



**NRF FOUNDATION**  
**RISE UP**

---

**SUPPLY CHAIN,  
INVENTORY & LOGISTICS**

CERTIFIED SPECIALIST

# **SUPPLY CHAIN, INVENTORY & LOGISTICS**

---

TABLE OF CONTENTS

**NRF FOUNDATION**  
**RISE UP**

## Table of Contents

---

<b>Welcome to RISE Up</b>		<b>11</b>
<hr/>		
<b>1. Discovering the World of Supply Chain Facilities</b>	<b>1.1 The Big Picture</b>	<b>13</b>
	Objectives .....	13
	What Is a Supply Chain? .....	13
	Exercise 1: Starbucks' Supply Chain Network: What Did You See? .....	15
	Exercise 2: Through the Supply Chain to You .....	16
	What Is Distribution? .....	18
	Product Distribution Channel Options .....	18
	Exercise 3: Your Most Recent Purchase .....	20
	The Role of Supply Chain Facilities .....	22
	The Role of Intermediaries in the Distribution Channel .....	24
	The Impact of Facilities on the Supply Chain .....	26
	Knowledge Check .....	30
	<hr/>	
	<b>1.2 The World of Supply Chain Facilities</b>	<b>32</b>
	Objectives .....	32
	Defining Warehousing .....	33
	Exercise 4: Which Supply Chain Facility?.....	35
	Safety First .....	38
	Exercise 5: Mismatches between Supply and Demand .....	40
	Exercise 6: Would My Product Be Affected? .....	42
	Facility Specialization .....	44
	Grocery Facilities .....	44
	Career Spotlight: Inventory Control Supervisor, Kroger .....	46
	Manufacturing Warehouses .....	48
	Distribution Centers (DCs) .....	48
	Fulfillment Centers (FCs) .....	50
	Supply Chain Facility Functions .....	51
	Materials Handling .....	52
	Exercise 7: Materials Handling: What Next? .....	55
	Product Storage .....	56
	How Much is Enough? .....	58
	Exercise 8: How Much Is Enough? You Decide .....	59
	Order Management .....	60
	Information Transfer .....	62
	A Day of Disorganization and Chaos: the Consequences of Sloppy Scanning .....	66
	Knowledge Check .....	68
	<hr/>	
	<b>1.3 Exploring Opportunities within Supply Chain Facilities</b>	<b>70</b>
	Objectives .....	70
	Supply Chain Facility Departments .....	70
	Receiving Department .....	71
	Stocking Department .....	72

## 1. Discovering the World of Supply Chain Facilities

### 1.3 Exploring Opportunities within Supply Chain Facilities

Picking Department .....	74
Shipping Department .....	75
Exercise 9: Match the Department with Warehousing Activities .....	76
Common Entry-Level Jobs .....	77
Receiving Associate / Unloader .....	78
Order Picker / Order Filler .....	80
Loader Associate .....	82
Supply Chain Facility Maintenance Worker .....	84
Equipment Maintenance Technician .....	86
Truck Driver .....	88
Career Spotlight: Truck Driver, Walmart .....	90
Overcoming Insecurities .....	92
Employability Attributes .....	92
Exercise 10: Just a Little Late: Rate the Associate .....	94
Exercise 11: Interpersonal Skills .....	95
Exercise 12: Changing Positions: Rate the Associate .....	96
Sample Career Paths .....	97
Knowledge Check .....	98

## 2. Supply Chain Facility Operations

### 2.1 The Receiving Cycle

100

Objectives .....	100
The Receiving Process .....	101
Unloading Activities .....	101
Inspection and Quality Check .....	103
Breakdown .....	106
Exercise 13: Breakdown: You Decide .....	110
The Receiving Cycle: The Technology We Use .....	112
The Receiving Cycle: The Tools We Use .....	114
Following the Inbound Schedule .....	114
The Inbound Schedule: A Closer Look .....	115
Knowledge Check .....	116

