# DECISION MAKING AND SCENARIOS

## MODULE 2.1 – Evaluating Projects

## Introduction and Analyzing the Incremental After-Tax Cash Flows of a Project - Initial Investment Phase

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# Introduction

- How do you compare the available projects?
- How do you decide which projects to select?

## Net Present Value Rule

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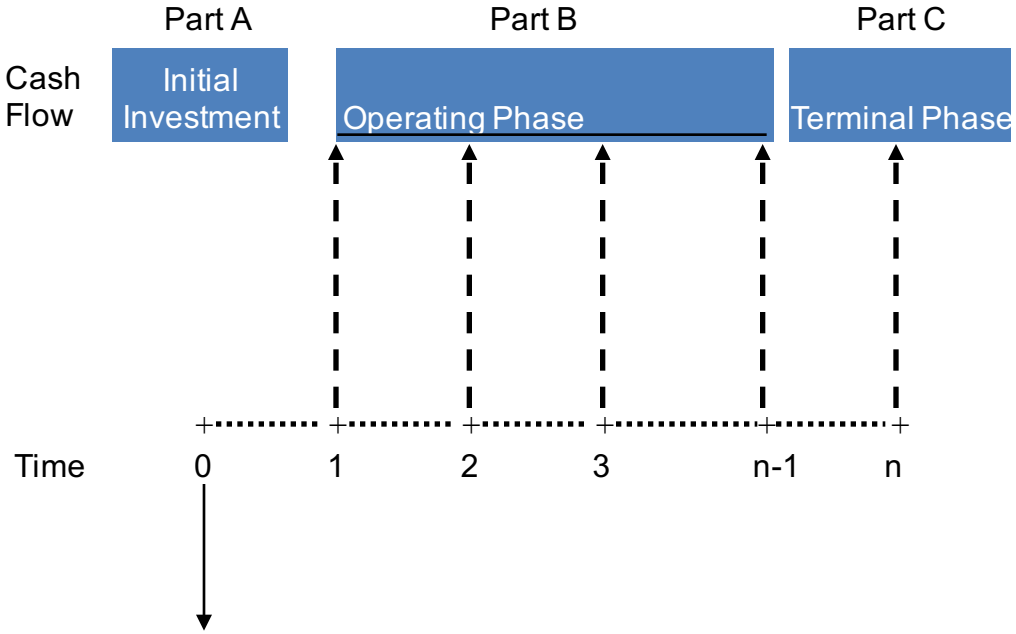
- If a project has a positive NPV, it is worth more than it costs – it creates value.
- Therefore, maximizing the value of the firm is equivalent to taking all projects with positive NPVs.
- If you cannot take all the positive NPV projects available, you take the combination of projects with the highest combined NPV

# ANALYZING THE INCREMENTAL AFTER-TAX CASH FLOWS

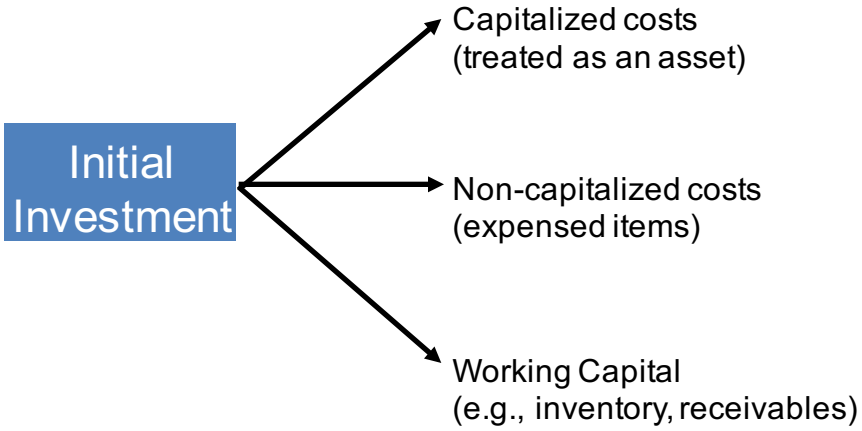
# Analyzing the Incremental After-Tax Cash Flows

- We must forecast the incremental cash flows of the project to determine the NPV.
  - What exactly does that mean?
- Basically, we ask how do the *after-tax* cash flows of the *organization* change because of the project!
- Three different phases of a project:
  - Initial Investment Phase
  - Operating Phase
  - Terminal Phase

# Incremental After-Tax Cash Flows



# Part A - Initial Investment



# Initial Investment - Capitalized Costs

- **Capitalized costs**

Capitalized costs are recorded as an asset and then that amount is generally written off as an expense – depreciated - over the asset's life

No immediate tax benefit unless there is some type of special credit (For example, the government might give a credit for expenditures on pollution control devices or solar energy.)

So capitalized costs are already after-tax cash outflows unless there is some credit (e.g., if you buy a machine whose purchase price is $1,000,000, the after-tax cash outflow is $1,000,000.

# Initial Investment - Non-capitalized costs

- **Non-Capitalized costs**:
  Items that are expensed like R&D, training, etc.

After-tax Outlay = Before tax outlay x (1-T)

where T = Corporate Tax Rate

# Initial Investment - Working Capital

Working Capital = Current Assets - Current Liabilities

- For many projects the working capital investment is often related to how the inventory and accounts receivable change net of the change in accounts payable.
- Inventory build-up is a common initial investment
  - Building up inventory requires a cash outflow unless it is funded by an increase in accounts payable
  - Accounts receivable increases also require a cash outflow – though more likely in the operating phase
- No tax benefit for increases in working capital

**Remember:** Working capital expansion consumes cash.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