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REA619
Property and Facility Management

Lecture 9



Real Estate Management

Lecture 9

REA619

Property and Facility Management

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Recap-Lecture 8

Core Competence in Facility Management

Concept

Core Competence in Facility Management

Facility Handbook

Concept

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Handbook

Requirements for Continuous Updating

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- ❖ Procurement in Facility Management
- ❖ Facility Maintenance Management

Facility Management Organization

Facility management Organization is the entity responsible for delivering and **implementing Facility Management services** according to **ISO 41014**, within the building or real estate project (operations, maintenance, energy management, and troubleshooting operations).

Services may be delivered and implemented **internally** through a full in-house team within the organization, **through external service providers**, or through a combination of both.

Facility management Organization can be either part of the **Demand Organization** or an external entity.

Facility Management Organization

Comparison Table (FM Organization vs. Demand Organization)

Item	FM Organization	Demand Organization
Definition	The entity responsible for managing facilities and providing or coordinating support services.	The entity that owns the core business activity and requests facility management services.
Focus	Operations, maintenance, and service efficiency.	Executing the core business of the organization.
Success Criteria	Service quality and operational continuity.	Achieving core business objectives.
Relationship	Service provider.	Service beneficiary/requester.
Example	An FM company managing maintenance, cleaning, and security in a hospital.	The hospital administration that requests these services to focus on healthcare delivery.

Facility Management Organization

Perspectives for Classifying and Understanding the FM Organization

The Facility Management Organization can be understood and classified from **five main perspectives**:

❖ Organizational Structure and Management Function

❖ Extent of Embeddedness within the Demand Organization

❖ Service Delivery Options

❖ Support Processes and Activities

❖ Dynamic Capabilities

The **demand organization** must select a **facility management organizational form** that **aligns with its strategic needs and available resources**.

Facility Management Organization

❖ Organizational Structure and Management Function

Organizational Structure	Advantages (+)	Disadvantages/Challenges (-)	Usage Context	Practical Example
(1) Functional-Line (Top-Down)	▪ Easy to implement and clear responsibilities. ▪ Strong adherence to procedures and reproducibility of results.	▪ Rigidity and lack of flexibility. ▪ Encourages siloed working.	Organizations with stable, ongoing operations requiring continuity, such as public sector entities and very large institutions.	Facility Management department in a government authority, where procedures are fixed and outputs are standardized.
(2) Divisional	▪ Clear specialization for each division (e.g., maintenance, administrative services). ▪ Suitable for large, geographically dispersed organizations.	▪ Increased distance between top management and operational level. ▪ Weak inter-departmental communication.	Very large organizations operating in multiple markets/products or with multiple geographical sites.	Large FM company with separate divisions managing industrial and healthcare facilities.

Facility Management Organization

❖ Organizational Structure and Management Function

Organizational Structure	Advantages (+)	Disadvantages/Challenges (-)	Usage Context	Practical Example
(3) Matrix	▪ Suitable for projects, programs, and operations. ▪ Ability to achieve multiple functional and project goals simultaneously.	▪ Increased pressure on employees. ▪ Difficulty managing and prioritizing tasks.	Project-based organizations requiring resources from different functional departments (e.g., construction or facility renovation projects).	FM team working on a full headquarters renovation project (where the project manager reports to FM manager and maintenance manager reports to operations manager).
(4) Adaptive/Learning	▪ High flexibility – can adapt quickly to changing conditions. ▪ Encourages innovation and learning.	▪ High employee turnover. ▪ May cause confusion and discomfort for staff. ▪ Potential loss of organizational knowledge.	Startups or FM organizations serving fast-changing clients (e.g., tech companies) in a volatile environment.	FM team in an IT company with an agile work environment, continuously adjusting workspace according to team needs.

Facility Management Organization

❖ Organizational Structure and Management Function

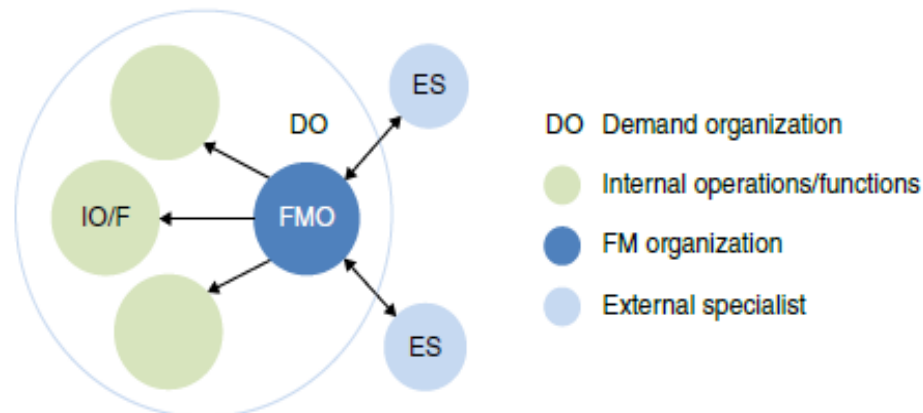
Organizational Structure	Advantages (+)	Disadvantages/Challenges (-)	Usage Context	Practical Example
(5) Flat	- Reduces distance between management and employees. - Direct communication and immediate feedback.	- Increased management workload. - Coordination challenges between teams when scaling.	Small to medium-sized companies, or FM teams operating at a single, limited site with fast decision-making.	Small specialized FM company providing services to a single office building, where technicians report directly to the facility manager.
(6) Team-Centered	- Combines advantages of flat and adaptive structures (small teams focus on specific areas). - Encourages competition and innovation.	- Challenges in communication and coordination between teams. - Risk of unhealthy competition if poorly managed.	Organizations relying on independent work units or self-managed teams delivering specific service bundles.	FM department dividing staff into specialized maintenance teams (mechanical team, electrical team), each operating as a semi-independent unit.

