



RASHTREEYA SIKSHANA SAMITHI TRUST
RV INSTITUTE OF MANAGEMENT
CA 17, 26 Main, 36th Cross, 4th T Block, Jayanagar
Bengaluru, Karnataka 560 041



Course Docket

21MBA431 - OPERATIONS AND SUPPLY CHAIN MANAGEMENT

Term – III Semester
Batch – 2021 - 2023
January 2023- May 2023

Course Facilitators

Dr. Santhosh M
Prof. Pooja Takalkar

R V INSTITUTE OF MANAGEMENT BANGALORE

COURSE OUTLINE

Programme	Master of Business Administration
Batch	2021- 2023
Semester	III
Course Title	OPERATIONS AND SUPPLY CHAIN MANAGEMENT
Course Code	21MBA431
Credits	3
Sessions	48
Course Facilitator	Dr. Santhosh M Prof. Pooja Takalkar

PART A

INTRODUCTION

With the growing manufacturing and service enterprises in recent years, supply chain management has gained popularity in India. The current course facilitates the students on how to build different supply chain management strategies and methods of forecasting demand, aggregate planning and network design for companies. The course aims at recognizing the role of Operations management among various business functions and its role in the organizations' strategic planning and gaining competitive advantage. It provides adequate knowledge of a range of operations management systems/models in decision making.

COURSE OUTCOMES

Having successfully completed this course student will be able to:

CO1: Understand the concept and scope of operations management in a business context

CO2: Distinguish the role of location planning and capacity planning for enhancing operations capability

CO3: Demonstrate knowledge of the functions of logistics and supply chain management

CO4: Design and Develop the supply chain network

CO5: Understand and apply the quality management tools in business context

PROGRAM OUTCOMES

PO1: Apply knowledge of management theories and practices to solve business problems with required abilities to understand, analyze and communicate global, economic, societal, cultural, legal and ethical aspects of business

PO2: Foster Analytical and critical thinking abilities for data-driven decision making

PO3: Ability to develop value based leadership to lead themselves and others in the achievement of organizational goals and contributing effectively to a team environment through effective communication and Negotiation skills

PO4: Ability to identify business opportunities, frame innovative solutions and launch new business ventures or be an intrapreneur

PO5: Ability to deal with contemporary issues using multi-disciplinary approach with the help of advanced Management and IT tools and techniques

PO6: Ability to apply domain specific knowledge and skills to build competencies in their respective functional area

PO7: Ability to engage in research and consultancy work with cognitive flexibility to create new knowledge and be a lifelong learner

PO8: Ability to understand social responsibility and contribute to the community for inclusive growth and sustainable development of society through ethical behavior

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	3	2	1	1	3	3
CO2	3	3	1	1	1	1	3	2
CO3	3	3	1	1	1	1	3	3
CO4	3	3	1	1	1	1	2	2
CO5	3	3	1	3	3	2	2	2

LEVEL 3-Substantial 2-Moderate 1-Slight - No Co-relation

KEY CONCEPTS

Module 1: Production and Operations management functions

- Introduction to operation;
- Operation management function;
- Classification of production systems
- Productivity; factors affecting productivity;
- The decision process;
- Characteristics of operations decisions;
- Decision making environments;
- Time study; methods
- Work study: Methods
- Method study: Methods
- Motion study: Methods
- Numerical problems on NT, ST and Production cost per unit

Module 2: Capacity and Location planning

- Importance of capacity decisions;
- Defining and measuring capacity;
- Determinants of effective capacity;
- Determining capacity requirement;
- Developing capacity alternatives
- Evaluating alternatives
- Need for location decisions;
- Nature of locations decisions;
- General procedure for making locations decisions;
- Evaluating locations decisions;
- Facilities layout;
- Need for layout decisions
- Types of processing
- Numerical problems on Layout selection
- Numerical problems on Capacity planning

Module 3: Supply chain management and Logistics

- Basic concepts & philosophy of SCM;
- Decision phases in SCM;
- Supply chain framework
- Key issues in SCM and benefits
- Logistics of part of SCM
- Logistics costs
- Inbound and out bound logistics;
- Bullwhip effects in logistics;
- Distribution and warehousing management
- Demand Management

Module 4: Designing the supply chain network

- Designing the distribution network;
- Role of distribution;
- Factors influencing distribution
- Design options
- Distribution networks in practice
- Network design in the supply chain;
- Factors affecting the network design decisions - Designing and Planning
- Transportation Networks;
- Role of transportation;

- Modes of transportation

Module 5: Introduction to Quality Management

- Dimensions of quality;
- Cost of quality and quality cost audit
- Statistical process control; control charts
- Numerical problems on Control charts: Mean – range chart, np chart, p chart, c chart and u chart
- Total quality management (TQM)
- Six sigma
- ISO 9000 and other ISO series
- Lean and Just in Time production system

TEACHING PEDAGOGY

- Class room discussion
- Project based learning
- Workshop from practioners
- Case based teaching
- Experiential learning

TEXT BOOKS AND REFERENCE MATERIALS

ESSENTIAL READINGS

1. Supply chain management, Chopra Sunil and Peter Meindl - 3rd edition, Pearson, 2007.
2. “Operation Management, Author- Joseph G Monks McGrew Hill Publication, International Edition-1987.
3. “Production and Operation Management”, -Pannerselvam R. PHI publications, 2nd edition

REFERENCES

1. “Production and Operation Management” Chary S. N. Tata McGrew Hill 3rd edition.
2. “Production and Operations Management”, Everett E. Adams, Ronald J. Ebert, Prentice Hall of India Publications, Fourth Edition.

3. Modern Production/Operations Management, Buffia, Wiley India Ltd 4th Edition.
4. Supply Chain Management-A Managerial Approach, Amith Sinha, Herbert, 2nd edition, TMH.
5. A Text Book of Logistics and Supply chain management, Agarwal D.K. - 1st edition, Macmillan

CASES AND ARTICLES

- Case on Active sourcing
- Case on Hamara Partner
- Case on Lead time management
- Case on Logistics in Retail sector
- Case on MSTC Ltd.
- Case on Setting Ethical standards
- Case on SCM in Retail sector
- Case on SCM security Measures in Indian ports
- Case on Tender negotiations
- Case on WE deliver
- Case on fresh and cheap farm produce to consumers

SUPPORTING READINGS

- <https://www.coursera.org/specializations/supply-chain-management>
- <https://www.futurelearn.com/courses/supply-chain-innovation>
- <https://www.edx.org/course/operations-management>
- Pearson e – library ; <https://elibrary.in.pearson.com/bookshelfDashboard>
- EBSCO : <https://www.ebsco.com/search?search=supplychainmodel>
- Jgate: <https://jgateplus.com/home/resources/>
- Capitaline: <https://www.capitaline.com/SiteFrame.aspx?id=1>

EVALAUTION PLAN

SL NO	PARTICULARS	MARKS
1	SEMESTER END EXAMINATION	50
2	CIA 1. Attendance and class participation 2. Mid –term Test 3. Quiz (5 quiz, 1 from each module) 4. Capstone Project (Project -15 marks ; Presentation -5 marks)	50 05 20 05 20
	Total	100



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III SEMESTER
Batch 2021-2023

SUBJECT CODE: **21MBA431**
SUBJECT: **OPERATIONS & SUPPLY CHAIN MANAGEMENT**

CAPSTONE PROJECT

The capstone project is a group assignment. This project is aimed to provide students the conceptual clarity on operations and supply chain practices followed at industries across various verticals. The project provides an insight about Supply chain design, process and implementation challenges at the organisational levels. The students will be able to appreciate the dynamics and robustness of Supply chain management in enhancing the operational capabilities of the organisation.

Objective of the Assignment/Activity:

1. To understand and appreciate the concepts of Supply chain, Logistics and TQM and its implementation at organisation level.
2. To analyse the firm, its SCM strategies and summarize the business through observation and interpretation during the course of the subject.

Group Assignment:

Students will form their own team of SIX members, finalize the topic and register the same with the subject faculty member. Once the topic has been chosen the team will adhere to it until the completion of the assignment

Submission of the Assignment:

The complete assignment will be submitted in a form of report, adding preliminary pages to the report on or before **30th March 2023**.

Outcome to be achieved

At the end of the assignment, students will be able to understand, analyse, interpret the concepts with reference to the firm that they have selected.

