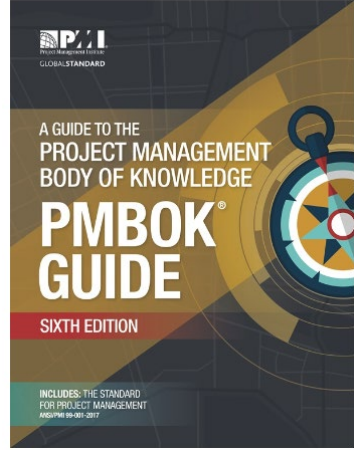


# Project Management Fundamentals for Telecommunications Projects



**Project** – A temporary endeavor undertaken to create a unique product, service or result

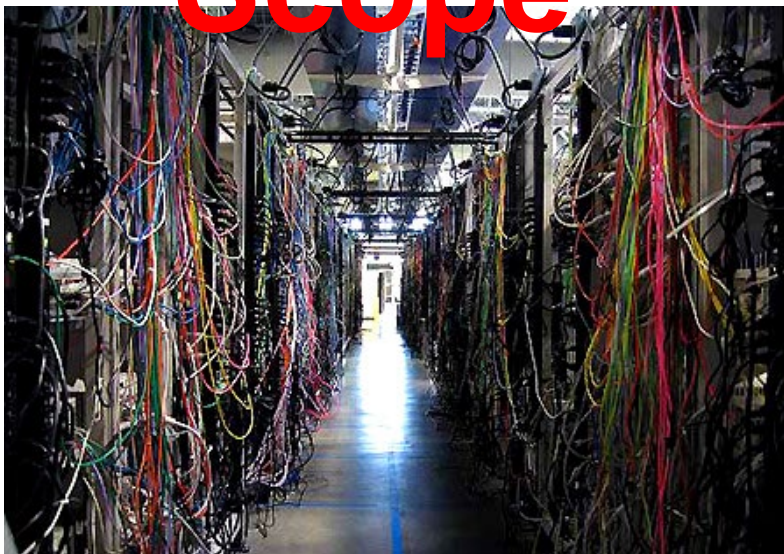
**Project Management** – the application of knowledge skills, tools and techniques to project activities to meet project requirements.



**Scope**

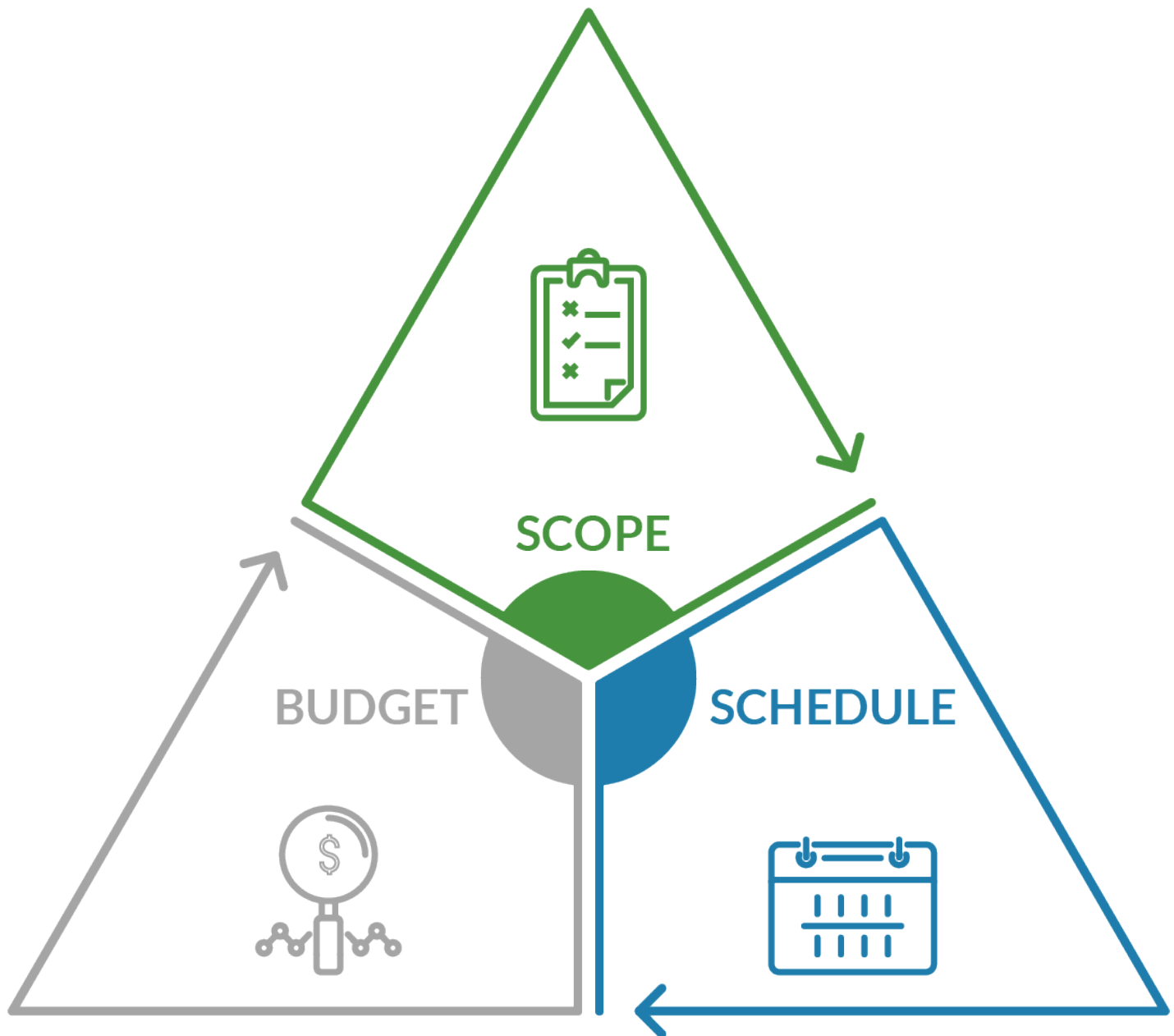
**Budget**

**Schedule**





**Project Manager**– the person in overall charge of the delivery of a particular project





How the client described the project



How the PM understood the project



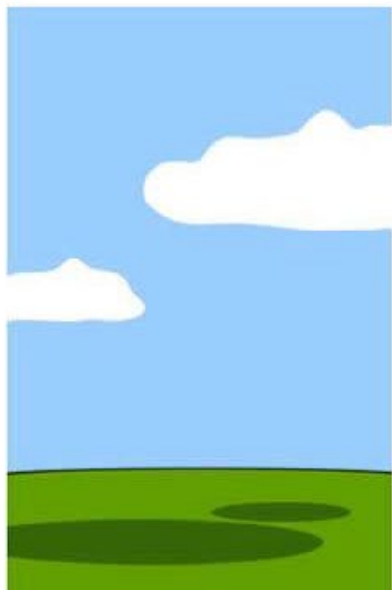
How the architect designed the project



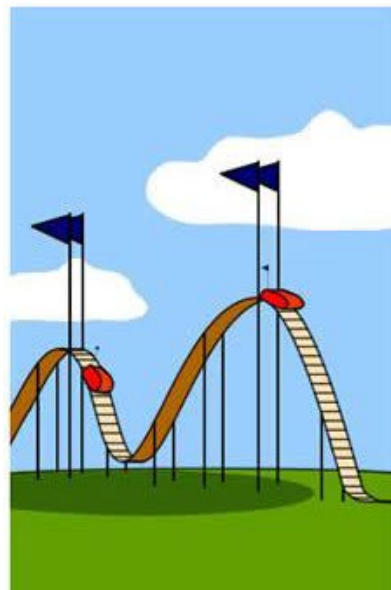
How the engineers designed the project



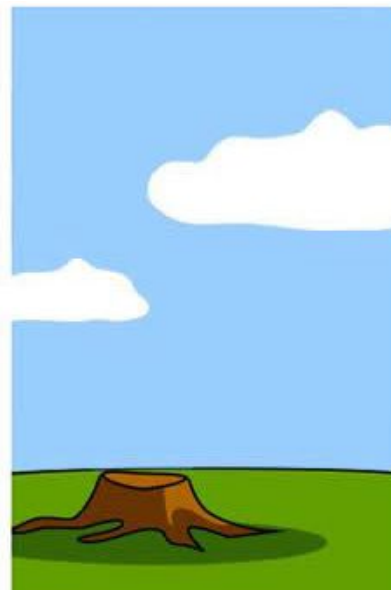
How the contractors constructed the project