Facility Management Organization

❖ Extent of Embeddedness within the Demand Organization

Organizational Model	Conceptual Definition	Strategic Advantages	Operational Constraints	Optimal Application Scenarios
(1) In-House / Internalized High Integration	An internal unit or department within the requesting organization responsible for delivering all FM services (e.g., mechanical and electrical maintenance, security, cleaning).	- Full operational control - Strong alignment with organizational strategic goals - Flexibility in resource allocation - Deep institutional knowledge of organizational needs - Smooth internal communication	- High cost (staff, training, infrastructure) - Possible gaps in specialized expertise - Limited scalability - Significant administrative burden	- Sensitive facilities (e.g., hospitals, factories) - Organizations requiring full control over FM services - Entities with unique operational requirements

An internal team delivering all FM services.

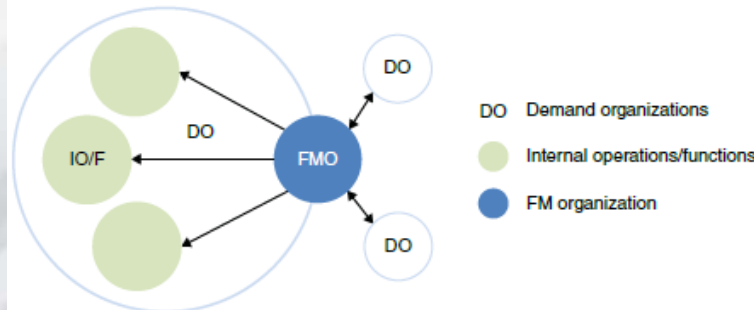


Facility Management Organization

❖ Extent of Embeddedness within the Demand Organization

Organizational Model	Conceptual Definition	Strategic Advantages	Operational Constraints	Optimal Application Scenarios
(2) Externalized / Hybrid Medium Integration	A semi-autonomous unit operating at the boundary of the organization, providing services to internal departments and external clients; may evolve into an independent entity (e.g., PPP partnerships or MBO-led units).	- Ability to expand scope of services - Potential to transform into an independent company - Balance between control and flexibility - Diversifying revenue through external services	- Complexity in managing internal and external clients - Risk of losing focus on the core mission - Challenges in prioritization - Potential conflicts of interest	- Organizations seeking to commercialize their services (e.g., universities managing multi-campus operations) - Entities exploring hybrid business models - Institutions seeking revenue diversification

A semi-autonomous unit serving internal and external clients.

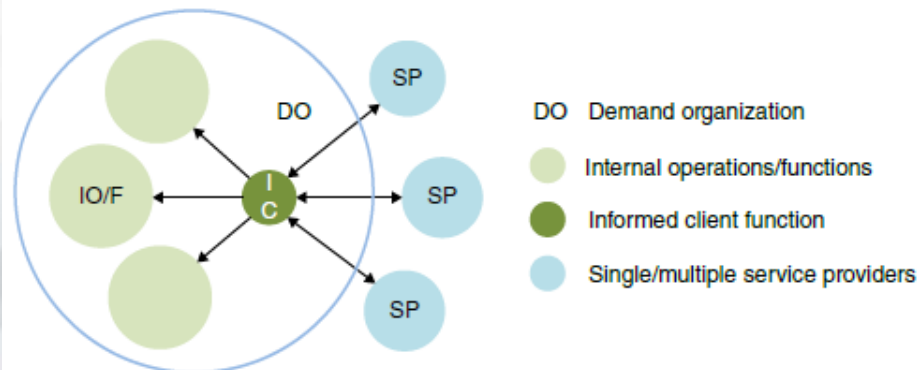


Facility Management Organization

❖ Extent of Embeddedness within the Demand Organization

Organizational Model	Conceptual Definition	Strategic Advantages	Operational Constraints	Optimal Application Scenarios
(3) Basic Outsourced Low Integration	A simplified model where a contract manager or small team manages relationships with multiple external service providers without direct execution by the organization.	- Low cost due to reduced internal staffing - Focus on supervision rather than execution - High flexibility in contracting with service providers	- Lack of a clear FM organizational structure - High dependency on external providers - Limited strategic impact - Service interruptions due to coordination gaps	- Small and medium-sized enterprises (SMEs) - Organizations focusing on core business activities - Entities with limited resources

Contract manager overseeing multiple external service providers.

