DegreeLive

OPERATIONS MANAGEMENT

BBA Semester 5 – Calicut University

MODULE 1: INTRODUCTION TO GLOBAL OPERATIONS MANAGEMENT

Global Operations Management

1. Management of production and service activities across international markets.
2. Focuses on efficient use of resources to deliver goods and services globally.
3. Ensures cost, quality, speed and flexibility.

Evolution

1. Traditional production systems.
2. Mass production.
3. Lean production.
4. Global supply chains.
5. Technology-driven operations.

Competitive Priorities and Operations Strategy

Competitive Priorities

Key objectives organizations compete on:

1. **Cost:** Producing at minimum cost.
2. **Quality:** Delivering defect-free products.
3. **Delivery:** Fast and reliable delivery.
4. **Flexibility:** Ability to adapt to changes.

Operations Strategy

1. Long-term plan aligning operations with business goals.

Importance

1. Competitive advantage.
2. Customer satisfaction.
3. Resource optimization.

New Product Development in Global Context

New Product Development (NPD)

1. Process of creating and launching new products.

Stages

1. Idea generation.
2. Screening.
3. Product design.
4. Testing.
5. Commercialization.

Manufacturability

1. Ease of producing a product efficiently.

Reliability

1. Ability of product to perform consistently over time.

Importance

1. Reduces production cost.
2. Improves customer satisfaction.

Quality Management for Global Operations

Quality Management

1. Activities ensuring products meet customer requirements.

Quality Cost

Costs related to quality.

1. **Prevention Cost:** Cost of avoiding defects.
2. **Appraisal Cost:** Cost of inspection and testing.
3. **Failure Cost:** Cost arising from defects.

Total Quality Management (TQM)

1. Organization-wide approach to continuous quality improvement.

Principles of TQM

1. Customer focus.
2. Continuous improvement.
3. Employee involvement.
4. Process orientation.

Global Operations Performance Metrics

KPI (Key Performance Indicator)

1. Measure used to evaluate operational performance.

Common KPIs

1. Productivity.
2. Quality level.
3. Delivery performance.
4. Inventory turnover.
5. Capacity utilization.
6. Customer satisfaction.

Importance

1. Performance evaluation.
2. Decision support.
3. Continuous improvement.

MODULE 2: TOOLS AND TECHNIQUES FOR GLOBAL OPERATIONS MANAGEMENT

Statistical Process Control (SPC)

Meaning

1. Statistical technique used to monitor and control production processes.

Objectives

1. Detect variations.
2. Improve quality.
3. Reduce defects.

Control Charts

1. Graphical tools used to monitor process performance.

Types

1. $\bar{X}$ Chart (Mean Chart).
2. R Chart (Range Chart).
3. P Chart (Proportion Defective).

Benefits

1. Early detection of problems.
2. Better quality control.

Process and Capacity Design

Process Design

1. Planning how products and services will be produced.

Capacity Design

1. Determining maximum output capability.

Bottleneck

1. Activity limiting overall system performance.

Capacity Constraints

1. Restrictions preventing higher production.

Operational Hedging

1. Creating flexibility to reduce operational risks.
2. Examples: Multiple suppliers, Multiple production locations.

Forecasting Techniques

Forecasting

1. Predicting future demand and business conditions.

Qualitative Methods

1. Based on judgment and experience.
2. Examples: Delphi Method, Expert Opinion.

Quantitative Methods

1. Based on numerical data.
2. Examples: Moving Average, Trend Analysis.

Forecasting Errors

1. Difference between forecasted and actual results.

Causes

1. Poor data.
2. Market changes.
3. Unexpected events.

Inventory Management and Control

Inventory

1. Stock of materials, work-in-progress and finished goods.

ABC Analysis

Classification based on value.

1. **A Items:** High value, low quantity.
2. **B Items:** Medium value.
3. **C Items:** Low value, high quantity.