How the project was documented



How the client was invoiced



How the project was supported



What marketing advertised



What the client really needed



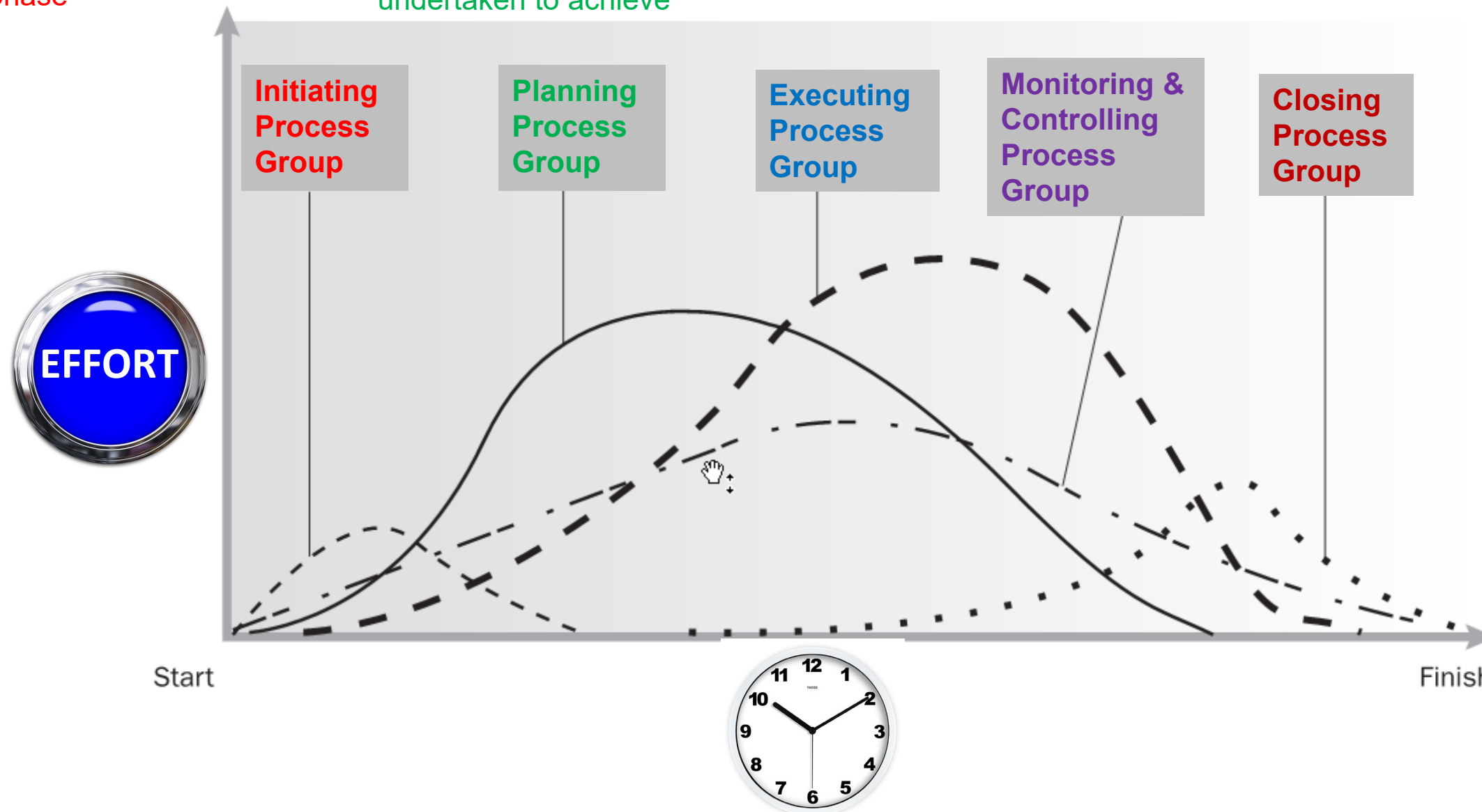
Processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase

Processes required to establish the scope of the project, refine the objectives and define the course of action required to attain the objectives that the project was undertaken to achieve

Processes performed to complete the work defined in the PM plan to satisfy the project requirements

Processes required to track, review and regulate the progress and performance of the project

Processes performed to formally complete or close the project contract



| 5 PM Process Group<br>10 Knowledge Areas | Initialing              | Planning  | Executing                                       | Monitoring & Controlling  | Closing                |
|--|-------------------------|---|---|---|------------------------|
| P Integration M                          | Develop project charter | Develop PM Plan   | Direct project work<br>Manage project knowledge | Monitor and control project work<br>Perform integrated change control | Close project or phase |
| P Scope M                                |                         | Plan Scope M, collect requirements, define scope & create WBS                                   |   | Validate scope, Control scope   |                        |
| P Schedule M                             |                         | Plan Schedule M, define activities, sequence activities, estimate duration and develop schedule |   | Control schedule  |                        |
| P Cost M                                 |                         | Plan cost M, estimate costs & determine budget  |   | Control costs   |                        |
| P Quality M                              |                         | Plan Quality M  | Manage Quality                                  | Control quality   |                        |
| P Resource M                             |                         | Plan Resource M & estimate activity resources   | Acquire resources, develop team & manage team   | Control resources   |                        |
| P Communications M                       |                         | Plan Comm M   | Manage communications                           | Monitor communications  |                        |
| P Risk M                                 |                         | Plan Risk M, identify risks perform qualitative & quantitative risk analysis                    | Implement risk responses                        | Monitor risks   |                        |
| P Procurement M                          |                         | Plan Procurement M  | Conduct procurements                            | Control procurements  |                        |
| P Stakeholder M                          | Identify stakeholders   | Plan Stakeholder M  | Manage stakeholder engagement                   | Monitor stakeholder engagement  |                        |

**Project Charter** – the document issued by the project sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.

**Inputs**

- Business Case
- Enterprise environmental factors (conditions (not under the immediate control of the team ) that influence, construction or direct the project)
- Organization process assets (plans, policies, knowledge bases that are specific used by the performing organization)

**Tools & Techniques**

- Expert judgement
- Data gathering (focus groups, checklists)
- Interpersonal and team skills
- Meetings

**Outputs**

- Project Charter
- Assumption Log

Project Charter <Project Name> Date: October 27, 2008

**1. Executive Summary**

[The information in the Project Charter authorizes a project.]

[The Executive Summary provides a brief overview of the project and provide enough of a description to complete the following sections. The Project Charter documents the business needs, project justification, current understanding of the customer's requirements, and the product, service, or result that is intended to satisfy those requirements. If information to complete the following sections is not available, state that it is unavailable, then state the person accountable and schedule for completion.]

< compose a brief summary as describe above.>

**2. General Project Information**

[Project Title – The proper name used to identify this project; Project ID – The working name or acronym that will be used for the project; Sponsoring Organization – The organization sponsoring this project; Sponsor Representative – The name of the person representing the Sponsoring Organization; Prepared by – The person(s) preparing this document; Version – Version of this document.]

Project Title: \_\_\_\_\_ Project ID: \_\_\_\_\_  
 Sponsoring Organization: \_\_\_\_\_ Sponsor Representative: \_\_\_\_\_  
 Prepared by: \_\_\_\_\_ Version: \_\_\_\_\_

**3. Project Stakeholders**

List all applicable project stakeholders.

| Position                          | Title/Name/Organization | Phone | E-mail |
|-----------------------------------|-------------------------|-------|--------|
| Sponsor Representative            |                         |       |        |
| Program Manager                   |                         |       |        |
| Project Manager                   |                         |       |        |
| Customer / User Representative(s) |                         |       |        |

Project Charter <Project Name> Date: October 27, 2008

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**4. Project Purpose**

[Explain the reason(s) for doing this project.]

**4.1. Business Issue**

[The Business Issue or Opportunity pertaining to the business is typically an area of "change" needing to be resolved. State in specific terms the issue or opportunity this project will address. Often, the Business Issue is a critical business initiative in the Sponsoring Organization's Strategic Plan.]

**4.2. Business Objectives**

[Define the specific Business Objectives of the project that correlate to the strategic initiatives or issues identified in the Sponsoring Organization's Strategic Plan. Every Business Objective must relate to at least one strategic initiative or issue and every initiative or issue cited must relate to at least one project business objective.]

| Strategic Plan Element | Project Business Objectives |
|------------------------|-----------------------------|
|                        |                             |
|                        |                             |
|                        |                             |

[Explain what the project is trying to achieve by stating its objectives which should be measurable and defined in term the project's major deliverables, effort, cost, tolerances and business benefits expected. State the objectives following SMART formula (Specific, Measurable, Attainable, Reasonable, and Timely).]

**5. Project Overview**

**5.1. Project Description**

[Describe the project focus, approach, customer(s), and the boundary limits of the project.]

**5.2. Scope**

[The Project Scope addresses the who, what, where, when, and why of a project.]

**5.3. Assumptions**

[Assumptions are statements taken for granted or accepted as true without proof. Assumptions are made in the absence of fact. List and describe the assumptions made in the decision to charter this project.]

**5.4. Constraints**

[Constraints are boundary conditions that the project must stay within. List and describe the constraints applicable to this project. Describe the known constraints of the project, e.g. there may be constraints on the amount of resources available to the project or the location of the project team.]

**6. Project Requirements & Deliverables**

[The Project Requirements & Deliverables define what the project must accomplish, including the customer/ user requirements and products / services to be provided by the project and the Work Product delivered.]

**7. Project Management Milestones & Deliverables**

[Provide a list of Project Management Milestones and Deliverables. This list of deliverables is not the same as the products and services provided by the project, but is specific to the management of the project. An example of a Project Management Milestone is the Project Plan Completed.]

| Milestone / Deliverable | Estimated Date | Responsible Individual |
|-------------------------|----------------|------------------------|
|                         |                |                        |
|                         |                |                        |
|                         |                |                        |

**8. Project Budget & Costs**

[Identify the initial funding required by the project and/or committed to this project by the Project Sponsor. Additional funding may be requested and committed, upon completion of the detailed Project Plan.]

| Purpose | Amount | Budget Source |
|---------|--------|---------------|
|         | \$     |               |
|         | \$     |               |

Project Charter <Project Name> Date: October 27, 2008

**9. Personnel & Other Resources**

[Identify the personnel and other resources required by the project and/or committed to this project by the project sponsor. Additional resources may be committed upon completion of the detailed project plan.]

| Resources      | Description |
|----------------|-------------|
| Project Team   |             |
| Support        |             |
| Facilities     |             |
| Equipment      |             |
| Software Tools |             |
| Other          |             |

**10. Project Risks**

[Risks are statements of issues or problems that have the potential to arise but have not yet occurred. List and describe the initial risks for this project.]