Structure of the capstone project

Chapter -1: Introduction

- Profile of the Selected sector
- Profile of the Selected Company / Firm
- Promoters / Board of Directors / Governing body
- Product profile
- Area of operations (Local/ National / International)
- Competitors Information
- Summary of Financials

Chapter -2: Capacity and Location management

- Defining and measuring firm's capacity
- Factors affecting Firm's capacity
- Capacity building measures of the firm
- Rationale for selecting firm's plant location
- Advantages and disadvantages of location
- Suppliers profile
- Vendor selection policy
- Production process of the firm

Chapter -3: Supply chain Framework

- Organisational strategy
- SC policies
- SC participants
- SC life-cycle activities
- SC support functions
- Performance measurement
- Continuous improvement
- SCM enablers

Chapter-4: Logistics management

- Inbound and outbound logistics
- Distribution channels
- Warehouse management
- Transportation network
- Demand management
- ERP modules adopted by the firm

Chapter -5: Total Quality Management

- Quality policy
- Customer relationship management
- Continuous improvement measures
- Customer retention measures
- Quality control tools employed
- Awards/ rewards/ recognition / certifications for quality management

Academic integrity

Academic integrity is a critical value of the institute community. Plagiarizing in any form will fail the importance of the assignment. Plagiarism is copying anything from another source without citing that source. For assignments identified as group work, it is expected that all members of the group will have contributed to the final output. A group may not collaborate with other group or students from another section. Extreme care must be taken to avoid passing of other's work as one's own. The students are required to provide appropriate citations when the information's is taken from other source.

Assignment preparation:

The assignment is taken by 6-member team. The students will select the topic/ company and register the same with the subject faculty member. Only one topic need to be selected by the entire team.

Report:

- Formatting: Heading should be Times New Roman 16
- Sub-headings: Times New Roman 14
- Body Text: Times New Roman 12
- Margin one on all the side. Spacing 1.5 lines.
- Body text should be justified and no copying and pasting work.
- Page numbers should be given in the footer from the Module 1
- Pictures should be limited.
- Cover page and student declaration is a must. No page number for the cover page and student declaration
- Chapter scheme should be essential. Do not number the same.

Annexure 1 Cover page

Annexure-2 Student Declaration

Annexure -3 Chapter Scheme

MARKING RUBRICS	Exemplary 3	Proficient 2	Below Expectations 1	Not Submitted 0	Total points
Introduction	Nature of business, product and services shown. Best and most applicable points are presented while unnecessary content is left out.	Important points about companies are presented while unnecessary content is left out.	Some important points about companies, product and services are addressed, but not fully covered.	Failed in assignment	3
Capacity and location management	Capacity and location management Points are clearly defined and well supported by evidence and research.	Capacity and location management Points are clearly defined to certain extent supported by evidence and research	Capacity and location management Points few defined and not clear as it is not supported by evidence and research.	Failed in assignment	3
Supply chain framework	Assignment has shown SC framework and Interprets each and every point related to the firm, giving scope for critical thinking,	Assignment has shown SC framework. Interpretation are given to each and every point related to the firm, giving scope for critical thinking,	Assignment lacks major information of SC framework Interpretations are limited each and every point related to the firm, giving scope for critical thinking.	Failed in assignment	3
Logistics management	The entire Assignment is unique, a lot of research done. All themes and concepts are analysed, integrated and incorporated.	The entire Assignment is unique; few of the research need to be completed. Done. All themes and concepts need to be analysed, integrated and incorporated.	50% of the themes and concepts throughout the analysis are integrated and incorporated to support the thesis. 50% of concepts are presented as a whole.	Failed in Assignment	3

Total quality management	The entire Assignment is unique, a lot of research done. All themes and concepts are analysed, integrated and incorporated.	The entire Assignment is unique; few of the research need to be completed. Done. All themes and concepts need to be analysed, integrated and incorporated.	50% of the themes and concepts throughout the analysis are integrated and incorporated to support the thesis. 50% of concepts are presented as a whole.	Failed in Assignment	3
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Sectors and Firms for Capstone Project

Sector	Firm
Apparel	Madhura coats, Reliance, Aditya Birla Fashion retail, Arvind mills, Raymond Limited, Bombay Dyeing
Automobile	Maruti, Hero corp, Tata, Mahindra, Bajaj, Kia, Hyundai, Honda, BMW, Volvo, Ashok Leyland, SML, Eicher
Chemicals/ Paints	Asian paint, Nerolac, Berger
Consumer durables	Samsung, LG, Godrej
FMCG	HLL, P&G, Coca-Cola, Pepsi
Food	Cadbury, Godrej, Parle, AMUL, Dabur
Computers	Wipro, HCL
Newspaper	HT Media, Bennett Coleman
Petroleum	Indian oil, Bharat Petroleum, Shell, Reliance
Pharma	Ranbaxy, Dr. Reddy's lab, Dabur, Himalaya, Cipla, Sun Pharma

Annexure-1 (Cover page)



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III SEMESTER
Batch 2021-2023

SUBJECT CODE: 21MBA431

SUBJECT: OPERATIONS & SCM

Topic:

“Capstone project on

.....”

NAME OF THE STUDENT	
SEMESTER	
REGISTERED NUMBER	
NAME OF THE FACULTY	
MARKS (out of 15)	

Annexure -2

Student Declaration

DECLARATION BY THE STUDENT

I hereby declare that “.....” is the result of the project work carried out by me as a partial fulfillment for the award of Master’s Degree in Business Administration by Bengaluru City University. I also declare that this project is the outcome of my own efforts and that it has not been submitted to any other University or Institute for the award of any other degree or Diploma or Certificate.

Signature of Student

Annexure-3

Chapter Scheme

Chapter No	Chapter name	Page Number
1		
2		
3		
4		
5		
	Conclusion & Bibliography	

COURSE FACILITATORS

Dr. Santhosh M

Department of Marketing

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Prof. Pooja Takalkar

Department of Finance

Email: poojat.rvim@rvei.edu.in Mobile: 6363276639

SESSION PLAN

Session Plan	Coverage of Key Components	Pedagogy/ Activity	Reading Material to be referred
MODULE 1: Production and Operations management functions			
1.	Introduction to operation; Operation management function	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • Chapter 1 of part 1of Book 1 • Chapter 1 of unit 1 of Book 2 • PPT – Module 1
2.	<ul style="list-style-type: none"> • Classification of production systems • Productivity; factors affecting productivity; • The decision process; • Characteristics of operations decisions; 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • Chapter 1 of part 1of Book 1 • Chapter 1 of unit 1 of Book 2 • PPT – Module 1
3.	<ul style="list-style-type: none"> • Decision making environments; • Time study; methods • Work study: Methods 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • Chapter 1 of part 1of Book 1 • Chapter 1 of unit 1 of Book 2 • PPT – Module 1
4.	<ul style="list-style-type: none"> • Method study: Methods • Motion study: Methods • Numerical problems on NT, ST and Production cost per unit 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • Chapter 1 of part 1of Book 1 • Chapter 1 of unit 1 of Book 2 • PPT – Module 1
5.	<ul style="list-style-type: none"> • Motion study: Methods • Numerical problems on NT, ST and Production cost per unit 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • PPT – Module 1
6.	<ul style="list-style-type: none"> • Motion study: Methods • Numerical problems on NT, ST and Production cost per unit 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> • Chapter 1 of part 1of Book 1 • Chapter 1 of unit 1 of Book 2 • PPT – Module 1 •

MODULE 2: Capacity and Location planning

7	<ul style="list-style-type: none"> • Importance of capacity decisions; • Defining and measuring capacity; 	<ul style="list-style-type: none"> a. Lecture b. Class room discussion c. Problems 	<ul style="list-style-type: none"> • Chapter 7 of part 1 of Book 1 • Chapter 2 of unit 2 of Book 2 • PPT – Module 2
8	<ul style="list-style-type: none"> • Determinants of effective capacity; <p>Determining capacity requirement;</p>	<ul style="list-style-type: none"> problems 	<ul style="list-style-type: none"> • Chapter 7 of part 1 of Book 1 • Chapter 5 of unit 2 of Book 2
9	<ul style="list-style-type: none"> • Developing capacity alternatives • Evaluating alternatives • Need for location decisions; • Nature of locations decisions; 	<ul style="list-style-type: none"> a. Lecture b. Class room discussion c. Problems 	<ul style="list-style-type: none"> • Chapter 7 of part 1 of Book 1 • Chapter 5 of unit 2 of Book 2 • PPT – Module 2
10.	<ul style="list-style-type: none"> • General procedure for making locations decisions; • Evaluating locations decisions; • Facilities layout; 	<ul style="list-style-type: none"> problems 	<ul style="list-style-type: none"> • Chapter 7 of part 1 of Book 1 • Chapter 5 of unit 2 of Book 2
11.	<ul style="list-style-type: none"> • Evaluating locations decisions; • Facilities layout; 	<ul style="list-style-type: none"> a. Lecture b. Class room discussion 	<ul style="list-style-type: none"> • Chapter 2 of part 1 of Book 1 • PPT – Module 2
12.	<ul style="list-style-type: none"> • Evaluating locations decisions; • Facilities layout; 	<ul style="list-style-type: none"> a. Lecture b. Class room discussion 	<ul style="list-style-type: none"> • Chapter 2 of part 1 of Book 1 • PPT – Module 2
13.	<ul style="list-style-type: none"> • Need for layout decisions • Types of processing • Numerical problems on Layout selection 	<ul style="list-style-type: none"> a. Lecture b. Class room discussion 	<ul style="list-style-type: none"> • Chapter 2 of part 1 of Book 1 • PPT – Module 2
14.	<ul style="list-style-type: none"> • Numerical problems on Capacity planning 	<ul style="list-style-type: none"> a. Lecture b. Class room 	<ul style="list-style-type: none"> • Chapter 2 of part 1 of Book 1 • PPT – Module 2