EOQ (Economic Order Quantity)

1. Optimum order size minimizing ordering and holding costs.

Benefits

1. Cost reduction.
2. Efficient inventory control.

Just-in-Time (JIT) and Lean Systems

JIT

1. Materials arrive only when needed.

Objectives

1. Reduce inventory.
2. Eliminate waste.
3. Improve efficiency.

Lean Systems

1. Focus on removing non-value-added activities.

Benefits

1. Lower costs.
2. Better quality.
3. Faster production.

MODULE 3: OPERATIONS PLANNING AND EXECUTION IN A GLOBAL CONTEXT

Production and Demand Planning

Production Planning

1. Determining what, when and how much to produce.

Demand Planning

1. Forecasting customer demand.

Scheduling

1. Allocation of resources over time.

Flow Time

1. Total time taken from start to completion of a process.

Objectives

1. Meet customer demand.
2. Optimize resources.
3. Reduce delays.

Learning Curves and Human Resource Planning

Learning Curve

1. Performance improves as experience increases.

Learning Rate

1. Speed at which efficiency improves.

Procedure Duration

1. Time required to complete activities.

Future Cost Estimation

1. Learning reduces future production costs.

Human Resource Planning

1. Ensuring right number of employees with required skills.

Benefits

1. Better workforce utilization.
2. Improved productivity.

Supply Chain Management and Risk Mitigation

Supply Chain Management (SCM)

1. Coordination of activities from suppliers to customers.

Objectives

1. Efficient flow of materials.
2. Cost reduction.
3. Customer satisfaction.

Purchasing

1. Procurement of materials and services.

Warehousing

1. Storage of goods until required.

Risk Mitigation

1. Supplier diversification.
2. Safety stock maintenance.
3. Contingency planning.

Advanced Inventory Management

MRP (Material Requirements Planning)

1. System for determining material requirements for production.

Functions

1. Inventory planning.
2. Scheduling purchases.
3. Production planning.

Bullwhip Effect

1. Small demand changes cause large fluctuations throughout supply chain.

Causes

1. Poor forecasting.
2. Delayed information.
3. Order batching.

Effects

1. Excess inventory.
2. Stock shortages.
3. Increased costs.

MODULE 4: ADVANCED TOPICS IN GLOBAL OPERATIONS MANAGEMENT

Facility Location and Layout Strategies

Facility Location

1. Selection of suitable place for operations.

Factors

1. Cost.
2. Market access.
3. Infrastructure.
4. Labour availability.

Facility Layout

1. Arrangement of resources within a facility.

Applications

1. **Office Layout:** Efficient employee workflow.
2. **Supermarket Layout:** Customer convenience and sales improvement.
3. **Warehouse Layout:** Efficient storage and retrieval.
4. **Process Layout:** Similar activities grouped together.

Advanced Quality Management

Quality Standards

1. Established requirements for products and processes.
2. Examples: ISO Standards, Industry-specific standards.

Quality Certifications

1. Formal recognition of compliance with standards.

Benefits

1. Customer confidence.
2. Global acceptance.
3. Improved quality.

Operations Management Across Regions

Asia

1. Cost efficiency.
2. High manufacturing capacity.
3. Rapid industrial growth.

Europe

1. Quality focus.
2. Sustainability emphasis.
3. Advanced technology adoption.

North America

1. Innovation-driven operations.
2. High automation.

Importance of Comparison

1. Identifies best practices.
2. Improves global competitiveness.

Technology and Innovation in Global Operations

Role of Technology

1. Automation.
2. Artificial Intelligence.
3. Robotics.
4. Cloud Computing.
5. Internet of Things (IoT).

Benefits

1. Higher productivity.

2. Better quality.
3. Faster decisions.
4. Reduced operational costs.

Role of Innovation

1. New products.
2. Improved processes.
3. Competitive advantage.

Environmental Impact of Global Operations

Environmental Issues

1. Pollution.
2. Carbon emissions.
3. Resource depletion.
4. Industrial waste.

Sustainable Operations

1. Energy efficiency.
2. Waste reduction.
3. Green supply chains.
4. Recycling and reuse.

Benefits

1. Environmental protection.
2. Cost savings.
3. Better corporate image.
4. Long-term sustainability.