**11. Project Organization**

**11.1. Project Organization Chart**

[Provide a graphic depiction of the project's organizational structure. The project's hierarchal diagram begins with the project sponsor and includes all project stakeholders.]

Project Charter <Project Name> Date: October 27, 2008

**11.2. Roles & Responsibilities**

[Describe the Roles and Responsibilities of all project stakeholders identified for this project. Include the names of all known users, customers and any other project stakeholders which may be involved in or interested this project.]

| Stakeholder Title | Name | Roles & Responsibilities |
|-------------------|------|--------------------------|
|                   |      |                          |
|                   |      |                          |
|                   |      |                          |

**12. Associated Documents**

[Make reference (include location and title and author of the document) to any other earlier work that may include useful information, such as an estimate of the project size and duration, a view of the risks faced etc.]

**13. Other Information**

[If the Project Charter is based on earlier work or an earlier project, there may be other useful information. For any referenced information, include the document name, location, author, final version, and final version date.]

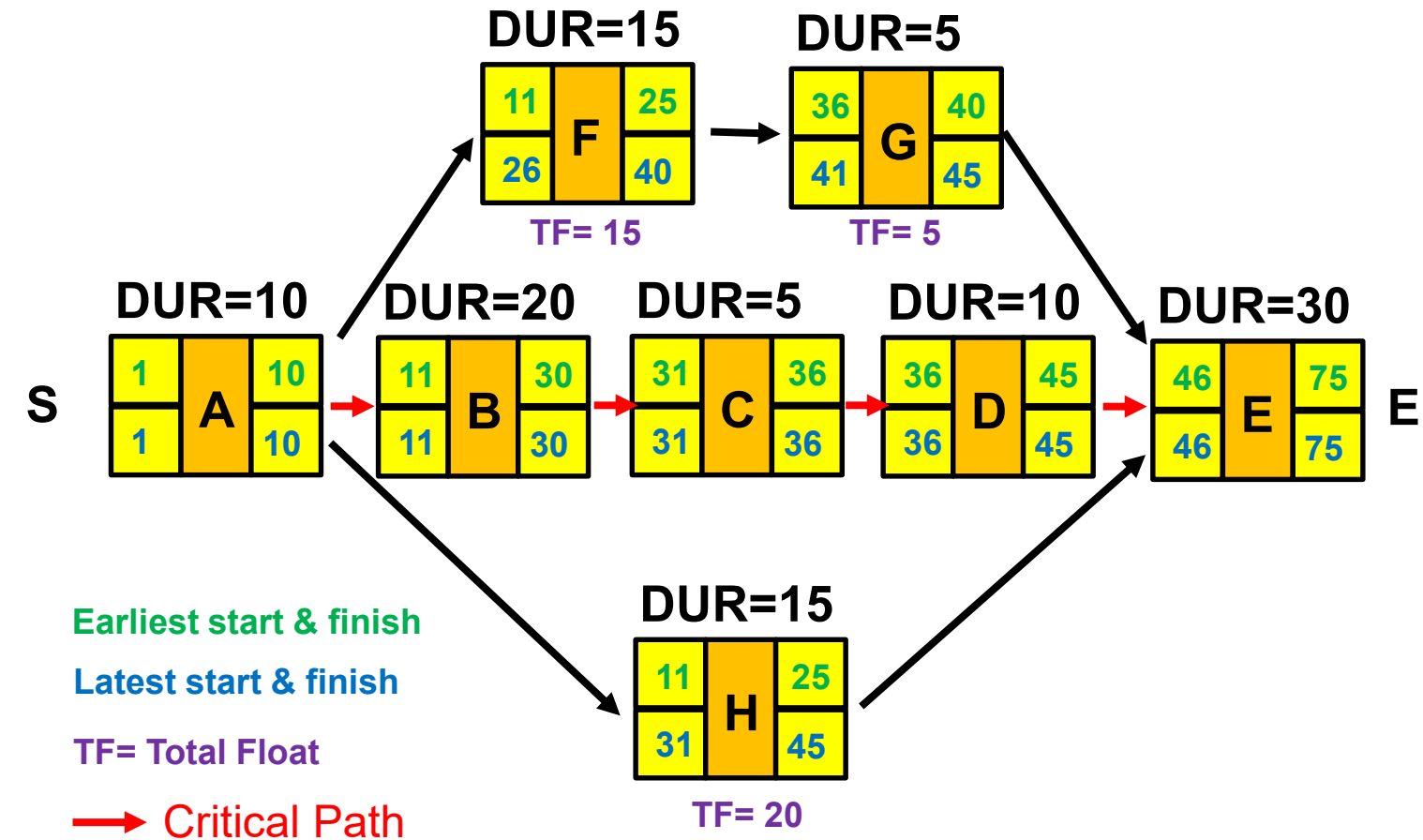
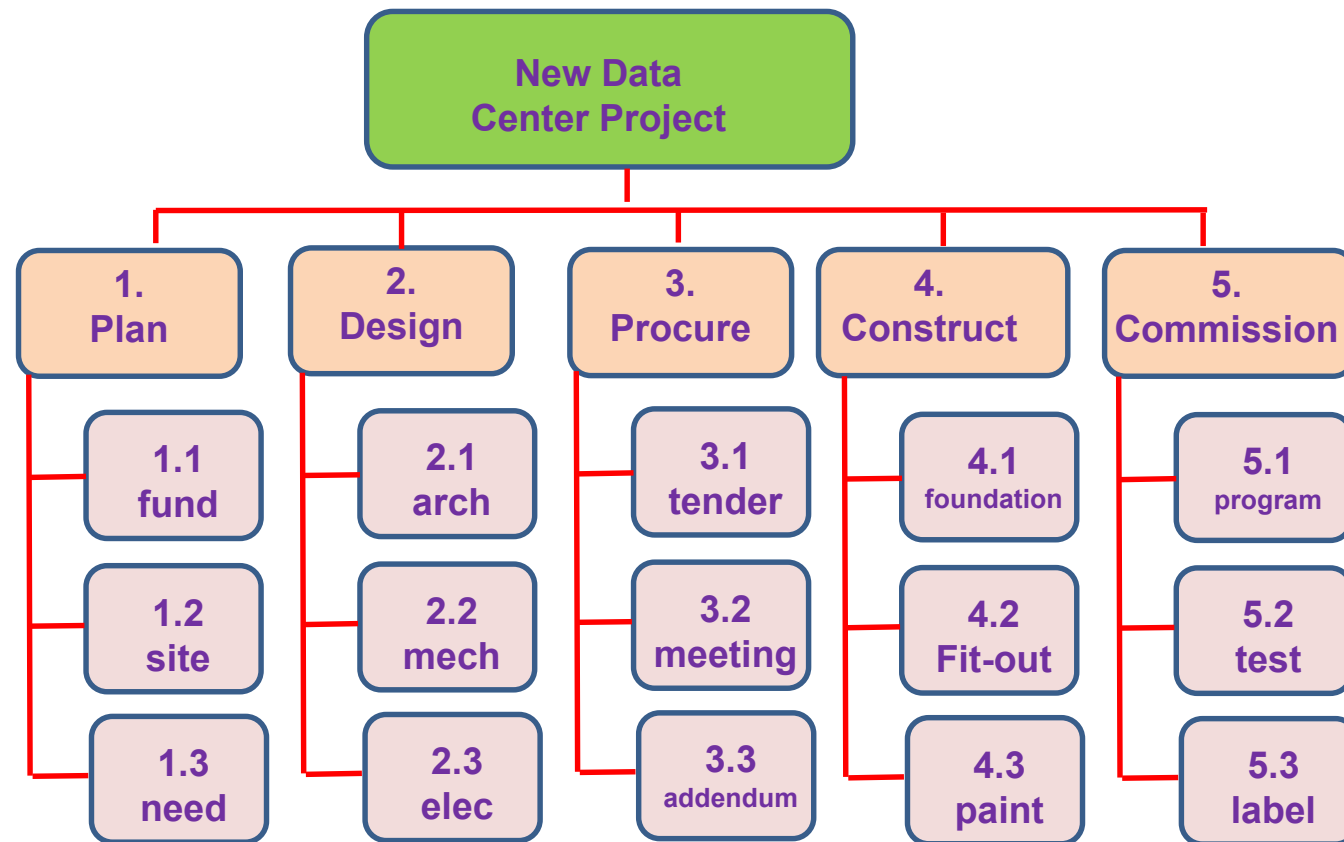
**14. Approval Signatures**

The Signatures of the people below document acceptance and approval of the formal Project Charter. The Sponsor Representative must have the authority to commit the organization's resources to the project. The Project Manager is empowered by this charter to proceed with the project as outlined in the charter.

| Position/Title         | Signature/Printed Name/Title | Date |
|------------------------|------------------------------|------|
| Sponsor Representative |                              |      |
| Program Manager        |                              |      |
| Project Manager        |                              |      |
|                        |                              |      |
|                        |                              |      |

