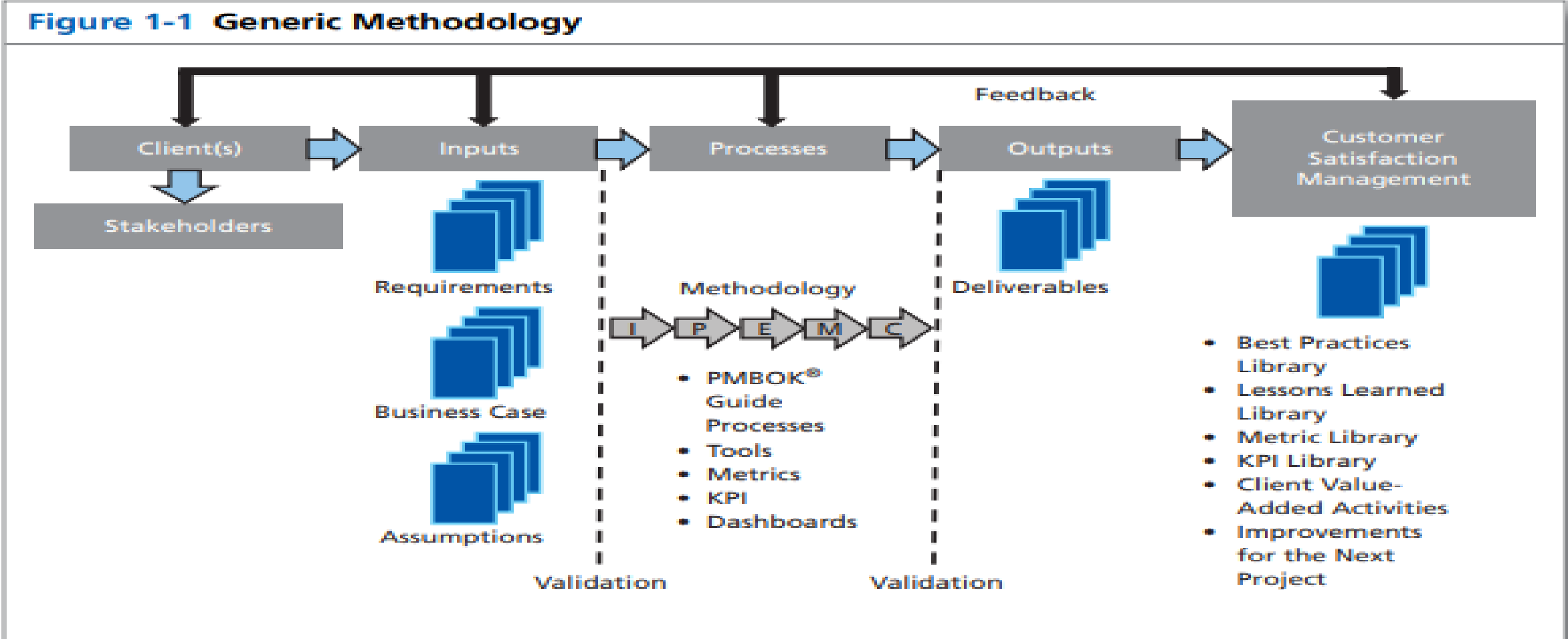


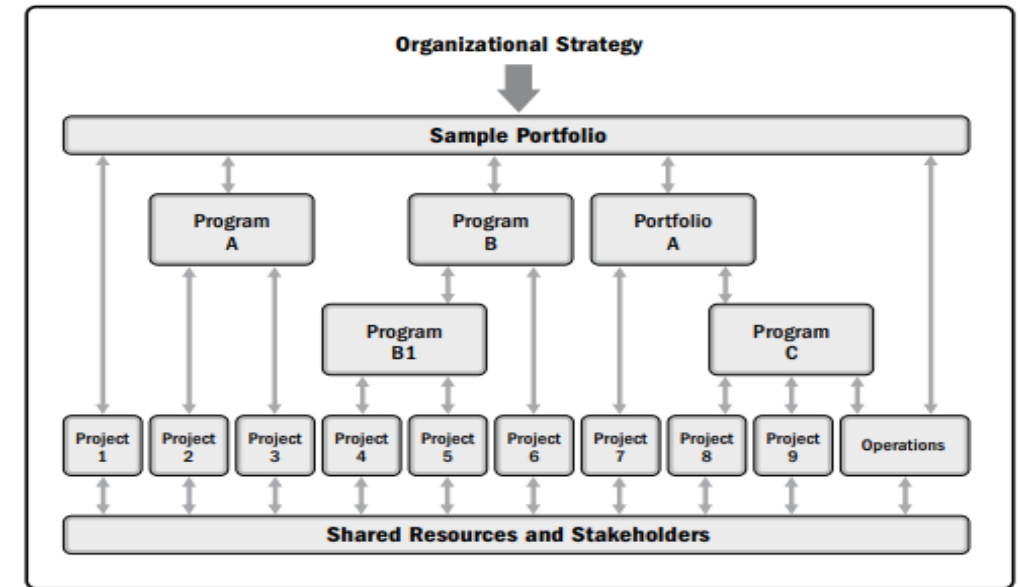
# PMBOK 7.0 IMPLEMENTATION

## What is PMBOK Standards?



# What is Portfolio, Program & Projects?.

| Specific Factor                               | Examples of Specific Factors   | Meet Regulatory, Legal, or Social Requirements | Satisfy Stakeholder Requests or Needs | Create, Improve, or Fix Products, Processes, or Services | Implement or Change Business or Technological Strategies |
|---|--|--|---------------------------------------|--|--|
| <b>New technology</b>                         | An electronics firm authorizes a new project to develop a faster, cheaper, and smaller laptop based on advances in computer memory and electronics technology  |  |                                       | X  | X  |
| <b>Competitive forces</b>                     | Lower pricing on products by a competitor results in the need to lower production costs to remain competitive  |  |                                       |  | X  |
| <b>Material issues</b>                        | A municipal bridge developed cracks in some support members resulting in a project to fix the problems   | X  |                                       | X  |  |
| <b>Political changes</b>                      | A newly elected official instigating project funding changes to a current project  |  |                                       |  | X  |
| <b>Market demand</b>                          | A car company authorizes a project to build more fuel-efficient cars in response to gasoline shortages   |  | X                                     | X  | X  |
| <b>Economic changes</b>                       | An economic downturn results in a change in the priorities for a current project   |  |                                       |  | X  |
| <b>Customer request</b>                       | An electric utility authorizes a project to build a substation to serve a new industrial park  |  | X                                     | X  |  |
| <b>Stakeholder demands</b>                    | A stakeholder requires that a new output be produced by the organization   |  | X                                     |  |  |
| <b>Legal requirement</b>                      | A chemical manufacturer authorizes a project to establish guidelines for the proper handling of a new toxic material   | X  |                                       |  |  |
| <b>Business process improvements</b>          | An organization implements a project resulting from a Lean Six Sigma value stream mapping exercise   |  |                                       | X  |  |
| <b>Strategic opportunity or business need</b> | A training company authorizes a project to create a new course to increase its revenues  |  |                                       | X  | X  |
| <b>Social need</b>                            | A nongovernmental organization in a developing country authorizes a project to provide potable water systems, latrines, and sanitation education to communities suffering from high rates of infectious diseases |  | X                                     |  |  |
| <b>Environmental considerations</b>           | A public company authorizes a project to create a new service for electric car sharing to reduce pollution   |  |                                       | X  | X  |