		discussion	
MODULE 3: Supply chain management and Logistics			
15.	<ul style="list-style-type: none"> Basic concepts & philosophy of SCM; Decision phases in SCM; 	a. Lecture b. Class room discussion c. Problems	<ul style="list-style-type: none"> Chapter 3 of unit 3 of book 2 Chapter 3 of part 5 of book 1 <ul style="list-style-type: none"> PPT – Module 3
20	<ul style="list-style-type: none"> Supply chain framework Key issues in SCM and benefits 	a. Lecture b. Class room discussion c. Problems	<ul style="list-style-type: none"> Chapter 3 of unit 3 of book 2 Chapter 3 of part 5 of book 1 <ul style="list-style-type: none"> PPT – Module 3
21.	<ul style="list-style-type: none"> Supply chain framework Key issues in SCM and benefits 	a. Lecture b. Class room discussion c. Problems	PPT – Module 3
22.	<ul style="list-style-type: none"> Logistics of part of SCM Logistics costs 	a. Lecture b. Class room discussion c. Problems	PPT – Module 3
23.	<ul style="list-style-type: none"> Logistics of part of SCM Logistics costs 	a. Lecture b. Class room discussion c. Problems	<ul style="list-style-type: none"> Chapter 2 of unit 3 of book 2 Chapter 2 of part 5 of book 1 <ul style="list-style-type: none"> PPT – Module 3
24.	<ul style="list-style-type: none"> Inbound and out bound logistics; Bullwhip effects in logistics; 	a. Lecture b. Class room discussion	PPT – Module 3
25	<ul style="list-style-type: none"> Distribution and warehousing management Demand Management 	a. Lecture b. Class room discussion	PPT – Module 3
26	<ul style="list-style-type: none"> Distribution and warehousing management Demand Management 	a. Lecture b. Class room discussion	PPT – Module 3
MODULE 4: Designing the supply chain network			
26	<ul style="list-style-type: none"> Designing the distribution network; Role of distribution; 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> Chapter 2 of unit 2 of book 2 Chapter 1 of part 3 of book 1 <ul style="list-style-type: none"> PPT – Module 4
27	<ul style="list-style-type: none"> Factors influencing distribution Design options 	a. Lecture b. Class room discussion	<ul style="list-style-type: none"> PPT – Module 4
28	<ul style="list-style-type: none"> Factors influencing distribution 	a. Lecture b. Class room	<ul style="list-style-type: none"> Chapter 2 of unit 2 of book 2 Chapter 1 of part 3 of book 1

	<ul style="list-style-type: none"> • Design options 	<p>discussion c. Problems</p>	<ul style="list-style-type: none"> • PPT – Module 4
29	<ul style="list-style-type: none"> • Distribution networks in practice • Network design in the supply chain; 	<p>a. Lecture b. Class room discussion c. Problems</p>	<ul style="list-style-type: none"> • Chapter 3 of unit 4 of book 2 • Chapter 2 of part 2 of book 1 <ul style="list-style-type: none"> • PPT – Module 4
30	<ul style="list-style-type: none"> • Distribution networks in practice • Network design in the supply chain; 	<p>a. Lecture b. Class room discussion c. Problems</p>	<ul style="list-style-type: none"> • Chapter 3 of unit 4 of book 2 • Chapter 2 of part 2 of book 1 <ul style="list-style-type: none"> • PPT – Module 4
31	<ul style="list-style-type: none"> • Factors affecting the network design decisions - Designing and Planning 	<p>a. Lecture b. Class room discussion c. Problems</p>	<ul style="list-style-type: none"> • Chapter 3 of unit 4 of book 2 • Chapter 2 of part 2 of book 1 <ul style="list-style-type: none"> • PPT – Module 4
32	<ul style="list-style-type: none"> • Factors affecting the network design decisions - Designing and Planning 	<p>a. Lecture b. Class room discussion c. Problems</p>	<ul style="list-style-type: none"> • Chapter 3 of unit 4 of book 2 • Chapter 2 of part 2 of book 1 <ul style="list-style-type: none"> • PPT – Module 4
33	<ul style="list-style-type: none"> • Transportation Networks; • Role of transportation • Modes of transportation 	<p>a. Lecture b. Class room discussion c. Problems</p>	<ul style="list-style-type: none"> • Chapter 3 of unit 4 of book 2 • Chapter 2 of part 2 of book 1 <ul style="list-style-type: none"> • PPT – Module 4

MODULE 5 Introduction to Quality Management

34	<ul style="list-style-type: none"> • Dimensions of quality; • Cost of quality and quality cost audit 	<p>a · L e c t u r e b · C l a s s r o o m</p>	<ul style="list-style-type: none"> • Chapter 1 of unit 5 of book 2 • Chapter 1 of part 3 of book 1 <ul style="list-style-type: none"> • PPT – Module 5
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		d i s c u s s i o n	
32	<ul style="list-style-type: none"> • Statistical process control; control charts • Numerical problems on Control charts: Mean – range chart, np chart, p chart, c chart and u chart 	a . L e c t u r e b . C l a s s r o o n d i s c u s s i o n	<ul style="list-style-type: none"> • Chapter 1 of unit 5 of book 2 • Chapter 1 of part 3 of book 1 PPT – Module 5
33	Total quality management (TQM)	a . L	<ul style="list-style-type: none"> • Chapter 1 of unit 5 of book 2 • Chapter 1 of part 3 of book 1 <ul style="list-style-type: none"> • PPT – Module 5

		e c t u r e b · C l a s s r o o m d i s c u s s i o n c · P r o b l e m s	
34	Six sigma	a · L e c t	<ul style="list-style-type: none"> • Chapter 5 of unit 5 of book 2 • Chapter 2 of part 3 of book 1 <ul style="list-style-type: none"> • PPT – Module 5

		u r e b . C l a s s r o o n d i s c u s s i o n c . P r o b l e m s	
35	ISO 9000 and other ISO series	p r o b l e m s	<ul style="list-style-type: none"> • Chapter 5 of unit 5 of book 2 • Chapter 2 of part 3 of book 1
36	Lean and Just in Time production system (Problems)	a .	<ul style="list-style-type: none"> • Chapter 4 of unit 5 of book 2

		<p>L e c t u r e . C l a s s r o o m d i s c u s s i o n . P r o b l e m s</p> <ul style="list-style-type: none"> • Chapter 3 of part 3 of book 1 <ul style="list-style-type: none"> • PPT – Module 5
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TEXT BOOKS AND REFERENCE MATERIALS

ESSENTIAL READINGS

1. Supply chain management, Chopra Sunil and Peter Meindl - 3rd edition, Pearson, 2007.
2. "Operation Management, Author- Joseph G Monks McGrew Hill Publication, International Edition-1987.
3. "Production and Operation Management", -Pannerselvam R. PHI publications, 2nd edition

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4. Supply Chain Management-A Managerial Approach, Amith Sinha, Herbert, 2nd edition, TMH.
5. A Text Book of Logistics and Supply chain management, Agarwal D.K. - 1st edition, Macmillan

CASE STUDY: <https://corporatefinanceinstitute.com/resources/knowledge/accounting/financial-statements-example-amazon-case-study/>

<https://elibrary.in.pearson.com/login>

SYLLABUS

Module 1: Production and Operations management functions

- Introduction to operation;
- Operation management function;
- Classification of production systems
- Productivity; factors affecting productivity;
- The decision process;
- Characteristics of operations decisions;
- Decision making environments;
- Time study; methods
- Work study: Methods
- Method study: Methods
- Motion study: Methods
- Numerical problems on NT, ST and Production cost per unit

Module 2: Capacity and Location planning

- Importance of capacity decisions;
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Module 3: Supply chain management and Logistics

- Basic concepts & philosophy of SCM;
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- Key issues in SCM and benefits
- Logistics of part of SCM
- Logistics costs
- Inbound and out bound logistics;

- Bullwhip effects in logistics;
- Distribution and warehousing management
- Demand Management

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- Designing the distribution network;
- Role of distribution;
- Factors influencing distribution
- Design options
- Distribution networks in practice
- Network design in the supply chain;
- Factors affecting the network design decisions - Designing and Planning
- Transportation Networks;
- Role of transportation;
- Modes of transportation

Module 5: Introduction to Quality Management

- Dimensions of quality;
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- Statistical process control; control charts
- Numerical problems on Control charts: Mean – range chart, np chart, p chart, c chart and u chart
- Total quality management (TQM)
- Six sigma
- ISO 9000 and other ISO series
- Lean and Just in Time production system

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REFERENCES

1. “Production and Operation Management” Chary S. N. Tata McGrew Hill 3rd edition.