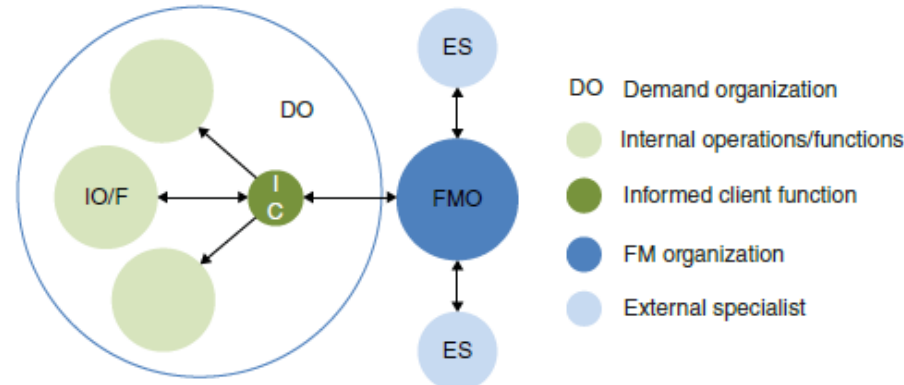


Facility Management Organization

❖ Extent of Embeddedness within the Demand Organization

Organizational Model	Conceptual Definition	Strategic Advantages	Operational Constraints	Optimal Application Scenarios
(4) Managed / Third-Party Managed Medium to High Integration	A small internal team manages the relationship with a specialized external FM provider responsible for coordinating multiple services.	- Unified governance of services - Reduced administrative complexity via a single main contract - Organization can focus on strategic priorities- Scalability based on operational needs	- Higher cost than simplified models - Dependency on the external provider - Possible misalignment of objectives - Potential for additional profit margins	- Large organizations with complex operations - Entities seeking to minimize administrative load - Organizations requiring specialized FM expertise - Multi-site institutions

Small internal team managing a specialized FM provider.

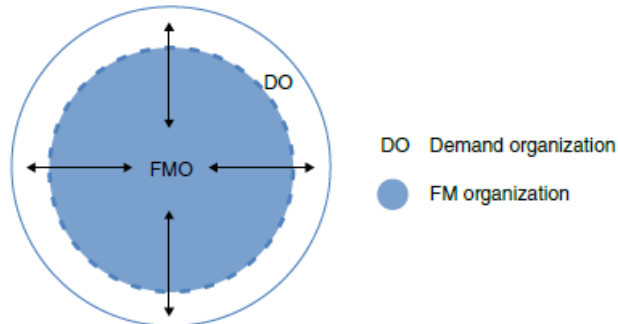


Facility Management Organization

❖ Extent of Embeddedness within the Demand Organization

Organizational Model	Conceptual Definition	Strategic Advantages	Operational Constraints	Optimal Application Scenarios
(5) Turnkey / Fully Integrated Full Integration	FM is fully integrated as a core part of the business model (e.g., property companies offering full-service workspace environments without separation between core and non-core activities).	- Complete integration between FM and core business activity - End-to-end service delivery - High scalability - No need to separate core vs. non-core operations	- High cost for tailored services - Difficulty distinguishing core from non-core operations - Heavy reliance on the provider - Possible limitations in customization (e.g., space design)	- Coworking space models - Real estate companies offering furnished/serviced spaces - Fast-growing organizations (e.g., startups) - Entities seeking full focus on their core business

FM fully integrated as part of the core business model.



Facility Management Organization

❖ Service Delivery Options

Service delivery options vary depending on organizational needs and resource availability.

Option	Brief Description	Advantages	Disadvantages	Optimal Usage	Practical Example
(1) Single/Multiple Service Providers	Direct contracting with one or more companies to deliver individual services (cleaning) or bundled services (operations and maintenance) based on organizational needs.	- High flexibility in selecting providers - Competitive pricing due to multiple bids - Ability to customize services.	- Multiple contracts increase administrative complexity - Coordination challenges - Higher management overhead.	Organizations with internal contract management experience or those requiring specialized and variable services.	Hospital contracts separately with a cleaning company and a maintenance firm.
(2) Managing Agent	External entity manages service contracts on behalf of the organization, while contracts remain under the organization's name.	- Specialized FM expertise - Reduces administrative burden - Flexibility to switch providers without changing the agent.	- High administrative cost - Potential service gaps - Reliance on agent's competence.	Organizations lacking internal FM expertise or developing a more mature FM model.	University engages an external agent to manage cleaning and maintenance contracts.

