Color Coded Process Groups:
- Initiating - M&C
- Planning - Closing
- Executing

Plan Cost Management → **Estimate Costs** → **Determine Budget** → **Control Costs**

7.1 Plan Cost Management (235)

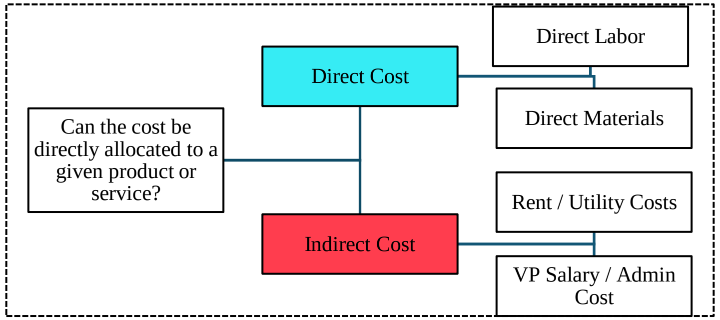
Definition: The process of…

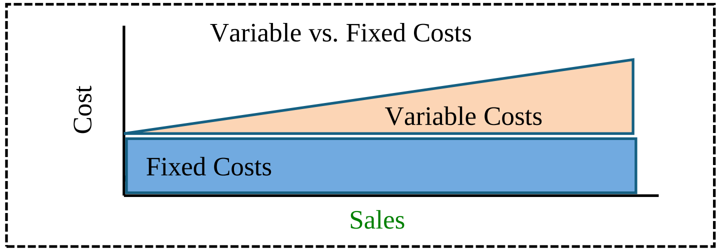
defining HOW the project costs will be estimated, budgeted, managed, monitored and controlled

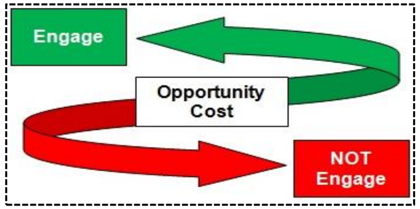
INPUT	TOOLS & TECHNIQUES	OUTPUT
▪ **Project Charter** ▪ Project Management Plan (PMP) • Schedule Management plan • Risk Management plan ▪ EEFs & OPAs	▪ Expert Judgment ▪ Data Analysis • Funding Options: (self-, equity, debt) • Make / Purchase / Rent / Lease • Financial techniques: Payback, ROI, IRR, DCF, NPV • Alternative Analysis ▪ Meetings	▪ **Cost Management Plan** • Subsidiary plan of the PMP • Describes **HOW** the project cost will be planned, structured, and controlled • **Units of measure**, level of precision, level of accuracy • **Control Thresholds** (% of deviation from baseline plan) • **Rules of Performance Identified** (EVM) • Reporting Formats

Project Cost Management

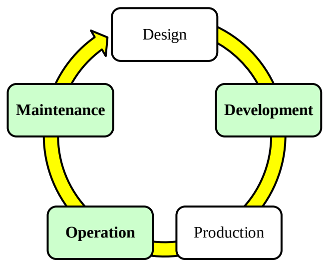
Types of Cost	Definition
Direct	**Material, labor**, expense or distribution cost associated with producing a product. It can be accurately and **easily traced to a product, department or project**
Indirect	Not directly accountable to a cost object. Indirect costs include administration, security costs, taxes, electricity
Fixed	Cost that **does not vary** with the quantity of output produced (office space)
Variable	Cost that **vary** with the quantity of output produced
Opportunity	▪ The value of the best alternative foregone, where a choice needs to be made between several mutually exclusive alternatives given limited resources ▪ What you give up by taking the other opportunity ▪ Bypass one opportunity in favor of another
Sunk	▪ Cost that has already been incurred and cannot be recovered ▪ Should not be considered when selecting or evaluating a project

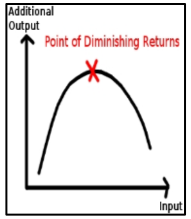






Types of Cost	Definition
Life Cycle	▪ Total costs estimated to be incurred in the design, **development**, production, **operation, maintenance**, support, and final disposition of a major system over its anticipated useful life span
Law of Diminishing Returns	▪ The principle that a **continual increase in effort or investment does not lead to a continual increase in output or results.** ▪ When any factor of production, as labor, is increased while other factors, as capital and land, are held constant in amount, the output per unit of the variable factor will eventually diminish.
Operating	Expense associated with day-to-day business activities and may be variable or fixed. An example of an operating cost is a company's inventory.
Depreciation	Every asset is initially valued at its cost. Accountants charge the cost of the asset to depreciation expense over the useful life of the asset. This cost allocation approach attempts to match costs with revenues and is more reliable than attempting to periodically determine the fair market value of the asset.