| Characteristic  | Project  | Program  | Product  |
|-----------------|--|--|--|
| <b>Duration</b> | Short term, temporary  | Longer term  | Long term  |
| <b>Scope</b>    | Projects have defined objectives. Scope is progressively elaborated throughout the life cycle.   | Programs produce aggregate benefits delivered through multiple components.   | Products are customer focused and benefits driven.   |
| <b>Change</b>   | Project teams expect changes and implement processes to address the changes, as needed.  | Program teams explore changes and adapt to optimize the delivery of benefits.  | Product teams explore changes to optimize the delivery of benefits.  |
| <b>Success</b>  | Success is measured by product and project quality, time lines, budget, customer satisfaction, and achievement of intended outcomes.                       | Success is measured by the realization of intended benefits and the efficiency and effectiveness of delivering those benefits. | Success is measured by the ability to deliver intended benefits and ongoing viability for continued funding.   |
| <b>Funding</b>  | Funding is largely determined up front based on ROI projections and initial estimates. Funding is updated based on actual performance and change requests. | Funding is up front and ongoing. Funding is updated with results showing how benefits are being delivered.                     | Product teams engage in continuous development via funding, development blocks, and reviews of value delivery. |

# What is Project Organization?



Figure 2-2. Examples of Project Stakeholders

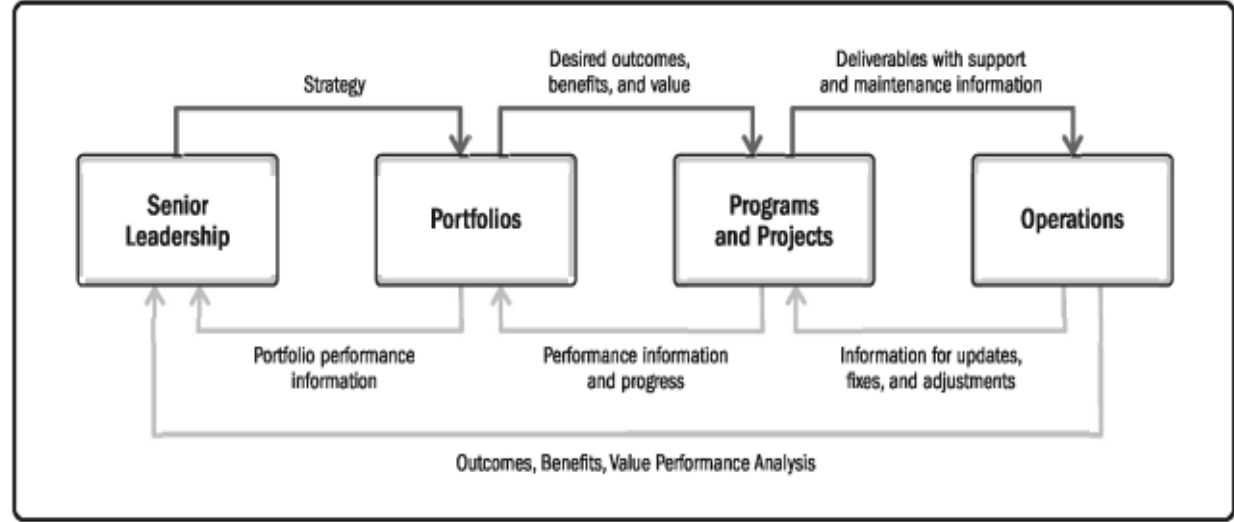


Figure 2-3. Example of Information Flow

Table 2-4. Delivery Cadence and Development Approach

| Deliverable                      | Delivery Cadence    | Development Approach |
|----------------------------------|---------------------|----------------------|
| Building                         | Single delivery     | Predictive           |
| Senior services                  | Multiple deliveries | Iterative            |
| Website                          | Periodic deliveries | Adaptive             |
| Community action patrol training | Multiple deliveries | Incremental          |