Facility Management Organization

❖ Service Delivery Options

Option	Brief Description	Advantages	Disadvantages	Optimal Usage	Practical Example
(3) Managing Contractor	Single company responsible for all subcontractors, acting as the sole point of contact for the organization.	▪ Simplified management through a single contract ▪ Unified accountability ▪ Reduced legal and administrative burden.	▪ Delays in problem resolution due to hierarchical chain ▪ Difficulty in contract amendments ▪ Potential additional profit margins.	Large, multi-site organizations; organizations seeking streamlined FM management.	Airport contracts a single company to manage security, cleaning, and maintenance.
(4) Integrator	Hybrid model combining strategic management (agent role) and operational execution (contractor role) with shared financial and performance risks.	▪ Higher service integration ▪ Fewer financial transactions ▪ Increased risk-sharing flexibility.	▪ Higher management fees ▪ Administrative complexity ▪ Strong dependence on provider.	Global or multi-branch organizations; entities seeking integration and performance optimization.	International company uses an integrated FM provider across several countries.

Facility Management Organization

❖ Service Delivery Options

Option	Brief Description	Advantages	Disadvantages	Optimal Usage	Practical Example
(5) Total FM	Full outsourcing of all FM responsibilities to a single provider, covering operations, maintenance, cleaning, and security.	- Complete service integration - Single contract - Reduced administrative complexity.	- High cost - Loss of operational control - Difficulty switching providers.	Large organizations with continuous 24/7 operations; organizations focused on core business.	Large bank outsources all FM services to a single company.
(6) Out-tasking	Internal FM team supplemented with external specialists for specific or periodic technical tasks.	- Lower cost - Retention of internal control - Flexible use of specialists.	- Gaps in organizational responsibilities - Reliance on external experts - Service continuity risks.	Organizations with internal FM teams; requiring periodic or highly specialized services.	Factory hires specialists annually to inspect fire safety systems.
(7) Agency	Hiring temporary staff through an employment agency to cover workforce gaps or seasonal peaks.	- High staffing flexibility - Reduced fixed labor costs.	- Variable quality - Limited training - High turnover.	Organizations with seasonal labor demand or requiring flexible workforce.	Shopping mall hires temporary cleaners during peak seasons.

Facility Management Organization

❖ Service Delivery Options

Each outsourcing option has its strengths and weaknesses; the organization must select the option that meets **user needs while delivering best value**.

Advance Planning

Decision-making requires time for thorough preparation; well-structured procedures provide a solid foundation for subsequent procurement and ensure rational, transparent decisions.

Suitability Assessment

Organizations can **assess** whether current options align with present and future service requirements and **select** the most appropriate choice based on circumstances.

Flexibility and Timing

Options that can adapt to changing conditions are more effective; periodic market reviews are useful, while habitual testing may be counterproductive.

When outsourcing is chosen, the organization effectively defines its procurement policy, followed by detailed processes for selecting and managing the appropriate service provider(s).

Facility Management Organization

❖ Support Processes and Activities

Types of Processes

Type	Examples	Flexibility Level	Challenges
Continuous Processes	Cleaning, waste management	Low	Dependence on key personnel
Periodic Events	Equipment maintenance, routine inspections	Medium	Requires coordination with external suppliers
Projects	Construction work, renovations	High	Risk of neglecting day-to-day operations

Small organizations

Can rely on continuous processes with high adaptability to changes

Large organizations

Require more complex structures to manage projects and periodic events effectively.

Balancing projects and daily operations: Day-to-day operations must not be neglected in favor of projects, as this can lead to financial, health, and safety risks.

Facility Management Organization

❖ Dynamic Capabilities

Definition

The organization's ability to integrate and reconfigure its internal and external capabilities to adapt to rapid changes in the environment.

Adaptation to Change

Facility management must be able to anticipate and respond to changes in the core business of the client organization.

Innovation and Continuous Improvement:

- Collaborate with the client organization to enhance service performance and user satisfaction.

Balancing Flexibility and Stability::

Avoid rigid structures that hinder change, but also prevent organizational chaos.

Dynamic capabilities are **developed, not acquired**, and are deeply rooted in organizational processes and historical paths.

Procurement in Facility Management

Definition

The process of contracting external service providers to obtain various facility management services:(security, cleaning, waste management, pest control, building maintenance, engineering, minor construction works, helpdesk services, printing, catering, energy, and information and communication technologies.....etc)

Primary Objective

To achieve **user satisfaction** with the **best possible value** by taking all relevant factors into account, including the type of service, its scope, and the organization's requirements.

