

# Project Management

## Resourcing, costing and control

by  
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# Resourcing, costing and control

- Aims
  - To understand the classification of costing in a project.
  - To understand the concept of earned value analysis (EVA).
- Expected Outcomes
  - Students are able to differentiate among type of costing.
  - Students are able to apply EVA in the project.
- References
  - William, R.T. 2013. Project Management. Random Exports
  - Heagney, J. 2012. Fundamentals of Project Management. American Management Association.
  - Richardson and Gary, L. 2010. Project Management theory and practice. Taylor and Francis.

# Content

- Classification of costing
- Earned value analysis (EVA)

# Classification of costing

| Type                             | Description  |
|----------------------------------|--|
| Direct material and labor cost   | Cost of materials that are entirely linked to the production of the final product. Example...salaries, wages and fringe benefit.   |
| Indirect material and labor cost | Any materials and labor cost that are necessary to complete a project but do not become an actual part of the final project. Example...telephone, internet, paper towels, office supplies and postage. |
| Fixed cost                       | Remain constant regardless of changes in the level of project activities. Example...rent, electricity, insurance, property taxes and supervisor.   |
| Variable cost                    | Vary in direct proportion to changes in the level of project activities. Example...direct material and direct labor.   |
| Overhead cost                    | Primarily those indirect costs associated with project implementation. Example...health insurance, payroll taxes and depreciation of laboratory capital equipment.                                     |
| General and administration cost  | Primarily associated with the general management and administration of the project. Example...accounting, contract management, human resources and security.   |
| Tangible cost                    | Quantifiable cost related to an identifiable resource or asset.  |
| Intangible cost                  | Unquantifiable cost relating to an identifiable source.  |
| Sunk cost                        | Incurred cost that cannot be changed by any decision and that cannot be recovered.   |
| Opportunity cost                 | Potential benefit given up when one activity is selected over another.   |

# Earned value analysis (EVA)

**Purpose:** To measure and track costs and schedules in a project. Also, examines actual cost at any period during the progress of a project.

**Benefit:**

1. An accurate project status
2. Identify over budget or under budget
3. Early identification of project trend and problem
4. Early warning signal

| Question  | What should be used?   |
|---|------------------------|
| How much work is planned?   | Planned value          |
| How much work is done already?                                    | Earned value           |
| How much have we spent so far?                                    | Actual cost            |
| What is the total cost of the project?                            | Budget at completion   |
| What do we expect the total project completion cost at this time? | Estimate at completion |
| What is the estimate to complete the project?                     | Estimate to complete   |
| What is the future of this project?                               | Variance at complete   |

**PV = planned completion % \* budget at completion**

**EV = actual completion % \* budget at completion**

**CV = EV – AV**

**$CVP = \frac{CV * 100}{EV}$**

**SV = EV – PV**

**$SVP = \frac{SV * 100}{PV}$**

**$CPI = \frac{EV}{AC}$**

**$SPI = \frac{EV}{PV}$**

**$EAC = \frac{AC * BAC}{EV}$**

**ETC = EAC – AC**

**VAC = BAC - EAC**

# FORMULA

# Conclusion

- Conclusion #1
  - Students are able to differentiate among type of costing.
- Conclusion #2
  - Students are able to apply EVA in the project.



# Project Management

## Lecture 9

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