INTRODUCTION TO PROJECT MANAGEMENT

LESSON 6 – PROJECT MANAGEMENT

SCIENTIA ET PRATIQUE

MTF
INSTITUTE OF MANAGEMENT, TECHNOLOGY & FINANCE

COURSE AGENDA

Your Journey in Operations Management

Class 1- Introduction

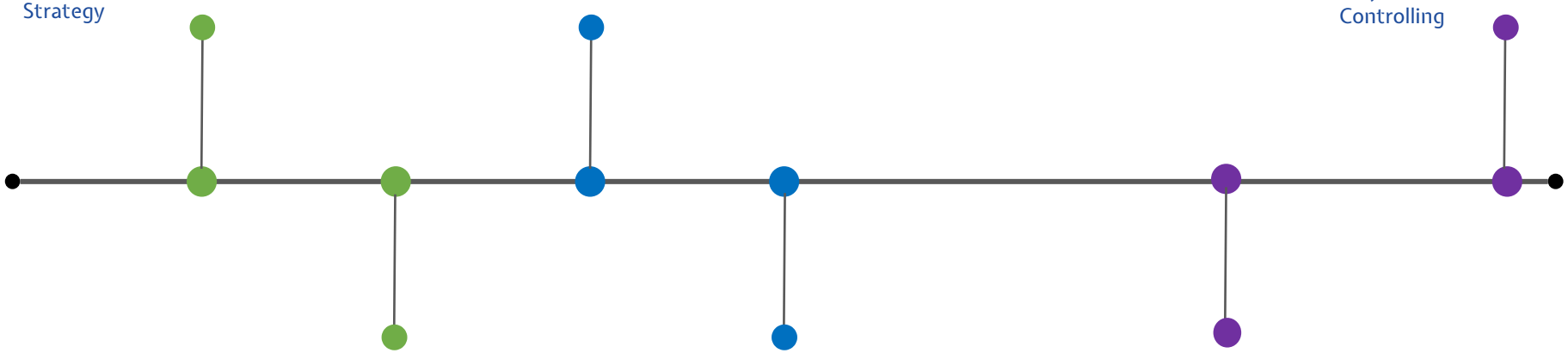
- Overview of Operations Management
- Why Operations Management Matters
- Definitions and Core Concepts
- Timeline of Operations Management
- Aligning Operations with Business Strategy

Class 2 Operations Strategy

- Cost, Quality, Flexibility, and Delivery
- Productivity: Measures and Improvements
- Sustainability in Operations
- Technology in Operations
- Capacity Planning

Class 3 – Process Design and Analysis

- Introduction to Process Design
- Process Types
- Lean Manufacturing
- Six Sigma
- Bottleneck Analysis
- Process Improvement



Class 4 – Supply Chain Management

- Introduction to Supply Chain Management
- Supply Chain Components
- Inventory Management
- Demand Forecasting
- Supply Chain Integration
- Logistics Management

Class 5- Quality Management

- Introduction to Quality Management
- Total Quality Management (TQM)
- Quality Tools
- ISO Standards
- Continuous Improvement
- Quality Audits

Class 6 – Project Management

- Introduction to Project Management
- Project Life Cycle
- Project Planning
- Gantt Charts and CPM/PERT
- Resource Allocation
- Risk Management
- Project Execution: Monitoring and Controlling

Sources

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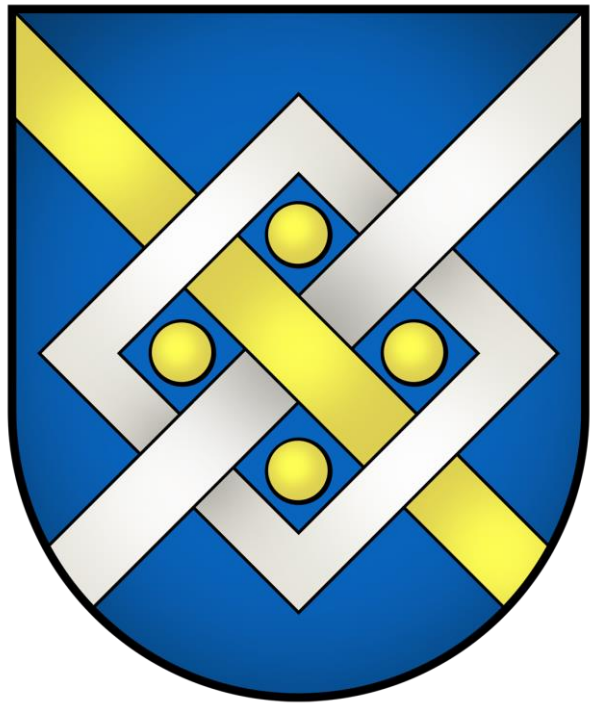
LAST CLASS HIGHLIGHTS



In conclusion, quality management is a fundamental aspect of operations management, encompassing various methodologies and tools to ensure that products and services meet or exceed customer expectations.