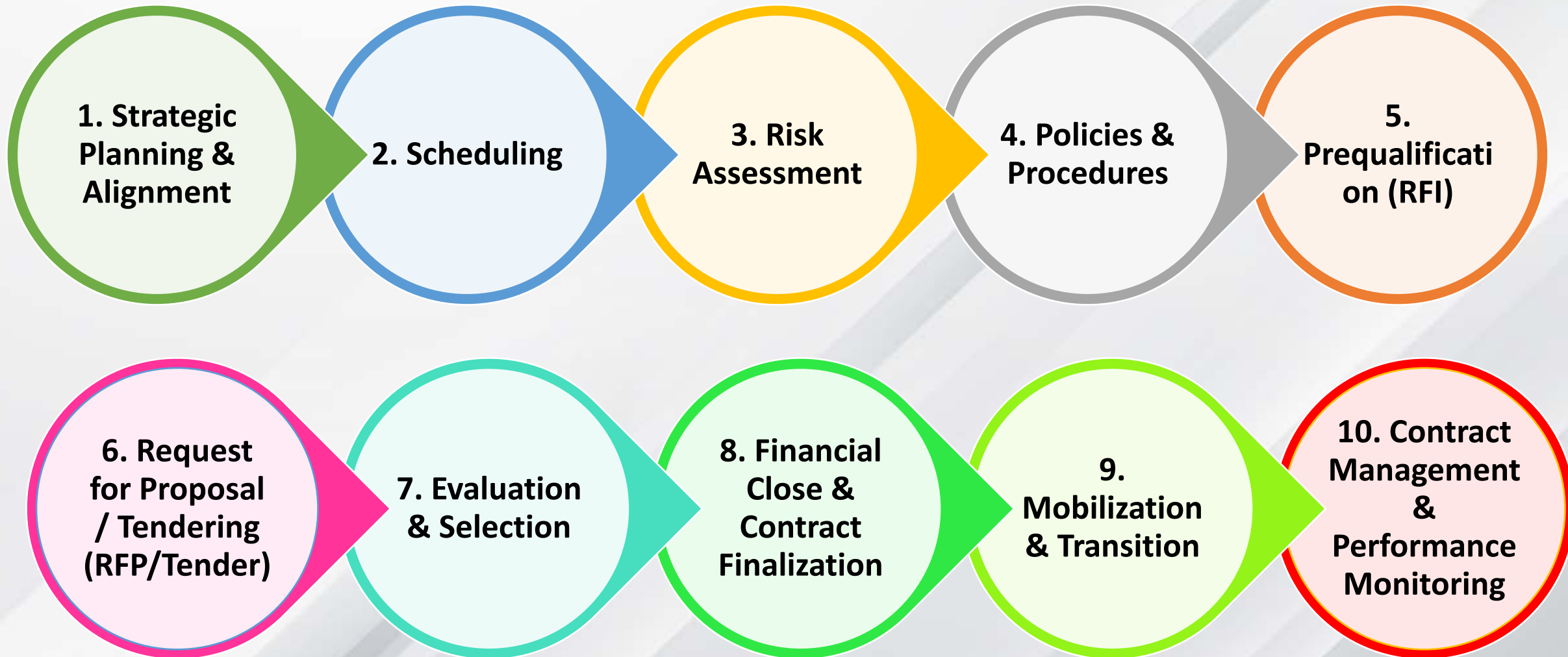
Importance

Procurement represents a **major and integral component** of **facility management**, rather than a series of simple purchasing decisions.

Procurement ≠ Purchasing: It's a **strategic, multi-stage process** requiring alignment with organizational goals.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle



Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
1. Strategic Planning & Alignment	Align procurement activities with the FM strategy and the organization's broader goals.	- Define service scope and budget. - Identify stakeholders. - Establish procurement policy.	Misalignment between procurement decisions and operational needs.	- Engage senior management early - Ensure alignment with FM strategy.
2. Scheduling	Develop a structured and realistic plan for the procurement process.	- Create a Gantt chart for milestones. - Allocate resources and teams. - Establish deadlines and key milestones.	- Schedule pressure - Poor resource allocation - Conflicting timelines	- Validate timelines with all stakeholders - Ensure resource availability.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
3. Risk Assessment	Identify and evaluate potential risks and opportunities associated with service procurement.	- Assess operational and financial risks. - Develop risk scenarios. - Estimate likelihood and impact.	Underestimating or overlooking major risks.	- Integrate risk assessment into all stages - Prepare a risk response plan.
4. Policies & Procedures	Establish clear organizational rules governing procurement, authority, and compliance.	- Define roles, responsibilities, and approval levels. - Ensure compliance with legal and Health, Safety, Security & Environment (HSSE) requirements. - Develop contract administration procedures.	- Lack of clarity in authority - Poor compliance - Weak controls.	- Use an authority matrix - Include compliance clauses - Review policies regularly.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
5. Prequalification (Request for Information RFI)	Ensure only capable and financially stable providers are invited to tender.	▪ Issue RFI documents. ▪ Evaluate technical and financial capabilities. ▪ Assess previous experience and cultural fit.	▪ Receiving incomplete or inaccurate information ▪ Selecting an unqualified provider.	▪ Use structured RFI templates ▪ Validate financial and operational information.

Prequalification Process:

Preliminary Screening: Eliminate unqualified providers (e.g., financial instability).

Detailed Evaluation: Score remaining providers on the following criteria

Shortlisting: Select 3–5 top providers for tendering.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Supplier Evaluation Criteria

Legal & Ownership:
Verify provider's legitimacy and stability.

Technical Competence:
Assess specialization, skills, and innovation.

Financial Capacity:
Ensure provider can sustain operations without financial distress.

HSSE Compliance:
Confirm adherence to health, safety, security, and environmental laws.

Cultural Fit:
Align provider's values with organizational ethics and workplace culture.

Innovation & Technology:
Evaluate use of **AI, IoT, automation, or predictive analytics**.