**Work Breakdown Structure (WBS)** – A hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables. Each descending level of the WBS represents an increasingly detailed definition of the Project work

**Critical Path (CP)** – The sequence of activities that represents the longest path through a project, which determines the shortest possible duration



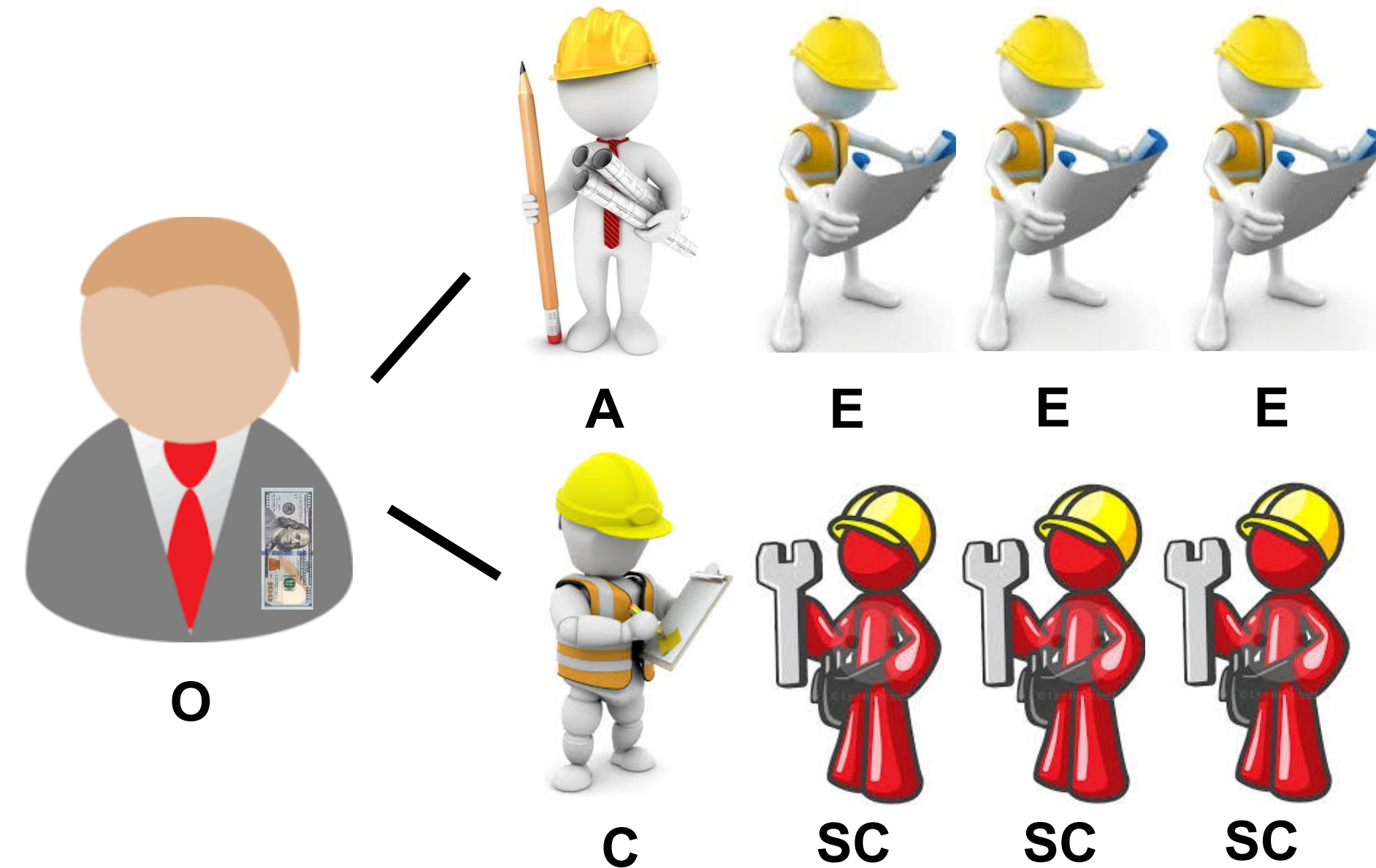


# Project Delivery Methods

- Design-Bid-Build (DBB)
- Construction Management (CM)
- DB (Design-Build)
- P3 (Public-Private Partnership)
- IPD (Integrated Project Delivery)

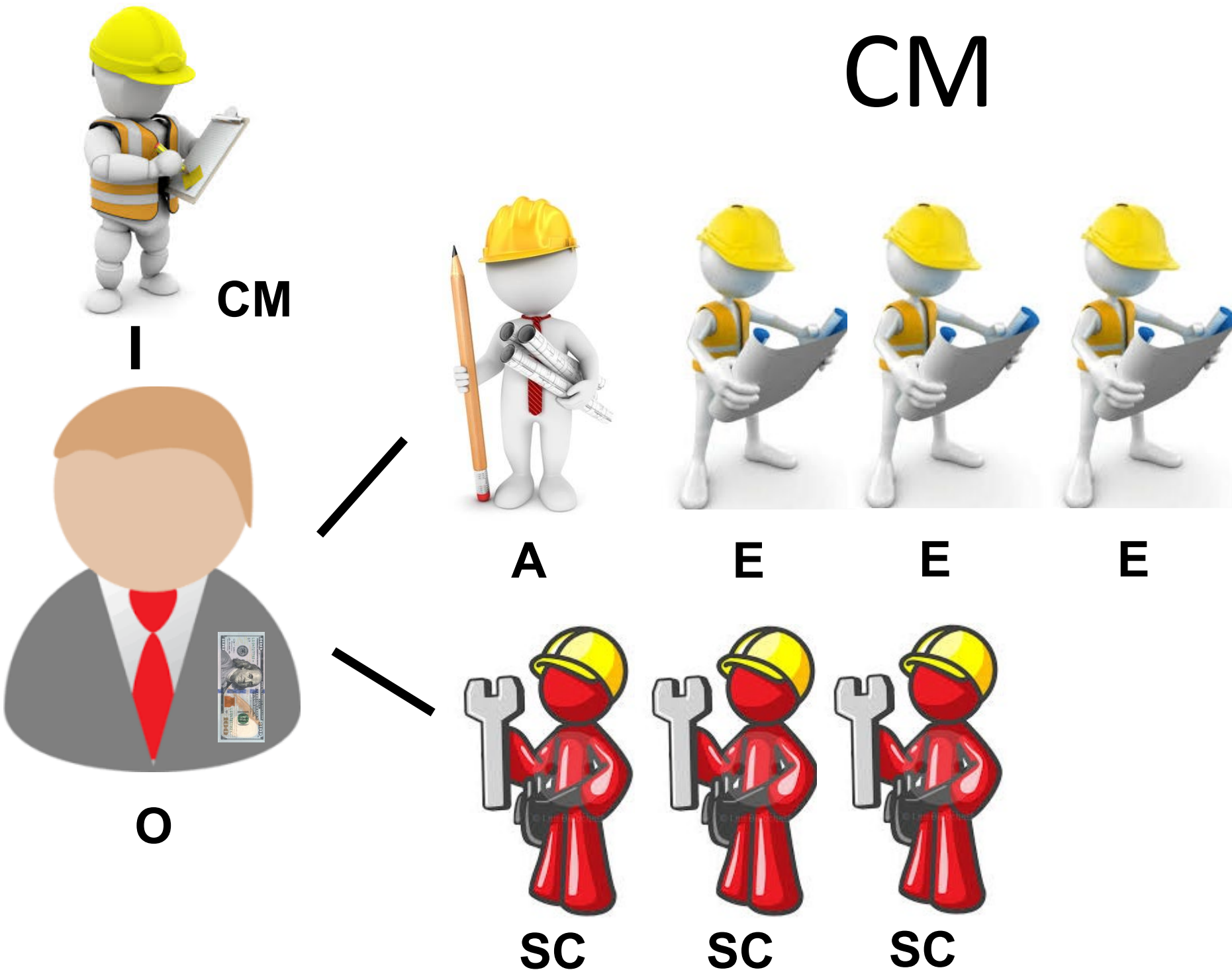
# DBB

- 2 contracts
- Linear process
- Control of design
- Low compliance bidding
- C & SCs has no input
- O responsible for changes