From TQM principles to specific quality tools like QFD, FMEA, and SPC, organizations can enhance their quality processes and outcomes.

ISO standards provide a framework for achieving and maintaining high quality, while continuous improvement techniques like Kaizen and the PDCA cycle drive ongoing enhancements.

Quality audits ensure compliance and continuous improvement, supporting the overall goal of delivering high-quality products and services.

INTRODUCTION TO PROJECT MANAGEMENT: DEFINITIONS AND SCOPE

Definitions

Project management involves applying knowledge, skills, tools, and techniques to project activities to meet the project requirements. It is a discipline that ensures projects are completed on time, within budget, and to the required quality standards. A project is a temporary endeavor undertaken to create a unique product, service, or result, characterized by a specific goal, a defined beginning and end, and the use of resources.

Key aspects of project management include:

- Scope Management: Defining and controlling what is and is not included in the project.
- Time Management: Ensuring timely completion of the project.
- Cost Management: Planning and controlling the project budget.
- Quality Management: Ensuring the project meets the required standards.
- Resource Management: Efficient and effective use of resources.
- Risk Management: Identifying and mitigating project risks.
- Stakeholder Management: Managing relationships and communication with stakeholders.

Sources

INTRODUCTION TO PROJECT MANAGEMENT: DEFINITIONS AND SCOPE

Scope of Project Management

Project management covers various processes and activities, including:

1. Initiating: Defining the project and obtaining authorization.
2. Planning: Establishing the project scope, objectives, and procedures.
3. Executing: Performing the work defined in the project management plan.
4. Monitoring and Controlling: Tracking, reviewing, and regulating project progress and performance.
5. Closing: Finalizing all activities and formally closing the project.

Effective project management ensures that organizational goals are met, resources are used efficiently, risks are managed, and stakeholders are satisfied with the project outcomes.

Sources

PROJECT LIFE CYCLE: PHASES AND KEY ACTIVITIES

Project Life Cycle Phases

The project life cycle consists of distinct phases, each with specific activities and deliverables. The primary phases are:

Initiation:

- Key Activities: Define the project, conduct feasibility studies, identify stakeholders, and develop a project charter.
- Deliverables: Project charter, feasibility report.

Planning:

- Key Activities: Develop a project management plan, define scope, schedule, and budget, identify resources, and conduct risk assessment.
- Deliverables: Project management plan, work breakdown structure (WBS), risk management plan.

Sources

PROJECT LIFE CYCLE: PHASES AND KEY ACTIVITIES

Execution:

- Key Activities: Coordinate people and resources, execute project plans, ensure quality standards are met, and manage communications.
- Deliverables: Completed deliverables, status reports, performance metrics.

Monitoring and Controlling:

- Key Activities: Track project performance, manage changes to the project plan, identify and mitigate risks, and ensure project stays on track.
- Deliverables: Performance reports, change requests, updated project plan.

Closing:

- Key Activities: Finalize all project activities, confirm project completion, obtain stakeholder acceptance, and conduct post-project evaluation.
- Deliverables: Final project report, lessons learned, project closure documentation.

The project life cycle provides a structured approach to managing projects, ensuring that all necessary activities are completed and project goals are achieved.

PROJECT PLANNING: TOOLS AND TECHNIQUES

Tools and Techniques

Effective project planning involves the use of various tools and techniques to ensure that project objectives are met. Key tools and techniques include:

Work Breakdown Structure (WBS):

- Description: A hierarchical decomposition of the total scope of work to accomplish project objectives.
- Benefits: Provides a clear and detailed overview of the project scope, helps assign responsibilities, and facilitates accurate cost and time estimates.

Gantt Chart:

- Description: A visual representation of the project schedule, showing tasks, durations, and dependencies.
- Benefits: Helps track progress, identify critical path activities, and manage timelines.