# What is Project/Product Life Cycle?

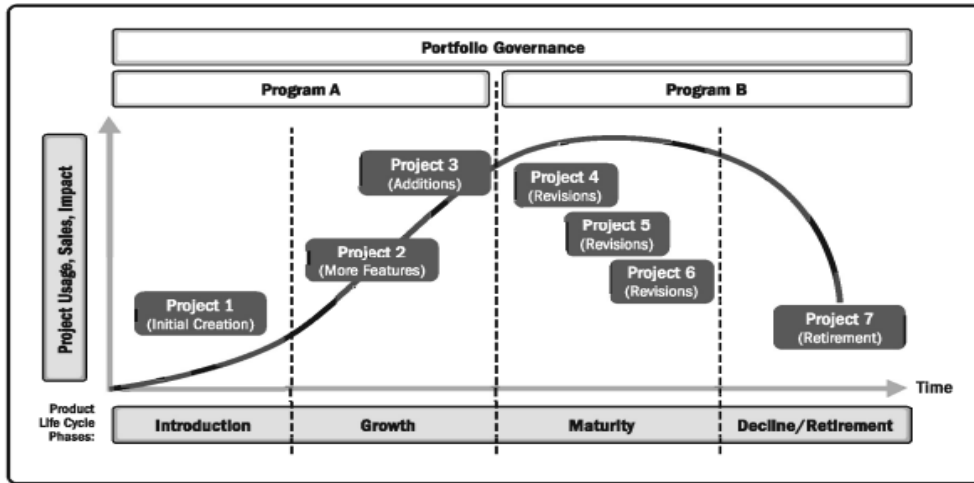
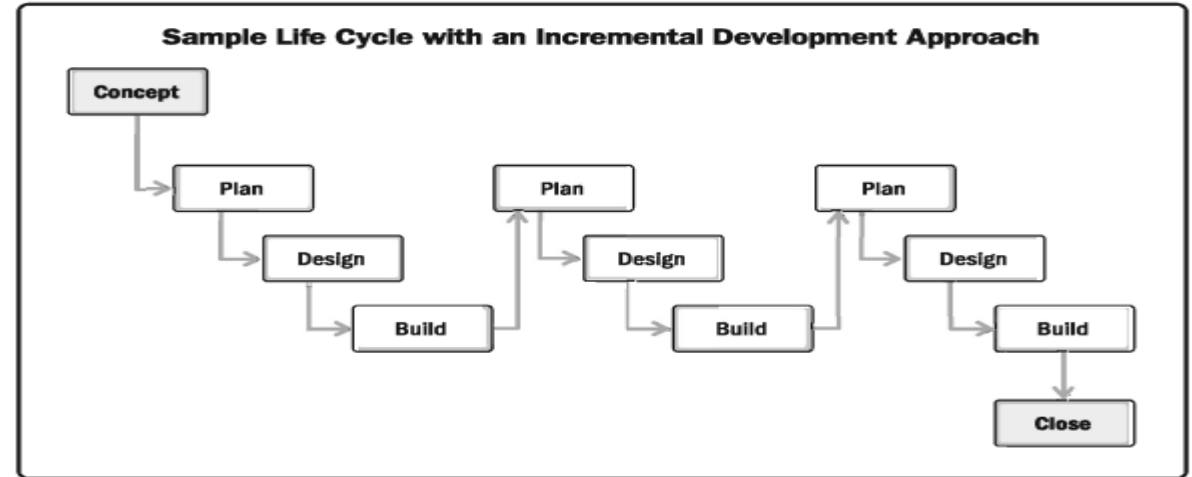
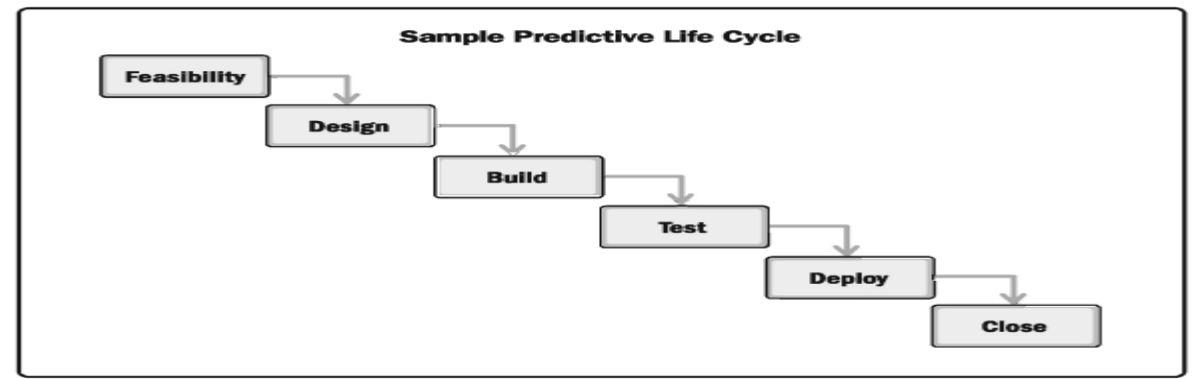
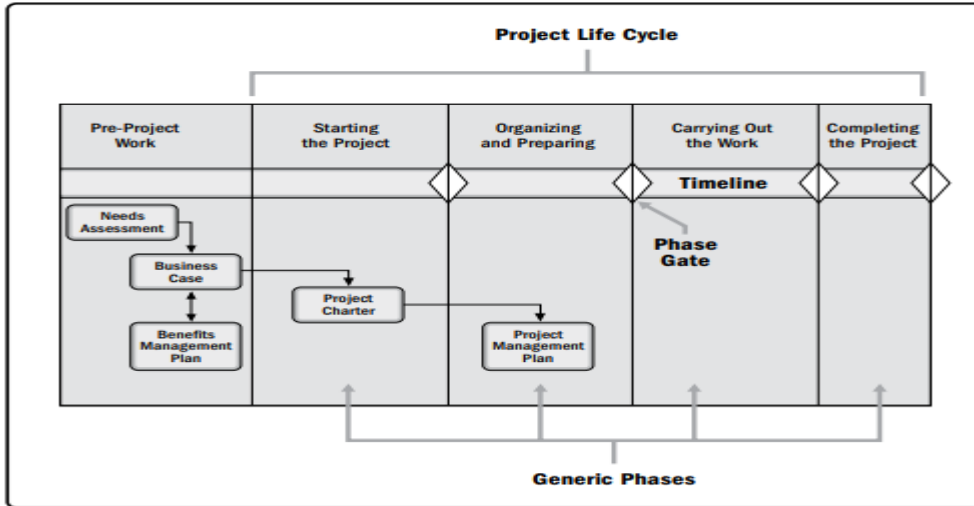
