Introduction

Many instructors have found the *Encyclopedia of Operations Management (EOM)* to be a valuable text for their supply chain and operations management courses – both at the undergraduate and graduate levels. Practical ways to use the *EOM* in your courses include:

- Assign key terms to be studied as a part of homework assignments and case studies.
- Encourage students to use the *EOM* to learn more about terms used in your class and readings.
- Use homework assignments, quizzes, exams, and cases to hold students accountable for mastering the key terms and concepts used in your course.
- Make sure that your students have mastered all 200 essential terms.
- Be sure to inform your students that the “links” at the end of each entry “point to” related terms for each term. The ebook version of the EOM has over 10,000 hyperlinks to help the reader build their own “mental map” of the field of supply chain and operations management.

The 200 essential supply chain and operations terms

The list of 200 “essential” supply chain and operations terms can be found below. These terms are also listed in the *EOM*. In this author’s view, every supply chain and operations manager, student, and instructor should have a good understanding of these 200 terms. These terms are marked with a star (☆) before the term in the *EOM* and are hyperlinked in the ebook edition.

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 2</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>5S</td>
<td>carrying cost</td>
<td>design thinking</td>
</tr>
<tr>
<td>8 wastes</td>
<td>causal map</td>
<td>direct cost</td>
</tr>
<tr>
<td>A3 Report</td>
<td>cellular manufacturing</td>
<td>distribution</td>
</tr>
<tr>
<td>ABC classification</td>
<td>commodity</td>
<td>distribution channel</td>
</tr>
<tr>
<td>acceptance sampling</td>
<td>commonality</td>
<td>Economic Order Quantity (EOQ)</td>
</tr>
<tr>
<td>Activity Based Costing (ABC)</td>
<td>control chart</td>
<td>economy of scale</td>
</tr>
<tr>
<td>appraisal cost</td>
<td>control plan</td>
<td>economy of scope</td>
</tr>
<tr>
<td>assemble-to-order (ATO)</td>
<td>core competence</td>
<td>effectiveness</td>
</tr>
<tr>
<td>automation</td>
<td>cost of quality</td>
<td>efficiency</td>
</tr>
<tr>
<td>balanced scorecard</td>
<td>Critical Path Method (CPM)</td>
<td>employee turnover</td>
</tr>
<tr>
<td>bathtub curve</td>
<td>culture</td>
<td>engineer-to-order (ETO)</td>
</tr>
<tr>
<td>benchmarking</td>
<td>cycle counting</td>
<td>Enterprise Resources Planning (ERP)</td>
</tr>
<tr>
<td>bill of material (BOM)</td>
<td>cycle time</td>
<td>ergonomics</td>
</tr>
<tr>
<td>bottleneck</td>
<td>decision tree</td>
<td>error proofing</td>
</tr>
<tr>
<td>brainstorming</td>
<td>Delphi Method</td>
<td>exponential smoothing</td>
</tr>
<tr>
<td>break-even analysis</td>
<td>demand</td>
<td>facility layout</td>
</tr>
<tr>
<td>bullwhip effect</td>
<td>demand management</td>
<td>facility location</td>
</tr>
<tr>
<td>capacity</td>
<td>Design for Manufacturing (DFM)</td>
<td></td>
</tr>
</tbody>
</table>
Failure Mode and Effects Analysis (FMEA)  
finished goods inventory  
flexibility  
focused factory  
forecast error metrics  
forecasting  
Gantt Chart  
half-life curve  
industrial engineering  
inspection  
Integrated Business Planning (IBP)  
inventory management  
inventory position  
inventory turnover  
Ishikawa Diagram  
jidoka  
job design  
job enlargement  
job shop  
kaizen  
kanban  
leadtime  
lean sigma  
lean thinking  
learning curve  
learning organization  
linear regression  
Little’s Law  
logistics  
lotsizing methods  
make-to-order (MTO)  
make-to-stock (MTS)  
make versus buy decision  
Malcolm Baldrige National Quality Award (MBNQA)  
manufacturing processes  
mass customization  
Master Production Schedule (MPS)  
Materials Requirements Planning (MRP)  
Mean Absolute Deviation (MAD)  
Mean Absolute Percent Error (MAPE)  
Mean Absolute Scaled Error (MASE)  
modular design (modularity)  
moment of truth  
moving average  
muda  
Murphy’s Law  
Net Promoter Score (NPS)  
New Product Development (NPD)  
news vendor model  
offshoring  
on-hand inventory  
on-order inventory  
on open order  
op erations management (OM)  
op erations performance metrics  
op erations research (OR)  
op erations strategy  
op portunity cost  
outsourcing  
o verhead  
Pareto Chart  
Pareto’s Law  
Parkinson’s Laws  
part number  
PDCA (Plan-Do-Check-Act)  
periodic review system  
periods’ supply  
picking  
postponement  
process  
process capability and performance  
process design  
process improvement  
program  
process map  
product design quality  
production planning  
productivity  
product-process matrix  
program management office (PMO)  
project charter  
project management  
project management triangle  
pull system  
purchase order (PO)  
purchasing  
push-pull boundary  
Quality Function Deployment (QFD)  
quality management  
queueing theory  
Radio Frequency Identification (RFID)  
reorder point  
respond-to-order (RTO)  
risk management  
Root Cause Analysis (RCA)  
safety stock  
Sales & Operations Planning (S&OP)  
scheduling  
SCOR Model  
service failure  
service guarantee  
service level  
service management  
service quality  
service recovery  
service stock  
service time reduction methods  
seven tools of quality  
shop floor control  
simulation  
slack time  
sourcing  
stakeholder analysis  
standard cost  
standardized work  
starving  
Statistical Process Control (SPC)  
stockout  
strategy map  
sunk cost  
supplier  
supply chain management  
sustainability  
switching cost  
takt time  
tampering  
Theory of Constraints (TOC)  
time study  
time-based competition  
Total Productive Maintenance (TPM)  
transportation management
The essential terms organized by common textbook chapter titles

