UNIT 5: FINANCIAL PROJECTIONS

1. COST OF THE PROJECT

Project Cost Components

Capital Expenditure (CAPEX):

- **Fixed Assets**: Land, building, plant & machinery, equipment
- **Intangible Assets**: Software, patents, licenses, preliminary expenses

Working Capital:

- **Current Assets**: Raw materials, finished goods, debtors, cash
- **Current Liabilities**: Creditors, accrued expenses
- **Net Working Capital** = Current Assets - Current Liabilities

Pre-operative Expenses:

- Feasibility studies, legal fees, trial runs, training costs
- Interest during construction period

Contingency (5-10% of total cost):

- Unforeseen expenses and price escalations

Example: Manufacturing Project Cost

Fixed Assets: Rs 50,00,000
Working Capital: Rs 15,00,000
Pre-operative Expenses: Rs 5,00,000
Contingency (8%): Rs 5,60,000
Total Project Cost: Rs 75,60,000

Cost Estimation Methods

Cost estimation methods are techniques used in project management to predict the cost of a project. They vary in accuracy and the level of detail required.

1. Analogous Estimation

Analogous estimation, or top-down estimation, uses data from similar, completed past projects to estimate the cost of the current project. It is most effective when there is a strong historical record and the current project is very similar to past ones. This method is quick but can be less accurate due to potential differences between projects. It's often used in the early stages of a project when limited information is available.

2. Parametric Estimation

Parametric estimation uses statistical relationships between historical data and other project variables to calculate a cost estimate. It involves identifying a "cost per unit" and multiplying it by the number of units in the new project. For example, if a company knows the average cost to develop one line of code or build one square foot of office space, it can use that parameter to estimate the total cost for a new project. This method is generally more accurate than analogous estimation but requires reliable historical data.

3. Bottom-Up Estimation

Bottom-up estimation is the most detailed and accurate method. It involves breaking down the project into its smallest components, or work packages, and then estimating the cost of each individual component. These individual costs are then aggregated to determine the total project cost. This method is time-consuming but provides a high level of accuracy and a strong basis for project budgeting. It is typically used in the later stages of a project when the scope is clearly defined.

4. Three-Point Estimation

Three-point estimation is a technique that accounts for uncertainty by considering three different cost estimates for each activity:

- **Optimistic (O):** The best-case scenario cost.
- **Pessimistic (P):** The worst-case scenario cost.
- **Most Likely (M):** The realistic cost, assuming no major issues.

These three values are then combined using a formula to get a final, weighted estimate. The most common formula is the **triangular distribution**, which is (O+M+P)/3. A more sophisticated method is the **beta distribution**, which weights the most likely estimate more heavily: (O+4M+P)/6. This method provides a range of possible outcomes and is useful for risk analysis.

2. ESTIMATION OF BANKING FINANCE AND MARGIN MONEY

Types of Bank Finance

Term Loans:

- Long-term (5-15 years) for fixed assets
- Medium-term (3-7 years) for equipment
- Interest: 9-15% per annum

Working Capital Finance:

- Cash credit against current assets
- Bank overdraft facilities
- Bill discounting

Margin Money Sources

- Promoter's own savings
- Sale of personal assets
- Government subsidies (MUDRA, NEIPP for Northeast)
- Family contributions
- Angel investors

Example:

Project Cost: Rs 50,00,000
Bank Loan (70%): Rs 35,00,000
Margin Money (30%): Rs 15,00,000

Margin Sources:
- Own savings: Rs 8,00,000
- Government subsidy: Rs 4,00,000
- Family contribution: Rs 3,00,000

3. MEANS OF FINANCE

Internal Sources

- **Retained Earnings**: Accumulated profits
- **Depreciation Funds**: Annual depreciation provisions
- **Asset Sales**: Disposing unused assets

External Debt Sources

- **Commercial Banks**: Term loans, working capital
- **Financial Institutions**: SIDBI, NABARD, State FCs
- **NBFCs**: Equipment finance, quick processing