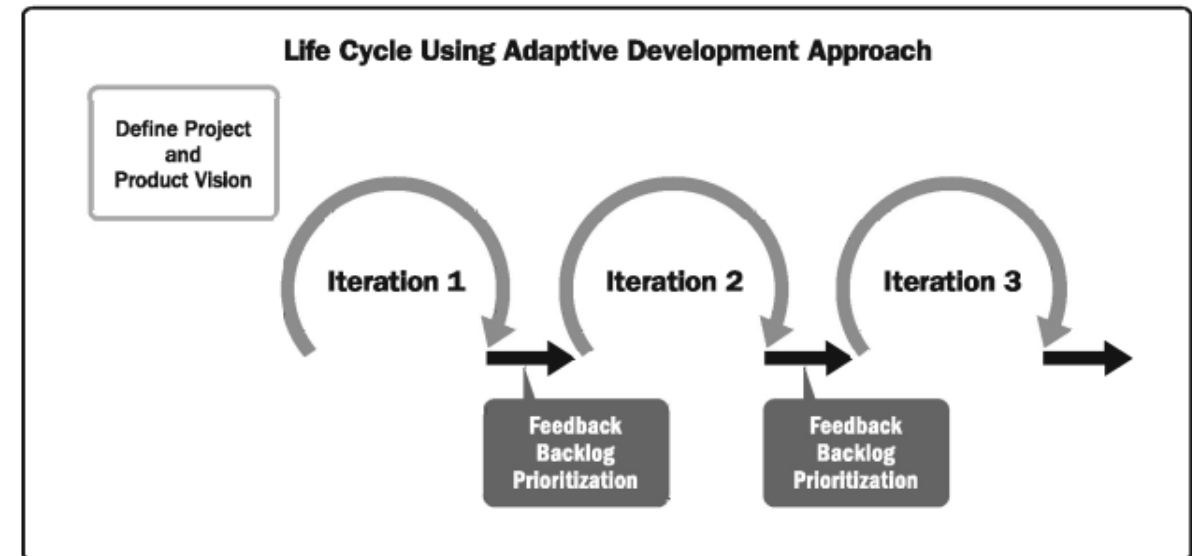
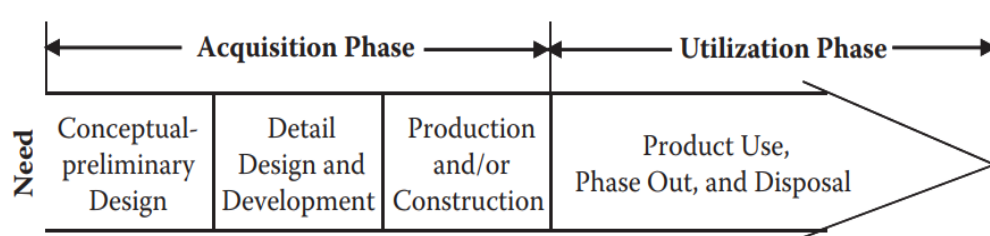
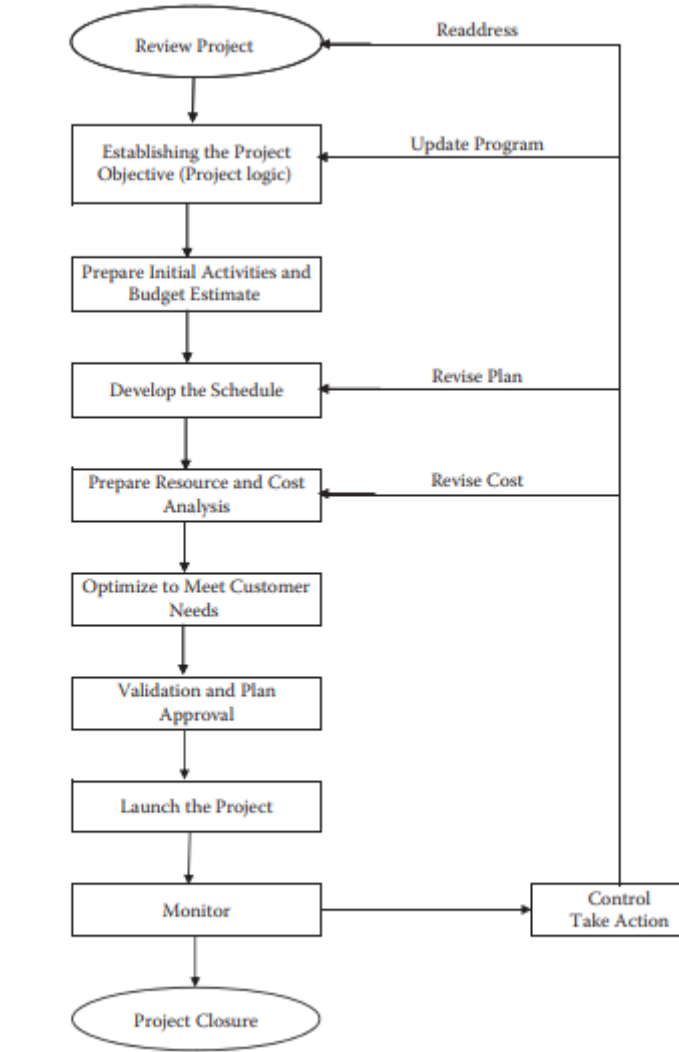
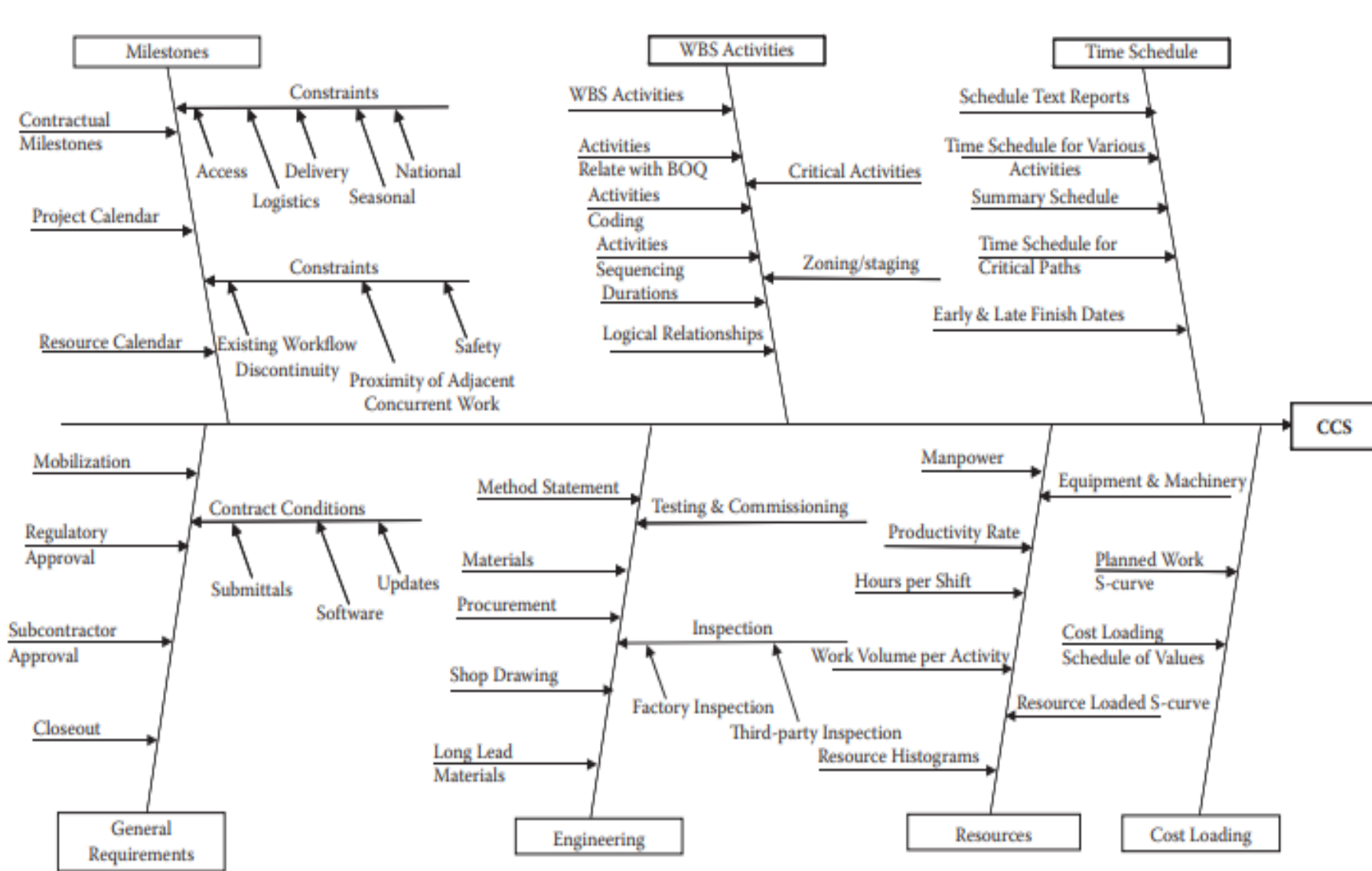


