IFMA's Finance and Business Course

Student Guide

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Empowering Facility Professionals Worldwide

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We would like to thank the following dedicated subject matter experts (SMEs) who shared their time, experience and insights during the development of the IFMA FMP Credential Program.

Stephen Brown, CFM, SFP, FMP, CPE, CPMM, MBCP, CBCP, CESCO, REM

Marnie Cluckie, CFM, SFP, ACC, BArch, BES, LEED AP, PROSCI

Laverne C. Deckert, BA

Gerard C. Dicola, CFM, SFP, FMP, Green Assoc

Alana F. Dunoff, FMP, IFMA Fellow

John Hickey, CFM

Christopher Hodges, PE, CFM, LEED AP, IFMA Fellow, FRICS

Cal Littlejohn, CFM

Jon Eldon Martens, FMP, SFP, CFM, CFMJ, IFMA Fellow

Aykean Matthews, MBA, CFM, FMP

Phyllis J. Meng, CFM, SFP, IFMA Fellow

Anthony Miele, CFM, FMP

Basavaraju N L, FMP

Patrick Okamura, CFM, SFP, FMP, CCS, CIAQM, LEED AP, IFMA Fellow

Joel Orton, CFM, FMP

Osama Othman, MBA, BSc, FMP, PMP

John T. Pivik, MS, CFM, PE, SFP, FMP, LEED Green Assoc

Samantha Rosenthal, MA, BA

Mark R. Sekula, CFM, FMP, SFP, LEED AP, IFMA Fellow

Guy Thatcher, CMC, FMP, IFMA Fellow

Brenda J. Varner, RCFM

John Vinken, MSc Eng, RCFM, CEM, CRSP, CET, FMP, SFP

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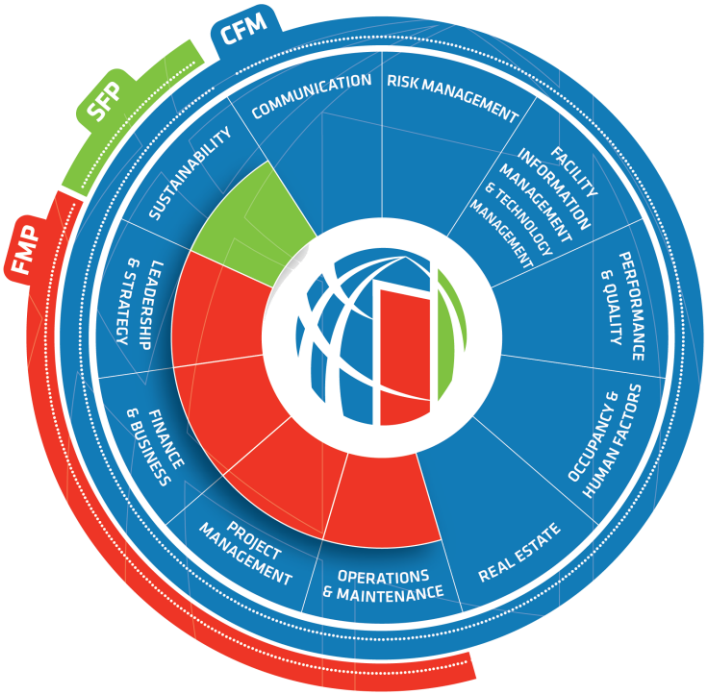
IFMA Credentials

About IFMA Credentials

After analyzing the work performed by facility managers, we have defined 11 competency areas. Our three world class FM credentials. — Facility Management Professional™ (FMP®), Sustainability Facility Professional® (SFP®), and Certified Facility Manager® (CFM®) — are based on these competencies.

1. The FMP is the foundational credential for FM professionals and industry suppliers looking to increase their depth-of-knowledge on the core FM topics deemed critical by employers.
2. The SFP is the leading credential for all facilities managers and like-minded professionals who are interested in the development of sustainable FM strategies.
3. The CFM is the premier certification for experienced FM professionals. A comprehensive exam assesses knowledge, skills, and proficiency across all FM competency areas.



Facility Management Professional (FMP) Program

IFMA's Facility Management Professional (FMP) credential is an assessment-based certificate program. This program demonstrates the fundamentals of facility management (FM). Developed from a foundation based on IFMA's global job task analysis (GJTA), the FMP Credential Program is continuously refreshed to align with current industry standards

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for FM knowledge, skills and tasks. The knowledge demanded by today's global employers is taught and tested online or in the classroom.

The four knowledge domains that the FMP Credential Program provides content and assessments on are:

- Operations and maintenance
- Project management
- Finance and business
- Leadership and strategy

IFMA's Core Competency Courses

IFMA's eleven (11) core competency courses, developed from IFMA's Global Job Analysis (GJTA), comprise the body of knowledge for facility managers. IFMA continuously refreshes the courses to align with global industry standards for FM knowledge, skills, and tasks. The courses provide practical knowledge and examples to help you improve your performance.

IFMA's Core Competency Courses include the following:

Communication: develop the skills you need to be an effective liaison between external and internal stakeholders.

Participants will be able to:

- Create and deliver the right message for the intended result.
- Develop an FM communication plan.
- Identify and share relevant information to the appropriate audience.

Risk Management: address the role of the Facility Manager in supporting or leading risk management planning; emergency preparedness, response and recovery; facility resilience and business continuity.

Participants will understand how to:

- Respond appropriately to emergencies affecting the facility.
- Meet the organization's business continuity goals.

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Facility Information Management and Technology Management: understand how to leverage modern tools and techniques for today's workplaces and occupants.

Participants will be able to:

- Understand secure, efficient data collection supports decision-making processes to meet core business objectives.
- Conduct technology needs assessments and anticipate the impact of new technologies.
- Understand decisions are made to keep, update, augment, or replace technology.

Occupancy and Human Factors: grow your ability to support organizational and individual occupant performance, while leading the FM team to develop and implement practices necessary to achieve success.

Participants will be able to:

- Create an environment where motivation, productivity, and retention are the norm.
- Blend safety and security with innovation.
- Negotiate service level agreements.

Real Estate: understand real estate principles and practices and how they contribute to achieving the core business strategy.

Participants will be able to:

- Develop and implement a real estate strategy to support the core business including assessing, acquiring, and disposing of real estate, and space management.
- Understand project management principles for managing new construction and other major projects.

Performance and Quality: define and make relevant what it means to capture fitness for the intended purpose, embrace a continuous improvement mindset, and satisfy stakeholders' needs.

Participants will be able to:

- Determine the needs and expectations of stakeholders for the facility and related service requirements.
- Understand and describe what comprises a comprehensive quality management system for FM.
- Measure the FM organization's performance to make continual improvements.

Sustainability: define the basics of five areas of sustainability and make relevant what it means to embrace sustainability.

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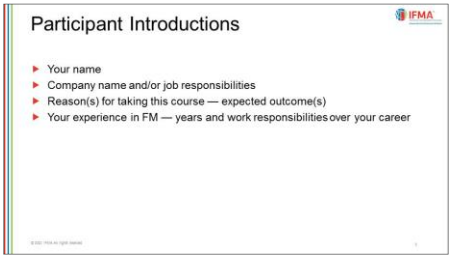
Participants will be able to:

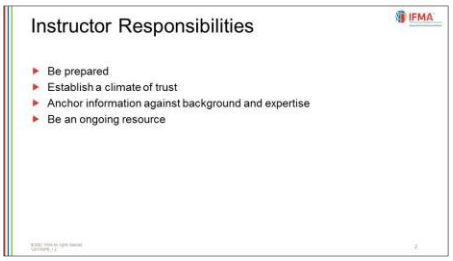
- Understand the management basics of:
  - Energy
  - Water
  - Materials and Consumables
  - Waste
  - Workplace and Site

Course Overview

Introductory Activity



Course Expectations



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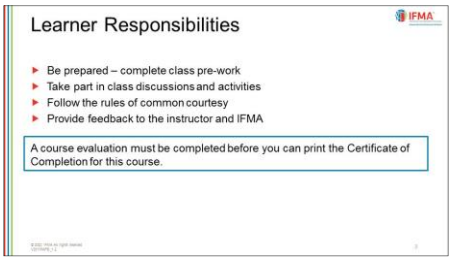


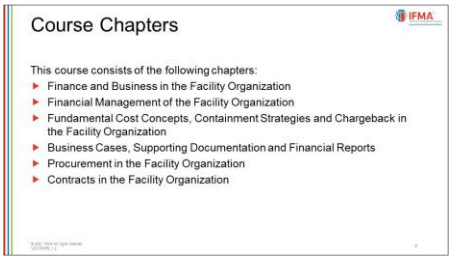
Course Audience

This course has been designed for individuals who want to obtain their FMP credential or enhance their FM industry professional development.

Course Chapters

This course consists of the following chapters:

- Finance and Business in the Facility Organization
- Financial Management of the Facility Organization
- Fundamental Cost Concepts, Containment Strategies and Chargeback in the Facility Organization
- Business Cases, Supporting Documentation and Financial Reports
- Procurement in the Facility Organization
- Contracts in the Facility Organization



Course Objectives

After you complete this course, you will be able to:

- Explain the foundational principles of managing finance and business in the facility organization.
- Manage the daily financial aspects of the facility organization by understanding key budgeting elements.

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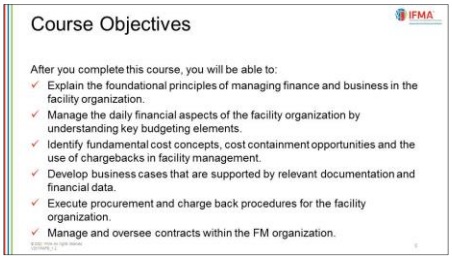
- Identify fundamental cost concepts, cost containment opportunities and the use of chargebacks in facility management.
- Develop business cases that are supported by relevant documentation and financial data.
- Execute procurement and charge back procedures for the facility organization.
- Manage and oversee contracts within the FM organization.



Course Introduction

Facility Management (FM)

FM encompasses multiple disciplines which ensure functionality of the built environment, this profession requires a broad range of knowledge and skills.

IFMA conducts a global job task analyses (GJTA) to identify task, knowledge and skill areas that are important for competent performance by facility managers. The GJTA updates the core foundation of competency areas that contain the body of knowledge for FM and FM professionals.

Role of Facility Managers as Related to Finance and Business

IFMA's most recent GJTA identifies the finance and business as a competency area, describes the role of the facility manager as related to finance and business, and identified key tasks, knowledge statements and competencies that support finance and business.

According to the IFMA GJTA:

Facility managers oversee aspects of the demand organization that represent significant financial investment in technology, buildings, structures, interiors, exteriors and grounds. They are responsible for the oversight, operation and maintenance of the buildings and

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grounds as well as service contracts. The demand organization may choose to contract for services.

The term **demand organization** is used throughout this course. ISO 41011 defines demand organization as an entity which has a need and the authority to incur costs to have requirements met.

The demand organization terminology brings clarity to the relationship between the parties involved by focusing on the process itself. The demand organization and the FM organization work together to define needs to meet the core business strategy and to develop FM policies and practices to enable the core business activities of the demand organization.

Due to the dynamic global environment, finance and business management is a complex undertaking for general management. Finance and business in FM involves:

- The administration of the financial management of the FM organization
- Procurement
- Finances associated with contracts

A facility manager's role in each area is shaped by the policies, practices and norms of the organizational environment.

This *Finance and Business* course presents essential finance and business concepts appropriate for facility managers. The information is self-contained so that an individual with limited experience in finance and business can grasp the contents.

The perspective presented combines descriptive and prescriptive information. This course is not meant to be an end-all in finance and business management for facility managers. It represents an integrated organizational function, not a stand-alone activity. Facility managers will need to engage finance, legal, procurement, risk managers and others in their organizations to make value maximizing decisions.

This course aims to provide proficiency and guidance. As you read through the course, reflect on the culture of your organization and consider how this information applies.

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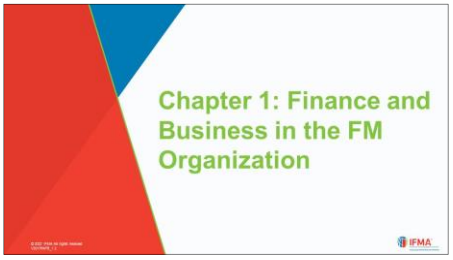
Chapter 1: Finance and Business in the FM Organization

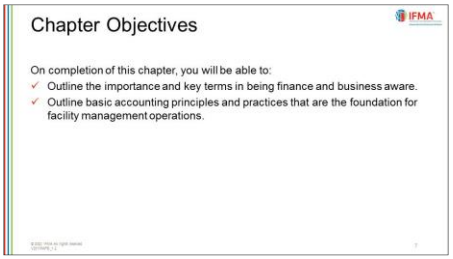
Chapter 1 Introduction

Chapter 1 introduces the concepts of finance and business and addresses their part in the day-to-day operation of the FM organization.

On completion of this chapter, you will be able to:

- Outline the importance and key terms in being finance and business aware.
- Outline basic accounting principles and practices that are the foundation for facility management operations.





Lessons

- Finance and Business Overview
- Fundamental Accounting Concepts

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Finance and Business Overview

Lesson Introduction

On completion of this lesson, you will be able to:

- Outline the importance and key terms in being finance and business aware.

This lesson contains the following topics:

- The Importance of Being Finance and Business Aware
- Financial Terminology

The Importance of Being Finance and Business Aware

The term finance refers to the usage, analysis, management, development, and interpretation of financial data. Financial data are found in reports, spreadsheets, computer printouts, budgets, pro forma, cost statements, and ratios.

The term business refers to the use, interpretation, and management of documents related to the administration and management of contracts, service providers, lease agreements, business cases, charge backs, and procurement policies and procedures.

Most FM operational decisions have financial and business implications. Facility managers must understand how its financial and business practices impact the effectiveness and efficiency of the demand organization.

An essential role for the facility manager is to prepare and manage FM budgets that comply with the demand organization's standards. An FM budget is a major discretionary spending area for the demand organization. It offers one of the best options to improve net profitability in the short term. Identifying FM needs is fundamental in deciding the resources and services required to get adequate funding for projects, services, operations, maintenance, and repairs. Collectively, these items become the budget requirements for efficient facility management.

A lack of financial expertise can limit facility managers ability to contribute to discussions about departmental and organizational strategy. Facility managers who are unable to recognize financial or budgetary pitfalls may incur unexpected expenses.

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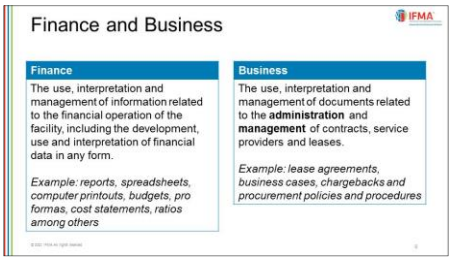

Financial Terminology

Finance has its own terminology. To ensure FM's needs and suggestions are heard, accepted, and funded, it is important that facility managers use financial terms correctly. To achieve this, Exhibit 1-1 lists many financial terms in alphabetical order. Consider the list as a baseline of terms common to finance and business. These terms are explained in more detail throughout the course. In addition, other terms and concepts may be introduced in the course.

Keep in mind, organizations might define these terms differently.

Exhibit 1-1: Common Financial and Business Terms

Term	Definition
Accounting	A monetary reporting system used to inform interested parties about a firm's business transactions. It does that by recording and summarizing business and financial operations and analyzing, verifying, and reporting the results.
Accrual basis accounting	Revenues recorded when earned and expenses recorded when incurred.
Amortization	The systematic reduction of a lump-sum amount; the expense applies to intangible assets (such as patents, franchises, leaseholds, and goodwill) in the same way depreciation applies to physical assets.
Asset	Item, thing or entity that has potential or actual value to an organization.
Balance sheet	A "snapshot" of a firm's financial position at a specific point in time.
Benefit-Cost Ratio	Ratio in which the present value of an investment or project is divided by the investment's or project's initial cost; a ratio of greater than one indicates that the investment or project is viable.
Budget	A formal, numerical expression of how an organization expects to operate for a defined period of time. Identifies the resources and

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Term	Definition
	commitments needed to set and achieve specific goals over a period, as well as the sources of the funding to provide those resources.
Capital asset	A depreciable item whose cost is significant to the company, who's expected life-cycle exceeds one accounting period and is typically much longer.
Capital budget	Shows financial impacts resulting from major, long-term, non-routine expenditures for items like property, plant and equipment.
Capital loss	The loss of the capital value of an asset due to changes in market conditions, requiring a devaluation of the asset value. Capital loss is the loss incurred when a capital asset, such as an investment or real estate, decreases in value. This loss is not realized until the asset is sold for a price that is lower than the original purchase price. Capital Loss = Purchase Price - Sale Price
Cash basis accounting	Recording accounting transactions for revenue and expenses when corresponding cash is received or payments made. Cash basis differs from accrual in that, accrual focuses on anticipated revenue and expenses. The main difference is the timing of when revenue and expenses are recognized.
Cash flow	Net cash before financing, including acquisitions.
Chart of accounts	Numerical list of all standard items that an accounting system tracks assets, liabilities, net assets, revenues, and expenses. It is a tool used by the demand organization that provides a digestible breakdown of all the financial transactions that a company conducted during a specific accounting period, broken down into subcategories.
Closing fiscal period	Process of transferring account balances from sub-ledgers to trial balance account at the end of an accounting period. It is typically associated with income statement accounts.
Cost	The amount paid or charged for the acquisition, maintenance, production or use of materials or services.
Cost center	An organizational unit in which budgetary funding is used to sustain operations.
Cost of operation	The total costs associated with the daily operation of a facility. It includes all maintenance and repair costs, both fixed and variable, administrative costs such as, clerical and timekeeping, general supervision such as, labor costs, janitorial, housekeeping and other

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Term	Definition
	cleaning costs, utility costs and indirect costs for example, all costs associated with roadways and grounds. Could also include the amortized or depreciation costs of capital assets.
Cost of ownership	The cost to the owner of owning the building, servicing the existing debt and receiving a return on equity. This also includes the cost of capital improvements, maintenance and repair, operations and disposal.
Credit	The positive cash entries in a bank account. A credit is an amount due to be paid to, or already residing in, an account. Credit is the opposite of debit. A credit is always positioned on the right side of an entry. It increases liability, revenue, or equity accounts and decreases asset or expense accounts.
Creditor	A lender of money or one to whom funds are owed.
Currency conversion factor	The net rate at which the demand organization converts revenues and expenses from one currency into another. Often an internally agreed rate set at the start of the budget year so as to remove the effect of currency fluctuations from operational budgets; almost never the same as the nominal exchange rate.
Debit	An amount due to be paid from, or already paid from, an account. Debit is the opposite of credit. A debit is always positioned on the left side of an entry. A debit decreases liability, revenue, or equity accounts and increases asset or expense accounts.
Debtor	An individual, company or other organization that owes debt to another individual, company or organization, the creditor. Almost always compensates a creditor with a certain amount of interest, representing the time value of money.
Depreciation	A noncash charge against assets, such as cost of property, plant and equipment over the asset's useful life. An expense associated with spreading or allocating the cost of a physical asset over its useful life.
Discount rate	The rate at which future cash flows are discounted because of the time value of money; the interest rate used to compute a present value amount.
Double-entry accounting	An accounting system in which each transaction is recorded in at least two places: a debit to one account and a credit to another account. Also known as dual-entry accounting.
Earnings before interest and taxes	A measure of an organization's earning power from ongoing operations, equal to earnings before deduction of interest payments

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Term	Definition
(EBIT)	and income taxes.
Earnings before interest, tax, depreciation and amortization (EBITDA)	An approximate measure of an organization's operating cash flow based on data from the demand organization's income statement. Calculated by looking at earnings before the deduction of interest expenses, taxes, depreciation and amortization.
Equity	The ownership interest in an organization's assets after deducting all of its liabilities or the difference between the assets and the liabilities or net worth. Also referred to as shareholder's equity or net assets.
Equivalent annual cost (EAC)	The cost per year of owning and operating an asset over its entire life span. This measure facilitates comparisons of the cost-effectiveness of various assets.
Expenses	Money outflow that represents goods and services consumed in the course of business operations.
Feasibility study	Study of a planned scheme or development, the practicality of its achievement and its projected financial outcome.
Financial accounting	Relates to the preparation of financial statements for the demand organization as a whole. May be used by owners and other internal parties but primarily intended for external parties such as creditors, investors, government agencies, unions and suppliers. Information is developed according to specific accounting standards.
Financial Accounting Standards Board (FASB)	The primary financial reporting standards-setting body in the United States; an independent, nonprofit group under the authority of the U.S. Securities and Exchange Commission (SEC).
Financial leverage	Refers to the use of borrowed money in acquiring an asset.
Financial ratios	Analytical tools examining the relationship of one quantity to another. Used to show underlying financial conditions and to help judge the financial health of an organization.
Financial reporting	The process of presenting information about an entity's financial position, operating performance and cash flow for a specified period.
Financial statements	Documents (e.g., balance sheet, income statement, statement of cash flows, and statement of retained earnings) that report financial information about an organization.
Fixed asset	An asset, such as property, plant or equipment, which has a long life and cannot be expensed in a single year or cannot be easily converted into cash.

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Term	Definition
Fixed costs	Costs that remain unchanged in total for a given time period, despite wide changes in the related level of total activity, for example, a licensing fee or taxes.
Fixed expenses	Expenses over which a company has little control.
Forecast	Comprehension of and the ability to display, how a unit will affect the cash flow of an organization.
General ledger	Accounting book of final entry, recording journal transactions under separate accounts. Sub-ledgers provide detailed information about individual accounts.
Generally accepted accounting principles (GAAP)	In the United States, rules, procedures and conventions used to help govern an organization's accounting operations and the preparation of financial statements.
Gross profit	An organization's profit before the deduction of operating expenses, interest payments, and taxes. Also referred to as gross margin.
Income statement	Accounting document that represents the company's revenue and expense transactions for the reporting period.
Incremental budgeting	A budget method that extrapolates from historical data; next year's budget is constructed by starting with the current year's budget as a baseline and then adjusting each line item for expected changes.
Insurance	A system to protect persons, groups or businesses against large financial loss by transferring the risks to an insurance company or other large group who agrees to share the financial losses in exchange for premium payments.
Intangible assets	Assets that have no physical substance. Intellectual property, items such as patents, trademarks, copyrights, business methodologies, goodwill and brand recognition are all common intangible assets.
Internal rate of return (IRR)	The return on investment a company typically realizes (or targets to realize) based on its past track record regarding asset investments. It is the interest rate at which lifetime dollar savings equal lifetime dollar costs, after the time value of money is taken into account.
International Financial Reporting Standards (IFRS)	A set of international accounting and reporting guidelines and rules that organizations can follow when compiling financial statements.
Journal	A daily, chronological record of business transactions.
Journal entry	An entry to the journal, recording a financial transaction, as a debit

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Term	Definition
	and then as a credit, by date. Journal entries are eventually posted to a ledger.
Lease	A contract between the owner of real property, the lessor and another party, the lessee, for the possession and use of the property for a specified term in return for rent or other valuable consideration.
Liabilities	Debts a business incurs that are expected to result in future negative cash flows to the firm. For example, salaries and tax liabilities. Can also include an assessment of net risk items (e.g., bad debts).
License	Distinguished from a lease, a license is the degree of real property interest the signer has in a property. A lease provides a higher level of legal interest in a property than a license.
Life-cycle	The useable life span of a product, process, facility, tool, system, technology, natural resource and the like. It is based on the presumption that all things go through a continuous cycle beginning with creation, use and disposal and then ideally start all over again.
Life-cycle costing	Process of determining, in present-value terms, all costs incident to the planning, design, construction, operation and maintenance and disposition of a structure over time.
Liquid assets	Cash or assets that can be immediately converted to cash or are easily convertible to cash.
Management accounting	Relates to the provision of accounting information for an organization's internal users. It is the organizations internal accounting system, designed to support the information needs of managers. Unlike financial accounting, this is not bound by any specific accounting standards. Also known as managerial accounting. The practice of identifying, measuring, analyzing, interpreting, and communicating the financial information managers require to pursuit the organization's goals.
Net assets	An organization's financial worth. They are the balance that remains when liabilities are subtracted from assets.
Net present value (NPV)	The difference between the present value of cash inflows and the present value of cash outflows over a period of time that occur as a result of undertaking an investment project.
Operating budget	A short-term budget projecting all estimated income and expenses during a given period, usually one year. Excludes capital expenditures, they are long-term costs.

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Term	Definition
Opportunity costs	Represent "lost" opportunities (measured in monetary units) that could have accrued to the entity by pursuing an alternate course of action.
Payback period	The length of time it will take to recoup an initial investment cost. In other words, how long it takes to earn back the funds you spent on a project.
Period	Time interval covered by a financial statement; usually one year for external statements but often less (month or quarter) for internal statements.
Present value (PV)	The method is used to compare costs; all cash flows are converted to their present value or the value of past and future dollars corresponding to today's value. In other words, the current value of a future sum of money or stream of cash flows given a specified rate of return.
Profitability index (PI)	The ratio of the present value of the cash inflows to the initial investment cost.
Pro forma invoice	A preliminary bill of sale sent to buyers in advance of a shipment or delivery of goods. The invoice will typically describe the purchased items and other important information, such as the shipping weight and transport charges.
Proforma statement	A financial statement prepared as a projection of the future. Attempts to present a reasonably accurate idea of a financial situation if present trends continue or certain assumptions hold true.
Property tax	A tax levied against owner, lessor or occupier of any property based on an assessment of the value of the property, its public infrastructure requirements or some other determining factor.
Revenues	Cash or properties received in exchange for goods or services. Revenue, often referred to as sales or the top line, is the income received from normal business operations.
Statement of cash flows	A financial statement used to show cash levels across the operating period so as to ensure that predicted liabilities due to be paid at any given time do not exceed the ability to pay.
Statement of shareholders' equity	A financial statement that starts with the balances from the end of the prior period and shows changes due to net income (loss) and dividends for the period or any new issuances or repurchases of stock. In other words, a shareholders' equity statement is detailing the changes within the equity section of the balance sheet over a

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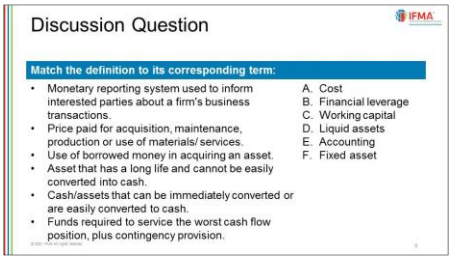
Term	Definition
	designated period. For corporations, shareholder equity, also referred to as stockholders' equity, is the corporation's owners' residual claim on assets after debts have been paid. Shareholder equity is equal to a firm's total assets minus its total liabilities.
T-account	An informal term for a set of financial records using double-entry accounting. A graphical representation of a general ledger that records an organization's transactions.
Time value of money principle	A principle which states that a dollar in hand is worth more than a dollar to be received in the future because it can either be consumed immediately or put to work to earn a return. The concept that the money an organization has now is worth more than the identical sum in the future due to its potential earning capacity.
Trial balance	Total of all debits and credits. The purpose is to ensure the entries in an organization's bookkeeping system are mathematically correct. If debits do not equal credits, an error has occurred (e.g., mistake in entry, omission, double posting).
Variable costs/expenses	Costs and expenses that fluctuate and may be influenced by factors such as occupancy levels. These organizational expenses change in proportion to how much an organization produces or sells. For example, fuel costs depend on mileage driven.
Working capital	The funds required to service the worst cash flow position plus any contingency provision deemed necessary.
Zero-based budgeting	Methodology which uses detailed asset lists and engineering and performance standards to assess resource needs, and market unit costs to create a total budget without reference to previous expenditure levels. In this method of budgeting all expenses must be justified for each new period.



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Fundamental Accounting Concepts

On completion of this lesson, you will be able to:

- Outline basic accounting principles and practices that are the foundation for FM operations.

This lesson contains the following topics:

- Primary Goals of an Accounting Information System
- Financial Accounting and Management Accounting
- Facility Management and Management Accounting
- Accounting Standards
- Accounting Records
- Double-Entry Accounting
- Accounting Cycle
- Accounting Principles for Financial Statements

Primary Goals of an Accounting Information System

A business uses an accounting information system (AIS) to collect, store, manage, process, retrieve, and report its financial data. This system keeps the financial data reliable and secure and makes it available to those individuals, such as managers, who need access to carry out their responsibilities. Having the data in one system helps with reporting and decision-making activities.

The primary goals of an accounting information system are:

- Create correct and prompt financial controls to guide an organization's operating requirements, actions, and resources.
- Ensure correct entry of financial data and economic transactions into the system.

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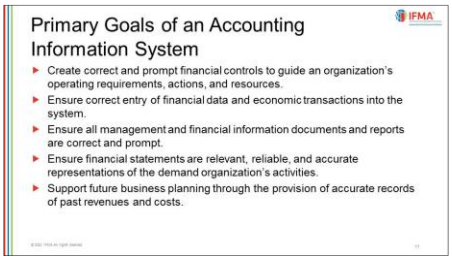
- Ensure all management and financial information documents and reports are correct and prompt.
- Ensure financial statements are relevant, reliable, and accurate representations of the demand organization's activities.
- Support future business planning through the provision of accurate records of past revenues and costs.

Collectively, these goals are important in ensuring efficiency and stewardship over the demand organization's resources, and in satisfying legal and regulatory requirements.

A facility manager's understanding of and compliance with accounting principles influences how the demand organization judges the performance of the FM function. The facility manager should be proficient in using the accounting information system for forecasting, budgeting, and reviewing expenses as they apply to FM activities. In addition, the facility manager should be able to communicate and work competently with internal and external accounting staff to convey the requirements of the FM organization.



Financial Accounting and Management Accounting

The terms financial and management accounting were defined in *Exhibit 1-1* as:

- **Financial accounting** — relates to the preparation of financial statements for the demand organization that is used by owners and other internal parties. It is primarily intended for external parties such as creditors, investors, government agencies, unions and suppliers. Information is developed according to specific accounting standards.
- **Management accounting** — relates to the preparation of management reports and accounts that provide information required by managers to make day-to-day and short-term decisions. Unlike financial accounting, which provides annual reports for external stakeholders, management accounting generates monthly or weekly reports for an organization's internal audiences, such as department managers and the chief executive officer.

A summary of the definitions above, financial accounting prepares information for external use. It provides information via financial statements and can be described as external accounting. Management accounting includes the design and use of information within organizations. It supports the information needs of organizational managers and can be described as internal accounting.

Exhibit 1-2 summarizes the basic differences between financial and management accounting.

Exhibit 1-2: Financial and Management Accounting Differences

Financial Accounting	Management Accounting
Provides data for *external* users such as creditors, investors, government agencies, unions and suppliers.	Provides data for *internal* users such as departmental managers and the CEO.
Provides objective and verifiable financial information, the emphasis on the accuracy of information.	Includes financial and non-financial information; may include subjective information; accuracy is important, but the emphasis is on relevance and timeliness of information.
Must follow externally imposed rules.	Not bound by any mandatory rules.
Reflects aggregate, summarized data for the demand organization.	Reflects parts of an organization such as, measures and reports internally about products and services, departments, managers, employees and customers, as well as the whole organization.
Provides a historical orientation; records and reports on events that have already occurred.	Records and reports on events that have already happened but emphasizes providing information about future events.

Organizational accounting systems provide both financial and management accounting information.

There can be variances in the accounting systems and financial and management accounting practices across organizations. Organizational specifics such as size, sophistication, industry, public or private characteristics, will dictate the accounts and detailed records kept.

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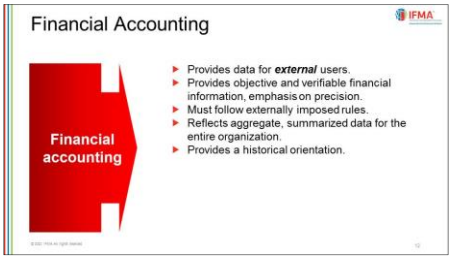
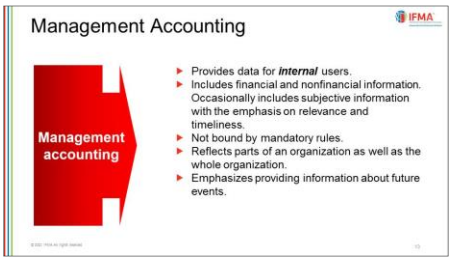
Some demand organizations have a single accounting system that supplies information for both financial and managerial needs. Organizations of all sizes have multiple systems in today's market.

The practices and conventions should be consistently implemented within an organization.

The facility manager should understand what is usual and customary and meet those expectations.





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Facility Management and Management Accounting

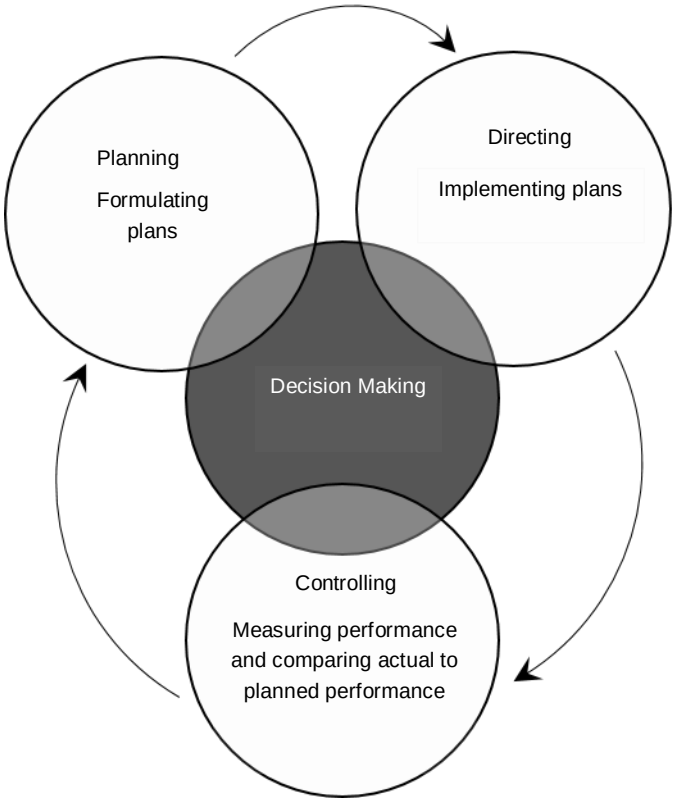

Exhibit 1-3: Cycle of Management Activities

As shown in Exhibit 1-3, planning, directing, and controlling intersect with decision making as the overarching management activity. In practice, these activities might not happen in sequence. For a variety of tasks or projects managers might go from planning to controlling to directing, and then back to planning before deciding.

Management accounting helps managers make well informed decisions about the operation of their departments. How management accounting data are displayed can be modified so the format supports a manager's specific needs. For instance, customized management accounting data should support the facility manager's planning, directing, controlling, and decision making, as shown in Exhibit 1-4.

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Exhibit 1-4: Application of Management Accounting Information

Management Activity	Description	FM Examples
Planning	Issue: Water consumption in a commercial building. Task: Identify alternatives. Select a course of action. Specify how to achieve the actions.	Steps: • Review current water consumption reports and water bills. • Set goals and identify methods to increase profits by improving water efficiency. • Secure necessary organizational approvals and funding.
Directing	Issue: Water consumption in a commercial building. Task: Mobilize and motivate people to carry out plans and execute operations.	Steps: • Assign related tasks to FM staff. • Retrain FM staff in procedures as necessary. • Install aerators for sinks and showers for immediate reduction in water consumption and expenses. • Initiate programs to collect rainwater and runoff for irrigation systems. • Educate customers, users, and building visitors about water resource management efforts.
Controlling	Issue: Water consumption in a commercial building. Task: Control operations to ensure plans are carried out and modify them as circumstances change.	Steps: • Monitor water efficiency operations and programs to ensure they are carried out as intended. • Monitor program costs. • Review performance reports. Compare current performance data and any ongoing water bill savings with old expenditures, planned reductions, and expected savings. • Solicit feedback from FM staff and stakeholders about the water efficiency initiatives. • Take corrective action as needed to

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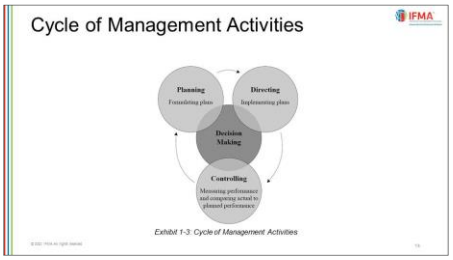
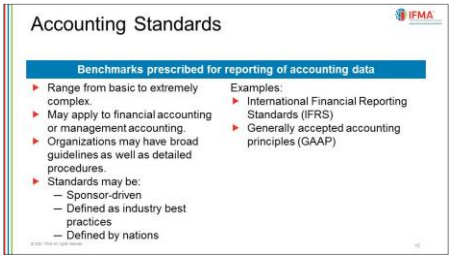
Management Activity	Description	FM Examples
		improve plan execution and control costs.
Decision making	Issue: Water consumption in a commercial building. Task: Make a variety of management decisions throughout planning, directing, and controlling activities.	Steps: • Identify alternatives. Choose among goals and methods to carry out water efficiency plans. • Review related expenditures and savings throughout the initiative. • Make small and large data driven decisions affecting FM staff, customers, users, and building visitors. • Answer questions. • Help solve problems. • Arbitrate any disputes. • Measure to verify cost reductions.

The cycle of management activities shown in *Exhibit 1-4* is similar to other FM process and planning models, for example, the Plan, Do, Check, Act, four-step model.

The effective use of this information, supports efficient property meetings, that exceed stakeholder expectations and meetings to support the financial soundness of the data and effective justification to stakeholders.



Accounting Standards



A demand organization may have financial accounting guidelines and procedures in place that everyone in the organization must follow. However, the organization uses accepted accounting standards as the foundation for these guidelines and procedures.

An accounting standard is a set of principles, guidelines, and procedures that serve as the basis of an organization's financial accounting policies and practices. Accounting standards apply to assets, liabilities, revenue, expenses, and shareholders' equity. Banks, investors, and regulatory agencies depend on accounting standards to ensure the information they receive about an organization is relevant and accurate. Industries and individual countries may also have applicable accounting standards and practices organizations must follow in their financial accounting policies and procedures. Facility managers should adhere to these standards as they apply to the FM function.

Two sets of accepted accounting standards the demand organization and the facility manager should know about are the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP).

International Financial Reporting Standards (IFRS)

The International Financial Reporting Standards (IFRS) is used globally and is equivalent to Generally Accepted Accounting Principles (GAAP). More than 120 countries, including those in the European Union (EU), follow IFRS. The International Accounting Standards Board (IASB) maintains IFRS. This standard is a set of international accounting and reporting guidelines, and rules demand organizations can follow when compiling their financial statements.

The adoption of IFRS as a universal financial reporting language is increasing due to cross-border transactions and the free flow of international capital. Before IFRS acceptance, different sets of national accounting standards complicated cross-border transactions. This added cost, complexity, and risk to companies preparing financial statements and for

investors and stakeholders using these financial statements to make decisions. IFRS addresses this challenge by supplying a high-quality, internationally recognized set of accounting standards that results in transparency, accountability, and efficiency, and sets a universal guideline for all involved in financial accounting.

Facility managers should know the demand organization's financial accounting policies and procedures and apply them to FM as applicable.

Generally Accepted Accounting Principles (GAAP)

Generally Accepted Accounting Principles (GAAP), issued by the Financial Accounting Standards Board (FASB), are rules, procedures, and conventions that were set up to help govern accounting practices by standardizing and regulating the definitions, assumptions, and methods used. GAAP includes commonly accepted ways of recording and reporting accounting information. GAAP is applicable in the United States and Canada. However, the International Standards Accounting Board and FASB are working toward merging GAAP and IFRS.

GAAP accommodates variation in applied accounting methods when the methods adhere to the following basic principles:

- **Relevance** — the information presented in financial and other public statements should be relevant and help readers evaluate the content so they can make educated guesses about the future financial state of the organization.
- **Reliability** — is a measure of the neutrality of information sources. It instills faith that the information is what it purports to be, and the information is independently verifiable. Reliability implies the demand organization presents an unbiased view of operations. The demand organization should corroborate that an independent auditor would produce the same results based on the same information.
- **Comparability** — suggests an organization's statements reflect the use of standards and techniques like those used in other demand organizations. In this way, users can differentiate real similarities and differences from those caused by differing conflicting accounting rules. By ensuring comparability, an organization's financial statements and other documentation can be compared to those of similar organizations within the same industry to benchmark how the first organization is doing.
- **Consistency** — all information should be gathered and presented in the same way across all periods. The same standards should apply over time so financial statements from differing periods can be compared. However, if the organization changes how it presents information, the organization should note the change in the financial statement and should state why the new accounting method adopted is preferable to the prior method.

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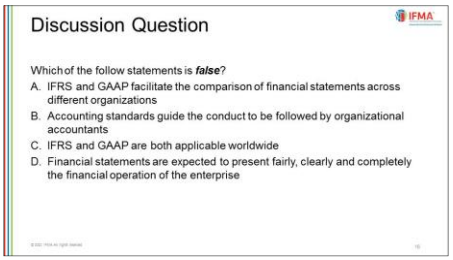
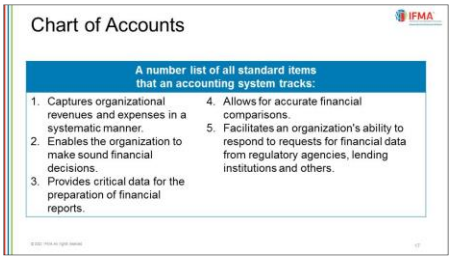


Accounting Records

Accounting records are the documented information needed to prepare financial statements. They include records of assets and liabilities, monetary transactions, ledgers, journals, and supporting documents such as financial statements, checks, and invoices. Certain regulatory bodies require companies to keep these records for several years should an audit or a compliance check be required.

No universal agreement exists about what creates a comprehensive set of accounting records. At different points in the business cycle, parties such as creditors, investors, or corporate governance groups have different and competing priorities for business documents. Regardless of the differing requirements, accounting systems store accounting records in three locations. Discussion of each one follows.

Chart of Accounts



A chart of accounts is an index, or list containing the name, a brief description, and an identification code of all the financial accounts in the general ledger. An organization uses a chart of accounts to organize its finances and to give interested parties such as investors and shareholders insight into the organization's financial status. In general, the list of accounts is shown in the order they appear in its financial statements. Therefore, balance sheet accounts are listed first. Next, the accounts in the income statement are listed.

The chart of accounts captures all financial information through a combined system which:

- Enables the demand organization to make sound financial decisions.

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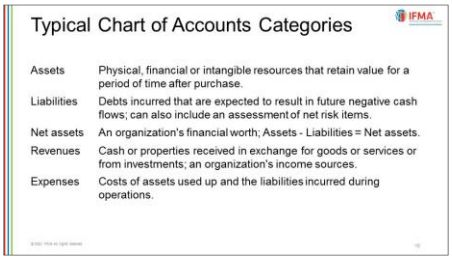
- Supplies critical data for the preparation of financial reports.
- Allows for correct financial comparisons.
- Facilitates a demand organization's ability to respond to requests for financial data from regulatory agencies, lending institutions, and other interested parties.

Identification or account codes entered by transaction are in the chart of accounts to help track costs across projects and within business units.

Account Categories



The accounts are listed in the chart of accounts in the same order they appear in the financial statements.

- **Assets** — an asset is anything having economic value today or in the future. Assets include physical property such as machinery, buildings, land, raw materials, inventory, and accounts receivable. Assets also include intellectual property such as patents and trademarks.

  Assets are listed on the balance sheet in descending order of liquidity, beginning with cash and followed by items easily converted to cash within one fiscal year or one operating cycle. Fixed assets (equipment, buildings, and land), items which cannot quickly convert into cash are listed on the balance sheet last.

- **Liabilities** — a liability is an existing obligation or debt, such as accounts payable and deferred taxes, that has not been fulfilled or paid for and can result in negative cash flow.

  Demand organizations divide their liabilities into current and long-term categories. Current liabilities are payable within one year, while long-term liabilities are payable over a longer period. The balance sheet lists current liabilities first, followed by long-term liabilities.

  A liability is not an expense. Expenses are the costs of an organization doing business; liabilities are obligations an organization owes. Expenses can be paid immediately, while liabilities take longer to pay.

- **Net assets or Owner's/Shareholder's Equity** — is what an organization owns minus what it owes. It is the same as shareholder's equity or owner's equity.

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Shareholders' equity or owners' equity (for privately held companies) is the amount of money that would be returned to shareholders after all assets were liquidated, and all debt paid off. In the case of acquisition, it is the value of the company sale minus all liabilities owed by the seller that were not transferred with the sale.

Net asset or equity is on the balance sheet and is one piece of data used to assess a demand organization's financial health.

- **Revenues** — is the income a business generates from normal operations. It is the top line or gross income figure from which costs are subtracted to get net income. Revenue is called top line because it appears first on an organization's income statement. Methods for calculating revenue include accrual accounting and cash accounting.

  For a demand organization, revenue could include income generated by the facility. This might include rent, parking fees, onsite laundry costs, etc.

- **Expenses** — is an operations cost an organization incurs to generate revenue. Common expenses include payments to suppliers, payroll, leases, and equipment depreciation.

  One of the goals of management teams is to maximize profits. This is done by increasing revenue and controlling expenses. However, cutting expenses too deeply can be detrimental to the demand organization. For instance, paying less on advertising not only reduces costs but it can also lower the organization's visibility and ability to attract potential tenants.

  Demand organizations enter expenses on their income statements using one of two accounting methods. With cash basis accounting, expenses are entered when they are paid. Conversely, under accrual accounting expenses are entered when they are incurred but not yet paid.

Account Structure and Numbering Conventions

Several factors influence what information appears in a demand organization's chart of accounts. Primary considerations include:

- How is the information used?
- What level of detail is needed?
- What is the accounting system's ability to track information?
- What financial reports must the organization prepare?

Based on its requirements, a demand organization's accounting department may organize its chart of accounts by cost center, such as departments, projects, services, or activities. Each transaction receives an identification or account code to correspond with a cost center. In this way, the information can be tracked through the financial reports by cost center, etc.

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Exhibit 1-5 depicts an example of a chart of accounts. This hypothetical chart illustrates some common classifications and numbering conventions. Note that demand organizations may have their own classification schemes and numbering conventions.

Exhibit 1-5 shows a numbering convention (listed next) used to assign account numbers.

The following numbers could be used as the leading digit in the numbering convention:

- **1** for assets
- **2** for liabilities
- **3** for net assets
- **4** or **5** for revenues
- **7** or **8** for expenses

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Exhibit 1-5: Sample Chart of Accounts — Categories and Numbering Conventions

Assets

- 1000 Cash
- 1010 Checking account (name) #1
- 1015 Checking account (name) #2
- 1020 Savings account (name) #1
- 1030 Petty cash
- 1040 Temporary cash investments
- 1100 Accounts receivable
- 1120 Rental property leases
- 1300 Loans made to others
- 1400 Inventory — land
- 1500 Inventory — buildings
- 1600 Work in progress
- 1700 Other assets
  - 1710 Prepaid expenses
- 1800 Fixed assets — general
  - 1810 Business vehicles
  - 1820 Tools and equipment
  - 1830 Office furnishings and fixtures
- 1900 Depreciated assets — general

Liabilities

- 2000 Accounts payable
  - 2010 Business taxes
  - 2020 Open purchase orders
  - 2030 Credit card (name) #1
  - 2040 Credit card (name) #2
- 2100 Short-term loans
  - 2101 Loan (name) #1
  - 2102 Loan (name) #2
- 2200 Construction loans
  - 2201 Loan (name) #1
  - 2202 Loan (name) #2
- 2300 Other current liabilities

Net Assets/Equity

- 3100 Construction revenue
- 3200 Professional services
  - 3250 Property management
- 3500 Rental property income

Revenues

- 4100 Product revenues
- 4200 Service revenues
- 5100 Other revenues

Expenses

- 7000 Salaries and wages
  - 7110 Management
  - 7120 Other salaries and wages
- 7300 Payroll taxes
  - 7320 Unemployment insurance and taxes
  - 7330 Workers' compensation insurance
  - 7340 Life and accidental death and disability insurance
- 7500 Accounting fees
  - 7510 Outsourced accounting fees
  - 7520 Outsourced payroll fees
  - 7530 Outsourced auditing fees
  - 7540 Banking service fees
- 7600 Office supplies
- 7700 Telecommunications
  - 7710 Local access
  - 7720 Long distance
  - 7730 Internet access
  - 7740 Wireless

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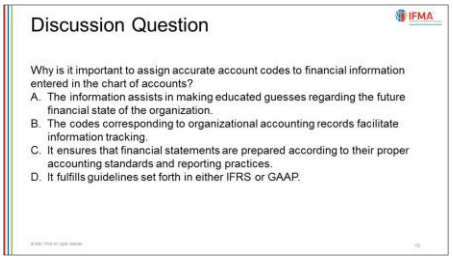
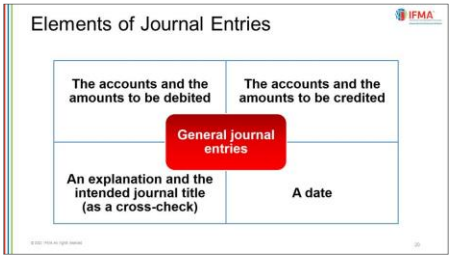
2400 Payroll liabilities 2500 Vendor liabilities 2600 Vehicle/equipment loans 2601 Loan (name) #1 2601 Loan (name) #2 2700 Mortgages owned 2701 (address) #1 2702 (address) #2 2703 (address) #3	7750 E-mail service 7800 Postage and shipping 7900 Printing 8000 Janitorial services 8400 Corporate travel 8410 Airfare 8420 Lodging 8430 Taxi/limo 8440 Auto rental 8450 Meals 8600 Insurance



Journal



A journal is a detailed record of all financial transactions. The journal is a physical record such as a book, or a digital document such as a spreadsheet or data within accounting software. Typical information contained in a journal includes sales, expenses, cash movements, inventory, and debt. For each transaction, the journal states, using a double-entry bookkeeping method, the transaction date, the accounts affected, and the currency amounts.

Information is put in the journal when it happens to ensure accuracy. This is important for spotting errors, budgeting correctly, and filing taxes.

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Information in the journal is used to reconcile accounts and transfer information to other accounting records such as to the general ledger.

Journals are often reviewed as part of an audit process, along with the general ledger.

Types of Journals

The simplest journal type is the general journal in which raw business transactions are recorded (as journal entries) in chronological order according to the date the transactions occur. It is the first place to record data including the transaction date, the identification or account code, and whether the transaction is a debit or credit. After a transaction is recorded in a general journal, the amount is entered in the proper account, such as cash, accounts receivable, and equipment.

To streamline basic recordkeeping activities, most demand organizations use accounting software to record transactions in journals and the general ledger simultaneously. However, despite advances in accounting software, there is always a need to record non-routine transactions such as sales of assets, bad debt, and depreciation in the general journal.

Some demand organizations keep specialized journals, each of which only contain specific types of transactions.

Specialized journals include:

- **Cash disbursement journal** — is a record of an organization's internal accounts. It itemizes all financial expenditures a business makes before posting corresponding payments to the general ledger. In general, accounting software maintains the cash disbursement journal which contains the disbursement amount, the check number, the transaction type, the payee, the payer, and any other applicable information.

  The cash disbursement journal shows whether more cash is leaving the organization than is coming in. This allows management to adjust to ensure a constant positive cash flow.

- **Cash receipts journal** — contains a record of all forms of cash received by a business such as the sale of a capital investment by the owner; cash sales; sale of an asset for cash; collection from customers; collection of interest, dividends, or rent; or loans from an individual, bank, or any other financial institution. The cash receipts journal is recorded in chronological order with the balance updated and verified continuously.

- **Purchases journal** — tracks orders placed using vendor credit and the current balance owed to each vendor. The purchases journal contains the date of the purchase, vendor account, invoice date, credit terms, accounts payable balance, and other account balances. This journal only records credit transactions. Any cash transactions are recorded in the cash disbursements journal.

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A demand organization uses the journal to track the status of each purchase, the amount owed to vendors, the due dates for each balance, and discount periods.

It is helpful to know the purpose of these four journals. However, most accounting software packages allow for entering all financial transactions. The packages are programmed to track and post these transactions to the proper accounts, thus eliminating the need for these specialized journals.

General Journal

Exhibit 1-6 is an example of a general journal with sample entries for the following transactions:

- February 1: €20,000 water efficiency equipment purchased on account from Aqua Monitoring Systems Company is debited to record cash outlay and credited to account for an asset.
- February 2: €180 invoice received from Copy Max for brochures promoting water conservation and explaining the FM water efficiency program
- February 11: €2,400 credit for merchandise return to Aqua Monitoring Systems Company

Exhibit 1-6 General Journal Example

Date 20XX	Account Title and Explanation	Reference	Amount	
			Debit	Credit
February 1	Equipment Accounts payable (Purchased on water efficiency equipment account from Aqua Monitoring Systems Company)		€20,000	€20,000
February 2	Printing Accounts payable (Received invoice from Copy Max for water efficiency brochures)		€180	€180

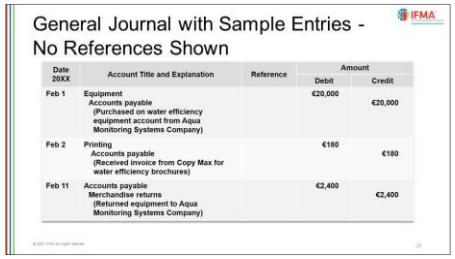
February 11	Printing Accounts payable - Merchandise returns (Returned equipment to Aqua Monitoring Systems Company)		€2,400	€2,400

The first column of the general journal shows the date of the transaction. The second column shows the account debited or credited (recorded in columns four and five), including a brief explanation. The third column shows a reference to the specific account; this column is completed at the time the accounts are posted.

General Ledgers

A general ledger is the record-keeping system for a demand organization's financial data, with debit and credit account records confirmed by a trial balance. It contains every financial transaction that takes place during an organization's life including account information used to prepare the organization's financial statements. Transaction data is posted to accounts for assets, liabilities, owner's equity, and expenses, as defined by the organization's chart of accounts.

The general ledger is the foundation of an organization's double-entry accounting system. The transaction details contained in the general ledger are compiled and summarized to produce a trial balance, income statement, balance sheet, statement of cash flows, and other financial reports. However, it is helpful to run a trial balance to check for errors and adjust them before running the other financial reports. These financial reports help accountants, company management, analysts, investors, and other stakeholders assess the company's performance continuously.



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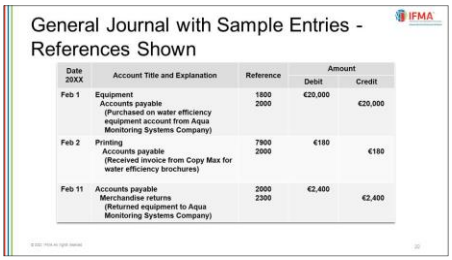
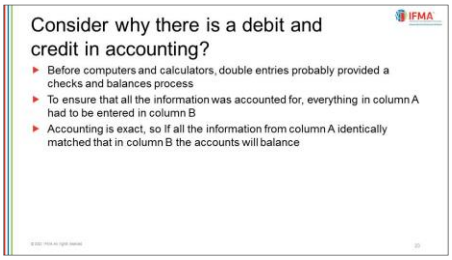


Double-Entry Accounting



Facility managers are not involved with double-entry accounting. However, they should be familiar with the concept and associated process.

In *Exhibit 1-1*, debit and credit were defined as follows.

- Debit is an amount due to be paid from or already paid from an account. Debit is the opposite of credit. In double-entry accounting, debits are shown as the left-hand side of a journal entry or an account record, where debts and expenses are recorded. Debit is commonly abbreviated as "Dr."
- Credit refers to positive cash entries in a bank account. A credit is an amount due to be paid to or already residing in, an account. It is the opposite of debit. In double-entry accounting, credits are shown as the right-hand side of a journal entry or account record, where payments to the account are recorded. Credit is commonly abbreviated as "Cr."

Exhibit 1-7 continues with displays of journal entries posted for the water efficiency equipment.

Exhibit 1-7: General Journal Postings in Ledger Accounts

Equipment		No. 1800
February 1	€20,000	

The equipment account debit increases.

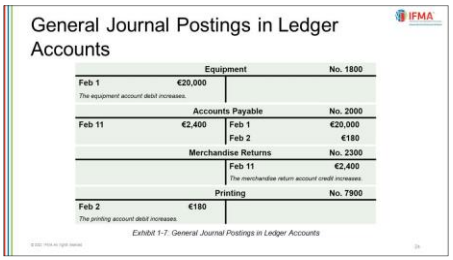


Exhibit 1-7: General Journal Postings in Ledger Accounts

Accounts Payable			No. 2000
February 11	€2,400	February 1	€20,000
		February 2	€180

Exhibit 1-7: General Journal Postings in Ledger Accounts

Merchandise Returns			No. 2300
		February 11	€2,400

The merchandise return account credit increases.

Exhibit 1-7: General Journal Postings in Ledger Accounts

Printing			No. 7900
February 2	€180		

The printing account debit increases.

Double-entry accounting is a system where every entry to an account requires an equal corresponding and opposite entry to a different account. The double-entry system is an internationally accepted accounting practice, that standardizes the accounting process, allows for better error detection, and improves the accuracy of financial statements.

For a demand organization to keep accurate accounts, every transaction appears in at least two of its accounts. This ensures the accounting equation stays balanced. The accounting equation, Assets = Liabilities + Equity, is the basis of double-entry accounting, where an organization's total assets are equal to its total liabilities plus its shareholder equity.

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Debits and credits are essential to the double-entry system. Transactions are recorded in a general ledger or T-account as debits and credits, where a debit in one account offsets a credit in another account. A debit will increase one account while at the same time, it decreases another account. For example, a debit increases asset accounts but decreases liability and equity accounts. On the income statement, debits increase the balances in expense and loss accounts, and credits decrease the balances of those same accounts. Debits decrease revenue and gains account balances, while credits increase their balances.

In the journal postings in *Exhibit 1-7*, the "No." notations of 1800, 2000, 2300 and 7900 refer to the ledger accounts to which the respective items are posted. Every demand organization selects its own numbering system for its chart of accounts. In this example, the "No. 2000" is associated with accounts payable. At the time of posting, these are the numbers that are entered as references in the general journal.

Exhibit 1-6 shows an example of a general journal with sample entries for the following transactions:

- February 1: €20,000 water efficiency equipment purchased on account from Aqua Monitoring Systems Company is debited to record cash outlay and credited to account for an asset.
- February 2: €180 invoice received from Copy Max for brochures promoting water conservation and explaining the FM water efficiency program.
- February 11: €2,400 credit for merchandise return to Aqua Monitoring Systems Company.

Exhibit 1-8 completes *Exhibit 1-6*.