The list of essential terms is organized below by chapter titles commonly found in major supply chain and operations textbooks. Many of the essential terms can be found in more than one of the lists below. This list can also be found near the front of the *EOM*. The list of textbooks referenced to create this list can be found at the end of this document.

**OPERATIONS STRATEGY** – Main term: operations strategy. Additional terms: balanced scorecard, core competence, flexibility, focused factory, learning curve, mass customization, offshoring, outsourcing, postponement, push-pull boundary, respond-to-order (RTO), strategy map, sustainability, switching cost, time-based competition, vertical integration.

**PRODUCT AND SERVICE DESIGN** – Main term: New Product Development (NPD). Additional terms: commonality, Computer Aided Design (CAD), Design for Manufacturing (DFM), design thinking, flexibility, job design, mass customization, modular design (modularity), part number, postponement, product design quality, project management, Quality Function Deployment (QFD), voice of the customer (VOC).

**SERVICE MANAGEMENT AND SERVICE QUALITY** – Main terms: service management and service quality. Additional terms: facility layout, moment of truth, Net Promoter Score (NPS), operations performance metrics, outsourcing, quality management, service failure, service guarantee, service level, service recovery, vendor managed inventory (VMI).

**QUALITY MANAGEMENT AND QUALITY CONTROL** – Main term: quality management. Additional terms: acceptance sampling, appraisal cost, control chart, cost of quality, Design for Manufacturing (DFM), error proofing, inspection, PDCA (Plan-Do-Check-Act), process capability and performance, process improvement program, Quality Function Deployment (QFD), service quality, seven tools of quality, Statistical Process Control (SPC), tampering, voice of the customer (VOC).

**PROCESS ANALYSIS AND IMPROVEMENT** – Main term: process improvement program. Additional terms: benchmarking, brainstorming, control plan, culture, design thinking, error proofing, job design (work design), lean sigma, lean thinking, learning organization, PDCA (Plan-Do-Check-Act), process map, program management office (PMO), project charter, stakeholder analysis, standardized work, Theory of Constraints (TOC), value stream map, work measurement.

**PROCESS DESIGN, LAYOUT, AND LOCATION** – Main terms: process design, facility location, and facility layout. Additional terms: capacity, error proofing, process.

**PROJECT MANAGEMENT** – Main term: project management. Additional terms: Critical Path Method (CPM), Gantt Chart, kaizen, lean sigma, Murphy’s Law, New Product Development (NPD), Parkinson’s Laws, process improvement program, program management office (PMO), project charter, project management triangle, slack time, stakeholder analysis, work breakdown structure (WBS).
LEAN THINKING – Main term: lean thinking. Additional terms: 5S, 8 wastes, A3 Report, cellular manufacturing, jidoka, kaizen, lean sigma, muda, pull system, standardized work, takt time, value added ratio, value stream map.