Color Coded Process Groups:
- Initiating - M&C
- Planning - Closing
- Executing

Plan Cost Management → **Estimate Costs** → Determine Budget → Control Costs

7.2 Estimate Costs (240)

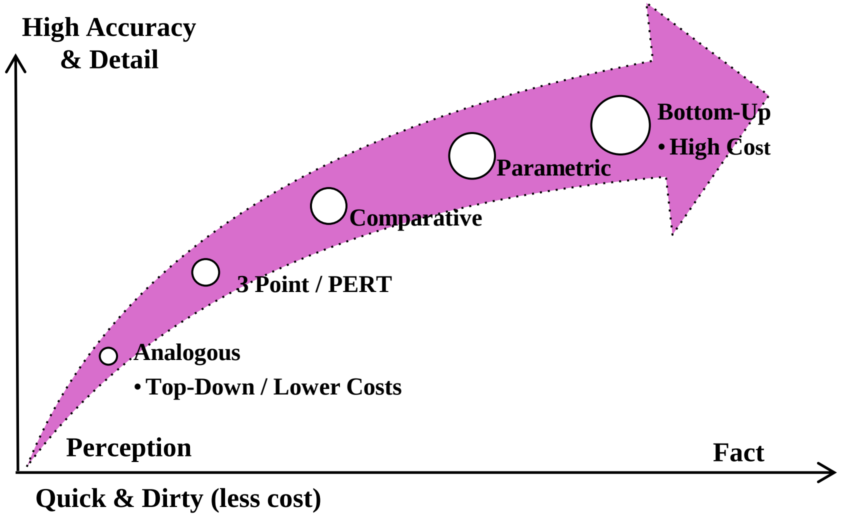
Definition: The process of…

developing **an approximation (~) of the cost of resources** needed to complete the project activities

INPUT	TOOLS & TECHNIQUES	OUTPUT
▪ **Project Management Plan (PMP)** • Cost Management Plan • Quality Management Plan • Scope Baseline = (PSS + WBS + WBS Dictionary) ▪ Project Documents • Lessons Learned • Project Schedule • Resource Requirements • Risk Register ▪ EEFs & OPAs	▪ Expert Judgment ▪ Analogous Estimating ▪ Parametric Estimating ▪ Bottom-up Estimating ▪ Three-point Estimating ▪ Reserve Analysis ▪ Cost of Quality (assumptions) ▪ PMIS ▪ Decision Making (voting)	▪ **Cost Estimates (CE)** ▪ Basis of Estimates (BOE) ▪ Project Doc Updates • Assumption Log • Lessons Learned Register • Risk Register

Cost Estimate	• Quantitative assessment of the probable cost required to complete project work • Estimate for 'all resources' • Direct labor, materials, equipment, services, facilities, IT, financing, inflation allowance, exchange rates, etc...

1. Discussed in Estimating Durations



Estimate Costs	
Types	**Description**
ROM Estimate (Rough Order of Magnitude)	• Made early in project with minimal detailed info • Initiating (Feasibility Study) • **Accuracy: - 25% to + 75%**
Preliminary Estimate	• Used to appropriate funds • Early Planning • **Accuracy: - 20% to + 30%**
Definitive Estimate	• Based upon detailed info from each work package • Late Planning • **Accuracy: - 5% to + 10%**

T/T - Estimating Techniques / Methods - Estimate Costs

2. Reserve Analysis (method to account for uncertainty)

- aka Contingency Reserves or contingency allowances
- Contingency reserves address **‘known-unknowns’**
  - Provided for specific activities
  - Part of the Cost Baseline
- Management reserves address **‘unknown-unknowns’**
  - **‘NOT’ part of the Cost Baseline**
  - **Part of the overall project budget**

