life-cycles

• Learning to manage inherent complexity in supply chains

• Impact of pricing regimes on supply chainperformance

• Financial links in enterprise supply chains

• Role of knowledge management in developing intelligent supply chains

• Developing a subculture of continuous improvement in enterprise supply chains.

Questions

Q 1. Identify strategic issues relevant to aviation supply chain and 'How Impact of ATF prices on cost-to-serve' for airlines is going to occur in near future?

	Q 2. Discuss various SC strategies specified in the case, and which one you think is the most appropriate strategy for airline industry and why?	**10**	**3**
	Q 3. Fully flexible supply chain: Respond opportunistically and manage yield. Focus on providing creative solutions at a premium price. Express your opinion on Fully flexible supply chain for aviation industry.	**10**	**3**
		10	**3**