2. “Production and Operations Management”, Everett E. Adams, Ronald J. Ebert, Prentice Hall of India Publications, Fourth Edition.
3. Modern Production/Operations Management, Buffia, Wiley India Ltd 4th Edition.
4. Supply Chain Management-A Managerial Approach, Amith Sinha, Herbert, 2nd edition, TMH.
5. A Text Book of Logistics and Supply chain management, Agarwal D.K. - 1st edition, Macmillan

CASES AND ARTICLES

- Case on Active sourcing
- Case on Hamara Partner
- Case on Lead time management
- Case on Logistics in Retail sector
- Case on MSTC Ltd.
- Case on Setting Ethical standards
- Case on SCM in Retail sector
- Case on SCM security Measures in Indian ports
- Case on Tender negotiations
- Case on WE deliver
- Case on fresh and cheap farm produce to consumers

SUPPORTING READINGS

- <https://www.coursera.org/specializations/supply-chain-management>
- <https://www.futurelearn.com/courses/supply-chain-innovation>
- <https://www.edx.org/course/operations-management>
- Pearson e – library ; <https://elibrary.in.pearson.com/bookshelfDashboard>
- EBSCO : <https://www.ebsco.com/search?search=supplychainmodel>
- Jgate: <https://jgateplus.com/home/resources/>
- Capitaline: <https://www.capitaline.com/SiteFrame.aspx?id=1>

EVALAUTION PLAN

SL NO	PARTICULARS	MARKS
1	SEMESTER END EXAMINATION	50
2	CIA	50
	1. Attendance and class participation	05
	2. Mid –term Test	20
	3. Quiz (5 quiz, 1 from each module)	05
	4. Capstone Project (Project -15 marks ; Presentation -5 marks)	20
	Total	100

Q.P. Code : 61322

Third Semester M.B.A. (Day) Degree Examination,
February/March 2020

(CBCS – 2014-15 Scheme)

Management

Paper 3.2 – PROJECTS AND OPERATIONS MANAGEMENT

Time : 3 Hours]

[Max. Marks : 70



SECTION – A

Answer any **FIVE** questions. Each question carries **5** marks : **(5 × 5 = 25)**

1. Explain the meaning of a project.
2. What is meant by project life cycle?
3. How is a project team formed?
4. What is business forecasting? How is it done?
5. Explain the concepts of earned value and cost performance index.
6. Explain the different types of production systems.
7. Detail the concept of seven wastes.

SECTION – B

Answer any **THREE** questions. Each question carries **10** marks : **(3 × 10 = 30)**

8. Explain the purchase functions and the process of vender selection.
9. Write short notes on :
 - (a) Project integration management
 - (b) Project time management
10. Discuss the concept of six sigma and its application with suitable examples.
11. How is risk qualified? How are problems in project management showed through risk analysis?

SECTION - C

12. Case Study (Compulsory) : (1 × 15 = 15)

You have been appointed as the production manager of a new facility that manufactures class room furniture. You are responsible for the layout of the said facility. Develop a blue print for the facility layout. You are required to follow the basic principles of a faculty layout, write the type of layout you would choose and explain your decisions clearly.

SECTION - A

Answer any FIVE questions. Each question carries 5 marks : (5 × 5 = 25)

Explain the meaning of a project.

What is meant by project life cycle?

How is a project team formed?

What is business forecasting? How is it done?

Explain the concepts of earned value and cost performance index.

Explain the different types of production systems.

Detail the concept of total waste.

SECTION - B

Answer any THREE questions. Each question carries 10 marks : (3 × 10 = 30)

8. Explain the purchase function and the process of vendor selection.

Write your answer on :

(a) Financial management

(b) Project management

9. Discuss the concept of six sigma and its application with suitable examples.

10. How is risk identified? How are problems in project management solved through risk analysis?

20.2 ACTIVE SOURCING

Gajaraj & Co. Ltd., (GCL) is a large conglomerate with multi product, multi Location Company. The company manufacturing unit is located in Thane, Maharashtra. Among many products, about 90 numbers per month, Fork Lift Trucks (FLT) are manufactured in Thane. GCL has a technical collaboration with a French company. GCL gets state of art technologies and global development inputs from its collaborator on regular basis. This keeps the products an edge of technical superiority in the market place. GCL outsources all components from outside except the gear box and transmission assembly.

Good and active sourcing is the key in the FLT department of GCL. The supply chain channel members, more importantly the suppliers were made to involve during process and product development. It helped in achieving the standards to levels of foreign collaborators and in containing costs.

SCM activities of FLT are headed by Mr. Chitnis. He is assisted by four; one procurement engineer, two chasers and one assistant. The SCM team profiles the detailed specifications that include definition of phased deliveries and acceptance criteria. The SCM team activities include vendor development, assessing the potential sources and vendor evaluation by rating method. SCM team develops purchasing strategies followed by electronic requests for proposal and prices. Thereafter agreements are made with suppliers for phased deliveries. GCL follows a policy of minimum two sources for any components or service sourcing. The role of chasers in SCM team in GCL is special. On daily basis, each chaser visits 3 or 4 vendors on their company motorbikes to follow up and arrange timely deliveries. The chaser is a link with the operation unit. The SCM engineer and 2 chasers attend daily morning 0830 Hrs production review meet to find out critical requirement of components on the manufacturing shop floor.

The success of FLT unit rests on the efficiency and success of sourcing. The President of GCL lays emphasis on right sources, close follow ups and vendor rating. GCL vendor rating evaluates supplier performances based on preset milestones and rating in the scale of 1 to 5. GCL buys services also for its FTL unit. For services it is difficult to introduce milestones. The vendors for the service are measured by surveys sent electronically to internal clients. The rating and weightage in the evaluation matrix thereon for the vendors are;

• Quality	-	30
• Timely deliveries	-	20
• Prices	-	20
• Finance stability	-	10
• Communication	-	10
• R&D work	-	10

Mr. Chitnis explains "We are involved in vendor rating and analysis to all our 51 important vendors. The monthly vendor rating system is programmed. I can make monthly review and warn

defaulting vendors or develop more vendors in specific areas. One failed source can create havoc in FLT unit. We take suggestions from our internal client for his definition of success. Then we have a tangible means of measuring success. Established sources and their expertise help up in our R&D work and cost reduction initiatives”.

QUESTIONS:

- 1) Discuss the manufacturing and sourcing philosophy of GCL.
- 2) Differentiate between vendor analysis and vendor development?
- 3) Is vendor rating method selected by Mr. Chitnis sound? Discuss its plus and minus points.



20.3 HAMARA PARTNER

Timely must surely be of essence for an auto manufacturer that delivered 9,02,743 motorcycles and an additional 1,06,175 three-wheelers from its plant in Pune between April and August this year. Bajaj Auto Ltd., ranked as the fourth largest two and three - wheeler manufacturer in the world, turned to Gurgaon-based Transport Corporation of India Ltd. (TCIL) to help it execute this.

Bajaj Auto Managing Director Rajiv Bajaj says his company foresaw the changes in customer behaviour and the key role which distribution would play. Its focus on supply chain management triggered the need to re-engineer its supply line to make it more responsive to change. This involved close coordination and transporter to distribution to efficient and production planning and finally to the parts vendor.

Bajaj formed a cross-functional team for developing a fresh perspective to the challenge. The team zeroed in on TCIL as a 3PL partner. The distribution patterns were studied and debated across various meetings and a plan formulated round the principle that the dealer must not hold excess inventory, but rather 'order as he retails'. TCIL Vice Chairman and Managing Director D.P. Agarwal says the pattern of full load (say 55 motorcycles) was changed to any number, with deliveries in "dealer clusters" rather than to a single dealer. Freight vehicles were rigged with modular fittings as the Bajaj product line ranged from an 80 CC Step to the high-end Eliminator (now Avenger).

A pilot area was demarcated and dealers approached for encouraging transparency, changing their order patterns from push to pull for deliveries within 48 hours of order. "for the first time in the industry, trailers were designed for motorcycles, TCIL patenting a three-deck format to carry 105 to 110 bikes or 28 auto-rickshaws (against 14 in a normal truck)", points out Agarwal. "These vehicles were further developed to have a self-loading and unloading mechanism for easy discharge of cargo without a ramp; they also have GPS on them for better fleet management".