Exhibit 1-8 - Example of general journal with sample entries including Reference numbers

Date 20XX	Account Title and Explanation	Reference	Amount	
			Debit	Credit
February 1	Equipment	1800	€20,000	
	Accounts payable	2000		€20,000
	(Purchased on water efficiency equipment account from Aqua Monitoring Systems Company)			
February 2	Printing	7900	€180	
				€180

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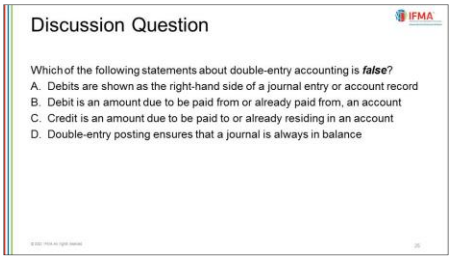
		Accounts payable	2000		
		(Received invoice from Copy Max for water efficiency brochures)			
February 11	Printing		2000	€2,400	€2,400
		Merchandise returns	2300		
		(Returned equipment to Aqua Monitoring Systems Company)			

Total debits = €22,580
Total credits = €22,580



Accounting Cycle

The accounting cycle process makes financial accounting of business activities easier. The accounting cycle ensures the accuracy and conformity of financial statements. Accounting software and the uniform and fully automated process of the accounting cycle help to reduce errors.

The eight-step accounting cycle process begins with recording every transaction and ends with comprehensive financial reports of the organization's activities for the designated cycle period. Accounting periods depend on demand organization needs and business cycles.

Organizations may need to modify the accounting cycle to fit with their business model and accounting procedures. This may involve modifications for accrual accounting versus cash accounting, or for the choice of double-entry accounting versus single-entry accounting. The modifications may also affect creating the income statement, the balance sheet, and the cash flow statement.

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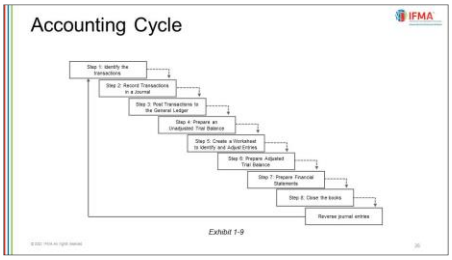
A facility manager does not have responsibility for the full accounting cycle, but a general awareness of the steps is helpful.

Exhibit 1-9 shows the steps in the accounting cycle. A brief explanation of each step follows below.



A brief explanation of each step follows below.

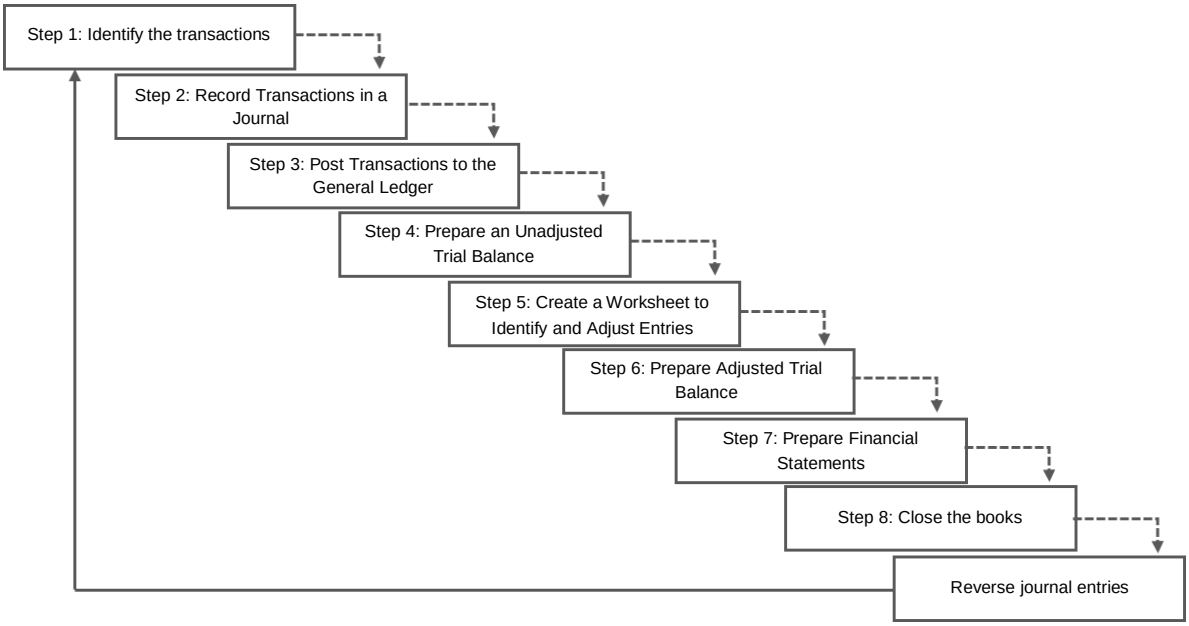


Exhibit 1-9

- **Step 1: Identify the transactions** — organizations have many transactions such as sales, refunds, or payment to vendors throughout the accounting cycle that create bookkeeping events.
- **Step 2: Record Transactions in a Journal** — transactions are recorded using journal entries. The receipt of an invoice, recognition of a sale, or completion of other financial events could trigger a journal entry.
- **Step 3: Post Transactions to the General Ledger** — once recorded as a journal entry, the transaction posts to an account in the general ledger. The general ledger supplies a breakdown of all accounting activities by account.

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- **Step 4: Prepare an Unadjusted Trial Balance** — after posting the journal entries to their associated general ledger accounts, an unadjusted trial balance is prepared. This is to find whether the total debits equal the total credits.
- **Step 5: Create a Worksheet to Identify and Adjust Entries** — after running the unadjusted trial balance, a worksheet is created and used to ensure debits and credits are equal. If discrepancies exist, then adjustments are made during the next step.
- **Step 6: Prepare Adjusted Trial Balance** — at the end of the accounting period, adjustments to entries are made. These result from the corrections made on the worksheet and from the passage of time.
- **Step 7: Prepare Financial Statements** — after posting the adjusted entries, the organization prepares the formalized financial statements.
- **Step 8: Close the books —** At the end of the accounting period, the organization completes temporary accounts, revenues, and expenses using closing entries. This includes transferring net income into retained earnings. Then, the organization prepares the post-closing trial balance to ensure debits and credits match. The new accounting cycle begins.
- **Reverse journal entries** — some adjusting entries made to prepare the financial statements need to be reversed as of the beginning of the next accounting cycle. A reversing journal entry avoids double counting the amount when the transaction occurs in the next period. Reversing entries are recorded on the first day of the new period. An example of this might be an accrual or deferral recorded on the last day of the accounting period.
    - An accrual pertains to expenses that should be reported now but have not yet been recorded or paid.

        An example of an expense accrual would be the electricity usage in December where neither the bill nor the payment will be processed until January. The December electricity should be recorded as of December 31 with an accrual adjusting entry that debits Electricity Expense and credits a liability account such as Accrued Expenses Payable.

    - An accrual pertains to revenues that should be reported now but have not yet been recorded nor has the money been received.

        An example of the accrual of revenues is a bond investment's interest that is earned in December, but the money will not be received until a later accounting period. This interest should be recorded as of December 31 with an accrual adjusting entry that debits Interest Receivable and credits Interest Income.

    - A deferral occurs when money is paid out that should be reported as an expense in a later accounting period.

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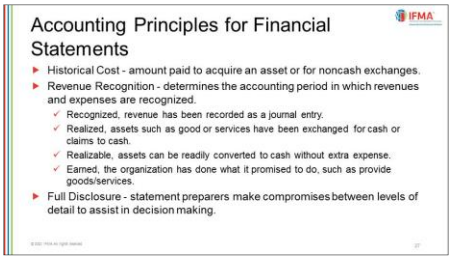
An example is a payment made in December for property insurance covering the next six months of January through June. The amount that is not yet expired should be reported as a current asset such as Prepaid Insurance or Prepaid Expenses. The amount that expires in an accounting period should be reported as Insurance Expense.
An additional example is the insurance company receiving money in December for providing insurance protection for the next six months. Until the money is earned, the insurance company should report the unearned amount as a current liability such as Unearned Insurance Premiums. As the insurance premiums are earned, they should be reported on the income statement as Insurance Premium Revenues.

- A reversing journal entry example:

  $10,000 of revenue is accrued in January because the company has earned the revenue but has not yet billed it to the customer. The customer is expected to be invoiced in February, so a reversing entry is created in the in the beginning of February to reverse the original $10,000 revenue accrual. The final billing, for a total of $12,000, is completed later in the month. The net result is the recognition of $10,000 in revenue in January, followed by the recognition of an additional $2,000 of revenue in February.

At the end of the year, financial statements are prepared. Public organizations must submit financial statements by certain dates. Therefore, their accounting cycle revolves around their reporting requirement dates.

Accounting Principles for Financial Statements



Facility management is a large part of a demand organization's budget. Therefore, the facility manager should have a solid working knowledge of business, finance, and accounting. This knowledge enables the facility manager to recognize what financial information needs to be reviewed, who records the FM related transactions, and who has the authority to approve the financial information and budget submitted.

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Some of the accounts shown in the demand organization's financial statements reflect FM activities. For instance, asset accounts include supplies, inventory, buildings, land, and equipment. Accounts related to liabilities include items such as mortgages, salaries payable, and taxes payable. Rents earned, interest earned, and revenues from services provided by the FM function are part of revenue. FM related expenses include utilities, rent, supplies, repairs, maintenance, and telecommunication.

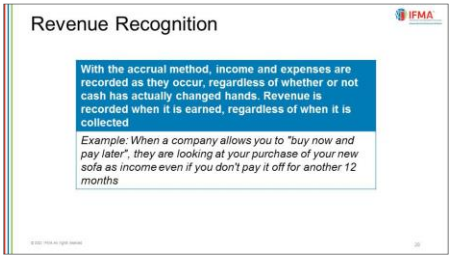
Although facility managers are not directly involved in preparing financial statements, they do have a responsibility to provide information in time to allow close-of-period accounting activities. They also should know how historical cost, revenue recognition, and full disclosure affect the information they supply.

Historical Cost

A historical cost is a measure of value. An asset's value is recorded on the balance sheet at the original cost when the organization bought it, even if it increased in value over time. Historical cost is used for fixed assets under Generally Accepted Accounting Principles (GAAP). Historical cost prevents overstating an asset's value when appreciation might result from volatile market conditions. For example, if an organization purchased its main headquarters, including the land and buildings, for $150,000 in 1950, and the current market value is $25 million, the asset is still recorded on the balance sheet at $150,000.

Similarly, asset depreciation is recorded to account for wear and tear on long-lived assets. For example, depreciation is recorded regularly for fixed assets, such as buildings and machinery, over the asset's useful life. On the balance sheet, annual depreciation accumulates over time and is recorded below an asset's historical cost. The subtraction of the accumulated depreciation from the historical cost, results in a lower net asset value for the item, thus ensuring no overstatement of the asset's true value.

Revenue Recognition



Although facility managers are not involved with the revenue recognition principle, they should have a general understanding of what it means.

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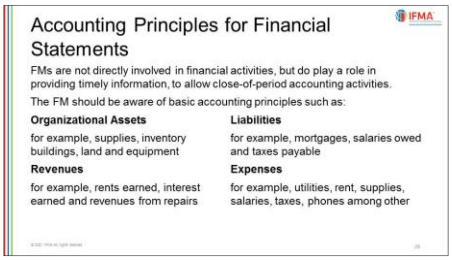
Revenue recognition is a Generally Accepted Accounting Principle (GAAP) that stipulates when revenue is to be recognized and how to account for it. Revenue accounting is when goods or services are sold. The revenue is recognized when the purchaser pays for the goods or services.

Revenue recognition is part of accrual accounting. It requires that revenues are recognized on the income statement in the period when realized or earned, not necessarily when cash is received. Realized means the customer received goods or services, but payment is expected later. Earned revenue accounts for goods or services provided or performed respectively. The revenue generating activity must be fully or almost complete to be included on the income statement during the period when realized or earned. In addition, there must be reasonable certainty the earned revenue payment will be received. Also, the revenue and its associated costs must be reported in the same accounting period.

Full Disclosure



In business, full disclosure refers to the need of all parties involved in a business transaction to tell the complete truth about any material issue related to the transaction.

For instance, full disclosure in real estate typically means the real estate agent or broker and the seller reveal any property defects and other information that may cause an interested party not to close the deal. The agent or broker must reveal whether the seller is willing to accept a lower offer, must reveal facts or data describing the seller's urgency level of completing the sale, and must reveal whether the agent or broker has any interest in the property or any personal relationship with the seller. Figures and estimates of the property value, how long the property has been on the market, and updates on offers or counteroffers placed on the property are typically disclosed too. Legal penalties may result if it is discovered the seller knowingly lied about or concealed significant facts about the property.

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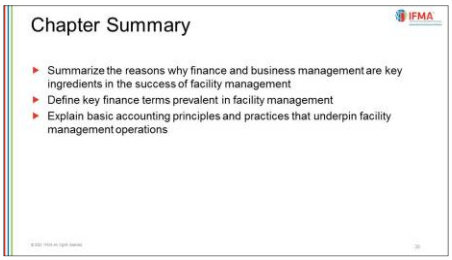

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Progress Check Questions

1. What is the term for the practice of communicating financial information to managers?

   a. Financial accounting
   b. Accrual basis accounting.
   c. Statement of cash flows.
   d. Management accounting

2. What statement best describes the contents of the chart of accounts?

   a. A demand organization's financial information by account.
   b. A list of financial accounts in an organization's general ledger.
   c. A demand organization's financial information by transaction type.
   d. A demand organization's financial information by statement.

3. What statement best describes the contents of a journal?

   a. Financial information organized by account.
   b. A numbered list of items an accounting system tracks.
   c. A daily, chronological record of business transactions.
   d. Financial information organized by statement type.

4. What best describes financial accounting?

   a. Identifying, measuring, analyzing, interpreting, and communicating financial information to managers.
   b. Calculating financial results using projections or presumptions.
   c. Recording, summarizing, and reporting transactions from business operations over a period.
   d. Budgeting in which all expenses must be justified for each new period.

5. Assets, Liabilities, and Net Assets are three categories in a chart of accounts. What are two more categories found in the chart of accounts?

   a. Revenue and expenses
   b. Cash flow and depreciation
   c. Debits and credits
   d. Capital and expense

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6. What statement best describes the acronym GAAP?

   a. General Accounting Acceptable Practice
   b. General Account Auditing Principles
   c. Generally Accepted Accounting Principles
   d. Global Accepted Accounting Principles

7. What statement best describes the term debit?

   a. A positive cash entry in a bank account
   b. A noncash charge against assets over the asset's useful life
   c. Increase an asset account or decrease a liability account.
   d. An operations cost incurred to generate revenue

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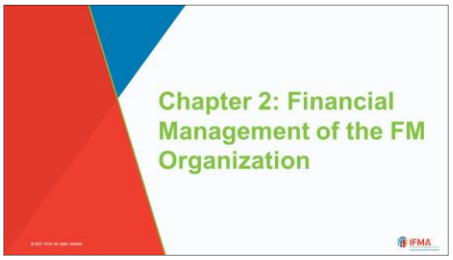
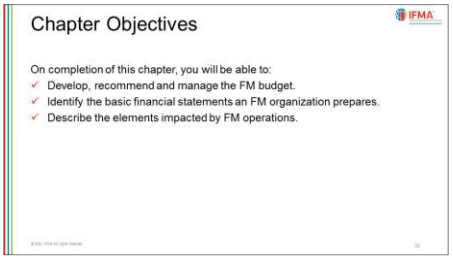
Chapter 2: Financial Management of the FM Organization

Chapter 2 Introduction





On completion of this chapter, you will be able to:

- Develop, recommend and manage the FM budget.
- Identify the basic financial statements an FM organization prepares.
- Describe the elements impacted by FM operations.

Lessons

- Budgets and Budgeting Basics
- Financial Statements

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Budgets and Budgeting Basics

Lesson Introduction

On completion of this lesson, you will be able to:

- Develop, recommend and manage the facility budget.

This lesson consists of the following topics:

- The Importance of Budgeting
- Budgeting Approaches
- Types of Budgets
- Additional Budgeting Concepts
- Budget Monitoring
- Budget Closeout
- Multinational Budgeting Considerations
- State or Cross-Border Benchmarking and Budgeting

The Importance of Budgeting

Budget

A formal, numerical expression of how an organization, or a part of the organization, expects to operate for a defined period of time. This identifies the resources and commitments needed to satisfy the identified goals over a period as well as the sources of the funding to provide those resources. Budgets and people involved in preparing and monitoring them can differ across organizations.

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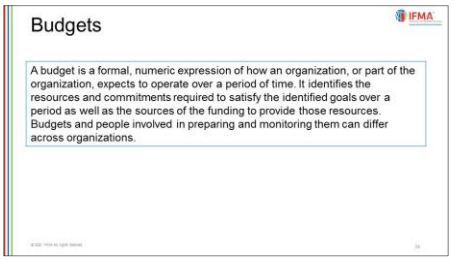
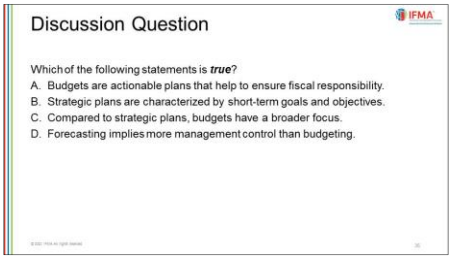


Additional concepts that a facility manager may encounter are discussed in this lesson, namely:

- general budgeting guidelines
- high-level international budgeting considerations
- approaches that organizations can apply to develop budgets

Budgeting is the process of gathering information, establishing the financial projections and monitoring progress toward them. Operating and capital budgets directly affect the facility manager, regardless of the organizational specifics.



A budget predicts what will happen and it estimates costs and plans for sufficient resources. Budgets are actionable plans that help to ensure fiscal responsibility, which, in turn contribute to the achievement of organizational goals.

Budgets are important for management planning and are similar to strategic plans and forecasting.

A comparison of **Strategic Planning, Forecasting** and **Budgets**

- **Strategic planning** — is the process of outlining the direction of an organization. It contains broad, long-term, significant plans and the methods and actions by which

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the organization will operate. The senior management of the demand organization leads the strategic planning process, which is given to the stakeholders for approval. The role of the facility manager in strategic planning is to align the department's strategy to the demand organization's strategy.

Strategic planning encompasses numerous programs undertaken to implement organizational strategies; it precedes budgeting and provides the framework for budgeting. In that regard, resulting budgets portray a slice or segment of a strategic plan.

- **Forecasting** — is a technique used for predicting operating results over periods of time. Time periods vary; forecasts may be for months, quarters, one-year, multiple years, accounting periods, or other time frames. Forecasts typically estimate revenues, expenses, and other items that affect cash flows. The financial manager provides historical information that the FM uses to prepare its required forecasts. If a forecast is incorrect the budget amounts will be incorrect, which could cause unforeseen budget variances in the FM department. Forecasts can change. They are typically updated as new information about changing conditions becomes available.

  Forecasting involves planning but lacks a high level of control and accountability of budgets. Variances in forecasts are analyzed and explained; the forecaster is not directly responsible for forecasted outcomes. Budgets imply acceptance of responsibility and a commitment to meeting the budgeted objectives.

Proforma statements are discussed in Lesson 2 of this chapter.

Forecasts can and often do change. They are typically updated as new information indicates a change in conditions.

- **Budgeting** — a budget is a financial plan for a defined period of time, typically one year. An organization uses budgeting to express strategic plans of activities or events in measurable terms. A budget is the sum of money allocated for a particular purpose and contains a summary of intended expenditures along with proposals for how to meet them. It may include a budget surplus, which provides money for use at a future time or a deficit in which expenses exceed income. Budgeting serves multiple roles of planning and control, determining what actually happened and comparing it with the previously planned outcomes.

  Budgeting provides an organization with several fundamental benefits, including, but not limited to the following:

  - **Improves communication and coordination** — budgets help ensure that all parts of an organization are working together to achieve organizational

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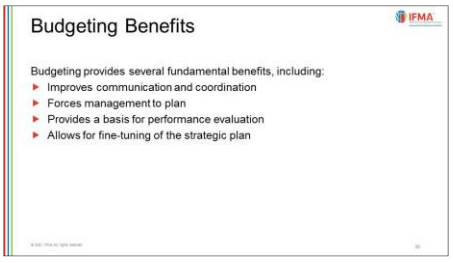
strategies. An FM budget should be linked to the demand organization's goals and objectives and aligned to other business plans and processes.

- **Forces management to plan** — the detailed plans in a budget are intended to achieve specific goals and objectives. Budgets encourage managers to foresee problems and consider how to deal with uncertainty and the future. An FM budget should provide accurate and realistic cost estimates. Budgets make effective use of historical data or previous costs, benchmark data from other organizations, and industry standard reference data. The data are used to analyze trends in cost spending and exercise industry best practices in the budgeting process.
- **Provides a basis for performance evaluation** — a budget sets a benchmark or baseline against which actual performance can be evaluated. It provides a series of checks and balances on the actions of management and staff responsible for the various aspects of the budget. An FM budget provides a financial plan against which the facility manager can compare actual results with budgeted results on an ongoing basis. Large differences between planned and actual results can be investigated and the budget can be revised going forward if necessary. The budget represents accountability and a facility manager's individual responsibility can become part of the performance evaluation process.
- **Allows for fine-tuning the strategic plan** — the detailed planning that characterizes budgets is the source of information for strategic planning.

Example: A strategic plan includes objectives for a facility's real estate master plan. The first draft of the FM budget includes estimates for a major renovation to meet the growing organization's needs. However, the estimates seem high. This information allows organizational management to reassess the risk associated with the investments and revise plans before a commitment is made.



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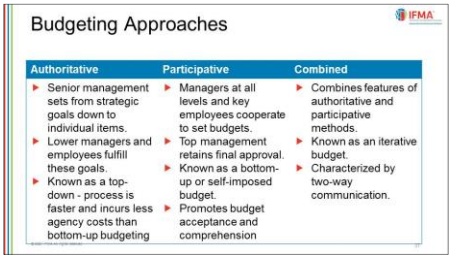
Budget Approaches



Approaches to budgeting differ across organizations, but all fall somewhere on a continuum between being entirely authoritative and entirely participative. *Exhibit 2-1* provides an overview of these budget approaches. Currency examples are in Canadian dollars (C$).

A facility manager needs to apply the budgeting standards and requirements of the demand organization. Such knowledge is a critical success factor to help ensure that:

1. The financial models used to develop budgets are appropriate.
2. The format is appropriate and consistent with business requirements.
3. The process for developing the budget follows standard management and financial practices of the demand organization.

Exhibit 2-1: An Overview of Budget Approaches

Budget Approach	Description	Advantages and Disadvantages
Authoritative	Senior management sets everything from strategic goals down to the individual items of the budget for each department and expects lower managers and employees affected by the budgets to fulfill these goals. Also known as a top-down budget.	*Advantages:* • Budget goals reflect strategic objectives. • Better control over decisions. • Top-down budget process is faster and incurs fewer agency costs than bottom-up budgeting. *Disadvantages:* • Dictates instead of communicates. • Senior management may be out of touch with departmental operations and set unrealistic or

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Budget Approach	Description	Advantages and Disadvantages
		unattainable goals. • Can result in employees feeling resentful and/or unmotivated.
Example: *Senior management gives FM a limit of C$200K for general landscape maintenance activities for the upcoming year. The facility manager must develop the operating budget with C$200K as the landscape maintenance expense target.*		
Participative	Managers at all levels and certain key employees cooperate to set budgets for their areas. Senior management participates in the process at varying points, particularly the beginning and end of the annual process and usually retain final approval. Also known as a bottom-up or self-imposed budget.	*Advantages:* • Expertise leads to informed budget decisions. • Can result in employees feeling involved and empowered. • Promotes budget acceptance and comprehension. *Disadvantages:* • Strategic goals may not receive priority in the budgetary process. • If managers and key employees do not give the budget appropriate focus, it can lead to managers underestimating costs and overestimating revenues.
Example: *A facility manager develops a department operating budget with input from purchasing, human resources and administration. Upon completion, the budget is sent to senior financial management for review and approval.*		
Combined	Combines the features of authoritative and participative budgeting and falls somewhere between these methods. Also known as an iterative budget. Characterized by two-way communication: • Senior management understands participants' difficulties/needs.	*Advantages:* • Strategic goals are communicated top-down and implemented bottom-up. • Personal control leads to acceptance, which leads to greater personal commitment. *Disadvantages:* • A longer process, which in a large demand organization

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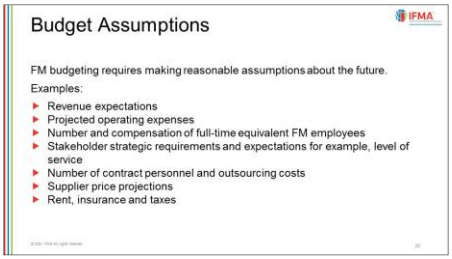
Budget Approach	Description	Advantages and Disadvantages
	• Participants understand management's dilemmas.	can significantly add to the budgeting timeline.
Example: *Senior management provides FM and all other department heads with a clear understanding of strategic goals. A facility manager works in the team to develop an operating budget that incorporates FM tactical goals aligned to the larger strategic goals. Senior management reviews the FM budget and once any adjustments are negotiated, the budget is approved.*		

The combined iterative budget approach is commonly used in many organizations because it provides balance between strategic and tactical inputs. Ownership of budget by the department and thorough review by management lead to comprehensive budgets that get applied.

Steps in a combined budgeting approach include the following:

1. Budget participants are identified from all levels of management as well as key employees with expertise in a particular area.
2. Top management communicates the strategic direction to budget participants.
3. Budget participants create the first draft of their budget.
4. Lower levels submit budgets to the next higher level for review in an iterative process stressing communication in both directions.
5. Thorough investigation of the budget items and approval from management sets the final budget.

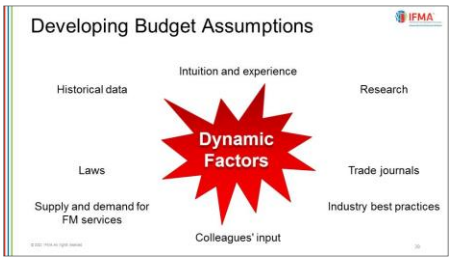
Setting Budget Assumptions



Regardless of a demand organization's unique requirements or budgeting approach, the budget process involves developing a set of assumptions. Assumptions are formulated at the start of budgeting and are generally described as premises — statements that are

assumed to be true, without proof or demonstration, from which a conclusion can be drawn.

Developing an FM budget requires making reasonable assumptions about the future.



Once assumptions are in place, the budgeting process unfolds according to organizational protocol, culminating in an agreed-upon pact between FM and senior management.

Formulating reasonable budget assumptions requires consideration of questions such as, but not limited to:

- What are the expectations for revenues in the upcoming year?
- What are the projected operating expenses?
- How many full-time equivalent (FTE) facility management employees will be needed? How much will the employees be compensated?
- What are the projected costs for health-care benefits?
- How many contract personnel will be required? How much will the outsourcing cost?
- Are supplier prices expected to increase or decrease?
- What are the required needs and expectations of service to the stakeholders? Stakeholders include, business unit leaders, managers and directors.
- What are the stakeholders' forecasted needs for the coming year and how will this affect the budget? For example: Is there a reorganization or move planned? Will the demand organization be taking on new hires? Will a new workflow process be introduced? Will organizational growth be outsourced? Will there be staff layoff?
- How much will rent, insurance and taxes be?

It is inevitable that the list of questions will vary.

To develop budget assumptions and forecasts, historical data about past performance, intuition and experience — even in changing times — can collectively provide a starting point. Due diligence is warranted. Conducting research, reading trade journals, reviewing industry best practices and taking the demand organization's policy and approval levels into consideration are all appropriate when formulating budget assumptions.

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Discussions with colleagues and other organizational personnel can provide information about:

- Senior management — strategic goals
- Finance — records of past performance and forecasts of future trends
- Human resources — shifts in the labor market and expected salary expenses
- Sales — revenue generation
- Purchasing — suppliers and price trends

It's important to realize that the elements behind the questions and assumptions are dynamic. Employment costs and conditions change, the supply of and demand for facility management services varies, laws that affect business and employment change and a myriad of other factors can shift up or down. To develop reasonable budget assumptions, facility managers need to stay current with what is going on. In the end, assumptions are educated guesses about the future.

FM's Alignment to the Organization in Future Work Environments

Technology has brought a revolution to business. Organizations and FM are being forced to make rapid changes and meet challenges as these transformations evolve. This will affect the budgeting and forecasting process and facility managers need to be aware of the changes and challenges that lie ahead and be conscious of how this will affect the future budget and forecast plans.

Increasing customer expectations and stricter government regulations are reshaping the FM industry in areas such as, but not limited to:

- health and safety
- labor management
- environmental and resource management
- data security

FM faces the challenge of assisting organizations improve their profitability and reduce costs. Sustainability is a key factor and the future for facility managers will involve a greater focus on indoor ecology, energy usage, water conservation and waste management, which will change the focus of the traditional budget.

An evolving organizational trend is to elevate the facility manager to a strategic, long-term planning partner. This involves changing basic skillset requirements, in addition to technical skills which require building maintenance and compliance to government regulations.

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Facility managers will need to acquire critical thinking, business management and communication skills to convey the motives for the new budget requirements that will be inevitable.

The trend to shift away from traditional work styles affects FM from an operational perspective and how buildings are occupied. Facility managers will be required to effectively accommodate varying occupancy rates, which in turn will affect power usage and energy conservation. Global collaboration has become the norm in business and the requirements to effectively administer the requirements for this to run proficiently will be added to facility managers portfolio.

Security and health and safety will still play a fundamental role in the FM organization and FM will need to pay closer attention to factors that contribute to employee health and productivity. Lighting and ergonomics play an essential role in this and will have to be factored into future planning and budgets.

Energy conservation is paramount to current and future government regulations. Modifications will need to be made in the conservation of energy in features such as daylight vs. artificial light, airflow, insulation and heating and cooling systems.

Everything discussed in this section will have an impact, some more substantial than others, on the planning, budgeting and forecasting required by FM in the future. These changes will require creative, imaginative and realistic thinking while investigating trends and preparing future budgets.

Budget Preparation Guidelines for Future Work Environments

Factors that need to be considered by FM when preparing budgets and forecasts for future work environments include:

- **Employee Expectations** — the generations that will need to be accommodated in the future are Gen Z and millennials, many of whom have increased expectations for freedom at work and flexible working patterns. These individuals connect, create, contribute, and collaborate. The main workplace features that they prefer are bright, open co-working spaces with amenities such as fresh food options, daily cleaning, 24/7 building access as well as on-demand workspaces that have shared or dedicated desks and provide access to meeting rooms.
- **Sustainability** — global warming is a paramount environmental challenge. Organizations need to become more energy and carbon efficient. This can be achieved by creating or introducing more sustainable buildings. The trend towards

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sustainable solutions will affect management and maintenance, building design, and supply and value chains.

Sustainability is discussed further in Chapter 5 – Procurement in the FM Organization.

- **Technology** — there has been a substantial increase in productivity, income growth and the development of industries due to technology. Progress in technology is increasing, with the improvement of automation, low-skill labor will be replaced, and a skillset will change.
- **Health and Well-being** — workplace wellness is a growing trend. New standards and technologies have driven the design of buildings to be centered around humans and their health, referred to as "wellness architecture." This includes air and water supply, centralized staircases to encourage physical activity, access to nutritional information and health food options.

Existing facilities and tight budgets put limitations on the facility manager, but there are ways that FM can keep up with the trends.

Example: Stair climbing is regarded as vigorous exercise that is good for your health, bones, and heart. A recent study revealed that 10 minutes of stair climbing gives a bigger boost than a cup of coffee. A facility manager can make the stairs that they currently have in the building accessible, visible, and attractive to employees.

Facility managers will always play a crucial role ensuring that the workplace meets with the employees' needs. As the workforce changes, facility managers will need to stay aware of trends, make provision for what is realistic in their budget preparations, and develop the skills needed to communicate to senior management the negative impact of inaction.

Types of Budgets

Operating and capital budgets are two types of budgets that are extremely important in FM. From a broad perspective, operating budgets are considered short-term, as they typically project only one year at a time. By comparison, a capital budget is long-term and may project two, five or more years into the future. Operating budgets and capital budgets have several other distinguishing characteristics.

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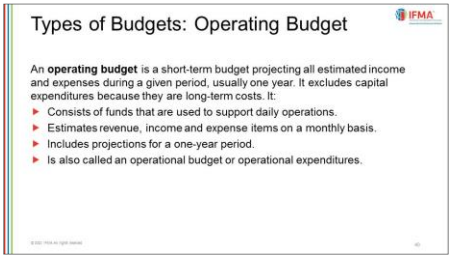
Operating Budget



Formally defined, an operating budget is a short-term budget projecting all estimated income and expenses during a given period, usually one year. It excludes capital expenditures because they may be long-term costs.

Operating budgets provide an important management planning and control mechanism. Development of the budget should take into consideration the following minimum requirements:

- Management's objectives for the site and facility
- Trend data such as surveys, demographic research and benchmark reports
- Probable changes in economic factors — anticipated changes in external factors such as higher utility costs, labor costs/availability, material costs/availability, regulations and new codes
- Detailed information on the site and facility's age, physical condition and finances
- Internal customer needs for ongoing services and upcoming projects
- Organizational initiatives

An operating budget consists of funds used to support daily operations. An operating budget estimates revenue or income and expense items on a monthly basis and includes projections for a one-year period. Specific items contained in an operating budget may vary. An example of customary operating revenue and expense categories are shown in *Exhibit 2-2*.

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Exhibit 2-2: Example of Customary Operating Budget Revenue and Expense Categories

Example of Customary Operating Budget Revenue and Expense Categories
Revenues, if any Chargebacks, if any Expenses — categories such as, but not limited to: • General and administrative • Office — rent and utilities • Operations and maintenance • Noncapital projects • Design and engineering • Taxes • Insurance • Marketing • Leasing • Depreciation (all capital depreciation)

Operating projections take into account seasonal variations in expenses and income, for example, utility costs or snow removal and expenses that are paid on something other than a monthly schedule, for example, real estate taxes or insurance.

An ongoing challenge in FM is to be proactive in conducting due diligence regarding asset management and maintenance. This avoids reactive initiatives of fixing assets as they break.

Developing an annual work plan, as a precursor to the operating budget, can result in a helpful tool to plan and organize expense information about projects, operations, maintenance and other costs and expenditures for the projected period. The annual work plan (AWP) covers short-term needs, is very specific and based on solid projections.

Note that the list of cost categories reflects the expense categories shown above in *Exhibit 2-2*.

Exhibit 2-3 shows an example of customary information found in an annual work plan.

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Exhibit 2-3: Common Cost Categories in Annual Facility Management Work Plan

Common Cost Categories in Annual Facility Management Work Plan	
General and administrative Salaries Employer's taxes Employment insurances Pension payments Health-care insurance Other benefits Office Purchase Rental Clothing and uniforms Car fleet Fuel and oil Maintenance and repairs Office automation Telecommunications Landlines Mobile phone charges Switch maintenance Printing Copier leases/renewals Mail Postage Equipment Couriers Operations and maintenance Utilities Natural gas Electricity Steam Water/sewage Fuel oil	Operations and maintenance, continued Maintenance • Preventive • Scheduled • Deferred Repair Custodial Cleaning contract Consumables Pest control Moving/porter services Noncapital projects Minor construction Renovation Repair Design and engineering Computer-aided design (CAD) photography and renderings Taxes Insurance Building insurance Liability insurance Marketing Leasing Depreciation (all capital depreciation)

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Common Cost Categories in Annual Facility Management Work Plan	
Environmental Waste management Operations Landscaping and grounds maintenance Health and safety operations Life and safety Emergency and disaster planning Security Guards Systems Fire precautions Detection and alarms Extinguishers Snow removal Employee amenities Vending areas Cafeteria/food service ATM Day care	

Spreadsheet software can be used to translate the categories into an actual work plan. *Exhibit 2-4* is a work plan excerpt showing the general and administrative costs from *Exhibit 2-3*.

Exhibit 2-4: Annual Facility Management Work Plan Sample Excerpt

Cost Categories	Amount	Comments
General and administrative Salaries Employer's taxes Employment insurances Pension payments Health-care insurances Other benefits		

This work plan excerpt is just an example of possible categories. It is not intended to be a ready-made template. A category and how it is populated is a function of what is appropriate for an organization. There are many possibilities that could exist due to the types and complexities of facilities. The line items shown here are included as likely categories of general and administrative costs but are not meant to be all-encompassing or complete.

In this sample, there are no entries in the fields. The Amount headers should specify the currency being used. Any remarks that might be helpful to clarify the costs or expenses can be included in the Comments column. For example, regarding personnel, if the facility manager is planning to hire one new FTE maintenance person, the comment might be: 'Includes one new hire FTE maintenance'.

This annual work plan excerpt could be translated into an operating budget. *Exhibit 2-5* shows a sample excerpt of a hypothetical operating budget for general and administrative costs for the calendar month of April. Actual expenses are shown in comparison to budget; variances are also included.

A well-planned operating budget:

- **Helps to optimize FM department performance** — careful and meticulous monitoring of expenses against budget allocations allows appropriate adjustments to be made.
- **Greatly enhances a facility manager's ability to recognize patterns and trends** — it facilitates a manager's ability to take appropriate preventive action to avert potential problems or implement corrective action if problems or unplanned needs do arise.

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Exhibit 2-5: Facility Management Operating Budget, April 20XX Sample Excerpt

Cost Categories	Fiscal Year Budget Amount	Expended Years-to-Date	Budget Years-to-Date	Variance
Salaries	250,000.00	187,500.00	166,666.67	-20,833.33
Employer's taxes	25,000.00	18,750.00	16,666.67	-2,083.33
Employment insurances	81,250.00	60,937.50	54,166.67	-6,770.83
Pension payments	10,000.000	7,500.00	6,666.67	-833.33
Health-care insurances	62,500.00	46,875.00	41,666.67	-5,208.33
Other payments	25,000.00	8,762.25	16,666.67	7,904.42
Total	453,750.00	330,324.75	302,500.00	-27,824.75

Cost Categories	Expense This Month	Expense This Month Last Year	Change Year on Year	Current Year-End Forecast	Forecast Outturn Against Budget
Salaries	22,315.00	18,475.22	3,839.78	270,833.33	-20,833.33
Employer's taxes	2,231.50	1,847.52	383.98	27,083.33	-2,083.33
Employment insurances	7,252.38	6,004.45	1,247.93	88,020.83	-6,770.83
Pension payments	892.60	739.01	153.59	10,833.33	-833.33
Health-care insurances	5,578.75	4,618.81	959.95	67,708.33	-5,208.33
Other payments	250.00	1,000.00	-750.00	17,095.58	7,904.42
Total	38,520.23	32,685.00	5,835.22	481,574.75	–27,824.75

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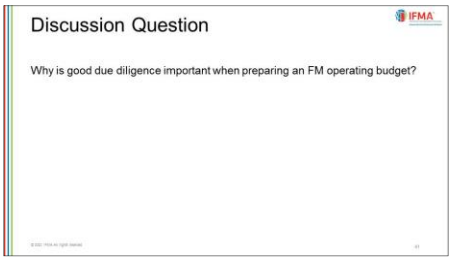

Capital Budget

A capital budget shows financial impacts resulting from major, long-term, non-routine expenditures for items like property, plant and equipment.

Two related terms are capital asset and capital expenditure:

- **Capital asset** — a depreciable item whose cost is significant to the company and whose expected life is longer than one accounting period.
- **Capital expenditure** — acquisitions of new or expanded long-term plant assets.

A capital budget is a direct, high-dollar response to the demand organization's business objectives. Capital budgeting requires an organization to reserve substantial funds and resources for use on large investments, often to realize benefits far into the future. A capital budget may be a multi-year presentation, attributable to the magnitude of capital expenditures.

The demand organization's finance department sets organizational rules for capital program development and finance personnel. For example, the CFO, controller and analysts are involved in capital budget approval and monitoring. A facility manager has a major role in gaining approval for capital projects and in capital program development. The facility manager or any other operational department manager, does not set policies for capital budgeting and execution. No capital project should be started without appropriate approvals by the management levels authorized by organizational financial policy.

Organizations may set capital thresholds or cutoff levels that establish the sphere of influence that finance and operational managers each have for capital projects. For example, finance may delegate more authority and responsibility to a facility manager for

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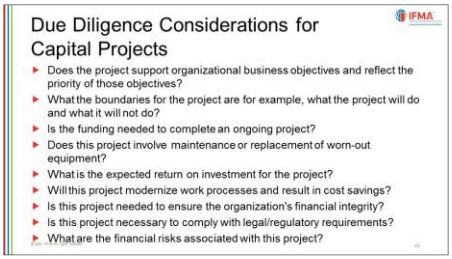
capital requirements below $50K. The finance department then takes ownership for any expenditure above $50K. Facility managers and all other department managers, must understand organizational rules, policies and procedures for capital budgeting set by finance management and they must unconditionally observe the protocol.

Capital projects are evaluated internally. The FM department and other departments submit capital requirements for approval. Senior management makes the go/no go decisions through a process that assesses, prioritizes, programs and budgets initiatives, before releasing them back to the submitting department for execution. Ideally, submissions for capital requirements show long-term economic and operational benefit to the demand organization. There can be situations where capital project justification is driven by another reason, for example compliance with a new mandatory regulatory requirement.



Consider the questions listed in *Exhibit 2-6* that may increase the probability for capital project approval.

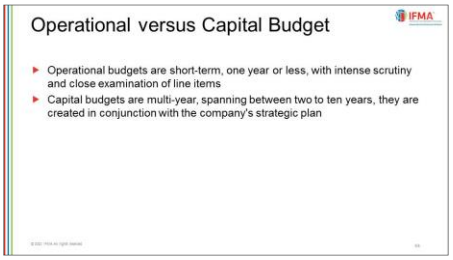
Exhibit 2-6: Considerations for Capital Projects

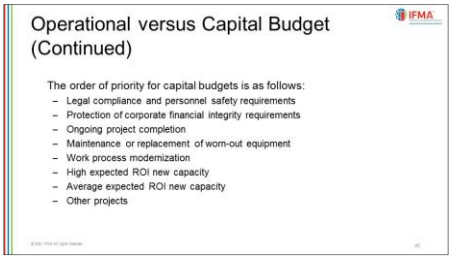
Considerations for Capital Projects	
• Does the project support organizational business objectives and reflect the priority of those objectives? • What the boundaries for the project are for example, what the project will do and what it will not do? • Is the funding needed to complete an ongoing project? • Does this project involve maintenance or replacement of worn-out equipment? • What is the expected return on investment for the project?	• Will this project modernize work processes and result in cost savings? • Is this project needed to ensure the demand organization's financial integrity? • Is this project necessary to comply with legal/regulatory requirements? • What are the financial risks associated with this project?

Capital budgeting is complex. Capital expenditures can have a different tax treatment from operational expenditures and are sometimes more or less attractive to the CFO, depending on that tax treatment. Decisions on whether an expenditure can be treated as capital versus operating expense are determined by finance policy and therefore beyond the control of the facility manager.

The upcoming discussion of Business Cases in Chapter 4 discusses the justifications related to capital investments. Capital investment decisions are crucial to an organization's welfare as they involve large expenditures that have a long-term impact.

Relationship between Operating and Capital Budget





From a FM perspective, budgets can be categorized by program, such as maintenance, operations, space build-out, environmental and security. A continual challenge for facility managers who set up budgets is taking the time to define and set rules for semiannual, annual and capital expenditures. The facility manager should be capable of managing and tracking each program, both in operating and capital budgets.

Operating Budgets

Conversations in a company regarding budgets typically refer to the operating budget. As a rule, facility managers are more likely to have control of the operating budget than the

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capital budget. The operating budget is more likely to be the subject of intense scrutiny and cost-reducing efforts. There is closer examination of line items in an operating budget than on a capital budget.

The yearly operating budget is divided into portions which are allocated to each corporate department to cover day-to-day operations. The total allocation for the FM department is subdivided into portions allocated to personnel costs, such as, but not limited to staff salaries and benefits and non-personnel costs such as rent, electrical bills and minor repairs. Most companies use a large portion of their revenue-generated cash flow to cover costs anticipated in the yearly operating budget.

A portion of the cash flow of the demand organization is allocated each month to spend on running the company's operations. Any income not used to pay operating expenses at the end of the fiscal year is retained earnings and can be used to pay out dividends (if the company is a public-traded company) or reduce debt.

Operating budgets can be both short-term, which is one year, or less and mid-term, which is between one and two years. Operating budgets represent out-of-pocket costs, which organizations prefer to avoid if possible.

Capital Budgets

Capital budgets for FM specifically include new real estate, office space, interior fit outs, building systems, HVAC equipment/component replacement, fire sprinkler line replacement, tenant improvement and new initiatives such as solar energy and water conservation.

Capital budgets appear to be more static than operating budgets and involve fewer cost types and longer terms. Occurrences are expected to happen slower than with an operating budget, but sometimes they don't. When interest rates rise, investment capital for real estate-related and facilities-related projects becomes limited. Capital budget plans can become disrupted when government raises prime rates to control inflationary growth.

Implications of Capital Spending on Operating Budgets and of Operational Costs on Capital Budgets

Capital budgets are affected by how operating budgets are managed. For example, preventive maintenance, if funded and completed, has a beneficial long-term impact on capital projects by extending the useful life of capital assets. Preventative maintenance programs can provide reasonable predictions of how long mechanical equipment will last, enabling FM to make predictions about planned equipment replacement, which is capital expense.

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The demand organization will only benefit from these savings if it remains in the facility or uses the equipment long enough. This situation generally does not make financial sense for a leased/rented space unless it is a long-term triple-net lease. A triple net lease (or "nnn" lease) is a form of real-estate lease agreement where the tenant or lessee is responsible for the ongoing expenses of the property, including real estate taxes, building insurance, and maintenance, in addition to paying the rent and utilities.

Capital projects and investments require maintenance and care after they are purchased or built. It is vital to examine capital expenditure for the ongoing effects that they will incur on the budget. The most commonly used tool to identify these costs is life cycle cost (LCC) analysis. LCC accounts for all costs associated with an item over its expected life, including purchase, operation, maintenance and disposal. Large capital investments are often approved on the basis of LCC claims that they will reduce operating expenses.

If these predictions are inaccurate or overstated, the facility manager will incur higher ongoing operational costs, or higher maintenance or housekeeping costs for each project. The facility manager may have difficulty proving why costs continue to increase if unable to research LCC analysis for projects and compare the predicted figures with actual results. It is important to remember that operational budgets carry the depreciation resulting from purchasing new assets or improving existing ones in the capital budget.

Capital Budgeting Process

A decision to invest in the workplace is made in conjunction with the company's strategic plan and capital budget development process.

> **Step 1** in the process is for management to determine the size of the total capital amount for a particular time period. The amount is established by the company's financial position, investments required, other investment opportunities and priorities and the anticipated revenue for a set period. Total capital investment is normally a small portion of the revenue stream.
>
> **Step 2** is allocating the capital budget between projects competing for corporate funds. It needs to be determined how the corporation selects or rejects projects and how it ranks the ones it accepts. Decisions will be made according to what supports the strategic business plan the most. If a facility manager cannot demonstrate support of the plan, there will be minimal or no capital investment. Government requirements can force capital expenditure.

A priority system should be determined for FM projects. Mandatory projects as required by regulatory bodies usually take priority, followed by equipment replacement and discretionary investments. A distinction of mandatory and discretionary may not always be clear and could depend on the nature of the business strategy. A detailed breakdown in general order of priority may take the following format:

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- Legal compliance and personnel safety requirements
- Protection of corporate financial integrity requirements
- Ongoing project completion
- Maintenance or replacement of worn-out assets
- Work process modernization
- High expected Return-On-Investment (ROI) for new capital expenditure capacity
- Average expected Return-On-Investment for new capital expenditure capacity
- Other projects

Budget Planning Periods

Unlike operating budgets, capital budget time frames are typically multi-year, spanning between two and ten years. Governments normally use longer time frames. Due to the long time frames, the time value of money becomes a significant factor in capital planning, more so if capital funds are borrowed or acquired through equity partners such as stock issues. Getting accurate cost estimates on long-range projects is problematic and vital. Consulting with corporate financial planners on what long-range planning assumptions are being implemented by other departments can be helpful.

Regardless of applying present value and discounting techniques to individual capital projects, applying present value to the entire capital budget over several years across the course of multiple projects will change it substantially. The differences between present-day and discounted dollars will be most evident in the future of the capital budget plan when the diminished value of the dollar will have its greatest impact. These factors are essential to corporate financial planners who must issue bonds or debentures or take on a mortgage to raise capital funds for projects.

Guidelines have been provided above on how to separate operating and capital expenses, be aware that there are no set rules and it can differ from organization to organization.

A standard that is set to differentiate between categories and can be allocated to the annual budget, could follow these guidelines:

- maintenance
- repair
- major repair — which is above a certain dollar level
- alteration
- minor construction
- major construction and replacement

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The reality is that no set standard is going to suit every demand organization. A facility manager can define some clear rules and by following them consistently in the absence of a standard, can ensure that there are positive fiscal impacts and ensure that like to like is being compared when budgeting or when being audited.

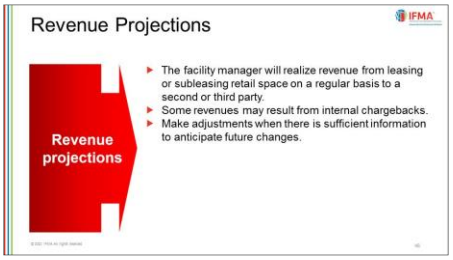
Additional Budget Concepts

Several important operating and capital budgeting principles have been presented. The following overview of some additional budgeting concepts can help facility managers to better coordinate efforts with upper management and promote their departments in terms that finance, and business-oriented senior management will understand.

Estimating Revenue and Expense Projections

A budget must account for revenue and expense projections. The facility manager needs to know buildings' condition and assessment to ascertain if the demand organization is considering past deficiencies or upcoming issues. In addition to this, the facility manager must establish what other departments are planning for capital investments that could have an impact on the demand organization's budget.

Revenue Projections



Most facility managers do not have any revenue projections — unless they have space that they are leasing or subleasing on a regular basis to a second/third party. The facility manager will realize monies from these leases. Some FM departments have a chargeback requirement to their internal customers, where the facility manager would realize revenue from the work provided to internal customers.

When based on experience, revenue can be projected with some degree of accuracy. Adjustments should be made when there is sufficient information to anticipate future changes. If there are revenue projections, remember that unpredictable events can affect revenues.

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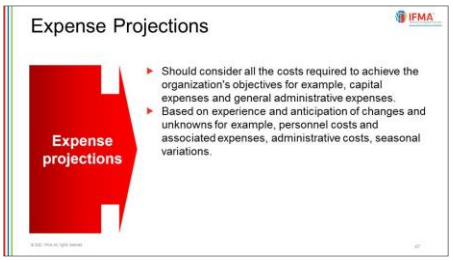
Expense Projections



Expense projections should consider all the costs required to achieve the demand organization's objectives — capital expenses and general administrative expenses.

Experience and historical data can help determine some of the expenses. Upcoming changes and unknowns must then be factored in, such as, but not limited to:

- Increased personnel costs and associated expenses, for example, compensation and benefits, training, additional office space and supplies and any additional supervision.
- Rising administrative costs, for example, increases in rent and insurance premiums.
- Seasonal variations, for example, temporary increases or decreases in labor requirements, periodic maintenance, utility costs and snow removal among others.

Ultimately, revenue and expense projections must be compared, even though there is no rule that says they must always balance. Deficits and surpluses or break-evens may occur. Certainly, large deficits are undesirable. Typically, when revenues and expenses are not at desired levels, FM activities are re-evaluated and, in some situations, readjusted.

Fixed/Variable Budget

Fixed/variable budgeting separates costs according to how they relate to other areas of an organization's business.

Fixed Costs

Fixed costs are costs that remain unchanged in total for a given time period, despite wide changes in the related level of total activity, for example, rent and equipment leases which don't vary during the term of the agreement and are charged on a regular basis. Despite wide changes in the related level of total activity these costs remain constant.

The demand organization is committed to fixed costs for the whole of the accounting period and in general, such costs cannot be reduced or deferred without incurring some significant additional risk, business impact or cost of change.

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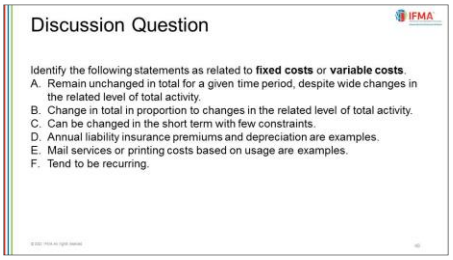
In addition to remaining stable, fixed costs tend to be recurring. Examples are rent held constant by a lease, annual liability insurance premiums and depreciation. Without a major change, such as the renegotiation of a lease, an organization's actual and budgeted fixed costs should be identical month after month.

Although fixed costs remain stable and do not change up or down for the time period, they can and often do change between budget cycles. Taxes, for example, can go up or down but are not activity-driven.

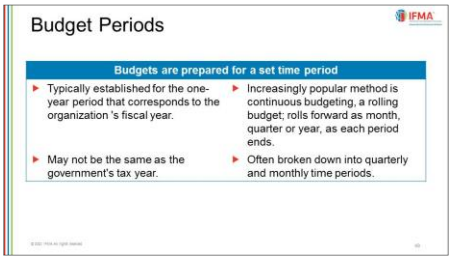
Variable Costs

Variable costs change in total in proportion to changes in the related level of total activity. For example, fuel costs depend on mileage driven.

Variable costs vary directly with changes to activity in a budget, such as assets and expenses. If a budget activity increases, so will variable costs and vice versa. Other examples of variable costs are the costs of mail services or printing — expenses that vary based on usage.



Budget Periods



FM organizations must prepare budgets for a set time period. A budget is typically established for the one-year period that corresponds to the fiscal year of the demand organization, although the demand organization's fiscal year may not be the same as the government's tax year.

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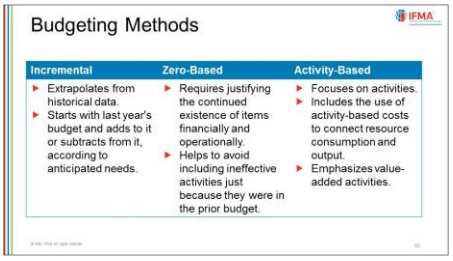
Annual budgets are often broken down into quarterly and monthly time periods, allowing managers regular opportunities to compare actual data with budgeted data. This process can highlight any problems and allows managers to remedy the problems quickly.

An increasingly popular budgeting method is continuous budgeting, also called a rolling budget, which is a 12-month budget system that rolls forward one month or quarter, as the current month or quarter, is completed. A continuous budget has a month, quarter or year basis. As each period ends, the upcoming period's budget is revised, and another period is added to the end of the budget.

Supporters of continuous budgeting maintain that this type of budget will be more relevant than a budget prepared once a year. The continuous budget can reflect current events and necessities in its estimates. Continuous budgets have the advantage of breaking down a large process into manageable steps. It is thought that, because managers always have a full period of budgeted data, they tend to view decisions in a longer-term perspective than with a one-year budget, which will cover a shorter and shorter time period as the year progresses. Potential disadvantages of continuous budgets include the need to have managers use part of each month working on the next month's budget.

Budget Methods



There are several different budgeting methods an organization can use; some methods a facility manager may encounter could include any one of the following.

Incremental Budgeting

Incremental budgeting is a budget method that extrapolates from historical data. Next year's budget is constructed by starting with the current year's budget as a baseline and then adjusting each line item for expected changes.

In incremental budgeting, a manager starts with last year's budget and adds to or subtracts from it, according to anticipated needs. Of the various budgeting methods, incremental budgets generally are easier to complete and involve less work. An advantage of the method is that history, experience and future expectations are used to develop the budget. The main drawback to incremental budgeting is that such budgets tend to only increase in

size over the years. Managers may simply use the figures from the past budget period and increase them by a set percentage rather than devoting appropriate time to research the realities of the current and future environment. A sense of entitlement may also arise with the use of an incremental budget.

Zero-Based Budgeting

Zero-based budgeting is a budget method in which the continued existence of items must be justified both financially and operationally before they are included in the new budget.

Most budgeting methods incorporate some review of historical data. Zero-based budgeting incorporates a unique perspective regarding historical records. Zero-based budgets help to avoid situations in which ineffective activities continue to exist simply because they were in the prior budget. While the traditional incremental budget focuses on changes to the past budget, the zero-based budget focuses on a critical review of every assumption and cost justification for all proposed expenditures.

If an organization uses zero-based budgeting, facility management and other departments, would be required to rank all its activities from most to least important and project costs for each activity. For example, statutory compliance with standards for accessible design that apply to new construction and alterations might be highly ranked as essential for business to continue, a necessity for business growth and an important organizational commitment to improve services.

Senior management reviews these lists and cuts items that lack justification or are less critical. In the process, questions are asked, such as, "should the activity be performed and if it isn't, what will happen?" or "are there substitute methods of providing this function, such as outsourcing?" Senior managers may also use benchmark figures and cost-benefit analysis to help decide what to cut. Only those items approved appear on the budget. Once the justification is made, the budget must be based on the most accurate information available.

The primary strength of the zero-based budget is that it forces review of all elements of a business. A facility manager would have to perform an in-depth analysis of each line item — considering objectives, exploring alternatives and justifying requests.

Zero-based budgeting is more analytic than incremental budgeting and can improve budgeting accuracy. It presents some distinct challenges, such as:

- A significant amount of budget preparation time
- Added paperwork
- The potential for unwanted competition for resources and morale problems, as senior management eliminates programs

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- Potential for inaccurate estimates, if prior budgets are not considered and past expenses and lessons learned from prior years are ignored

Activity-Based Budgeting

Activity-based budgeting (ABB) is a system that records, researches and analyzes activities that lead to costs for a company. Activities are any activity engaged in the primary purpose of making a profit. This general term encompasses all the economic activities carried out by a company during the course of business, including operating, investing and financing activities which are ongoing and focused on creating value for the shareholders. Every activity in a demand organization that incurs a cost is scrutinized for potential ways to create efficiencies. Efficiency signifies a level of performance that describes using the least amount of input to achieve the highest amount of output. It requires reducing the number of unnecessary resources to produce a given output, including personal time and energy. It is a measurable concept that can be determined using the ratio of useful output to total input. It minimizes the waste of resources, such as physical materials, energy and time while accomplishing the desired output.

ABB includes the use of activity-based costs to make a clear connection between resource consumption and output. This allows managers to better understand how resource demands are affected by changes in activity.

Implementing ABB in developing an FM operating budget would require three basic steps:

1. Identifying activities for the department
2. Estimating the demand for each activity's output
3. Assessing the cost of resources required to deliver the activity output

Assuming that two or more activities share spaces or buildings, ABB must naturally be balanced by some type of chargeback system to the activity. This means that each relevant activity will be charged the costs of building/floor usage.

Chargebacks are discussed in Chapter 3.

The ABB approach emphasizes value-added activities and expresses budgeting units in terms of activity costs. By identifying value-added versus non-value-added activities, ABB provides opportunities for cost reduction and elimination of wasteful activities.