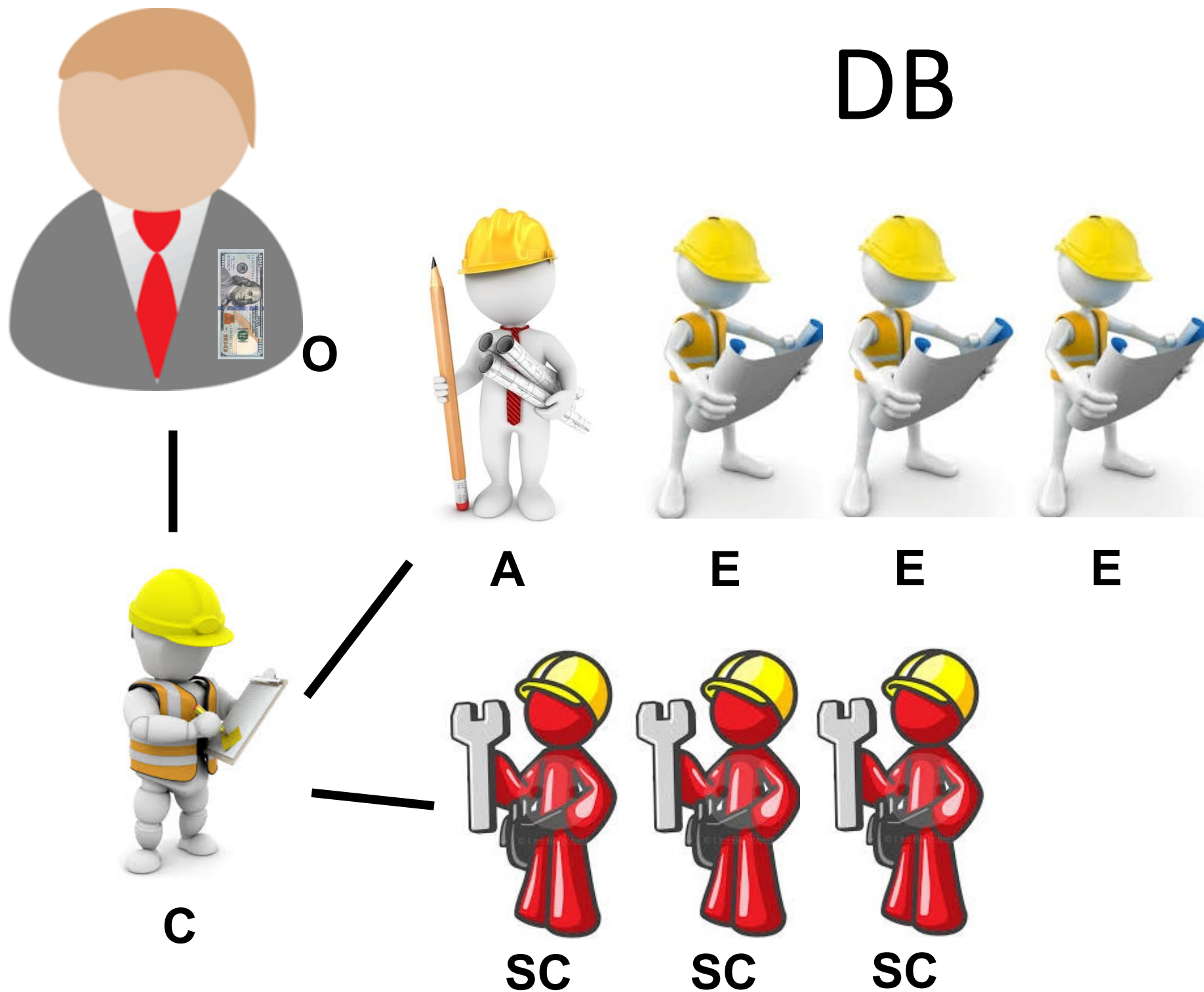




# CM



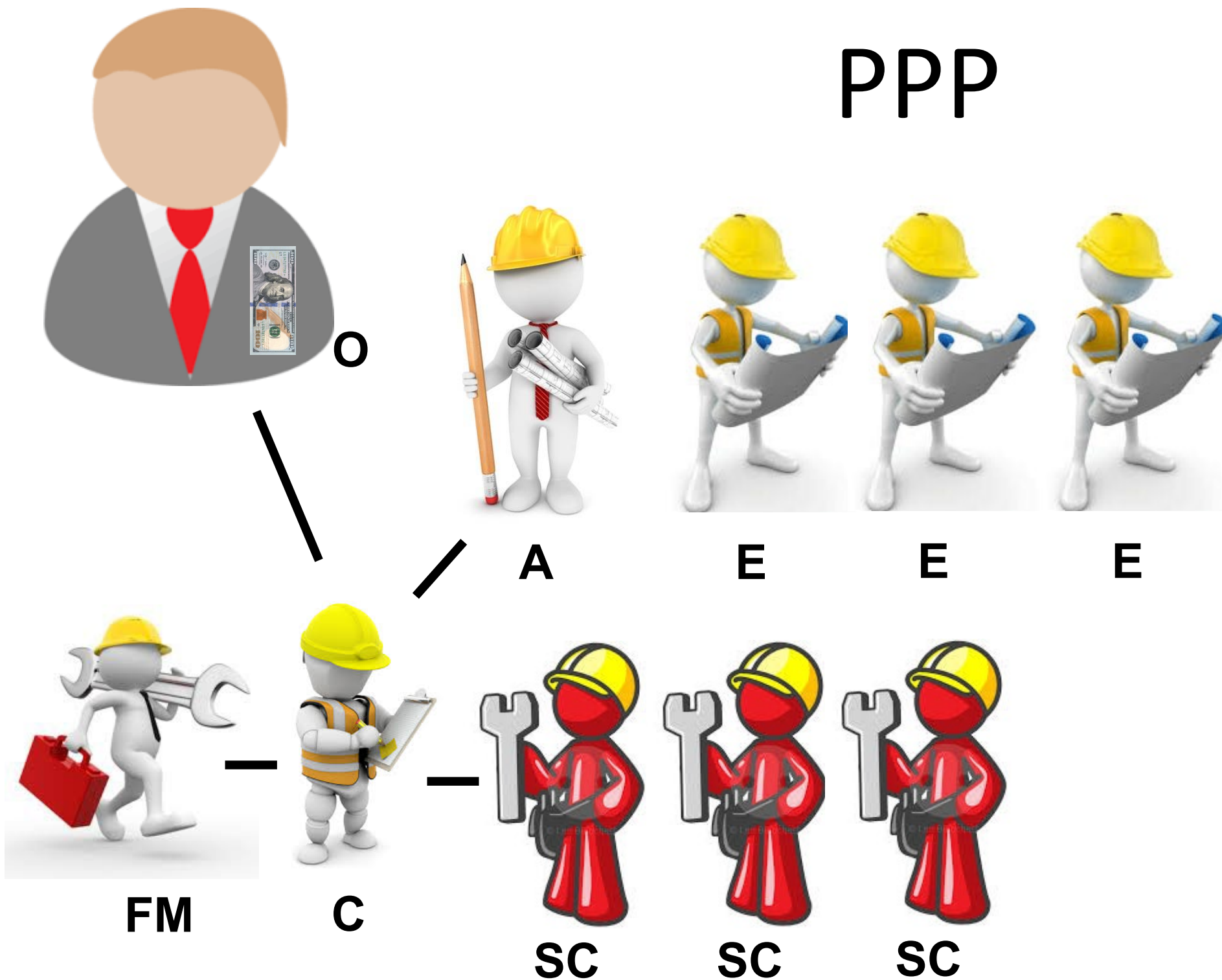
- Multiple contracts
- Linear process
- Early involvement from Cs
- Cost effective bidding
- Exposure of CM's lack of proper oversight
- O responsible for cost changes



- 1 contract
- Constructability input during the design process
- Single point of contact
- Cost effective, Fast delivery
- O is pushed for early decisions
- O needs to manage on quality