PROJECT PLANNING: TOOLS AND TECHNIQUES

Critical Path Method (CPM):

- Description: A scheduling technique used to identify the longest sequence of tasks that determines the project duration.
- Benefits: Helps identify critical tasks that must be completed on time to avoid project delays.

Program Evaluation and Review Technique (PERT):

- Description: A statistical tool used to analyze and represent the tasks involved in completing a project.
- Benefits: Helps estimate project duration and identify potential delays.

Risk Management Plan:

- Description: A plan that identifies potential risks, assesses their impact, and defines mitigation strategies.
- Benefits: Helps proactively manage risks and reduce their impact on the project.

Resource Allocation Plan:

- Description: A plan that identifies and assigns resources to project tasks.
- Benefits: Ensures that resources are available when needed and used efficiently.

GANTT CHARTS AND CPM/PERT: SCHEDULING TOOLS

Gantt Charts

A Gantt chart is a bar chart that represents a project schedule. It shows the start and finish dates of the project elements and provides a visual timeline for project activities.

Components:

- Tasks: Listed on the vertical axis.
- Timeline: Represented on the horizontal axis.
- Bars: Represent the duration of each task, with the position reflecting the start and end dates.

Benefits:

- Visualization: Easy to understand and visually represents the project schedule.
- Tracking Progress: Helps track task progress and identify delays.
- Dependency Management: Shows task dependencies and helps manage overlapping activities.

GANTT CHARTS AND CPM/PERT: SCHEDULING TOOLS

Critical Path Method (CPM)

CPM is a project modeling technique used to identify critical and non-critical tasks to prevent project delays.

Steps:

- List Activities: Identify all tasks required to complete the project.
- Sequence Activities: Determine the order of tasks and their dependencies.
- Estimate Duration: Assign time durations to each task.
- Draw Network Diagram: Create a flowchart to visualize task sequences and dependencies.
- Identify Critical Path: Determine the longest path of dependent tasks, representing the shortest possible project duration.

Benefits:

- Identifies Critical Tasks: Highlights tasks that directly impact the project timeline.
- Optimizes Scheduling: Helps optimize resource allocation and scheduling.
- Improves Time Management: Ensures focus on critical tasks to avoid delays.

GANTT CHARTS AND CPM/PERT: SCHEDULING TOOLS

Program Evaluation and Review Technique (PERT)

PERT is a statistical tool used to manage uncertain activities in a project.

Components:

- Optimistic Time (O): The shortest time in which a task can be completed.
- Pessimistic Time (P): The longest time it might take to complete a task.
- Most Likely Time (M): The best estimate of the time required to complete a task, assuming everything proceeds as usual.

Formula: Expected Time (TE) = (O + 4M + P) / 6

Benefits:

- Manages Uncertainty: Provides a more realistic schedule by accounting for uncertainty.
- Improves Planning: Enhances the accuracy of project timelines and resource planning.
- Identifies Risks: Helps identify potential delays and plan mitigation strategies.

RESOURCE ALLOCATION: STRATEGIES AND CHALLENGES

Strategies for Resource Allocation

Effective resource allocation is critical for project success. Key strategies include:

Resource Leveling:

- Description: Adjusts the project schedule to address resource constraints.
- Benefits: Reduces resource over-allocation, ensures balanced workload, and avoids burnout.

Resource Smoothing:

- Description: Adjusts activities to ensure resources are used efficiently without affecting the critical path.
- Benefits: Maintains project timeline while optimizing resource usage.

Critical Chain Project Management (CCPM):

- Description: Focuses on resource availability and buffers to manage uncertainties.
- Benefits: Improves project delivery times and reduces stress on resources.

Priority Scheduling:

- Description: Prioritizes tasks based on their importance and resource availability.
- Benefits: Ensures critical tasks are completed first, improving project outcomes.

RESOURCE ALLOCATION: STRATEGIES AND CHALLENGES

Challenges in Resource Allocation

- Resource Availability: Ensuring resources are available when needed can be challenging, especially in multi-project environments.
- Resource Conflicts: Conflicts can arise when resources are shared across multiple projects or departments.
- Estimating Requirements: Accurately estimating resource requirements is difficult, leading to under or over-allocation.
- Changing Priorities: Shifting project priorities can disrupt resource allocation plans.
- Skill Mismatch: Ensuring resources have the necessary skills for assigned tasks can be challenging, impacting productivity and quality.