Figure 2-4. Sample Product Life Cycle



# Project Planning, Activities, Components & Risk Matrix



**FIGURE 1.31**  
Ishikawa diagram for CCS data.

**URE 4.33**  
ject planning steps.

# Construction Project Activities

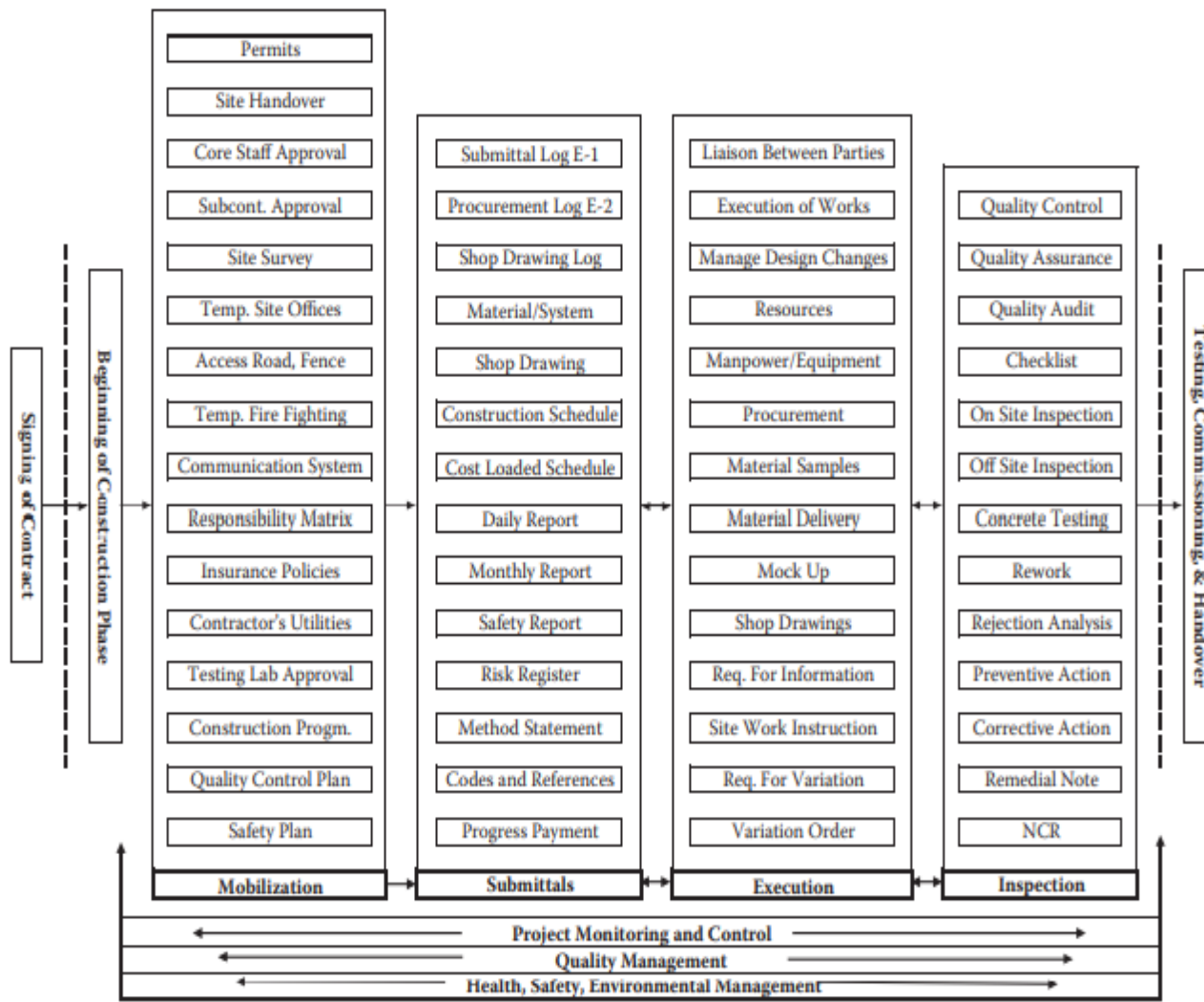


FIGURE 4.18 Major activities during construction phase.

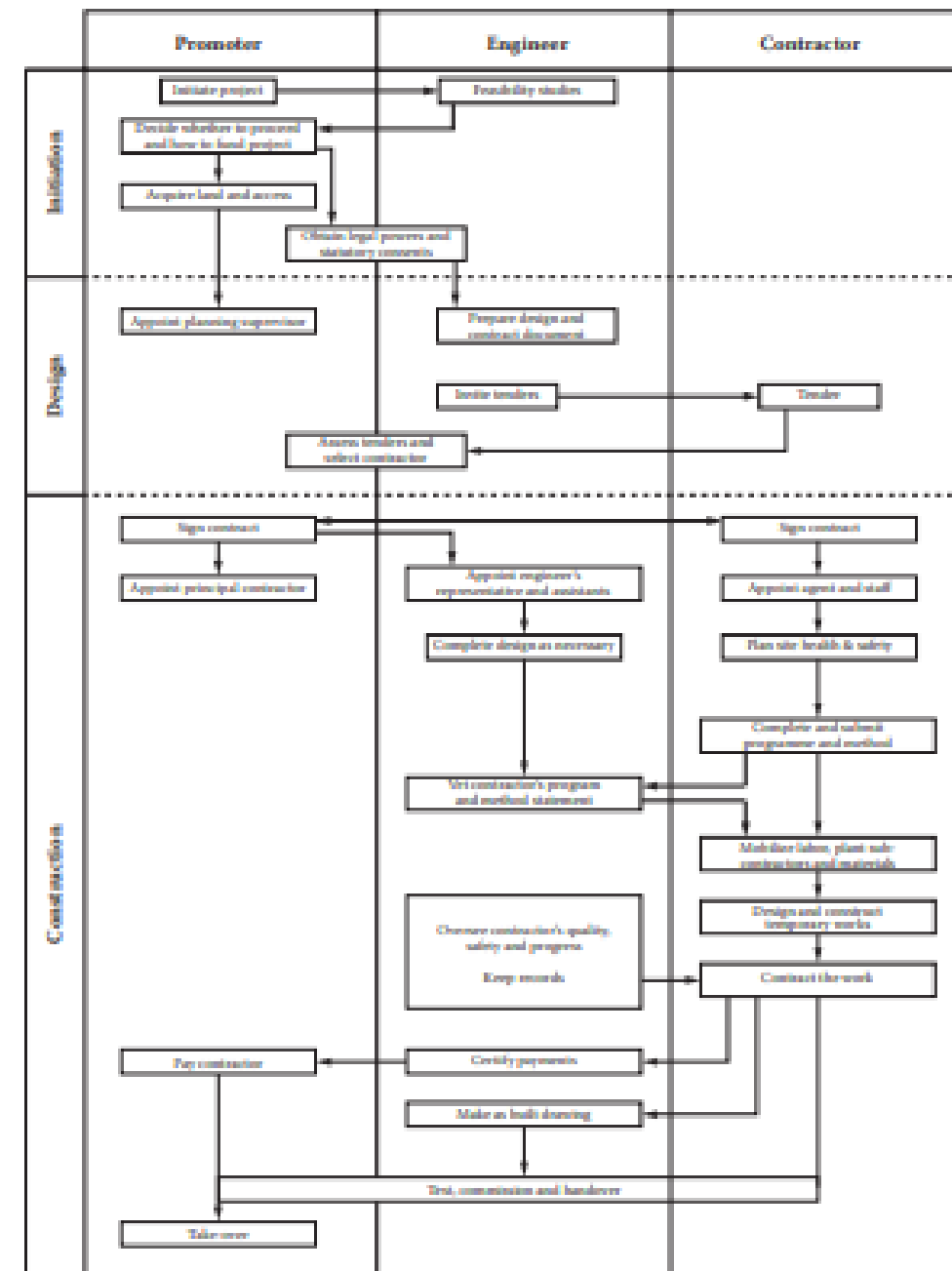


FIGURE 4.14 Division of responsibility. (From *Civil Engineering Procedure* by ICE. Reprinted with permission from Thomas Telford Publishing, UK.)