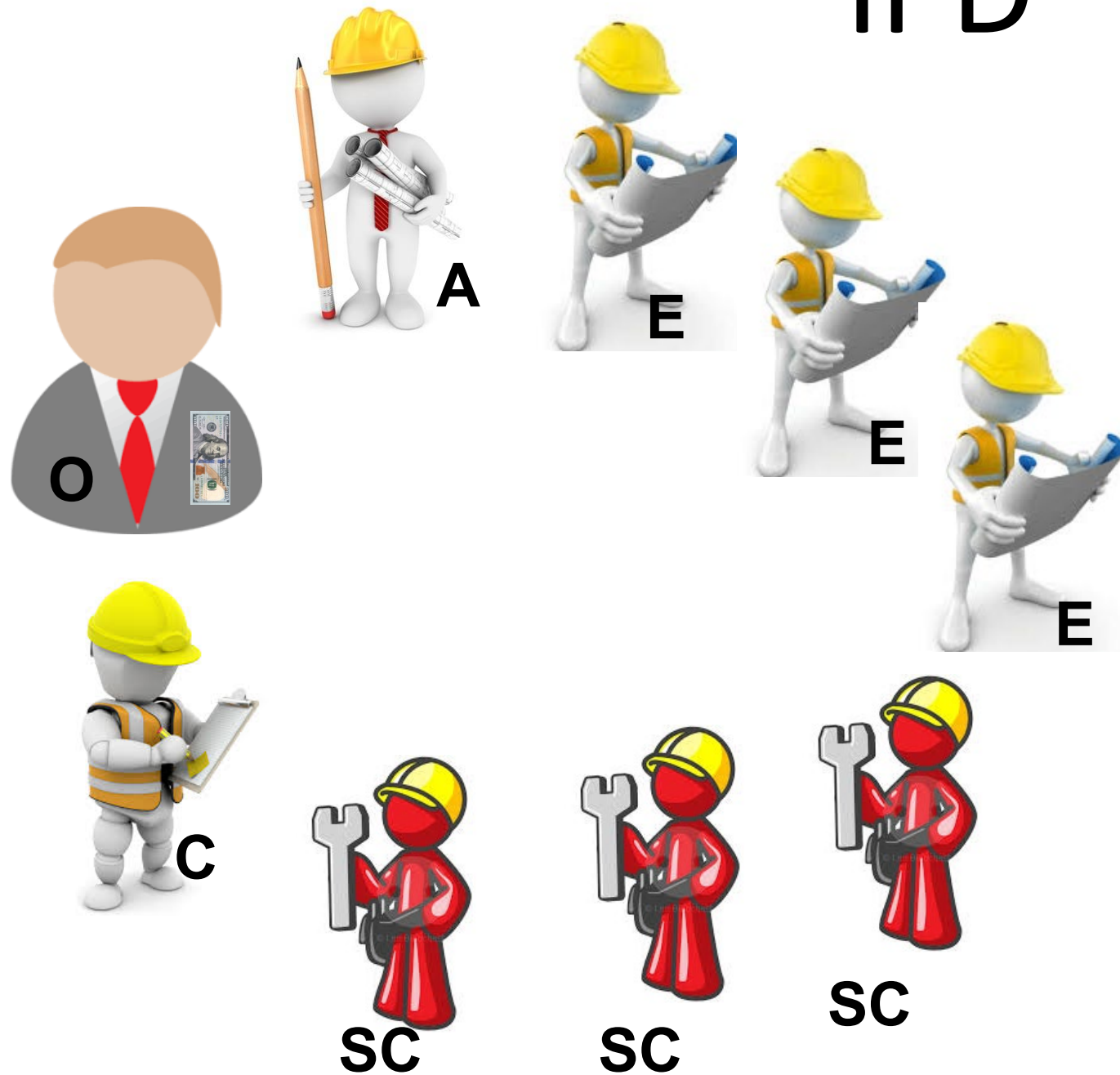


# PPP



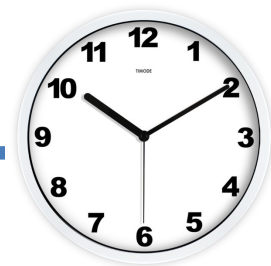
- 1 contract + ongoing operation
- Constructability input during the design process
- Single point of contact
- Cost effective, Fast delivery
- O is pushed for early decisions
- O needs to manage on quality

# IPD

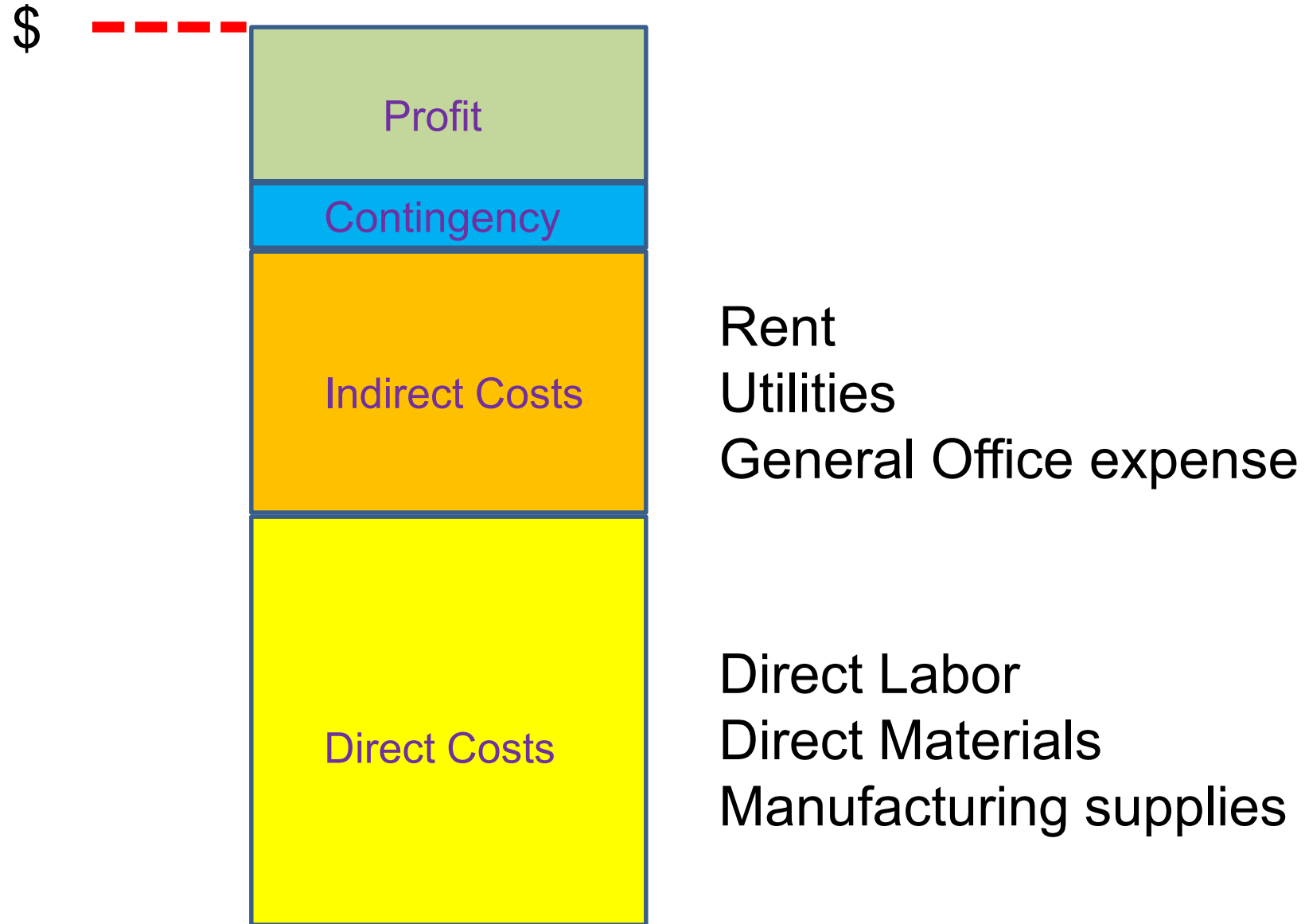


- Team approach
- Team culture is equal in importance to owner goals
- Responsibilities are shared
- Cost effective, Fast delivery
- Pre-established relationship
- O needs to manage on quality