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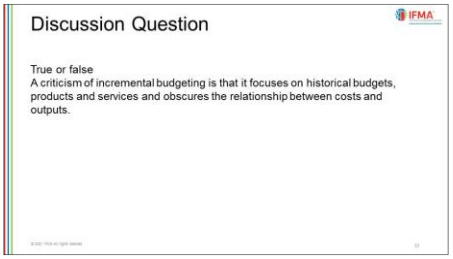
ABB proponents maintain that traditional incremental budgeting focuses on departments or products and services and obscures the relationship between costs and outputs by oversimplifying the measurements and grouping them into broad categories. Traditional budgets rely on past/historical budgets; there is more potential to continue funding items that would be cut if their cost-effectiveness or lack thereof were better known. ABB supporters believe that an activity-based budgeting approach coordinates and synchronizes activities of the demand organization to better serve customers.

Determining Appropriate Budget Method

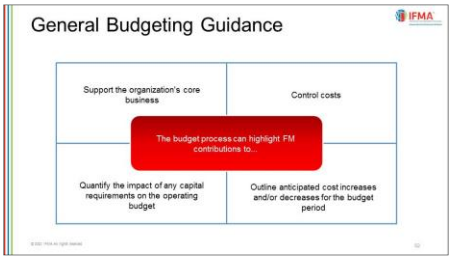
The facility manager needs to see the historical financial cost center and information for the facility department; this will provide the financial model and required format for budget preparation. Although there are various budgeting methods available, the demand organization will determine the appropriate method to be used.

Using the Appropriate Financial Model to Develop a Budget

Financial modeling is the task of building an abstract representation of a real-world financial situation. This type of model represents a simplified representation of the performance of a department and indicates the funding, the anticipated Return on Investment (ROI) and the present and future value for the department. This information is typically prepared by financial services and not the facility manager, however, the facility manager should be aware of where this information resides, how to obtain it and understand of what it entails.



General Budgeting Guidance



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Many factors characterize an FM budget. No single factor can lead to an effective operating or capital budget. FM is a major consumer of organizational resources and FM budgets are subject to closer scrutiny than those of other departments. Facility managers do not need to be budget experts, but the high-level visibility of the budget necessitates comprehension to contribute to the budgeting process. The facility manager should be able to answer resource questions using both FM and business knowledge, use the financial language that management understands, and demonstrate the department's efficient and effective use of resources.

Finance and business personnel who review and approve FM budgets are often unfamiliar with department practices and principles. The budget process provides a facility manager with the opportunity to educate those individuals about what FM does to accomplish the following:

- **Support the organization's core business** — when presenting the current budget, a facility manager can discuss how it supports business and operational objectives by showing, where possible, how FM costs are determined in response to organizational requirements.
- **Control costs** — budget discussions with finance and business personnel provide the chance to review FM cost savings, control and avoidance strategies and accomplishments.
- **Outline anticipated cost increases and/or decreases for the budget period** — a facility manager should identify the cause for the changes and the strategies the FM department is employing to counteract any negative effects. Any requests for funds should be in sync with objectives set by senior management.
- **Quantify the impact of any capital requirements on the operating budget** — a facility manager can demonstrate how capital project requirements influence the operating budget line items for increased or decreased space, increased expenses and depreciation.

The overall goal of the budget process is to produce accurate and detailed financial projections and provide for fiscal accountability. Throughout the budgeting content presented here, organizations will vary in how they gather information and implement, monitor and adjust activities. A proactive FM budget process facilitates the preparation of both operating and capital budgets. *Exhibit 2-7* offers some general guidelines appropriate for facility management across all types of organizations.

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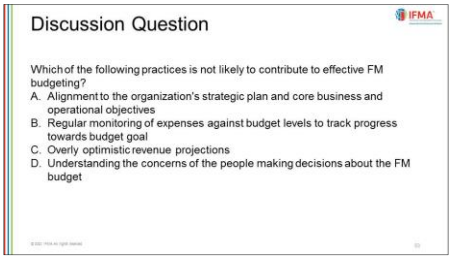
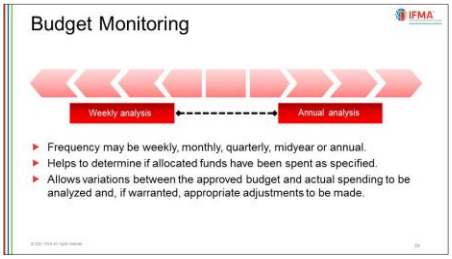
Exhibit 2-7: Guidelines for Effective Facility Management Budgeting

Guidelines for Effective Facility Management Budgeting

- Know the demand organization's strategic plan, core business and operational objectives. Make budget decisions that align FM to these. Demonstrate that alignment to external reviewers and stakeholders.
- Obtain knowledge of the demand organization's budgeting process — the guidelines to follow, the timing of the process and how the demand organization will use the budgets.
- Be able to identify all line items in the budgets that FM contributes to. Ask questions to find out if there is uncertainty about the meaning of items or of how a number is derived.
- Foster buy-in from decision makers. Understand the concerns of the people making decisions about the FM budget. Be sure to address those concerns in the department budgets.
- Establish rapport with finance staff involved in the budgeting process. Regularly communicate and coordinate FM requirements. Ask questions about points that are unclear or not understood. As appropriate, seek advice about the assumptions being made of the FM budget process.
- If other FM personnel are to participate in the budget process, make sure that everyone involved understands elementary accounting principles.
- Design the FM budget process to be consistent and easy to understand. Clarify everyone's role in the budget process.
- If time permits, draft a preliminary budget that estimates revenues and expenses. If they are not within senior management parameters, look for ways to make adjustments.
- Once a budget is implemented, regularly monitor expenses against budget levels to track progress toward budget goals.
- If budget problems arise, be prepared to correct them through formal plans of action and to offset negative budget variances.
- Have ongoing discussions with those involved in FM budgeting. Better communication and planning increases the chance of handling and responding to unplanned contingencies.
- Have several contingency projects and activities identified should spending levels be lower than anticipated.



Budget Monitoring



Monitoring expenses against budget levels is a core management activity for a facility manager.

The frequency, be it weekly, monthly, quarterly, midyear or annual, is determined by the detail required, organizational practices and personal preference. Regardless of timing, each review provides a facility manager with important data. Periodically monitoring the budget by reviewing reports and accounting records helps to determine if allocated funds have been spent as specified. If deviations appear between the approved budget and actual spending, variations can be analyzed and appropriate adjustments made.

Weekly Analysis

Weekly analysis facilitates tracking of large or seasonal expenditures on a timely basis. Most accounting systems routinely update financial information on a monthly basis. There may be an additional reporting lag before the information is available for a facility manager's review. Weekly checks help ensure that there are no surprises when monthly budget reports become available.

Monthly Analysis

Monthly analysis provides expenditures for that month and assesses short-term spending patterns, timing of billing and payments and similar activities.

Monthly Combined with Year-over-Year and Year-to-Date Analysis

This combination facilitates comparisons of current monthly and year-to-date expenses with both the authorized budget and previous spending. The combination helps to identify trends and variances.

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Monthly comparisons of actual expenditures may be made with budgeted expenditures for that month. Variances between actual and anticipated expenditures can be noted. Actual monthly expenditures can be compared to the same month last year and budgeted amounts at year-end can be compared. Lease costs at the end of a fiscal year, for example, could be compared to budget or lease costs could be compared from month to month or the previous year.

Quarterly Analysis

Quarterly analysis coincides with the demand organization's fiscal calendar. Organizations monitor their targets on a quarterly basis and report to the stock market and/or shareholders on that performance, so it is key from a "whole organization" perspective and from a target/results basis.

- Variances identified by quarterly cost reviews can be used to fine-tune budgets and reallocate funds as necessary.
- As quarterly analysis at the end of the second or third quarter is usually tied to organizational profit and loss statements, a facility manager can use the analysis results to ensure that the department's budgeting and spending approach is consistent with the demand organization as a whole. Profit and loss statements are discussed in subsequent content on Financial Statements.

Midyear Analysis

Actual expenditures for the first six months can be compared with budget and projections for the second six months. This is also the point at which some organizations start to plan budgets for the next fiscal year.

Annual Analysis

Year-end budget reports can provide further insights about how efficient the department is and where improvements may be needed. Valuable comparisons can be made, such as:

- Percentage of maintenance and repair versus new work
- Trends in maintenance and repair versus new work
- Unit costs compared to benchmarks, such as the IFMA benchmarks for facility costs

Data analysis and statistical analysis software has greatly increased the amount of data and information that budget analysis can compile. Spreadsheets, databases and financial analysis software can produce accurate, up-to-date information for review. In addition, many organizations incorporate enterprise resource planning (ERP) programs into their budgeting process. ERP programs have the ability to consolidate all of an organization's

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operating information into a single computer system. For example, a facility manager and finance personnel, could use ERP data to estimate and then track the effects that an FM budget alteration has on other parts of an organization.

The accounting systems that organizations and FM use to monitor budgets may vary. Regardless of how it is done, there is a clear message for a facility manager:

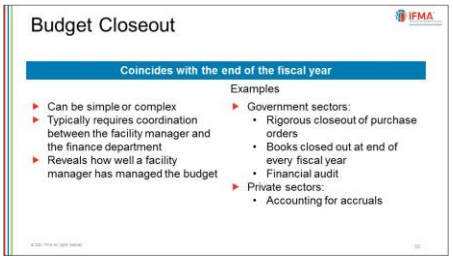
If expenses against budget levels is not regularly monitored, it is highly probable that the budget status will not be properly understood by FM. There is an increased likelihood that wrong decisions will be made based on misunderstanding.

Remember, that for some organizations, expenditures can be a direct cost to a business unit and a wrong decision can result in a direct loss to that business unit versus profit for the year or longer.

Unexpected Budget Impacts

The relationship between budget reductions and down-time increases will have an impact on business units. This could result in having to lay people off or discontinuing certain services on offer. Variances and cost changes need to be tracked throughout the year. Actuals and budget numbers need to be compared. This can result in re-forecasting a project for future quarters. Unexpected growth or a cost reduction are some factors that can affect variances and cost changes. Either of these impacts will be related to the various departments and will affect staffing, contracting and investing.

Budget Closeout



Budget closeout coincides with the end of the fiscal year. As with many aspects of budgeting, budget closeout can be simple or complex. Some organizations may have

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formal authorization requests to close; others may have a more informal closeout process, signaled when all administrative actions have been completed and expenses have been posted to accounts. Simple or complex, the process typically requires coordination between the facility manager and the finance department.

Legal and financial requirements and even simple tasks may differ across organizations. For example, in most government sectors, there is a rigorous closeout of purchase orders. With few exceptions, the government closes out its books at the end of every fiscal year since the authority to obligate those funds normally expires at the end of that year. Expenses are simply accounted for based on the obligation incurred during the fiscal year in which the funds were appropriated. Customarily, this is followed by a financial audit.

In the private sector, accruals are a part of the year-end closeout process. An accrual refers to either accrued revenues, which are earned revenues yet to be received as cash or recorded or accrued expenses, which are incurred but unpaid expenses yet to be recorded.

FM must follow the rules prescribed by the demand organization and its environment.

There are two ways to account for receiving cash or paying expenses:

- **Cash basis** — or cash basis accounting, accounts for cash when it is received or spent. Items promised to be paid or received, such as accounts payable and receivable, are ignored.

  Cash basis accounting is not allowed under IFRS or GAAP.

- **Accrual basis** — revenues are recorded when earned and expenses recorded when incurred.

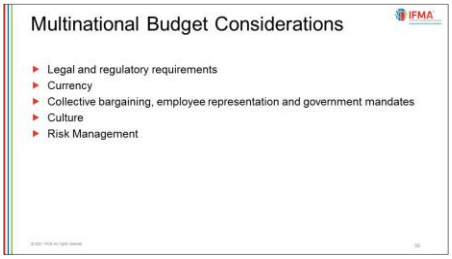
  For example, utilities accruals may be based on meter readings and self-calculation of the sum due, as utility invoices are often issued too late by the provider for year-end purposes.

  Accrual basis accounting is the accepted norm for most organizations.

In FM, an accrual is an expense accounted for at the time the goods or services are received. At fiscal year-end, a facility manager identifies the value of the goods or services received to-date but not yet invoiced and/or paid for.

In *The Facility Manager's Guide to Finance and Budgeting*, authors David Cotts and Edmond P. Rondeau describe good budget management as a learned skill and they use the analogy of the budget as a map. Good budgets are like maps; they allow a facility manager to know at all times where he or she is in order to reach a destination.

Multinational Budgeting Considerations



Multinational organizations have additional considerations in budgeting. Operating and capital budgeting theory does not change, but the process is more complicated. Furthermore, there are many additional complexities in global investment analysis. Even though a facility manager cannot directly influence global budgeting practices, it is wise to have a general awareness of the major issues and challenges such as, but not limited to, those listed in *Exhibit 2-8*. These same issues and challenges prevail when evaluating global investments.

Exhibit 2-8: Impact of Select Global Factors on Budgeting

Global Factor	Potential Budget Implications
Legal and regulatory requirements	Country-specific factors must be carefully researched, documented and understood. Government policies and regulations can affect acquisitions and purchases, taxation and other budget items.
Currency	Unpredictable events can sometimes result in rapid changes in rates of inflation and monetary exchange rates.
Collective bargaining, employee representation and government mandates	Employees in most parts of the world are protected from actions that impact their wages and employment conditions. The implications for minimum wages, severance packages and pensions must be understood.
Culture	Cultural differences necessitate involving local contacts to understand usual and customary practices.

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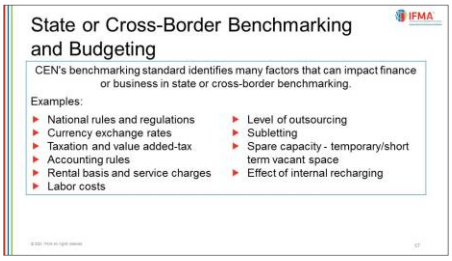
Global Factor	Potential Budget Implications
Risk management	There are many potential issues that can pose high levels of risk to the safety and well-being of employees and other organizational assets.

State or Cross-Border Benchmarking and Budgeting



Business standards help facilitate business decisions, increase consumer confidence, lower costs, and support the growth of economies.

The European Committee for Standardization (CEN) is such a business facilitator in Europe. Through its services, CEN provides a platform for the development of European standards and other technical specifications that become the national standards in each of its member countries. CEN along with its American counterpart, the American National Standards Institute (ANSI), are both member organizations of the International Organization for Standardization (ISO).

CEN has developed several European standards for real estate and facility management. These standards are of key importance to many of the European Union member countries who have traditionally worked to their own standards. In a globalized world, CEN standards strive to promote conformity, provide a transparent basis for management and support the communication of information. All of these outcomes have the potential to reduce the challenges of real estate and facility management across states and borders and help organizations make better decisions.

Specific to measuring, analyzing and comparing performance data important to real estate and facility managers, objective and consistent benchmarking across borders poses challenges. CEN's benchmarking standard attempts to facilitate meaningful comparison

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between services in different geographical locations, especially in different jurisdictions or countries.

CEN's benchmarking standard identifies many factors that can impact finance or business in state or cross-border benchmarking, such as, but not limited to:

- National rules and regulations
- Currency exchange rates
- Taxation and value-added tax
- Accounting rules
- Rental basis and service charges
- Labor costs
- Level of outsourcing
- Subletting
- Spare capacity, temporary/short-term vacant space
- Effect of internal recharging

The impact of these factors, among others, cannot be ignored but must be understood when deciding whether to use benchmarking or which factors to benchmark.

In general, cross-border benchmarking should be used with extreme care and should include careful analysis of all relevant factors. It is likely to be a valid exercise when the objective of the benchmarking is to establish at least one of the following comparisons:

- Real operating costs within a demand organization so as to make an informed decision on relocation
- The cost/benefit/risk of potential investment in a new operation in a new territory
- Resource usage or effectiveness within existing operations in two or more different territories to assess best practices within the demand organization
- Resource usage or costs per output unit to assess the impact of best practices on outputs between organizations in the same or similar industry but in different locations

Now that budgets have been reviewed, look at the example in the case study.

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Case Study: The example provided is an example of an FM budget for two years increasing annually.

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
SERVICES					
Building Engineering Services	Provide qualified staffing to perform preventative maintenance/repair on building systems along with maintaining the central plant	$800,000	$780,000	$820,000	$815,000
Janitorial Services	Provide cleaning services to entire building to ensure the building maintains required health requirements along with maintaining an "A" rating	$250,000	$245,000	$256,250	$250,000
Security Services	Provide safety and security for building and occupants	$300,000	$325,000	$330,000	$305,000
Security System Maintenance	Preventative maintenance & repair of computerized security system and wiring	$50,000	$50,000	$52,500	$51,500
Chiller certification & testing	Required by Environmental Protection Agency, chillers not properly	$20,000	$17,500	$22,500	$18,800

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	functioning could cause possible air contamination or a/c shut down. Required by AQMD				
Boiler Certification & testing	Required by City and AQMD if not tested and certified could be shut down	$20,000	$15,000	$22,000	$18,300
Fire Extinguisher Recharging	Required by City Fire Department	$7,000	$5,000	$8,000	$5,500
Regulation 4 testing	Required by City Fire Department	$25,000	$24,000	$26,500	$24,500
Certify/ maintain/ repair building backflow devices	City requirement to be tested on a yearly basis	$10,000	$75,000	$15,000	$12,500
Maintain/repair/clean cafeteria exhaust fans	Required by health department to prevent clogging and fire	$16,000	$16,000	$18,000	$17,000
Grease Interceptor cleaning	Required by City to remove grease prior to entering waste stream	$50,000	$50,000	$55,000	$55,000
Maintain/ repair trash compactor	To ensure compactor working at all times otherwise trash picked up daily and trash hauling cost will rise more than 100%	$5,000	$25,000	$6,500	$5,450
Water mitigation	Service to mitigate water intrusion to prevent oil, mildew	$10,000	$15,000	$15,000	$15,000

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	and disease				
Pest control services	Ensure building is free of pests and rodents	$30,000	$20,000	$25,000	$21,000
Thermal scanning of building electrical	Annual services to detect possible electrical problems prior to having a major electrical fire	$6,000	$6,000	$6,000	$6,000
Water treatment testing and analysis	Quarterly consulting service required to test water system and ensure building system including cooling towers and chillers are fee of contamination.	$10,000	$5,000	$5,500	$5,500
TOTAL SERVICES		**$1,589,000**	**$1,673,500**	**$1,683,750**	**$1,626,050**
COMPUTER SERVICES					
CAFM system upgrades/ repairs	Provide software upgrades and expansion	$20,000		$20,000	$15,000
CAFM System yearly license fees	Annual licensing fees to software producer	$25,000	$25,000	$25,000	$25,000
Tools & equipment					
TOTAL COMPUTER		**$45,000**	**$25,000**	**$45,000**	**$40,000**
SUPPLIES					
Office Supplies	Supplies necessary to maintain normal business	$25,000	$20,000	$25,000	$22,500

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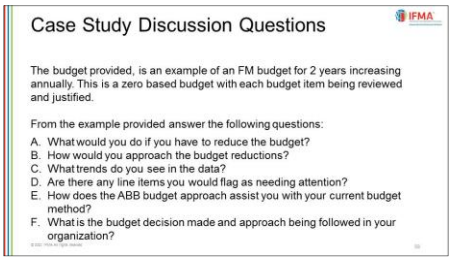
Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	operations for Facilities				
Computer Supplies	Printer cartridges, storage disks, anything needed to maintain daily operations functioning smoothly	$5,000	$4,000	$5,000	$5,000
Tools & equipment		**$30,000**	**$24,000**	**$30,000**	**$27,500**
TOTAL SUPPLIES					
MEMBERSHIPS, TRAVEL & CONFERENCES					
Membership in IFMA for 3 staff	Provide up to date information and assistance for facilities staff	$2,000	$700	$700	$700
Seminar/ conference fees	Registration for facilities conferences	$5,000		$5,000	$3,000
Travel	Transportation and lodging for attending facilities conferences	$5,000		$5,000	$5,000
TOTAL MEMBERSHIP, TRAVEL & CONFERENCES		**$12,000**	**$700**	**$10,700**	**$8,700**
TOTAL BUDGET		**$1,676,000**	**$1,723,200**	**$1,769,450**	**$1,702,250**



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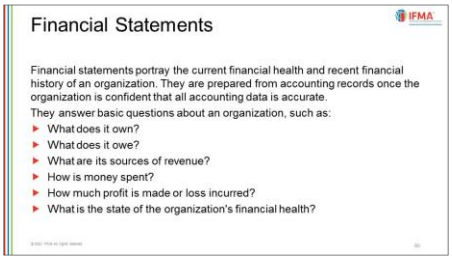
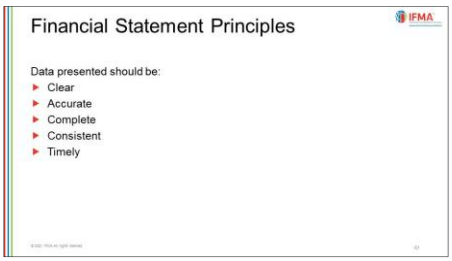
Financial Statements

Lesson Introduction

On completion of this lesson, you will be able to:

- Identify the basic financial statements an organization prepares and describe the elements impacted by FM operations.





This lesson contains the following topics:

- Financial Statement Categories
- Types of Financial Statements
- Depreciation
- Capitalization Versus Expense
- Lease or Purchase Considerations for Capital Assets
- Proforma Statements
- Summary Guidelines for Effective and Efficient Financial Operations

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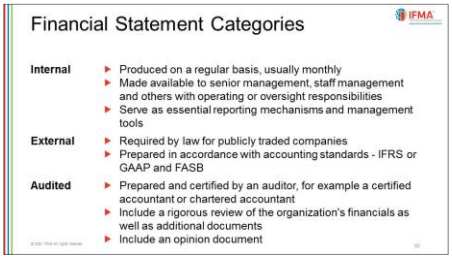
- Analyzing and Interpreting Financial Documents

Financial Statement Categories



Financial statements portray the current financial health and recent financial history of an organization. They answer basic questions about the demand organization, such as, but not limited to:

- What is owned?
- What is owed?
- What are the sources of revenue?
- How is money spent?
- How much profit is made or how much loss is incurred?
- What is the state of the demand organization's financial health?

An organization prepares its financial statements in accordance with the GAAP and/or IFRS which indicates that all data must be:

- **Clear** — appropriate for the intended audience
- **Accurate** — free of errors
- **Complete** — including any additional information the intended audience might need to understand the statement. For example, reporting variance against the actual budget and comparative data from the previous year or including text-based notes
- **Consistent** — fulfilling any applicable accounting standards or requirements
- **Timely** — prepared and distributed so well-thought-out action can correct any problems

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Provisions of the Sarbanes-Oxley Act of 2002 (SOX) have important implications for FM. This legislation was enacted in the United States in response to high-profile corporate financial scandals. The intent of SOX is to protect shareholders and the general public from accounting errors and fraudulent practices in the enterprise. Key provisions of SOX:

- Define the responsibility of boards and senior management to provide accurate and complete financial reports and address conflicts of interest by auditors and stock analysts.
- Extend whistleblower protection — legal protection for employees reporting fraudulent practices, including U.S. workers overseas.
- Apply to all companies listed in the United States and their auditors, both foreign and domestic.

Since SOX applies to organizations trading in or with the United States, no matter where they are based, it is also applicable to facility managers globally. Any significant changes from FM capital or expense projections must be brought to the attention of finance to ensure that the organizational financial statements accurately reflect operations.

Organizations may prepare two sets of financial statements — one for internal purposes — known as management accounting. A second set for external disclosure — financial accounting. Publicly traded companies have an additional requirement for their external financial statements — they are required to produce external audited financial statements.

Internal Financial Statements

Internal financial statements are produced on a regular basis and made available to senior management, staff management and others with operating or oversight responsibilities. Internal statements serve as essential reporting mechanisms and management tools. They may present information about the demand organization as a whole or they may report on data for each department or units within departments.

Periodic review of this type of data provides a management control mechanism and alerts an organization to any necessary remedial actions. The method of disclosing information in internal statements and the degree of detail provided is often adapted for the audience's requirements and level of financial knowledge.

Many organizations internally audit their financials. Through a systematic methodology, statements and supporting documentation are reviewed and analyzed. The specific scope of internal audits varies, but they customarily consider items such as compliance with the demand organization's policies and procedures, the efficacy of operations, the reliability of financial reporting, potential fraud, safeguarding assets and compliance with laws and

regulations. Such internal organizational audits are different from financial statement audits required for compliance with accounting standards.

External Financial Statements

Most companies, including the public sector, prepare their financial statements per the GAAP/IFRS or country specific standards such as IAS (India Accounting Standard). The terminology in external financial statements is precisely defined by the applicable accounting standards. Full disclosure, mandated by regulatory bodies, such as the Securities and Exchange Commission in the United States and Canada, requires that external financial statements be made available to regulatory bodies, banks, lending institutions, the public and other interested parties. Companies that are not publicly traded do not have a similar mandatory requirement, they still typically produce external financial statements for their private owners, banks and lenders.

Audited Financial Statements

Audited financial statements are prepared and certified by an auditor. The credentials of the auditor may vary. In the United States, an independent certified public accountant (CPA) is the auditor; in the United Kingdom, a Chartered Accountant serves as the auditor.

During the audit process, the demand organization is responsible for providing source documents for its financial statements to the auditor. Source documentation includes a wide range of financial documents, such as accounts payable and accounts receivable information, expense reports and budgets. The audit includes a rigorous review of the organization's financials as well as the additional documents. The auditor examines, evaluates and cross-references them. The outcome is a professionally prepared set of audited financial statements that the demand organization can then present to interested parties. In the United States, for example, the auditor certifies that the financial statements meet the requirements of the GAAP.

Audited financial statements include a document that is referred to as an opinion. It is the responsibility of the auditor to provide either an unqualified opinion or a qualified opinion.

Unqualified Opinion:

- States that the financial statements are presented fairly
- Provides the highest level of assurance an auditor can supply regarding the accuracy of the financial statements
- Indicates that the auditor is satisfied with the financial statements as a whole

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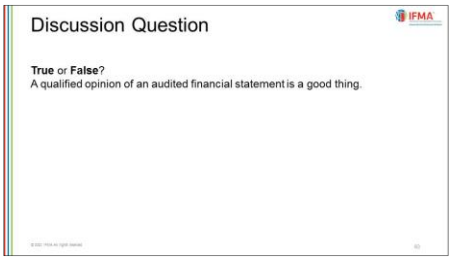
Qualified Opinion:

- Suggests that there is a material problem with one or more aspects of the financial statements
- Flags an issue that the auditor has reservations about, such as a minor departure from IFRS, GAAP or the Sarbanes-Oxley Act

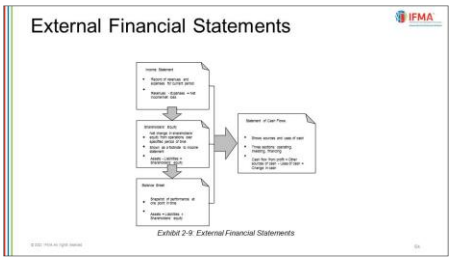
In extreme cases, the auditor may express no opinion on financial statements. Such a disclaimer of opinion results from incomplete records, unauditable records, litigation, lack of auditor independence and so forth. When an auditor declines to issue an opinion, it is an indication that the financial statements are unreliable and unpredictable. This indicates that the demand organization needs to examine and retool its internal accounting procedures so it can operate according to customary and proper accounting standards.

Increasingly, not-for-profit organizations undergo similar independent financial statement audits, examining the accuracy and completeness of information presented in their financial statements. These audits may be voluntary or legally required, such as a result of tax exemption regulations, terms of the demand organization's bylaws or funding requirements.

When reviewing financial information, keep in mind that, a single underline designates a subtotal, a double underline indicates a grand total and numbers enclosed in parentheses indicate negative values or losses. The currency shown in the financial statement examples that follow are in U.S. dollars (USD).



Types of Financial Statements



In accounting, the core set of financial statements includes the:

- Income statement
- Statement of shareholders' equity
- Balance sheet
- Statement of cash flows

Collectively, these four external financial statements capture transactions that reflect the operations and activities of an entity. All transactions are supported by appropriate source documents.

Exhibit 2-9 provides the general order and process used to generate the statements and includes brief notes about each one. First, net income is determined, including shareholders' equity (on the income statement and the statement of shareholders' equity), then assets and liabilities are determined and presented on the balance sheet. The statement of cash flows is used to reconcile the other statements.

Of the four financial statements, facility managers should have a fundamental awareness of the income statement, the balance sheet and the statement of cash flows. Shareholders' equity is a financial statement that starts with the balances from the end of the prior period and shows changes due to net income or loss and dividends for the period or any new issuances or repurchases of stock. Since this is not a statement that directly impacts FM, we will focus our attention on the remaining three statements.

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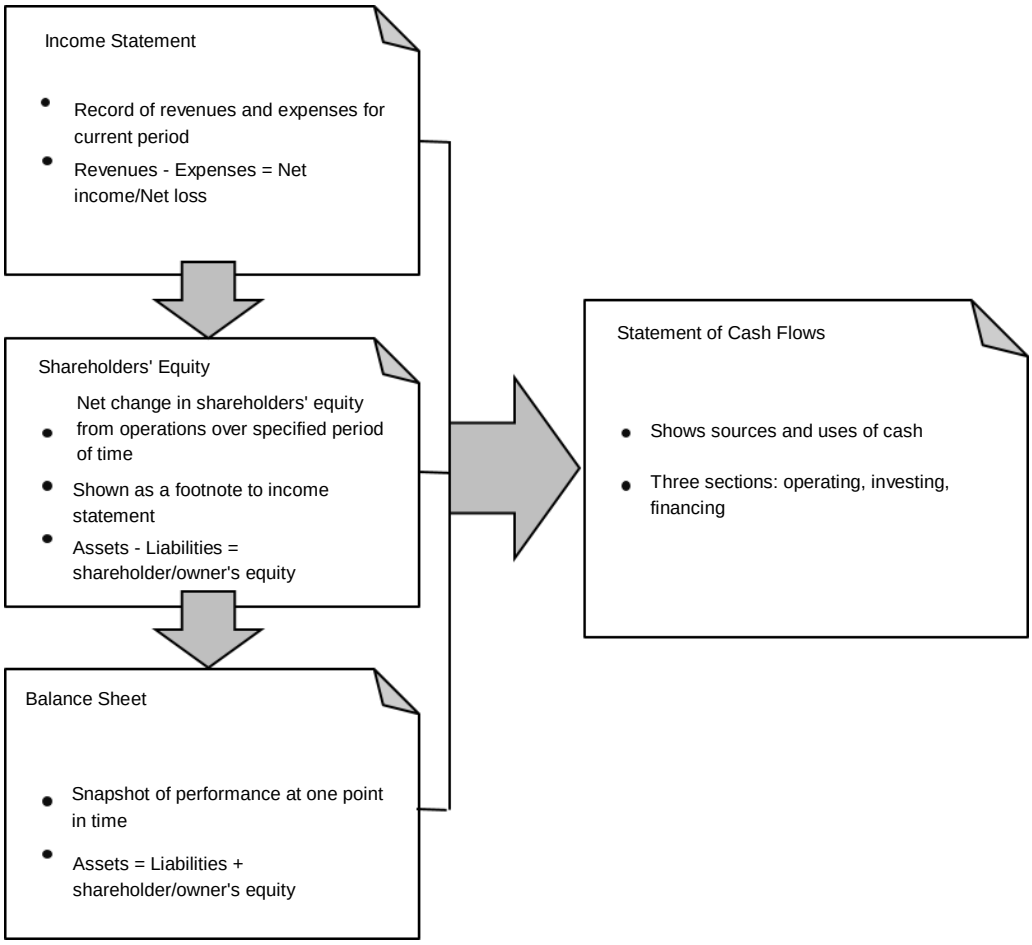


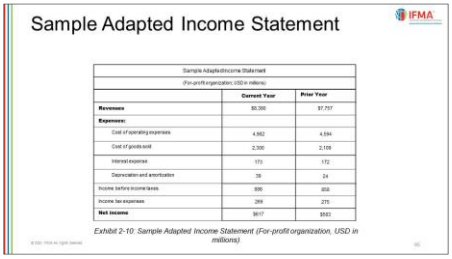
Exhibit 2-9: External Financial Statements

Review the sample financial statements, keep in mind two points:

- In most organizations, financial statements are prepared by a stand-alone financial accounting division or department.
- Much of the content of financial statements comes from departments or divisions outside the FM arena.

It is important that a facility manager have a working knowledge of organizational financial statements. A facility manager must be able to track and report supporting information that financial managers need to prepare the statements.

Income Statements



The income statement is an accounting document that represents the company's revenue and expense transactions for the reporting period. Also called the profit and loss (P&L) statement or the earnings statement, it shows the profitability of an organization for a specific period. In other words, the income statement indicates cumulative business results within a defined time frame. It does not reflect the demand organization's financial solvency. An income statement is comparable to the statement of activity (SOA) prepared by not-for-profit businesses.

Exhibit 2-10 shows a simple version of an income statement (an adapted excerpt) reporting revenues and expenses and the results of operations. A total is compiled for each category and the difference between the two totals is then reported as the change in net income. Often referred to as the bottom line, the difference between revenues and expenses, including taxes, indicates net profits or net losses for the period. In not-for-profit organizations, the change in net income is referred to as the demand organization's change in unrestricted assets. Unlike the adapted excerpt shown here, in a complete organizational income statement, the categories of revenues and expenses reported would be more extensive and would vary depending on the demand organization.

Exhibit 2-10: Sample Adapted Income Statement

Sample Adapted Income Statement		
(For-profit organization; USD in millions)		
	Current Year	**Prior Year**
Revenues	$8,380	$7,757
Expenses:		
Cost of operating expenses	4,982	4,594
Cost of goods sold	2,300	2,109
Interest expense	173	172

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Net Operating Income:	$925	882
Depreciation and amortization	39	24
Income before income taxes	886	858
Income tax expenses	269	275
Net income	$617	$583

Legend for key terms in adapted income statement:

- **Statement date shown** — a specific period of time, in this case, annual figures; at year-end, the result of operations is added to or deducted from net income reported on the balance sheet.
- **Revenues** — also called income; reported as gross not net.
- **Expenses** — all expenditures to produce the fiscal year revenues, that are not capitalized; refers to current period debts.
- **Cost of operating expenses** — administrative costs such as FTE salaries and benefits, rent and other costs not directly related to the cost of delivering a product or service.
- **Cost of goods sold** — actual cost to the organization for items sold.
- **Depreciation and amortization** — counted as an expense on the income statement even though it does not involve out-of-pocket payments.
- **Net income** — indicates profitability of the demand organization for the accounting period. It is also known as the "bottom line" as it appears as the last line on the income statement after all expense, interest, and taxes have been subtracted from revenue.
- **Net operating income** — is a measure of profitability which represents the amount the company has earned from its core operations and is calculated by deducting operating expenses from operating revenue. It excludes non-operating expenses such as loss on sale of a capital asset, interest, tax expenses etc.

The sample income statement excerpt presents collective information, capturing data for different departments, programs and other cost centers on one statement. There may also be separate income statements prepared for FM operations or other departments, programs and cost centers.

In this adapted income statement, FM would principally impact the operating expenses.

In addition to serving as a budgeting tool, the income statement helps management to understand the financial condition of the demand organization. For example, comparing

results from one annual period to a previous year will show what items affect the bottom line.

The next rendition of the adapted income statement, in *Exhibit 2-11*, shows the dollar and percentage changes through a comparative horizontal analysis.

Exhibit 2-11: Sample Adapted Income Statement Comparative Horizontal Analysis

			Increase (Decrease)	
	Current Year	**Prior Year**	**Amount**	**Percentage**
Revenues	$8,380	$7,757	$623	8.0%
Expenses:				
Cost of operating expenses	4,982	4,594	388	8.5
Cost of goods sold	2,300	2,109	191	9.1
Interest expense	173	172	1	0.6
Depreciation and amortization	39	24	15	62.5
Income before income taxes	886	858	28	3.3
Income tax expenses	269	275	(6)	(2.2)
Net income	$617	$583	$34	5.8

A simple horizontal analysis that studies the percentage changes in these comparative statements reveals the following.

The dollar change was $623, computed as follows:

$8,380 - $7,757 = $623

Revenues in the current year increased by 8 percent, computed as follows:

$$Percentage\ \ change\ = \frac{\text{Dollar amount of change}}{\text{Base} - \text{year amount}}$$

$$Percentage\ \ change\ = \frac{\text{US\$623}}{\text{US\$7,757}} = 0.080 = 8\%$$

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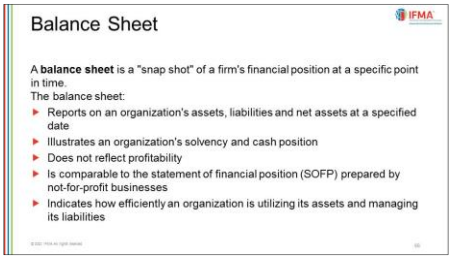
While revenue increased by 8 percent in the current year, the bottom line grew by only 5.8 percent. This may be attributed to the fact that expenses grew faster than revenues. The cost of operating expenses by 8.5 percent and the cost of goods sold by 9.1 percent.

Many decisions in an organization hinge on the trend of revenues, income, expenses and so on. In addition to the simple horizontal analysis shown here, finance will perform a variety of additional trend analyses that are critical in management planning.

Our sample adapted income statement shows comparative figures on the same page, for example, current year to prior year. There are different variations of income statements. For example, a two-column format may be prepared showing current month totals and a second column with year-to-date figures. Income statements may show only a singular period. Generally, analysis is greatly aided in a multi-period format, allowing the reader to spot trends and turnarounds.

Balance Sheet



A balance sheet is a “snapshot” of an organization's financial position at a specific point in time. It reports on an organization’s assets, liabilities and equity at a specified date. The statement illustrates an organization’s solvency and cash position; it does not reflect profitability. The balance sheet is comparable to the statement of financial position (SOFP) prepared by not-for-profit businesses.

A balance sheet is usually divided into two sections, with assets on top and liabilities and owner's/shareholder's equity or net assets listed below.

- **Assets** — are resources obtained, owned or controlled by an organization as a result of past transactions or events that will probably result in future economic benefits to the demand organization. Assets are divided into categories and shown in the order of their liquidity — arranged from most to least liquid. Typical categories include current assets; plant, property and equipment (PPE); long-term assets; and other assets.
- **Liabilities** — are what the organization owes to others. They are listed in order of the time frame in which they are due, usually as current and long-term. Current liabilities or accounts payable, are expected to be settled within the normal operating cycle or one year of the balance sheet date and include the portion of

long-term debt expected to be paid in this period. Long-term liabilities such as mortgages and bonds are any liabilities not qualifying as current and other are those liabilities that are not material individually.

- **Equity** — is the ownership interest in an organization's assets after deducting all of its liabilities or the difference between the assets and the liabilities or net worth. Also referred to as shareholder's equity or net assets. The balance sheet assets must always equal liabilities plus equity. *Exhibit 2-12* indicates that total assets equal total liabilities and shareholders' equity.

The balance sheet also indicates:

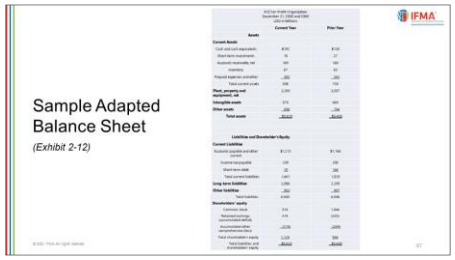
- The amount the demand organization has invested in assets and where the money is invested.
- The amount of the monetary investments in assets that comes from creditors (liabilities) and shareholders (equity).

Analysis of a balance sheet indicates how efficiently an organization is utilizing its assets and managing its liabilities. A balance sheet is prepared by accountants, but it has important implications for managers relative to working capital and financial leverage.

- **Working capital** — is the amount of money tied up in short-term investments. Too little working capital can indicate that the demand organization may be unable to pay bills or take advantage of profitable opportunities; too much working capital reduces profitability because it must be financed in some way, usually through loans.
- **Financial leverage** — is the use of borrowed money in acquiring an asset. A high percentage of balance sheet debt relative to the capital invested by owners indicates that the demand organization is leveraged. Interest paid on loans may be deductible but can be negated if the asset doesn't retain value, for example, drops in value or fails to produce anticipated revenues.

To provide a context for decision making, a current balance sheet should be compared to previous ones. A comparative balance sheet shows a second set of figures for another reporting period. As with other multi-year presentations, a comparative statement allows some interpretation of how the demand organization has changed over time.

A simple version of a balance sheet, an adapted excerpt, is shown in *Exhibit 2-12*. A legend of key terms follows the statement.



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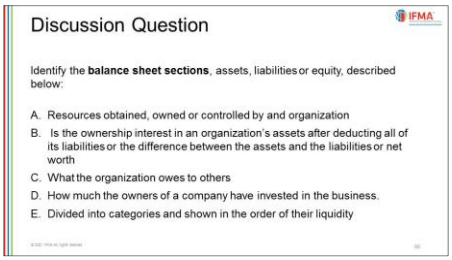

Exhibit 2-12: Sample Adapted Balance Sheet

XYZ For-Profit Organization December 31, 20XX USD in Millions		
	Current Year	**Prior Year**
Assets		
Current Assets		
Cash and cash equivalents	$192	$130
Short-term investments	15	27
Accounts receivable, net	169	168
Inventory	67	63
Prepaid expenses and other	363	342
Total current assets	806	730
Plant, property and equipment, net	3,280	3,037
Intangible assets	878	849
Other assets	656	784
Total assets	$5,620	$5,400
Liabilities and Shareholder's Equity		
Current Liabilities		
Accounts payable and other current	$1,213	$1,166

Income tax payable	238	208
Short-term debt	10	146
Total current liabilities	1,461	1,520
Long-term liabilities	2,056	2,299
Other liabilities	983	987
Total liabilities	4,500	4,806
Shareholders' equity		
Common stock	916	1,046
Retained earnings (accumulated deficit)	414	(203)
Accumulated other comprehensive (loss)	(210)	(249)
Total shareholder's equity	1,120	594
Total liabilities and shareholders' equity	$5,620	$5,400

Legend for key terms in adapted balance sheet:

- **Statement date shown** — the specific date the statement was prepared — the snapshot taken at midnight on December 31, 20XX.
- **Current assets** — cash and cash equivalents and assets held for sale or expected to be realized in the current operating cycle or within one year of the balance sheet date. Some examples include; cash, prepaid items, accounts receivable, certificates of deposit and inventory.
- **Accounts receivable** — monies owed to the demand organization by customers, members and so forth.
- **Inventory** — items owned by the demand organization and held for eventual sale.
- **Prepaid expenses** — expenditures made in a current period that the demand organization will benefit from in a future period.
- **Plant, property and equipment** — includes cost, accumulated depreciation and resulting book value of land, buildings and furniture. All assets are recorded at original cost, regardless of whether they have appreciated or depreciated in value.
- **Other assets** — is a grouping of accounts that a company owns or benefits from. They are referred to as "other" because they are uncommon and cannot be classified in the main asset categories.

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- **Total assets** — the subtotal of all four asset accounts — the aggregate value of all assets held by the demand organization. This total is used in computing financial ratios.
- **Current liabilities** — amounts owed by the demand organization and due within 12 months of the statement date.
- **Accounts payable** — are amounts due to vendors or suppliers for goods or services received by the demand organization that have not yet been paid for.
- **Long-term liabilities** — monies owed by the demand organization not due to be paid in the current year.
- **Other liabilities** — is a general category of debts or obligations that don't fit into the other categories listed.
- **Total liabilities** — the aggregate value of all debts and obligations the demand organization owes to outside parties.
- **Equity** — represents the shareholders' stake in the company, identified on a company's balance sheet. The equity is calculated by subtracting total liabilities from a demand organization's total assets.

In this adapted balance sheet, FM would principally impact the plant, property and equipment asset.

Every accounting transaction affects an organization's balance sheet. In particular, capital projects can have significant implications. What constitutes capital costs are determined by tax law and organizational policy, both of which are complex and can vary widely across nations and organizations.

The next rendition of the adapted balance sheet, in *Exhibit 2-13* on the next page, shows the dollar and percentage changes.

Horizontal analysis reveals:

- Total assets grew by 4.1 percent.
- Total liabilities fell by 6.4 percent.
- Retained earnings turned from a deficit to a positive balance indicating growth of operations in the current year.

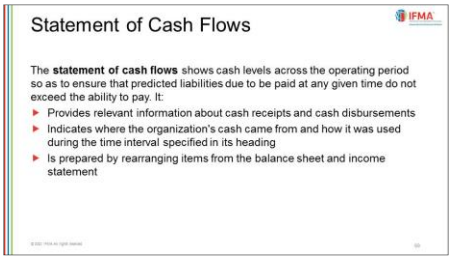
Exhibit 2-13: Sample Adapted Balance Sheet

XYZ For-Profit Organization December 31, 20XX USD in Millions				
	Current Year	**Prior Year**	**Increase**	**(Decrease)**

Assets			Amount	Percentage
Current Assets				
Cash and cash equivalents	$192	$130	$62	47.7%
Short-term investments	15	27	(12)	(44.4)
Accounts receivable, net	169	168	1	0.6
Inventory	67	63	4	6.3
Prepaid expenses and other	363	342	21	6.1
Total current assets	806	730	76	10.4
Plant, property and equipment, net	3,280	3,037	243	8.0
Intangible assets	878	849	29	3.4
Other assets	656	784	(128)	(16.3)
Total assets	$5,620	$5,400	$220	4.1
Liabilities and Shareholder's Equity				
Current Liabilities				
Accounts payable and other current	$1,213	$1,166	$47	4.0%
Income tax payable	238	208	30	14.4
Short-term debt	10	146	(136)	(93.2)
Total current	1,461	1,520	(59)	(3.9)

liabilities				
Long-term liabilities	2,056	2,299	(243)	(10.6)
Other liabilities	983	987	(4)	(0.4)
Total liabilities	4,500	4,806	(306)	(6.4)
Shareholders' equity				
Common stock	916	1,046	(130)	(12.4)
Retained earnings (accumulated deficit)	414	(203)	617	303.9
Accumulated other comprehensive (loss)	(210)	(249)	39	15.7
Total shareholder's equity	1,120	594	526	88.6
Total liabilities and shareholders' equity	$5,620	$5,400	$220	4.1

Statement of Cash Flows



A statement of cash flows is used to show cash levels across the operating period to ensure that predicted liabilities due to be paid at any given time do not exceed the ability to pay. The statement provides relevant information about cash receipts and cash disbursements — where the demand organization's cash came from and how it was used — during the

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time interval specified in its heading. The specific time frame may vary: a quarter, multi-period or multi-year presentation may be prepared.

As we see in the simple cash flow statement in *Exhibit 2-14*, uses of cash are recorded as negative figures and sources of cash are shown as positive figures. A legend of key terms follows the sample.

Note that this sample provides the traditional (financial accounting) view of cash flow — a year-end annual statement — a "snapshot" of the year-end. Nevertheless, a facility manager should be generally aware of the statement and the implications. Later in this chapter, in *Exhibit 2-17*, the FM perspective of cash requirements at each period end over the year is shown.

Exhibit 2-14: Sample Statement of Cash Flows

ABC For-Profit Organization Year End 20XX USD in Millions		
Operating activities		
Net income		$35,000
Adjustments for noncash items		
Depreciation	$14,000	
Net increase in current assets other than cash	(24,000)	
Net increase in current liabilities	8,000	(2,000)
Net cash flow from operating activities		33,000
Investing activities		
Sale of plant, property and equipment	$91,000	

Net cash flow from investing activities		91,000
Financing activities		
Borrowing	$22,000	
Payment of long-term debt	(90,000)	
Purchase of treasury stock	(9,000)	
Payment of dividends to stockholders	(23,000)	
Net cash used for financing activities		(100,000)
Net increase (decrease) in cash		$24,000

Legend for key terms in adapted cash flow statement:

- **Operating activities** — primarily results from day-to-day revenue and expense activities depicted on the income statement; converts the items reported on the income statement from the accrual basis of accounting to cash.
- **Investing activities** — reports the purchase and sale of long-term investments and property, plant and equipment as well as certain transactions involving securities or other non-operating assets.
- **Financing activities** — results from activities involving cash transactions by and for owners; reports on the contribution and redemption of equity capital. For example, the issuance and repurchase of the company's own bonds and stock and the payment of dividends and creditor loan repayments.

Some of the analysis findings from this statement of cash flows reveal:

- Operations provides less cash than net income; this may be harmless, or it may signal difficulty collecting receivables or selling inventory.
- The sale of plant, property and equipment is the major source of cash; due to the amount, it is probably a one-time situation or a sell-off of unproductive assets. Sale of plant assets should not persist, or the demand organization could go out of business.
- There was more payment of long-term debt than new borrowing, a positive indicator.

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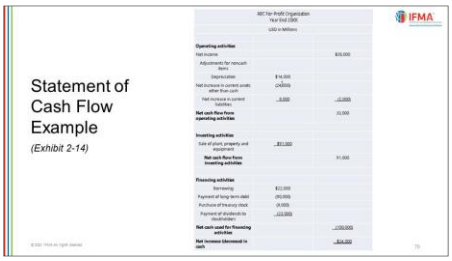
Cash flow statements routinely include a section of supplemental information reporting the exchange of significant items that did not involve cash and the amount of income taxes and interest paid.

Cash flow statements are prepared by rearranging items from the balance sheet and income statement. Much like a bank statement for a checking account, a cash flow statement shows where the demand organization's money went and how much is left for the given period. Further, the statement portrays how an organization is able to turn accounts receivable into cash. It provides a reasonable indication of solvency and the ability to pay bills as they come due.

Statements of cash flow are important in understanding investment and credit decisions. To many investors and creditors, the beginning and ending cash balances on the statement are the primary barometer of an organization's financial well-being.

In large organizations, changes in cash flow do not typically impact day-to-day FM operations. But cash flow projections may be important considerations during the annual budget process. If cash is limited, budget spending should be appropriately conservative. Conversely, good cash levels may present opportunities for new purchases or investments. Cash flow for small organizations typically has great significance both for day-to-day operations and the longer-term outlook.



Notes to Financial Statements

Notes are an important part of financial statements because they help to portray an organization's finances beyond the actual numbers. Notes to financial statements for a publicly traded organization generally start with highlights of significant accounting policies and proceed to describe matters of importance such as, but not limited to:

- Major acquisitions
- Changes in operations
- Pension requirements
- Any pending litigation

- Any special contracts or major agreements

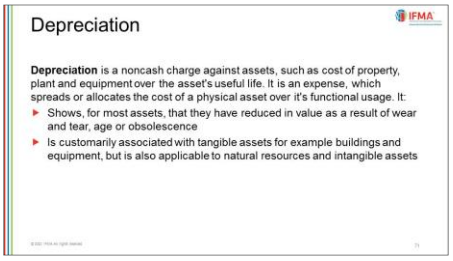
Not-for-profits may have different supplemental notes about contributions receivable, investments, joint fund-raising costs and so forth.

Auditors review notes and footnotes as part of the annual audit process. Other interested parties should also carefully review notes and footnotes for the relevant information they contain.

Accurate assessment of an organization's financial health requires a thorough analysis of all financials plus any supplementary notes. Such analysis is a complex undertaking. Detailed analysis of financial statements is not an expectation for a facility manager. It is prudent for a facility manager to understand some of the managerial issues implicit in the income statement, the balance sheet and the statement of cash flows. Data for standard financial ratios is derived from an organization's financial statements.

Ratios will be discussed in more detail in the next chapter.

Depreciation



Depreciation is a noncash charge against assets, such as cost of property, plant and equipment over the asset's useful life. It is an expense associated with spreading or allocating the cost of a physical asset over its useful life. Depreciation is the only expense where money is not paid out. It reflects the amount of the asset that is used up during that accounting period to provide the associate revenues.

For most assets, depreciation is a way of showing how an asset's value is reduced because of wear and tear, age, or obsolescence. Except for land, most assets lose their value over time, in other words, they depreciate and must be replaced once the end of their useful life is reached. Land rarely declines in value; therefore, land is not depreciated. In the case of

buildings, they may depreciate, or they can appreciate in value. Furniture, fixtures, and equipment are examples of items that depreciate.

To a certain extent, the concept of depreciation may be counterintuitive. For example, a portfolio may include a priceless historical building that was long ago depreciated to zero on the financial books but may still be a very valuable property.

In FM, depreciation is customarily associated with tangible assets such as buildings and equipment. The concept is also applicable to natural resources and intangible assets such as, goodwill, patents and brand standard. When accounting for natural resource assets, the assets are expensed through depletion and depletion expense is the portion of the natural resource's cost that is used up in a particular period. For intangible assets — those with no physical form — cost is most often systematically expensed through amortization.

A facility manager should be aware of the rules of the demand organization and regulatory bodies and ensure that the FM organization adheres to those rules in every way. Land cannot be depreciated. In the United States, depreciation is governed by the IRS, who are very strict on the number of years for depreciation and the method that is used. Buildings can only be depreciated for 37 years. In India, depreciation is administered as per the rule of the Income Tax Department.

In accordance with standard accounting practices, the cost of a fixed asset initially recorded in financials is not just the cost of acquiring the asset. In addition to purchase price, the amount recorded includes all additional expense necessary to get the asset ready for intended use. For example, the figure for a new piece of maintenance equipment should include all additional expenses for delivery and installation. In some countries, costs incurred for employee training would also be included.

The example below shows the depreciable cost for maintenance equipment.

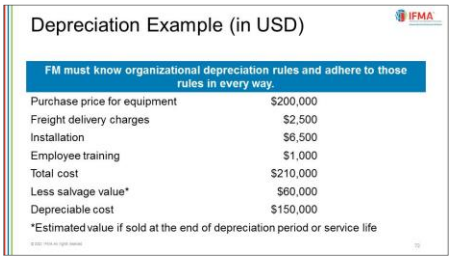


Exhibit 2-15: Depreciable Cost for Maintenance Equipment

Purchase price for equipment	$200,000
Freight delivery charges	$2,000
Installation	$6,500

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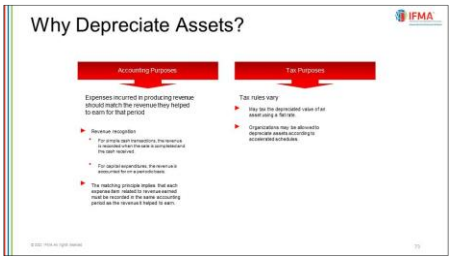
Employee training	$1,500
Total cost	$210,000
Less salvage value	$60,000
Depreciation cost	$150,000

(Example in USD)

Why Depreciate Assets?



Generally speaking, there are two reasons to depreciate an asset — for accounting purposes and for tax purposes.

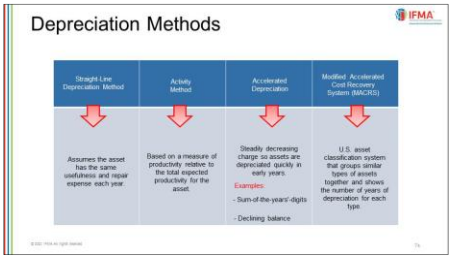
From the accounting perspective, expenses incurred in producing revenue should match the revenue they helped to earn for that period. This embodies the following two accounting principles.

- **Revenue recognition** — according to the revenue recognition principle, revenue should be recognized at the time the transaction is completed, for example, recording revenue in an account when the customer is billed. For simple cash transactions, the revenue is recorded when the sale is completed, and the cash received. However, for capital expenditures, the application of this principle is not always as simple. Consider any large project that takes a number of years to complete. An organization cannot wait until the project is entirely completed before it bills. Instead, it bills periodically — for the amount of work completed — and receives payments as the work progresses. Revenue is taken into the accounts on this periodic basis. Application of the revenue recognition principle helps to ensure that revenue is taken into the accounts properly and the earnings statements of the demand organization are accurate.
- **Matching** — an extension of revenue recognition, the matching principle states that each expense item related to revenue earned must be recorded in the same accounting period as the revenue it helped to earn. If this is not done, the financial statements will not measure the results of operations fairly.

Considering the maintenance equipment in the previous example, if 20 percent of its useful life is used up in the first year of operation, it should be depreciated by that amount.

The second reason for depreciation is for tax purposes. Some nations tax the depreciated value of an asset using a flat rate. Based on other taxation rules, organizations may be allowed to depreciate assets according to accelerated schedules — rates faster than their useful life — or methods that write off assets over a predetermined amount of years that has nothing to do with the asset's useful life.

Depreciation Methods



Different depreciation methods exist. Common methods include the following:

- Straight-line depreciation **method** — the simplest form of depreciation is the straight-line depreciation method. Straight-line depreciation assumes that the asset has the same usefulness and repair expense in each year. While this may be unrealistic, the method is popular because it is straightforward.

  The straight-line method determines the amount to depreciate per year by simple division.

$$Straight-line\ \ depreciation\ \ per\ \ period\ \ = \frac{Depreciation\ \ base}{Estimated\ \ service\ \ life}$$

  Depreciation base — is the asset's original cost less its salvage value.

  Salvage value — sometimes called residual value or scrap value, is the estimated value of an asset if it is sold at the end of its depreciation period or service life. Salvage value can be zero.

Based the information provided in the table above and estimating five years of service life, the maintenance equipment would be depreciated as $150,000/5 = $30,000 per year.
• The total cost is $210,000. • The salvage value is $60,000. • The depreciation base is $210,000 - $60,000 = $150,000
In year zero, the asset would be worth $210,000; in year one, it would be worth $210,000 – $30,000 = $180,000; and in year five it would be worth US $60,000, its salvage value.

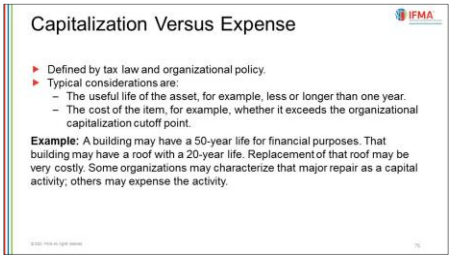
  Depreciating the maintenance equipment attempts to allocate the acquisition cost of the equipment over five years, what was established as its useful life.

- **Activity method** — unlike the straight-line method, the activity method is not based on the passage of time but on a measure of productivity relative to the total expected productivity for the asset. This may be applied to machinery or equipment where utilization varies over a period of time for example a photocopier.
- **Accelerated depreciation** — accelerated depreciation methods have a steadily decreasing charge so that assets are depreciated quickly in early years, which can better match the usage patterns of many assets. Items that have increasing maintenance costs will have more balanced total costs if accelerated depreciation is applied. Accelerated methods include the sum-of-the-years'-digits method and the declining balance method.
- **Modified Accelerated Cost Recovery System** — in the United States, the IRS allows a Modified Accelerated Cost Recovery System (MACRS) for tax filings that employs straight-line and accelerated depreciation methods. MACRS includes an asset classification system that groups similar types of assets together and shows the number of years of depreciation for each type of asset. Besides real estate, two common asset classes are the five-year asset class (including automobiles and light-duty trucks) and the seven-year class (including most machinery and equipment). A light-duty truck would be depreciated for five years and a copier would be depreciated for seven years — both according to depreciation rates set for each class.

Facility managers do not have discretion in choosing between depreciation methods; rather, they follow organizational protocol. Accountants generally choose the method that fits the usage pattern and service life of the asset most closely. Taxation also influences depreciation methods in different ways.

Depreciation is an important concept to be aware of because facility managers often manage assets that necessitate depreciation. In some organizations, FM may be required to pay back all depreciation charges through centralized accounting. In other scenarios, FM may receive an annual depreciation charge equal to the sum of all annual depreciated costs for all depreciable assets managed by the department. This expense item, which can be significant, shows up on the FM budget throughout the depreciable life of the asset. A facility manager would have to budget for the amount because it reduces the amount of operating funds available for other work.