Bajaj dealers now carry 12 to 15 days of inventories, against 35 earlier.

This was not all. The next issue to be tackled was after sales availability of genuine Bajaj spares. It was a dual objective, namely, to ensure timely delivery of spares to dealers for their customers as also to check the rampant growth of spurious Bajaj spares. "We formed a logistics protocol", says Agarwal. "Regular orders were shipped through the conventional TCIL mode, by a hub and spoke arrangement, while the VOR (vehicle off road) orders were shipped through XPS surface cargo and XPS Air emergency order".

This focus on spares was further enhanced by a pilot depot for spares. Bajaj claims the results were startling, with spares inventories with dealers falling to 15 days within three months and deliveries on the same day in the core zone and within 24 hours in the remainder of the zone. "Parts like motorbike chassis, which are seldom required, are also now available within a day, leading to very quick repairs for the worst mishaps, thus validating the customer's faith in purchasing a Bajaj product", says Bajaj.

(Source page 92 Business India 5th Oct 2008)

QUESTIONS:

- 1) Explain how Bajaj, its 3PL partner and others in SCM joined hands for profitability?
- 2) What inventory techniques are used in the case?
- 3) Give details: your one idea to reduce the cycle time of SCM for Bajaj industrial products and spare parts.
- 4) List at least four factors and explain on which 3PL partners choice need to be evaluated.



20.4

LEAD TIME MANAGEMENT

Farm Equipment Manufacture Ltd., (FEML), established in 1965, is one of the world's leading producers of agricultural equipments. FEML's latest efforts on supplier relationships have their redefinition, the factory was focused on sheet steel stampings, welding, assembly and paint as core manufacturing processes. With this strategy purchased past costs began to represent an increasing percentage of the FEML's manufactured costs. This laid the first corner stone in FEML's re-examination of supplier relations. The second corner stone fell in place when, because of capacity constraints, steel stamping dept was unable to fill the factory's total stamping requirements and this led to the development of external stamping sources.

Now the third corner stone was laid: Discussion began to arise as to whether the internal stamping dept should be treated the same as external stamping suppliers with the implication that the internal dept should compete for business and receive the same level of support at any other outside source.

Typically FEML's suppliers are small and medium sized manufacturers. Increasingly, such companies have been under industry wide competitive pressure to reduce overhead and trim costs. Many of them have reduced their employees to minimum necessary to run daily operations. Planning and implementation of new manufacturing strategies is beyond the capabilities of these companies because of lack of expertise. This realization led to the fourth and final corner stone. A vigorous debate began on "why don't strategic outside sources receive the level of support provided to FEML's internal sources"?

In 1995, Mr. Sonawala, GM-SCM at FEML's headquarters, initiated a pilot supplier development programme. The aim was to resolve the debate via a pilot experiment to support 16 suppliers. An agreement was forged with the pilot suppliers that would entitle FEML's engineer's were sent out to work with the suppliers who participated in the project. The result showed price reductions that resulted for FEML enabled it to more than recoup the investment it made.

Based on these results, in 2001, the FEML works formed a dedicated supplier development group on providing resource to assist strategic suppliers in implementing SCM. Recent improvement efforts have targeted lead-time reduction in suppliers factories. In addition to providing personnel to work at the supplier's facilities, FEML has provided training and education for supplier's staff. As a result of these efforts, FEML has been reduction of more than 90% in lead time at some suppliers and resulting price reductions to FEML (after providing suppliers share) have been as much as 15%.

The programme has yielded mutual benefits to FEML and its suppliers.

(Source question paper VTU fourth Semester MBA July 2007)

QUESTIONS:

- 1) What should be the basis for sharing benefits between FEML and its suppliers?
- 2) "Managing lead time is more important than reducing the inventory in a supply chain". Defend the statement in the context of FEML.

- 3) Explain the brief performance indicators at FEML and its suppliers end.
- 4) List at least four factors on which suppliers of FEML need to be evaluated.



20.5 LOGISTICS IN RETAIL SECTOR

At a time when retail is undergoing a initial phase in its evolution in India, Juzar Mustan, CEO of AFL Logistics, shares his insight to it and tells why he is confident of the industry in the country. Some of his views are:

RETAIL SECTOR:

Retail is going through challenging times. The business is under siege from within as many players are trying to outdo the other. After two years of very difficult period, now reality is sinking on retail sector and everyone is cutting down costs. I am optimistic that 'Logistics industry will grow because organised logistics is growing in India'

I do not think the logistics players are going to slow down too much because within the retail business itself, organised retail is increasing. Though the retail may slow down, the organised retail is actually growing. So even when the size of the cake is shrinking, the segment is increasing and the share the logistics players going to have is increasing business.

Many of the retailers have their own logistics divisions. Some of them are revising their plans. Outsourcing is going to happen, irrespective of one likes it or not. Because the retail players cannot manage the supply chain on their own; they need to collaborate. I also feel that many of the retailers are now experiencing the expertise which 3PL players lacked.

LOGISTICS SECTOR:

The organised logistics, which is about 6% of the total logistics market, is growing probably 15-20% a year. The 6% is going to grow to 10% and 12% very fast even though the market in general has slowed down. Factors like inflation have slowed down the industry as a whole and it could impact growth. However, the organised market is growing even now 15-20%. But they have to look at cost because it is a very price sensitive market where the margins have come down. But size has not come down and organised players are growing. Consumer durables, IT and telecom are growing very fast and even retail, not the supermarket retail, but specialty retail is growing.

We are different from others in our warehousing strategy which focuses on few and dedicated ones. Unlike others, we have a very good technology platform in house and are developing our people capabilities. We are hiring people from other segments like retail, consumer durables because we want to bring in domain knowledge of such segments into our organisation. We are also taking a large number of management trainees from reputed institutes.

We intend to double our revenues in three to five years. We have plans to invest in retail and other industry verticals like IT, telecom, and consumer durables with dedicated facilities. We want to become a logistics service provider to the whole segment not just to the end retailer or user. Market wise, Indian logistics can double in the next 3 years. In terms of organized market of that

market, it is going to triple. By 2015, organised logistics may have close to 20% share of the entire market. On the skill side, today Indian logistics is very cost focused so much so that at times it comes at the expense of service. I think within the next 2-3 years, at least some section of the industry would move to high cost and high value and at that point of time there would be huge scope for companies like AFL because we can provide high service values at a slightly higher cost to our clients. Today lot of infrastructure - ports, terminals, railways, transport hubs - is being developed at various places at the same time and it is good for the country. In two years time, all of this would be ready and it would give tremendous potential to the logistics industry. Multimodal transportation could really happen.

Many of the academic institutions are looking at providing logistics programmes, which will also address lack of skilled manpower. So, there would be sufficient personnel for the industry in 2-3 years' time.

SMALLER PLAYERS:

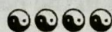
Some are transforming into organised players, some have become very good regional logistic companies during the last 3-5 years. Some have collaborated with their suppliers and offer a basket of services while some have become landlords by leasing their properties to people like us. We do not have much of 2PL and lower categories of players and therefore the job of a 3 PL becomes much more difficult. As 3PL players, like AFL, we have to work with many other service providers who are just service providers. We do not have many of them and most of them are not professionals.

Having made a commitment and delivering on that commitment is a risk. We have to work around that risk and it is a challenge. We manage that with better people, better monitoring, better relationship and by helping the 2PL players themselves grow by training them. This makes them more responsive to us. It is because of this that logistics cost in India is in double digits, 13-14%. It will become within single digit within the next 3 years which will happen because of modernization of the industry, advent of more organised logistics players, better infrastructure, better skilled manpower, etc.

The prevailing market sentiment is negative. I am very positive about the logistics industry growing in spite of economic pressures. It will grow because organised logistics is growing in India. The entire logistics industry may slow down because of the pressures of economic slowdown but the share of organised logistics would growth and that give me my optimism.

QUESTIONS:

- 1) How retail sector is faring in India?
- 2) Discuss the growth of organised logistics and how Mastan finds a role for AFL in the phase?
- 3) What are changes taking place in logistic industry?
- 4) Discuss how retail and logistics industries are closely connected? How joint SCM strategies will help each other.



20.6 MSTC LIMITED

Metal Scrap has a global big business. Metal scrap is traded across countries. The metal scraps generated globally are; Ferrous Scrap 40 million tons/years, aluminium scrap 5 million tons/years. The scrap metal is collected, segregated, pressed and sold. The scrap in turn gets melted, refined and put to re use. The scrap industry helps in saving environment and energy. The scrap prices range from 60 to 90 percent of original metal prices depending on quality.