# What is Project Planning?

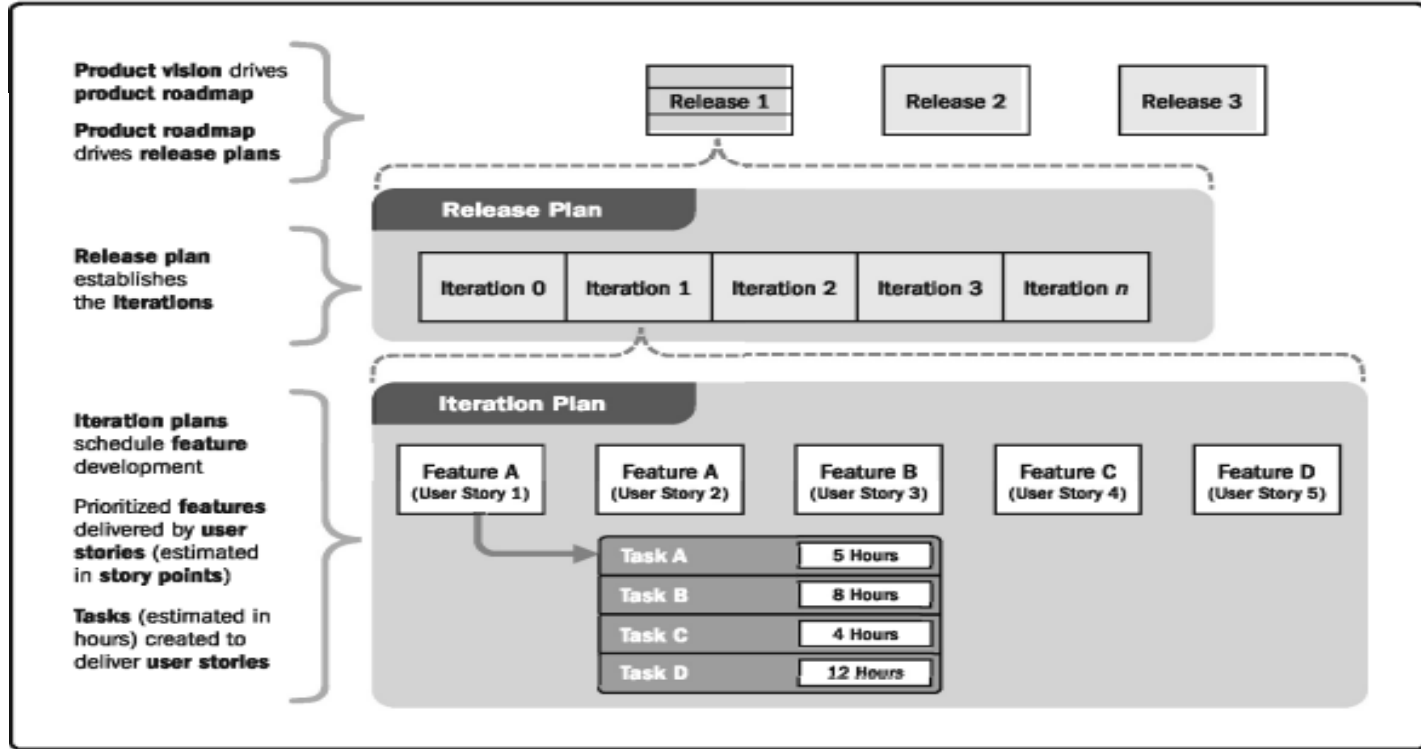
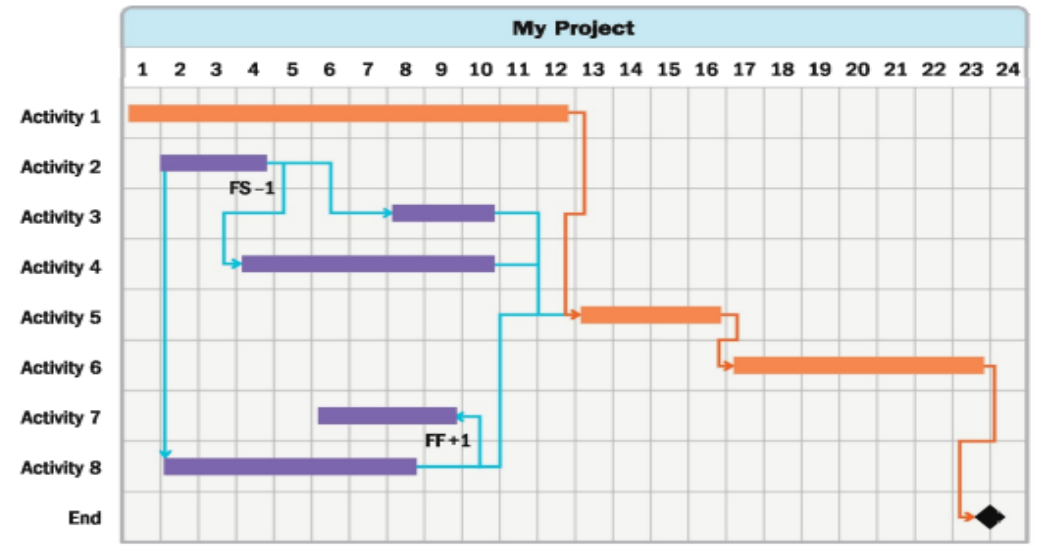