3. Cost of Quality

- **Total cost of ALL effort to achieve quality, both good & bad**
  (**Good…** training, testing; **Bad…** rework, scrap, warranty work)
- PMBOK Definition: Total cost of the conformance of work and the nonconformance work that should be done as a compensatory effort that may have been done or has been done incorrectly

4. Project Management Information System

- Tools & techniques used to gather, integrate, ands disseminate the outputs of the project management processes
- Can simplify CE process & facilitate rapid consideration of CE alternatives

5. Decision Making Techniques

- Discussed in Collect Requirements
- Multiple alternatives with an expected out-come in the form of future actions

Color Coded Process Groups:
- Initiating - M&C
- Planning - Closing
- Executing

Plan Cost Management → Estimate Costs → Determine Budget → Control Costs

7.3 Determine Budget (248)

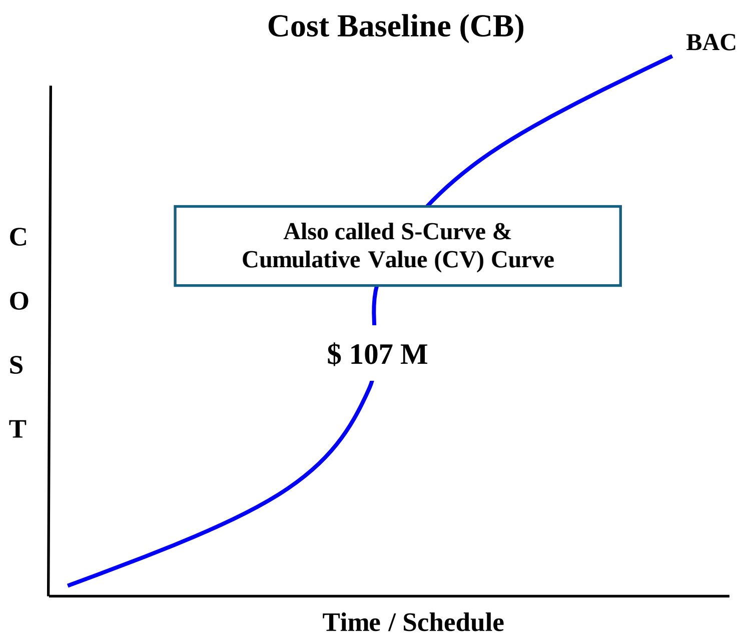
Definition: The process of…

aggregating the estimated costs of individual activities or work packages to **establish an authorized cost baseline**

INPUT	TOOLS & TECHNIQUES	OUTPUT
▪ Project Management Plan (PMP) • **Cost Management Plan** • **Resource Management Plan** • **Scope Baseline =** (PSS + WBS + WBS Dictionary) ▪ Project Documents • BOE (Basis of Estimate) • Cost Estimates • Project Schedule • Risk Register ▪ Business Docs • Business Case • Benefits Management Plan ▪ Agreements ▪ EFFs & OPAs	▪ Expert Judgment ▪ Cost Aggregation ▪ Reserve Analysis ▪ Historical Data ▪ **Funding Limit Reconciliation** • Compare planned expenditures against commitment limits ▪ Financing	▪ **Cost Baseline** • Approved version of the time-phased project budget, excluding any management reserves ▪ **Project Funding Requirements** ▪ Project Doc Updates • Cost Estimates • Project Schedule • Risk Register

Cost Baseline (CB)