Capitalize vs. Expense



Capitalizing vs. expensing refers to how a cost is treated on the financial statements. Expensing a cost indicates it is included on the income statement and subtracted from revenue to determine profit. Capitalizing indicates that the cost has been determined to be a capital expenditure and is accounted for on the balance sheet as an asset, with only the depreciation showing up on the income statement. Whether an asset should be capitalized or expensed is defined by tax law and organizational policy.

Typical considerations in making the determination are:

- Will the item purchased be consumed/used in a year or less?
- Does the purchase cost exceed the organizational capitalization cutoff point?

This capitalization cutoff point is a designated limit or floor that is determined by an organization, and any purchase over the cutoff point counts as a capital expenditure, while anything less as an operating expense.

If an item is capitalized, it is recorded among the fixed assets of the demand organization and depreciated according to the demand organization depreciation policy.

Returning to the maintenance equipment purchase, let's say that the demand organization had a policy of capitalizing goods and assets with a value more than $20K. Since the equipment cost $200K, it was capitalized and depreciated over its established useful life of five-years.

A facility manager may also have to consider organizational policies and practices when performing certain high-cost maintenance or repair activities. For example, a building may have a 50-year life for financial purposes. That building may have a roof with a 20-year life. Replacement of the roof may be very costly. Some organizations may characterize that major repair as a capital activity; others may expense the activity. This is yet another demonstration of why it is important that a facility manager knows and understands the demand organization's rules and policies.

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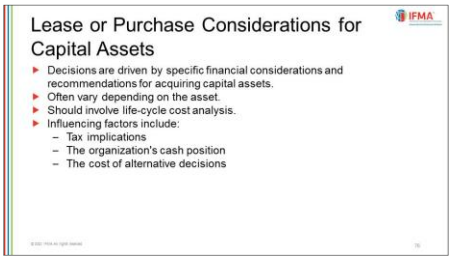
Lease or Purchase Considerations for Capital Assets

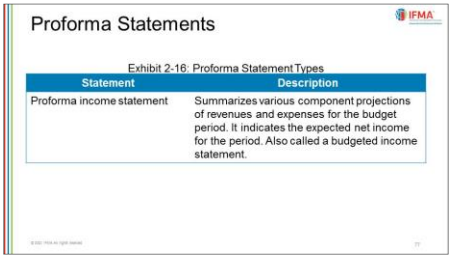


Whether an organization is public or private, the CFO, finance director or senior financial manager will have established specific financial considerations and recommendations for acquiring capital assets. These financial considerations related to lease or purchase often vary depending upon the asset for example, equipment, land, buildings and vehicles. Management might decide to pay off and buy a maintenance vehicle at the end of a three-year lease term. For other leased assets, management may have concerns over ongoing operating expenses and the investment in or financial commitment for those assets.

Lease or purchase considerations for capital assets should involve life-cycle cost analysis. Generally speaking, the influencing factors between lease and purchase decisions are tax implications, the demand organization's cash position and the cost of alternative decisions.

There is a myriad of financial, legal and tax issues that enter into lease versus purchase decisions. The outcomes influence the demand organization's financial statements, FM budgets, cash position and many other factors. We will examine this complex issue further in subsequent content on business cases and financial analysis.

Proforma Statements



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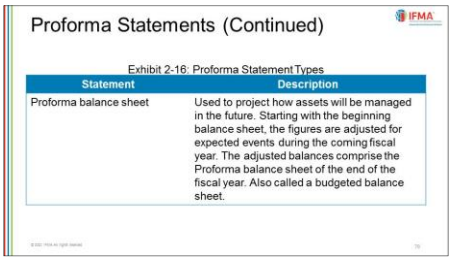

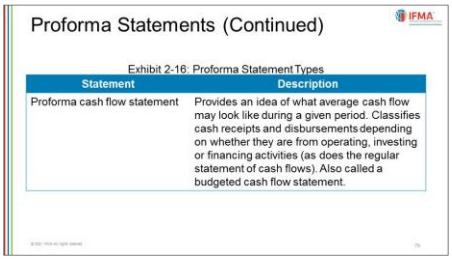

In finance, the term "Proforma" describes financial statements, income statements, balance sheets and cash flow statements that have one or more assumptions or hypothetical conditions built into the data. Stated another way, Proforma financial statements are forecasts of goals for a future period. They predict how the income statement, the balance sheet and the cash flow statement will look in the future if expected events occur.

Proforma statements are the result of the budgeting process. An individual pro forma statement is a budgeted financial statement based on forecasted data — historical documents adjusted for events as if they had occurred. Proformas portray financial conditions for the end of the specified budget period if events happen according to plan.

Exhibit 2-16 provides basic descriptions of each type of Proforma statement.

Exhibit 2-16: Proforma Statement Types

Statement	Description
Proforma income statement	Summarizes various component projections of revenues and expenses for the budget period. It indicates the expected net income for the period. Also called a budgeted income statement.

Proforma statements are used routinely in preparing "what-if" scenarios, formulating business plans, estimating cash requirements or submitting financing proposals. Most Proformas are prepared for one year.

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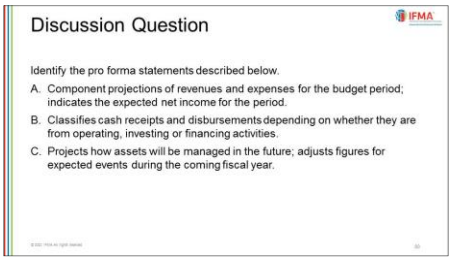
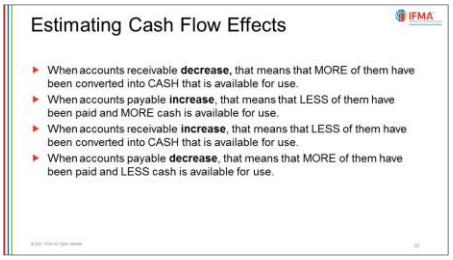


Forecasting Cash Flows



The importance of forecasting cash flows cannot be overstated. Running out of cash is not a desirable position for any organization. Even a profitable organization can end up in bankruptcy if it runs out of cash at the wrong time, for example, when loans and other large payments are due.

Cash flows are influenced by the collection of accounts receivable and the payment of accounts payable. Speeding up the collection of receivables and postponing the payment of payables can have a positive short-term effect on cash flows.

Cash flow effects can be projected by estimating ending balances in the receivables and payables accounts and calculating the changes in those balances from the beginning of the year. The following relationship illustrates this concept:

- When accounts receivable decrease, MORE of them have been converted into CASH that is available for use.
- When accounts payable increase, FEWER of them have been paid and MORE cash is available for use.
- When accounts receivable increase, FEWER of them have been converted into CASH that is available for use.
- When accounts payable decrease, MORE of them have been paid and LESS cash is available for use.

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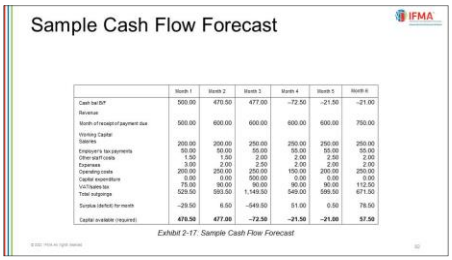

Exhibit 2-17 provides a sample cash flow forecast showing the monthly effects over a six-month period.

Exhibit 2-17: Sample Cash Flow Forecast

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Cash bal B/F	500.00	470.50	477.00	–72.50	–21.50	–21.00
Revenue						
Month of receipt of payment due	500.00	600.00	600.00	600.00	600.00	750.00
Working Capital						
Salaries	200.00	200.00	250.00	250.00	250.00	250.00
Employer's tax payments	50.00	50.00	55.00	55.00	55.00	55.00
Other staff costs	1.50	1.50	2.00	2.00	2.50	2.00
Expenses	3.00	2.00	2.50	2.00	2.00	2.00
Operating costs	200.00	250.00	250.00	150.00	200.00	250.00
Capital expenditure	0.00	0.00	500.00	0.00	0.00	0.00
VAT/sales tax	75.00	90.00	90.00	90.00	90.00	112.50
Total outgoings	529.50	593.50	1,149.50	549.00	599.50	671.50
Surplus (deficit) for month	–29.50	6.50	–549.50	51.00	0.50	78.50
Capital available (required)	**470.50**	**477.00**	**–72.50**	**–21.50**	**–21.00**	**57.50**

Exhibit 2-17: Sample Cash Flow Forecast

Why are Proforma statements important? Organizational financial statements indicate what has happened in the past. Proformas predict how financial statements will look in the future. Collectively, these budgeted Proforma financial statements are instrumental in the allocation of resources.

If senior financial management has serious concerns about the Proformas resulting from the FM budgeting process or cash flow forecasting, a facility manager may have to revisit the budget process and re-create the Proforma statements. This reiterative process may continue until senior management finds them acceptable or is convinced there are no better alternative plans.

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"Smoothing" FM Investments

Planning is critical in FM. Decisions exist in a resource-constrained environment. Forecasting and other financial analysis techniques can provide voluminous information. Decision making comes down to what can or should be afforded and when. Financial statements, Proformas and other cash flow forecasting helps to quantify FM investments.

Critical and noncritical projects are generally obvious. For example, major building renovations might be mandated to comply with the passage of new occupational safety and health regulations. In FM, there's often a struggle for funding and resources for many mainstream middle-ground items. For example, a major piece of equipment needs a costly repair. The reality is that it needs to be replaced, but adequate funding for the replacement is not available because the facility manager did not have a sound plan for repairing and replacing assets that have exceeded their useful life span.

A simple way to avoid this problem is to develop a five-year plan to keep track of assets. A computer spreadsheet can facilitate the task.

- Assets, both capital and operations and maintenance (O&M), that are of considerable expense and are therefore likely to be viewed as a budgeted project can be listed in the leftmost column — column A.
- The Remaining Useful Life (RUL) of each asset can be listed in the column B.
- Column C identifies the year the asset was installed.
- The next series of columns represents the next five years, column D being the current year. Each year is divided into two categories — capital expenditures and O&M expenditures.
- As assets reach the end of their useful life, the cost of the replacement is identified in the appropriate column.
- At the far right, a column can be added for comments.

Example of a Five-Year Plan to Track Assets:

Asset (Budgeted Project)	Remaining Useful Life (RUL)	Year Installed	Current Year		Year 2		Year 3		Year 4		Year 5		Cost of Replacement	Comments
			Capital Expenditures	O&M Expenditures	Capital Expenditures	O&M Expenditures	Capital Expenditures	O&M Expenditures	Capital Expenditures	O&M Expenditures	Capital Expenditures	O&M Expenditures		
AHU #1	3	2002		$2,000		$2,060		$2,122	$54,636	$1,093		$1,126	$50,000	2019 replacement cost
AHU #2	8	2007		$2,000		$2,060		$2,122		$2,185		$2,251	$50,000	2019 replacement cost
Boiler	2	2006		$1,500		$1,545	$21,218	$796		$820		$844	$20,000	2019 replacement cost
Pump #1	4	2013		$1,200		$1,236		$1,273		$1,311	$4,502	$675	$4,000	2019 replacement cost
Pump #2	10	2019		$1,200		$1,236		$1,273		$1,311		$1,351	$4,000	2019 replacement cost

Since this plan is revised on an annual basis, each year the RUL will decrease by one year.

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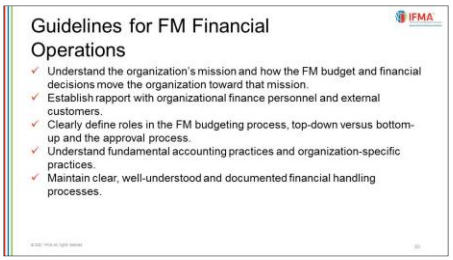
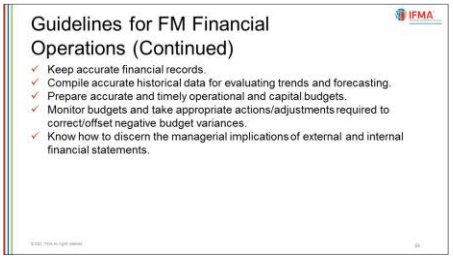
The spreadsheet format easily and quickly communicates assets and their costs and the date of scheduled replacement. It can provide a logical way to augment financial planning and decision making.

Summary Guidelines for Effective and Efficient Financial Operations





Simply stated, facility managers must have efficient and effective financial systems and procedures in place. Reflecting on the content just presented, we conclude with the general guidelines in *Exhibit 2-18* that facility managers should keep in mind. Organizations may vary in how information is gathered, implemented, monitored, adjusted and the like, but the guidelines that follow are appropriate in all environments: public, not for profit, government, nongovernmental organization (NGO), partnerships or sole proprietorships.

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Exhibit 2-18: General Guidelines

- Understand the demand organization's mission and how the FM budget and financial decisions move the demand organization toward that mission.
- Establish rapport with organizational finance personnel and external customers.
- Clearly define roles in the FM budgeting process (top-down versus bottom-up and the approval process).
- Understand fundamental accounting practices and organization-specific practices.
- Maintain clear, well-understood and documented financial handling processes.
- Keep accurate financial records.
- Compile accurate historical data for evaluating trends and forecasting.
- Prepare accurate and timely operational and capital budgets.
- Monitor budgets and take appropriate actions/adjustments required to correct/offset negative budget variances.
- Know how to discern the managerial implications of external and internal financial statements.

In this topic some of the primary documents in finance have been examined, including; accounting records, budgets, financial statements and Proformas. Several important accounting principles have been covered, which should facilitate a knowledge of concepts that are critical to FM success.

Analyzing and Interpreting Financial Documents

The goal of financial analysis is to assess organizational performance in the context of stated goals and strategies, which provides insight into financial health and highlights problems and opportunities. Ratio analysis is the principal tool organizations use for financial analysis. In FM, specific metrics and ratio analysis are also used.

Financial Statement Ratio Analysis

Financial statement ratio analysis assesses how various line items in financial statements relate to one another. Such ratio analysis is a more useful exercise than discovering the

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dollar amount spent because of the variables affecting an organization's spending that uniquely apply to it.

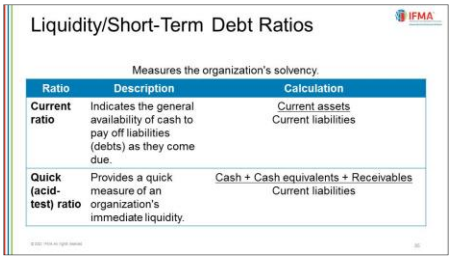
Many organizations use ratios to analyze budget and financial report data. However, ratios are useful at any given point in time.

Many different ratios can be used to analyze financial data. The following are most relevant to facility managers:

- Liquidity/short-term debt ratios
- Asset management ratios
- Profitability ratios
- Return ratios

All ratio calculation examples are shown in U.S. dollars (USD). Note that in practice, some ratios may have different formulas. The point here is to understand what the ratio measures. No financial statements are shown here; hypothetical numbers are used to illustrate each ratio.

Liquidity/Short-Term Debt Ratios



Liquidity ratios primarily show an organization's solvency — its ability to pay bills and other short-term obligations without undue hardship. For each of the following liquidity or short-term debt ratios, the higher the ratio, the stronger the liquidity.

Current Ratio

The current ratio answers the question, "Does the demand organization have sufficient current assets to pay its bills during the year?" It indicates the general availability of cash to pay off liabilities (debts) as they come due.

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The equation for the current ratio and an example is shown below. The example is based on a situation in which:

- Current assets = US$250,000.
- Current liabilities = US$100,000.

$$Current\ ratio\ =\ \frac{Current\ \ assests}{Current\ \ \ liabilities}$$

$$=\ \frac{US\$250{,}000}{US\$100{,}000} =\ 2.5{:}1$$

The ratio indicates that the demand organization has US$2.5 in current assets for each dollar of its current liabilities or 2.5 times the current assets.

The current ratio cannot provide data on cash flow timing. Lowering current ratios over time shows declining liquidity, but if too high, could show that the demand organization has too much invested in low-yield short-term assets.

Quick (acid-test) Ratio

The acid-test ratio provides a quick measure of an organization's immediate liquidity. It is generally considered a more rigorous test of liquidity than the current ratio. It eliminates inventories and prepaid expenses, (for example insurance premiums), from the current assets then compares these quick assets to the current liabilities (excluding long-term liabilities, other liabilities and net assets) to assess the demand organization's ability to pay the current liabilities.

The equation for the quick ratio and an example appear below. The example is based on a situation in which:

- Cash = US$200,000.
- Cash equivalents = US$10,000.
- Accounts receivables = US$10,000.
- Current liabilities = US$100,000.

$$Quick\ \ ratio\ =\ \frac{Cash\ \ +\ \ Cash\ \ equivalents\ \ +\ \ \mathrm{Receivables}}{Current\ \ \ liabilities}$$

$$=\ \frac{US\$200{,}000\ \ +\ \ US\$10{,}000\ \ +\ US\$10{,}000}{US\$100{,}000}$$

$$=\ 2.2{:}1$$

The quick ratio may be a more accurate indicator than the current ratio of an organization's ability to meet its financial obligations in a short span of time. Since the quick ratio

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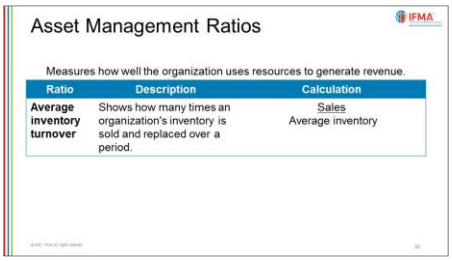
excludes the least liquid current assets, primarily inventory, comparing it to the current ratio shows the effect of inventory on liquidity. A stable current ratio plus a declining quick ratio imply increasing inventory that could be temporary or permanent.

Asset Management Ratios



Asset management ratios measure how efficiently an organization's assets are used to generate income — in other words, how well the demand organization uses resources to generate revenue.

Average Inventory Turnover

Average inventory turnover is a ratio showing how many times an organization's inventory is sold and replaced over a period.

Average inventory turnover is calculated as shown below. The example is based on a situation in which:

- Sales = US$1,500,000.
- Average inventory = US$300,000. Average inventory = (Beginning Inventory + Ending Inventory) / 2

$$Inventory\ \ turnover\ \ = \ \ \frac{Sales}{Average\ \ Inventory}$$

$$= \ \ \frac{US\$1{,}500{,}000}{US\$300{,}000} \ \ = \ \ 5\ \ times$$

If relatively high, the inventory turnover ratio shows that the inventory is efficiently managed, while a declining ratio could show excess inventory due to poor sales or obsolescence. Too high a ratio could mean lost sales due to stockouts (ineffective buying).

Average inventory turnover is generally calculated using sales, but it may also be calculated with cost of goods sold (COGS). Although the first calculation is more frequently used, COGS may be substituted because sales are recorded at market value, while inventories are usually recorded at cost. Also, using average inventory instead of the ending inventory levels helps to minimize seasonal factors.

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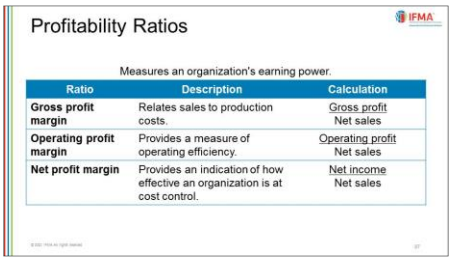
Profitability Ratios



Profitability ratios measure an organization's earning power. They help judge operating performance such as sales versus related expenses, leverage and risk. Profitability ratios answer the question "How well did the demand organization operate during the period?" They indicate the effectiveness of management in controlling expenses and earning a reasonable return for owners and shareholders in public companies.

Gross, operating and net profit margin are three measures often compared to each other. For example, if compared to industry averages over several years gross profit margin has been holding steady, but operating profit margin and net profit margin have been declining, then the cause must be from indirect costs since gross profit equals net sales less COGS while operating profit and net profit deducts COGS and a number of indirect items.

Gross Profit Margins

This ratio relates sales to production costs.

The gross profit margin is calculated as shown below. The example is based on a situation in which:

- Gross profit = US$750,000. Gross Profit = Revenue – Cost of Goods Sold. Cost of Goods Sold (COGS) refers to all the direct costs and expenses involved in producing or delivering goods and services.
- Net sales = US$1,500,000. Net Sales = Revenue – Sales Returns, Allowances and Discounts.

$$Gross\ profit\ \ margins\ \ = \ \ \frac{Gross\ \ profit}{Net\ \ sales}$$

$$= \ \ \frac{US\$750{,}000}{US\$1{,}500{,}000} \ \ = \ \ 0.50$$

For each dollar of sales, the demand organization generates US$0.50 in gross profit.

Net Operating Profit Margin

The operating profit margin is calculated as shown below. The example is based on a situation in which:

The operating profit margin is calculated as shown below. The example is based on a situation in which:

- Net sales = US$1,500,000.
- COGS = US$1,100,000.
- Selling, general and administrative expenses = US $150,000.

$$Operating\ profit\ margin\ =\ \frac{Operating\ profit}{Net\ sales}$$

$$=\ \frac{(US\$1{,}500{,}000\ -\ US\$1{,}100{,}000\ -\ US\$150{,}000)}{US\$1{,}500{,}000}\ =\ 0.167$$

For each dollar of sales, the demand organization makes US $0.167 in operating profit.

Net Profit Margin

Net profit margin provides an indication of how effective an organization is at cost control. The higher the net profit margin, the more effective the demand organization is at converting revenue into actual profit.

The net profit margin is calculated as shown below. The example is based on a situation in which:

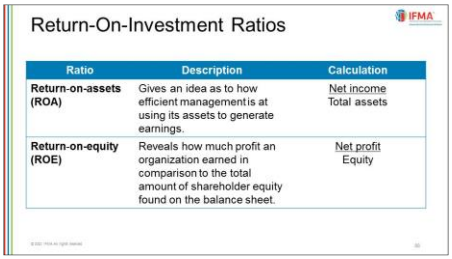
- Net income = US$140,000.
- Net sales = US$1,500,000. Net Sales = Revenue – Sales Returns, Allowances and Discounts

$$Net\ profit\ margin\ =\ \frac{Net\ income}{Net\ sales}$$

$$=\ \frac{US\$140{,}000}{US\$1{,}500{,}000}\ =\ 0.093$$

Normal net profit margin depends on the industry; a relatively low margin could mean that competitors are forcing price cuts or that the demand organization has poor cost controls.

Return-On-Investment Ratios


Return-On-Investment Ratios

Ratio	Description	Calculation
Return-on-assets (ROA)	Gives an idea as to how efficient management is at using its assets to generate earnings.	Net income / Total assets
Return-on-equity (ROE)	Reveals how much profit an organization earned in comparison to the total amount of shareholder equity found on the balance sheet.	Net profit / Equity

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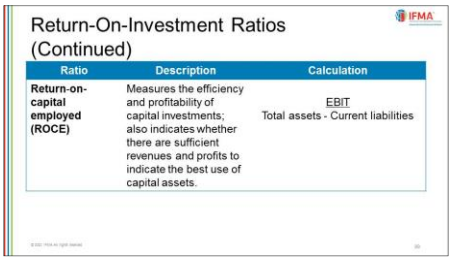

Return ratios are a subset of financial ratios that measure how effectively the demand organization manages its investments. Return ratios analyze investments in assets or equity and calculate the return per dollar they generate. To evaluate the performance of investments the demand organization can compare results to benchmarks like the return ratios of similar investments, companies, or industries.

Return-on-Assets

A return-on-assets (ROA) ratio indicates how profitable an organization is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings; it is displayed as a percentage.

The return-on-assets ratio is calculated as shown below. The example is based on a situation in which:

- Net income = US$140,000.
- Total assets= US$1,800,000.

$$Return - on - assets \ \ (ROA) \ \ = \ \ \frac{Net \ \ income}{Total \ \ assets}$$

$$= \ \ \frac{US\$140{,}000}{US\$1{,}200{,}000} \ \ = 0.116 \ \ = \ \ 11.6\%$$

For each dollar invested in total assets, the demand organization makes US $0.116 in net income or 11.6 percent. A variation adds interest expense to net income to give organizations with high debt financing a more appropriate ratio.

The ROA percentage gives an idea of how effectively the demand organization is converting the money it has to invest into net income. The higher the ROA number, the better, because the demand organization is earning more money on less investment.

Return-on-Equity

Return-on-equity (ROE) reveals how much profit an organization earned in comparison to the total amount of shareholder equity found on the balance sheet. The ratio is usually expressed as percentage.

The equation for the ROE ratio and an example appear below. The example is based on a situation in which:

- Net income = US$120,000.
- Equity = US$900,000.

$$\text{Return} \ -on-equity \ = \ \frac{Net \ Income}{Equity}$$

$$= \ \frac{US\$120{,}000}{US\$900{,}000} \ = \ 0.133 \ = \ 13.3\%$$

This 13.3 percent is the return the demand organization is earning on shareholder equity. An organization that has a high ROE is more likely to be capable of generating cash internally.

Return-on-Capital Employed

Return-on-capital employed (ROCE) measures the profitability of an organization by the pre-tax profit, which is earnings before interest and taxes or EBIT, achieved on an organization's capital employed. The capital employed is the capital investment necessary for a business to function. It is commonly represented as total assets less current liabilities.

The equation for the ROCE ratio and an example appear below. The example is based on a situation in which:

- EBIT = US$10,000.
- Total assets = US$400,000.
- Current liabilities = US$320,000.

$$\text{Return} - on - capital \ employed \ = \ \frac{EBIT}{Total \ assets \ - \ Current \ liabilities}$$

$$= \ \frac{\$10{,}000}{(\$400{,}000 \ - \ \$320{,}000)}$$

$$= \ \frac{US\$1{,}000{,}000}{(US\,\$80{,}000)} \ = \ .125 \ = \ 12.5\%$$

The ROCE ratio measures the efficiency and profitability of capital investments undertaken by an organization. An organization acquires capital assets such as vehicles, computers and so forth to help make its operations more efficient, cut down on costs and realize greater profits or acquire more market share. ROCE also indicates whether the demand organization is earning sufficient revenues and profits in order to make the best use of its capital assets. The higher the percentage, the better.

Ratios such as the ones described highlight organizational strengths and weaknesses. They either provide assurance of financial health or detect early warning of any significant

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financial difficulties. Ratios should not be relied upon as sole indicators for decision making. There are many other evaluative measures that may be used in conjunction with ratio analysis. Balanced scorecards, best practices and surveys are a few of the possibilities.

Financial ratios are used by banks to see if they are able to loan money at a lower rate and also by shareholders to see if the stock is worth investing in. They can be extremely useful as benchmarks by which to compare financial performance with industry averages for organizations of similar type, scope and size and even key competitors. Benchmarks from comparable organizations enable facility managers to identify areas of conformity and variance from the norm with similar or competing organizations. For example, knowing that the organization spends a certain percentage of revenue on external building maintenance allows for a comparison to the building envelope (made up of siding, masonry, sash, glazing and window washing) and exterior signage expenditures of any other comparable organization.

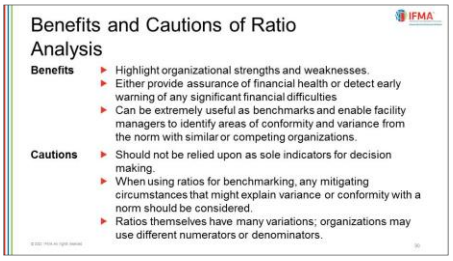
When using ratios for benchmarking, keep in mind that every demand organization's circumstances are different. Consider any mitigating circumstances that might explain variance or conformity with a norm. Ratios themselves have many variations. Even though they share a common name, one organization may use different numerators or denominators than another in performing the calculation.

Exhibit 2-19: Summary of Financial Ratios

Ratio	Description	Calculation
Liquidity/short-term debt ratios		
Current ratio	Indicates the general availability of cash to pay off liabilities (debts) as they come due	$\frac{Current\ \ assets}{Current\ \ liabilities}$
Quick (acid-test) ratio	Provides a quick measure of an organization's immediate liquidity	$\frac{Cash\ +\ Cash\ \ equivalents\ +\ Receivables}{Current\ \ liabilities}$
Asset management ratios		
Average inventory turnover	Shows how many times an organization's inventory is sold and replaced over a period	$\frac{Sales}{Average\ \ inventory}$
Profitability ratios		
Gross profit margin	Relates sales to production costs	$\frac{Gross\ \ profit}{Net\ \ sales}$

Operating profit margin	Provides a measure of operating efficiency	$\frac{Operating\ \ profit}{Net\ \ sales}$
Net profit margin	Provides an indication of how effective an organization is at cost control	$\frac{Net\ \ income}{Net\ \ sales}$
Return ratios		
Return-on-assets (ROA)	Gives an idea as to how efficient management is at using its assets to generate earnings	$\frac{Net\ \ income}{Total\ \ assets}$
Return-on-equity (ROE)	Reveals how much profit an organization earned in comparison to the total amount of shareholder equity found on the balance sheet	$\frac{Net\ \ income}{Equity}$
Return-on-capital employed (ROCE)	Measures the efficiency and profitability of capital investments; also indicates whether there are sufficient revenues and profits to indicate the best use of capital assets	$\frac{EBIT}{Total\ \ assets\ \ -\ \ Current\ \ liabilities}$

FM Metrics and Ratio Analysis



Demonstrating the bottom-line performance of the FM organization to senior management can be challenging, but it is a critical task for a facility manager. Facilities do not generate sales, so facility managers have to be creative in promoting the financial contributions of FM. Documenting cost avoidances and cost savings are two ways this can be accomplished. Developing specific FM metrics (ratios) to relate, compare or measure performance against quantifiable standards is another.

It is challenging to apply metrics across all FM departments. Initiatives such as the European benchmarking standards processes are developing metrics for real estate and FM across states and borders.

While no universal metrics exist, per se, several possibilities are shown in *Exhibit 2-20*. Computer software can be used to accumulate and process the required data and calculate ratios. The metrics chosen to track and report should be appropriate to the demand organization and whatever senior management considers important to financial well-being.

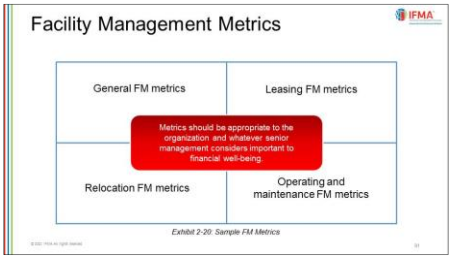


Exhibit 2-20: Sample FM Metrics

General FM metrics • Total occupancy cost/square foot • Total occupancy cost/total staff • Total occupancy cost/FM staff • Budget variance/total budget • Total FM budget/FM staff • Total FM budget/total staff • FM salaries/FM staff • FM budget/total organizational administrative budget	**Operating and maintenance FM metrics** • Total utility cost/square foot • Total utility cost/total staff • Individual utility costs/square foot • Operations and maintenance costs/square foot • Operations and maintenance costs/total staff • Custodial costs/square foot • Grounds costs/acre (paved and planted) • Garage costs/parking space • Cost/service request • PM vs DM (preventive maintenance vs deferred maintenance)
Leased FM metrics • Average lease cost/square foot • Leased costs/owned costs (for various aspects of FM)	**Relocation FM metrics** • Moving costs/staff moved, box move only, with construction and with construction and furniture moved (typically known as Churn and often benchmarked) • Cost/workstation provided or cost/square foot, administrative personnel, professional staff, managerial and executive

Organizations and bankers may request a number of different figures in order to compare alternative ratios than presented within this case study. These numbers and ratios are based on the consolidated statements of financial position for Union Pacific and the Burlington Northern Railway based on millions of dollars for 2007. This is a good example of a comparison between two for-profit freight railroad companies. Not all financial statements are clear cut, for example, the gross profit margin could not be computed to net sales, due to no indication of gross profit in the financial statement.

This case study serves to demonstrate how to obtain the ratios and why they are important. If the demand organization wants to invest in infrastructure, they need to know the financial position, whether there is funding or if funding is available to finance the improvement(s). If there is an interest to invest in stock, a good indicator and benchmark is to see how profitable the demand organization is.

Case Study: Comparison of financial statements of two companies in the same industry Exhibit 2-21

Union Pacific			BNSF		
Current Ratio			Current Ratio		
Current Assets	Current Liabilities		Current Assets	Current Liabilities	
2594	3041	0.85	2181	3235	0.67
Quick Ratio			Quick Ratio		
Cash + cash equivalents + Accounts Receivable	Current Liabilities		Cash + cash equivalents + Accounts Receivable	Current Liabilities	
878+632	3041	0.50	330+790	3235	0.34
Operating Profit Margin			Operating Profit Margin		
Operating Profit	Net Sales		Operating Profit	Net Sales	
3375	16283	0.21	3486	15802	0.22
Net Profit Margin			Net Profit Margin		

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Union Pacific			BNSF		
Net Income	Net Sales		Net Income	Net Sales	
1855	16283	0.113	1829	15802	0.115
Return-on-Assets			Return-on-Assets		
Net Income	Total Assets		Net Income	Total Assets	
1855	38033	0.049	1829	33583	0.054
Return-on-Equity			Return-on-Equity		
Net Income	Equity (shareholders)		Net Income	Equity (shareholders)	
1855	15585	0.119	1829	11144	0.16
Return-on-Capital Employed			Return-on-Capital Employed		
Earnings before Interest & taxes	Total Assets - Current Liabilities		Earnings before Interest & taxes	Total Assets - Current Liabilities	
3375	38033-3041	.096	3486	33583-3235	.115

Compare the railroads and indicate which is operating more efficiently. The railroads invest heavily in the rolling stock, each engine can cost over one million dollars.

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Progress Check Questions

1. What is the purpose of the budget?

    a. Provide a formal, numerical expression of how an organization expects to operate for a defined period of time.
    b. Define long-term organizational plans that are aligned with a demand organization's goals.
    c. Provide financial data for external users.
    d. Organize financial information by statements.

2. What is one of the advantages of the authoritative budget approach?

    a. Improved budget acceptance and comprehension.
    b. Greater personal commitment to the budget goals.
    c. Budget goals reflect strategic objectives.
    d. Employees feel involved and empowered.

3. What statement best describes a capital budget?

    a. Provides a short-term projection of all estimated income and expenses during a given period, usually one year.
    b. Requires an organization to reserve substantial funds and resources for use on large investments
    c. Identifies funds used to support daily operations.
    d. Has NO impact on operating budgets

4. What best describes fixed costs?

    a. They remain unchanged in total for given period of time, despite wide changes in the related level of total activity.
    b. They change in total in proportion to changes in the related level of total activity.
    c. They can be changed in the short term with few constraints.
    d. They change as the quantity of the goods or service that a business produces changes.

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5. What does an Incremental Budget do?

   a. Starts with last year's budget and adds to it or subtracts from it, according to anticipated needs
   b. Helps to avoid including ineffective activities just because they were in the prior budget
   c. Includes the use of activity-based costs to connect resource consumption and output
   d. Emphasizes value-added activities

6. What is true about Internal Financial Statements?

   a. Are required by law for publicly traded companies
   b. Are prepared and certified by an auditor
   c. Are made available to senior management, staff management and others with operating or oversight responsibilities
   d. Are prepared in accordance with accounting standards - IFRS or GAAP and FASB

7. What best describes Balance Sheet Assets?

   a. Resources obtained, owned or controlled by an organization
   b. An organization's net worth
   c. What the demand organization owes to others
   d. How much the owners of a company have invested in the business

8. What information does Current Ratio give you?

   a. Indicates the general availability of cash to pay of liabilities, debts as they come due
   b. Provides a quick measure of an organization's immediate liquidity
   c. Shows how many times an organization’s inventory is sold and replaced over a period
   d. Relates sales to production costs

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9. What do Operating Activities do?

    a. Report the purchase and sale of long-term investments and property, plant and equipment
    b. Primarily show the results from day-to-day revenue and expense activities depicted on the income statement
    c. Show the results from activities involving cash transactions by and for owners; reports on the contribution and redemption of equity capital and creditor loan repayments
    d. Report all expenditures to produce the fiscal year revenues that are not capitalized

10. What is meant by Depreciation?

    a. A noncash charge against assets, such as property, plant and equipment over the asset's useful life
    b. A cash expense associated with the acquisition of an asset
    c. A one-time expense reflected in the operating budget
    d. A way of showing reduced value of land as a result of wear and tear, age or obsolescence

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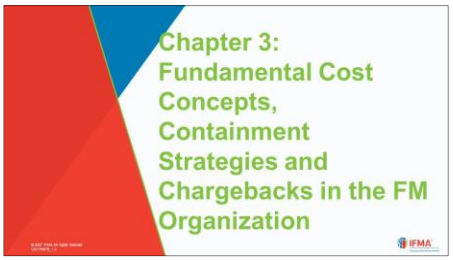
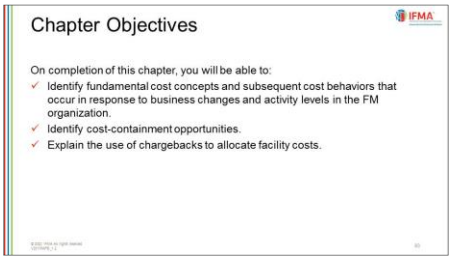
Chapter 3: Fundamental Cost Concepts, Containment Strategies and Chargebacks in the FM Organization

Chapter 3 Introduction

On completion of this chapter, you will be able to:

- Identify fundamental cost concepts and subsequent cost behaviors that occur in response to business changes and activity levels in the FM organization.
- Identify cost-containment opportunities.
- Explain the use of chargebacks to allocate facility costs.





Lessons

- Fundamental Cost Concepts
- Cost-Containment Strategies
- Chargebacks

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Fundamental Cost Concepts

Lesson Introduction

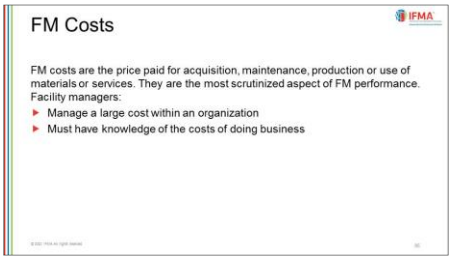
On completion of this lesson, you will be able to:

- Identify the fundamental cost concepts and the subsequent cost behavior in response to business changes and activity levels in the FM organization.

This lesson contains the following topics:

- Cost Terms and Classifications
- Assigning Costs to Cost Objects
- Cost Measurement Systems
- Using Costs in Decision Making

Cost Terms and Classifications



All organizations incur costs; however, the term cost has different meanings depending on the organization. In The Facility Manager's Guide to Finance and Budgeting, authors David Cotts and Edmond P. Rondeau define costs as "the price paid for acquisition, maintenance, production, or use of materials or services."

In for-profit organizations, profits are the result of total revenue less costs. In not-for-profit organizations, costs are the expenditures required to fulfill the mission. Ultimately the

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amount in cash reserves must be higher than the amount spent. If expenses consistently exceed reserves and revenues, the organization may ultimately fail.

For FM:

- Facility managers manage a large cost center within an organization
- Costs are the most scrutinized aspect of FM performance
- Facility managers must know the costs of doing business

Therefore, this chapter focuses on cost terms and cost accounting concepts encountered in FM. Knowing the basic cost terminologies and concepts makes it easier to communicate with other managers and finance personnel. It also enables effective and efficient management, accurate cost accounting, proper financial analysis, and sound recommendations to senior management.

Facility managers must also understand cost behavior or how costs react because of changes in business activity levels. FM uses this understanding to predict future costs.

Example:

A facility manager plans to start a xeriscaping or water wise landscaping project next year and wants to know how it will affect the FM operating budget. The facility manager anticipates that expenses for premises support, mentioned in the budget, will change in the following manner:

- There will be the added cost of a landscape designer to draw up plans.
- The cost of planting materials will increase, even though the size of the grounds won't expand.
- Once completed, the costs for water, fertilizer, maintenance, and pest control will decrease. However, while consumption WILL decrease, unit costs are still subject to market conditions.
- The cost for additional staff will not be required because existing full-time staff will execute the plan.

To develop an accurate budget for next year, the facility manager needs to know the behavior of all the different costs involved. To help make distinctions about which costs will change and by how much, costs are often categorized as hard, soft, variable, fixed, mixed, or total.

It is necessary to predict how a particular cost will behave. Cost behavior doesn’t refer to good or bad behavior but rather, how a specific cost will behave in response to changes in business activity levels. Costs may stay the same or change proportionately, that is rise or fall, in response to a change in activity.

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In FM, knowledge of cost behavior is valuable in a variety of situations such as creating a budget, preparing a forecast or determining which of two alternatives should be selected.

Example:
A facility manager expects to undertake a xeriscaping or water wise landscaping project next year. The facility manager needs to know how that will affect the FM operating budget. The facility manager anticipates that expenses for premises support, mentioned in the budget, will change in the following manner:

- Make provision for the expense of a landscape designer to draw up plans and consult as required.
- Planting materials will increase, but the grounds won't expand.
- On completion of the project, costs for water, fertilizer, maintenance and pest control will decrease. While consumption WILL decrease, unit costs are still subject to market conditions.
- Existing full-time staff will execute the plan, additional staff will not be required.

To develop an accurate budget for next year, the facility manager needs knowledge of the behavior of all the different costs involved. To help make distinctions about which costs will change and by how much, costs are often categorized as variable, fixed, mixed or total.

Hard and Soft Costs

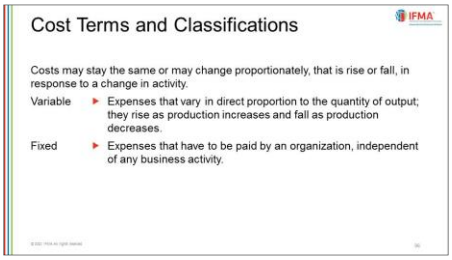
Hard costs – Costs that are tangible; therefore, can be determined or estimated in advance. Examples include labor, utilities, equipment, and buildings.

For example, hard costs associated with office relocations may include the costs for actual moving services, supplies, and trucking expenses; costs for move materials, freight elevator and loading dock usage; special security guard services during a move; new stationery, business cards, move notices, etc. Other move costs that might be included are design, food service, graphics, furniture, voice, data costs, and so forth.

Soft costs – Costs that are intangible; therefore, more difficult to determine or estimate. Examples include lost productivity because people's work is disrupted during renovations, lost opportunity costs because organizational assets and internal staff are not used as planned, and the emotional impact on customers or employee morale.

For FM the term soft costs are internal costs, such as the downtime of employees involved in managing the move; and the loss of productivity of employees being moved.

Variable Costs



Variable costs – as per Exhibit 1-1, are costs that fluctuate and may be influenced by factors such as occupancy levels. Variable costs increase and decrease in proportion to changes in activity level, such as fuel costs that depend on the mileage driven. For example, the cost of xeriscaping project materials will vary in direct proportion to the type and number of drought-resistant grasses, indigenous or adaptive low water plants, and rocks and accent boulders that are purchased.

Examples of variable costs in FM:

- Utilities
- Waste disposal
- Costs of materials and supplies
- Travel expenses

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Cost drivers – also referred to as allocation base, are activities that have a direct and casual relationship to the incurring of overhead costs. Cost drivers can be any factor that has a cause-and-effect relationship on costs. A change in a cost driver will result in a change in the total cost of a related cost object.

A cost object is anything for which cost data is accumulated. A cost object is used to determine how much a particular thing or activity costs. In FM, items or activities, such as customers projects and services are considered as cost objects.

Fixed costs typically do not have cost drivers. Fixed overhead is allocated to cost pools using an allocation base.

Fixed Costs

Fixed costs – remain unchanged in total for a given period, despite wide changes in the related level of total activity. For example, a licensing fee, taxes, or salaries. A facility manager's salary would not be expected to change appreciably while overseeing the xeriscaping project, nor will the salary of the FTE grounds staff who do the landscaping.

In FM, rent, depreciation, insurance, property taxes, licensing fees, and salaries are all examples of fixed costs. Fixed costs remain constant in total unless they are influenced by an outside force, such as a price change. A cost that is fixed means that it is fixed within a relevant range.

Relevant range – is the range of activity on which the assumptions about fixed costs and variable costs are valid. Relevant range is typically expressed as specific cost drivers, such as usage, for a specific duration of time.

A cost object – is anything for which cost data is accumulated. A cost object determines how much a particular asset or activity costs. In FM, items, such as supplies, or activities, such as customer projects and services are considered cost objects

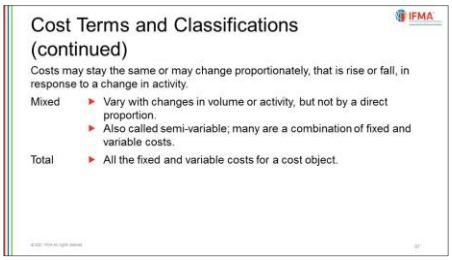
Cost drivers – are activities or factors that have a direct and causal relationship to the incurring of overhead costs. A change in a cost driver will result in a change in the total cost of a related cost object. Examples of cost drivers are increased consumption of materials, aging of buildings or equipment, increased incidents of extreme weather conditions.

Example - The rent for a FM copier is US$200 per month. The amount is based on the relevant range of 0 to 20,000 copies per month. The cost object is the paper, and the cost driver is the number of copies made monthly. There would be a cost increase for going to 30,000 per month.

This example puts all these concepts together to illustrate fixed costs and relevant range. The example is based on a situation in which: The assumption that the rent for a FM copier is US$200 per month is valid within the relevant range of 0 to 20,000 copies per month. The object would be the copies and the driver would be how many copies have been made on a monthly basis. A significant increase in the demand for copy services that greatly increases the monthly copy count would mean renting an additional copier. The fixed cost of monthly rent for reprographics will increase due to the second copier.

Cost pool – is the combining or grouping of cost objects in a way that is meaningful to management for assigning accountability. For example, cost objects such as renting a trenching machine to modify the landscape irrigation system during the xeriscaping project and the labor for a maintenance employee may be included in the maintenance department cost pool.

Mixed Costs



Mixed costs or semi-variable costs – are costs that vary when there are changes in volume or activity, but they do not vary in direct proportion to each other. Many mixed costs are a combination of fixed and variable costs. They change in response to a change in volume and activity but by less than a proportionate or equally corresponding amount. For example, if there is a fuel price increase, the price of other commodities will be subject to increase.

Total Costs

Total costs — are all the fixed and variable costs for a cost object.

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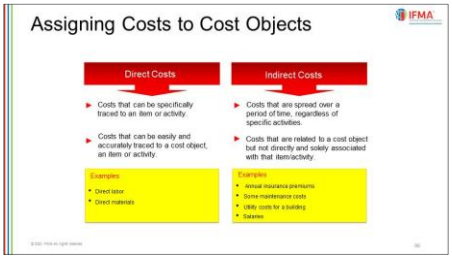
Assigning Costs to Cost Objects



Assigning costs to a cost object is required for pricing, profitability studies, control of spending, and chargebacks. When assigning costs to cost objects, costs are classified as direct or indirect.

Direct Costs

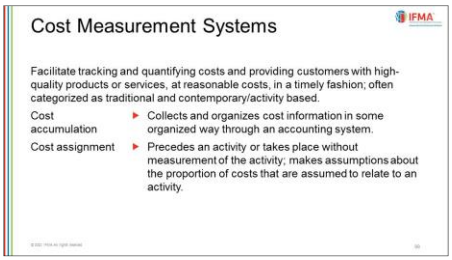
Direct costs – are costs that can be specifically traced to an item or activity such as labor and material costs used to repair a hole in the roof. Another example are the costs for maintenance labor and materials required to reduce water usage outdoors.

Indirect Costs

Indirect costs – are costs that are spread over time regardless of specific activities. They cannot be easily and accurately traced to a single cost object. Examples include yearly insurance premiums, overhead, and utility costs.

Indirect costs are also allocated across multiple cost objects. For example, the full-time job of corporate concierge will have multiple responsibilities for supporting both building occupants and visitors. Therefore, assigning a concierge's salary to any one service, for example, document delivery, catering, or event planning, is not realistic. Because the cost is incurred to support a variety of activities, it should be allocated across all services provided.

Cost Measurement Systems



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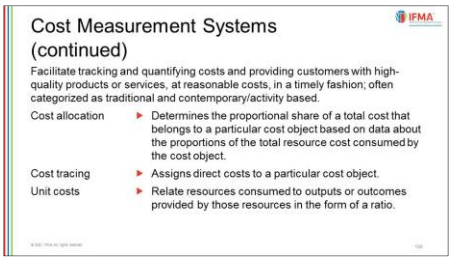
The demand organization often measures FM in terms of its cost effectiveness. Therefore, facility managers must be relentless in their efforts to evaluate past cost performance, reduce necessary costs, and eliminate unnecessary expenditures. This requires FM to have a cost measurement system that supports its cost control efforts.

Costs are measured to manage them. A cost measurement or allocation system:

- Informs the facility manager of how resources are consumed in creating and delivering products and services to customers.
- Provides insight into how costs incurred in creating and delivering products and services contribute to FM overall costs and what factors cause them to change.
- Provides the information necessary to estimate the cost of providing new product features and services.
- Tracks and quantifies costs so FM can better provide customers with affordable, timely, and high-quality products or services.

Cost measurement systems are often broadly categorized as traditional, or activity based. Activity based is synonymous with contemporary.



The following terms are explained to help you better understand the characteristics of traditional and activity-based cost measurement systems.

- **Cost accumulation** – The collection and organization of costs through an accounting system. Whenever a cost is incurred, such as for the purchase of equipment, supplies, or a service, that cost is collected by an accounting system.
- **Cost allocation** – The process of determining the proportional share of a total cost that belongs to a particular cost object based on data about the proportions of the total resource cost consumed by the cost object. Costs are allocated to different cost objects, in proportion to the percentage of the total cost was consumed by each cost object.
- **Cost assignment** – Precedes an activity or takes place without measurement of the activity, as it makes assumptions about the proportion of costs that are assumed to relate to an activity. Costs are assigned to costs objects based on assumptions because:
    - The costs are too small to be worth accurate allocation.

  - The data collection would be too expensive or difficult relative to the cost.
  - There is reliable historical data on which the assignment can be based.
- **Cost tracing** – The assignment of direct costs to a particular cost object.
- **Unit costs** – Costs related to resources consumed to outputs or outcomes provided by those resources in the form of a ratio. The cost of providing one unit of a product or service is a unit cost. Unit costs include all fixed and variable costs. They may be based on an average of costs incurred or resources consumed.

There are different schools of thought about the benefits of traditional cost measurement systems compared to those that are activity-based. The different systems produce different outputs. Facility managers, as a rule, do not have a choice in the matter. However, it is important that facility managers understand how the systems differ and how each system converts data into information of interest to management.

Traditional and activity-based costing both start with the same basic cost elements. As shown in *Exhibit 3-1*, traditional and activity-based cost measurement systems are built on conceptually different foundations.

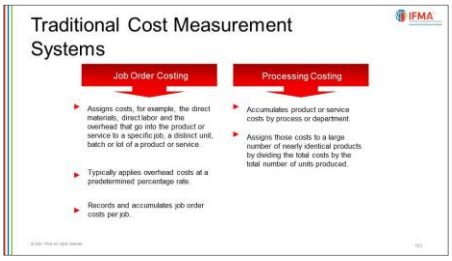
Exhibit 3-1: Comparison of Traditional and Activity-Based Cost Measurement Systems

	Traditional Costing	Activity-Based Costing
Basic cost elements	Include salaries and wages, utilities, depreciation, materials and supplies and taxes.	Include salaries and wages, utilities, depreciation, materials and supplies and taxes.
Cost object selection and procedures for tracking cost flows	Use responsibility centers, for example, departments or functional areas as the key cost object in tracking flows.	• Use activities and operations* as intermediate cost objects in tracing costs to final cost objects. • Assign costs to final cost objects based on cost drivers.
Cost allocation rules	• Use a single base for allocating indirect/common costs. • Limit what is included, primarily to materials and direct support costs. • Focus attention on who does the work.	• Include all traceable activities, for example, marketing, customer support, business support and non-traceable indirect activities. • Focus attention on the process of the work. • Provide comprehensive information by functions, resources, activities and cost drivers.

	Traditional Costing	Activity-Based Costing

*An activity is generally described as a series of related tasks performed by a person; an operation is a series of tasks performed by a machine. The distinction is not always definitive.

Traditional Cost Measurement Systems



Traditional cost measurement systems are department or operation-focused rather than activity-focused.

Traditional cost measurement systems support mass production and inventory management. As noted in Exhibit 3-1, costs are allocated to and tracked by responsibility centers. A responsibility center represents work units, sub-units, departments, and divisions based on the functions they perform.

Two popular forms of traditional cost measurement systems are job order costing and process costing. In practice, many organizations use hybrids of the two.

Job Order Costing

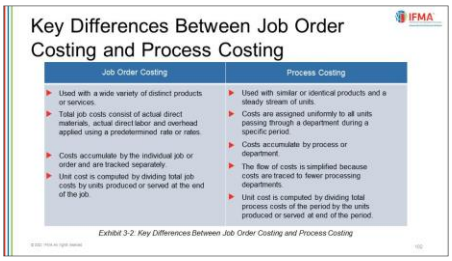


Exhibit 3-2: Key Differences Between Job Order Costing and Process Costing

Job order costing or job costing – a traditional cost measurement system in which direct labor, direct material, and overhead costs associated with a job are grouped. For example, it would include labor, material, and overhead costs associated with a job that was done for a specific customer.

Job costing systems – assign costs that were incurred to create a product or service for a specific job, batch of products, or service. An example would be applying the direct cost of materials and labor to a specific job, along with the appropriate percentage of overhead. Overhead costs are typically applied at a predetermined percentage rate. Each job is given

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a unique identification code or number and a job cost sheet is used to record and accumulate job order costs.

A job order costing system assigns costs to individual jobs using the following steps:

- Identify the job by a unique code or other date-specific reference method
- Trace the direct costs for the job
- Identify indirect cost pools associated with the job/overhead
- Choose the cost allocation base or cost drivers to allocate indirect costs to the job
- Calculate the rate per unit of each cost allocation base
- Assign costs to the cost object by adding all direct and indirect costs that are based on a combination of machine and labor hours

The benefits of job order costing systems include the following:

- They provide detailed results of a specific job or operation
- They are flexible enough to be used by a wide variety of organizations
- They can have strategic value for an organization because they give a detailed breakdown of all the different types of costs
- They can help pinpoint sources of cost overruns across different jobs

Process Costing

Process costing – is a traditional cost measurement system. Product and service costs are grouped by process or department. They are then assigned to nearly identical products by dividing the total costs by the total number of units produced. It is used when there are no distinct jobs associated with processes.

Process costing is appropriate for automated, repetitive processes where the cost of one unit is identical to the cost of another. It lends itself well to situations where a continuous flow of nearly identical products is produced or where there are no distinct jobs associated with a service rendered.

Costs of direct materials, direct labor, and overhead are traced to individual departments or processes. Costs are accumulated for each step in the process and a record of units worked on is also maintained. At the end of the accounting period, the total cost is allocated to units processed in that given time. This is accomplished by dividing the total cost of production in that period by the units produced, resulting in a cost per unit.

Job order costing and process costing systems share similarities.

- Both systems assign material, labor, and predetermined overhead costs to products produced and services provided as a mechanism for computing unit product or service costs.

- Both systems use the same basic accounts, such as overhead, materials, work-in-process, and finished goods.
- The flow of costs through the accounts is basically the same in both systems.

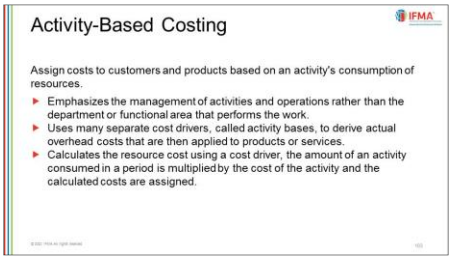
The flow of costs through the accounts is basically the same in both systems.

Despite the similarities, the differences between the systems are significant, as shown in Exhibit 3-2

Exhibit 3-2: Key Differences Between Job Order Costing and Process Costing

Job Order Costing	Process Costing
• Used with a wide variety of distinct products or services. • Total job costs consist of actual direct materials, actual direct labor and overhead applied using a predetermined rate or rates. • Costs accumulate by the individual job or order and are tracked separately. • Unit cost is computed by dividing total job costs by units produced or served at the end of the job.	• Used with similar or identical products and a steady stream of units. • Costs are assigned uniformly to all units passing through a department during a specific period. • Costs accumulate by process or department. • The flow of costs is simplified because costs are traced to fewer processing departments. • Unit cost is computed by dividing total process costs of the period by the units produced or served at end of the period.

Activity-Based Costing



Activity-based Costing (ABC) – is a cost measurement system used to track and control overhead costs. It accumulates costs of activities that consume resources.

ABC is a method of allocating costs to customers, services, and products based on an activity's consumption of resources. It emphasizes the management of activities and operations rather than the department or functional area that performs the work.

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To allocate indirect and support activity expenses to products and services, traditional cost measurement systems use direct labor and machine hour as a basis. Engineering changes, setups and parts maintenance are included. However, activity-based costing segregates the expenses of indirect and support resources by activities. The expenses are then assigned to the products and services based on the drivers of the activities.

Instead of applying a flat overhead percentage across the board, ABC identifies and quantifies specific overhead costs, which helps managers understand and contain overhead costs. The level of detail provided with ABC costing makes benchmarking and chargeback systems more accurate.

ABC systems are used in organizations that have either multiple products and services or products and services that use varying amounts of resources. Resources include direct costs, such as materials and indirect costs, such as customer service, quality control, and supervision. When products or services consume direct and indirect costs at different rates, allocating these costs uniformly makes some products and services appear more profitable and others less profitable than they really are.

Key steps for designing an activity-based cost measurement system are included in Exhibit 3-3.

Exhibit 3-3: Implementing ABC in Facility Management

Step 1	From a selection of cost drivers activities extract all costs that represent the gross overhead component of each of those activities; set them aside.
Step 2	Identify separate and unique overhead activities associated with each cost driver's gross overhead component and create a cost pool for each of those overhead activities. From here, each cost pool will be used to accumulate activity base costs from different and widely varying cost drivers (consumption, usage, and the like) hence the name activity-based costing. Cost pools might include overhead activities such as building maintenance, heating a building, and repairing equipment, among others.
Step 3	Determine how to measure overhead by agreeing on an activity base unit such as square feet, per person, per hour, per production, among others.
Step 4	Determine the exact amount or proportion of activity base units consumed by each cost driver activity.
Step 5	Consolidate identical activity base units under their appropriate cost pools.
Step 6	For each associated cost pool, sum the activity base units to arrive at a gross activity base for that cost pool.
Step 7	Calculate an overall cost per unit for each overhead activity by dividing the total

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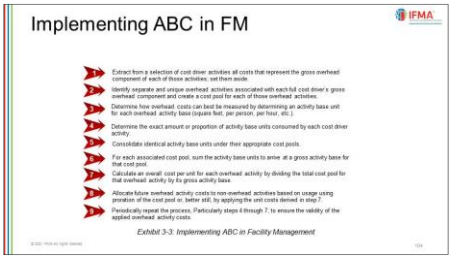
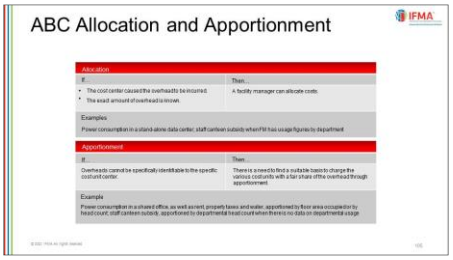
	cost pool for that overhead activity by its gross activity base.
Step 8	Allocate future overhead activity costs to non-overhead activities based on usage by dividing the cost pool proportionally across the cost pools or, by applying the unit costs derived in step seven.
Step 9	Periodically repeat the process, particularly steps four through seven, to ensure the validity of the applied overhead activity costs.