RISK MANAGEMENT: IDENTIFICATION AND MITIGATION

Risk Identification

Risk identification involves recognizing potential risks that could impact the project. Key techniques include:

- Brainstorming: Gathering input from the project team and stakeholders to identify possible risks.
- Delphi Technique: Using expert consensus to identify and prioritize risks.
- SWOT Analysis: Analyzing strengths, weaknesses, opportunities, and threats to identify risks.
- Checklists: Using pre-defined checklists to identify common risks.
- Interviews: Conducting interviews with stakeholders and experts to uncover potential risks.

RISK MANAGEMENT: IDENTIFICATION AND MITIGATION

Risk Mitigation

Risk mitigation involves developing strategies to reduce the impact of identified risks. Key strategies include:

- Avoidance: Changing the project plan to eliminate the risk.
- Transference: Shifting the risk to a third party, such as through insurance or outsourcing.
- Mitigation: Taking proactive steps to reduce the likelihood or impact of the risk.
- Acceptance: Acknowledging the risk and preparing to manage its impact if it occurs.

Effective risk management ensures that risks are identified early, assessed accurately, and managed proactively to minimize their impact on the project.

PROJECT EXECUTION: MONITORING AND CONTROLLING

Monitoring

Monitoring involves tracking project performance and progress against the project plan. Key activities include:

- Performance Measurement: Using key performance indicators (KPIs) to measure project progress.
- Status Reporting: Regularly updating stakeholders on project status and performance.
- Variance Analysis: Comparing actual performance against planned performance to identify deviations.
- Change Management: Managing changes to the project scope, schedule, and budget.

PROJECT EXECUTION: MONITORING AND CONTROLLING

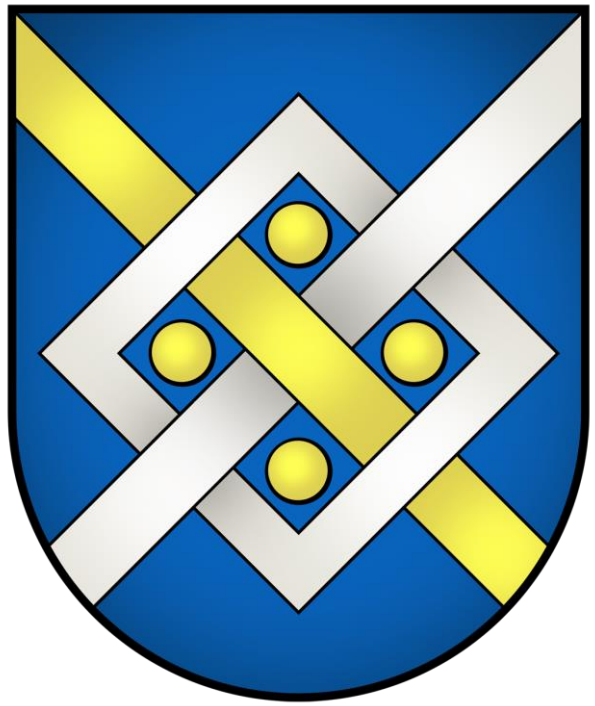
Controlling

Controlling involves taking corrective actions to address any deviations from the project plan. Key activities include:

- Issue Management: Identifying, tracking, and resolving project issues.
- Risk Management: Implementing risk mitigation strategies and updating risk management plans.
- Quality Control: Ensuring that project deliverables meet quality standards.
- Schedule Control: Managing changes to the project schedule to ensure timely completion.
- Cost Control: Monitoring project costs and managing changes to the project budget.

Effective project execution requires continuous monitoring and controlling to ensure that project objectives are met, risks are managed, and stakeholders are satisfied with the project outcomes.

COURSE MAIN TAKE-AWAYS



Operations Management (OM) is the branch of management focused on designing, overseeing, and controlling the process of production and redesigning business operations in the production of goods or services.

Several core concepts are central to understanding Operations Management, and encompass Product Design, Process Design, Quality Management, Supply Chain Management, Inventory Management, Lean Manufacturing and Just-In-Time (JIT).

In conclusion, Operations Management is a vital aspect of any business that significantly impacts efficiency, cost management, and customer satisfaction.

This introductory course covered the most important topics related to this huge field of knowledge and can be further deepened and detailed in other courses.

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