Term used when you are in **Planning** & **Executing** Process Groups



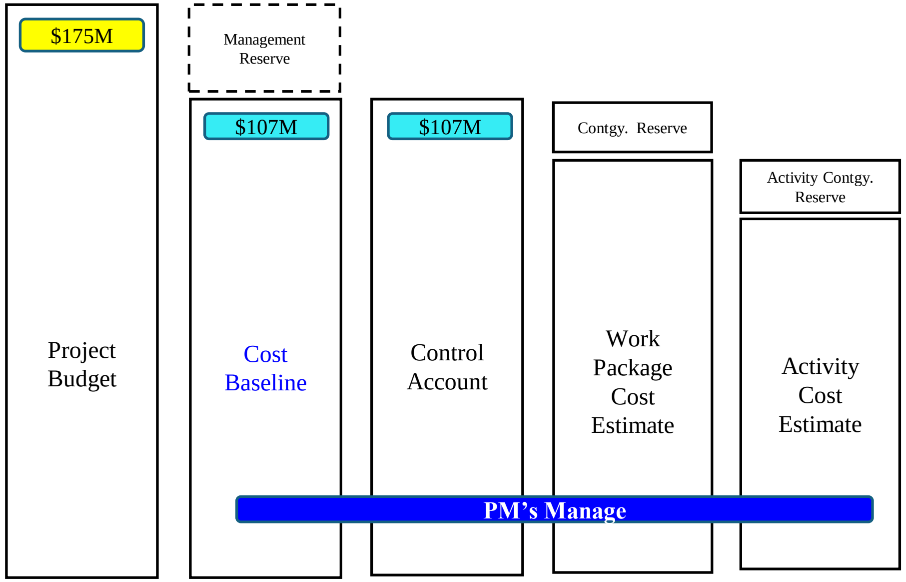
Example:	
ROM (Sum of all activity estimates)	$ 100 M
PM Contingency	$ 7 M
Cost Baseline	$ 107 M

PM Contingency is for **known-unknowns**

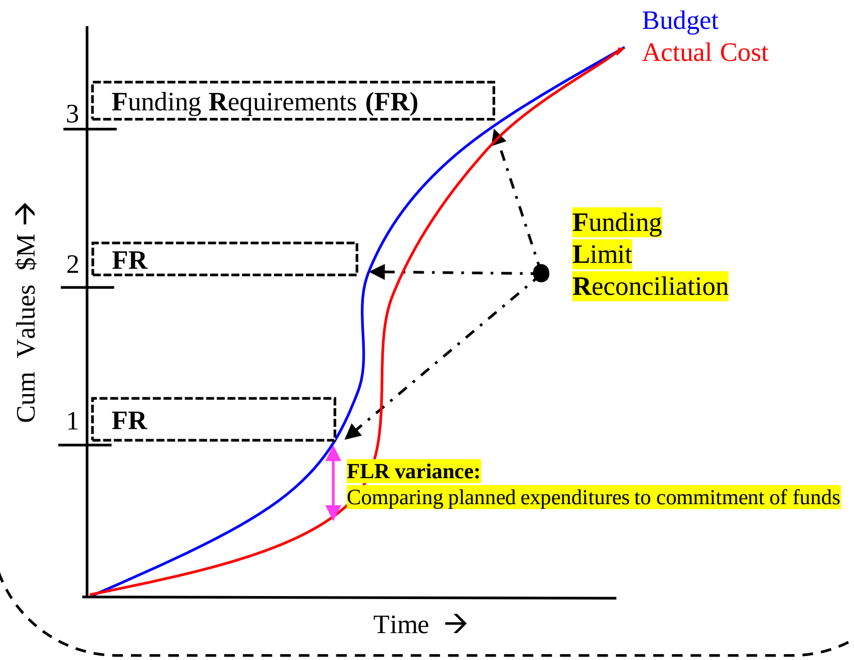
If a risk for a **known-unknown is 'NOT REALIZED', the contingency $ 'may or may not be removed'** from the CB / PMB and returned to Management Reserve.
(Sponsor Discretion)

Practical Example:	Estimated Costs
Website Development	$ 15,000
10% Risk Contingency	$ 1,500
Cost Baseline	
$7,500 Management Reserve (Sponsor owned)	$ 7,500
Total Project Budget?	

Budget Components



Cost Baseline, Expenditures, and Funding Requirements



Value Engineering is also referred to as:

- Value management
- Value Methodology
- **Value Analysis** (reducing the cost!)

Definition:

a) Approach used to **optimize project life cycle costs, save time, increase profits, improve quality, expand market share, use resources more effectively**

b) Value can therefore be **increased** by either **improving the function** or **reducing the cost.**

(Note: value does not always mean higher cost !)

Marginal analysis is an examination of the additional benefits of an activity compared to the additional costs incurred by that same activity.

Qualitative analysis means looking at the intangibles.
The factors about a company that are not purely numbers driven can be just as important as crunching the numbers.

Quantitative analysis means looking at and the actual numbers.
Looking at different financial metrics and ratios is fundamental to the analysis of any company being looked at.