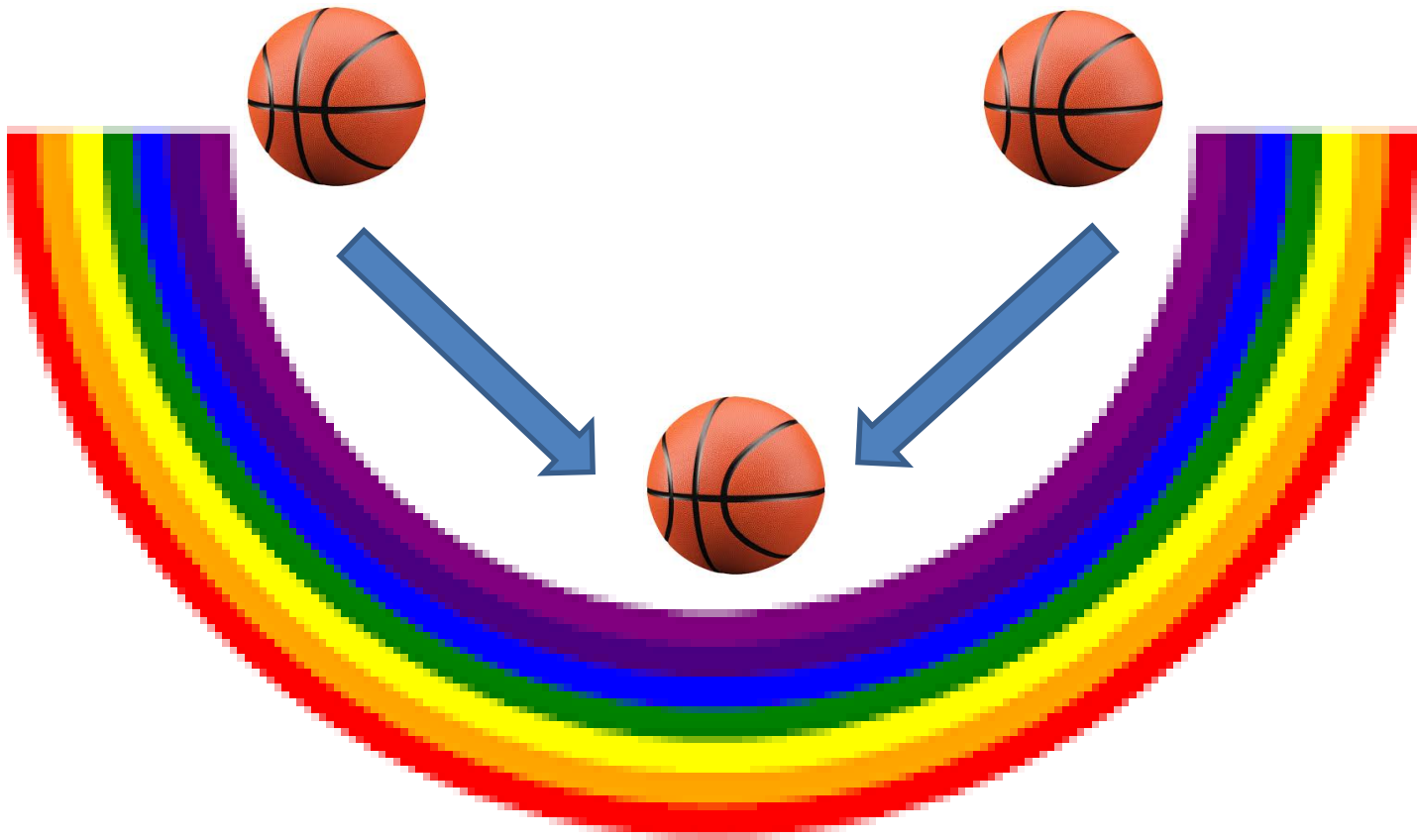
# How costs work



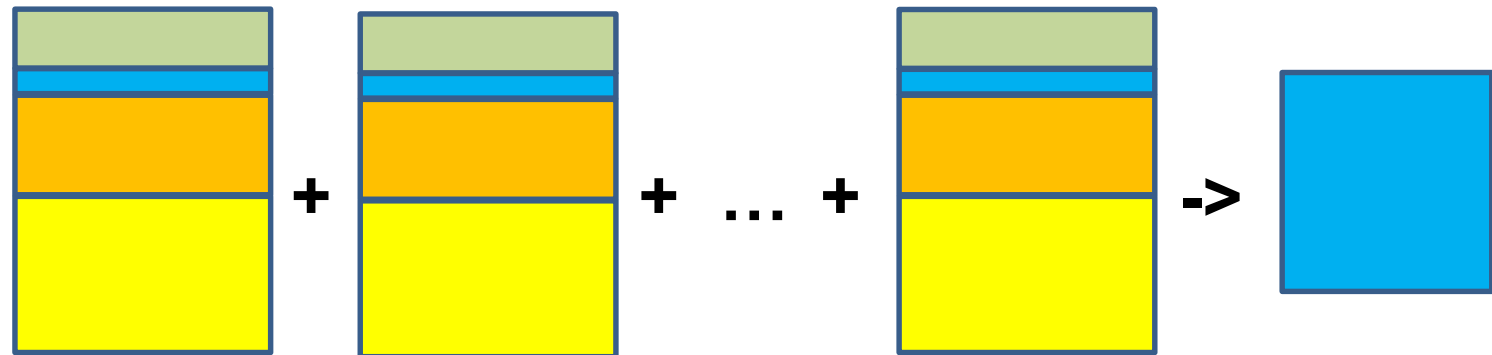


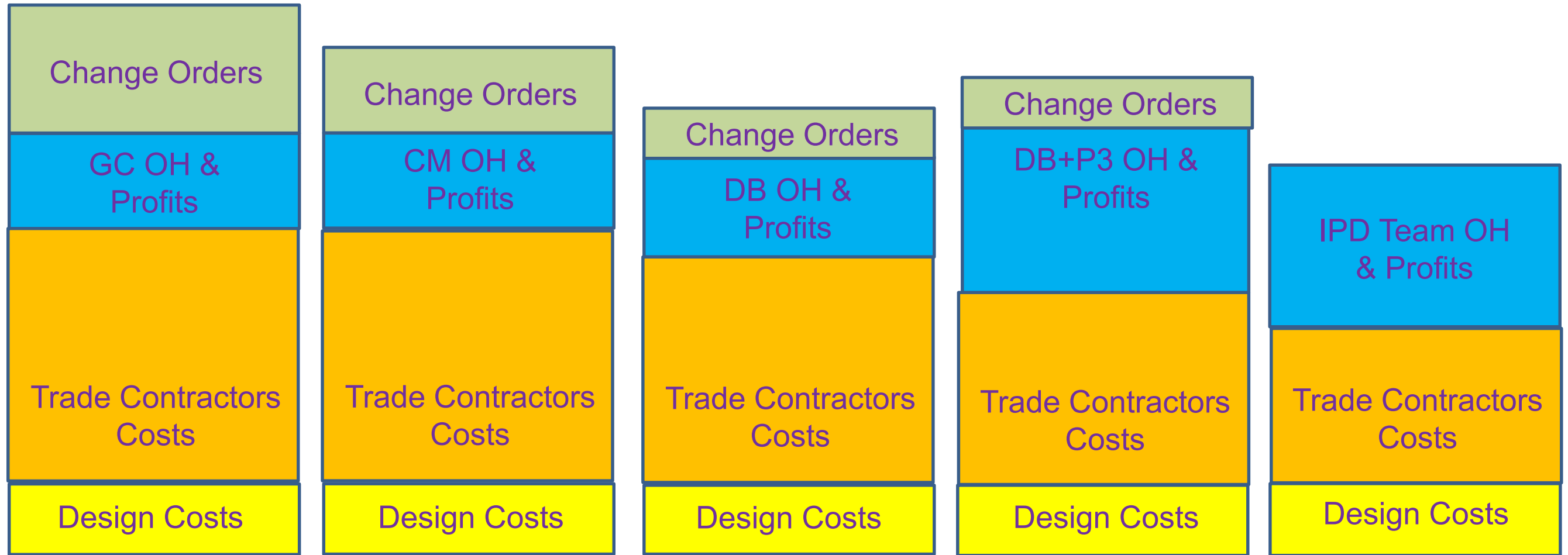
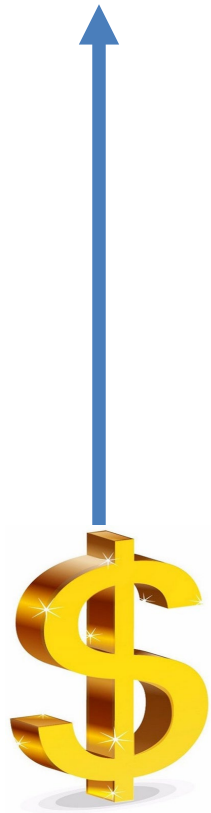


DBB, CM, DB, PPP:  
 Project team can work  
 to keep project  
 positioned for success  
 but many forces act to  
 disturb the equilibrium