Social Responsibility:
Assess community impact and ethical practices.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
6. Request for Proposal / Tendering (RFP/Tender)	Obtain detailed and competitive proposals that meet performance-based requirements.	- Prepare output-based specifications. - Define Service level agreements (SLAs), KPIs, incentives, and penalties. - Set submission timelines.	- Ambiguous proposals - Delays - Price-focused bids.	- Apply a two-envelope system (technical + financial) - Ensure clear specifications.

Service Level Agreements (SLAs)

- ❖ Statements of intent between an organization and service providers on behalf of users.
- ❖ Can be general for multiple services or specific to a particular facility/service.
- ❖ Must align with the relevant service specifications.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Service Level Agreements (SLAs)

Importance

- ❑ **Translating users expectations** regarding the level of service provided into formal, measurable requirements to ensure clarity of responsibilities and service quality.
- ❑ **Consulting with service providers** helps establish practical and achievable targets, ensuring a balance between user needs and the provider's capabilities.

Example: Setting a response time for equipment failure that is acceptable for users and feasible for the service provider. It may also include a maximum acceptable threshold for rectifying failures or malfunctions.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Service Level Agreements (SLAs)

Who
prepares
SLAs?

- ☐ Typically, the **organization** prepares the SLAs.
- ☐ In certain sectors (e.g., ICT services or utilities), **service providers** define the SLA within their standard terms and conditions.
- ☐ **Service Level Agreements** should **evolve** based on user feedback and technological advancements.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Service Level Agreements (SLAs)

**Key
elements
to include
when
drafting an
SLA**

Definitions, roles, and responsibilities

Services and service scope

Self-delivery vs. subcontracting

Prioritization of requirements

Performance targets

Compliance and governance

Occupation of facilities

Working hours

Resources provided

Inspection and audit

Communication with users

Periodic reviews

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
7. Evaluation & Selection	Select the provider offering the best balance of quality, capability, and value.	- Score proposals using predefined criteria - Conduct interviews. - Shortlist and rank bidders.	- Subjective evaluation - Bias - lack of transparency.	- Use multi-disciplinary evaluation panels - document scoring decisions.

Method	Description	Use Case
Two-Envelope System	Separates technical (quality) evaluation from financial (price) evaluation to focus on quality first.	Complex services where quality is critical, e.g., healthcare facility management.
Whole Life Cost (WLC)	Assesses the total cost of an asset over its lifecycle, including operation, maintenance, and replacement.	High-value, long-life assets, e.g., HVAC systems, elevators.
Scorecard / Weighted Scoring	Evaluates suppliers based on weighted criteria (e.g., 70% quality, 30% price).	Standard or recurring services, e.g., cleaning, security.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
8. Financial Close & Contract Finalization	Complete all contractual, commercial, and legal requirements before awarding the contract.	- Review and finalize contract terms. - Verify insurance, staffing plans, and subcontractor roles. - Ensure mobilization readiness.	Contractual gaps or unclear obligations leading to disputes.	- Conduct a full legal review prior to signature - validate mobilization plans.

Type	Description	Use Case
Fixed-Term Contract	A standard contract for a set period, usually 3–5 years, with termination clauses included.	Used for most routine facility management services such as cleaning, security, and general maintenance.
Framework Agreement	Pre-approved suppliers who can be called upon for future contracts without re-tendering each time. 5+ years	Suitable for large or multinational organizations with continuous or recurring needs.
Partnership Model	A long-term collaborative relationship between the organization and the supplier, sharing goals, risks, and rewards. 5–10 years	Used for innovative or complex services, such as smart building management, requiring ongoing collaboration and innovation.

Procurement in Facility Management

Key Stages in the FM Procurement Cycle

Stage	Primary Objective	Key Activities	Risks / Challenges	Practical Solutions / Recommendations
9. Mobilization & Transition	Ensure a smooth transfer from the outgoing provider to the new one without service disruption.	- Pre-contract meetings. - Engage end-users. - Establish handover and transition plans.	- Service disruption during changeover - communication gaps.	- Implement a phased transition - maintain dual-running for critical services.
10. Contract Management & Performance Monitoring	Maintain service quality and ensure full compliance with service-level agreements (SLAs).	- Track KPIs and SLAs. - Conduct audits and inspections. - Apply incentives and penalties.	- Provider complacency - poor performance - financial or operational risks.	- Hold quarterly performance reviews - use ICT systems for monitoring.

Facility Maintenance Management

Facility management emerged from the need for **organized building maintenance** in many countries, where **Maintenance** was considered the **fundamental pillar** for keeping **buildings and facilities operational**.

With the evolution of **facility management**, the focus has expanded beyond merely maintaining buildings to include managing all resources and services that support the efficient and sustainable operation of facilities

Maintenance is defined as a set of activities and procedures carried out to preserve buildings, equipment, and facilities in good condition or to restore them to operational status after any malfunction or damage.

The Main Objectives

Asset Protection and Continuity of Operations:

Ensuring Safety, Security, and Operational Efficiency:

Aligning Maintenance Strategy with Business Goals and Facility Management Strategy:

Facility Maintenance Management

Maintenance Strategy

A Maintenance Strategy is a planning framework that defines the approach for maintaining facilities and their assets. It should be an integral part of the facility management strategy and directly linked to business objectives.