Let's consider some examples of ABC allocation and apportionment in FM.

- **Allocation** – two basic conditions must exist before a facility manager can allocate costs. First, the cost center must have caused the overhead to be incurred and second, the exact amount of the overhead must be known.

  Examples:

  - Power consumption in a stand-alone data center
  - Courier delivery costs, such as FedEx or a similar courier, that can be tracked directly
  - Rebranding a reception area, usually in the marketing or public affairs departments
  - Hospitality catering
  - Overtime costs for FM staff to keep a building open and provide services, for example, during a corporate acquisition

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- Staff canteen subsidy — when FM has usage figures by department, for example, from payment cards and can allocate by proportion of users or money spent by each department
- Internal moves requested by a department — where FM can allocate whole cost and any related "domino effect" costs

- **Apportionment** – When overhead costs cannot be linked to a specific cost unit center, find a method of allocating or assigning the overhead costs to the affected cost units. There may be multiple methods, but the basis for how costs are assigned should be agreed on and published in advance so departments can budget for it.

  Examples:

  - Power consumption in a shared office (and rent, property taxes, water) apportioned by floor area occupied or by head count
  - FM office salaries, apportioned by departmental head count
  - Staff canteen subsidy, apportioned by departmental head count when there is no data on departmental usage
  - Internal moves dictated by corporate need, apportioned by departmental head count or by numbers of heads/desks actually moved

Computer databases have made tracking individual costs using ABC more feasible. Organizations that adopt ABC will be able to use the information generated for accounting and decision making. They can cost products and services, analyze processes, assess management performance, and assess profitability more accurately than organizations that use a volume-based or traditional costing system.

The information derived from ABC can be used to eliminate non-value-adding activities. If an activity or resource can be eliminated without increasing the cost or without decreasing the desirability of a product or service to customers, potential cost savings are possible.

ABC has many advantages. *Exhibit 3-4* lists general advantages and disadvantages of activity-based cost systems.

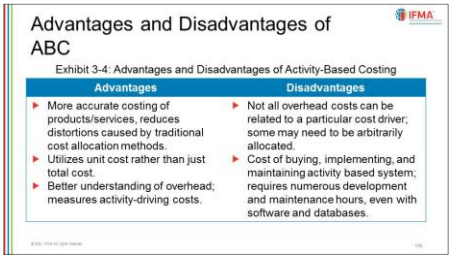
Advantages and Disadvantages of ABC

Exhibit 3-4: Advantages and Disadvantages of Activity-Based Costing

Advantages	Disadvantages
More accurate costing of products/services, reduces distortions caused by traditional cost allocation methods.	Not all overhead costs can be related to a particular cost driver; some may need to be arbitrarily allocated.
Utilizes unit cost rather than just total cost.	Cost of buying, implementing, and maintaining activity based system; requires numerous development and maintenance hours, even with software and databases.
Better understanding of overhead; measures activity-driving costs.	

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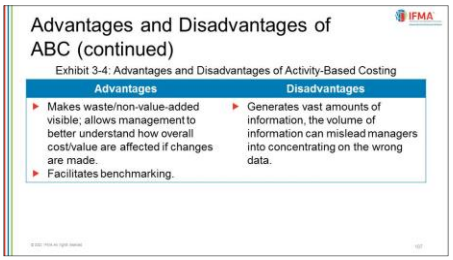
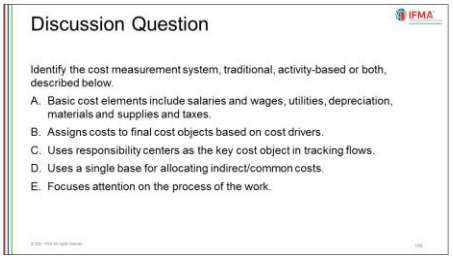
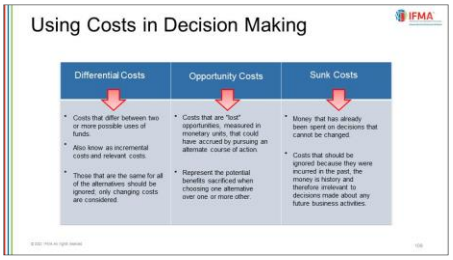


Exhibit 3-4: Advantages and Disadvantages of Activity-Based Costing

Advantages	Disadvantages
• Accurate costing of products/services; reduces distortions caused by traditional cost allocation methods. • Utilizes unit cost rather than total cost. • Better understanding of overhead; measures activity-driving costs. • Makes waste/non-value-added visible; allows management to better understand how overall cost/value are affected if changes are made. • Facilitates benchmarking.	• Not all overhead costs can be related to a particular cost driver; some may need to be arbitrarily allocated. • Cost of buying, implementing, and maintaining activity-based system; requires numerous development and maintenance hours, even with software and databases. • Generates vast amounts of information; the volume of information can mislead managers into concentrating on the wrong data.



Using Costs in Decision Making



Costs are an important part of many business decisions in FM. Consider the following:

- What sorts of property, plant and equipment should the FM organization hold?
- Should the FM organization modernize or sell an old property?
- Should the FM organization upgrade mechanical systems at a property?
- Should services be reduced to lower costs, or could they be improved with little or no cost impact?
- Should a service be done in-house or outsourced?

When making FM decisions such as these, it is important to understand the following cost concepts.

Differential Costs

The differential cost concept implies that costs and revenues differ depending on the conditions. Incremental costs and relevant costs are other terms for differential costs.

Differential costs – are costs that are not the same when comparing alternatives. By identifying differential costs, facility managers can better evaluate and compare alternative courses of action. When using differential costs, facility managers ignore the costs that are the same for all alternatives under consideration and focus only on costs that differ

Example: A facility manager is considering the purchase of a replacement machine. The replacement machine will have maintenance costs of $100,000 per year, while the current machine's maintenance costs are $65,000. The differential cost would be $35,000 of maintenance per year.

The estimated time to do routine maintenance on the machines under consideration varies significantly because of how they are designed. Some machines are designed for easy access to parts. Other machines require many more steps to access parts. The differential cost would be the estimated time to do routine maintenance using the hourly labor rate.

Opportunity Costs

Opportunity costs – Represent "lost" opportunities (measured in monetary units) that could have accrued to the entity by pursuing an alternate course of action.

Opportunity costs are an important factor to consider in business decision making, especially when resources are limited. The alternative that offers the best investment opportunity is preferred. However, if another investment is chosen, the opportunity provided by the first alternative is given up or lost.

Example: When investing time in a major renovation project, the maintenance employees cannot work on anything else even if there were other more critical projects.

Sunk Cost

Sunk costs – are money that was spent on decisions that cannot be changed. The money once spent cannot be recovered. A sunk cost should be ignored when making decisions about future business activities.

A car is taken to the mechanic and the repair cost is $1,000. Two months later the car has problems once again and needs to return to the mechanic. The repair cost this time is $1,500. Some would say that this cost should not be paid because the initial $1,000 that was already paid. However, the $1,000 is a sunk cost — it has been spent and is done. A new decision must be made as whether to spend the $1,500. This decision shouldn't include the 'emotion' of having already spent $1,000.

Example: You purchased a state-of-the-art 400MHZ motor generator to run machinery in the plant. The generator cost USD$50,00. However, when put into service the generator did not work. Why? Because the machinery in the plant was 20 years old and was not compatible with the newer electronics used in the generator. Instead, what was needed was an older model generator. The cost of the newer model cannot be recovered.

Sometimes facility managers erroneously include sunk costs when wanting to justify continued expenditures in a particular area. However, in making real estate decisions, sunk costs warrant some consideration. For example, after purchasing property and spending money to engineer the site, the property cannot be used. The acquisition costs, attorney fees, and engineering costs are sunk costs. If management wants the property to be sold, these sunk costs could be considered when setting the sale price. Ideally, the goal is to sell the property for what was paid for it, plus the sunk costs.

A summary of these cost concepts as they relate to investment decisions in FM:

- Differential costs and revenues always relate to future outcomes and are critical to accepting or rejecting alternative capital budget projects that are also future-oriented decisions.
- Opportunity costs must be included in an investment decision and are typically treated as a cash outlay at the onset of the project.
- Sunk costs are ignored because they are historical costs that are not relevant to the investment decision.

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Cost-Containment Strategies

Lesson Introduction

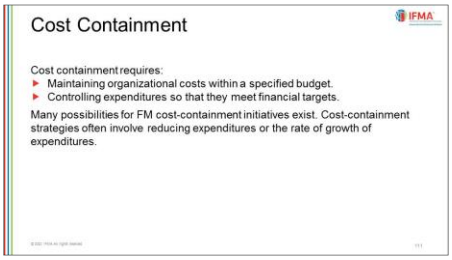
On completion of this lesson, you will be able to:

- Identify fundamental cost concepts and subsequent cost behaviors that occur in response to business changes and activity levels in the FM organization.

This lesson contains the following topics:

- Cost-Containment Opportunities
- Cost-Containment Implementation

Cost-Containment Opportunities



Every organization independent of size, industry, and legal structure must control costs to be successful. Unfortunately, the time-proven reality is that more costs rise than fall, and this adds to the challenge. Therefore, facility managers, because they are large consumers of organizational financial resources, have a never-ending challenge to contain costs.

This topic covers practices that can transform the task that can never be completed into positive cost-containment actions no matter what the unique organizational demand and concludes with guidelines for implementation.

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Cost-containment requires maintaining organizational costs within a specified budget and controlling expenditures to meet financial targets. Cost-containment strategies involve reducing expenditures or the rate of growth of expenditures.

There are many possibilities for FM cost-containment initiatives. In *Exhibit 3-5*, several self-explanatory suggestions based on the collective experience of numerous practitioners are listed.

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Exhibit 3-5: Cost-Containment Opportunities in Facility Management

Cost-Containment Opportunities in Facility Management	

• Implement zero-based budgeting.
• Promote efficiency programs that to reduce the number of units of resources units consumed in each activity.
• Work on supply chain consolidation:
  - Reduce costs of buyer administration and management by managing fewer suppliers.
  - Remove duplication of supply chain management, administration, and overhead costs.
  - Leverage volume purchasing opportunities.
• Develop multi-skilled staff to reduce total resource requirements, cover vacations, and absences
• Reduce staffing levels to meet norms, not peaks of activity, and procure temporary resources for peak activity periods.
• Subcontract services to remove margin-on-margin pricing markups and replace with transparent costing for costs of procurement and administration.
• Implement service level reviews to identify opportunities to reduce service levels, activity frequencies, and so forth to save materials and other resource usage
• Implement process reviews to remove unnecessary steps and thus reduce the time or cost.
	• Do a market analysis on current service delivery structures to decide whether to continue sourcing services internally or externally.
	• Invest in planned maintenance to reduce reactive maintenance costs
	• Review risk profiles and consider accepting heightened risk on some facilities or services.
	• Invest in productivity improvements, for example, energy-efficient plant.
	• Change core business activity cycles or processes that increase facility costs, for example changing the period for re-planning space allocations, and by contributing to production planning decisions
	• Overhaul property disposal by improving space usage
	  - Sublease vacant leased space
	  - Sell vacant property.
	• Sell used furnishings and equipment.
	• Consider risk sharing with vendors.
	• Introduce effective chargeback practices to service users.

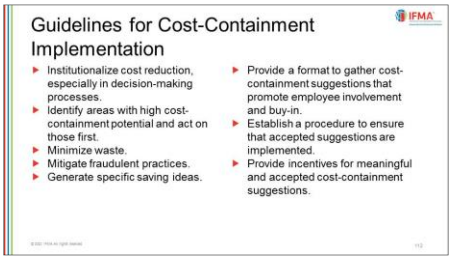
Cost-Containment Implementation

Cost-containment strategies have merit. Management embraces ideas for cost savings but employees and customers may resist when changes disrupt the status quo.

The need for some cost-containment initiatives may be obvious to employees and customers; however, when they require employee or customer buy-in, you should be proactive to reduce the chances of resistance. At a minimum, be clear about the purpose of the change and give employees and customers the opportunity to ask questions and express their concerns.

Management can set the example and promote cost-containment strategies; however, if their actions fail to match their words, the initiatives will fail. Improperly managed cost-containment initiatives can derail projects, damage morale, and negatively impact the demand organization's growth, performance, and reputation in the marketplace.

Successful cost-containment implementation has its challenges. *Exhibit 3-6* offers guidelines that improve the chances of success.



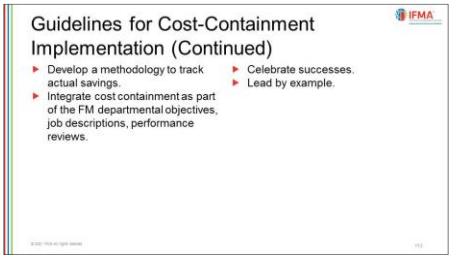


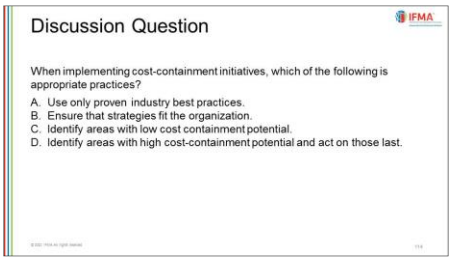
Exhibit 3-6: Guidelines for Cost-Containment Implementation

Guidelines for Cost-Containment Implementation	
• Institutionalize cost reduction, especially in decision-making processes. • Identify areas with high cost-containment potential and act on those first. • Minimize waste. • Mitigate fraudulent practices. • Generate specific savings ideas. • Develop a methodology to track actual savings. • Integrate cost-containment as part of the FM departmental objectives, job descriptions, performance reviews.	• Provide a format to gather cost-containment suggestions that promote employee involvement and buy-in. • Establish a procedure to ensure that accepted suggestions are implemented. • Provide incentives for meaningful and accepted cost-containment suggestions. • Celebrate successes. • Lead by example.

When implementing cost-containment initiatives, keep in mind:

- Strategies need to fit the demand organization.
- Actions should be quantifiable and measurable.
- Strategies should be chosen carefully to mitigate any harm to the business or people.

The best cost-containment strategy of all is to plan. Ultimately, the goal is to be proactive instead of reactive. Being proactive implies that you have anticipated the opportunities for improvement or prevention. Being proactive costs a lot less than being reactive in the long run.



Case study:

- Refer to the Case Study example in the *State or Cross-Border Benchmarking and Budgeting* topic.
- You've been asked to cut the budget by 10%.

- What are some of the actions you might take and why?

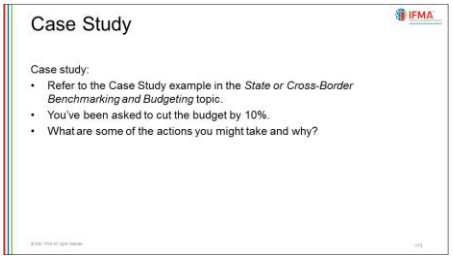


Exhibit 3-7: Case Study: Example of FM Budget

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
SERVICES					
Building Engineering Services	Provide qualified staff to perform preventative maintenance/repair on building systems along with maintaining the central plant	$800,000	$780,000		
Janitorial Services	Provide cleaning services to entire building to ensure the building maintains required health standards along with maintaining an "A" rating	$250,000	$245,000		
Security Services	Provide safety and security for building and occupants	$300,000	$325,000		
Elevator Maintenance & Repair	Provide elevator/escalator maintenance and repairs required by	$350,000	$350,000		

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	the State of California and City				
Security System Maintenance	Preventative maintenance & repair of computerized security system and wiring	$50,000	$50,000		
Maintain/repair building management system	Preventative maintenance & repair of proprietary BMS. Consists of automatic controls and devices for building heating, ventilation and air conditioning as well as lighting systems	$80,000	$90,000		
Computer rooms cleaning	Maintain clean room atmosphere for all building computer rooms	$50,000	$45,000		
Chiller certification & testing	Required by Environmental Protection Agency, chillers not properly functioning could cause possible air contamination or a/c shut down. Required by AQMD	$20,000	$17,500		
Boiler Certification & testing	Required by City and AQMD if not	$20,000	$15,000		

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	tested and certified could be shut down				
Fire Extinguisher Recharging	Required by City Fire Department	$7,000	$5,000		
Regulation for testing	Required by City Fire Department	$25,000	$24,000		
Fire alarm repairs & certification	Required to maintain properly functioning fire alarm system, provide certifications of systems as required	$10,000	$15,000		
Fire sprinkler repair	To repair leaks in building sprinkler piping	$10,000	$15,000		
Certify/maintain/repair building backflow devices	City requirement to be tested on a yearly basis	$10,000	$75,000		
Roll up door repairs	Maintain and repair roll up doors	$10,000	$0		
Maintain/repair/clean cafeteria exhaust fans	Required by health department to prevent clogging and fire	$16,000	$16,000		
Grease Interceptor cleaning	Required by City to remove grease prior to entering waste stream	$50,000	$50,000		
Maintain/repair trash compactor	To ensure compactor working at all times	$5,000	$25,000		

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Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	otherwise trash picked up daily and trash hauling cost will rise more than 100%				
Repair of vertical blinds	For repair and replacement parts of the building window coverings	$5,000	$2,500		
Repair/replace carpet	To mitigate trip hazards carpet needs to be repaired asap	$10,000	$2,500		
Water mitigation	Service to mitigate water intrusion to prevent mold, mildew and disease	$10,000	$15,000		
Pressure wash building and clean windows	To prevent exterior building deterioration from dirt and grime and to maintain a Class A building	$15,000	$15,000		
Pest control services	Ensure building is free of pests and rodents	$30,000	$20,000		
Thermal scanning of building electrical	Annual services to detect possible electrical problems prior to having a major electrical fire	$6,000	$6,000		
Cooling tower and chiller chemicals and chemical monitoring	Weekly service to provide and add chemicals for	$30,000	$25,000		

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
	building water systems to maintain proper chemical balance. Necessary for monitoring and servicing equipment that regulates the chemicals and water in the building chillers and cooling towers. Reduces liability of staff handling the chemicals and having hazardous chemicals stored onsite				
Water treatment testing and analysis	Quarterly consulting service required to test water system and ensure building system including cooling towers and chillers are fee of contamination	$10,000	$5,000		
TOTAL SERVICES		**$2,179,000**	**$2,233,500**		
COMPUTER SERVICES					
CAFM system upgrades/repairs	Provide software upgrades and expansion	$20,000	$0		

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
CAFM System yearly license fees	Annual licensing fees to software producer	$25,000	$25,000		
Tools & equipment					
TOTAL COMPUTER		**$45,000**	**$25,000**		
SUPPLIES					
Office Supplies	Supplies necessary to maintain normal business operations for FM	$25,000	$20,000		
Computer Supplies	Printer cartridges, storage disks and supplies needed to maintain daily operations functioning smoothly	$5,000	$4,000		
Emergency supplies, food and water	Replenish emergency supplies that have expired or have been used	$5,000	$1,000		
Tools & equipment		**$35,000**	**$25,000**		
TOTAL SUPPLIES					
MEMBERSHIPS, TRAVEL & CONFERENCES					
Membership in IFMA for 3 staff	Provide up to date information and assistance for facilities staff	$2,000	$700		
Seminar/conference	Registration for	$5,000	$0		

Description	Justification	Budget Financial Year 2017	Actual Financial Year 2017	Budget Financial Year 2018	Actual Financial Year 2018
fees	facilities conferences				
Travel	Transportation and lodging for attending facilities conferences	$5,000	$0		
TOTAL MEMBERSHIP, TRAVEL & CONFERENCES		**$12,000**	**$700**		
TOTAL BUDGET		**$2,271,000**	**$2,284,200**		

Chargebacks

Lesson Introduction

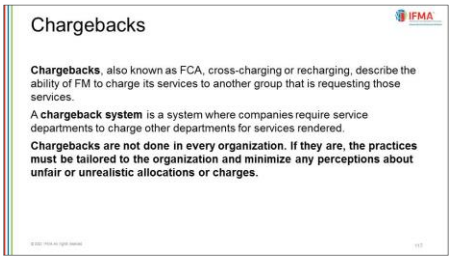
On completion of this lesson, you will be able to:

- Explain the use of chargebacks to allocate facility costs.

This lesson contains the following topics:

- What is a chargeback?
- Advantages and Disadvantages of Chargebacks
- Chargeback Systems
- Facility Manager's Role in Chargebacks

Chargebacks



Chargebacks are an opportunity to create accountability and transparency. The practice results in gaining a better grasp of business allocations and costs and allows organizations to effectively fund and reallocate resources to match the momentum of business change and evolution, resulting in the moving and sharing of resources across the demand organization. Facility Cost Allocation (FCA) is typically a corporate decision with senior administrative support from the Finance Department. While the facility manager can propose and promote FCA, it requires support and commitment from senior management or else the push-back can be insurmountable.

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What is a Chargeback?

A chargeback is the ability of facility management to charge its services to another group that is requesting those services. This is also known as cross charging or recharging.

An example of a chargeback is billing an internal department for the space it uses. The objective is to reduce the inefficient use of space by being explicit about departmental costs. Chargebacks can be applied to all FM services. A well-designed chargeback system can provide a fair allocation of facility costs and services to the end user.

Chargebacks were not intended to penalize the workforce for the resources and real estate it uses. Also, the goal is not to create a source of profit. Chargebacks were created for the FM team to make sure that the workforce has the space and services it requires to be productive, while maximizing company profits. It is about building awareness about where monies are allocated and improving cost strategies.

In today's business environment workspace dynamics are constantly evolving and facility managers need to adjust their strategies to match the growing needs.

Advantages and Disadvantages of Chargebacks

Chargebacks offer both the demand organization and FM some important benefits. The main advantages of chargebacks are they:

- Make FM costs more apparent and understandable to line managers.
- Allow FM costs to be more easily tied to a product in a manufacturing.
- Promote cost-conscious behavior and encourage thrift and efficiency.
- Encourage FM to be cost competitive when end users have the option to use an outside provider.
- Promote the FM unit as a resource partner and preferred provider of support to other business units.

Some of the primary disadvantages of chargeback are:

- Rates may not be market-competitive costs.
- Systems may lack flexibility and can be time-consuming and difficult to administer.
- Rates or terms are not determined by negotiation with the customer. Customers often do not have a choice in whether to use the internal supplier and subsequently the service levels.

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- If customers have a choice, a facility manager may have to prepare many more annual cost estimates for customers to convince them that FM is a vendor of choice.
- Chargebacks may involve unrealistic cost allocation rules.
- Chargebacks may penalize departments that have problems in reducing head count or space occupancy.
- Systems may deprive FM of any discretionary budget.

In an office setting, chargebacks can lead the FM department to focus on costs and politics instead of services. When this happens, chargebacks may not be worth the time or effort.

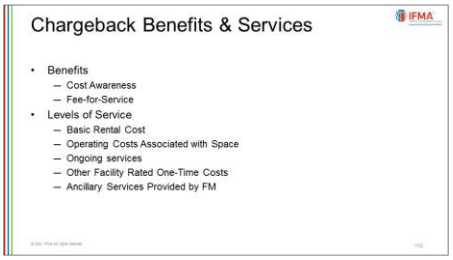
Chargeback Systems

Chargebacks are not applied in every organization. If they are, the practices must be tailored to the demand organization.

Systems for administering chargebacks may be broad or quite specific. FM may:

- Charge actual direct costs.
- Charge actual direct costs plus an overhead charge.
- Charge an allocation based on specified criteria, such as space occupied or number of employees.
- Use flat fee rates (tiered or negotiated), tied to internal service-level agreements that define objectives.
- Use a combination of these approaches or use different ones.

Even more complex chargeback methodologies are based on external market-based or industry-wide pricing.



Benefits of Chargeback Systems

By implementing a fair equitable chargeback system, there are two primary benefits:

- **Cost Awareness** — FM becomes acutely aware of the costs. Cost awareness benefits the company as a whole by reducing costs. It helps avoid unnecessary work by allocating resources more closely in line with the original, budgeted purpose.

- **Fee-for-service** – in the early stages of growth most facilities departments are set up as an overhead cost center, which means that costs are not allocated to the users. End users will continue to ask for services until they are turned away by the facilities department due to a lack of funds. Shifting from this mode of operation to a fee-for-service is usually difficult because corporate attitudes about facilities services must change at every level of the FM organization. Once this shift is made, the facilities department will be seen as a service provider.

In a budget, a chargeback is recorded as either revenue or expense recovery to FM. If the chargeback is for another department within an organization, it is recorded as a cost or expense by the department occupying the facility and using the FM services.

Levels of Service

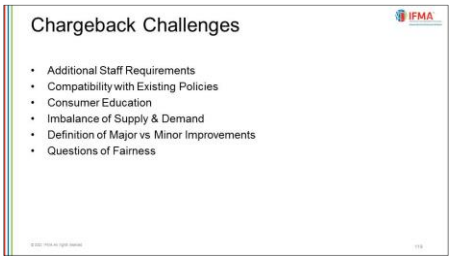
Chargeback systems can be organized into five levels of service. This breakdown reflects the structure of standard lease packages.

1. **Basic Rental Cost** — basic rental may be standard for all departments or it can be adjusted to reflect the capital asset value of space. It is based on an appraisal of the type of construction. The baseline for cost comparisons is standard finished office space. Alterations above the building standard are billed as a separate, one-time charge. Basic rentals include the following:
    - Rental per square foot, including the repayment of base building construction, loan interest, reasonable profit, insurance and taxes.
    - Repayment of the cost to construct the required space to the building standard specified in the tenant work letter in commercial practice.
    - Repayment cost of the initial space layout and working drawings for standard alterations.
2. **Operating Costs Associated with the Space** — a single rate for all user departments is usually set, unless they have a sophisticated space accounting and tracking system that will break out costs by department. Space-associated operating costs typically include:
    - Utilities
    - UPS - Uninterruptible Power Supply
    - Facility administration
    - Site management
3. **Ongoing Services Rendered** — setting a baseline is important. Some departments may require more service than others, for example a day porter for executive areas. Either some means of tracking these differences or a schedule of above-standard charges is needed. Examples of ongoing services:
    - Routine responsive maintenance

- Preventative maintenance, inspections and monitoring
- Security service
- Landscaping maintenance
- Housekeeping service
- Technology services

4. **Other Facility-Related One-Time Costs** — expenses associated with rearranging facilities to support a change in the basic operation of the user constitute a facility-related one-time cost. One-time costs are tracked by work orders for specific jobs and include the following:
    - Moving
    - Furniture rearrangement
    - Space redesign
    - Above-building-standard alterations to prepare the space for occupancy
    - Extra design services for above-standard alterations, such as extra detailing, millwork shop drawings, installation drawings and specification of systems furniture
5. **Ancillary Services Provided by Facilities Departments —** demand for a wide range of services that are time consuming and expensive. If these services are provided, extra charges are levied. These services can include but are not limited to:
    - Catering for special meetings
    - Chauffeur service
    - Picture framing
    - Setting up and clearing of conference rooms

A well implemented chargeback system assists facility managers in fairly allocating facility costs to the end user. There are challenges in implementing and maintaining the system, but the benefits do outweigh the difficulties.



Change in an FM organization can be difficult, and when implementing a chargeback system, obstacles may occur such as:

- **Additional staff requirements** — the facilities department has the following five options where this is concerned:
    1. Allocate more staff to manage the system
    2. Hire part-time or temporary assistance
    3. Eliminate other tasks
    4. Estimate where the chargeback system will reduce unnecessary work and use the existing staff to manage the service
    5. Ensure staffing flexibility and scalability to meet the various needs
- **Compatibility with existing policies** — before procedures can be implemented, they need to be dovetailed with existing policies, manual procedures and automated sequences, so that data can be tracked smoothly across organizational lines.
- **Consumer education** — the facilities department must educate the building users about how the system works and why specific items are charged. If this is not done, claims of unfairness may arise and end users will become less cooperative.

Once the challenges of implementing a chargeback system are overcome, additional challenges can arise, these being:

- **Imbalance of supply and demand** — services are demanded according to the budget. There may be a year-end rush to finish the budget which will overload the facility management department. The reverse is also possible, over ordering of items or services and then reneging on the commitments.
- **Definition of major vs minor improvements** — a comprehensive chargeback system covers the life cycle cost of operating and paying back a building's useful life. It does not cover costs of major replacement or renovations that will extend a building's useful life. The cost for this is factored into some chargeback systems to develop a general fund from which all projects can be funded. This leaves users displeased for having allocated resources to a long-term investment that does not pay off.
- **Questions of fairness** — when users become conscious of costs, they also become conscious of how costs are allocated across all departments. Across-the-board charges are simple for administration, but unless clearly communicated, will cause concerns about inconsistencies.

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Chargebacks in the Evolving Workplace

The concept of understanding resource usage is not new to FM. This knowledge is used to forecast future needs, plan for annual budget meetings and ensure that all user needs are met.

When the chargeback strategy was initially designed, space was allocated by department, with each individual assigned their own workspace. The chargeback process grouped allocations based on department. It brought awareness regarding what was being used and how, offering real data for making informed business decisions. With the emergence of mobile tools, these departmental structures are being eroded, making way for a collaborative workspace environment, in which teams are comprised of individuals with varying strengths from multiple departments. This transformation has forced management teams to adjust their mindset regarding space and asset allocation.

Re-evaluate the Space Allocation Strategy

As greater emphasis is being placed on workspaces becoming collaborative and cooperative, a similar shift of emphasis from departmental structure and cost center level to space usage, coupled with workforce behavior has occurred. The productivity of the worker is paramount, and the arrangement of workspaces is shown to have a substantial effect on this metric. In order to truly analyze space utilization from every angle, facilities teams are developing different ways of considering how to allocate space with particular focus on the different workspace groupings and the personal dynamics within them.

Previously clients used their chargebacks through the space cost center, where each department and each individual was assigned their own space. A department could be identified if it was under utilizing the allocations and revisions could be made accordingly. With the evolving workspace the mindsets and tools need to adjust.

While the concept is still the same, the cost center has been renamed "category", so that facility managers have the flexibility required to define their own categories. The view has been expanded to allow for more flexibility, with the ability to define different groupings. Employee X might be working on multiple projects, moving around from space to space as the needs arise. Rather than assigning a specific department or space to this individual, it is more effective to group him in multiple categories, based on specific projects, job title or job description. This flexibility empowers the facility manager to run better analytics and visually see the relationships which will, in turn, allow them to make better decisions regarding how to enhance the work environment.

This allows for more precision in cost-cutting efforts, expanding efforts to maximize all resources. Chargebacks can now be addressed more as billing and tracking spaces per

employee and become tools for examining the needs of the individual as well as the demand organization.

Chargebacks still have their value and place and will continue to be a valuable tool for data analysis of space usage. With so much flexibility occurring in modern business practices, there has to be a shift in the ways the assets are being applied, the spaces allocated and the needs of the workers addressed. There is a shift toward more collaborative spaces but, there are many organizations that have their staff in more traditional workstation environments. There is both a shift and continuum; there may be some activities that are charged to the customer – if they want it, they have to pay for it from their budget and not the FM. This is a hybrid of chargebacks and traditional costs. The important questions are, who pays for the actual service? Is it part of the facility manager's budget? Does it come from the business unit?

Facility Manager's Role in Chargebacks

Managing a chargeback system is challenging. Facility managers need to be able to calculate true costs for products and services, including overheads. Allocation rules can at times seem unrealistic.

Example: Within an organization, two operating units occupy approximately the same gross square footage. One is in a brand-new property and the other is space in a 30-year-old rental. Should each unit be charged the same base rent? How can FM account for the qualitative differences so that allocations do not appear arbitrary?

If a facility manager is required to implement and administer a chargeback system, it will need to ensure that the department has software and hardware to administer a chargeback budget. The facility manager will need to define, justify and apply chargeback procedures so that:

- What costs to charge back, on what basis the charges are computed, such as square foot or per use and on what terms services will be provided are determined, documented and communicated.
- Agreements with customers on what services to deliver are tracked and charges incurred during the agreements are documented and communicated.
- The system used to do the chargebacks is in keeping with the demand organization's philosophy and policies regarding chargebacks.
- Actual operational costs are determined.
- A standard method for defining and charging occupied and vacant space is determined and communicated to the appropriate parties.

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- Business units understand the financial implications of facility-related requests.
- The method used to determine and calculate what is charged back and at what rate is documented and communicated to the relevant business unit or operation.
- The services to be charged back are adequately communicated and agreed to by the customer.
- Where appropriate, a contract or service level agreement is entered with the customer.
- The true cost of the space and services is reflected in the profit and loss statement of the business unit.

It is common for clients or business units in an organization to challenge the fairness of a chargeback model or to dispute invoices. Facility managers will need to hone their communication skills; it has been suggested that chargebacks are 20% reporting and 80% politics.

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Progress Check Questions

1. What best describes a variable cost?

    a. A cost that varies with changes in volume or activity, but not in direct proportion
    b. A cost that routinely increases and decreases proportionately with changes in activity level
    c. A cost that remains unchanged in total for a given time period
    d. A cost that Is fixed within some relevant range-specific cost drivers for a specific duration of time

2. Why do cost allocations?

    a. To collect and sort cost information in an organized manner through an accounting system
    b. To relate resources consumed to the outputs or outcomes provided by those resources in the form of a ratio
    c. To assign direct costs to a particular cost object
    d. To determine the proportional share of the total cost that belongs to a particular cost object, based on data about the proportions of the total resource cost consumed by the cost object

3. What is meant by differential costs?

    a. Costs that have been incurred on decisions that cannot be changed
    b. Costs that represent the potential benefits sacrificed when choosing one alternative over one or more others
    c. Costs that differ between two or more possible users of funds
    d. Costs that should be ignored because they were incurred in the past

4. What does job order costing do?

    a. Accumulates resource costs from multiple sources that are brought together to deliver a product or service
    b. Traces costs of materials, direct labor and overhead to individual departments or processes
    c. Accumulates product or service costs by process or department then assigns them to a large number of nearly identical products
    d. Determines unit costs for similar or identical products and a steady stream of units

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5. What is an appropriate practice when implementing cost-containment initiatives?

   a. Use a top-down approach
   b. Make sure actions are quantifiable and measurable
   c. Do not implement initiatives unless there are budget challenges
   d. Initiatives should support the status quo

6. What are cost containment opportunities in facility management?

   a. Increasing staff levels to cover forecast peak periods of activity
   b. Deferring or delaying expenditures to another budget period
   c. Bringing subcontracted services in-house
   d. Eliminating chargebacks

7. What operating costs are associated with space?

   a. Training
   b. Utilities
   c. Financing
   d. Marketing

8. What are examples of ancillary services provided by facility departments?

   a. Catering for special meetings and chauffeur services
   b. Space redesign and moving
   c. Security and landscaping
   d. Above-building-standard alteration

9. Once a chargeback has been implemented, what other issue might arise?

   a. FM becomes acutely aware of the cost
   b. Increase in service requests
   c. Questions of fairness
   d. Increase in FM department's discretionary budget

10. Chargeback, cross-charging, or recharging are also known as FCA. What is FCA an acronym for?

    a. Facilities Calculation Allowance
    b. Facilities Cost Allocation
    c. Facilities Cost Allowance
    d. Facilities Calculation Allocation

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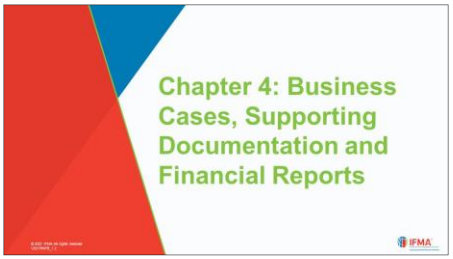
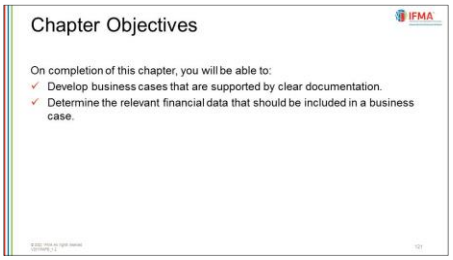
Chapter 4: Business Cases, Supporting Documentation and Financial Reports

Chapter 4 Introduction

On completion of this chapter, you will be able to:

- Develop business cases that are supported by clear documentation.
- Determine the relevant financial data that should be included in a business case.





Lessons

- Developing a Business Case
- Business Case Financial Data

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Developing a Business Case

Lesson Introduction

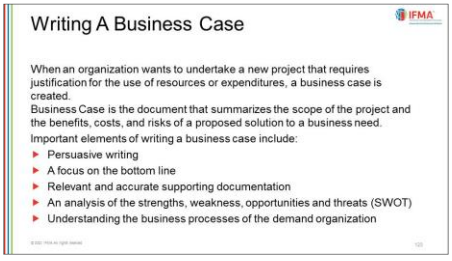
On completion of this lesson, you will be able to:

- Develop business cases that are supported by clear documentation.

This lesson consists of the following topics:

- Promoting Facility Management in Business Terms
- Writing a Business Case
- Components of a Business Case
- Business Case Sample

Writing a Business Case



When an organization wants to undertake a new project that requires justification for the use of resources or expenditures, a business case is created.

A facility manager cannot be successful without aligning the FM organization to the demand organization in all aspects of its identity. To meet the FM organization's objectives, it is integral that FM understands the core business objectives. Alignment to the core business objectives is essential when developing business cases for the FM initiatives. When preparing a business case, demonstrate knowledge of the demand organization's pursuit of profits and reduction of costs.

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Business Case is the document that summarizes the scope of the project and the benefits, costs, and risks of a proposed solution to a business need.

Important elements of writing a business case include:

- **Persuasive writing** – encourages careful word choice, the development of logical arguments and a cohesive summary. A business case should be compelling and should adequately capture the qualitative characteristics, quantifiable and unquantifiable elements and tangible and non-tangible benefits of a proposed undertaking. A well written business case will promote the FM organization as a valued partner to the demand organization.
- **A focus on the bottom line** – will hold senior managements' attention. Include the funds required, the return-on-investment (ROI) which is the profit anticipated or saving that will result from the project/initiative, the improvement of morale, productivity and welfare of employees and the fulfillment of legal or mandatory compliance requirements.
- **Relevant and accurate supporting documentation** – will promote understanding of how the proposed initiative will support the demand organization's objectives. The FM needs are not always obvious to other departments and explaining these in language that is understood by the decision makers is a critical function for a facility manager.
- **An analysis of the strengths, weakness, opportunities and threats (SWOT) –** as they relate to the proposed initiative or project will provide an assessment of the current state and rationale for the proposed initiative. A key benefit of the SWOT analysis is that it not only focuses on fixing or mitigating weaknesses but also shows how to nurture and leverage strengths. The internal data is more reliable if some of the stakeholders interviewed are external customers and suppliers. External viewpoints add perspective, particularly for weaknesses that internal stakeholders may minimize.
- **Understanding the business processes of the demand organization** – such as the approved business case format as well as budget cycles, approval authorities and competing demands for resources, and working within this framework increases the likelihood of the project receiving funding. Proposed capital investments in FM have to compete for capital funding. Finance and other senior management will review the case and prioritize the project against many other initiatives that may require capital investment. Facility managers who are familiar with the business terms and principles that senior management use and adhere to business process will increase the chances of their projects being approved.

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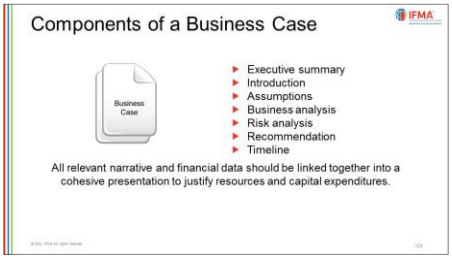
Components of a Business Case



A business case should follow the preferred or approved organizational format and include expected elements. *Exhibit 4-1* provides a list of commonly found components. Due to the diversity of the subject, this list is not prescriptive but more a general indication. Some of these elements are dealt with in more detail in a subsequent section.

Exhibit 4-1: Common Components of a Business Case

Components	What It Provides
Executive summary	A high-level overview of the proposed initiative, including why it is necessary and key recommendations.
Introduction	A description of the current situation, the requirement for the proposed initiative and recommendation and how the effort will fulfill organizational objectives.
Assumptions	Recognition of what major assumptions are behind the proposed initiative.
Business analysis	Financial analysis results: Initial cost estimates, funding required and related expenses, projected cash flows and financial payback. *Business case financial data will be covered in more detail later in this chapter.* Rationale for change: A discussion of how the solution addresses issues or opportunities. • Potential benefits, such as improved customer satisfaction, increased retention of tenants, or reduced maintenance costs. • Compliance with mandatory regulatory requirements, such as standards for accessible design or legislation related to health and safety at work.
Risk analysis	An overview of:

Components	What It Provides
	• Risks involved in the proposed initiative. • Alternative options in ranked order to demonstrate the optimum solution. • What will happen if the effort is not undertaken, also referred to as the do-nothing scenario, where the FM organization would be without the project.
Recommendation	Content describing the recommended solution(s).
Timeline	Estimates about money, people and time that will be needed to deliver the solution and realize the benefits.

Business Case Sample

The following information is taken from a sample business case that compares two investment options for the purchase of a new chiller. The presentation highlights a comparison of long-term financial implications for each decision.

This scenario is hypothetical, and the information includes some of the likely components of a business case. As noted in Exhibit 4-1, "Common Components of a Business Case," additional information would logically be included in such a business case.

Remember that most organizations have a required format for their business cases and specify the type of financial analysis required. It is incumbent on a facility manager to ensure that FM business cases follow organizational protocols.

In researching the best course of action, the facility manager must consider:

- The best equipment to provide the right comfort environment along with the right temperature, humidity, and ventilation.
- The new equipment must reduce the cost of operation by being more energy efficient.
- The new equipment must be able to integrate into the existing building automation system (BAS).
- How the alternative option, six 50-ton package units, compares to replacing the 300-ton chiller.
    - What are their costs and maintenance schedules?
    - What is the estimated useful life of the equipment?
    - What is the life cycle costing (LCC) for each option for 20 years which is the expected useful life of the chiller? What are the total costs, maintenance, operations, parts, labor, energy costs for each recommendation?
    - Are there physical and/or infrastructure constraints to installing six 50-ton package units? Is there adequate space for either the chiller or the package units?
    - How reliable will the new equipment be?
    - During installation, how will it affect the building occupants?

Executive Summary

The organization's strategic plan mandate is: "Strive to become more competitive and effective and provide the best, safe and productive workplace possible for employees." All decisions for FM operations and processes are measured against this mandate.

In terms of the critical comfort needs of the employees in a building, a high-performance heating, ventilating and air conditioning (HVAC) system makes a building a more desirable work environment. After an assessment performed by an engineering firm, it has been determined that the current chiller is beyond its useful life. To continue to provide air conditioning and sustain a competitive and pleasant workplace, a chiller must be replaced. Additionally, the organization is concerned about its impact on the environment and the community. In addition to cost savings, sustainability factors must be a consideration when replacing equipment.

This proposal for capital funding is based on the analysis of two mutually exclusive investment choices. The recommendation is a new 300-ton chiller. The new chiller will play a significant role in creating a more comfortable environment by providing the right temperature, humidity and ventilation. It will reduce the building cost of operation, provide energy efficiency and minimize environmental impact.

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Introduction

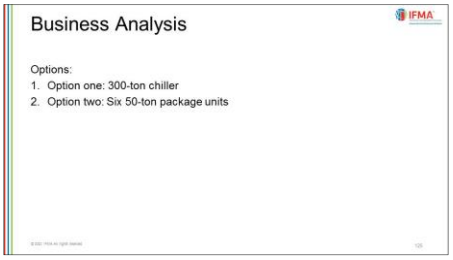
The reliability of the current chiller is declining; a facility condition assessment performed by an engineering firm has confirmed that the unit is in a state of disrepair and should be replaced very soon. It is currently costing more to continue operating the current chiller than to replace it. Running the HVAC at maximum efficiency is the best way to minimize service calls, eliminate surprises and control total cost of operation.

Possible Solutions

This proposal for capital funding analyzes two mutually exclusive investment choices:

- Option one: a new 300-ton chiller to replace the current one.
- Option two: Six 50-ton package units, a change to the current system.

Business Analysis



The financial analysis shown here outlines the initial cost estimates for the two options under consideration.

Option one: 300-ton chiller

- Initial Cost of a 300-ton chiller is $295,000.
- Annual Maintenance and Utilities costs are $1,725 and $20,000 respectively.
- Useful life span is 20 years.
- Based on the manufacturer recommendations a major overhaul of the chiller system is recommended after 10 years. The cost is $170,000.
- To determine a life-cycle cost for option one, the finance department used a Net Present Value (NPV) method.
- A Net Present Value of Option one is $ (636,364). The calculation included the initial cost, overhaul cost, and maintenance and utilities costs. M&U costs were a subject to an annual 4% increase.

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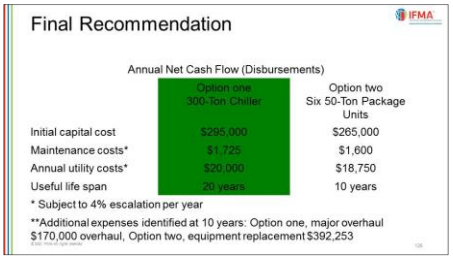
- Net present value (NPV) was calculated based on the expected costs of an investment, where these costs were discounted by a rate that reflected inflation and opportunity costs. The discount rate used by finance department was ten percent.

Option two: Six 50-ton package units

- Initial Cost of Six 50-ton package units is $265,000.
- Annual Maintenance and Utilities costs are $1,600 and $18,750 respectively.
- The useful life span is 10 years.
- An equipment replacement cost for the six package units is $392,000. The replacement cost is calculated considering 4% annual inflation.
- To determine a life-cycle cost for an option two, the finance department used a Net Present Value (NPV) method.
- A Net Present Value of Option two is $ (674,585). The calculation included the initial cost, replacement cost, and maintenance and utilities costs. M&U costs were a subject to an annual 4% increase.
- Net present value (NPV) was calculated based on the expected costs of an investment, where these costs were discounted by a rate that reflected inflation and opportunity costs. The discount rate used by finance department was ten percent.

Final Recommendation



The recommendation is the purchase of option one, a new 300-ton chiller.

As shown in the following table, when initially comparing two options in a total cost analysis, the projections for the initial capital costs, annual maintenance costs and annual utility costs for option one (300-ton chiller) are higher than for option two (six 50-ton package units).

Annual Net Cash Flow (Disbursements): Exhibit 4-2

	Option one 300-Ton Chiller	Option two Six 50-Ton Package Units
Initial capital cost	$295,000	$265,000

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Annual Maintenance cost*	$1,725	$1,600
Annual utility cost*	$20,000	$18,750
Useful life span	20 years	10 years
Additional expenses	$170,000 equipment overhaul	$392,253 equipment replacement
Life-Cycle cost	$636,364	$674,585

* Subject to 4% escalation per year

While the initial inclination may be to select option two (the package units), because it is less expensive in the short-term, it is not the best choice in the long term.

Note that the service life of the option two package units is 10 years, compared to the 20-year useful life span for the option one 300-ton chiller. A potential threat is the uncertainty of future replacement costs. An escalation in cost of 4% per year has been considered to reflect inflation, however, the actual replacement cost could be higher.

Life-cycle cost considers all the costs incurred during the service life of an asset, therefore, the economically sound choice between the two alternatives is Option one, the 300-ton chiller. The decision to purchase the 300-ton chiller is based on a long-range strategic evaluation.

Assumptions

The following assumptions support the choice of the 300-ton chiller:

- Installation of the recommended 300-ton chiller has zero physical constraints.
- There is adequate space for the chiller.
- The 300-ton chiller will provide energy efficiency, therefore providing a positive impact to the organization's sustainability goals.
- The 300-ton chiller model was chosen not only because it's one of the latest and most reliable products on the market, but it will enhance the reliability of the building HVAC system.

Business Case Template

A business case is typically presented as a structured written document, but a case may be made through a short verbal argument or presentation. Other situations may require a

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written document in combination with a presentation. Content may vary depending on the needs and expectations of the demand organization or the size and scope of the initiative.

Below is a template that might be used to develop a business case.

Business Case Template: Exhibit 4-3

It includes the following four sections: • Executive Summary • Finance • Project Definition • Project Organization	
Section Heading	**Question Answered**
EXECUTIVE SUMMARY	
FINANCE	
Financial Appraisal	How much?
Sensitivity Analysis	How much?
PROJECT DEFINITION	
Background Information	Why?
Business Objective	Why?
Benefits and Limitations	Why?
Option Identification and Selection	What?
Scope, Impact and Interdependencies	What?
Outline Plan	What? When? Who?
Market Assessment	Context?
Risk Assessment	Context?
Project Approach	How?
Purchasing Strategy	How?
PROJECT ORGANIZATION	
Project Governance	How? Who?
Progress Reporting	How?

Business Case Financial Data

Lesson Introduction

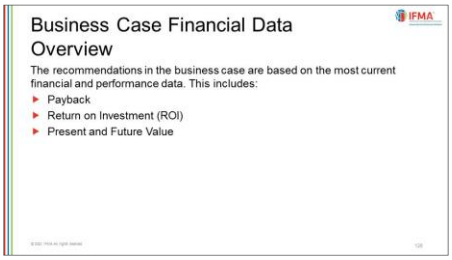
On completion of this lesson, you will be able to:

- Determine the relevant financial data that should be included in a business case.

This lesson consists of the following topics:

- Business Case Financial Data Overview.
- Quantifying the Costs and Benefits.
- Minimizing Risk in Capital Investments.

Business Case Financial Data Overview



A well-crafted business case includes relevant financial data in order to justify the capital expenditure and to demonstrate an understanding of the organization's concerns for profits, reduced costs and similar financial concerns. As most organizations are ever mindful of the bottom line, a business case should define how much money will be involved in the project or initiative and how much the organization will make (or save) through the change.

The recommendations in the business case are based on the most current financial and performance data, this includes:

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Business Case Financial Data Overview: Exhibit 4-4

Discounting	**Internal rate of return (IRR)** – a discounting method that determines the rate of return promised by an investment project over its useful life. It is sometimes simply called the yield on a project. IRR should not be confused with ROI, or return-on-investment. ROI gives the overall picture of the investment and its returns from beginning to end. IRR takes into account the future value of money; it is very important to calculate.
	Present and Future Value – present value is the method used to compare costs; all cash flows are converted to their present value or the value of past and future dollars corresponding to today's value. Future value is the amount that a given amount, invested today at a given rate of return or interest rate, will be worth at some designated future time.
Non-discounting	**Payback** – a non-discounting method that determines the time required for a demand organization to recover its original investment, the speed of recovering the initial investment.
	Return-on-investment (ROI) – a non-discounting method that is a measure of cash generated by or lost due to an investment. It measures the cash flow or income stream from the investment relative to the amount of invested. Return-on-investment is derived as the "return" incremental gain from an action divided by the cost of that action. The ROI is a measure of investment profitability not a measure of the investment size. It reflects the percentage returned based on the capital invested. The higher the investment risk, the greater the potential investment return, and the greater potential investment loss.

Quantifying the Costs and Benefits

Financial information and performance information are important components in a business case. Compiling such information involves:

- Researching the problem or opportunity.
- Identifying the alternative solutions available.
- Quantifying the benefits and costs of each solution.

The level of due diligence required to quantify costs and benefits and secure the necessary funding will vary depending on the specific business case need. The concepts and

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techniques that follow may not apply in every scenario, but a facility manager should understand their potential utility.

These include:

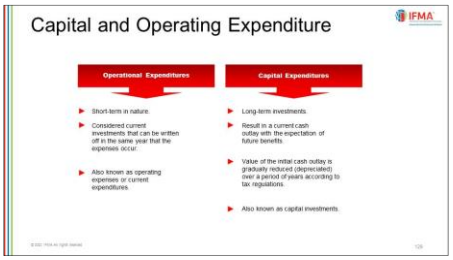
- Capital Investments and Time Value of Money
- Capital Investment Analysis
- Concept of Best Value
- Life-Cycle Costing
- Benchmarking

Capital Investments and Time Value of Money

Capital is a limited organizational resource, and organizations can experience difficulty recovering money tied up in bad capital investments. Given these two simple facts, all FM capital projects or initiatives must be carefully evaluated.

Determining how to analyze capital investments, requires knowledge of what constitutes a capital expenditure versus an operational expense and an appreciation of the concept of the time value of money.

Capital Expenditures and Operating Expenses



In accounting, there are two categories of business expenses: capital expenditures and operating expenditures (expenses). There are distinct differences between the two, including their respective tax treatments.

Capital expenditures, or capital investments, are acquisitions of new or expansions of long-term assets that the demand organization will use for more than one year.
Examples of capital investments include plant and equipment purchases, construction and renovations, and hardware purchases, such as computers.

Operating expenditures (expenses) are short-term in nature and represent day-to-day costs that are necessary to keep a business running. Operating expenses include rent, utilities, salaries, and pension plan contributions.

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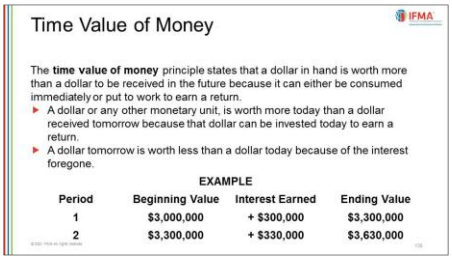
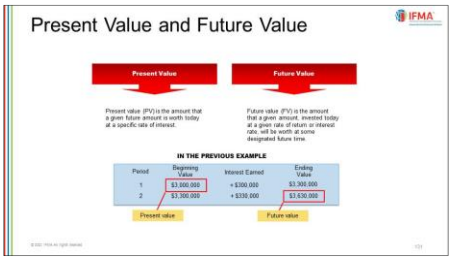
Time Value of Money





The time value of money principle states that a dollar in hand is worth more than a dollar to be received in the future because it can either be consumed immediately or put to work to earn a return.

For example, if a demand organization allocates funds to the FM department for a capital project, the demand organization loses the opportunity to invest that money today in an interest-bearing account.

There are two methods that are used to evaluate an investment in a project. They are discounted and undiscounted cash flows.

Discounted cash flow (DCF) is the analysis that adjusts cash flows over time for the time value of money.
Undiscounted cash flows don't incorporate the time value of money, and solely consider the normal value of cash flows when it comes to making investment decisions.

Stated differently — the time value of money recognizes that:

- A dollar, or another monetary unit, is worth more currently than a dollar received tomorrow because that dollar can be invested today to earn a return.
- A dollar tomorrow is worth less than a dollar today because of the interest that is not earned.

If finance grants FM funds for a capital project, the demand organization loses the potential to invest that money in an interest-bearing account.

Time Value of Money: Exhibit 4-5

To further explain the time value of money, consider the café renovation below:

Results of the current year-end client satisfaction survey highlight ongoing problems with the building cafeteria. Low user ratings of the café have been a consistent trend in the past three annual surveys, progressing from "somewhat dissatisfied" to "extremely dissatisfied." In the current survey, the users' open-ended comments note numerous issues with the café.

During a survey results review meeting with the demand organization's regional manager, it is mutually agreed with the facility manager that it is time to renovate the 10,000-square-foot café. This has been on hold for some time. The facility manager estimates the project to be a $3 million investment and develops a business case to request capital funds for the renovation.

As shown below, if finance could invest it and secure a 10% annual interest rate, rather than granting FM that money, $3,000,000 would be worth almost $3,630,000 in two years because of the cumulative interest earned.

Period	Beginning Value	Interest Earned	Ending Value
1	$3,000,000	+$300,000	$3,300,000
2	$3,300,000	+ $330,000	$3,630,000

This simple example demonstrates that money has value over time. It sets the stage for a discussion of two additional capital investment concepts: present value and future value.

Present value (PV) is the method used to compare costs; all cash flows are converted to their present value or the value of past and future dollars corresponding to today's value. PV is the amount that a given future amount is worth today at a specific rate of interest. In our example, the $3,000,000 is the present value.

Future value (FV) is the amount that a given amount, invested today at a given rate of return or interest rate, will be worth at some designated future time. The $3,630,000 is the future value.

There's a simple formula used in finance to calculate the time value of money.

Present value x Future value interest factor = Future value

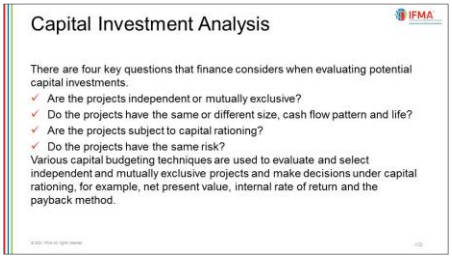
$3,000,000 x 1.2100 = $3,630,000

Note that the future value amount arrived at in this calculation reveals the same result as identified in the PV section above.

Where did the 1.2100 future value interest factor come from? Finance has interest factor tables. For years, it was necessary to locate the appropriate interest multiplier in a table and then do the calculation. In this case, the factor is 1.2100 for 10% over two years. Business calculators and electronic spreadsheets now have the interest factors and formulas preprogrammed. If the variables are known, the time values are easy to determine.

Future value is intuitive; money is invested and interest collected. If the investment is secure, the future value is expected to increase.
Present value is the monetary value today of a future payment that is discounted at some appropriate interest rate. The present value of $3,630,000 is $3,000,000. The 10% interest rate is called the discount rate. As with future value, there are present value interest tables for calculating the present value of money received in the future.
The formula used in finance to calculate the present value is:
Future value x Present value interest factor = Present value
$3,630,000 x 0.826 = $2,998,380
The present value interest factor for 10% over two years is 0.826. The reason for $2,998,380, not $3,000,000, is because of rounding of the present value interest factors in the table. Facility managers do not have to do manual calculations like this, financial calculators and spreadsheets perform the calculations.
Two final points about future value and present value: • The operation of evaluating a present value into the future value is called capitalization. In our example, it shows how much $3,000,000 today will be worth in two years. • The reverse operation, evaluating the present value of a future amount of money, is called discounting. This explains how much $3,000,000 received in two years, at some interest rate, is worth today.
In many organizations, finance is responsible for time value calculations. Facility managers may have little, if any, responsibility related to calculating the numbers, but they should understand the terms and concepts as it is part of the language of senior management.
There are, of course, different sources of money for capital investments. Money for an FM capital project may be internal, capital investments may also be funded externally through numerous ways.
Example: bank loans, private loans, venture capital, public offerings of shares of company stock to investors and so forth. Depending on the source of the funding, a facility manager may have different responsibilities.

Capital Investment Analysis



There are four key questions that finance considers when evaluating potential capital investments.

1. Are the projects independent or mutually exclusive?
2. Do the projects have the same or different size, cash flow pattern and life?
3. Are the projects subject to capital rationing?
4. Do the projects have the same risk?