IPD: Many forces to keep project  
 positioned for success





**DBB**

**CM**

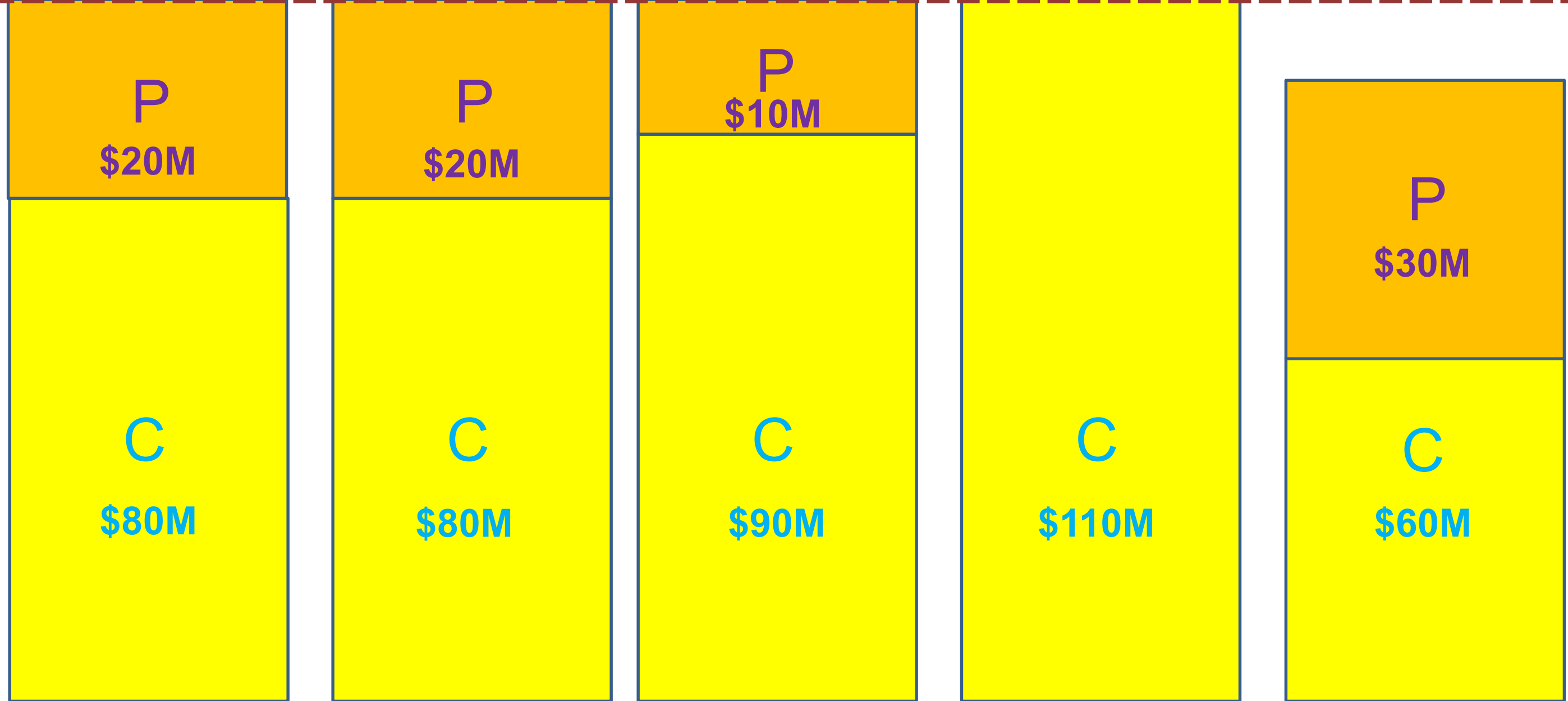
**DB**

**PPP**

**IPD**



**TARGET COST = \$100M**



**Target**

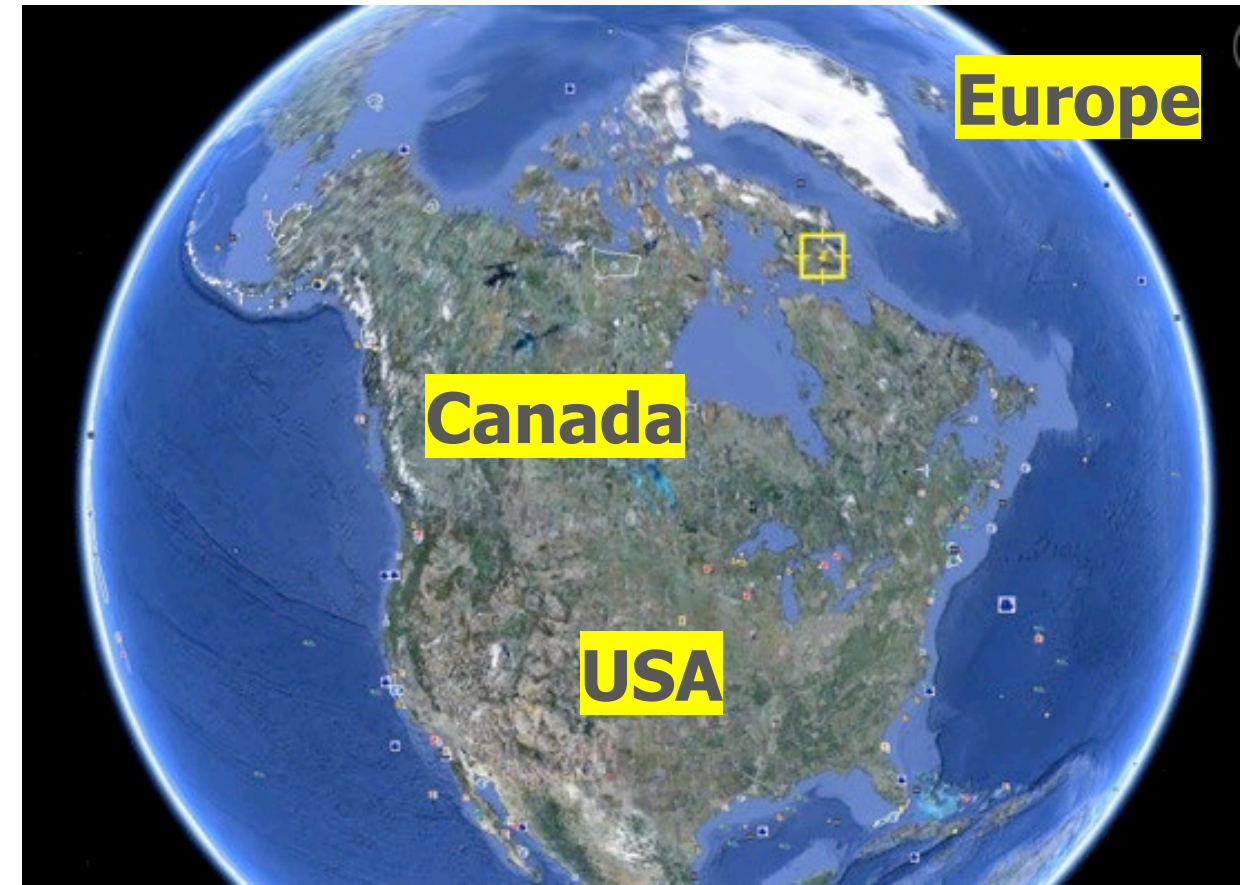
**Actual == Target**

**Actual ~ Target**

**Actual > Target**

**Actual < Target**





**~new 10,000sqm airport terminal +  
4,500sqm service building**

**~\$300M**

**~450 data drops**





- **New regional general hospital**
- **\$650M**
- **15ORs, 108 IPRs**
- **55,000 sqm**
- **5800 data drops**

## 9.2 Work area density

Table 1 illustrates the recommended telecommunication outlet/connector densities of the work areas based on the function at that location. While this is not an exhaustive list, it does represent the majority of the application-specific areas and spaces found in healthcare facilities. Further, as the names, functions and areas are not defined by any standard, each facility may have different nomenclature than listed here, so a reasonable review to compare functions and descriptions may be necessary to select the appropriate work area cabling density.

In Table 1, each area classification is listed with representative related spaces. Each space is listed with its associated "cabling services", which refers to the relative cabling density of that work area location. The densities are defined as a range. Since adding horizontal cabling or outlets after initial construction can be complex and disruptive to the facility, the designer should select a number between the midpoint and upper end of the range if no other guidance or direction is provided.

- L = Low: 2 to 6 outlets in each area
- M = Medium: 6 to 14 outlets in each area
- H = High: > 14 outlets in each area

| b) Surgery/Procedure/Operating Rooms |                 |                  |              |                  |                      |                |                    |
|--------------------------------------|-----------------|------------------|--------------|------------------|----------------------|----------------|--------------------|
| Patient Prep                         | Patient Holding | Patient Recovery | Sterile Zone | Sub-Sterile Zone | Intensive Care Rooms | Operating Room | Anesthesia Offices |
| M                                    | M               | M                | L            | L                | H                    | H              | M                  |

| c) Emergency  |            |             |            |                 |
|---------------|------------|-------------|------------|-----------------|
| Ambulance Bay | Evaluation | Observation | Exam Rooms | Procedure Rooms |
| L             | M          | H           | M          | H               |





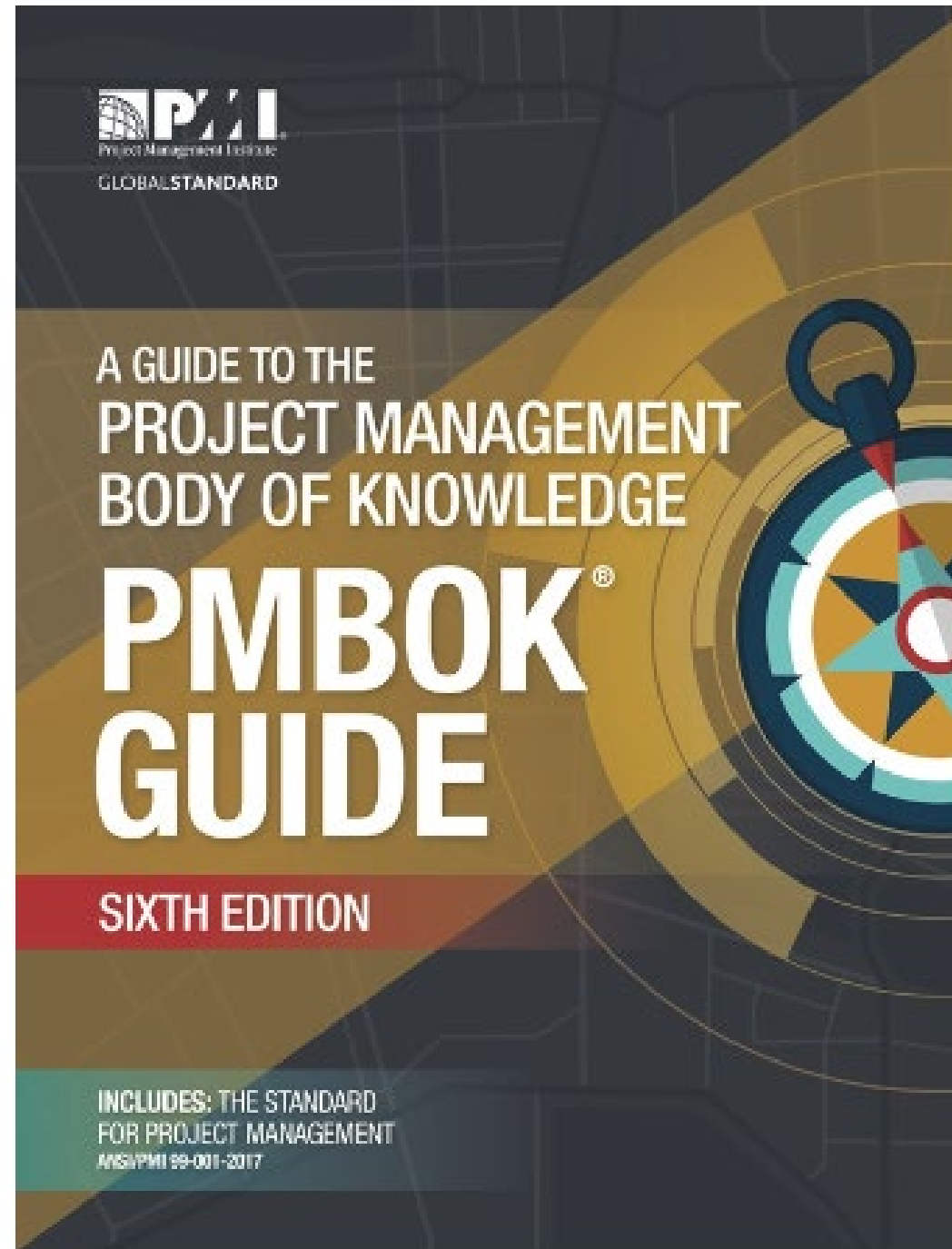
- **New 25,000 sqm general hospital**
- **72 inpatient beds and 44 universal care beds along with operating rooms, diagnostic imaging, lab, pharmacy, dialysis, and administration space.**
- **~\$125M**
- **~2500 data drops**
- **GPON**





# INTEGRATED PROJECT DELIVERY

*An Action Guide for Leaders*





*Thank  
you*