### 2.2 Storage and Inventory

119

Objectives .....	119
Where Is it?.....	119
Where Is It? What Went Wrong? .....	119
Where Is It? Expert Opinion .....	120
Put-Away .....	121
The Stocking Process .....	123
Finding Storage Locations .....	125
Exercise 14: Put-Away: Your Turn .....	127
Product Storage Activities: Management Strategies .....	131
Exercise 15: Product Storage Activities: Associates' Handling of Inventory .....	134

## 2. Supply Chain Facility Operations

### 2.2 Storage and Inventory

Following Good Stocking Practices .....	135
Exercise 16: Assessing Stocking Practices .....	136
Inventory Checks .....	137
What Is Cycle Count? .....	138
Why Cycle Count .....	139
Cycle Count Strategies .....	142
Random Cycle Count .....	142
ABC Cycle Count .....	143
Exercise 17: ABC Cycle Count: You Decide .....	144
Storage and Inventory: The Technology We Use .....	146
Storage and Inventory: The Equipment We Use .....	147
Storage and Inventory: The Tools We Use .....	148
Knowledge Check .....	150

### 2.3 The Order Fulfillment Cycle

**152**

Objectives .....	152
The Picking Process .....	153
The Pick List .....	153
Order Picking Options .....	153
The Picking Process: The Pick List .....	155
Picking Technology .....	157
Picking Equipment and Tools .....	158
Following Best Picking Practices .....	159
The Picking Team's Impact .....	159
Picking Activities .....	160
Exercise 18: I Can't Find the Item .....	163
The Packing Process .....	164
Labeling Boxes .....	165
Packing Activities .....	167
Exercise 19: Excelling at Packing .....	169
Best Practices for Unitizing Products .....	170
Audits .....	171
The Shipping Process .....	172
The Loading Process .....	174
Exercise 20: MHE Load Calculation .....	177
Best Practices for Loading Trucks .....	180
Shipping Options .....	183
Full Truckload (FTL) .....	183
Less Than Truckload (LTL) .....	184
Piece or Parcel Shipping .....	185
Selecting the Right Option .....	185
The Order Fulfillment Process: The Technology We Use .....	186
The Order Fulfillment Process: The Equipment We Use .....	187
The Order Fulfillment Process: The Tools We Use .....	188
The Outbound Schedule .....	189
The Outbound Schedule: A Closer Look .....	190
Exercise 21: Reading an Outbound Schedule .....	191
Knowledge Check .....	192

<b>2. Supply Chain Facility Operations</b>	<b>2.4 Safety</b>	<b>194</b>
	Objectives .....	194
	Safety .....	195
	Heavy Lifting Techniques .....	196
	Industry Spotlight: Workplace Safety, Amazon .....	200
	Safety with Materials Handling Equipment .....	202
	Best Practices for Stacking Products .....	204
	Safety around Conveyor Systems .....	205
	Career Spotlight: Trailer Technician III, Walmart .....	206
	The Occupational Safety and Health Administration (OSHA) .....	208
	Knowledge Check .....	209
<b>3. Reverse Logistics</b>	<b>3.1 What is Reverse Logistics?</b>	<b>211</b>
	Objectives .....	211
	Exercise 22: Reverse Logistics and You: Your Recent Returns .....	212
	Supply Chain and Distribution Channels: A Review .....	213
	The Circular Chain .....	214
	The 6 Rs of Reverse Logistics .....	216
	The Possible Paths from the Consumer .....	218
	Exercise 23: The Path Back: Your Turn .....	220
	Why the Field Is Growing: The Accelerated Growth of ECommerce .....	224
	Why the Field Is Growing: Consumer Demand for Convenience .....	225
	No Such Thing as Free Returns .....	227
	Knowledge Check .....	228
	<b>3.2 The Backwards Journey</b>	<b>230</b>
	Objectives .....	230
	Return Centers .....	230
	Key Functions of Reverse Logistics Centers .....	234
	Collection Points for Returns .....	236
	Examples of Collection Points .....	237
	Returns in the Supply Chain Facility and the Dispositioning Process. Key Steps in Systematic Dispositioning .....	240
	Dispositioning on the Job: Key Qualities and Skills .....	242
	What Happens After Dispositioning: Beyond the Return Center .....	244
	Costs and Decision-Making in Reverse Logistics: The Shirt ....	246
	Costs and Decision-Making in Reverse Logistics: Dog Food ..	246
	Exercise 24: What Should Pet Emporium do? .....	247
	Recalled Items .....	248
	Recalled Item: Hoverboard Example .....	250
	Remainders: Overstocked Items .....	252
	Journey of an Overstocked Fall Home Decoration: Pumpkin-shaped Candle .....	254