Let's consider some of the terms and concepts behind these questions:

- **Independent** – acceptance or rejection of an independent project has no impact on the acceptance or rejection of other projects under consideration.
- **Mutually exclusive** – situations where the acceptance of one capital budgeting project prevents or prohibits the acceptance of others.
- **Size, cash flow pattern and life** – size is the magnitude of the capital investment. Cash flow is the income from all sources less expenses, indicating how much cash is available at a given time. Stated another way, cash flow is net cash before financing, including acquisitions. It refers to the actual flow of cash into cash receipts and savings and out of cash payments of an organization during a given time period. Estimating capital project cash flows is critical because erroneous assumptions, inaccurate, or unreliable data can corrupt the entire capital budget. "Life" in this context generally refers to the duration of the project or the stages of a project over time, from initiation to completion.
- **Capital rationing** – capital rationing is the allocation of investment funds to multiple projects when senior management places an upper limit on the size of the capital investments or the demand organization lacks sufficient money.
- **Risk** – risk, or the chance of loss, is the possibility that the actual benefits provided by the investment will deviate from the investor's initial expectations

Capital investment analyses can be quite complex and involved. An overview of some techniques a facility manager may encounter is provided below and includes net present value (NPV), internal rate of return (IRR), and simple payback period.

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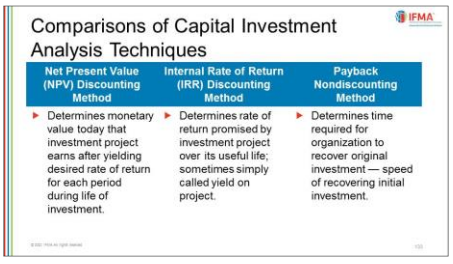
The facility manager needs to be aware of what other departments are planning for capital investments. For example, in a hospital, if the diagnostic imaging department is planning to install a new x-ray machine, then the facility manager will need to add lead shielding to the walls and possibly upgrade the electrical services, backup power, lighting, HVAC, and more.

Capital investments factors are used to aid in decision-making of capital investment projects. These elements of a project decision, such as cost of capital or the amount of time the investment could take, are to be weighed to determine whether an investment should be made. Maximizing utility for the investor is key; the manner in which the investment is made must be in the best interest of the investor. Capital investment factors may be described as "factors influencing investment decisions" or "capital investment determinations."

Net present value and internal rate of return are discounted cash flow (DCF) methods. The payback period is an undiscounted cash flow method. These methods are used to analyze the investment projects. The use of DCF method has increased over the years.

Discounting methods recognize the time value of money. The net present value method and the internal rate of return are two approaches that make capital budgeting decisions using discounted cash flows. The same basic assumption underlies both the NPV and IRR methods; risk or uncertainty is not factor. They evaluate a capital investment by comparing the equivalent present values of all future net cash flows for the initial investment. Discounting methods also acknowledge that those projects promising earlier returns are preferable to projects promising later returns.

Exhibit 4-6 summarizes key characteristics of net present value, internal rate of return, and the payback method. The intent of the information is to assist facility managers to grasp the principles so they can provide the information that finance needs from them. A discussion comparing the three methods follows the exhibit.


Comparisons of Capital Investment Analysis Techniques

Net Present Value (NPV) Discounting Method	Internal Rate of Return (IRR) Discounting Method	Payback Nondiscounting Method
Determines monetary value today that investment project earns after yielding desired rate of return for each period during life of investment.	Determines rate of return promised by investment project over its useful life; sometimes simply called yield on project.	Determines time required for organization to recover original investment — speed of recovering initial investment.

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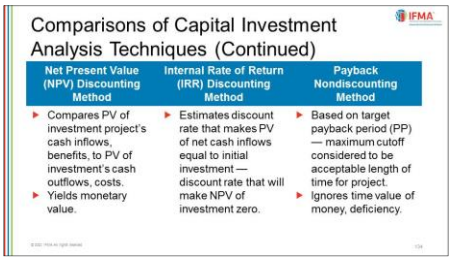

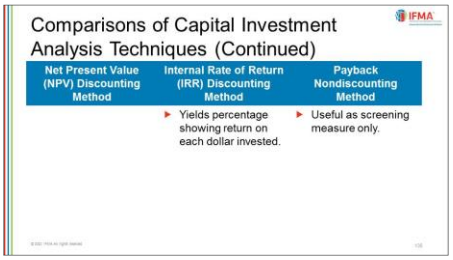

Exhibit 4-6: Comparison of Capital Investment Analysis Techniques

Comparison of Capital Investment Analysis Techniques

Net present value (NPV)

The difference between the present value of cash inflows and the present value of cash outflows over a period of time that occur as a result of undertaking an investment project.

Description	Advantages and Disadvantages
• Compares the present value of the project's cash inflows and benefits to the present value of the project's cash outflows and costs. • Yields a monetary value. • The reference point for NPV for accepting or rejecting projects is zero. • For independent projects, if the NPV is zero or greater, an investment project is acceptable. • For mutually exclusive projects, the investment with the highest positive NPV should be accepted.	*Advantages:* • Recognizes the time value of money. • May be used to evaluate investments with uniform net cash flows and uneven cash flows. • Provides theoretically correct accept/reject decisions. *Disadvantages:* • Does not provide any indication of relative profitability. • Present value monetary value can be difficult to understand.

Internal rate of return (IRR)

A discounted cash flow method that determines the rate of return promised by an investment project over its useful life. It is sometimes simply called the yield on a project.

Definition/Description	Advantages and Disadvantages

Comparison of Capital Investment Analysis Techniques

- The internal rate of return (IRR) is a metric used in financial analysis to estimate the profitability of potential investments.
- Estimates the discount rate that makes the present value of net cash inflows equal to the initial investment, a discount rate that will make the NPV of an investment zero.
- The criterion rate, hurdle rate, serves as a cutoff point. Projects below this cutoff rate are rejected unless they are mandatory projects.
- For independent projects, accept if IRR is equal or greater than the criterion rate; reject if IRR is less.
- For mutually exclusive projects, the investment with the highest positive IRR that exceeds the criterion rate should be accepted.

Advantages:

- Recognizes the time value of money.
- The percentage rate of return facilitates comparisons with the demand organization's minimal acceptable rate of return or hurdle rate.
- May be used to evaluate investments with uniform net cash flows and uneven cash flows.

Disadvantages:

- Requires a process of trial and error.
- Delivers only a percentage rate of an investment's potential earnings, not the magnitude or duration of cash flows.

Payback
An undiscounted cash flow method that determines the time required for an organization to recover its original investment – the speed of recovering the initial investment.

Return-on-Investment (ROI)
A non-discounting method that reflects the percentage returned based on the capital invested. ROI is a measure of investment profitability not a measure of the investment size. The higher the investment risk, the greater the potential investment return, and the greater potential investment loss.

Definition/Description	Advantages and Disadvantages

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Comparison of Capital Investment Analysis Techniques

- Based on a target payback period (PP) – the maximum cutoff considered to be an acceptable length of time for a project to recover its original investment.
- Projects with a PP shorter than the target are accepted, those with PPs longer than the target are rejected.
- For independent projects, except if the PP is less than or equal to the maximum payback period, otherwise, reject.
- For mutually exclusive projects, accept the shortest PP that is less than or equal to the maximum payback period.

Advantages:

- Easy to understand.
- Provides an indicator of liquidity and risk.

Disadvantages:

- Ignores time value of money.
- Based primarily on experience and judgment, no firm guidelines for setting the maximum payback period.
- Does not measure profitability, only speed of recovering original investment.

Both the NPV and IRR methods have gained widespread acceptance as decision-making tools.

In comparing the two methods, it is important to keep in mind that:

- The NPV method is often simpler to use because the IRR method requires a process of trial and error. However, computer spreadsheets can be used to automate the IRR method.
- The NPV method makes a more realistic assumption about the rate of return that can be earned on cash flows from a project. If the NPV and IRR methods disagree about the worthiness of a project, it might be wiser to use the data from the NPV method.
- A major difference is that the end result of NPV is a monetary value; whereas, the final computation for IRR is a percentage. Because the NPV values of individual projects can be added to estimate the effect of accepting some possible combination of projects, this is an advantage for NPV. IRR yields a percentage. Multiple projects cannot be added or averaged to evaluate any combination of capital investment projects.
- Another advantage of the NPV method is its usefulness in evaluating a project in which the required rate of return varies over the life of the project. The total present value of the cash inflows can be determined and compared with the total initial investment to evaluate the attractiveness of a project. It is not possible using the IRR method to infer if the project is unattractive. Different required returns for each year means that there is no single rate of return or a single IRR value.

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Reliability cautions are evident in both methods:

- NPV is only as reliable as the discount rate that is selected. An unrealistic discount rate can result in an erroneous decision to accept/reject a project.
- A capital investment project should not be accepted solely on the basis of a high IRR value. A high IRR result must be investigated to assess if an opportunity to invest cash flows at such a high IRR is realistic.

Among all the various methods to analyze capital investments, the discounted cash flow methods are theoretically some of the most reliable. The NPV and IRR methods will yield similar results as long as there are no differences in:

- The project size, the amount of the initial investment
- The net cash flow pattern
- The life of the project
- The cost of capital over the life of the project

Compared to DCF methods, such as the NPV and IRR, payback period method ignores the time value of money. This is a critical deficiency. The payback method can lead a manager to choose investments that do not maximize profits.

The payback and ROI methods are useful as screening measures and can help identify investment proposals for managers to consider further. If a proposal doesn't provide a payback within a specified period, the potential project can be rejected without additional consideration.

Discounted and Undiscounted Cash Flow methods have distinct strengths and weaknesses. To evaluate investment projects, organizations should use multiple criteria. Employing multiple methods will help to mitigate the potential for estimation errors.

Lesson Activity

Completing a Business Case

The purpose of this activity is to perform a payback analysis.

Railroad Capital Budget Business Case

T & P Railroad Capital Budget Project

This proposed capital project is very visible and very political.
BACKGROUND:

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T & P Railroad trains provide passenger service between two major cities. Three trains arrive at the outlying depot and are fueled and serviced daily. These three trains layover at the depot overnight. At one time, the depot was in a sparsely populated area. However, the area is now densely populated with residential units. The residents are complaining loudly about the constant noise overnight along with the diesel emissions.

The locomotives continue to run overnight to provide power to the passenger cars for servicing, lighting, refrigeration and more. It is estimated that the trains consume more than 137,592 gallons of fuel for the continuous operation of the auxiliary HEP (head end power) engines providing power to the trains over the course of a year.

PROPOSAL:

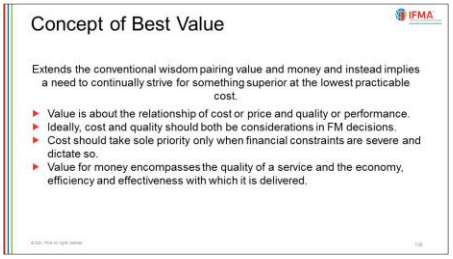
It is proposed to provide 480V ground power to the engines. The engines could then be shut down and "plugged in" to the auxiliary electrical power. This will result in reducing fuel consumption, reduce background noise and reduce diesel emissions.

PROJECT COSTS AND STATISTICS:	
• The cost of the project is $850,00 • Cost of Capital - 6% • Maximum term of loan - five years	Emissions reduction: • 1.5 tons HC (Hydrocarbons) per year • 4.03 tons CO (Carbon Monoxide) per year • 40.95 tons NOx (Nitrogen Oxides) per year • 1.01 tons PM (Particulate Matter) per year
Current statistics: • Fuel cost $4.30 gallon • 21 gallons of diesel per hour per train for HEP • Three-four gallons per hour additional for engine idle • 15-20 hours idle per night	*Proposed electrical costs:* • $6,590 per month • $347 per day

Perform a payback analysis.

The group is to report back as to the recommendation on this project and why, based on your financial analysis.

Concept of Best Value



In business, value is generally described as an amount of goods, services or money considered a fair and suitable equivalent for something else. Value is often equated to satisfaction with the cost of a good or service for the given quality received.

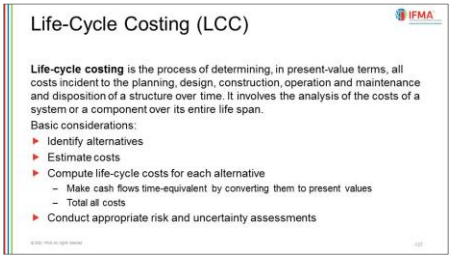
In *Total Facilities Management*, authors Brian Atkin and Adrian Brooks discuss best value. They note that best value extends the conventional wisdom pairing value and money and instead implies a need to continually strive for something superior at the lowest practicable cost.

Atkin and Brooks make succinct points underpinning best value decisions:

- Value is about the relationship of cost or price and quality or performance.
- Ideally, cost and quality should both be considerations in FM decisions.
- When financial constraints are severe and indicate as such, cost should take sole priority.

A demand organization may think it is achieving best value when it pays less for goods and services. Costs are typically easier to measure and by their nature more readily quantified. To equate value with a mere reduction in cost can be shortsighted. According to Atkin and Brooks, value for money encompasses the quality of a service and the economy, efficiency and effectiveness with which it is delivered.

Life-Cycle Costing



Life-cycle costing (LCC) aids the decision-making process by determining, in present-value terms, all costs incident to the planning, design, construction, operations and maintenance

and disposition of an asset over time. This process takes into account aspects such as the total cost of acquisition and support of an item throughout its useful life, including the cost of removal and disposal. LCC is needed to plan for activities such as maintenance and preparation for future needs and funds. Life-cycle cost reflects the hard costs or the upfront costs of an asset, including capital investment costs, operating costs, maintenance costs and the cost of disposal.

Life-cycle costing is covered in more detail in the *Operations and Maintenance* Course.

Life-cycle costing considers all the costs incurred during the service life of an asset; it facilitates making economically sound decisions. LCC provides a basis to compare the merits of competing project implementation alternatives. The economic consequences of mutually exclusive project alternatives can be evaluated over a period of time.

In practice, there are different methodologies for LCC. It is beyond the scope of our discussion here to present any specific methodology, but the basic considerations inherent in most approaches are:

- Identify alternatives
- Estimate costs
- Compute life-cycle costs for each alternative
    - Make cash flows time-equivalent by converting them to present values
    - Total all costs
- Conduct appropriate risk and uncertainty assessments

There are different ways to test assumptions made and "what-if" scenarios for high-cost items, such as what happens if maintenance costs are 15% more or less than planned. Sensitivity analysis, scenario analysis and other ways to assess and mitigate investment risks will be covered later in this topic.

Life-cycle cost analysis is often calculated with other supplementary measures of economic evaluation, such as NPV, IRR and payback methods, that were discussed earlier in the module. LCC is consistent with these other common valuation measures when the same parameters and length of study period are used.

LCC is an analytical process. Although, the concepts underlying LCC are fairly straightforward, their application can present some challenges, such as uncertainty as to

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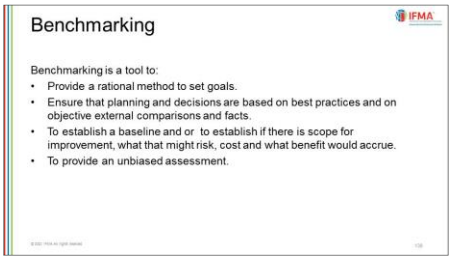
when and how LCC should be employed and what assumptions should be made during the analysis. There are many variables that are key to the assumptions made in the process.

LCC is a useful decision-making tool. It is valuable for ranking and prioritizing projects and making data-driven recommendations to senior leadership. A facility manager's recommendation should take into account the demand organization's strategic plans and other environmental factors. The lowest LCC may not be the best recommendation based on market economics and the long-term outlook.

Benchmarking



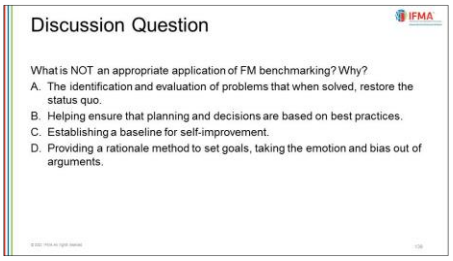
Benchmarking is the continuous, systematic process of measuring products, services, costs, quality and best practices against the best levels of performance. A misconception of benchmarking is that it captures best-in-class information, but the practice has a much wider application. The best performance levels often are comparisons to external benchmarks of industry standards. They may also be based on internal benchmarking information or measures from other organizations outside an industry that have similar processes. Measuring effectiveness of activities may be enhanced through benchmarking with peers.

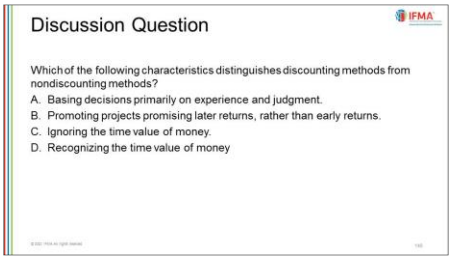
Initially, manufacturing companies primarily used benchmarking to improve products. Benchmarking practices are now commonly used in service industries as well and applied to customer service and other types of departments. Benchmarking studies can differ in focus, for example, operational or strategic. They can take many formats, including best practice, functional, process, and competitive.

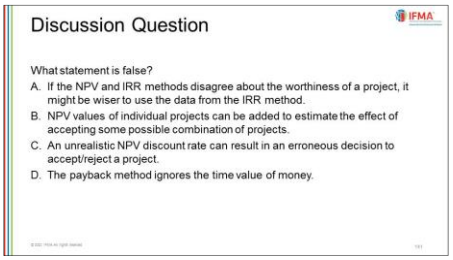
Benchmarking is another tool that a facility manager can use when quantifying costs and benefits. Consider a few applications for FM:

- To provide a rational method to set goals, taking the emotion and bias out of arguments.
- To ensure that planning and decisions are based on best practices and on objective external comparisons and facts.

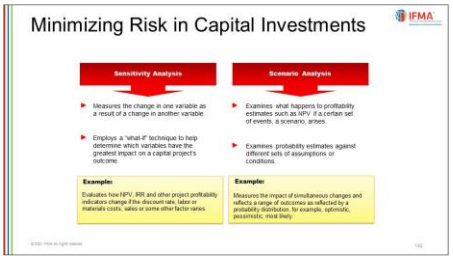
- To establish a baseline for self-improvement by investigating how peer organizations/similar buildings/similar functions are performing; to establish if there is scope for improvement, what that might risk, cost and what benefit would accrue
- To provide an unbiased assessment of what needs to change or what course the FM department or the demand organization should pursue in an investment.







Minimizing Risk in Capital Investments



Risk implies uncertainty and instability. The following statements are potential risk factors for a demand organization:

- Future cash inflows can vary unexpectedly throughout the life of a project.

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- The rate of return used in calculations may not be accurate for the life of the project.
- The cost of financing may increase during the life of a project.
- New mandatory regulatory factors can require additional investments at any given point in time.
- The life of the related product or service could be significantly shorter or longer than anticipated.
- Inflationary or recessionary economic conditions may impact the value of cash flows.
- Domestic or global political events may impact project cash flows or the viability of the project.

There are different ways to minimize the risk in capital investments. Sensitivity analysis and scenario analysis are two useful approaches that one should be aware of in FM.

Sensitivity Analysis

Sensitivity analysis measures the change in one variable because of a change in another variable. It determines which variables have the greatest impact on a capital project's outcome.

As it pertains to capital investments, sensitivity analysis is a "what-if" technique evaluating how NPV, IRR and other indicators of the profitability of a project change if the discount rate, labor or materials costs, sales or some other factor varies from one case to another. The purpose is to assess how sensitive the NPV, the IRR or another specified profitability measure is to a change. Spreadsheet programs facilitate the "what-if" analysis.

Sensitivity analysis can be used to answer questions such as, but not limited to:

- What happens to NPV if cash flows increase or decrease for each year of the project?
- Will NPV remain positive throughout a project if there is no cash inflow in the second year of a three-year project?
- What will happen to NPV if the discount rate increases or decreases?
- What would happen to NPV if a major redesign, requiring additional capital investments, becomes necessary at some point during the project in order to address competitive new products?
- What would be the impact on NPV if the project is extended, with decreasing cash flows and increased maintenance costs in the extended years?

The principal merits of sensitivity analysis are the ability to pinpoint forecasting errors and the fact that computer spreadsheet programs eliminate many tedious manual calculations. Sensitivity analysis does not account for the probability of any of the outcomes or the impact of simultaneous changes in variables, and it does not provide a decision rule for accepting/rejecting projects.

Scenario Analysis

Scenario analysis examines what happens to profitability estimates such as NPV if a certain set of events, called a scenario, arises. Probability estimates are examined against different sets of assumptions or conditions.

Scenario analysis is a variation of sensitivity analysis. Where sensitivity analysis measures the change in one variable as a result of a change in another, scenario analysis measures the impact of simultaneous changes and reflects a range of outcomes as reflected by a probability distribution.

An infinite number of assumptions or conditions exist, but scenario analysis often includes the following three.

- **Base-case scenario** - is the average scenario based on management assumptions.

Example: Operating revenues and the salvage value of an asset could be greater than the most likely values.

- **Best-case scenario** – is the ideal projected scenario.

Example: When calculating the net present value, use the lowest possible discount rate, the highest possible growth rate, and the lowest possible tax rate.

- **Worst-case scenario -** considers the most serious or severe outcome that may happen in a given situation.

Example: When calculating the net present value, one would take the highest possible discount rate and the highest expected tax rate.

There are both advantages and disadvantages to scenario analysis. The biggest advantage is that the scenario analysis provides an in-depth examination of all possible outcomes. It allows management to test assumptions and understand the potential impact of specific variables and identify potential risks. For example, performing a worst-case scenario can help avoid surprises and a tendency to be overly optimistic in projecting a rate of return. The main disadvantage of the scenario analysis is that it is susceptible to user biases and

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tends to be heavily dependent on historical data. This can lead to incorrect assumptions, and result in models that are unrealistic.

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Progress Check Questions

1. When creating a business case, how should all relevant narrative and financial data be treated?

    a. They should be linked together into a cohesive presentation
    b. They should be treated separately to allow for individual presentations
    c. They should be a combination of narrative, financial, and capital expenditures
    d. None of the above

2. What element is NOT important when writing a business case?

    a. Persuasive writing
    b. Having the data available
    c. Relevant financial data
    d. Health and safety analysis

3. What are the main components of a business case?

    a. Executive summary, Assumptions, Business Analysis, Risk Analysis, Recommendation, and Timeline
    b. Executive summary, Future Status, Business Analysis, Risk Analysis and Recommendation
    c. Executive summary, Assumptions, Business analysis, Risk analysis and Timeline and Deadline
    d. Executive summary, Future status, Business analysis, Risk analysis and Timeline and Deadline

4. Each of the following is the benefit of persuasive writing, except for which one?

    a. It inspires new ideas
    b. It encourages careful word choice
    c. It aids the development of logical arguments
    d. It formulates a cohesive summary

5. What does SWOT stand for?

    a. Strengths, Weaknesses, Objectives, Threats
    b. Sustainability, Wining, Objectives, Threats
    c. Strengths, Weaknesses, Opportunities, Threats
    d. Strengths, Weaknesses, Opportunities, Time

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6. What is meant by present value?

   a. The estimated discount rate that makes the present value of net cash inflows equal to the initial investment
   b. The monetary value today of a future payment that is discounted at some appropriate interest rate
   c. The dollar value of the investment that is made today at a given rate, will be worth in the future
   d. The current value of an investment project calculated from assumed future value

7. What is meant by net present value?

   a. The estimated discount rate that makes the present value of net cash inflows equal to the initial investment
   b. The difference between the present value of cash inflows and the present value of cash outflows over a period of time that occur as a result of undertaking an investment project.
   c. The equivalent dollar value today of future net cash inflows
   d. The monetary value that an investment project earns before the investment is over

8. What is meant by internal rate of return?

   a. The estimated discount rate that makes the present value of net cash inflows equal to the initial investment
   b. The monetary value today that an investment project earns after yielding the desired rate of return for each period during the life of the investment
   c. The equivalent dollar value today of future net cash inflows
   d. The equivalent dollar future value of present net cash inflows

9. What is a Discounted Cash Flow method?

   a. Return on Investment
   b. Internal Rate of Return (IRR)
   c. Payback Period
   d. Benchmarking

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10. What is one of the basic considerations inherent in most approaches to Life Cycle Costing (LCC)?

    a. Placing asset in the facility register
    b. Capital Budget Planning
    c. Identifying alternatives and computing costs for each alternative
    d. Commissioning plan development

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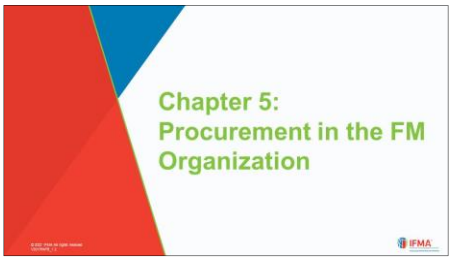
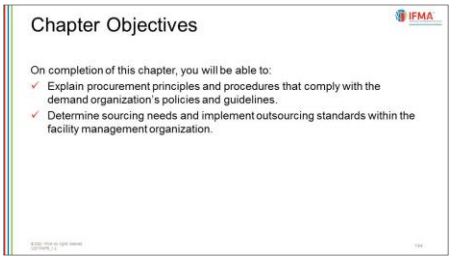
Chapter 5: Procurement in the FM Organization

Chapter 5 Introduction

On completion of this chapter, you will be able to:

- Explain procurement principles and procedures that comply with the demand organization's policies and guidelines.
- Determine sourcing needs and implement outsourcing standards within the facility management organization.





Lessons

- Procurement Procedures
- Facility Management Outsourcing

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Procurement Procedures

Lesson Introduction

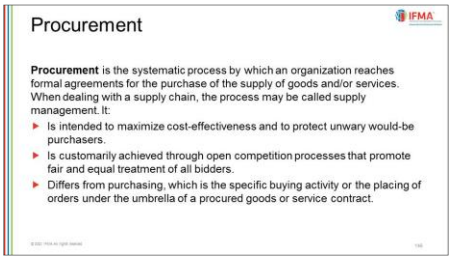
On completion of this lesson, you will be able to:

- Explain procurement principles and procedures that comply with the demand organization's policies and guidelines.

This lesson covers the following topics:

- What is Procurement?
- Procurement Principles
- Sustainable Procurement Practices
- Procurement Process

What is Procurement?



Procurement is the systematic process by which an organization reaches formal agreements for the purchase of the supply of goods and/or services.

All organizations need goods, materials, and equipment to operate. Procurement ensures this happens in the right volume and at the right time to meet a demand organization's needs. This means the purchasing department makes sure the demand organization has the goods and services it requires to run smoothly. The purchasing department oversees

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several functions including handling the procurement process. In general, procurement is referred to as the final act of purchasing.

Why Procurement Is Important

Organizations in all industries depend on procurement to seek out and manage external supplier relationships. This makes sure needed items and services are acquired at the best possible cost so projects and processes can move forward efficiently and successfully. Procurement helps to streamline processes, reduce raw material prices and costs, and find better sources of supply. As a result, procurement directly affects an organization's bottom line and business operations by controlling costs, avoiding delays and errors, and maximizing resources.

Facility Manager's Responsibilities

A facility manager may coordinate the procurement of real estate, equipment, and products or services by following the demand organization's procurement process, and with support from the individuals involved in the procurement process.

Consider the following scenarios that illustrate situations where the procurement process and FM requirements might not align.

- An FM-related incident needs a swift response, which is not conducive to the prolonged bidding process.
- The facility manager prefers a vendor because of best price value and superior quality of work. However, the vendor is not approved through the procurement process.
- Only one source carries proprietary equipment or spare parts FM needs, thus removing the need for competitive bidding.
- Unforeseen events require FM to increase the quantity needed shortly after procurement of the goods through competitive bidding.

The procurement process creates a clear, agreed on, and auditable process for obtaining goods and services. The process protects the demand organization and individuals involved in the process from fraud and corruption.

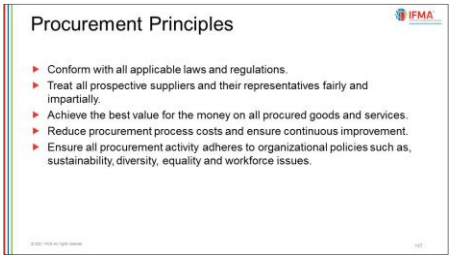
An FM procurement request, that includes the scope of work and specifications, and any building constraints, may involve the collaboration and cooperation by facility management, procurement, and others within the demand organization. FM and Procurement should have created a process for managing emergency purchases.

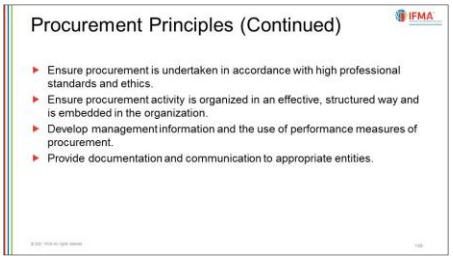
Discussion of the procurement process continues later in this chapter.

FM procurements take time to complete and involve collaboration and cooperation between facility management, procurement and others. Each party has an important role:

- The facility manager writes the scope of work and specifications along with indicating building constraints
- Procurement manages the structure and process
- Purchasing and legal contribute expertise and guidance as required

Procurement Principles





In addition to procurement activities conforming to applicable laws and regulations, practices should follow principles regarded as ethical code of conduct. Although the following seven principles tend to apply primarily to procurement by organizations in the public sector, organizations in the private sector should consider them.

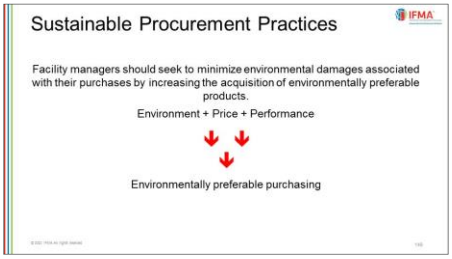
- Value for money: A demand organization manages funds efficiently and economically when procuring goods and services. Characteristics such as quality and durability may factor into deciding whether a purchase signifies value for money.
- Fairness: A demand organization should **not** give preference to individuals or suppliers. The organization assesses bids objectively based on how well the bids meet the organization's requirements.
- Competition: A demand organization should get competitive bids from multiple suppliers unless specific reasons exist not to do so. For example, there may be a situation where the good or service is only available from one supplier.
- Efficiency: A demand organization carries out procurement processes efficiently to maximize value and avoid delays.

- Transparency: A demand organization should make procurement information available to everyone interested in the process. Information stays confidential when legal or other valid reasons exist to keep the information private.
- Integrity: Those individuals who handle the procurement process should strive to be seen as trustworthy, reliable, honest, and responsible.
- Accountability: People involved in the procurement process need to report their activities accurately. This includes reporting any errors that occur.

Procurement practices should consider ability, capacity, integrity, financial status, performance, reliability, quality of product or service and delivery when evaluating prospective contractors.

Traditionally, procurement activities were paper based. Like many other organizational functions, procurement is constantly expanding the scope for doing business electronically. This promotes competitive bidding, improves customer-supplier relations in evaluating a potential supplier before and during a purchase contract, assists in driving down transaction costs and improves accuracy. The use of tools and services to move towards an online or electronic process, to share information, is considered good business practice.

Sustainable Procurement Practices



Facility managers have been required to consider sustainability for years. With responsibilities being centered on the built environment, efforts related to green building materials and energy efficiency have become the focus of facility managers internationally.

The Leadership in Energy and Environmental Design (LEED) standards for green buildings and other sustainability standards organizations, are applied globally by organizations. LEED has driven sustainability initiatives since the early 2000s. This has led to environmental improvements and cost savings associated with reductions in energy use. When facility managers integrate sustainability into their work routines, the environment benefits accordingly. With responsibilities centered on the environment, efforts related to green building materials and energy efficiency have become the focus of facility managers internationally.

In 2018, the U.S. Environmental Protection Agency produced a report that estimated 22.2% of greenhouse gasses in the U.S. could be attributed to industry. This finding suggests that anyone interested in sustainability must place emphasis on procurement and the entire life cycle of a product. The life cycle extends from the mining and extraction of materials to the manufacture and distribution of the goods and finally to the product's end-of-life management.

To optimize sustainable procurement practices, environmental considerations should become part of the normal purchasing practice. Facility managers should strive to minimize environmental damages associated with their purchases by increasing the acquisition of environmentally preferable products.

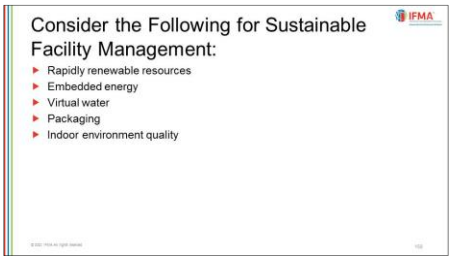
From a sustainability standpoint, the first guiding principle in procurement should be:

Environment + Price + Performance = Environmentally preferable purchasing

In the practice of sustainable facility management and good corporate citizenship, procurement should consider:

- Rapidly renewable resources
  Includes linseed, straw, cotton, wheat, sunflowers, natural rubber, bamboo, and cork. These can produce green building products, such as linoleum, straw bales, cotton bat insulation, wheatboard panels, bamboo cabinetry, cork flooring, soy-based foam release agents and fabrics.
- Embedded energy
  The energy used to create an object. The energy consumed by all processes associated with the production of a building, landscape, or site starting with the acquisition of natural resources to product delivery. It is a significant component of the life cycle impact of the building, landscape, or site. Also referred to as embodied energy.
- Virtual water
  The water "hidden" in the products, services, and processes people buy and use every day. The end-user of the product or service does not see virtual water. It is consumed throughout the value chain, which makes creation of the product or service possible. Also referred to as embedded water or indirect water.
- Packaging
  Serves to protect the product inside. The packaging should be environmentally friendly and biodegradable, preferably compostable, recyclable, reusable, and non-toxic. The packaging should be made from recycled products or manufactured through low impact means.
- Indoor environmental quality
  The strategies and systems used to provide occupants with a healthful, comfortable,

and safe workplace. It generally focuses on temperature and relative humidity, indoor air quality, lighting, noise, and cleanliness.



It is critical for managers, when developing an environmentally preferable purchasing (EPP) program (discussed later in this topic), to distinguish between the benefits and drawbacks of green product offerings. Becoming environmentally aware when developing the EPP program does not have to be difficult. Facility managers should consider the following while achieving this:

Track the Trends

Many manufacturers address the needs of the green movement with their products. There have been improvements in the overall environmental quality of products such as furniture, window treatments, and wall coverings. The manufacture of carpeting has made substantial progress by including more recycled content and curtailing emissions by using lower levels of fossil fuels.

Increased interest in biodiesel and alternative fuels supplies more options for ground care equipment.

The use of compact fluorescents and solid-state lighting or LEDs has changed the lighting industry.

Manufacturers pay attention to where their products end up after their useful lives end. For instance, manufacturers of paint make their products more environmentally friendly. Some manufacturers offer recycled paints to reduce costs. However, paint is a substantial solid waste issue because organizations may have significant disposal problems. Facility managers can reduce their disposal costs and minimize paint reaching landfills through paint recycling initiatives.

Watch the Words

FM must be cautious when weighing the promised benefits of green products and services. The increase in demand for environmentally friendly materials has led some manufacturers to oversell the benefits of their products and position them as green when they may not be. Facility managers should request data from the seller or seek independent data that

support these claims. Manufacturers of genuinely green products back up their claims with facts and details.

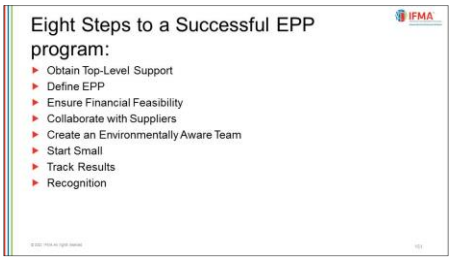
Another tactic manufacturers might take is greenwashing. This is an attempt to capitalize on the growing demand for environmentally sound products by presenting a false impression or supplying misleading information. It is an unsubstantiated claim made to deceive people into believing that a product is environmentally friendly.

Facility managers can ensure the sustainability of their environmentally preferable purchasing (EPP) program by following these steps.

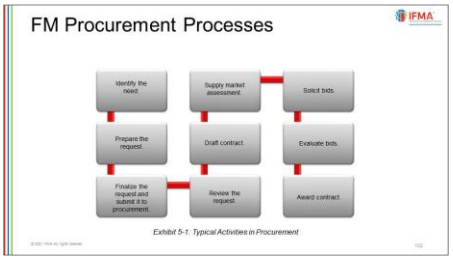
- Obtain Top-Level Support – Within the limits of their responsibility, progressive facility managers should take steps to develop an EPP if one does not exist. Obtain buy-in from someone in senior management who can champion the efforts and provide credibility for the program.
- Define EPP – Environmentally Preferred Purchasing is the purchasing of products or services that have a positive effect on human health and the environment when compared with competing products or services.

  Facility managers can fine-tune their definition by classifying eligible EPP products as those that are more durable and less hazardous; conserve energy or water; and can be reused, re-purposed, or recycled at the end of their intended useful life. Product content can be taken into consideration. Products made from plant-based materials are more environmentally friendly than those made from non-renewable resources. Products made from biodegradable materials are also preferable.
- Ensure Financial Feasibility – The triple bottom-line approach has successfully been implemented when developing an EPP program. This strategy ensures that the environment, the social benefits of products and services, and the financial benefits are all given consideration.
- Collaborate with Suppliers – Facility managers should work with suppliers and inquire about their EPP efforts and green alternatives. Suppliers may be able to offer products that have been recycled, have less toxicity, are more energy efficient, or save more water. These types of discussions can drive product development. Suppliers inform researchers about what is being requested in the marketplace, which can lead to making products more environmentally friendly to increase sales and profits.
- Collaborate with Suppliers – Facility managers should work with suppliers and inquire about their EPP efforts and green alternatives. Suppliers may be able to offer products that have been recycled, have less toxicity, are more energy efficient, or save more water. These types of discussions can drive product development. Suppliers inform researchers about what is being requested in the marketplace, which can lead to making products more environmentally friendly to increase sales and profits.

- Start Small – EPP initiatives can cover a broad range of products, services, and issues. This can be overwhelming at first. Begin the process by focusing on one goal and building from there. For example, the goal might be to buy products with less packaging. When a product or contract is scheduled for renewal, FM should start looking for options for that product. Success in completing a goal like this example can encourage the building of the program/initiative.
- Track Results – Track the successes of the effort. Figures showing meaningful results, such as reductions in energy, water, or chemical use, can encourage continued support. Use an online greenhouse gas calculator to determine greenhouse gas emissions, trees saved, and the amount of material diverted from landfills. Sharing these results with senior management shows the FM department's accomplishments and gains support for future EPP efforts.
- Recognition – Recognize FM staff members who show sustainability in their sourcing initiatives. Share their successes with other members of the demand organization.



Procurement Process



The procurement process is an essential part of a demand organization's strategy to make operations profitable. In many cases, an organization's standards, centralized by controls from accounts payable, dictate its procurement process. The procurement process includes the preparation and processing of a procurement requirement, receipt of the item, and payment approval. This can also involve planning purchases, determining specifications, researching suppliers, negotiating prices, financing, and controlling inventory.

Procurement and its processes can require substantial organizational resources. This should result in different areas of the organization working together to ensure effective

procurement practices. The type and complexity of the procurement and the level of the expenditure involved also influence the process. For instance, simple procurement with a low monetary value takes much less time and rigor than a procurement of high monetary value, or one entailing a public bidding process for an organization in the public sector.

The following are three ways a demand organization could ask for bids from suppliers. Click each one to learn more.

- Request for proposal (RPF) **–** An official statement to vendors about the business activity in works, supply, or service required. A request for proposal (RFP) is a business document announcing a project and asking for bids from qualified suppliers. The RFP describes the organization issuing the request, the scope of the project including its goals, the bidding process, the criteria for evaluating the bids, and contract terms. The request includes a statement of work describing the tasks the winning bidder is to perform and the timeline for completing the work. The RFP tells bidders how to prepare proposals, what information to include, and specifically how to format and present the bids. The demand organization evaluates the feasibility of the submitted bids, the financial health of each bidding company, and the bidding company's ability to accept the project.
- Invitation to tender (ITT) – The initial step in competitive tendering, in which suppliers and contractors are invited to provide offers for supply or service contract. Invitations to tender are also known as calls for bids or calls for tenders.

  An invitation to tender (ITT) is a formal, structured procurement document issued by the demand organization to invite suppliers to bid on a contract for goods, services, or work the organization is looking to fulfill. Before responding to the ITT, the invited supplier usually completes a pre-qualification questionnaire, which the demand organization uses to decide a bidding organization's suitability for delivering the project successfully. Suitability is based on the bidder's financial stability, previous experience, core competence, capability, and quality standards.
- Request for quotation (RFQ)Request for quotation (RFQ)– Used when discussions with bidders are not required (mainly when the specifications of the business activity in works, supply, or service are already known) and when price is the main or only factor in selecting the successful bidder.

  A request for quotation (RFQ) is a process in which a demand organization asks select suppliers and contractors to send price quotes and bids to fulfill certain tasks or projects. This is important to an organization needing a consistent supply of specific products. An RFQ can be the first step in submitting a request for proposal. Although these two documents supply details of the project or services needed, the RFQ asks for a more comprehensive price quote. In addition, an RFQ is for general products in which the quantity is known. Conversely, an RFP is for unique, niche

projects, and quantities and specifications are unknown. Also known as an invitation for bid (IFB).

A demand organization can give its managers procurement budgets with specific values to spend to obtain the goods or services needed to operate their departments. Although the procurement process varies among organizations, most FM procurement involves the activities listed in Exhibit 5-1. The activities supply a sense of customary order but are not intended as rigid steps in the process.

The type and complexity of the acquisition and the level of the expenditure also influence the practices and process. Along a continuum, simple procurements with a low monetary value generally take much less time and rigor than procurements of high monetary value or those that require a public bidding process.

Even though organizational procurements vary, most FM procurement processes conceptually involve the activities described in *Exhibit 5-1*. The activities as they are listed here provide a general sense of customary order and are not intended as prescriptive steps.

Exhibit 5-1: Typical Activities in Procurement

Activity	What It Involves
Identify the need. Develop scope of work or specifications.	• Clarify the need. • Review any current arrangements or similar previous procurements. • Identify stakeholders and other parties with interest in the procurement and who should be involved in the process. Interested stakeholders include FM staff, other organizational personnel, customers, providers and suppliers, regulatory agencies, and the public. • Perform due diligence to identify procurement legislation and other compliance requirements and standards.
Prepare the request.	• Create applicable service specifications and service level agreements. • Identify the specifications to include in the bidding process, and the contract terms and conditions. • Prepare evaluation criteria, such as how vendor submissions are to be rated or scored.
Finalize the request and submit it to Procurement.	• Review evaluation criteria. Involve stakeholders for verification and buy-in as needed. • Revise request as needed.

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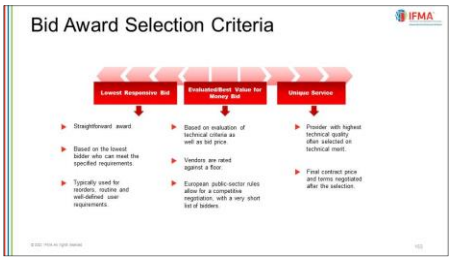
Activity	What It Involves
Procurement reviews the request.	• Procurement determines the scope and scale of the procurement request. • Procurement identifies the monetary value.
Purchasing drafts the contract.	Purchasing/Procurement prepares the first draft of the contract because they have responsibility for reviewing the contract and the statement of work before sending it out for bids.
Make use of a current supply market assessment (market survey) or conduct one.	• Compile a list of potential bidders. • Issue a pre-qualification questionnaire (PQQ) to the potential bidders. • Screen for basic conditions and proof of competence and experience, financial stability, and adequate resources. • Select a brief list of bidders to receive the RFP or ITT, as fits the procurement requirement.
Solicit bids.	• Open the contract for bids. For the private sector, a pre-qualified list of selected bidders is a usual practice. For the public or government sector, bidding is usually open to any qualified vendor. • Hold a briefing for prospective vendors, if called for. The briefing depends on the procurement scope, scale, and monetary value.
Evaluate bids.	• Review the submitted bids. In the private sector, bids and evaluations are usually performed in private. In the public or government sector, bid openings are performed in public. • Schedule formal interviews with bidders as necessary. • Use the evaluation criteria to assess and score the bids.
Select the best bid.	• Award contract. • Hold a precontract meeting to review items such as: - The vendor's plan for contract initiation. - Insurance coverage with respect to statutory requirements and eventualities. - Contract administration of payments, meetings and other key events. - How purchase orders will be generated by the procurement/purchasing department after bid winner sends in needed documentation, such as insurance and safety procedures



Award selection criteria can range from lowest responsive bid to single source.

- **Lowest responsive bid**
  The bidder fully followed all bid requirements, and whose past performance, reputation, and financial capability are acceptable. The bidder offered the most advantageous pricing or cost benefit based on the criteria outlined in the bid documents.
- **Bid evaluation**
  This process examines and compares bids to select the best offer responsive to predefined evaluation criteria for supplying goods, works, and services needed to achieve an organization's goals. The best offer recommended from the bid evaluation is the lowest responsive evaluated bid, which may not be the lowest priced bid.
- **Sole source**
  This selection is where only one supplier delivers the unique, specialized product or service the demand organization requires. Documentation for this method should include the unique nature of the requirement, how the demand organization learned only one supplier is able to meet the need, and the basis for deciding the reasonableness of the cost.
- **Single Source**
  This selection is one where two or more suppliers deliver the required product or service. However, the demand organization selects one supplier over the others for reasons such as expertise or previous experience with similar contracts. Documentation for this method should include the circumstances leading to selecting the supplier, rationale for selecting the specific supplier, and the basis for deciding the reasonableness of the cost.

Exhibit 5-2 lists tips to help those individuals involved in the demand organization's procurement process to be successful. Note that not all tips apply directly to FM procurement.

No matter how the procurement process is executed, it should be carried out in compliance with organizational policies and existing laws and regulations. *Exhibit 5-2* provides general tips to help ensure procurement success.

Exhibit 5-2: Tips for Successful Facility Management Procurement

Consider applying these tips for successful procurement.

- Try to resolve a known problem area before outsourcing it.
- Make sure current levels of contracted and actual expenditure on the services are fully understood.
- Confirm all project or task constraints are understood, especially:
  - Existing contract end dates
  - Ownership of materials and equipment
  - Ownership of software used in the services
  - Data ownership and location
  - Planned transfer process between contractors
  - Retention of any key staff and who employs them
  - Roles and availability of client team members, especially decision makers and signatories
  - Labor unions or work councils
- Assemble all the information bidders must have to develop a complete and accurate price.
- Create a complete service specification that explains how objective measurement will be done through performance indicators.
- Provide suggested performance indicators based on applicable current performance.
- Do not suggest service methodologies or subcontractors who are specialists unless it is essential. Focus on needed outputs and performance.
- Clarify the resources, accommodations, information technology (IT), storage facilities, etc. available to the contractor.
- Specify a pricing model that is sufficiently clear to allow comparison between proposals or bids.
- Be specific when listing the evaluation criteria before issuing the bid solicitation.
- Offer the bidders the opportunity for alternative proposals in addition to following the official proposal.
- Request a mobilization plan and mobilization costs from the bidders as the first phase of implementation. This helps make sure the physical and organizational arrangements needed for the activity are in place.
- Establish and publish the process for managing steps during the bid process preparation phase, including:
  - Understanding the overall timetable
  - Briefing the bidders
  - Arranging site visits as needed

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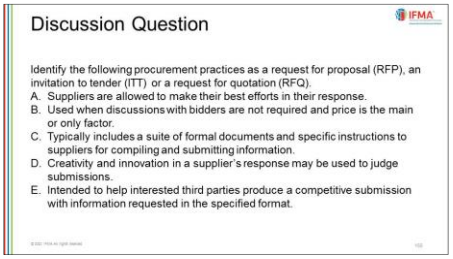
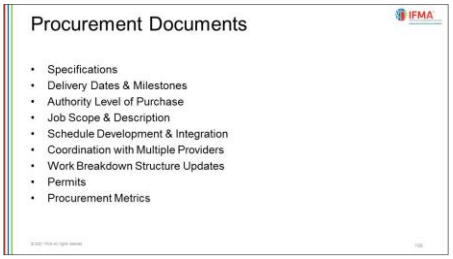
Consider applying these tips for successful procurement.

- Answering questions and clarifying requests
- Returning the proposals to the demand organization
- Allowing for negotiation as needed
- Allowing for mobilization

- Establish clear variation and change control processes.



Procurement Documents



At a minimum, the request for proposal (RFP), the invitation to tender (ITT), and the request for quotation (RFQ) include the following sections:

- **Specifications**
  A specification, also known as a statement of needs, describes in detail the goods or services the demand organization requires. This makes sure each potential supplier has clear guidelines to follow when quoting on goods and services, and when carrying out the contractual agreement if selected. The specification is clear and concise. It includes functional and performance terms, and any needed technical requirements. The specification should provide enough information for suppliers to determine what is required to deliver the expected level of quality and to price their goods or services**.**
- Delivery Date **and** Milestone Date
  This section states delivery and milestone dates. The delivery date is the actual date the goods or services are scheduled to be delivered to the demand organization in fulfillment of the contract. A milestone date is when a partial delivery of goods or services is expected.

- Authority level of purchase
  This section lists the individuals in the demand organization who have the authority to approve and sign documents related to the stages of the procurement process. It may include reference to the applicable purchasing criteria.

Statement of Work

A Statement of Work (SOW) is a listing of the specific tasks the supplier is to perform. It describes the work requirements or tasks, the performance, and design expectations for a project. The SOW defines the liabilities, responsibilities, and work agreements between the demand organization and the service provider. It also lists any milestones, reports, deliverables and their associated dates, and goods or services the demand organization expects the supplier to deliver.

The statement of work should be written in precise language relevant to the business function, such as to the FM function. This prevents misinterpretations of terms and requirements. Although detailed, the SOW is a general description of work. If further detail of tasks is needed, then supplementary documentation should be added to the SOW as a scope of work.

Scope of work is discussed further in Chapter Six: Contracts in the Facility Organization.

Other elements that could be part of the SOW include:

- **Job scope and description**
  The scope of work and the deliverables listed in detail.
- **Schedule development and integration**
  Individuals in the demand organization or the service provider create schedule for working on items listed in the SOW. The service provider lists the approval and project schedule integration process the service provider plans to use.
- **Coordination with multiple providers**
  If the service provider subcontracts work, then the service provider coordinates, schedules, and tracks the work delegated to subcontractor.
- **Work breakdown structure updates**
  The service provider updates the relevant portions of the work breakdown structure (WBS) as needed.
- **Permits**
  The required permits and their required lead times are listed.
- Procurement Metrics
  The metrics by which the products or services results will be assessed are listed. Metrics might include the frequency and level of detail of performance, quality, or cost data.

Sample Statement of Work ***Facility managers should modify this sample to fit their statement of work requirements.***
Scope:
Title: *The title is how the work will be referred to.*
Introduction: *Provides a brief description of the tasks or services required.*
Estimated Value: *Provides a total estimate of the overall value of the requirement, including the cost of the professional services, the travel and living costs, translation, miscellaneous costs, GST/HST and any other costs which will be associated with the requirement.*
Objectives of the Requirement: *Describes what is to be achieved or delivered by the completion of the contract. It also identifies the intended use of the completed requirement.*
Background and Specific Scope of the Requirement: *Identifies the situation leading up to the requirement. It describes the range, extent and parameters around the work to be completed in association with the contract and those events and circumstances leading to the need for this contract. This section may also include a description of the demand organization, end users, previous contract work and its success or failure, bibliography, references, technical experts in the field and, previous contractors.*
Requirements: *The requirements describe the tasks or activities to be performed by the facility manager. It also includes a detailed description of what is required for each of the identified deliverables. This section will provide information on the language, format, version and content requirements for each task or activity and each deliverable or milestone in the work.*
You may see all this information included in a table and/or text.
Tasks, Activities, Deliverables and Milestones (Work Breakdown Structure):

TASKS/ ACTIVITIES	DELIVERABLES/ MILESTONES	CONTRACTOR LEVEL OF EFFORT	HEALTH CANADA ACTIVITIES & REVIEW	MILESTONE PAYMENT	TIME TENTATIVE SCHEDULE

Specifications and Standards: *This section identifies the manner in which the work is to be delivered and will be measured as completed. In some cases, the information provided in the deliverable or the method and source of acceptance sections of the SOW will be sufficient. In other cases, specific reference will be made to the details and qualitative and quantitative measures which will be used by the demand organization to determine completion and satisfaction with the work. It also identifies the guidelines and templates that must be followed or used by the facility manager in completing the work.*

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Sample Statement of Work ***Facility managers should modify this sample to fit their statement of work requirements.***
Technical, Operational and Organizational Environment: *Provides details on the technical organizational and operational environment in which the work will be completed.*
Method and Source of Acceptance: *Provides a description of the performance, quality, format and testing requirements which will be used to measure whether the work is acceptable or not.*
Reporting Requirements: *Describes any performance or status reporting requirements which will be expected of the facility manager during the life of the contract. Includes the format, frequency, number of copies and specific content requirements. It will also identify the need for presentations, conferences or status meetings, if required between the facility manager and the demand organization.*
Project Management Control Procedures: *Provides details of how the demand organization will control the work, progress meetings, demonstrations and, prototypes. It will identify how the payment schedule will be matched to the measurement of performance throughout the contract. Contract management and controls in the SOW should be specific to the work and tasks.*
Change Management Procedures: *Provides a description of the process by which any changes to the scope will be handled. It clearly defines that no changes will be implemented without first obtaining the approval of the demand organization in writing and as required the complete processing of a contract amendment.*
Ownership of Intellectual Property: *It is expected that there will be no intellectual property created as a result of the contract.*
Other Terms and Conditions of the SOW:
Authorities: *Identifies who will perform the role of the facility manager and the demand organization and the person who will handle administration and invoicing questions. It also clarifies how the demand organization is to interact with and obtain direction from the facility manager.*
Contractor's Obligations: The following are examples of the contents that may be included under this heading: • Keep all documents and proprietary information confidential • Meet all tasks, deliverables and milestones as identified • Attend meetings with the demand organization, if necessary • Participate in teleconferences • Maintain security clearance with no conflict for the duration of the contract • Conduct and maintain all documentation in a secure area
Location of Work, Work site and Delivery Point: *Identifies where the work is expected to be*

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Sample Statement of Work ***Facility managers should modify this sample to fit their statement of work requirements.***	
completed.	
Language of Work: *Identifies if the work must be conducted in a particular language and if so by which role or for which task.*	
Special Requirements: *Indicates if there will be any requirements for special licenses, information on patents, permits, bonds or import/export details which may be required of either Party.*	
Security Requirements: *In order to undertake the work the facility manager will need to demonstrate that they meet the security requirements in advance of being awarded the contract.*	
Project Schedule:	
Expected Start and Completion Dates: *Identifies the period in which the work is to be completed. More details are provided in the SOW which identifies the specific schedule which will be required for completion of the work.*	
Required Resources or Types of Roles to be Performed: *Provides a brief description of the roles to be performed by the facility manager's resources, if applicable, and the specific expertise or minimum requirements for each role.*	
Applicable Documents and Glossary:	
Applicable Documents: *Appends any relevant background documents, drawings, specifications, samples or information which will be important to demonstrate what, how and when the work will need to be completed.*	
Relevant Terms, Acronyms and Glossaries: *Provides an explanation of any relevant terms, acronyms or wording used in the body of the SOW.*	
Sign-off for proposed resource: The following phrase will appear at the end of each Statement of Work. "Note: Before signing the Statement of Work, if you have any questions or concerns, please call the demand organization authority indicated above to negotiate any issues."	
If you agree to the requirements of this statement of work, please sign and date the document which will be accepted as your proposal.	
Please return an original signature copy by mail.	
Signature: _____	Date: _____

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Facility Management Outsourcing

Lesson Introduction

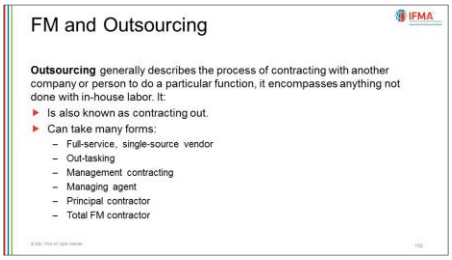
On completion of this lesson, you will be able to:

- Determine sourcing needs.
- Implement outsourcing standards within the facility management organization.

This lesson covers the following topics:

- Forms of Facility Management Outsourcing
- Why Outsource FM Activity?
- The Benefits and Cautions of FM Outsourcing
- How to Prepare for FM Outsourcing

Forms of Facility Management Outsourcing



Outsourcing is the process of contracting with another company or person to do a particular function. It encompasses anything not done with in-house labor. Therefore, outsourcing is the business practice of hiring a third party outside the demand organization to perform services or create goods traditionally performed by the organization's employees. Organizations use outsourcing to cut labor costs, including salaries, overhead, equipment, and technology.

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In many countries, outsourcing is the subject of controversy because it can cause loss of domestic jobs. In addition, communication between the demand organization and external providers can be difficult. Security threats can occur when multiple entities can access the demand organization's sensitive data. However, supporters of outsourcing believe outsourcing creates an incentive to distribute resources where they are most effective.

Facility management outsourcing involves turning over partial or complete management and decision-making authority of FM to a third party outside the demand organization. FM outsourcing may happen because the demand organization wants to save money and improve productivity in FM. It also allows the organization to focus more fully on its core business. Before the demand organization outsources FM to a third party, it should review this decision based on capacity and coverage, along with cost.

In FM outsourcing the facility manager's position can change to one of the following roles or models.

Facility Management Agent

A managing agent is an entity having and exercising the right of general control, authority, judgment, and discretion over the business or affairs of an organization. With this model, the demand organization keeps direct client control over FM procurement specifications. However, it risks delegating responsibility to the facility management agent without delegating the direct power to solve problems. The demand organization may also experience higher indirect costs due to the volume of transactions associated with the managing agent's contract.

The demand organization adopts the managing agent model when the organization decides it does not want to relinquish control of its facility to service providers, even though the organization's employees do not have the skill or ability to manage the facility efficiently and cost-effectively.

The demand organization secures the services of a facility management agent. The agent, who serves in a supervisory role, is paid a percentage of the value of the FM expenditure managed. The demand organization continues to supply most of FM support activities rather than include them in the facility management agent's scope of work. The organization still controls procurement of all services and contracts.

Facility Management Contractor

A managing contractor is an entity contracted to administer and oversee a project performed by subcontractors who carry out various parts of the work. A facility management contractor is an entity that contracts to provide facility services to a demand organization and is accountable for contract performance.

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The facility management contractor serves as the demand organization's single point of contact. The demand organization usually keeps control of service specifications and often imposes key contract terms to be passed down the supply chain. The facility management contractor may perform many FM services, but typically subcontracts some or all services to other service providers. The demand organization may specify suppliers for critical operations, such as equipment maintenance. Otherwise, the organization is not involved in the relationship between the facility management contractor and secondary service providers.

The demand organization pays the facility management contractor a fee reflecting a percentage of the value of the FM expenditure managed. In addition, the organization's responsibility for resources and costs supporting management activities are reduced when they become the contractor's responsibility.