FORECASTING – Main term: forecasting. Additional terms: Bass Model, Box-Jenkins forecasting, Collaborative Planning Forecasting and Replenishment (CPFR), damped trend, Delphi Method, demand filter, demand management, exponential smoothing, forecast error metrics, forecast horizon, forecast interval, Integrated Business Planning (IBP), linear regression, lumpy demand, Mean Absolute Deviation (MAD), Mean Absolute Percent Error (MAPE), seasonality, technological forecasting, time bucket, tracking signal.

INVENTORY MANAGEMENT – Main term: inventory management. Additional terms: ABC classification, bullwhip effect, carrying cost, cycle counting, demand management, distribution, independent demand, inventory position, inventory turnover, on-hand inventory, on-order inventory, part number, periodic review system, periods’ supply, pull system, purchasing, reorder point, safety stock, service level, stockout, vendor managed inventory (VMI), Warehouse Management System (WMS), work-in-process (WIP) inventory.

MATERIALS REQUIREMENTS PLANNING/PRODUCTION PLANNING – Main terms: Materials Requirements Planning (MRP) and production planning (aka aggregate production planning). Additional terms: bill of material (BOM), Enterprise Resources Planning (ERP), Integrated Business Planning IBP (aka Sales & Operations Planning S&OP), inventory management, leadtime, lotsizing methods, Master Production Schedule (MPS), on-hand inventory, on-order inventory, purchase order (PO), purchasing, scheduling.

PURCHASING/SOURCING/LOGISTICS – Main terms: purchasing, sourcing, logistics. Additional terms: commodity, leadtime, newsvendor model, purchase order (PO), service level, spend analysis, supplier, supply chain management, vendor managed inventory (VMI).

CAPACITY MANAGEMENT – Main term: capacity. Additional terms: bottleneck, learning curve, Little’s Law, process design, queuing theory (aka waiting line analysis), starving, utilization.

SUPPLY CHAIN MANAGEMENT – Main term: supply chain management. Additional terms: bullwhip effect, carrier, distribution, distribution channel, facility location, logistics, make versus buy decision, offshoring, outsourcing, purchasing, sourcing, value chain, vendor managed inventory (VMI), vertical integration.

The list of textbooks used to create the above list of “chapter titles”

The following is the list textbooks used to create the list above. This is a representative list of tables of contents from a number of recently published textbooks. We apologize to the authors of textbooks not included in this convenience sample.


Section 1: Strategy, Products, and Capacity
1. Introduction
2. Strategy
3. Design of Products and Services
4. Project Management
5. Strategic Capacity Management
6. Learning Curves
Section 2: Manufacturing and Service Processes
7. Manufacturing Processes
8. Facility Layout
9. Service Processes
10. Waiting Line Analysis and Simulation
11. Process Design and Analysis
12. Six Sigma Quality
13. Statistical Quality Control
Section 3: Supply Chain Processes
14. Lean Supply Chains
15. Logistics, Distribution, and Transportation
16. Global Sourcing and Procurement
Section 4: Supply and Demand Planning and Control
17. Enterprise Resource Planning systems
18. Forecasting
20. Inventory Management
21. Material Requirements Planning
22. Workcenter Scheduling
23. Theory of Constraints
Section 5: Special Topics
24. Health Care
25. Operations Consulting

Stevenson, 13-th edition, 2017
1. Introduction to Operations Management
2. Competitiveness, Strategy, and Productivity
3. Forecasting
4. Product and Service Design
SUPPLEMENT TO CHAPTER 4: Reliability
5. Strategic Capacity Planning for Products and Services
SUPPLEMENT TO CHAPTER 5: Decision Theory
6. Process Selection and Facility Layout
7. Work Design and Measurement
SUPPLEMENT TO CHAPTER 7: Learning Curves
8. Location Planning and Analysis
9. Management of Quality
10. Quality Control
11. Aggregate Planning and Master Scheduling
12. MRP and ERP
13. Inventory Management
14. JIT and Lean Operations