**3. Reverse Logistics****3.2 The Backwards Journey**

Data Analytics in Reverse Logistics: How Information Can Prevent Returns .....	255
Data Analytics: The Many Benefits of Scanning .....	256
Cost Recovery: A Review .....	257
Knowledge Check .....	260

**3.3 Return Fraud, Its Impacts and Solutions 262**

Objectives .....	262
Exercise 25: Exploring Retailers' Return Policies .....	264
Rejecting Returns .....	266
Costs Retailers Avoid with Their Return Policies .....	267
Understanding Return Abuse and Fraud .....	269
Scenario: This Stinks! .....	272
Solutions to Mitigate Return Fraud in Supply Chain Facilities	274
Return Fraud and the Environment .....	275
Examples of Retailer Solutions for Sustainability in Reverse Logistics .....	276
Knowledge Check .....	277

**3.4 Careers in Reverse Logistics 278**

Objective .....	278
Careers in Reverse Logistics .....	278
Career Paths in Reverse Logistics: Moving Up .....	279
Knowledge Check .....	281

**4. Management and Strategy****4.1 Management 282**

Objectives .....	282
Facility and Logistics Operations .....	282
Operations Management .....	284
The Impact of Operations Management: Voice-to-Pick Technology	286
Logistics Management .....	287
Two Logistics Managers and Their Stock Space and Inventory	288
Two Logistics Managers and Their Coordination of Transportation .....	290
Two Logistics Managers and Their Management of Facility Operations .....	292
Career Spotlight: Transportation Manager, Kroger .....	296
Exercise 26: Identifying Performance Problems .....	298
Management Roles in Warehousing .....	299
Supply Chain Facility Supervisor .....	303
Logistics Manager .....	304
Inventory Manager .....	304
Knowledge Check .....	306

## 4. Management and Strategy

### 4.2 Lean Supply Chain Facility Management 308

Objectives .....	308
Adopting Lean Supply Chain Facility Management Practices	309
Exercise 27: Identifying Waste .....	311
Exercise 28: Improving Facility Performance .....	312
Scheduling Shipments and Deliveries .....	313
Advanced Shipping Notice (ASN) .....	314
Managing Suppliers .....	316
Choosing the Right Vendors .....	316
Making Accurate Purchasing Decisions .....	319
Exercise 29: How Many Bananas? .....	321
Risks of Inaccurate Forecasting .....	322
Measuring Supply Chain Facility Performance .....	322
Measuring Facility Performance .....	324
Exercise 30: Improving Throughput Metrics .....	326
Knowledge Check .....	330

### 4.3 Strategic Planning 332

Objectives .....	332
The Strategy Behind Planning .....	332
Determining the Need .....	333
Exercise 31: Determining the Need: You Decide .....	335
Facility Strategic Planning .....	338
Owning or Contracting Warehousing .....	339
Private Warehousing .....	340
Public Warehousing .....	341
Contract Warehousing .....	342
Storage in Transit .....	343
Exercise 32: Choosing a Facility Option: Your Turn .....	346
Exercise 33: What to Consider when Choosing a Location ...	350
Understanding Location Strategy .....	351
Supply Chain Facilities and Proximity .....	352
Exercise 34: Storage Locations: You Decide .....	353
Considering Transportation Costs .....	354
Modes of Transportation .....	354
Operating with One vs. Multiple Facilities. ....	358
Exercise 35: Total Logistics Cost .....	359
Exercise 36: The Impact of Decisions: Your Turn .....	360
Exercise 37: Choosing a Strategy: You Decide .....	362
Knowledge Check .....	366