The facility management contractor receives a fee, which includes the transaction costs associated with the multiple service provider contracts. It is important the contract between the demand organization and the facility management contractor includes a provision for open-book accounting. This gives the demand organization access to the facility management contractor's premises, books, and records to prevent misunderstandings about the cost of services.

Total Facility Management Contract

Total facilities management (TFM) is the complete outsourcing of FM services to one facilities management service provider. A total facilities management contract details the demand organization's outsourcing of all its FM requirements and responsibility to one FM service provider at a fixed price. The contract can include services such as planned preventive maintenance, commercial cleaning services, water treatment services, and security services. The demand organization's role becomes that of strategic planning, performance management, and budget control.

It is important the FM service provider understands exactly what the demand organization needs and expects, and that services are delivered by skilled and experienced individuals using the latest technology. It is also important the demand organization understands the FM service provider might partially or completely subcontract FM services. This is significant because the terms and conditions of the contracts between the FM service provider and the subcontractors might not include the terms and conditions between the demand organization and the FM service provider. As a result, performance management issues could arise.

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Exhibit 5-3 compares the FM outsourcing roles or models.

Characteristics	Facility Management Agent	Facility Management Contractor	Total Facility Management Contract
Compensation	Percentage of value of FM expenditure managed	Percentage of value of FM expenditure managed	Fixed price
Client Relationship	Serves in supervisory role	Provides facility services	Provides facility services
	Has no direct power to solve problems	Is accountable for contract performance	Has full management responsibility
		Tends to subcontract services	May subcontract all or part of FM services
		Is demand organization's single point of contact	
Features	Demand organization keeps direct control	Demand organization not involved in subcontractor relationship	Demand organization does strategic planning, performance management, budget control
	Demand organization supplies most of FM support activities	Demand organization keeps control of service specifications	Demand organization's terms and conditions may not apply to subcontractors
	Demand organization controls procurement and contracts	Demand organization imposes contract terms for all involved	
		Demand organization has access to contractor's premises, books, records	

Outsourcing Models

The following are models demand organizations can use to outsource work:

- Freelancer
  This model works on a low cost, per project basis. This model is a quick way to get a task completed; creating a graphic design is an example of a freelancer project. Companies or individuals can be found globally through online portals that focus on presenting freelance workers who bid on jobs. The demand organization selects the winning bid according to the organization's requirements or according to the bidder's credentials.
- Project Work
  This model works as a specialized outsourcing center designed to complete work promptly and at a fixed cost. The demand organization gets the work completed without having to hire more employees. Time zones and language differences can cause barriers to use of this model.
- Business Process Outsourcing (BPO)
  This model is a method of subcontracting various business operations to third party suppliers. Although BPO originally applied only to manufacturing, it now also applies to outsourcing services such as accounting, payment processing, FM, IT services, human resources, tech support, sales, and marketing. BPO tends to rely on technology and infrastructure to enable the subcontractor to perform its role efficiently.

  A demand organization's BPO options depends on whether it contracts the job within or outside the borders of its home country. BPO is offshore outsourcing if the demand organization contracts the job to another country where political stability, lower labor costs, and tax savings exist. BPO is nearshore outsourcing if the demand organization contracts the job to a neighboring country. BPO is onshore outsourcing or domestic sourcing if the demand organization contracts the job within its own country but in a different city or state.
- Build-Operate-Transfer (BOT) Contract
  This is a model used to finance normally large scale, greenfield infrastructure projects developed through public-private partnerships. Examples of these projects include a highway in Pakistan, a wastewater treatment facility in China, and a power plant in the Philippines. Under a BOT contract, an entity, usually a government, grants a concession to a private company to finance, build, and run a project. The private company runs the project for 20-30 years with the goal of recouping its investment. After that period, the private company transfers control the project to the public entity.

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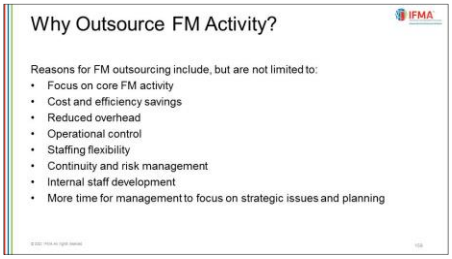
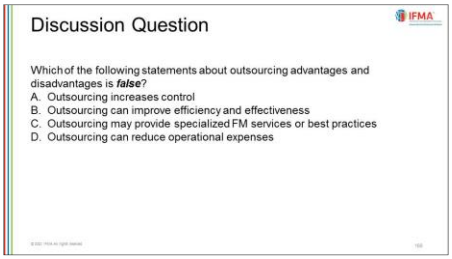
Why Outsource FM Activity?



Reasons for FM outsourcing include, but are not limited to:

- Focus on core FM activity
- Cost and efficiency savings
- Reduced overhead
- Operational control
- Staffing flexibility
- Continuity and risk management
- Internal staff development
- More time for management to focus on strategic issues and planning

There are other reasons for FM to outsource. For instance, facility stakeholders may demand more services and amenities than the FM department can provide. Through outsourcing, smaller FM departments can access the resources and capabilities they may not have otherwise.



The Benefits and Cautions of FM Outsourcing

Exhibit 5-4 summarizes common advantages and disadvantages to consider when deciding whether to outsource a job.

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Exhibit 5-4: Common Advantages and Disadvantages of Outsourcing

Advantages	Disadvantages
• Saves FM administration and management time • Increases FM ability to focus on core and strategic revenue-generating activities • Provides FM staff flexibility to complete other projects • Improves FM staff efficiency and effectiveness by gaining access to more skill sets • Reduces operational and staffing/benefits costs • Improves the quality and timeliness of FM services • Provides specialized FM services or best practices the FM department might be unable to access otherwise	• May cost more to go outside the FM function for specific abilities • Could cause loss of control • May result in poor morale within the existing FM staff • May cause lost productivity time because the outside organization must learn about the demand organization's FM function • Could require different supervisory skills than used for internal staffing and a change management approach with customers, staff, and management • Could lead to privacy and confidentiality issues

It is important to note that laws, regulations, standards, and legal conventions may affect outsourcing. For instance, the demand organization should be aware of the employment laws in the countries in which it does business because there may be restrictions about hiring contract employees.

Example: In the United States, there are liability cautions in hiring contract employees. Government regulations are very specific in terms of what characteristics differentiate an external contractor from staff. In the European Union, the Acquired Rights Directive specifies several points about business transfers from one entity to another, as in a sale of a business unit or a merger; there are liabilities for all statutory rights and claims arising from contracts of employment, including the transfer of services such as office cleaning, catering, security.

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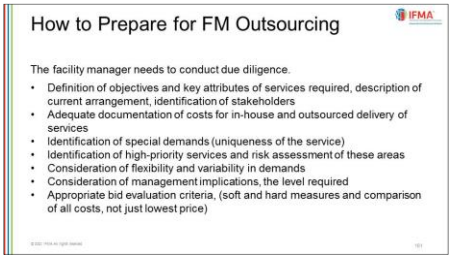
How to Prepare for FM Outsourcing



Facility managers develop and manage FM-related contracts. Before the contract phase, the facility manager should make sure FM's outsourcing goals and requirements are clearly defined. This helps to avoid problems that could arise during the procurement process. It also helps to make sure the contract's terms are properly carried out. After clearly defining the FM outsourcing goals and requirements, the facility manager gets approval from senior management, with input from procurement personnel and legal counsel.

To complete these steps, the facility should:

- Define the goals and key attributes of the outsourced goods or services, including the current requirements and the affected stakeholders
- Document the direct and indirect costs for in-house delivery so they can be compared to the cost of outsourced goods or services. Then decisions can be made on best value.
- Identify any special demands or the uniqueness of the goods or services.
- Identify any high-priority goods or services, do a risk assessment to document the consequences of failure, and outline a plan if a problem arises.
- Consider the level of flexibility or variability required in the delivery of outsourced goods or services.
- Consider the management implications, effort, and involvement required to manage service providers.
- Document the bid evaluation criteria that includes soft and hard measures, and a comparison of all costs.

Progress Check Questions

1. What statement best describes a request for quotation (RFQ)?

    a. A special procedure the demand organization uses to generate competing offers from bidders.
    b. The process a demand organization uses to reach an agreement for goods or services.
    c. The process used to ask select suppliers and contractors to quote and bid on tasks or projects.
    d. An official statement to vendors about a business needed activity, supply, or service.

2. What statement best describes an invitation to tender (ITT)?

    a. The process by which an organization reaches a formal agreement for the purchase of goods or services.
    b. An official statement to vendors about needed work, supply, or service.
    c. The buying activity or the placing of orders under the cover of a procured goods or service contract.
    d. A formal document issued to invite suppliers to bid on a contract an organization wants to fulfill.

3. What statement best describes a request for proposal (RFP)?

    a. The process that describes the work requirements or tasks, the performance, and design expectations for a project.
    b. An official statement to vendors about the business activity in works, supply, or service required.

    c. The procedure used when discussion between an organization and bidders is unnecessary.
    d. A special procedure an organization uses to generate competing offers from bidders.

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4. As facility manager, you work with Procurement to secure a new janitorial services provider. When in the procurement process is the service level agreement drafted?

   a. When the bid is sent out for solicitation.
   b. When the contract is being prepared.
   c. When procurement request is prepared.
   d. When the contract is awarded to winner.

5. What statement best describes lowest responsive bidder as award selection criteria?

   a. The bidder offers the most advantageous pricing based on the bid document requirements.
   b. The examination and comparison of bids to select the best offer responsive to predefined evaluation criteria.
   c. Only one supplier delivers the unique, specialized product or service the organization needs.
   d. The bidder is the preferred supplier due to previous experience with similar contracts.

6. Facility management decides to outsource administrative services. What potential advantage is the demand organization most likely to realize?

   a. Greater flexibility, because the vendor will be able to customize employee benefits
   b. Improved staff morale by gaining outside experience
   c. May provide specialized FM services or best practices that the FM Department cannot provide
   d. Greater leverage to secure employee benefits at reduced costs

7. What is an important reason for outsourcing FM services?

   a. To improve control over the facility management services.
   b. To maintain privacy and confidentiality.
   c. To improve the morale within the existing FM staff.
   d. Increases FM ability to focus on core and strategic revenue-generating activities.

8. What does EPP stand for or mean?

   a. Efficient Product Purchasing program
   b. Environmentally Preferable Purchasing program
   c. Environmentally Purchased Product program
   d. Efficient Preferable Purchasing program

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9. What is a common overlooked disadvantage to FM outsourcing?

    a. The time it takes to orient the vendor to the organization's culture, practices, and requirements
    b. Reduced overhead for the FM organization
    c. The time required by managers for FM administration and oversight activities
    d. The quality and timeliness of FM services

10. What argument can the Facility Manager use to advocate for outsourcing?

    a. Different supervisory skills are required, so a change management strategy is necessary
    b. The time it takes to bring the vendor up to speed on the organization's culture and practices.
    c. Lower operational expenses and increased staff capabilities without incurring fixed staffing costs
    d. Exposure of confidential information and potential loss of privacy.

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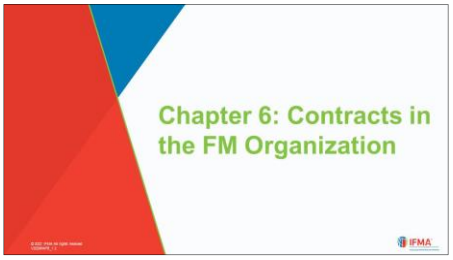
Chapter 6: Contracts in the FM Organization

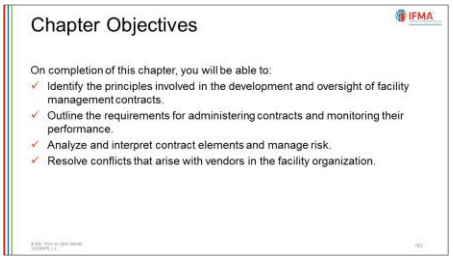
Chapter 6 Introduction

On completion of this chapter, you will be able to:

- Identify the principles involved in the development and oversight of facility management contracts.
- Outline the requirements for administering contracts and monitoring their performance.
- Analyze and interpret contract elements and manage risk.
- Resolve conflicts that arise with vendors in the facility organization.

This chapter discusses the different types of contracts as they relate to FM, and contract elements facility managers should understand. It describes common steps used to administer contracts and how to address vendor conflict when it arises. In addition, the chapter explains how to recognize and mitigate potential contract fraud and irregularities.





Lessons

- Contract Development, Management and Oversight
- Types of Contracts
- Contract Administration and Monitoring

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- Resolving Vendor Conflicts
- Analyzing and Interpreting Contract Risks
- Prevention of Contracting Fraud and Irregularities

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Contract Development, Management and Oversight

Lesson Introduction

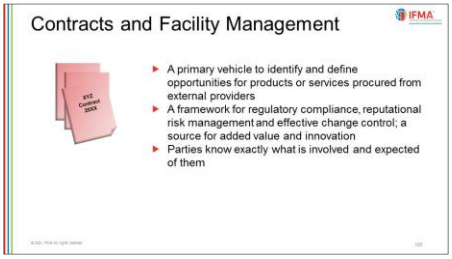
On completion of this lesson, you will be able to:

- Identify the principles involved in the development and oversight of facility management contracts.

This lesson covers the following topics:

- Contracts and Facility Management
- Contract Fundamentals and Terms
- Contract Considerations
- Scope of Work

Contracts and Facility Management



Facility managers must manage and support their organizations effectively and efficiently. However, not all managers can support every aspect of the FM function using their internal FM staff. As a result, they need to procure goods or services from external suppliers. Securing a contract with an external supplier selected through the procurement process is how the facility manager formalizes the agreement for the goods or services needed.

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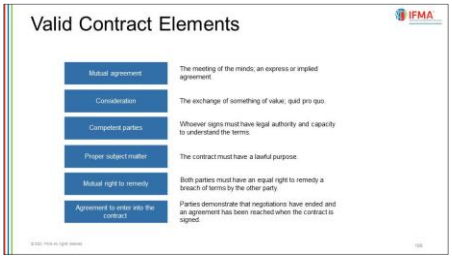
Contracts are legal documents developed with the direct or indirect review and input of lawyers/solicitors. Even simple contracts have legal jargon. The content that follows won't make an individual an expert in contract "legalese," but the fundamentals presented should enable facility managers to achieve far better negotiated results on behalf of FM and help in contract administration and management.

In the global marketplace, the quality of contract management is a key indicator of a demand organization's performance and integrity. The contracting process, as part of the procurement process, provides a framework for regulatory compliance, risk management, and effective change control.

In facility management, contracts include the details for delivery of the following types of services.

- Planned services, such as:
  - Preventive maintenance
  - Predictive maintenance
  - Planned maintenance
  - Planned minor works
  - Construction
- Unplanned services, such as:
  - Breakdown and corrective maintenance
  - Unplanned property services
  - Unplanned replacement/refurbishment maintenance
  - Unplanned minor works
- Property services, such as:
  - Cleaning services
  - Security services
  - Grounds maintenance
  - Waste management
- Sustainable services for the environment, but not limited to:
  - Energy Management
  - Waste Management and Recycling
  - Water Management

Contract Fundamentals and Terms



Contracts establish agreements between an organization and landlords or tenants, suppliers, and customers as well as other businesses. They are negotiated for a wide variety of products and services.

The following definitions are of terms often used in contracting discussions. Explanation of several types of contracts occurs in the next topic.

- Contract
  A contract is a legal device used by two or more persons or entities to indicate they have reached an agreement. A contract is legally binding. It provides terms and conditions that describe the agreement and constitute a legal obligation. To be considered valid, a contract typically requires the following elements.
- Mutual agreement
  Is an express or implied agreement that helps ensure that both parties understand and agree to the essential details, rights, and obligations of the contract. While this may seem obvious, a mutual agreement should explicitly clarify the terms of the deal so that when the parties subsequently agree to formally enter into the contract, they are agreeing to the same thing. For example, a contract is a mutually binding legal document between a demand organization and an outsourcing firm to obtain goods or services under specified terms and conditions. A purchase order when accepted by an outsourcing firm is a type of contract.
- Consideration
  Consideration is what each party to a contract gets or expects to get from the contractual deal. Once the parties have met, they must each exchange something of value to create a contract. This includes goods or a promise to do something, for example, the price paid by one side and the goods supplied by the other. The Latin term quid pro quo, meaning "something for something," can be used to refer to contract consideration.
- Competent parties
  Competent parties are those persons legally and competently capable of entering into agreements enforceable by law. Also, each person who signs the contract must have the legal authority to sign on behalf of an organization or another person. For

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example, minors cannot enter into contracts without the signature of a parent or guardian.

- Proper subject matter
  The contract must have a lawful purpose.
- Mutual right to remedy
  Both parties must have an equal right to remedy a breach of terms by the other party. All parties agree to the same terms for remedy.
- Agreement to enter into the contract
  Once both parties understand the deal and understand what type of consideration will be exchanged by each party, they are ready to form an agreement. The parties demonstrate that negotiations have ended, and an agreement has been reached when the parties sign the contract.

Contract General Terms and Conditions

- **General Terms and Conditions** – Are terms that apply to the whole contract. They include information such as payment terms, licenses required, how changes are handled, etc.
- **Blanket Terms –** A blanket term in contract language is one whose meaning is the same throughout the document. It applies to all general terms and conditions referenced in a contract as well as the specific terms and conditions relating to the specific project, such as site access restrictions and security requirements.
- **Master Agreement –** A master, umbrella, or general services agreement is that part of a contract having the general terms and conditions that apply to all the work the demand organization is requesting of the outsourcing firm. The agreement helps ensure all parties understand and agree to the essential details, rights, and obligations of the contract.
- **Addendum –** An addendum, also known as a work order, is a supplement to the master agreement. It has detailed provisions for specific goods and services the outsourcing firm is to provide. The addendum includes terms and conditions specific to the request, such as fees and payment terms.
- **Statement of Work (SOW) –** A document used for service contracts. It describes the services the demand organization expects the supplier to perform. It includes any specific tasks expected of the service supplier, where and how the work is to be performed, and what is due and when. The statement of work uses language relevant to the business function and the service. This prevents misinterpretations of terms and requirements. It makes sure deliverables are clear and work is completed efficiently thus saving time and money.
- **Scope of Work (SOW)** – A document used for contracted deliverables, such as construction, consulting reports, and the like. It describes what the demand

organization expects the supplier to deliver as accurately, clearly, and thoroughly as possible. It includes the types of deliverable requested, the performance and design expectations of the project, and defines who is doing what. For example, it describes the specific tasks the supplier is to perform and the extent to which they can be changed. It defines the liabilities, responsibilities, and work agreements between the demand organization and the service provider. It also has a timeline presented as milestones, reports, deliverables, and their associated dates. Similar to a statement of work, a scope of work uses language relevant to FM function. The intent is to prevent misinterpretations of terms and requirements. When carefully organized, a scope of work helps make sure work is completed efficiently thus saving time and money.

Exhibit 6.1 is an example of a contract. It is not meant to imply facility managers should adopt it for their FM organizations.

Company name	Company Logo
CONSTRUCTION CONTRACT	
I. PARTIES AND PROPERTY	
A. This Construction Contract is made on **{DateOf}** and indicates the terms of the agreement between **{CompanyName}** and **{OwnerName}**. B. The property for the construction to be completed is located at: **{PropertyAddress}**	
II. DESCRIPTION AND SCOPE OF WORK	
A. The Contractor will perform the construction services as follows B. The Contractor shall furnish all the materials and perform all of the work shown on the construction plan in the site property.	
III. TERM OF CONTRACT	
The term of this Contract will begin on **{StartDate}** and will remain active until the completion of the service. The term can be extended with the written consent of both parties involved.	
IV. START DATE AND COMPLETION DATE	
A. The construction will begin on **{StartDate}**. B. The construction shall be completed on or before **{Completion Date}**.	
V. CONTRACT PAYMENTS	
A. The Owner should pay the Contractor a total amount of $**{Contract Price}** for the completion of the job. B. Payments for the job will be due as stated below:	

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The Owner should deposit ${**Deposit**} of the total amount upon contract signing.

Payment Terms

C. Payment will be made by **{Payment Method}**.
D. Failure to pay when due will result in breach of contract. The Contractor has the right to stop the construction if payments are not made.
E. Once the final payment on this contract is received, then the parties involved will be released and discharged from any claims for any work performed.

VI. PERMITS AND LICENSES

The Contractor must obtain and pay for all required permits and licenses. The Contractor will also obtain and pay the fees for the governmental inspections if necessary.

VII. LABOR AND MATERIALS TO BE USED

A. The Contractor shall provide and pay for all labor and types of equipment which includes construction tools, machinery and transportation.
B. The materials that will be used shall be brand new and in good condition.

VIII. OTHER RESPONSIBILITIES OF THE CONTRACTOR

A. The Contractor shall be responsible for supervising, managing and completing all construction services under this Agreement.
B. The Contractor shall be responsible for keeping all records and documents in a safe place at the property. The contractor shall store these documents in safe storage as it will be presented to the owner once work has been completed.
C. The Contractor shall be responsible for taking all precautions for the safety of its employees and the public at the property. The contractor must take full responsibility for the acts or negligence of its employees. The contractor is also responsible for training its employees about the Occupational Safety and Health Regulation to give knowledge on how to handle emergencies and accidents in the workplace.
D. The Contractor shall give a guarantee to the Owner that all work will be in accordance with the Contract Documents. Any issues caused by defective materials or equipment for a period of ten years shall be remedied by the Contractor.
E. The Contractor shall provide skilled and competent staff suitable to do the work and should maintain discipline and order at the Property.
F. The Contractor shall be responsible for maintaining the Property clean and keeping it free from waste and hazardous materials. If hazardous materials or substance are noticed in the Property such as dangerous chemicals, contaminants or any toxic substances, the Contractor shall be responsible for notifying the Owner immediately. The Contractor is also responsible for training its employees about handling hazardous materials and substances in a correct and safe manner. Any sickness, damages, loss of employees

caused by these hazardous materials shall be handled by the Contractor.

IX. INSURANCE

A. The Contractor shall be responsible for purchasing and maintaining an appropriate insurance policy for the construction.
B. The Owner shall maintain to maintain insurance covering the replacement cost in the event of loss through fire, casualty, an act of nature and theft.

X. TERMINATION

This Contract can be terminated by either party:

A. If the Contractor or Owner breaches any of the obligations specified in this Agreement.
B. A written notification identifying the breach should be issued by the Contractor or Owner.

XI. INDEMNIFICATION

A. The Contractor shall indemnify and hold harmless owners and employees against all liability, claims, demands, expenses, on account of any loss, damage or injury.
B. The Contractor agrees to be responsible for providing defense against such liability claims or demands.

XII. AMENDMENT

This Contract can only be changed or modified through writing and shall be signed by the parties involved.

XIII. GOVERNING LAW

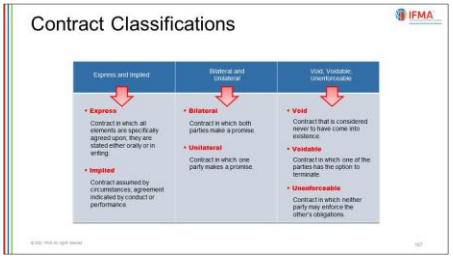
This Contract shall be governed under the laws of **{State/Country}**.

XIV. SIGNATURES

We, the undersigned, hereby agreed that we have read and acknowledged this contract bounded by its terms and conditions.

Date: **{DateOf}**

Contract Classifications



Before beginning the discussion of contract types, it might help to explain the ways that contracts can be described

- **Contracts based on formation**

  This includes express contracts, implied contracts, and quasi contracts.

  - An express contract is a voluntarily entered-into contract agreed on either verbally or in writing by two or more parties.
  - An implied contract is a legally binding obligation deriving from actions, conduct, or circumstances of one or more parties in an agreement. Although the implied contract has the same legal force as an express contract, it is assumed to exist without written or verbal confirmation.
  - A quasi contract, also known as an implied-in-law contract, is a retroactive agreement between two parties who have no earlier obligations to each other. A judge creates it to correct a circumstance in which one party gets something at the expense of the other party.

- **Contracts based on the nature of consideration**

  This includes bilateral contracts.

  - A bilateral contract, which is the most common of binding contracts, is an agreement between two parties that involves concessions or obligations owed by both sides of the contract. Common examples of a bilateral agreement are a sales agreement, a lease, or an employment contract.
  - A unilateral contract is an agreement in which an offeror (the party who makes the offer) promises to pay after a specific act occurs. Only the offeror is the party committed to an obligation. An example of a unilateral contract is an insurance policy.

- **Contracts based on execution**

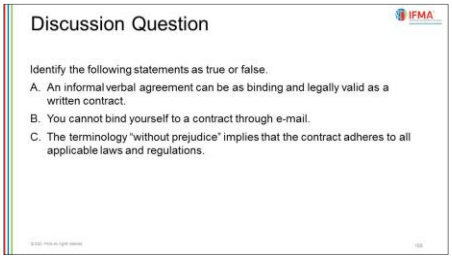
This is about the degree a contract has been fulfilled.

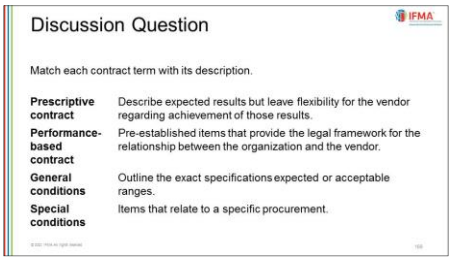
- An executed contract is a contract that has been fully performed by both parties.
- A pending or in process contract is a contract that has not yet been fully performed or fully executed. Both parties have important obligations remaining.

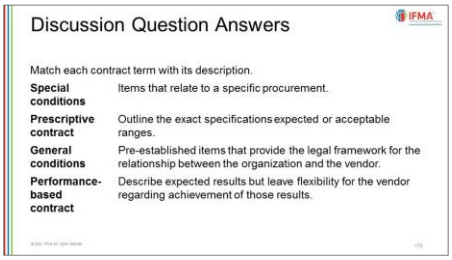
- **Contracts based on validity**

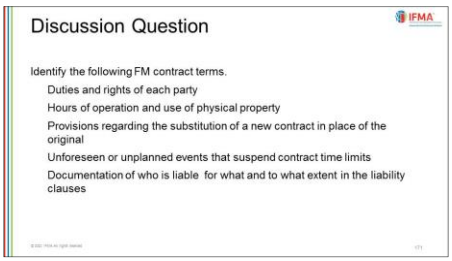
  This is about the validity of the contract in terms of it being enforceable.

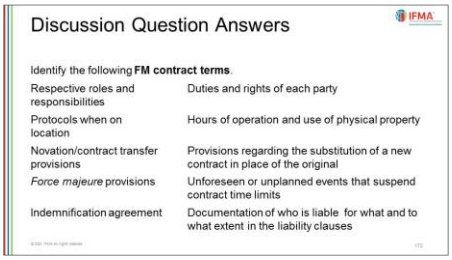
  - A valid contract has all the required elements and is legally enforceable in court. It creates legal obligations between parties to the contract.
  - However, some contracts are not considered enforceable. For example, this can happen when one of the parties involved is later found to be incapable of fully understanding the implications of the agreement.
  - A void contract is a formal agreement that is effectively illegitimate and unenforceable from the moment it is created. A void contract can happen when one of the parties involved is incapable of fully understanding the implications of the agreement.
  - A voidable contract is a formal agreement between two parties that can be cancelled or altered for qualified legal reasons, such as:
    - Failure by one or both parties to disclose a material fact
    - A mistake, misrepresentation, or fraud
    - Undue influence or duress
    - One party's legal incapacity to enter a contract
    - One or more terms that are unconscionable
    - A breach of contract
  - Finding a defect in a contract is a common way to void a contract. However, the simplest way to void a contract is for all parties to agree that voiding it is the best option.
  - A contract is not valid if it involves doing something that is a criminal act, a civil wrong, or against the public good.











Contract Considerations

When FM services require an external supplier, the facility manager should contract with the supplier in such a way that:

- Situations or requests that violate the terms of the agreement are identified and prevented.
- Situations or requests that may increase costs due to unplanned time, usage, or additional services are identified, and either avoided or negotiated to minimize any impact on the budget.

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- Situations or requests which may reduce costs are reviewed to decide that all contracted services have been met satisfactorily and that a reduction in billed services is proper.
- Situations where the contractor needs unanticipated support or access to buildings, structures, or grounds can be arranged to minimize negative delivery impact.

The facility manager should also consider the following to minimize any negative affect on timing and completion of the contracted work:

- Ensure an agreement of what FM needs is in place.
- Determine the impact of collective agreements that the contractor may already have in place.
- Revise the agreement with the contractor; ensure that any additional reductions that have been added to the contract meet FM's requirements.
- Confirm who will provide direction after contractor selection.
    - If the contractor provides direction, then the contractor may have to be paid for this service.
    - Consider staffing needs to manage or monitor a contractor.
- If there is a change order for contracted services, determine the financial impact and consider its effect on other business functions within the demand organization.

Summary

The form and substance of contracts used in facility management vary based on the need to be fulfilled. Exhibit 6-2 provides a checklist of customary terms found in FM contracts. Not all items or terms are included in every contract. Some contracts may have other items or terms related to the need they are addressing. Facility managers should review all contract terms to understand their meaning and to execute them as needed.

Exhibit 6-2: Checklist of Facility Management Contract Items

Item	Provisions to be Covered
Date of agreement	
Identity of the parties	• Individuals or business entities? • If businesses, what type, for example, partnership, corporation, other? • Name of person signing on behalf of the business and indication he or she has authority to bind the business • Signer's official title
Addresses of the parties	

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Item	Provisions to be Covered
Purpose(s) of the contract and relevant definitions	Locations to be serviced
Underlying assumptions	
Respective roles and responsibilities	• Duties of each party • Rights of each party
Description of the work involved, and outcomes expected	Reports (types and frequency)
Performance levels and how quality will be judged	• Service specifications and service level agreements • Monitoring
Terms for incentives and penalties	
Staffing levels	
Personnel requirements, certifications, bonding, insurance, security clearances, criminal record checks and so forth	The demand organization's right to check qualifications and competencies of contractor personnel and approve the use in advance
Schedule	• Timelines and deadlines • Other relevant dates
Duration	Term of the contract
Rights of access to locations	
Protocols when on location	• Hours of operation, dress, badges, where to eat and so forth • Use of physical property, for example, computers and office space
Communication	• How communication with facility staff and occupants is to be done • Reports and liaison meetings
Restrictions on subcontracting	
Novation/contract transfer provisions	Provisions regarding the substitution of a new contract in place of the original

Item	Provisions to be Covered
Payment terms and pricing mechanisms	• Lump sum, COD, installments? • Payment due dates • Length of period from invoice issue to due date • Taxes • Interest • Late fees
Termination options	Default, bankruptcy, escape clause and other dissolution procedures
Service suspensions	What disruptions in service, not excused by a force majeure clause, are allowable, such as server failures, software glitches, disputes with copyright owners, licensor labor disputes
Force majeure provisions	What unforeseen or unplanned events suspend contract time limits, such as: • Natural disasters; earthquakes, hurricanes, floods • Wars, riots or other major upheaval • Performance failures of parties outside the control of the contracting party, for example, disruptions in telephone service attributable to the telephone company or labor actions
Dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delays	
Contract variations	• The handling of changes in the demand organization's requirements • Change order request/change proposal process • Contract amendments
Severability of individual provisions	
Audit rights	
Dispute resolution clause	Mechanisms for dispute resolution and how disagreements or disputes are to be handled
Ownership	Copyright issues, patents, and intellectual property

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Item	Provisions to be Covered
	specifications
Confidentiality and restrictions on information obtained/learned	
Arrangements for transfer of assets at start/end of contract	
Arrangements for handover to succeeding contractor at end of contract	
Contingency arrangements	
Liquidated damages	Also referred to as liquidated and ascertained damages, the specified monetary amount the parties designate during the formation of a contract should one of the parties breach the contract, for example, late performance
Indemnification agreement	Documentation of who is liable for what and to what extent in the liability clauses, for example, which party agrees to pay for any losses that arise, limitations on liability
Safety	• Safety gear • Special health and safety hazards • Accidents to contractor personnel • Reporting requirements • Contractors' safety manuals and protocols
Anti-discrimination policy	
Drug-free workplace policy	
Quality assurance	Provisions related to quality management systems/continuous improvement
Statement that contract constitutes entire agreement	
Signatures of authorized signatories	
Notarization	If required by applicable law
Governing law	Which country or regional laws apply to the contract

Contracts may require translation into multiple languages.

Additional information is often put in appendices to the contract. For example, request for proposals (RFPs) usually require the staff and company resumes, a statement of whether they have completed similar size and type of projects along with references and tender documentation. Also invitations to bid, prequalification questionnaires, contracting party's responses, and similar documents may be included in appendices.

Exhibit 6-3 lists principles facility managers should consider when reviewing contracts. These principles help make sure contracts are clear and complete and follow legal requirements. Facility managers should also make sure that legal counsel and someone from procurement review the contracts.

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Exhibit 6-3: Facility Management Contract Do and Don't

Do:	Don't:
• Title the document "Contract" so that there can be no mistake as to its intent. • Include the date in the first paragraph for easy reference after contract execution, so the contract can later be identified by date, such as "the January 4, 20XX, Contract for Property Snow Removal." • Make sure the parties are properly identified in the first paragraph, names are spelled correctly and addresses are accurate. • Use common sense headings to make it easier to find particular contract provisions. • Number the paragraphs for ease of reference. • Pay attention to punctuation and conjunctions, especially "and" and "or", since grammar errors and words chosen can change meaning. • Use plain language whenever possible. • Make sure the contract addresses all possible contingencies and that nothing is left to chance. • Have an attorney review every contract before signing. • Sign in blue or other colored ink to make the original easily distinguishable from photocopies. • Initial every page of the contract and make sure the other party does the same so that nothing is missed • Retain a copy of the contract for the records.	• Include legalese or archaic phrases such as "the party of the first part" or "heretofore" as they generally add little in terms of clarity. • Include overly long sentences. Break sentences down into easily digestible thoughts. • Be repetitive unless it is absolutely necessary. It is preferable to refer to a previous provision according to its number or heading rather than to repeat it verbatim. • Assume the other party defines terms the same way. If there is any doubt, include a definition in the contract. • Accept the other party's oral explanation of a confusing term; include everything in writing. • Start acting according to the terms of the contract until both parties have executed it. • Assume that use of a standard or form contract eliminates the need for legal review. Even if a standard contract worked well in the past, a change of circumstances, date or party can change the whole equation. • Agree to a contract modification without documenting it in writing. • Rush reading the contract. It takes time to understand all of the possible nuances of the language used. • Sign any contract unless it is fully understood what it aims to do and what the terminology means. Clarify any questions with legal counsel.

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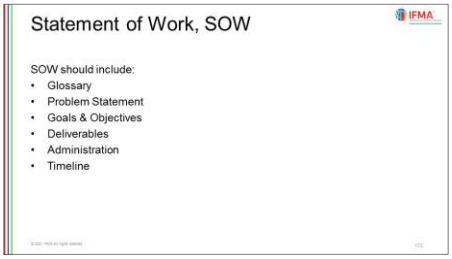
Scope of Work



The Scope of Work (SOW) is the section of an agreement where the work to be completed is described. The SOW should contain, milestones, reports, deliverables, and end products that are expected to be provided. The SOW should also contain a timeline for all deliverables

An issue with most scope of work is a lack of specifics, namely when the two parties disagree on what should have been delivered and a review of the SOW does not support one interpretation over the other. This problem is common in agreements and is often where disputes arise. The best way to avoid this problem is to avoid any and all ambiguity. See *Exhibit 6.4* for examples.

A Scope of Work should include the following components:

- Glossary
- Problem Statement
- Goals of the Agreement
- Objectives of the Agreement/Deliverables
- Administration
- Timeline

Glossary

Spell out each acronym used in the SOW. Include definitions of odd or unusual terms.

Problem Statement

Succinctly describe the problem to be addressed. Describe the scientific and technological baseline which is the current state-of-the-art or developmental status of the field to be advanced.

Goals of the Agreement

At the beginning of this section, complete the following sentence: "The goal of this project

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is to…" Complete the sentence with a *brief* description of the goal(s) and how the goal(s) will be met. Goals can be technical, economic, or social.

Objective of the Agreement/Deliverables

This section must contain the objectives of the project, what are the quantifiable elements at the end of this agreement — this is where the deliverables should be listed. Deliverables are comprised of a task and an end product.

Exhibit 6-4: Poor and Good Examples of SOW Language:

Poor Example:	**Task:** Assess employee needs for public health awareness
	Deliverable: Write survey to address needs.
The problem with the example is that nothing is specified. The task should be measurable and the deliverable must be quantifiable.	
Good Example:	**Task:** Survey four departments of ten employees in health and safety awareness. Each employee will answer a 25-question survey that assesses their general knowledge of health and safety as they relate to public health. One reviewer should take about one hour with each department to take the survey and another two hours per department to assess the data.
	Deliverable: A 10-hour curriculum for employees of up to ten that addresses issues of deficiencies in public health awareness.
By reading the task and deliverables, the administrative personnel should be able to construct the budget associated with the SOW. More importantly, in reviewing the deliverables, there should be no question about what is expected of the facility manager. A SOW may contain many deliverables, but each should be broken down into tasks and end products to specify what is expected.	

Administration

If there are meetings, calls, conferences, or other "soft" deliverables, they should be outlined in the administration portion of the SOW. Any requirement that is not an end product of a specific task but is required of FM needs to be described in the administration section of the SOW.

Exhibit 6-4: Continued:

Poor Example:	The facility manager will be required to give weekly reports of progress during the implementation of sustainable practices with more frequent reports while the wastewater is drained.
The problem with the example is that it does not specify what needs to be in the reports, what	

"more frequent" means and when the "wastewater is drained".	
Good Example:	The facility manager will be required to give weekly reports consisting of water usage, installation of new sustainable products and potential risk areas. Bi-weekly reports will be required during wastewater drainage which takes place during, May 15 to July 15.

Timeline

This section lays out all dates for the project. It states dates for the tasks and deliverables. It also covers the dates for the administration portion of the SOW.

The glossary, problem statement, goals of the agreement, objectives/deliverables and administration components of the SOW should not have any ambiguity as to what is expected of the FM department. Together, these elements should explain what is expected, when and in what form, while noting any special requirements.

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Types of Contracts

Lesson Introduction

On completion of this lesson, you will be able to:

- Identify the principles involved in the development and oversight of facility management contracts.

This lesson covers the following topics:

- Purchase Orders
- Service Contracts
- Contract Pricing Terms
- Additional Contract Types

Appropriate contracts help to ensure the demand organization successfully meets its strategic goals. It also helps facility managers fulfill their departmental goals. This section discusses several types of the more widely used contracts.

Purchase Orders

A purchase order (PO) is a written contract between an organization and a vendor using a standard form or e-purchase (paperless). One-time purchase orders and blanket purchase orders are common practice in FM. It controls the purchasing of products and services from external suppliers. The PO gives specific information on the product or service to be delivered, delivery date, the price, and any other terms and conditions.

One-time Purchase Order

A one-time purchase order expires with the individual delivery of a finite good or service. *Exhibit 6.5* is an example of a one-time purchase order.

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Exhibit 6.5: One-Time Purchase Order Example:

Example: Provide 1,500 reams of 80 gsm* white copier paper

*Weight of paper is measured by the amount that a square meter weighs. Here is a value given in grams per square meter or gsm. It may be measured in pounds per ream or lb.

A one-time purchase order should state:

- The quantity and quality of the items being ordered, as above
- The agreed-on unit price
- Any discount from list price, if agreed
- The agreed total price net of any sales taxes
- The total price, including taxes
- A reference purchase number to be quoted on the invoice for the sale
- Date of the purchase order
- The name, signature and contact details of the person initiating the PO

Errors and Omissions Excepted (E&OE) is usually included in Pos in the United Kingdom. There may be additional details such as:

- Earliest/latest day for delivery
- Delivery address
- Instructions on packaging or access
- Reference to standard terms and conditions of contract
- Reference to payment term
- Statement that substitution is not acceptable

Blanket Purchase Order (BPO)

A blanket purchase order allows a stream of procurements over a length of time and/or within a dollar ceiling. When the duration for a BPO is a year, it may be called an annual PO, which must be reviewed and edited as required. BPOs should contain all the same information as a one-time PO.

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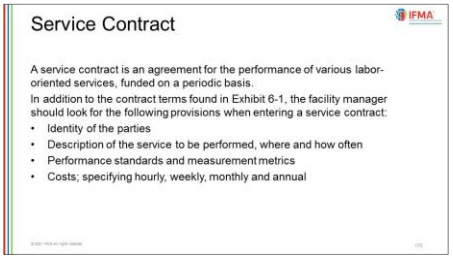
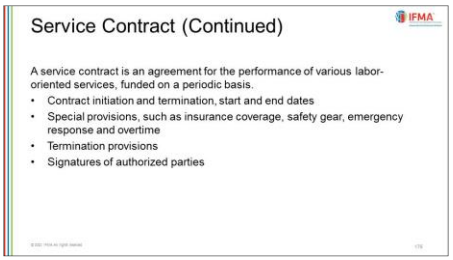
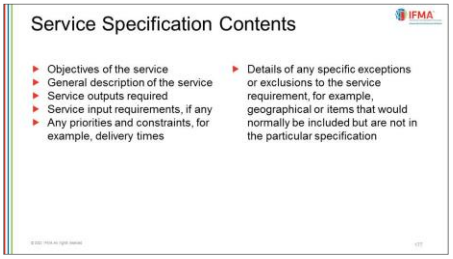
Service Contracts







A service contract is an agreement for the performance of various labor-oriented services, funded on a periodic basis. It contains the following information:

In addition to the contract terms found in Exhibit 6-1, the facility manager should look for the following provisions when entering a service contract:

- Identity of the parties
- Description of the service to be performed, where and how often
- Performance standards and measurement metrics
- Costs; specifying hourly, weekly, monthly and annual
- Contract initiation and termination, start and end dates
- Special provisions, such as insurance coverage, safety gear, emergency response and overtime
- Termination provisions
- Signatures of authorized parties

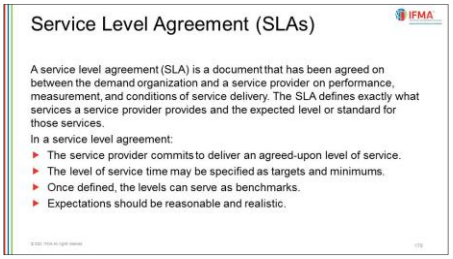
Other terms that may be included in a service contract are:

- Escalation clauses for contracts that involve substantial labor
- Acceptable limits to offset cost increases in labor and materials
- Right to audit the contractor's records regarding labor and material costs
- Copies of the contractor's licenses, certificates for liability insurance and workers' compensation insurance, company safety manual, and bonds (e.g., bid bond, performance bond, or fidelity bond)

Other provisions to consider including in a service contract are:

- A dispute-resolution clause to lay out how the parties will resolve disputes
- A contingency agreement that states which actions under certain conditions will result in specific outcomes
- Performance metrics to provide the standards by which the service provider and the facility manager can evaluate the conduct and outcome of the work

Service Level Agreement (SLAs)



A service level agreement (SLA) documents what has been agreed on between the demand organization and an internal service provider, including FM, on performance, measurement, and conditions of service delivery. SLAs are not contracts; however, similar to Statements of Work and Scopes of Work, they clarify what is expected, who is doing the work, when the work must be done, and what constitutes sufficient or adequate work.

In general, most SLAs include:

- Agreement details, identification of the parties, effective date of the agreement and duration
- Definitions
- Description of the scope of services to be provided
- The quality and timing of the service
- Pricing
- Customer/service provider communication
- Customer rating and feedback

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- How performance will be monitored
- How problems and disputes should be resolved
- Incentives and penalties
- Subcontracting provisions
- Procedures for revising the SLA
- Under what situations the SLA might be waived.
- Transfer of responsibility

Exhibit 6-6 depicts a sample service level agreement.

Exhibit 6-6: Service Level Agreement Template

CUSTOMER NAME			**SERVICE LEVEL AGREEMENT**
DOCUMENT INFORMATION AND APPROVALS			
VERSION HISTORY			
Version #	Date	Revised by	Reason for Change
DOCUMENT APPROVALS			
Approver Name	Project Role	Signature/ Electronic Approval	Date
TABLE OF CONTENTS			
1.0 Service Level Agreement Overview			1
2.0 Description of Services			1
3.0 Service Performance			1
4.0 Service Costs			2
5.0 Service Provider and Customer Responsibilities			2
6.0 Problem Management and Disaster Recovery			3
7.0 Periodic Review Process			4

8.0 Termination of Agreement			5
9.0 Signatures			5

1.0 SERVICE LEVEL AGREEEMENT OVERVIEW

This is a Service Level Agreement (SLA) between *Service Provider (Facilities)* and *Demand Organization*. The purpose of this Service Level Agreement (SLA) is to identify the basic services and any agreed upon optional services, to be provided by *Facilities* regarding *building and grounds maintenance* for *Demand Organization*.

This SLA covers the period from *Date* to *Date* and will be reviewed and revised at the end of this period.

Include a brief description of what the service or application does.

2.0 DESCRIPTION OF SERVICES

Services	**Description**
What services are included in this SLA?	
How will service be delivered?	
What are the hours of operation (regular business hours and after-hours support)?	
When will regularly schedule maintenance be performed?	

3.0 SERVICE PERFORMANCE

3.1 PERFORMANCE METRIC AND SERVICE COMMITMENT

Performance Metric	**Service Commitment**	**Measurement**
Customer Relations		
Resource Availability		
Response Time		
Resource Utilization		
Work Prioritization		

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Work Quality		

3.2 INCIDENT/PROBLEM MANAGEMENT					
Incident/Problem Management					
Severity Level	Description	Response time to begin working issue	Resolution/ Mitigation	Status Updates	Metric/ Measure
Severity 1 Incidents	The entire department's ability to perform mission critical business functions is in jeopardy or unavailable. For example: Power Failure				
Severity 2 Incidents	A department or individual's ability to perform mission critical function is in jeopardy or unavailable but a workaround is or can be established with a reasonable time. For example: Emergency repair for a water leak.				
Severity 3 Incidents	A department or individual's ability to perform a job function may be impacted or inconvenienced but can continue business as normal operations. For example: Broken door/cracked window				

4.0 SERVICE COSTS					
List any costs for services described in this SLA (if applicable). Determine what costs should be centrally managed on a year to year basis versus costs that need to be individually billed to the customer. Ensure service, administrative and material costs are accounted for. Consider overtime costs, costs of outsourcing and emergency and/or catastrophic occurrences.					
5.0 SERVICE PROVIDER AND CUSTOMER RESPONSIBILITIES					
5.1 SERVICE PROVIDER DUTIES AND RESPONSIBILITIES (WHAT YOU ARE ACCOUNTABLE FOR DOING/PROVIDING)					
• Duties and responsibilities • Duties and responsibilities • Duties and responsibilities					
5.2 CUSTOMER DUTIES AND RESPONSIBILITIES (WHAT THE CUSTOMER IS ACCOUNTABLE FOR DOING/PROVIDING)					
• Duties and responsibilities • Duties and responsibilities • Duties and responsibilities					
6.0 PROBLEM MANAGEMENT AND DISASTER RECOVERY					
List any problems and how they will be managed; contingency plans. Be specific using a table or flow chart.					

Service Specifications

A service specification describes the acceptable level of service to meet customer requirements. It also provides a framework for monitoring actual services. It may be used as a benchmark to assess the standard and quality of service provided.

As part of the service contract, a service specification includes:

- Internal standards: relevant organizational or FM standards and/or past related service standards
- External standards: conformance to regulatory requirements, international standards, health and safety laws and regulations, official industry standards, manufacturers' recommendations and so forth.
- Procedures: a particular way of doing something

The level of detail in a service specification can vary, depending upon complexity and importance. For example, specifications for parking lot maintenance regarding pothole patching sealing would be more detailed than cleaning specifications for an office area.

Prescriptive vs. Performance Specifications

A primary consideration when developing a service specification is whether it should be a prescriptive specification or a performance-based specification.

Prescriptive Specifications

Dictate exactly what will be done, how the tasks will be performed, and the frequency. They are restrictive, based on specific inputs. Prescriptive specifications specify inputs and how the targets will be met. A risk with creating a prescriptive specification is it can become overly regimented.

Performance-based specifications

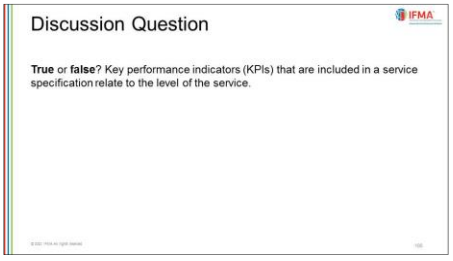
Typically set quality-related targets that allow the service provider some flexibility in determining the most appropriate response. These specifications outline the work to be done (outputs) and the target or requirements to be met. The challenge with creating a performance-based specification is the ability to convey quality expectations in terms the contractor can execute and can be measured.

It is best practice to focus on describing outputs (performance) rather than describing inputs (prescriptive). Facility managers should consider using prescriptive specifications only when a clear risk-related reason to do so exists. It is best to avoid prescriptive specifications that limit a vendor's ability to supply the best solution, or that impose resource requirements or a rigid method.

The metrics a facility manager uses to rate a contractor's performance should do the following:

- Describe the objectives of the service.
- Provide a general description of the service.
- Explain the service outputs required.
- Explain any priorities and constraints.
- Provide details of any specific exceptions or exclusions to the service requirement.

Service specifications describe performance requirements in terms of key performance indicators (KPIs). These are the most relevant metrics in determining whether the outcomes of an activity contribute to the goals of the entire organization and the aims of the activity.



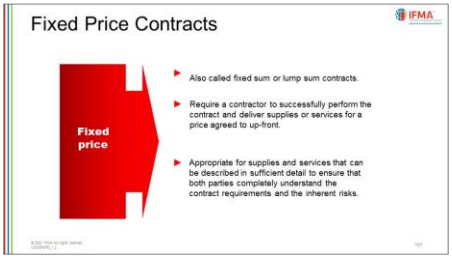
Contract Pricing Terms

Another type of contract is based on cost or payment provisions. A guiding principle in FM contract management is that payment is dependent upon performance. Facility managers are responsible for making sure service providers and contractors perform according to their commitments. Therefore, agreements should clearly specify how payments will be adjusted when performance deviates.

Fixed price contract

A fixed price contract, also known as a fixed sum or lump sum contract, requires a contractor to perform the contract and deliver supplies or services successfully for a price agreed to up-front. A contract is a fixed price contract if the negotiated price is not allowed to vary unless certain predefined and extenuating circumstances exist. This happens so the

costs involved can be estimated with a reasonable degree of certainty. Although this might be helpful for one of the parties, an increase in costs could pose a risk for the other party.



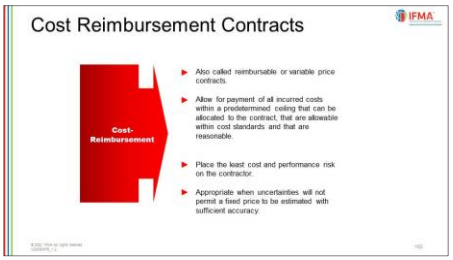
Cost reimbursement contract

A cost reimbursement contract allows for payment of all incurred costs within a predetermined ceiling that can be allocated to the contract, which are allowable within cost standards, and that are reasonable. Also known as a reimbursable or variable price contract, there are four types of cost reimbursement contracts: cost plus fixed fee, cost plus incentive fee, cost plus award feed, and cost per percentage of cost. This type of contract is beneficial when uncertainties exist such as the expected performance or a workable price cannot be set accurately.

The following are cost-reimbursement contracts:

- **Cost type** — involves payment of all incurred costs within a predetermined total estimated cost.
- **Cost sharing** — the demand organization and the contractor agree to split the cost of performance in a predetermined manner. No fee is given.
- **Cost plus fixed fee** — allows for payment of all incurred costs within a predetermined amount plus an agreed-upon fee that will not change.
- **Cost plus incentive fee** — provides for adjustment of the fee using a predetermined formula based on the total allowable costs in relation to total targeted costs.
- **Cost plus award fee** — provides for negotiation of a base fee with an award fee that can be given based on an evaluation by the demand organization of the contractor's performance and cost control.

The last two cost-reimbursement contract types require considerable monitoring and are usually reserved for the larger dollar value, more visible procurements.



National Buy Contract

A national buy contract is a specialized procurement contract applicable primarily to large organizations. It provides goods or services at favorable, below retail cost in exchange for an extended agreement to purchase from a sole source. This contract is also known as national standing offers, national purchasing contract, or framework contracting.

Advantages for entering such a national buy contract are:

- Decreased administrative costs
- Faster product selection
- Elimination of unnecessary purchases and inventories
- Control over local purchasing and delivery
- Consistent quality
- Streamlined reporting

Two significant cautions go with national buy contracts:

- The buyer may become locked into a bad deal if prices fall below the negotiated price.
- The buyer may incur more charges for extras not indicated in the initial list of goods or services.

Additional Contract Types

Open Book Contract

An open book contract is an agreement between a buyer and supplier that lays out a work/service arrangement where the costs are not finite. There is a margin the supplier can add to the final cost for services provided. Once the project is completed, the supplier provides an invoice for materials used based on the actual cost plus the agreed upon margins set in the contract.

Time and Materials Contract and Labor Hour Contract

A time and materials contract provides for buying supplies or services based on direct labor hours at fixed hourly rates and on actual cost for materials. This type may be used when it is impossible to estimate the extent or duration of the work accurately or to predict costs with any degree of confidence.

The labor hour contract is a variation of the time and materials contract. It differs in that the contractor does not supply the materials. As with the time and materials contract, the labor hour contract is used only after the contracting organization or manager decides no other contract type is suitable.

Indefinite Delivery Indefinite Quantity Contracts

Using an indefinite delivery indefinite quantity (IDIQ) contract is a way to deliver certain FM services and reduce procurement process time. This type of contract provides for an indefinite quantity of supplies or services for the fixed term of the contract. The IDIQ system can consist of several trade-specific contracts which the facility manager can access as often as the contract terms allow. Trade-specific contracts include FM services such as:

- Painting and plastering
- Floor covering
- Systems furniture disassembly, relocation and reassembly
- Furniture repair and cleaning
- Interior electrical work
- Plumbing
- Carpentry
- Paving, concrete and asphalt
- Roofing repair and replacement
- Fencing
- Railroad track repair and replacement

An IDIQ is useful when precise quantities of supplies or services above a specified minimum or the timing for delivery cannot be determined. The facility manager can place delivery orders for supplies or task orders for services against a basic contract for individual supplies or services as needed. The basic contract specifies minimum and maximum quantities as either number of units for supplies or as dollar amounts for services. Under an IDIQ contract, FM can place orders for additional quantities of supplies or services which the supplier must fulfill up to the stated maximum.

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The facility manager should set a reasonable maximum quantity based on market research, trends on recent contracts for similar supplies or services, surveys of potential users, or any other reasonable basis. The facility manager should ensure the minimum quantity is more than a nominal amount but should not exceed the least amount FM is certain to order. The contract should specify minimum or maximum quantities FM can order under each delivery order or task. The contract should also specify the maximum orders FM may place during a specific period.

In administering IDIQ contracts, the FM function acts as general contractor for executing delivery orders or tasks, or for coordinating projects requiring more than one supplier. The facility manager may consider incorporating a full-time contract management staff for dedicated supplier control.

Appropriate contracts help to ensure that the demand organization successfully meets its strategic objectives and FM fulfills departmental objectives. Furthermore, contracts may avoid the risks associated with excessive costs, project delays, quality issues and similar problems. Evaluating the soundness of the contracts is an important aspect of a facility manager's job.

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Contract Administration and Monitoring

Lesson Introduction

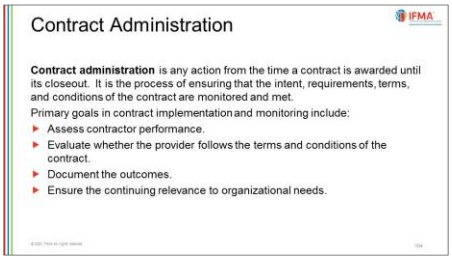
On completion of this lesson, you will be able to:

- Outline the requirements for administering contracts and monitoring their performance.

This lesson contains the following topics:

- Contract Administration Review
- Contract Monitoring
- Contract Closeout

Contract Administration Review



Contract administration is any action from the time a contract is awarded until its closeout. It is the process of ensuring that the intent, requirements, terms, and conditions of the contract are monitored and met. Contract administration includes the planning, negotiation, execution, performance, and management of contracts made with demand organizations, vendors, partners, or employees. It also covers ensuring payment is made and disputes are resolved.

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The facility manager begins the contract administration process once the contract is awarded. If the terms of a contract are complete and clear, contract administration should be straightforward in achieving the following goals:

- Assess contractor performance.
- Evaluate whether the provider follows the terms and conditions of the contract.
- Document the outcomes.
- Ensure the continuing relevance to organizational needs.

Contract oversight by the facility manager ensures the contractor fulfills expectations associated with a project, product, or service in a responsible manner. Monitoring by FM helps ensure successful completion of a contract. Monitoring should also uncover difficulties which could lead to failure of product or project delivery or to unsatisfactory service.

Contract Administration Process

The process includes analysis of:

- Existing contract administration policies and procedures
- Contract administration training programs
- Roles and responsibilities of procurement, accounts payable, and departmental contract administration staff
- Various position descriptions
- Special processes for revenue generating contracts
- Requisition and contract development processes
- Contract administrator delegation process and documentation
- Payment processes
- Contract violations notice and dispute resolution process
- Blanket, term, and time and materials contracts
- Primary goods and services contracts
- Applicable audits

Facility Management and Service Specifications, and SLAs

A facility manager has management and oversight responsibilities for services provided to occupants. This, of course, is true whether the service is outsourced or performed by internal FM staff. All services must be fulfilled according to expected performance and time standards. The inclusion of service specifications and service level agreements in a service contract or as an addendum is extremely helpful in contract administration.

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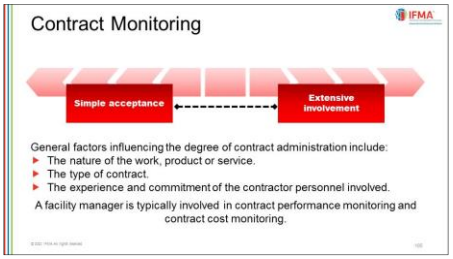
During service specification and service level agreement (SLA) creation, a facility manager should:

- Identify and clarify stakeholder interests relative to the types of services needed and the level of acceptable performance.
- Define critical success factors and KPIs.
- Consider how to track, report, and address service effectiveness.
- Decide how to resolve service-related disagreements.
- Determine how to review and modify the service specification or SLA as needed.

After service specifications and SLAs are operational, the facility manager should:

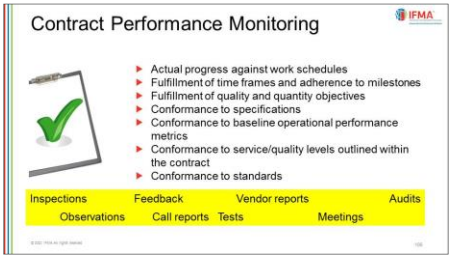
- Either serve as point of contact for problems or concerns or make sure someone is appointed to this role.
- Coordinate and implement modifications to service specifications or SLAs.
- Assess the effectiveness of service tracking and reporting tools.
- Plan and coordinate service reviews.
- Facilitate or take part in conflict resolution processes.
- Strengthen working relationships with other areas of the facility.