Metal Scrap Trading Corporation Limited/Kolkata was started in public sector to recycle scrap. It is now called MSTC Limited.(MSTC)

Facilitating the process of mobilisation of indigenous scrap and the process of recycling of scrap has been the long-cherished mission of MSTC Limited. It is a known fact that the recycling of 1.1 tonne of scrap materials can help conserve and replenish the natural, virgin resources like coking coal, iron ore and limestone to the tune of 1.0 tonne, 1.6 tonne and 950 kg. respectively. In an attempt to utilise the indigenous scrap, MSTC Limited has for long tried to create an virtual marketplace for the interaction of buyers and sellers and optimise both their interests. In the year 2002, the scrap trading group carried this step forward by introducing a web-based e-auction portal. Today the organisation occupies a pride of place in having around 15,000 regular customers.

However, the ever popular scrap disposal enterprise MSTC has moved much beyond scrap, and is today selling thermal coal, ferro- manganese and even diamonds through its portal. Informs Malay Sengupta, Chairman-cum-Managing Director, MSTC "Our organisation has created a niche for itself in the coal and scrap sector. The size of the scrap market is estimated to be around Rs. 3,000 crore, of which Rs. 800 crore worth of scrap material is transacted through our e-commerce portal while another Rs. 900 crore or so is being handled by us through other methods. Nearly 50 per cent of coal in non-power sector is sold through our e-auction portal". The scrap-trading major aims to create a B2B portal which will deal with commodities which have a reasonable number of suppliers (10 or so in numbers) and a fair number of buyers (3,000 approximately) thus helping build a virtual market for such commodities. Since the discussion is about B2B portal, it is obvious that these commodities will be the industrial raw materials and intermediate products.

The process of e-auction is transparent, paper-less, hassle-free and economic and helps instill a lot of confidence among the customers. The organisation has already started e-banking for auction of coal and the entire transaction takes place online. This not only saves time but also reduces the chances of personal interface between the buyer and the seller that leads to greater transparency in deal making.

It has been past four years since the group has moved into e-commerce and the e-auction processes and e-procurement services. "E-commerce process can however pick up when the infrastructure is robust and net banking becomes popular. Success of an e-commerce operation is dependent on the seamless flow of information, which is being hampered by low internet bandwidth, slowing the process of bidding as it takes a long time to log on to the system. In an attempt to strengthen our e-commerce activities, we have plans to form two joint ventures – one with a mining

group in the area of mining and another one in the area of warehousing and logistics. A Detailed Project Report (DPR) is being prepared, and we hope to embark on it by the year of 2007-2008" avers Malay Sengupta. The organisation has enjoyed a 3000 per cent profit over the last nine years and the organisation has been doubling its profit every year from 2002 to 2005. "There will be a merging of our two portfolios which includes e-commerce and trading in the next five years", quips Sengupta.

E-commerce has emerged as the key driver for the Indian economy and the scrap trading group is helping fuel the industrial growth.

(Source Page-12 of Industry Spectrum of Business World dated 06.08.2007)

QUESTIONS:

- 1) Discuss the advantages of recycling of scrap metals ?
- 2) What is E- Auction portal ? Explain how it helps in sale of scrap materials ?
- 3) Discuss what steps you propose for E-Auction of an industrial products ?



20.7 ON SETTING ETHICAL STANDARDS

Special steel company limited (SSCL) is a reputed company and specializes in alloy steel manufacturing in Nagpur. The company turnover is 650 crores in last fiscal and has quality reputation in the market. Since it entered market in mid 70's, it exported in last year value 69 crore. Growth rate of the company is 11% and SSCL is looking forward for brown field expansion of its capacities. SSCL markets its products at competitive prices in all industrial towns in India. The exports are handled from its head office in Nagpur and export division in Mumbai. The exports are divided in 4 Zones North with its office in Delhi, South Zonal Office in Chennai. Similarly Eastern Zonal Office, Kolkata. Mumbai is Western Zonal Office and also in addition handled exports and imports activities.

The company by practice has established good ethical standards. The standards were by the chairman of the SSCL Arvind Jain. The company executives were known for their integrity and hard work and thus taking the company to growth path. Chairman of SSCL was assisted by Board of Directors and Company Secretary. The functional and full time directors were in the area of Finance, Production, Marketing, HRD and Project. Director marketing and Director Project used to go on tours frequently to Delhi, Kolkata, Chennai, and Mumbai and to overseas on their work. The tour frequencies were almost weekly. Regular coordination and follow up of activities were done in department and Zonal meetings.

Last Saturday Arvind Jain was following news item on Star News. He was shocked to see news flash that the Marketing Director K. Ram of SSCL was alleged for molestation of a lady employee serving in his office in Mumbai. The Mumbai police were looking for Ram for arresting and further action. Ram was in Delhi on Saturday. Jain telephoned immediately Zonal Manager in SSCL Mumbai and Delhi, so that he can get first hand information. He was angry that he should get his company information through TV news.

The Zonal Manager Delhi informed that he was not aware of any Mumbai incident. The Zonal Manager Mumbai was not available in his house in Mulund (a suburb of Mumbai). Even after 2 days there was no news or whereabouts of the Mumbai Zonal Manager.. TV news on 3rd Day gave that Mumbai police were searching the absconding K. Ram, Marketing Director of SSCL. Newspapers and weekly business magazines published and news articles on the subject. A business weekly gave a story with photographs of K. Ram and the lady employee giving their side of the story.

Ram aged 54, is a marketing wiz-kid and considered good in exports and international negotiations. Son of Ram was in UK as a software engineer. Ram's story gave that the lady employee, a secretary in Mumbai office, did come to his five star hotel room and went away. The TV story was made up by Competitor Company to tarnish SSCL image. The lady employee contended that she was called by Ram along with Zonal Manager for official work to the hotel. In the hotel room Ram molested her telling that she will be promoted as officer shortly. The lady ran and lodged FIR in police station. The

lady was middle aged and has a son going to high school.

The next week TV news said "Ram, Director of SSCL surrenders to Mumbai police. Police took him to custody and produced in Magistrate Court. The court granted bail to Ram"

QUESTIONS:

- 1) Discuss the ethical issues of the company involved in this case.
- 2) What are reactions on the issue from different stake holders of SSCL? (3)(a)What actions you suggest that Jain should take immediately and (b) Policy decisions to stop such recurrences



20.8

SCM IN RETAIL SECTOR

At a time when retail is undergoing a challenging phase in its evolution in India, Juzar Mustan, CEO of AFL Logistics, shares his insight to it and tells ETSL why he is confident of the industry in the country 'Logistics industry will grow because organised logistics is growing in India'

HOW IS THE RETAIL SECTOR FARING IN INDIA?

Retail is going through challenging times. The business is under siege from within as many players are trying to outdo the other. After two years of very hunky going, now reality is sinking on them and everyone is cutting down costs.

WHAT WILL HAPPEN TO THOSE LOGISTICS COMPANIES THAT WANTED TO PIGGY RIDE ON THE RETAIL SEGMENT?

I do not think the logistics players are going to slow down too much because within the retail business itself, organized retail is increasing. Though the retail may slow down, the organized retail is actually growing. So even when the size of the cake is shrinking, the segment is increasing and the share of the logistics players is going to have are increasing.

BUT MANY OF THE ORGANIZED PLAYERS HAVE THEIR OWN LOGISTICS DIVISIONS?

Of course all of them have. But many of them are revising their plans. Outsourcing is going to happen, irrespective of one likes it or not. Because the retail players cannot manage the supply chain on their own; they need to collaborate. I also feel that many of the retailers are now experiencing the expertise which 3PL players lacked 2-3 years ago.

HOW GROWTH ORIENTED IS THE ORGANISED LOGISTICS SECTOR?

The organised logistics, which is about 6% of the total logistics market, is growing probably 15-20% a year. The 6% is going to grow to 10% and 12% very fast even though the market in general has slowed down. Factors like inflation have slowed down the industry as a whole and it could impact growth. However, the organized market is growing even now 15-20%. But they have to look at cost because it is a very price sensitive market where the margins have come down. But size has not come down and organised players are growing.

ACCORDING TO YOU, WHICH ARE THE SEGMENTS THAT ARE GROWING?

Consumer durables, IT and telecom are growing very fast and even retail, not the supermarket retail, but specialty retail is growing.

AFL IS ONE OF LARGEST INTEGRATED LOGISTICS PLAYERS IN THE COUNTRY. BUT WHAT DIFFERENTIATES IT FROM OTHERS?

We are different from others in our warehousing strategy which focuses on few and dedicated ones. Unlike others, we have a very good technology platform in-house and are developing our people capabilities. We are hiring people from other segments like retail, consumer durables because we want to bring in domain knowledge of such segments into our organization. We are also taking a large number of management trainees from reputed institutes.