Equity Sources

- **Venture Capital**: Early-stage, high-growth companies
- **Private Equity**: Established businesses seeking expansion
- **Angel Investors**: Individual wealthy investors
- **Crowdfunding**: Online platforms for small amounts

Government Sources

- **MUDRA Loans**: Up to Rs 10 lakhs for MSMEs
- **Startup India**: Tax benefits and funding support
- **State Incentives**: Subsidies and tax exemptions
- **Northeast Schemes**: NEIPP with 30% capital subsidy

4. ESTIMATION OF REVENUE, EXPENSES AND PROFIT

The accurate estimation of Revenue, Expenses, and Profit is a critical component of financial planning in project management, determining a project's financial viability and guiding resource allocation.

1. Estimation of Revenue (Income)

Project revenue is the total income a project is expected to generate. This is typically the contract value from the client or the projected value of the completed asset/product.

- **Define Project Scope:** The first step is clearly defining the project's deliverables and scope, as this dictates the value proposition and, thus, the potential revenue.
- **Pricing Strategy:**
    - **Fixed Price Projects:** Revenue is based on the agreed-upon contract value.
    - **Time and Materials (T&M) Projects:** Revenue is estimated by forecasting the required billable hours for each resource type (e.g., Senior Engineer, Junior Consultant) and multiplying by their respective billable rates.
    - **Internal Projects:** Revenue can be considered the future economic benefit or value generated by the completed project (e.g., savings from efficiency, value of a new product).
- **Scenario Analysis:** To account for uncertainty, project managers often create multiple revenue projections:
    - **Best-Case Scenario:** Optimistic estimate, factoring in upselling or favorable external factors.
    - **Worst-Case Scenario:** Conservative estimate, factoring in potential scope reduction or client delays.
    - **Most-Likely Scenario:** The most realistic expectation.

2. Estimation of Expenses (Costs)

Project expenses are the total direct and indirect costs required to execute the project. A detailed Work Breakdown Structure (WBS) is essential for a "bottom-up" estimate.

- **Direct Costs:** Costs directly attributable to the project:
    - **Labor:** Resource costs (salaries, wages, benefits) for project team members, calculated by multiplying estimated hours by the cost rate. This is often the most significant variable cost.
    - **Materials & Supplies:** Raw materials, components, software licenses.
    - **Equipment:** Costs for buying or renting machinery and tools.
    - **Subcontractors/Vendors:** Costs for external services.
- **Indirect Costs (Overhead):** Costs necessary to run the business but not tied to a single project:
    - **Administrative Expenses:** HR, accounting, office space (rent, utilities).
    - **Non-Billable Internal Costs:** Time spent on training, internal meetings, etc.
    - Indirect costs are often allocated to a project as a percentage of direct costs or labor.

- **Contingency Reserve:** A reserve added to the total cost estimate to cover unforeseen risks or known unknowns (e.g., price fluctuations, unexpected technical challenges). This helps avoid budget overruns.

3. Calculation of Profit

Project Profit is the residual amount after deducting all project expenses from the project revenue.

$$\text{Profit} = \text{Revenue} - \text{Expenses}$$

Profitability Metrics:

- **Gross Profit:** Revenue minus Direct Costs.
- **Net Profit:** Revenue minus all Direct and Indirect Costs.
- **Profit Margin (Net):** (Net Profit / Revenue) ×100. This ratio measures the project's efficiency and financial return. A project is typically considered viable only if its projected profit margin meets or exceeds the company's minimum target.

5. PROJECTION OF FINANCIAL STATEMENTS

Project financial projections involve forecasting how the project will impact the company's overall financial health, typically through the three primary financial statements. These projections move beyond individual project profitability to model the business's total financial outlook.

1. Projected Income Statement (Profit & Loss)

This statement shows the company's expected profitability over a specific future period.

- **Key Line Items to Project:** Project revenue, Cost of Goods Sold (COGS) or Direct Costs, Operating Expenses (including allocated project overhead), Depreciation/Amortization, Interest Expense, and Net Income.
- **Forecasting Method:** Line items are often projected as a percentage of the projected revenue (e.g., COGS as a percentage of sales, which may be based on historical data or industry benchmarks).