Contract Monitoring



The specific nature of a facility manager's involvement in contract administration varies. General factors influencing involvement include the nature of the work, product or service, the type of contract, and the experience and commitment of the contractor personnel. Regardless of degree of involvement, the facility manager should monitor FM contract performance and cost. This topic discusses these two monitoring activities.

Contract Performance Monitoring



Contract performance monitoring is an essential part of proper contract administration in that it helps to:

- Confirm the contractor performs its duties and obligations per the contract terms.
- Find and address any developing problems or issues.
- Find planned and unplanned modifications that may arise throughout the contract term.
- Negotiate and process contract change orders.

Contract performance monitoring may be:

- A preventive function
- An opportunity to determine whether a contractor needs technical assistance
- A valuable source for information concerning the effectiveness and quality of goods or services the contractor supplies

To help facility managers enforce contract compliance, the demand organization should consider including the performance monitoring tools to be used in the bid request and in the contract.

Useful tools for monitoring activities include:

- Project software
- Spreadsheets and databases
- Custom applications
- Work management center management information systems
- Computer-aided facility management (CAFM), where computer aided design integrates with work management, project management, and asset management databases

To confirm contractors are complying with contract performance provisions, FM should monitor the following areas:

- Actual progress against work schedules

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- Fulfillment of time frames and adherence to milestones
- Fulfillment of quality and quantity objectives
- Scope of work
- Conformance to specifications
- Conformance to baseline operational performance metrics
- Conformance to service/quality levels outlined within the contract
- Conformance to standards

Facility managers can obtain vendor performance information from any combination of the following:

- Inspections
- Observations
- Tests
- Audits
- Vendor reports
- FM reports
- Solicited feedback from FM stakeholders
- Unsolicited feedback such as complaints or suggestions from FM stakeholders
- Scheduled vendor meetings
- Performance score sheets
- Vendor scorecards
- Work management center call reports if call center support applies

Exhibit 6-7 is a sample performance scorecard that could be used with a performance payment scale to reward the service provider for scores exceeding expectations. However, penalties for not meeting the minimum requirements could be tied to low performance scores. The contract should state clearly what activity causes adverse actions.

Exhibit 6-7: Sample Performance Scorecard for Monthly Service

Vendor: ABC Elevator Repair			**Month: March 20XX**
Service Criteria	**Priority Weighting**	**Monthly Rating***	**Score (Weight x Rating)**
Preventive maintenance	5	2	10

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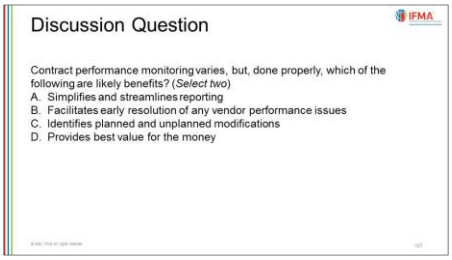
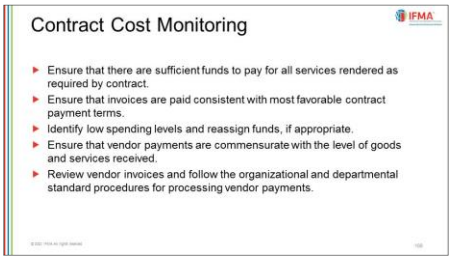
Response time to breakdowns	5	N/A	N/A
Total Score			10
Performance rating % (Actual total/maximum x 100)			100%
* 0 = Below expectation 1 = Meets expectation 2 = Exceeds expectation			



Contract Cost Monitoring



The goal of cost control is to manage the delivery of a project within the approved budget. Cost monitoring happens during contract execution review and approve contractor costs. This includes cutting unnecessary costs involved in the project. Although contractors manage and control their costs, the demand organization monitors these costs to ensure contractors meet these responsibilities.

FM monitoring of contract costs includes activities such as:

- Ensuring the availability of sufficient funds to pay for all services rendered
- Ensuring invoice payments are consistent with the most favorable contract payment terms
- Finding low spending levels and reassigning funds, if appropriate
- Ensuring vendor payments are equal with the level of goods or services received

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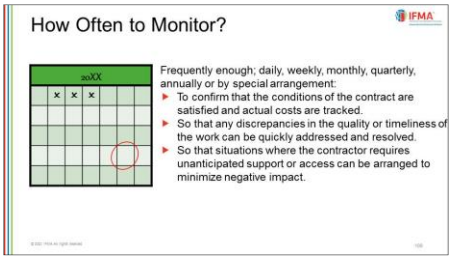
- Reviewing vendor invoices and following demand organization and FM standard procedures for processing vendor payments
- Preparing reports on cost monitoring activities related to the contract (see *Exhibit 6-8* for a sample report)

Click to view Exhibit 6-8[1]

Frequency of Contract Performance and Cost Monitoring



Facility managers should monitor contract work based on the complexity and value of the contract. That is, activity level should be often enough to confirm the contractor is satisfying the contract's terms and to track actual costs incurred. Activity level could range from daily to annually.

1

Exhibit 6-8: Sample Facility Management Cost Control Report

Property XYX Monthly Performance Service Scorecard					
Vendor: ABC Elevator Repair				**Month: March 20XX**	
	A	**B**	**C**	**D**	
Service	**Annual Contract Sum**	**Changes**	**Anticipated Expense (A+B)**	**Spent to Date**	**Comments**
Preventive maintenance	€20,000	€5,000	€25,000	€12,000	PM program ahead of schedule
Response time to breakdowns	€10,000	—	€10,000	—	No reactive repairs to date
Total Score	€30,000	€5,000	€35,000	€12,000	

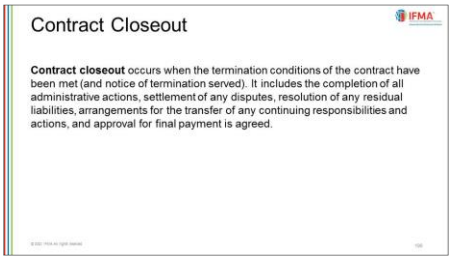
**Amounts given in euros*

Facility managers should monitor contract performance and cost so that they can:

- Address and resolve any discrepancies in work quality or timeliness quickly.
- Arrange to minimize the effect of situations where the contractor needs unanticipated support or access to buildings, structures, or grounds.

Facility managers should prepare reports to make sure contract performance and cost monitoring activities are documented.

Contract Closeout



Closeout is an important aspect of contract administration. It is the point at which the termination conditions of the contract have been met (and notice of termination served). It includes the completion of all administrative actions, settlement of disputes, resolution of any residual liability, arrangement for the transfer of any continuing responsibilities and action, and approval for final payment is agreed.

Facility managers should clearly understand contract requirements and responsibilities and execute any FM-related closeout tasks. The facility manager should also identify any specialized activities such as special payment issues, special property issues, or transfer of routine services. *Exhibit 6-9* depicts a sample closeout checklist, that can be modified for the demand organization's geographical location and FM requirements for that location.

Exhibit 6-9: Sample Facility Management Contract Closeout Checklist

Closeout Checklist		
Contract: Elevator Maintenance		
Recipient: ABC Elevator Repair		
Performance period: January 1, 20XX, to December 31, 20XX		
Task	**Description**	**Date Completed**
1	Final technical report received/accepted	

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2	All milestones satisfactorily completed	
3	Disposition of classified material	
4	Final voucher submitted	
5	Method for verifying costs determined	
6	Cost verification process completed	
7	Final payment completed	
8	Other requirements completed (Specify these)	
9	Issuance of completion statement	
10	Contract funds review completed and excess funds de-obligated	

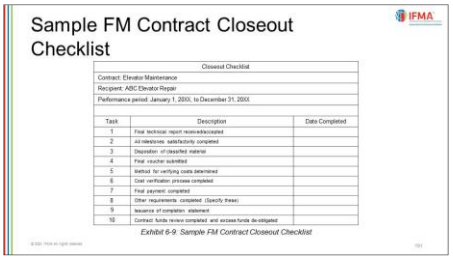


Exhibit 6-9: Sample FM Contract Closeout Checklist

Resolving Vendor Conflicts

Lesson Introduction

On completion of this lesson, you will be able to:

- Resolve conflicts that arise with vendors in the facility organization.

This lesson contains the following topics:

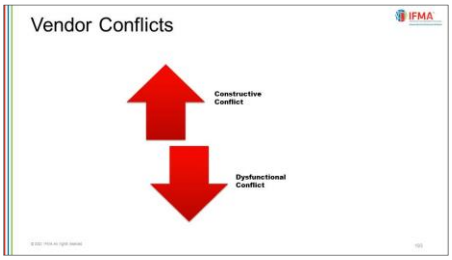
- Nature of Vendor Conflicts
- Contract Dispute Resolution

Nature of Vendor Conflicts

Conflict means disagreement, opposition of any kind, argument, antagonism, or hatred between two people or groups, or among many people or groups. Conflict can happen on issues such as sharing of resources, responsibilities, authority, accountability, etc.

Conflict between the demand organization and vendors is an inevitable part of the relationship. However, the way conflict is handled distinguishes between it being a constructive or dysfunctional experience for all parties. Discussion of these views is next.

Constructive and Dysfunctional Conflict with Vendors



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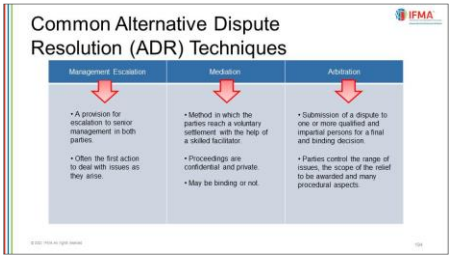
Constructive conflict embraces differing ideas to move towards achieving goals. This type of conflict leads to beneficial results such as increased productivity, clarification of issues, and consideration of new ideas. Constructive conflict can transform the way FM and the vendor interact with each other. It can improve the quality of outcomes. Examples of such outcomes include:

- Surfacing important problems so they can be addressed
- Analyzing problems thoroughly
- Collaborating and partnering more effectively

Conversely, dysfunctional conflict happens when disagreement moves towards antagonism instead of towards resolution. It leads to an overall decline in communication or performance, which can erode relationships and derail progress. It becomes detrimental and has a negative impact on contract execution and outcomes. When dysfunctional conflict surfaces, facility managers should take quick action to diffuse the situation and minimize any negative consequences that could result.

Avoiding issues that lead to conflict and contract disputes can be challenging. Even carefully drafted contracts do not always succeed in preventing contract disputes. The key for facility managers is to manage conflict proactively when it arises and mitigate escalation. Discussion of the issues at hand and negotiation can sometimes help the parties resolve the matter and achieve an agreeable outcome. If not, there is contract dispute resolution, which is discussed in the next topic.

Contract Dispute Resolution



Dispute resolution refers to processes that can be used as alternatives to going to court to resolve a conflict, dispute, or claim. Dispute resolution processes have advantages such as providing the parties involved with greater participation in reaching a solution and having more control over the outcome of the dispute. In addition, they have more flexibility than in a court trial.

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Dispute resolution supplies a faster and less expensive process than litigation and provides fair and equitable decision or award. Common methods for dispute resolution include mediation and arbitration. Discussion of each method follows.

Mediation — is a private process where a neutral third person, called a mediator, helps the parties discuss and resolve the dispute. The parties describe the issues; discuss their interests, understandings, and feelings; provide each other with information; and explore ideas for resolution of the dispute. The mediator does not have power to make a binding decision but can help the parties find a mutually acceptable resolution.

Arbitration — is also a private process. With arbitration, the disputing parties agree that one or several individuals can decide about the dispute after receiving evidence and hearing arguments. Arbitration is different from mediation because the neutral arbitrator has the authority to decide about the dispute. The arbitration process is like a trial in that the parties make opening statements and present evidence to the arbitrator. Often, the parties do not have to follow governmental rules of evidence. In addition, the arbitrator does not have to apply governing law. After the hearing, the arbitrator issues an award, which can either announce the decision only or give reasons for the decision. The arbitration process may be either binding or non-binding. When arbitration is binding, the decision is final, can be enforced by a court, and can only be appealed on very narrow grounds. When arbitration is non-binding, the arbitrator's award is advisory and can be final only if accepted by the parties.

Every contract should have a contract dispute resolution clause to set out the way the parties will resolve disputes. It provides a neutral set of agreed-upon guidelines to help maintain a good business relationship and minimize the amount of time and money spent working out issues. Contract dispute resolution clauses include verbiage acknowledging that the parties are knowingly giving up their right to go to court.

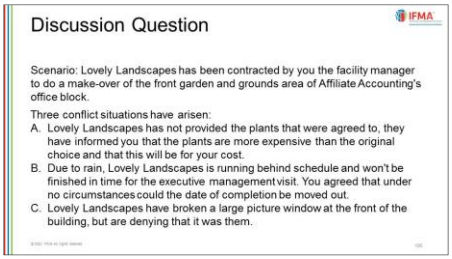
Exhibit 6-10 lists examples of dispute resolution clauses. This verbiage should not be construed as legal advice. The demand organization’s legal counsel should review and approve a dispute resolution clause before a contract is signed.

Exhibit 6-10: Common Types of Dispute Resolution Clauses for FM Contracts

- Management escalation
- Mediation (non-binding)
- Binding mediation
- Mediation, premeditation, binding mediation or arbitration elective; parties share expenses
- Mediation, premeditation, binding mediation or arbitration elective; parties share expenses up to the binding mediation or arbitration award
- Arbitration, split fees and costs
- Arbitration, prevailing party receives fees and costs
- Arbitration, three arbitrators, for anticipated large disputes
- Performance guidelines and arbitration
- Performance guidelines and binding mediation
- Binding mediation or arbitration, graduated processes
    - Provisions for:
        - Disputes less than (amount)
        - Disputes over (amount) but less than (amount)
        - Disputes over (amount)

As with all parts of a facility management contract, facility managers should have a deep understanding of the specific terms of the dispute resolution clause. During dispute resolution, the facility manager should work to ensure that:

- The resolution process follows the terms in the agreement.
- The cause of the dispute is clear and confirmed.
- The dispute is resolved with little or no negative impact on the work schedule or inconvenience to occupants.
- The dispute does not negatively affect other work the vendor is doing.



Analyzing and Interpreting Contract Risks

Lesson Introduction

On completion of this lesson, you will be able to:

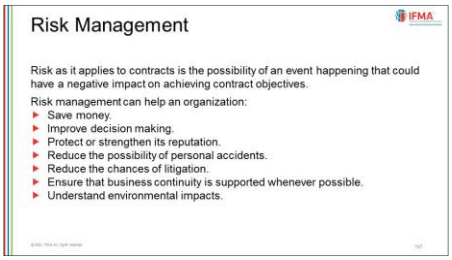
- Analyze and interpret financial contract elements to manage risk.

This lesson contains the following topics:

- Risk Management
- Risks in Facility Management Contracts
- Importance of Examining Financial Contract Elements

This topic explores the basic elements of risk management. In addition, it discusses how applying a systematic risk management approach can help to identify and prioritize financial contract risks while improving collaboration between the demand organization and contractors.

Risk Management



Regardless of the type of facility, it is important to make sure that any associated facility management contract has certain essential provisions so that it properly fulfills its required purpose. The contract clearly outlines the precise scope of the FM services the service provider is to perform along with the relevant KPIs the service provider is to achieve.

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To a certain extent, facility managers become risk managers in relation to contract management. Risk is the effect of uncertainty on objectives. It is the chance of something happening that will have a negative effect. The level of risk reflects the likelihood of the unwanted event and its potential consequences. The kind of risk involving FM may apply to situations with property or equipment loss, or harmful effects on the environment.

Risk as it applies to contracts is the possibility of an event happening that could have a negative impact on achieving contract objectives. Risk varies by contract and creates uncertainty when understanding and evaluating risk. It may relate to preventing negative outcomes or it may relate to ensuring positive outcomes. This leads to risk management.

Risk management refers to coordinated activities to direct and control an organization regarding risk. A demand organization's risk management strategies include:

- Acceptance or tolerance of a risk without taking further action
- Control or reduce the likelihood and potential negative impact of a risk event
- Share or transfer risk
- Avoid or prevent the risk

Risk management provides a process for facility managers to identify, assess, manage, and control potential events or situations that threaten achieving contract objectives. When applied, risk management becomes a structured approach that can help a demand organization and the FM function:

- Save money.
- Improve decision-making.
- Protect or strengthen its reputation.
- Reduce the possibility of personal accidents.
- Reduce the chances of litigation.
- Ensure that business continuity is supported whenever possible.
- Understand environmental impacts.

In addition to organizations having risk management departments or personnel, consultants and organizations offer risk management services and software applications. However, risk management approaches cover the same elements. Although facility managers are not directly involved in the entire risk management process, it is beneficial for them to understand these elements.

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Risk Identification

6-11: Sample Risk Rating

Risk identification is the process for identifying and recording potential risks that can affect the successful delivery or completion of a project. It is the early and continuous identification of events that, if they occur, could have negative impact on the ability to achieve goals successfully.

Risk Categories

Risk categories are the classification of risks by an organization's business activities. They provide a structured overview of the underlying and potential risks faced by a business. In addition, creating categories helps with assessment and risk response.

FM contract risk categories include:

- Scope of services and nature of work
- Subcontracting
- Geography and vendor delivery capability
- Pricing and costing options
- Contract duration and renewal options
- Service and resource flexibility
- Vendor company failure
- Service failure
- Reputational risk
- Change and transition

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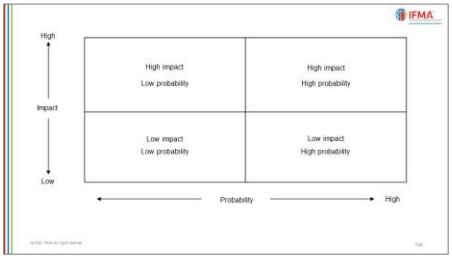
Risk Assessment



Risk assessment identifies and analyzes potential events that may negatively impact individuals, assets, or the environment. It evaluates the potential risks that may be involved in a projected activity.

Risk is rated in terms of probability and impact. Estimating probability and impact can be challenging. The process involves judgment and the consistent application of rating factors. The key is to identify those factors that need focus from the facility manager. Exhibit 6-11 provides an example of risk rating that could help facility managers in this area.

Exhibit 6-11: Sample Risk Rating

Probability Rating		Impact Rating	
Probability	Score	Impact	Score
Almost certain	5	Catastrophic	5
Likely	4	Critical	4
Moderate	3	Serious	3
Unlikely	2	Marginal	2
Improbable	1	Negligible	1

Contract risk assessment should answer the following questions:

- To which party does the contract assign the risk of extra costs or time for a particular event?
- What is the likelihood of the event occurring?
- What is the economic exposure to the risk-bearing party if the event occurs?

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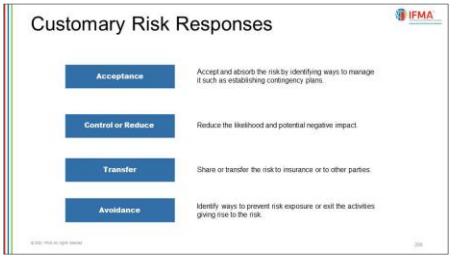
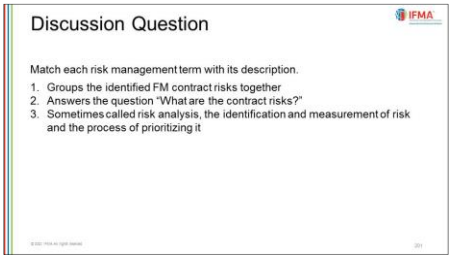
Risk Response



After risks are identified and categorized, facility managers should consider what the best response is to manage the risk. Risk response is the measures taken to avoid or reduce the impact of a risk or to control the effects of a risk. Customary risk responses are:

- **Accept** and absorb the risk by identifying ways to manage it, such as establishing contingency plans.
- **Control or reduce** the likelihood and potential negative impact of the risk.
- **Share or transfer** the risk through a contractual arrangement such as insurance or to other parties.
- **Identify** ways to **avoid** or prevent risk exposure or to exit the activities giving rise to the risk.

When outsourcing FM services, facility managers should be aware of contract risks they could encounter to ensure successful relationships with vendors.



Risks in Facility Management Contracts

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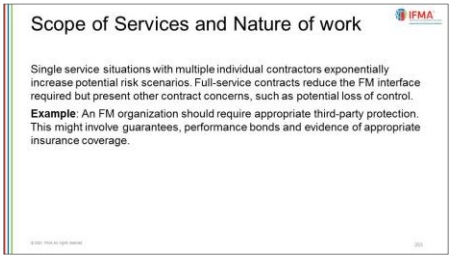
Scope of Services and Nature of Work



The contract clearly defines the scope of services and nature of work. In addition, terms and conditions specify project deadlines and the cost to fulfill requirements. The terms and conditions also specify the measures and indicators to be used by FM to monitor the contractor's performance.

Risks can increase exponentially when the contract is for a single service with multiple individual contractors.

Full-service contracts reduce the number of FM interface required. However, they present other concerns such as the potential for loss of control.

As a practical way to reduce risk, the facility manager could require third-party protection such as guarantees, performance bonds, or evidence of sufficient insurance coverage. To do this, the facility manager should secure copies of the contractor's licenses, liability and workers' compensation insurance certificate, company safety manuals, and bonds.

Types of bonds:

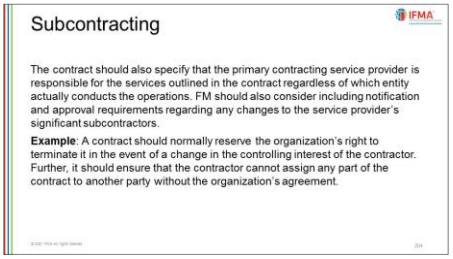
- **Bid bond** — is a debt secured by a bidder for a construction job, or similar type of bid-based selection process, for the purpose of providing a guarantee to the project owner that the bidder will take on the job if selected.
- **Performance bond** — also known as a contract bond, is issued to one party of a contract as a guarantee against the failure of the other party to meet obligations specified in the contract.
- **Fidelity bond** — a form of business insurance that covers any loss of money or property incurred due to fraudulent or dishonest behavior.

Additional risk management considerations include:

- **A dispute-resolution clause** — Specify that mediation should be used to attempt to resolve straightforward misunderstandings. A neutral third party will need to mediate in order for disputants to come to a consensus.
- **Negotiate liquidated damages** — A liquidated damages clause is included in an agreement so that if the agreement is not fulfilled, a specified amount will need to be paid.

- Contingency agreement — is a contract provision that requires a specific event or action to take place in order for the contract to be considered valid.
- **Combine dispute prevention and a contingent agreement** — this combined approach can be an effective remedy. This clause gives both sides an incentive to stay in touch throughout the implementation stage and involve a mediator at the first sign of trouble.
- **Use Performance Metrics** — Performance metrics are standards that the service provider and FM can used to evaluate the conduct and outcome of the work. Based on measures agreed-upon beforehand, they must reflect the demand organization's goals, they must be key to its success, and they must be quantifiable. To be useful, performance metrics must be written in a clear, concise manner, promoted, and translated into precise, actionable steps.

Subcontracting



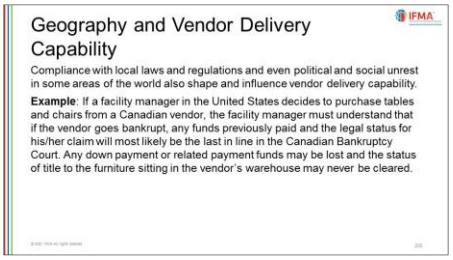
Some service providers may contract with third parties. Although FM can benefit from the specialization of subcontractors, risks associated with subcontracting exist when services are distributed among parties with whom FM has no direct relationship.

The fundamental aim is to hold the primary service provider to the same standard regardless of who performs the work. Ideally, FM should be notified if the service provider assigns any part of the contract to another party. Depending on the contract type, however, FM may not be aware of and be able to approve all subcontractors.

To provide accountability and reduce contract risk, a primary contracting service provider could be designated in the contract. The contract could also specify that the primary contracting service provider handles the services outlined in the contract regardless of which entity conducts the operations. Some of the risk may be mitigated by requiring the contractor and any subcontractor to integrate quality assurance or quality management systems into the process of work completion. FM should also consider including notification and approval requirements about any changes to the service provider's significant subcontractors.

Example: A contract should normally reserve the demand organization's right to terminate it in the event of a change in the controlling interest of the contractor. Further, it should ensure that the contractor cannot assign any part of the contract to another party without the demand organization's agreement.

Geography and Vendor Delivery Capability



The risk associated with geography and vendor delivery capability varies in cross-border situations. Risks could be due to cultural conflicts, compliance issues with local laws and regulations, or political and social unrest. These factors could shape and influence vendor delivery capability. Facility managers should be aware of these issues when working with vendors from other countries. It is beneficial for facility managers to have a deep understanding of the culture and how to navigate relationships with the people in the countries where they conduct business.

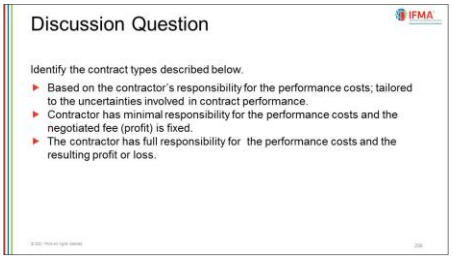
Example: If a facility manager in the United States decides to purchase tables and chairs from a Canadian vendor, the facility manager must understand that if the vendor goes bankrupt, any funds previously paid and the legal status for his/her claim will most likely be the last in line in the Canadian Bankruptcy Court. Any down payment or related payment funds may be lost and the status of title to the furniture sitting in the vendor's warehouse may never be cleared.

Pricing and Costing Options

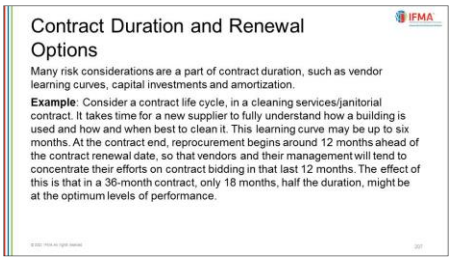
When a demand organization outsources services, contract type and payment basis influence risks. The contract type and price or estimated cost and fee result in reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance. Other risks include:

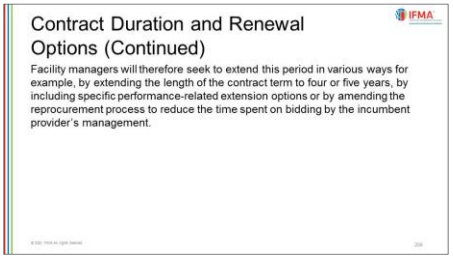
- The degree and timing of the responsibility assumed by the contractor for the costs of performance.
- The amount and nature of the profit incentive offered to the contractor for achieving or exceeding specified standards or goals.

To reduce risk, the facility manager could ensure the contractor handles performance costs. Profit and fee incentives are tailored to the uncertainties involved in the contractor's performance.



Contract Duration and Renewal Options

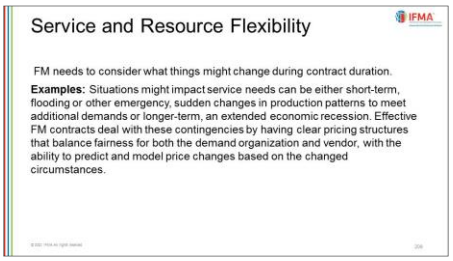




This type of contract risk involves grasping the specifics about the contract term – whether it has a specific end date and termination, automatic renewal provisions, or continuance contingent on performance as evaluated by the demand organization.

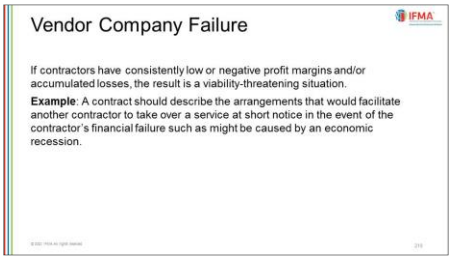
Facility managers can reduce contract risk in this area by extending its length, by including specific performance-related extension options, or by amending the procurement process to reduce the time spent on bidding by the incumbent provider. However, facility managers should not agree to automatic renewals unless they see a specific benefit to the demand organization to do so.

Service and Resource Flexibility



Situations such as a weather-related emergency, a change in production, or a recession can affect FM service needs and resource availability. FM contracts could mitigate the risk of these contingencies by including clear pricing structures to balance fairness for the demand organization and vendor with the ability to predict and model price changes based on the changed circumstances.

Vendor Company Failure



A contractor could go out of business if it consistently has a low or negative profit margin or if it has accumulated losses. This obviously affects its ability to fulfill contractual obligations.

The demand organization could mitigate this risk by prequalifying a vendor and learning about its financial solvency through the organization's procurement process.

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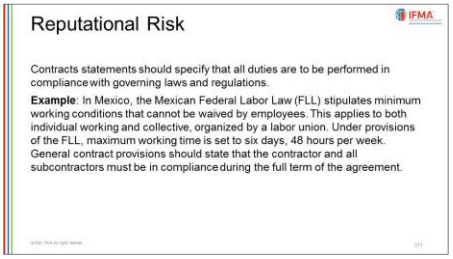
Service Failure

Minor mistakes or problems, such as equipment breakdown, happen in service execution. These do not necessarily constitute a service failure. However, the consistent inability to manage a contract, or repeated inferior performance may be a service failure and pose potential serious risk.

To mitigate risk, facility managers should ensure vendors could have a process, including a contingency plan, to respond promptly to service failures. Business interruption and continuity insurance could be in force to cover any related loss.

Reputational Risk



Reputational risk is a hidden threat or danger to the good name or standing of a business or entity. It can adversely affect a company's profitability and valuation. It can occur:

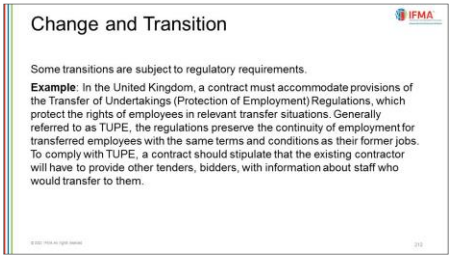
- Directly due to a company's actions
- Indirectly due to employee actions
- Tangentially due to supplier actions

Examples of reputational risks are:

- Discrimination against minorities
- Unequal treatment of men and women
- Violations of a drug-free workplace policy
- Non-compliance with immigration laws
- Occupational health and safety violations or inappropriate corrective actions

The demand organization can mitigate risk by ensuring contracts specify that all duties are to be performed in compliance with governing laws and regulations. The organization can also mitigate risk through prompt damage control measures to address these violations if they arise with stakeholders.

Change and Transition



Good transition management should provide for a seamless implementation with minimal disruption. Considerations to help a smooth transition to a new contract begin during the planning stage of procurement and continue throughout the procurement process.

A large, complex organization, with notable change or transition issues may need to include a transition plan in its contracts to identify key issues, risks, tasks, responsibilities, resources, time frames, policies, and procedures, etc.

A contract should be flexible enough to accommodate changes approved by the demand organization. The contract should also include a plan for an exit and transition process. The contract should describe what happens if the vendor defaults on terms that causes the demand organization to change from that vendor to another vendor. The demand organization's finance and legal personnel should ensure that proper details are in the contract.

Communication is also important in any contract change and transition. It helps to ensure that all stakeholders are aware of the changes, that any issues are identified early, and that the new arrangements are implemented as smoothly as possible. Facility managers should help with communicating new contract arrangements to all stakeholders, including:

- The new contractor
- The previous contractor, if relevant
- Staff impacted by the change
- Occupants affected by the new contract arrangements

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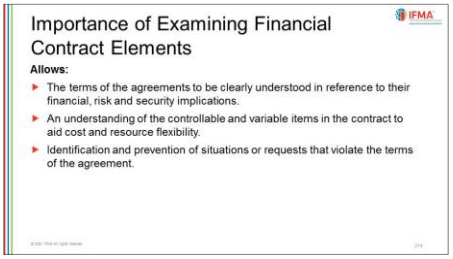
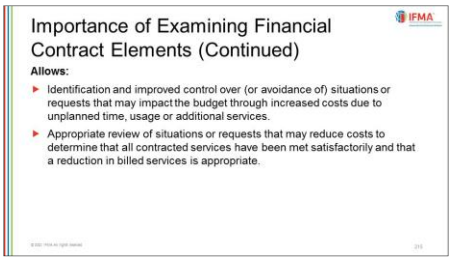
Importance of Examining Contract Elements





A facility manager should review a contract to understand its conditions, potential risks, and how much of that risk the demand organization can accept. Analyzing and interpreting financial contract elements in the context of a systematic risk management strategy helps facility managers to address a broad range of issues and risks in contract relationships. Analysis of financial contract elements, lease agreements, service contracts, cost statements, etc. allows the facility manager to do the following:

- Understand the terms of the agreements in reference to their financial, risk, and security implications.
- Gain an understanding of the controllable and variable items in the contract to aid cost and resource flexibility.
- Identify and prevent situations or requests that violate the terms of the agreement.
- Identify and improve control over, or avoidance of, situations or requests that may impact the budget through increased costs from added time, usage, or services.
- Review situations or requests that may reduce costs to determine that all contracted services are met satisfactorily and that a reduction in billed services is appropriate.

Potential mutual benefits from systematic risk management include:

- Reduced contract risks
- Increased revenues
- Reduced costs and fewer cost overruns
- Improved contract performance
- Improved compliance

- Effective communication and trust between all parties

Analyzing and interpreting financial contract elements in the context of a systematic risk management strategy helps to address a broad range of issues and risks in contract relationships. Good risk management facilitates collaboration rather than "policing."

Potential mutual benefits from systematic risk management include:

- Reduced contract risks
- Increased revenues
- Reduced costs and fewer cost overruns
- Improved contract performance
- Improved compliance
- Effective communication and trust between all parties

Prevention of Contracting Fraud and Irregularities

Lesson Introduction

On completion of this lesson, you will be able to:

- Identify ways to prevent fraud and irregularities.

This lesson contains the following topics:

- Types of Contract Fraud
- Indications of Fraud
- How Fraud Could Occur
- Principles of Contract Fraud Control

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Fraud is generally defined as an intentional deception made to gain an advantage or damage another individual. It encompasses a variety of illegal acts characterized by deceit, concealment, or violation of trust. To explain, fraud involves the false representation of facts, whether by intentionally withholding valuable information or by providing false statements to another party for the purpose of gaining something that may not have been provided without deception.

Similarly, contract fraud happens when a person knowingly makes a false statement to have someone else agree to a contract. This act is intended to deceive the second person into signing a contract to which that person might not have otherwise agreed. Contract fraud can also occur when a person tricks a second person into unknowingly signing a contract.

Best practices in procurement, valid contracts, and prevention control help to deter contract fraud. However, it helps to be aware of the types of fraud that exist. Descriptions of the primary types follow.

Types of Contract Fraud

Fraud is defined as an intentional deception made to gain an advantage or damage another individual. It encompasses illegal acts characterized by deceit, concealment or violation of trust. These acts are not dependent upon the application of a threat of violence or physical force. Fraudulent activities are perpetrated by parties and organizations to obtain money, property or services; to avoid payment or loss of services; or to secure personal or business advantage.

Similarly, contract fraud happens when a person knowingly makes a false statement to have someone else agree to a contract. This act is intended to deceive the second person into signing a contract to which that person might not have otherwise agreed. Contract fraud can also occur when a person tricks a second person into unknowingly signing a contract.

Best procurement practices, valid contracts, check points and prevention control help to deter collusion, conspiracy or complicity and corruption, the money exchange, goods or services and prevent contract fraud.

Fraud as it relates to contracts can take many forms. The primary ones are described below.

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Collusion between Personnel or Agents

- **Collusion**
  Collusion is a secret agreement and cooperation between interested parties, such as countries or organizations, for a purpose that is fraudulent, deceitful, or illegal. Collusion can take forms, such as:
  - Accepting bribes or kickbacks
  - Sharing insider information
  - Setting prices
  - Limiting production
- **Price fixing**
  Price fixing is a written, verbal, or inferred agreement among competitors to raise, fix, or otherwise maintain the prices at a specified level. It is illegal when it involves collusion among two or more product or service providers to maintain artificially high prices or to keep the prices paid to their suppliers artificially low. Price fixing takes various forms such as, but not limited to the following:
  - Establishing or adhering to price discounts
  - Holding prices firm
  - Eliminating or reducing discounts
  - Adopting a standard formula for computing prices
  - Maintaining certain price differentials between different types, sizes, or quantities of products
  - Adhering to a minimum fee or price schedule
  - Fixing credit terms
  - Not advertising prices

  Facility managers should contact the legal department if they suspect price fixing is taking place. Facility managers should also consider including the subject of price fixing in their ethics training for FM staff.
- **Noncompetitive pricing**
  Noncompetitive pricing means conspiring competitors effectively raise prices when the organization acquiring goods or services solicits competing bids.
- Bid rigging
  Bid rigging is an illegal practice in which competing parties collude to determine the winner of a bidding process. This practice can be present where business contracts are awarded through the process of soliciting competitive bids. The goal is to win a contract and all parties share in the award.
  Although bid rigging can take different forms, one of the most common practices

occurs when companies decide in advance who will win a bidding process. Another practice of bid rigging involves hiring a competing company as a subcontractor to subvert the bidding process. A company may also decide to form a joint venture with a competing company but do this with the sole purpose of submitting a single bid without any intention of working with the other company to achieve savings by combining resources or expertise.
Other forms of bid rigging include:

- **Bid rotation**
  A form of market allocation that occurs when bidding companies take turns at being the winning bidder.
- **Bid suppression**
  One or more bidders sit out of a bidding process, so another bidder is guaranteed to win the bidding process.
- **Complementary bidding**
  Companies intentionally submit uncompetitive bids to guarantee that their bids are not selected thus helping to ensure that another, preselected bidder is chosen. This is also known as courtesy bidding or cover bidding.
- **Buyback**
  Used in no-reserve auctions where the seller of an item buys the auction item to prevent it from selling at too low a price.

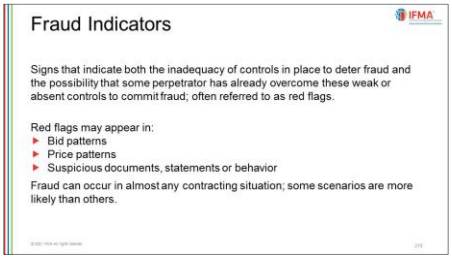
Irregularities During Execution of Contract

Fraudulent activity can occur during the execution of a contract. This can include:

- Failure to perform to specifications
- Falsification of records and invoices
- Overstatement of work completed
- Unauthorized or illegal use of confidential or proprietary information
- Payments for Work not Carried Out

  Sometimes known as phantom charges, payment can occur when charges are submitted for expenses not incurred or for work not performed. It may involve misrepresentation of status or progress to continue receiving funds.

Indications of Fraud



Facility managers should be aware of how to recognize fraud in the bidding process and in the awarding of contracts. Certain signs, or red flags, point to inadequacy of controls to deter fraudulent activity. Although these signs may cause suspicion, they are not definite proof of a fraudulent act. They do signal the facility manager to proceed with caution and to evaluate a situation carefully to determine whether fraud exists.

Exhibit 6-12 lists signs or red flags which facility managers should be aware of that could indicate activity at odds with a competitive process.

Exhibit 6-12: Common Fraud Indicators in Facility Management Contracts

Red flags in bid patterns
✓ The same company keeps winning a particular procurement. This may be more suspicious if one or more companies continually submit unsuccessful bids. ✓ The same suppliers submit bids and each company seems to take a turn being the successful bidder. ✓ Some bids are much higher than published price lists, previous bids by the same firms or organizational cost estimates. ✓ Fewer than the normal numbers of competitors submit bids. ✓ A company appears to be bidding substantially higher on some bids than on other bids, with no apparent cost differences to account for the disparity. ✓ Bid prices drop whenever a new or infrequent bidder submits a bid. ✓ A successful bidder subcontracts work to competitors that submitted unsuccessful bids on the same project. ✓ A company withdraws its successful bid and subsequently is subcontracted work by the new winning contractor.
Red flags in price patterns

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Identical prices may indicate a price fixing conspiracy, especially when:

- ✓ Prices stay identical for long periods of time.
- ✓ Prices previously were different.
- ✓ Price increases do not appear to be supported by increased costs.
- ✓ Discounts are eliminated, especially when discounts were historically given.
- ✓ There is a wide spread of prices for the same work package that is not explained by resource levels.

Red flags related to suspicious documents, statements or behavior

- ✓ The proposals or bid forms submitted by different vendors contain irregularities, such as identical calculations or spelling errors or similar handwriting, typeface or stationery. This may indicate that the designated low bidder may have been involved in preparing the losing vendor's bid.
- ✓ Bid or price documents contain whiteouts or other physical alterations indicating last-minute price changes.
- ✓ A company requests a bid package for itself and a competitor or submits both its and another's bids.
- ✓ A company submits a bid when it is incapable of successfully performing the contract, likely a complementary bid.
- ✓ A company brings multiple bids to a bid opening and submits its bid only after determining or trying to determine, who else is bidding.
- ✓ A member of the internal, or buyer, team consistently favors one bidder with no clear rationale or puts hurdles in the way of other bidders or of effective mobilization.

A bidder or salesperson makes:

- ✓ Any reference to industry wide or trade association price schedules.
- ✓ Any statement indicating advance, nonpublic, knowledge of competitors' pricing.
- ✓ Statements to the effect that a particular customer or contract "belongs" to a certain vendor.
- ✓ Statements that a bid was a "courtesy," "complementary," "token" or "cover" bid.
- ✓ Any statement indicating that vendors have discussed prices among themselves or have reached an understanding about prices.

How Fraud Could Occur

Almost any bidding or contracting situation is susceptible to fraudulent activity.

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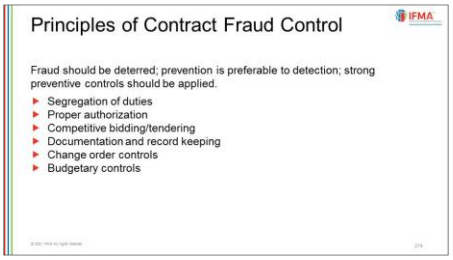
Facility managers can benefit by recognizing scenarios, such as the following, where fraud could happen.

- **Few providers** – The fewer the contractors, the easier it is for them to work together and agree on prices, bidding, etc.
- **Little product differentiation** – The probability for collusion increases if no products can be easily substituted for the product the buyer needs, or if restrictive specifications exist for the product being procured.
- **Standardized products** – The more standardized a product is, the easier it is for competitors to reach agreement on a common price structure.
- **Repetitive purchases** – The probability of collusion increases as vendors become familiar with other bidders, which can result in opportunities for sharing the work.
- **Strong ties** – The probability of collusion increases when competitors know each other through social connections, trade associations, legitimate business transactions, or employee migration among the companies.

Organizations stand to derive many benefits from recognizing where fraud may occur during bidding and award of contracts. Awareness and preventive controls are not enough to ensure the successful execution of a contract. Facility managers need to provide ongoing assurance, which is the next topic for discussion.

Principles of Contract Fraud Control



In addition to being aware of how fraud could occur, facility managers should consider focusing on setting internal controls to deter and prevent the risks in FM contracting.

Internal controls are the mechanisms, rules, and procedures implemented to ensure the integrity of organizational information, promote accountability, and prevent fraud. In addition to preventing fraud, these controls can help streamline operations and improve operational efficiency. The effectiveness of internal controls depends on human judgment. Therefore, facility managers should encourage their staff to follow them.

Although no two systems of internal controls are identical, standard principles for FM, such as the following, should be in place to make fraud and error manageable.

Segregation of Duties

Segregation of duties helps to reduce the likelihood of errors and lowers the risk of fraud by dividing tasks of a key process among two or more individuals or departments.

Example: In the procurement process, one individual requests the work and another person authorizes payment.

Proper Authorization

Proper authorization prevents invalid transactions from occurring. This ensures all business activities adhere to established guidelines and goals and prevent fraud or theft. Specific individuals authorize certain types of transactions, which confirms an activity has been seen, reviewed, and approved by the right person before it is processed or paid.

Example: The supervisor reviews and approves an employee request for ordering cleaning supplies. The approval is not returned to the requestor but sent to another employee to place the order.

Competitive Bidding/Tendering

Competitive bidding, also known as open tender/bidding, is the process where multiple contractors are invited to tender/bid on a project so that the owner can maximize market pricing and achieve the desired project at the lowest possible cost. Competitive bidding allows transparency, equality of opportunity, and the ability to show that the outcomes represent the best value. A decision not to use competitive bidding should require high level authorization.

Example: All bids are opened and logged at the time they are due. Three employees are present at the bid opening with at least one person representing a department other than the procurement or purchasing function to ensure fairness in the bidding and evaluation process.

Documentation and Record Keeping

Strong internal controls rely on supporting documentation to detail the basis for decisions and transactions. Uniform and consistent documentation also ensures conformity with organizational policies, practices, and compliance with laws and regulations.

Example: Documentation and record keeping of a large capital construction project supports accurate financial reporting and compliance with associated laws and regulations.

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Change Order Process

A change order is the written document signed by the contractor, designer, and owner that allows for changes involving cost and time. As an amendment to the contract, it changes the contractor's scope of work. A change might be adding a window where there was none in the original plans.

Example: An omission in the original plans reveals an organization has an inefficient change order process which caused schedule delays and affected service quality. An audit also showed triple payment for a piece of equipment, which included two times through change orders. The organization updated its change order process to speed up schedule delays, and to ensure cost validation and comparison to costs listed in the original bid.

Budgetary Controls

A budget is a formal, numerical expression of how an organization, or a part of the organization, expects to operate for a defined period. This identifies the resources and commitments needed to satisfy the identified goals over a period as well as the sources of funding required to provide those resources. Budgetary control refers to how well a manager uses a budget to check and control costs and operations in an accounting period. For instance, it is a process for facility managers to set financial and performance goals with budgets, compare the actual results, and adjust performance as needed. Having budgetary controls helps to minimize potential conflicts and reduce security gaps.

Example: A facility manager sets FM goals for the year and then creates a budget to monitor and control costs related to those goals. Next, the facility manager assigns FM staff members to be accountable for each budget activity and to separate administration of the budget.

Progress Check Questions

1. What statement best defines a Statement of Work?

   a. A supplement to the Scope of Work that has detailed provisions for specific goods and services the outsourcing firm is to provide.
   b. A document that states the legal framework of the general terms and conditions that apply to all the work the demand organization is requesting of the outsourcing firm.
   c. A document used for service contracts that describes the services the demand organization expects the supplier to perform.
   d. A legally binding obligation deriving from actions, conduct, or circumstances of one or more parties in an agreement.

2. Responsibility for contracts requires knowledge of contract terminologies. What does the term competent party mean?

   a. A responsible minor, who fully understands the nature and consequences of their actions in the contract.
   b. A colleague who can sign a contract on behalf of the facility manager who is not available at the time.
   c. An individual who has the legal authority to sign on behalf of an organization or another person.
   d. A facility manager who doesn't fully understand the legalese but has successfully used the same contractor numerous times.

3. What type of contract requires a contractor to successfully perform the contract and deliver supplies or services for an agreed price?

   a. Cost-Reimbursement Contract
   b. IDIQ Contract
   c. Fixed Price Contract
   d. Open Book Contract

4. What internal control principle helps facility managers prevent contract fraud?

   a. Standardized products
   b. Fixed price contract
   c. Separation of duties
   d. Purchase order

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5. What is NOT a typical element of a contract?

   a. Mutual agreement
   b. Consideration
   c. Competent parties
   d. Security services

6. What statement best describes contract administration?

   a. Any action from the time a contract is awarded until its closeout.
   b. The maximum level of service acceptable to meet customer needs.
   c. Specific information on the product or service to be delivered.
   d. Framework for assessing the standard and quality of service provided.

7. All of the following components are generally included in the Service Level Agreement, except for which one?

   a. Pricing and the quality of the service
   b. Customer rating and feedback
   c. Description of the scope of services to be provided
   d. RFP response procedures and deadlines

8. What statement best describes contract closeout?

   a. A work/service arrangement where the supplier costs are not finite.
   b. The point where termination conditions of the contract have been met.
   c. Framework for assessing the standard and quality of service provided.
   d. Arrangement where contracting manager decides no contract type is suitable

9. What are alternatives to going to court to resolve a conflict?

   a. Agreeing to mediation.
   b. Developing clear and comprehensive service level agreements.
   c. Avoiding or reducing the negative impact of a risk event.
   d. Engineering a smooth transition to a new contract.

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10. What is the submitting a dispute to one or more qualified and impartial persons for a final and binding decision known as?

    a. Arbitration
    b. Graduated process
    c. Management escalation
    d. Mediation

11. What is it called when the final resolution process allows the parties to work together with the assistance of a trained facilitator?

    a. Arbitration
    b. Mediation
    c. Management escalation
    d. Graduated process

12. What statement best describes mediation?

    a. Alternative to going to court to resolve a conflict, dispute, or claim.
    b. Proper authorization to prevent invalid transactions from occurring.
    c. Coordinated activities to direct and control an organization regarding risk.
    d. Process to help the parties find a mutually acceptable resolution to a dispute.

13. What statement best describes arbitration?

    a. Alternative to going to court to resolve a conflict, dispute, or claim.
    b. Like a trial in that parties make opening statement and present evidence.
    c. Coordinated activities to direct and control an organization regarding risk.
    d. Process to help the parties find a mutually acceptable resolution to a dispute.

14. What statement best describes dispute resolution?

    a. Alternative to going to court to resolve a conflict, dispute, or claim.
    b. Disagreement, antagonism, or argument between two people or groups.
    c. Measures taken to avoid, reduce, or control the impact of a risk.
    d. Considerations to make a smooth transition to a new contract.

15. What statement best describes risk assessment?

    a. Measures taken to avoid, reduce, or control the impact of a risk.
    b. Classifies potential risks by an organization's business activities.
    c. Evaluates the potential risks that may be involved in a projected activity.
    d. Identifies ways to prevent risk exposure for a project.

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16. What risk response(s) should a facility manager consider after identifying a risk?

    a. Avoid
    b. Control or reduce
    c. Share or transfer
    d. All of the above

17. What is included in Reputational Risk?

    a. Discrimination against minorities
    b. Categorization of risks
    c. Risk probability and impact
    d. Correct risk response plan

Progress Check Question Answer Key

Chapter 1: Finance and Business in the FM Organization

Finance and Business Overview

1. d
2. b
3. c

Fundamental Accounting Concepts

1. c
2. a
3. c
4. c

Chapter 2: Financial Management of the FM Organization

Budgets and Budgeting Basics

1. a
2. c
3. b
4. a
5. a

Financial Statements

1. c
2. a
3. a
4. b
5. a

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Chapter 3: Fundamental Cost Concepts, Containment Strategies and Chargebacks in the FM Organization

Fundamental Cost Concepts

1. b
2. d
3. c
4. a

Cost-Containment Strategies

1. b
2. b

Chargebacks

1. b
2. a
3. c
4. b

Chapter 4: Business Cases, Supporting Documentation and Financial Reports

Developing a Business Case

1. a
2. d
3. a
4. a
5. c

Business Case Financial Data

1. b
2. b

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3. a
4. a
5. c

Chapter 5: Procurement in the FM Organization

Procurement Procedures

1. c
2. d
3. b
4. c
5. a

Facility Management Outsourcing

1. c
2. d
3. b
4. a
5. c

Chapter 6: Contracts in the FM Organization

Contract Development, Management and Oversight

1. c
2. c

Types of Contracts

1. c
2. c
3. d

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Contract Administration and Monitoring

1. a
2. d
3. b

Resolving Vendor Conflicts

1. a
2. a
3. b
4. d
5. b
6. a

Analyzing and Interpreting Contract Risks

1. c
2. d
3. a

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Appendix

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Glossary

Contingency agreement

States which actions under certain conditions will result in specific outcomes.

Business Process Outsourcing (BPO)

This model is a method of subcontracting various business operations to third party suppliers.

Agreement to enter into the contract

Once both parties understand the deal and understand what type of consideration will be exchanged by each party, they are ready to form an agreement. The parties demonstrate that negotiations have ended, and an agreement has been reached when the parties sign the contract.

Authority level of purchase

Lists the individuals in the demand organization who have the authority to approve and sign documents related to the stages of the procurement process.

Bid rigging

An illegal practice in which competing parties collude to determine the winner of a bidding process.

Bilateral contract

The most common of binding contracts, an agreement between two parties that involves concessions or obligations owed by both sides of the contract.

Budgetary control

Refers to how well a manager uses a budget to check and control costs and operations in an accounting period.

Build-Operate-Transfer (BOT)

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This is a model used to finance normally large scale, greenfield infrastructure projects developed through public-private partnerships.

Competent parties

Competent parties are those persons legally and competently capable of entering into agreements enforceable by law. Also, each person who signs the contract must have the legal authority to sign on behalf of an organization or another person. For example, minors cannot enter into contracts without the signature of a parent or guardian.

Consideration

Consideration is what each party to a contract gets or expects to get from the contractual deal. Once the parties have met, they must each exchange something of value to create a contract. This includes goods or a promise to do something, for example, the price paid by one side and the goods supplied by the other. The Latin term quid pro quo, meaning "something for something," can be used to refer to contract consideration.

Contingency agreement

States which actions under certain conditions will result in specific outcomes.

Contract

A contract is a legal device used by two or more persons or entities to indicate they have reached an agreement. A contract is legally binding. It provides terms and conditions that describe the agreement and constitute a legal obligation. To be considered valid, a contract typically requires the following elements.

Contract cost monitoring

Occurs during contract execution review and approve contractor costs. This includes cutting unnecessary costs involved in the project.

Contract performance monitoring

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An essential part of proper contract administration. It helps to:
- Confirm the contractor performs its duties and obligations per the contract terms.
- Find and address any developing problems or issues.
- Find planned and unplanned modifications that may arise throughout the contract term.
- Negotiate and process contract change orders.

cost control

Manages the delivery of a project within the approved budget.

Delivery Date

The delivery date is the actual date the goods or services are scheduled to be delivered to the demand organization in fulfillment of the contract.

Dispute-resolution clause

Determines how parties will resolve disputes.

Embedded energy

The energy used to create an object. The energy consumed by all processes associated with the production of a building, landscape, or site starting with the acquisition of natural resources to product delivery. Also referred to as embodied energy.

EPP – Environmentally Preferred Purchasing

The purchasing of products or services that have a positive effect on human health and the environment when compared with competing products or services.

Executed contract

A contract that has been fully performed by both parties.

Express contract

A voluntarily entered-into contract agreed on either verbally or in writing by two or more parties.

Facilities Management Outsourcing

Refers to transfer of management and decision making to a third-party outside of the organisation.

Facility Management Agent

An entity having and exercising the right of general control, authority, judgment, and discretion over the business or affairs of an organization.

Facility Management Contractor

An entity that contracts to provide facility services to a demand organization and is accountable for contract performance.

Freelancer

An independent worker who earns wages on a per-job or per-task basis, typically for short-term work.

Implied contract

A legally binding obligation deriving from actions, conduct, or circumstances of one or more parties in an agreement.

Indoor environmental quality

The strategies and systems used to provide occupants with a healthful, comfortable, and safe workplace. It generally focuses on temperature and relative humidity, indoor air quality, lighting, noise, and cleanliness.

Invitation to tender (ITT)

A formal, structured procurement document issued by the demand organization to invite suppliers to bid on a contract for goods, services, or work the organization is looking to fulfill.

Milestone Date

A milestone date is when a partial delivery of goods or services is expected.

Mutual agreement

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Is an express or implied agreement that helps ensure that both parties understand and agree to the essential details, rights, and obligations of the contract. While this may seem obvious, a mutual agreement should explicitly clarify the terms of the deal so that when the parties subsequently agree to formally enter into the contract, they are agreeing to the same thing. For example, a contract is a mutually binding legal document between a demand organization and an outsourcing firm to obtain goods or services under specified terms and conditions. A purchase order when accepted by an outsourcing firm is a type of contract.

Mutuality of remedy

Both parties must have an equal right to remedy a breach of terms by the other party. All parties agree to the same terms for remedy.

Packaging

Serves to protect the product inside. The packaging should be environmentally friendly, biodegradable, preferably compostable, recyclable, reusable, and non-toxic.

Procurement

The systematic process by which an organization reaches formal agreements for the purchase of the supply of goods and/or services.

Procurement Metrics

The metrics by which the products or services results will be assessed are listed. Metrics might include the frequency and level of detail of performance, quality, or cost data

Project Work

This model works as a specialized outsourcing center designed to complete work promptly and at a fixed cost.

Proper subject matter

The contract has a lawful purpose.

Quasi contract

A retroactive agreement between two parties who have no earlier obligations to each other. Also known as an implied-in-law contract.

Rapidly renewable resources

Includes linseed, straw, cotton, wheat, sunflowers, natural rubber, bamboo, and cork. These can produce green building products, such as linoleum, straw bales, cotton bat insulation, wheatboard panels, bamboo cabinetry, cork flooring, soy-based foam release agents and fabrics.

Request for proposal (RFP)

An official statement to vendors about the business activity in works, supply, or service required.

Request for quotation (RFQ)

A process in which a demand organization asks select suppliers and contractors to send price quotes and bids to fulfill certain tasks or projects.

Risk assessment

Identifies and analyzes potential events that may negatively impact individuals, assets, or the environment.

Risk category

The classification of risks by an organization's business activities, providing a structured overview of the underlying and potential risks faced by a business.

Risk identification

The process for identifying and recording potential risks that can affect the successful delivery or completion of a project.

Segregation of duties

Helps to reduce the likelihood of errors and lowers the risk of fraud by dividing tasks of a key process among two or more individuals or departments.

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Statement of Work (SOW)

A listing of the specific tasks the supplier is to perform. It describes the work requirements or tasks, the performance, and design expectations for a project.

Straight-line depreciation

Straight line depreciation is the default method used to recognize the carrying amount of a fixed asset evenly over its useful life. It is employed when there is no particular pattern to the manner in which an asset is to be utilized over time. Use of the straight-line method is highly recommended, since it is the easiest depreciation method to calculate, and so results in few calculation errors.

The Leadership in Energy and Environmental Design (LEED)

Provides standards for green buildings and other sustainability standards organizations.

Total Facility Management Contract

Details the demand organization's outsourcing of all its FM requirements and responsibility to one FM service provider at a fixed price.

Unilateral contract

An agreement in which an offeror (the party who makes the offer) promises to pay after a specific act occurs.

Valid contract

Contains all the required elements and is legally enforceable in court. It creates legal obligations between parties to the contract.

Virtual water

The water "hidden" in the products, services, and processes people buy and use every day. The end-user of the product or service does not see virtual water. It is consumed throughout the value chain, which makes creation of the product or service possible. Also referred to as embedded water or indirect water.

Void contract

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A formal agreement that is effectively illegitimate and unenforceable from the moment it is created. A void contract can happen when one of the parties involved is incapable of fully understanding the implications of the agreement.

Voidable contract

A formal agreement between two parties that can be cancelled or altered for qualified legal reasons.

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