Figure 2-17. Release and Iteration Plan

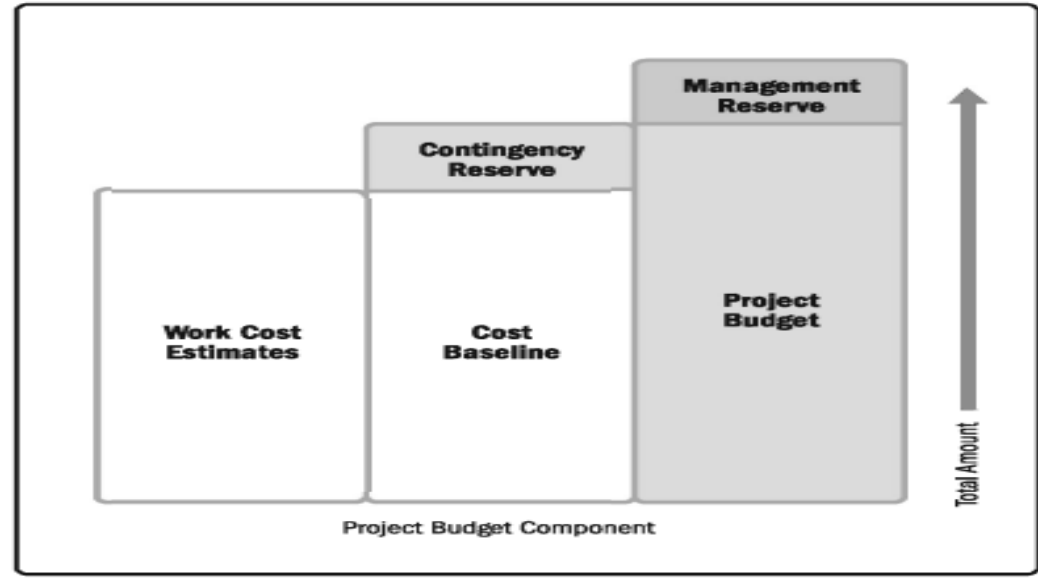


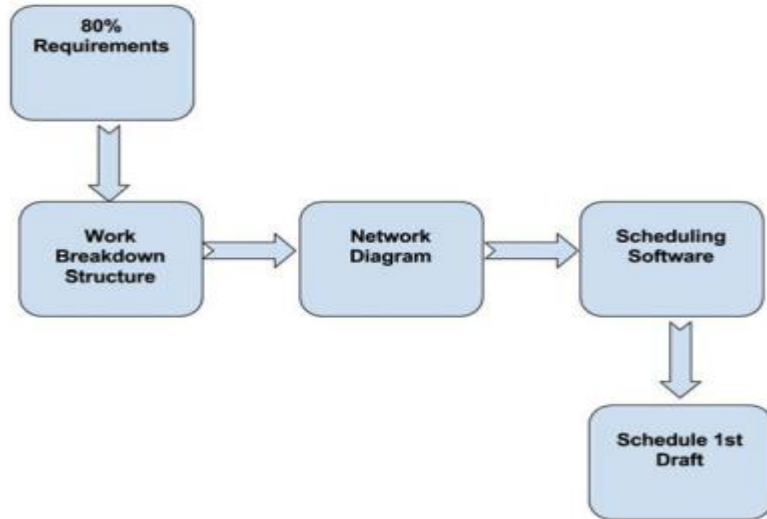
Figure 2-18. Budget Build Up



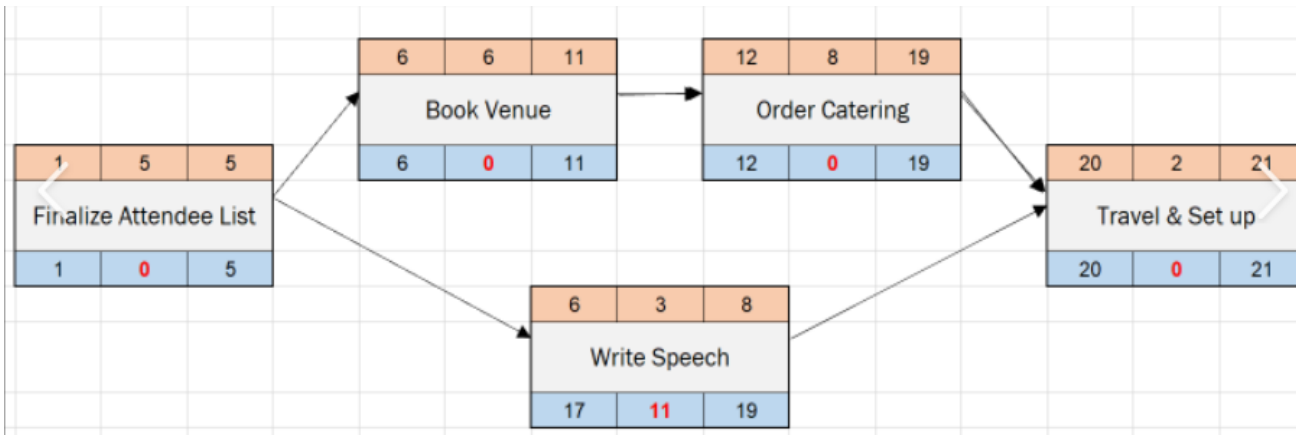
Figure 2-21. Scenario for Developing a Smart Watch

# PMI – Project Planning

## 0. Project Definition process



## 2. Network Diagram



## 1. Breakdown Structures

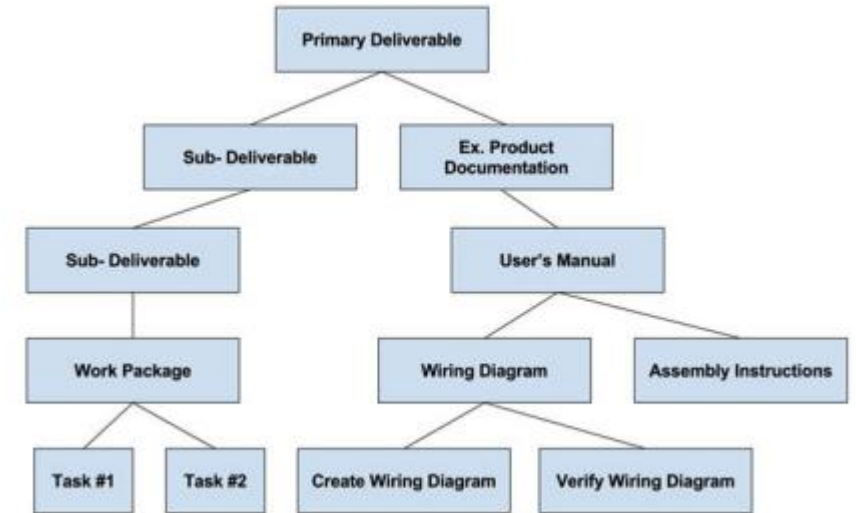
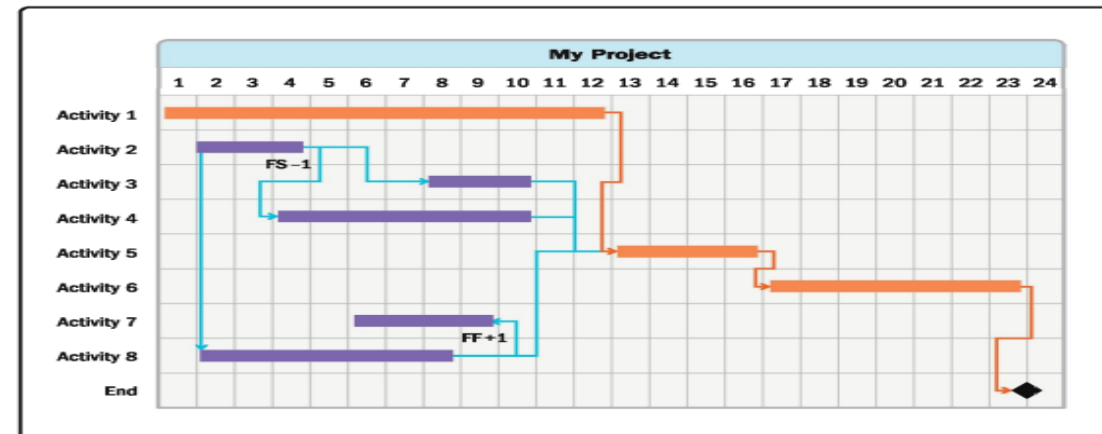