SUPPLEMENT TO CHAPTER 14: Maintenance

15. Supply Chain Management

16. Scheduling

17. Project Management

18. Management of Waiting Lines

19. Linear Programming


1. The Operations Function
2. Operations and Supply Chain Strategy
3. Product Design
4. Process Selection
5. Service Delivery System Design
6. Process-Flow Analysis
7. Lean Thinking and Lean Systems
8. Managing Quality
9. Quality Control and Improvement
10. Forecasting
11. Capacity Planning
12. Scheduling Operations
13. Project Planning and Scheduling
14. Independent Demand Inventory
15. Materials Requirements Planning and ERP
16. Supply Chain Management
17. Sourcing
18. Global Logistics


Part I: Introduction to Operations Management
1. Operations and Productivity
2. Operations Strategy in a Global Environment
3. Project Management
4. Forecasting

Part II: Designing Operations
5. Design of Goods and Services
S5. Sustainability in the Supply Chain
6. Managing Quality
S6. Statistical Process Control
7. Process Strategy
S7. Capacity and Constraint Management
8. Location Strategies
9. Layout Strategies

Copyright © 2019 Clamshell Beach Press (info@clamshellbeachpress.com)
PART III: Managing Operations
11. Supply Chain Management
S11. Supply Chain Management Analytics
12. Inventory Management
13. Aggregate Planning and S&OP
14. Material Requirements Planning (MRP) and ERP
15. Short-Term Scheduling
16. Lean Operations
17. Maintenance and Reliability
PART IV: Business Analytics Modules
Module A. Decision-Making Tools
Module B. Linear Programming
Module C. Transportation Models
Module D. Waiting-Line Models
Module E. Learning Curves
Module F. Simulation

1. Introduction to Operations Management
2. Introduction to Processes
3. Process Analysis
4. Process Improvement
5. Process Analysis with Multiple Flow Units
6. Learning Curves
7. Process Interruptions
8. Lean Operations and the Toyota Production System
9. Quality and Statistical Process Control
10. Introduction to Inventory Management
11. Supply Chain Management
12. Inventory Management with Steady Demand
13. Inventory Management with Perishable Demand
14. Inventory Management with Frequent Orders
15. Forecasting
16. Service Systems with Patient Customers
17. Service Systems with Impatient Customers
18. Scheduling to Prioritize Demand
19. Project Management
20. New Product Development

Cachon & Terwiesch, Matching Supply with Demand: An Introduction to Operations Management, 4-th Edition, 2018
1. Introduction
2. The Process View of the Organization
4. Estimating and Reducing Labor Costs
5. Batching and Other Flow Interruptions: Setup Times and the Economic Order Quantity Model
6. The Link between Operations and Finance
7. Quality and Statistical Process Control
8. Lean Operations and the Toyota Production System
10. The Impact of Variability on Process Performance: Throughput Losses
11. Scheduling to Prioritize Demand
12. Project Management
13. Forecasting
14. Betting on Uncertain Demand: The Newsvendor Model
15. Assemble-to-Order, Make-to-Order, and Quick Response with Reactive Capacity
16. Service Levels and Lead Times in Supply Chains: The Order-up-to Inventory Model
17. Risk-Pooling Strategies to Reduce and Hedge Uncertainty
18. Revenue Management with Capacity Controls
19. Supply Chain with Capacity Coordination

Swink, Melnyk, Cooper, and Hartley, Managing Operations Across the Supply Chain, 3rd Edition, 2017

Part 1 – SUPPLY CHAIN: A PERSPECTIVE FOR OPERATIONS MANAGEMENT
1. Introduction to Managing Operations Across the Supply Chain
2. Operations and Supply Chain Strategy

Part 2 – FOUNDATIONS OF OPERATIONS MANAGEMENT
3. Managing Processes and Capacity
4. Supplement: Process Mapping and Analysis
5. Product/Process Innovation
6. Manufacturing and Service Process Structures
7. Managing Quality
8. Supplement: Quality Improvement Tools
9. Managing Inventories
10. Lean Systems

Part 3 – INTEGRATING RELATIONSHIPS ACROSS THE SUPPLY CHAIN
11. Customer Service Management
12. Sourcing and Supply Management
13. Logistics Management

Part 4 – PLANNING FOR INTEGRATED OPERATIONS ACROSS THE SUPPLY CHAIN
14. Demand Planning: Forecasting and Demand Management
15. Sales and Operations Planning

Part 5 – MANAGING CHANGE IN SUPPLY CHAIN OPERATIONS
16. Project Management
17. Supplement: Advanced Methods for Project Scheduling

A Word file for this document can be found on the www.ClamshellBeachPress.com website.