We intend to double our revenues in three to five years. We have plans to invest in retail and other industry verticals like IT, telecom, and consumer durables with dedicated facilities. We want to become a logistics service provider to the whole segment not just to the end retailer or user.

HOW DO YOU FORESEE THE LOGISTICS MARKET MOVING FORWARD?

Market wise, Indian logistics can double in the next 3 years. In terms of organised market of that market, it is going to triple. By 2015, organized logistics may have close to 20% share of the entire market.

On the skill side, today Indian logistics is much cost focused so much so that at times it comes at the expense of service. I think within the next 2-3 years, at least some section of the industry would move to high cost and high value and at that point of time there would be huge scope for companies like AFL because we can provide high service values at a slightly higher cost to our clients. Today lot of infrastructure - ports, terminals, railways, transport hubs - is being developed at various places at the same time and it is good for the country. In two years time, all of this would be ready and it would give tremendous potential to the logistics industry. Multimodal transportation could really happen.

Many of the academic institutions are looking at providing logistics programmes, which will also address lack of skilled manpower. So, there would be sufficient personnel for the industry in 2-3 years' time.

IN THE MEANTIME, WHAT IS HAPPENING TO SMALLER PLAYERS?

Some are transforming into organized players, some have become very good regional logistic companies during the last 3-5 years. Some have collaborated with their suppliers and offer a basket of services while some have become landlords by leasing their properties to people like us. We do not have much of 2PL and lower categories of players and therefore the job of a 3 PL becomes much more difficult. As 3PL players, like AFL, we have to work with many other service providers who are just service providers. We do not have many of them and most of them are not professionals.

Having made a commitment and delivering on that commitment is a risk. We have to work around that risk and it is a challenge. We manage that with better people, better monitoring, better relationship and by helping the 2PL players themselves grow by training them. This makes them more responsive to us. It is because of this that logistics cost in India is in double digits, 13-14%. It will become within single digit within the next 3 years which will happen because of modernisation of the industry, advent of more organized logistics players, better infrastructure, better skilled manpower,

etc.

The prevailing market sentiment is negative. Are you still confident of the sector?

I am very positive about the logistics industry growing in spite of economic pressures. It will grow because organised logistics is growing in India. The entire logistics industry may slow down because of the pressures of economic slowdown but the share of organised logistics would grow and that give me my optimism.



20.9 SUPPLY CHAIN SECURITY MEASURES IN INDIAN PORTS

The security of goods, equipments and men in every stage of supply chain management is crucial for confidence and growth of any business. It assumes more importance in import and export activities. DP World is a global company that sets in place mechanisms to address security vulnerabilities as well as preventive action plans in shipping activities at sea ports. The security systems at ports are made to avoid problems. Recently, a security standard ISO 28000:2007 has been developed.

With two out of its six subcontinent facilities ready with prestigious ISO 28000:2007 certification in supply chain security management systems, DP World's Indian terminals have extended the security cover to the entire gamut of supply chain. While the global terminal operator's Nhava Sheva and Mundra terminal facilities have been credited with ISO 28000 certification, according to sources, its Chennai terminal is expected to complete the process shortly.

The certification is part of DP World's roll out of ISO 28000 certification across its 48 terminals in 27 countries. In India, where it has a major presence, the timing of the roll out could not have come at a more appropriate as today when the country and the Government are recovering from the aftermath of terror attacks. Like in the USA, many port experts here believe that the next mode of terrorists attack could be via shipping containers

Accordingly to DP World, the certification from the Rotterdam-based Dutch auditing and maritime classification society DET Norske Veritas (DNV) after stringent security audit of the facilities has focused principally on container security, physical access controls, personnel security, procedural security, security training and threat awareness, business partner requirements and IT security.

The ISO 28000 standard thereby, has set in place mechanisms and processes to address security vulnerabilities at strategic and operational levels, as well as establish preventive action plans. The security measure is in addition to International Ship and Port Facility Security (ISPS) mandated systems in operation at the major ports where these terminals are situated.

While ISPS is a physical security measure that ports apply for their facilities. ISO 28000 certification has more focus on the security provided to the supply chain. "Here we are talking about the possibility of the supply chain being disrupted or the chance of somebody trying to exploit the supply chain for their own nefarious objectives", said Binoy Kurup, DNV technical resource head based in Mumbai. "If the port security measures are matched with the kind of supply chain management standards provided by the certification, the impetus an organization gets would be superb", he said. "We believe security is a baseline service we offer customers and it is also an integral part of creating a safe work environment for our people", said Mohammed Sharaf, Chief Executive Officer of DP World. "We are rolling out the independently audited ISO 28000 security certification throughout our network. Having an internationally recognized and certified security management system in India will greatly benefit DP World's customers and other terminal users and stakeholders who can now

be assured that robust systems are in place to provide for the safety of their cargo and people using the terminal facilities of DP World”.

DP World’s investment in the security management system has also been recognised by the US Customs Border Protection agency, which invited it to join its Customs Trade Partnership Against Terrorism (C-TPAT) programme. Thus, “DP World is the only global marine terminal operator to have achieved ISO 28000 certification and simultaneous members of C-TPAT”, said Mr. Sharaf. “DPW’s security management system collaborates with the ISPS system to facilitate the kind of interaction which you would not find elsewhere”.

“In the government you may not see various parties talking to each other. But here there is a communication platform available for various stakeholders to interact with each other and collaborate”, said Mr. Kurup.

(Source: Adapted from an article in Economic Times dated 19th. Jan. 2009 page 15 “ET Shipping & Logistics”)

QUESTIONS:

- 1) What is ISO 28000 system? Why it is considered necessary?
- 2) Discuss differences between ISPS, C-TPAT and ISO 28000.
- 3) What are the contributions of DP World in security management?



20.10 TENDER NEGOTIATIONS

Sen Alkalis (SA) was a large company manufacturing caustic soda. SA was well known in business circle and was producing 55,000 tons of caustic soda per year in its plant which was based on a river bank. There was a requirement of 2 Nos. of special transformers for use in their sub-station. The transformers had critical operations of converting AC to DC electricity (Rectifier type of transformers). The budget for the 2 transformers was Rs. 75 lakhs. SA management emphasised that the transformer should be of high quality, reliability and good after sale service for smooth running of the plant. SA also plant for a tender for the 2 transformers which was based on a complete turnkey concept of supply, erection, commissioning, testing of the equipment, training of personnel, two year normal operation spares and handing over the plant.

The quotations were floated by the Chief Materials Manager (CMM) of SA in two part bid system. The part-I consisted of the technical parameters of the plant and part-II consisted of the commercial and price aspect. The limited tender action was approved by the top management of SA considering the special nature of the equipment and that few names are famous in the field. The enquiries were floated to Siemens – Germany, ABB - Sweden, Alsthom - France, GE - USA and BHEL - India. The first four parties had good experience in manufacture of such large equipment, whereas the fourth party had no previous experience of building such large transformers.

The technical bids were opened by the CMM of SA per the procedures of the company on the appointed date. The offers of the first four bidders namely, Siemens, ABB, Alsthom and GE were technically found suitable. BHEL informed that they are finalising a technical collaboration with Alsthom of France for manufacture of this type of transformers. Based on the reputation of BHEL and broad parameters of collaboration, BHEL was also found technical acceptable.

The price bid from all the five bidders were opened as per normal practice of the company and in the presence of the representatives of the bidders. The price bid opening showed the bare prices as opened were: Siemens - Rs.38 lakhs each, ABB - Rs.37 lakhs each, BHEL - Rs.59 lakhs each and Alsthom - Rs.61 lakhs. GE did not quote. After loading taxes, duties, handling cost, expert costs, technical loading and Net present value there on the inter say tender position was Siemens - Rs.39 lakhs , ABB - Rs.41 lakhs, BHEL - Rs.60 lakhs and Alsthom - Rs.63 lakhs.

The CMM of SA ordered re-bidding from all the four tenders. The scope was slightly altered, extended warranty for 6 months was added and the few additional spares for the transformers were included. The re-bidding prices that came were Siemens - Rs.48 lakhs each, ABB - Rs. 48.8 lakhs each, BHEL + Alsthom who made a combine bid - Rs.49.3 lakhs each. The bidding and tender opening procedures were in line with the normal practices followed. The purchase manual of SA had no guidelines for re-bidding and negotiations. BHEL and Alsthom had the strong backing of the French collaborators of the SA. SA management was planning for negotiations with BHEL and Alsthom for finalising the contract. Siemens and ABB started complaining that the unethical methods are being adopted by the CMM of SA to help Alsthom group.

QUESTIONS:

- 1) What are the ethical issues involved in the particular case ?
- 2) Should the purchase manager of SA go for re-bidding ?
- 3) Draw guidelines for SA for re-bidding and negotiations.