The strategy aims to ensure operational continuity, protect assets, achieve regulatory compliance, and support environmental sustainability.

Stages in Developing a Maintenance Strategy:

- I. Needs Identification:** Analyze business requirements and risks associated with assets.
- II. Asset Assessment:** Classify assets based on importance and impact on operations.
- III. Maintenance Approach Selection:** Determine whether maintenance will be preventive, corrective, or a combination.
- IV. Strategy Documentation:** Develop a clear maintenance policy including maintenance schedules, team responsibilities, and key performance indicators (KPIs).

Facility Maintenance Management

Maintenance Policy

A Maintenance Policy is a set of guiding principles and rules that define the scope of procedures and controls necessary to ensure that all maintenance activities are carried out in alignment with the organization's objectives and its facility management strategy.

Component	Details	Implementation Examples
Regulatory Compliance	Ensuring adherence to Health, Safety, and Environmental (HSSE) regulations, as well as accessibility and inclusion requirements	Regular audits of safety systems and equipment
Human Resources	Identifying required competencies for the maintenance team and developing their skills	Training staff on the use of modern maintenance systems
Spare Parts	Managing inventory of critical spare parts to avoid operational downtime	Storing essential spare parts near the facility to ensure rapid response
Documentation	Keeping records of previous maintenance and modifications made to facilities	Using (BIM) to document data and facilitate access
Continuous Improvement	Adopting a continuous improvement approach, such as Kaizen, to review and enhance performance	Quarterly reviews of maintenance performance and KPI analysis

Facility Maintenance Management

Maintenance Strategy vs. Maintenance Policy

Item	Maintenance Strategy	Maintenance Policy
Definition	A comprehensive plan that defines the overall approach to facility maintenance and links it to business objectives	A set of principles and procedures ensuring daily maintenance is carried out efficiently
Objective	Determines “what” and “why” maintenance is required	Determines “how” maintenance is executed and the daily procedures
Focus	Long-term planning, asset prioritization, selection of maintenance methods	Daily operations, regulatory compliance, resource management, and continuous improvement
Outputs	A clear strategy and long-term action plan	A documented policy defining procedures, responsibilities, and performance standards
Relationship	Guides the policy and defines the overall framework	Implements the strategy on the ground through daily operations

Facility Maintenance Management

Maintenance Methods

Maintenance Methods

Preventive Maintenance

Scheduled Maintenance

Condition-Based Maintenance

Shutdown Maintenance

Corrective Maintenance

Unplanned Maintenance

Breakdown Maintenance

Emergency Maintenance

Facility Maintenance Management

Maintenance Methods

Category	Type	Description	Advantages	Disadvantages	Suitable Applications
Preventive Maintenance	Scheduled Maintenance	Regular maintenance based on a predefined timetable	• Prevents failures • Improves reliability • Reduces long-term costs	• Higher upfront costs • May be unnecessary at times	• Critical assets • High-risk environments • High-value equipment
	Condition-Based Maintenance	Maintenance based on the actual condition of the asset	• Cost-effective • Reduces unnecessary maintenance • Enhances planning	• Requires advanced monitoring technologies • Initial technology costs	• Complex equipment • Remote locations • High-cost maintenance assets
	Shutdown Maintenance	Comprehensive maintenance performed during facility shutdown	• Comprehensive servicing • Improved efficiency • Reduced operational disruption	• Complete operational shutdown • High costs • Complex planning	• Continuous-process plants • Industrial facilities • Major annual maintenance