### 4.4 Facility Design and Layout 368

Objectives .....	368
Introduction to Design and Layout .....	368

## 4. Management and Strategy

### 4.4 Facility Design and Layout

Exercise 38: What to Consider When Designing a Facility ....	369
Optimal Design and Layout .....	370
Exercise 39: Solving Facility Space Problems .....	371
Determining Size and Capacity .....	373
Exercise 40: Calculating Facility Size and Total Capacity .....	375
Exercise 41: Finding the Right Supply Chain Facility .....	375
Facility Layouts .....	376
Traditional Supply Chain Facility Model .....	376
ABC Storage Layout .....	378
Mixed/multiple Storage Layout .....	379
Facility Design and Layout Principles .....	380
Exercise 42: Designing a Facility Layout: Your Turn .....	381
Knowledge Check .....	382

### 4.5 Developing a Green Strategy

**384**

Objectives .....	384
Supply Chain Facilities Going Green .....	384
Exercise 43: Types of Waste: Your Turn .....	385
Enhancing Sustainability Practices .....	385
Enhancing Sustainability Practices by Reducing Waste: Stop & Shop's DC that Turns Food Waste into Energy .....	388
Enhancing Sustainability Practices with Packaging: Puma's Use of Recycled Packaging .....	388
Enhancing Sustainability Practices with Packaging in Shipping: Coca-Cola's Reusable Wooden Pallets and Worker-Friendly Plastic Pallets .....	388
Enhancing Sustainability Practices with Energy: Nike's 100% Renewable Energy Powered DC .....	389
Enhancing Sustainability Practices with Water: Rainwater Harvesting in Americold's Supply Chain Facilities .....	389
The Circular Supply Chain .....	390
Exercise 44: Making a Green DC .....	391
Knowledge Check .....	392

## 5. Planning a Career in the Supply Chain Industry

### 5.1 The Right Job for You

**394**

Objectives .....	394
Starting a Career in a Supply Chain Facility .....	394
Career Spotlight: Distribution Center Services Manager, PetSmart .....	396
Exploring Entry-Level Supply Chain Jobs .....	398
Searching for Jobs Online .....	399
Initial Challenges and Opportunities .....	401
Knowledge Check .....	402



<b>5. Planning a Career in the Supply Chain Industry</b>	<b>5.2 Getting Your Foot in the Door</b>	<b>404</b>
	Objectives .....	404
	Making Yourself a Good Job Candidate .....	404
	Crafting an Ideal Resume .....	405
	Resume Checklist .....	406
	Applying for a Job .....	411
	Parts of an Online Application .....	412
	Job Fairs, Interviewing Events and Onsite Tours .....	413
	The Interview Process .....	414
	Common Interview Questions .....	415
	Questions to Ask the Interviewer(s) .....	418
	Exercise 45: Asking the Right Questions .....	419
	Virtual Interviews .....	420
	Following Up after the Interview.....	423
	Knowledge Check .....	426
	<b>5.3 Building a Career for Yourself</b>	<b>428</b>
	Your First Day on the Job .....	428
	Being a Good Employee .....	429
	Growing with the Company .....	430
	Career Development Tips .....	430
	<b>Congratulations!</b>	<b>432</b>
	<b>Appendix A - Supply Chain Career Planner</b>	<b>434</b>
	<b>Appendix B - Glossary</b>	<b>464</b>
	<b>Appendix C - Answers to Knowledge Check Questions</b>	<b>474</b>