2. Projected Balance Sheet

This statement shows the expected assets, liabilities, and equity at a specific point in the future.

- **Key Line Items to Project:**
    - **Assets:** Accounts Receivable (money owed by clients), Inventory, Property, Plant & Equipment (if the project involves significant capital expenditure).
    - **Liabilities:** Accounts Payable (money owed to vendors), Deferred Revenue (payments received before work is done), and Debt (if the project requires a loan).

- **Forecasting Method:** Key operational items like Accounts Receivable are often linked to revenue projections (e.g., projected as a specific number of days' worth of sales).

3. Projected Cash Flow Statement

This statement shows the expected movement of cash (inflows and outflows) over a future period, crucial for managing liquidity. It reconciles the accrual-based Income Statement and Balance Sheet to actual cash movements.

- **Key Sections to Project:**
  - **Cash from Operating Activities:** Cash effects of revenues and expenses.
  - **Cash from Investing Activities:** Cash spent on or received from assets (e.g., capital expenditure from the project).
  - **Cash from Financing Activities:** Cash from debt, equity, or dividends.
- **Importance:** A project might look profitable on the Income Statement (high revenue, low expenses), but if payments are slow (high Accounts Receivable) and the project has high upfront costs, the company could face a cash flow shortfall. The Cash Flow Statement Projection identifies these potential liquidity issues early.

These statements are interconnected: the Net Income from the Income Statement flows into Retained Earnings on the Balance Sheet, and changes in Balance Sheet items affect the Cash Flow Statement.

6. PROJECTION OF CASH FLOW

The Projection of Cash Flow is a financial statement that estimates the net amount of cash and cash equivalents entering and leaving a business over a specified period. The theory behind it is based on the idea that cash is king; a business can be profitable on its income statement (Net Profit) but still fail if it runs out of cash to pay its bills (liquidity risk).

The projection is organized into three main activities to show where the cash is truly coming from and where it is being spent:

1. Operating Cash Flow (OCF)

This section projects the cash generated or used by the core, day-to-day running of the business.

- **Net Profit:** This is the starting point from the Profit & Loss Statement. However, it is an accrual-based figure (it includes non-cash items).
- **+ Depreciation:** Depreciation is a non-cash expense. It reduces the Net Profit but does not involve an actual cash outflow. Therefore, it is added back to Net Profit to find the true cash from operations.
- **± Changes in Working Capital:** Working capital is the difference between current assets (like inventory and accounts receivable) and current liabilities (like accounts payable).

    - **Increase in Current Assets (e.g., more inventory):** This is a cash outflow because you paid cash to acquire the assets.
    - **Increase in Current Liabilities (e.g., taking longer to pay suppliers):** This is a cash inflow because you held onto the cash longer.

(This adjustment converts the Net Profit from an accrual basis (when the sale/expense is recorded) to a cash basis (when the cash is actually received/paid).)

2. Investment Cash Flow (ICF)

This section projects the cash used for acquiring or selling **long-term assets** that are expected to generate future income.

- **Capital Expenditure on Fixed Assets:** This represents cash spent to purchase or upgrade long-term assets like machinery, buildings, and equipment. It is a **cash outflow**.
- **Investment in Working Capital (Note: Often shown in OCF, but can be a long-term investment decision):** If a project requires a permanent increase in the level of working capital (e.g., a mandatory inventory level), that initial investment can sometimes be classified here as a one-time capital outlay.

(This section reflects the company's commitment to growth and future capacity by investing in the necessary infrastructure.)

3. Financing Cash Flow (FCF)

This section projects the cash used to raise funds and pay back capital providers (owners and lenders).

- **Equity Contributions:** Cash received from owners or investors for their share of the company. This is a **cash inflow**.
- **Loan Receipts and Repayments:** Cash received from borrowing (inflow) and cash paid to reduce the principal of the debt (outflow).
- **Interest and Dividend Payments:** Cash paid to lenders (interest) and owners (dividends). These are cash outflows.

(This reveals how the project's operations are being funded and how the project is servicing its debt and providing returns to its owners.)