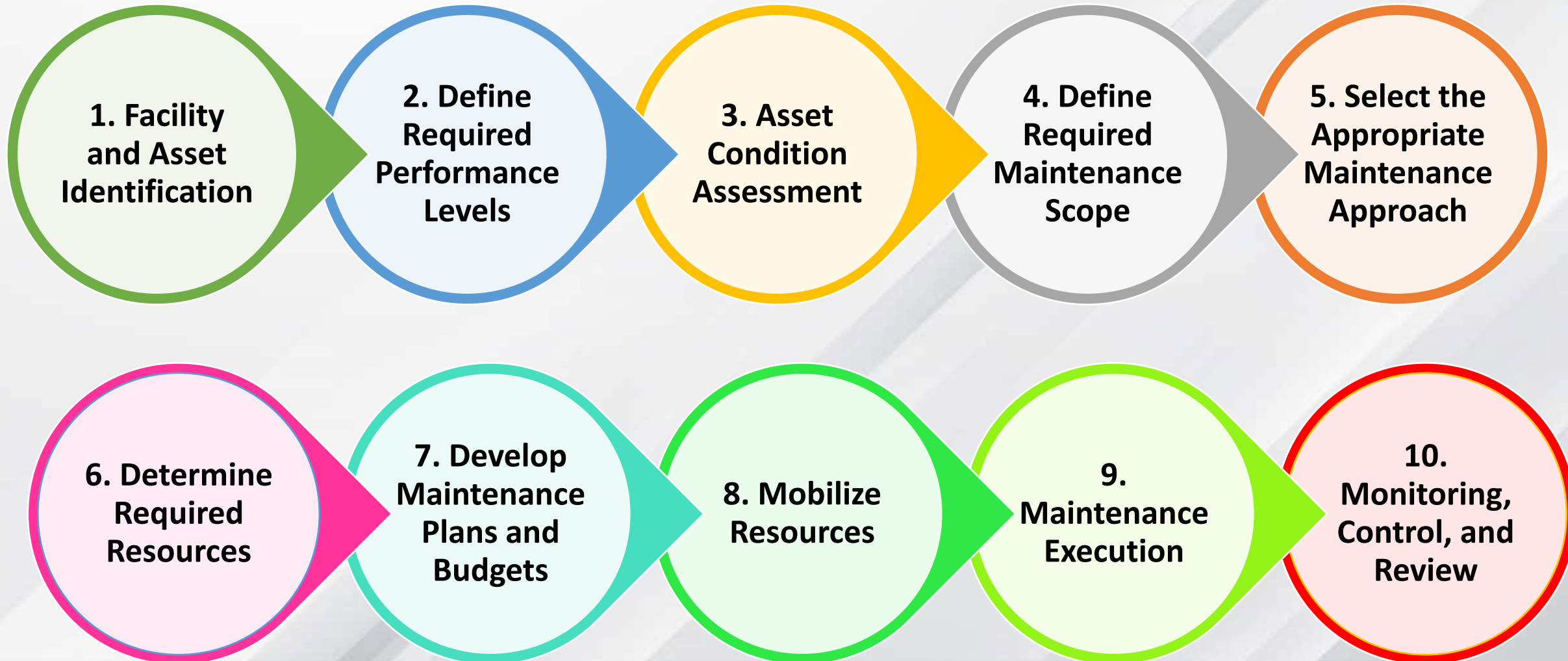
Facility Maintenance Management

Maintenance Methods

Category	Type	Description	Advantages	Disadvantages	Suitable Applications
Corrective Maintenance	Unplanned Maintenance	Maintenance performed in response to failures or issues	• Fast response • Flexible execution • Suitable for emergencies	• Unplanned downtime • Higher costs • Potential safety impact	• Non-critical assets • Simple facilities • Emergency situations
	Breakdown Maintenance	Maintenance performed after total asset failure	• Low initial cost • Simple management • Suitable for low-value assets	• Long downtime • High replacement costs • Safety risks	• Low-value assets • Temporary facilities • Auxiliary equipment
	Emergency Maintenance	Immediate response to sudden and critical events	• Rapid response • Prevents severe damage • Ensures safety protection	• High costs • Resource pressure • Limited planning	• Emergency cases • Natural disasters • Safety-related failures

Facility Maintenance Management

Steps of the Maintenance Process (10 Steps)



Facility Maintenance Management

Steps of the Maintenance Process (10 Steps)

Step	Activity	Required Outputs
1. Facility and Asset Identification	- Define the scope of the facility and its assets - Develop a comprehensive database	- Complete asset map - Updated asset register
2. Define Required Performance Levels	- Determine performance objectives - Establish key performance indicators (KPIs)	- Defined performance targets - Clear and measurable KPIs
3. Asset Condition Assessment	- Evaluate asset condition - Determine fitness for purpose	- Asset condition report - Maintenance recommendations
4. Define Required Maintenance Scope	- Identify maintenance requirements - Establish priorities	- Defined maintenance scope - Prioritized maintenance list
5. Select the Appropriate Maintenance Approach	- Evaluate alternatives (preventive/corrective) - Select the optimal approach	- Defined maintenance approach - Justification for selection

Facility Maintenance Management

Steps of the Maintenance Process (10 Steps)

Step	Activity	Required Outputs
6. Determine Required Resources	• Assess human resource needs • Identify required tools and equipment	• Resource plan • Implementation schedule
7. Develop Maintenance Plans and Budgets	• Create detailed plans • Prepare budgets	• Annual maintenance plans • Approved budgets
8. Mobilize Resources	• Prepare teams • Provide equipment • Train staff	• Ready teams • Available equipment • Training plans
9. Maintenance Execution	• Carry out maintenance tasks • Monitor progress	• Completed maintenance activities • Progress reports
10. Monitoring, Control, and Review	• Monitor performance • Compare results against targets	• Performance reports • Improvement recommendations

Lecture Summary: Quick Review

Facility Management Organization

Concept

Comparison Table (FM Organization vs.
Demand Organization)

Perspectives for Classifying the FM
Organization

❖ Organizational Structure and
Management Function

❖ Extent of Embeddedness within
the Demand Organization

❖ Service Delivery Options

❖ Support Processes and Activities

❖ Dynamic Capabilities

Lecture Summary: Quick Review

Procurement in Facility Management

Concept

Key Stages in the FM Procurement Cycle

Facility Maintenance Management

Concept

Maintenance Strategy

Maintenance Policy

Maintenance Methods

Steps of the Maintenance Process



Thank You