20.11 WE DELIVER

In a country like India, where the infrastructure setup is nothing much to write about, an 'efficient and effective flow' is often more the exception than the norm, though that is changing. At present estimates, there are some 2,500 logistics service providers, both Indian and foreign, vying for this enormous market.

India's logistics industry is expected to grow from \$ 90 billion last year to \$ 125 billion in 2010. A report by the commercial real estate services firm, Cushman & Wakefield predicts the sector growing at 15 to 20 per cent annually and reaching revenues of \$ 385 billion by 2015. Organised logistics will double their share to approximately 12 per cent in the same period.

One of the biggest drivers will be large scale retailing. Reliance Retail, for instance, intends to not only operate retail and grocery stores, but also create a vertically integrated fresh food supply chain to handle distribution all the way from the farmer to the shop. Reliance Retail has a joint venture with British logistics company Wincanton to manage the backend operations for its food, grocery and hypermarket businesses. The backend operations entail transportation, warehousing, efficient inventory keeping, and supply chain management to ensure that Reliance's 600 stores are always well stocked.

Yet, logistics cannot exist in a vacuum. It needs roads, it needs vehicles, and it needs warehouses from where vehicles can pick up the goods to transport across. The Cushman & Wakefield report says that over 110 logistics parks are proposed while half a billion dollars will be spent on creating huge warehousing space across India by 2012. Seeing huge potential, property developer K. Raheja has tied up with Prologis, the world's largest logistics and warehousing developer to build warehousing and logistics in India at a cost of \$ 1 billion over the next five years.

Prologis chairman and CEO Jeffrey Schwartz says the venture will initially focus on developing property in Mumbai, Pune, Delhi, Kolkata, Chennai and Bangalore, which he says will be among the fastest growing centres for distribution operations in India. To cash in on the growing requirement, the government is proposing Free Trade Warehousing Zones to evolve as 'international trading hubs' that will facilitate import and export of goods and services in free currency. Custom Bonded Warehousing also being promoted to facilitate deferred payment of custom duty to encourage entrepreneurs and export-oriented units.

These accomplishments and plans for the future are, alas, dimmed by many problems. A major issue is the unwillingness of clients to pay for logistics. The country spends a hefty 14 per cent of its DGP on its logistics system versus 8 per cent in developed nations. This means transportation and storage costs are much higher. Thus, as much as 40 per cent of product costs of foreign entities that have created a retail presence in India are taken away by transportation costs.

Other hindrances are low productivity, complex tax laws and low technology. India's logistics industry is a fragmented market dominated by small businesses. While the established players provide an integrated delivery service, the focus of the small companies is to gain a toehold in the supply

chain. A number of them offer only one or two services out of the gamut of products comprising transportation, warehousing, freight forwarding, express cargo delivery, courier services, and bulk and container freight. The freight forwarding segment is also represented by thousands of small customs brokers and clearing and forwarding agents, who cater to local cargo requirements.

A regulatory environment that largely limits operations to one state or region has also led to a very fragmented road haulage industry. Transporters with fleets of less than five trucks account for over two-thirds of the three million trucks plying per day across India and make up 80 per cent of revenues. A study found that impediments to the trucking industry will curtail its growth from the present \$ 60 billion in market value to only \$ 70 billion by 2010, and no \$ 90 billion as projected earlier. The ban on overloading has, however, spurred demand for medium and heavy commercial vehicles with axle weights of five tonnes and above. It has, besides, induced a shift to higher tonnage vehicles that have lower per unit costs.

WEAK CONNECTIVITY:

Most airports in India are a logistics nightmare. "it takes a minimum of six hours for a forwarder to secure his consignment after it is unloaded from the aircraft", points out P.K. Gupta, executive director for sales and marketing, National Aviation Company of India Ltd (NACIL), "Modern terminals must have state-of-the-art technologies and express bypass speed-lines for freight to be delivered in the least possible time". NACIL is with 149 destinations in India and 43 destinations in 29 countries.

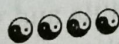
Yet, for just India's air freight operations, NACIL estimates the country will need 215 aircraft by 2025, thus highlighting how much this sector is expected to grow. Air cargo worldwide earned over \$ 6.5 billion last year, with Asia accounting for less than half this revenue. In India last year, only 1.07 million tonnes of air cargo was freighted domestically and internationally.

Gupta says with globalisation, India's air logistics will need to move from traditional forwarding to SCM. "SCM spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption," he adds.

(source: relevant website)

QUESTIONS:

- 1) What is scope and importance of logistics in Indian business ?
- 2) What are problem are in Indian logistic industries? Write your suggestions for improvement.
- 3) Indian air fright has to move from traditional forwarding to SCM discuss the statement.



20.12

FRESH AND CHEAP FARM PRODUCE TO CONSUMERS

There's so much stuff that gets wasted in India. CII-McKinsey report say that 25-40% of fresh fruits and vegetables get wasted along the entire chain, The general consensus among retailers like Choupal Fresh (ITC), Nature's Basket (Godrej), Subhiksha, Spinach and Heritage Foods is that fears on waste are unfounded. At the farm end, about 10% of the produce is deemed to be subpar quality by the buyers, no more than 5% overall would be lost along the value chain till the retail end. And they realised it within months of kicking off operations. Even Reliance is said to be coming around to the same view: the notion of wastage due to delays is not right.

Even McKinsey & Co now says that their report was grossly misinterpreted. Says Ireena Vittal, partner, McKinsey & Co, "Most corporations believe that the 40% waste is like money on the table. We never said so. Value capture is best done through better grading and sorting."

The puzzle isn't difficult to solve: just a casual visit to the local mandi will do. Smashed tomatoes go cheap damaged tomatoes, smashed watermelons, withered leafy veggies, yellowing pumpkins are a familiar sight at most mandis. And there's plenty of it, at least 15% is substandard quality. But there's always a bargain hunter for all of it, even if it's a few days old. Of course, the seller realises only 25-30% of the cost, but almost negligible volume loss. Says Arvind Chaudhary, CEO (Foods), The Future Group, "Of the daily stock of fruits and vegetables that make it to the Food Bazaar stores, we lose no more than 2% of the daily stock of fresh food, and largely because it isn't sold by the end of the day." Instead of pushing for reducing waste, there's a smarter way to manage the supply chain: rush fresh produce to the store. For instance, Godrej Aadhar and ITC Choupal Fresh have reworked their supply chains in such a way that there is no more than 4-6 hour duration from harvest to the store. That way, the produce remains fresh for consumers, and farmers have the option to harvest when the demand peaks. Which then begs the next question — is an elaborate cold chain infrastructure necessary to keep things fresh?

The CII summit in the capital in March this year was no different. It projected an investment of Rs 18,000-20,000 crore in cold chains to support if the country was to do justice to the two-fold increase in the production of fruits and vegetables from 140 mn tonnes to 300 mn tonnes by 2012. The action has begun. Reliance has recently taken over Adani's retail operations, considered to have one of the best cold chain operations in the country. Other retailers are also sniffing around to either buy or build.

The corporations who've done their homework say that such investments simply aren't cost-effective. Here's why: a typical basket of fruits and vegetables worth Rs 12 a kg at the retail end incurs an additional cost of 40 paise to reach the store from a consolidator, according to Food Bazaar estimates. Now, these costs jump as soon as a cold chain is used. Says R. Subramanian, managing director, Subhiksha Trading Services, "We've done a few studies internally, and we find that for transporting fruits and vegetables by cold chain increases the transportation cost by nearly 5.5 times."

It's much the same story for ITC's Choupal Fresh: a kilo of typical vegetables costs 40 paise per kilo to transport in an ambient chain, and this rises to 80 paise per kilo in a cold chain.

Besides, a cold chain investment doesn't do much to shape consumer preferences. On the contrary, most Indians derive their benefit of taste from the cooking method that they use, says Rajan Chibba, CEO, Intrim Business Associates, a Delhi-based retail consultancy. For consumers, it makes no difference whether the vegetables have been transported via a cold chain or an ambient chain. Anyway, in the normal course, fresh produce makes it to a store or a pushcart retailer from the farm gate in less than 16 hours, and under a day for a purchase to be made. Instead of squeezing out savings from the existing system, corporations potentially have another fallback option — exports.

(Source: Adapted from an article in Economic Times dated 26-05-2007 Page no 9)

QUESTIONS:

- 1) How farm products get sold in local Mandies?
- 2) Is an elaborate cold chain infrastructure necessary to keep farm products fresh?
- 3) If you are head of SCM of a retail company dealing in farm products discuss:
 - i) Current scenario
 - ii) Your SCM plans to give cost efficient fresh farm products to consumers, take examples and explain.



[Handwritten Signature]
Director