Figure 3-2. WBS example

## 3. Scheduling Gantt Diagram





# PMI – Project Planning

## 0. Project Definition process

### WBS and Schedule Integration

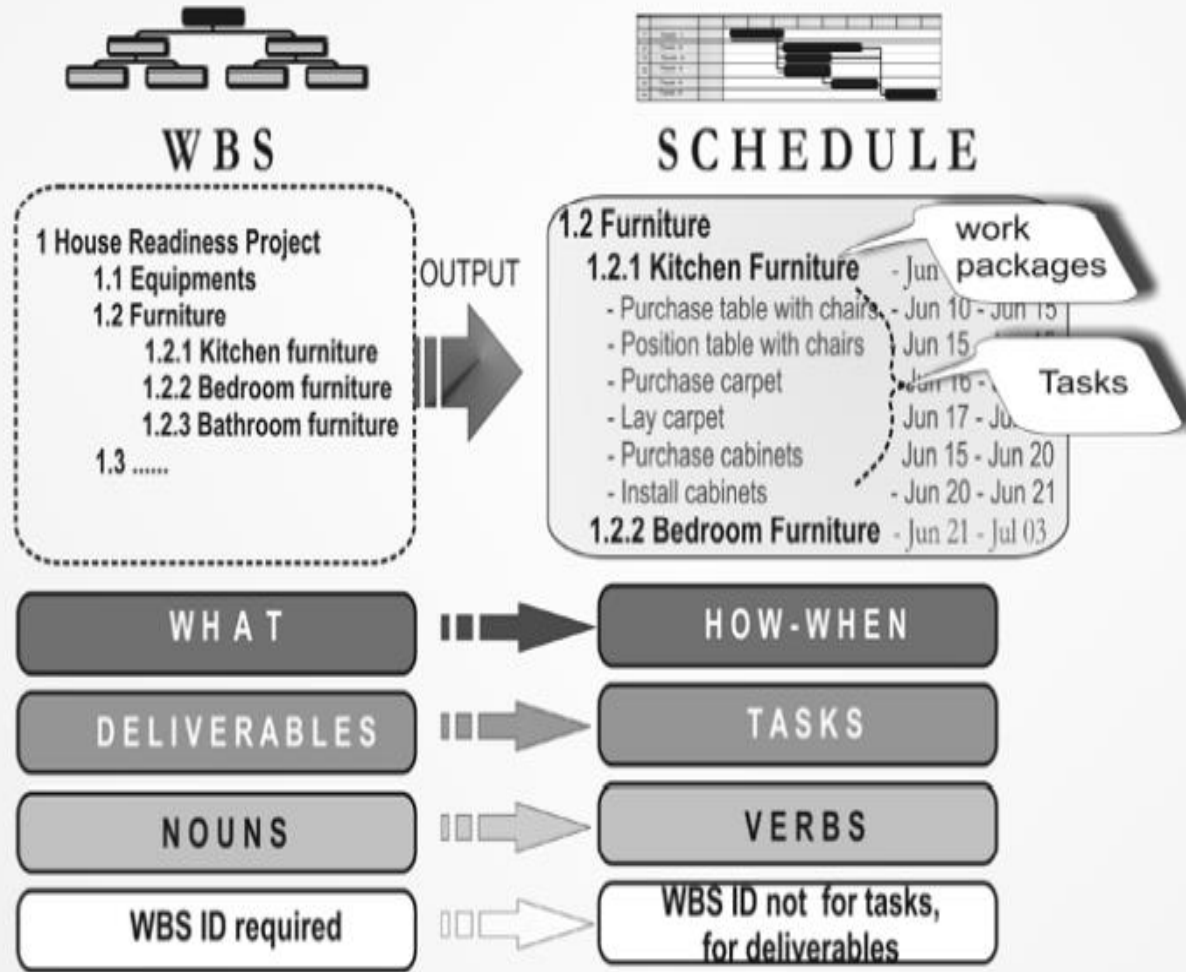


Figure 9.1 bg® key differences between the WBS and the schedule

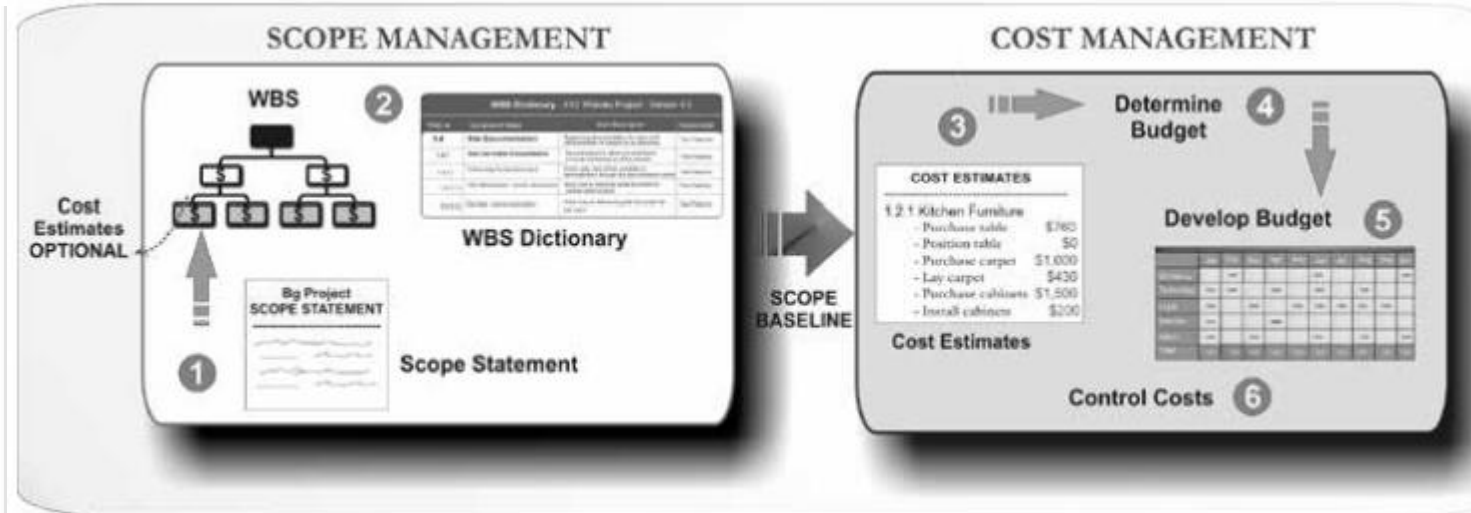
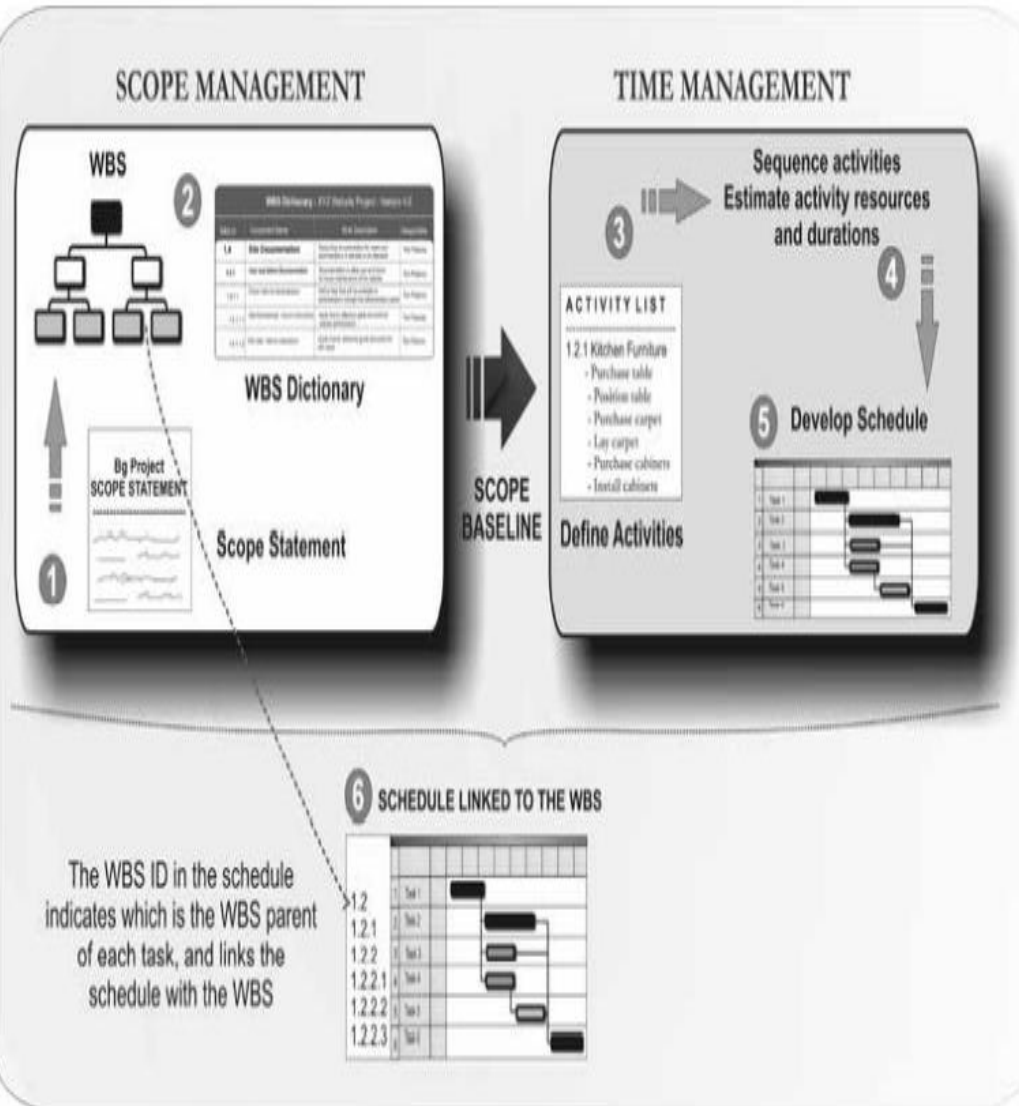
### WBS AND SCHEDULE COMPARISON CHART

|                          | WBS   | SCHEDULE   |
|--------------------------|---|--|
| Graphical representation |   |  |
| Work                     | Defines WHAT to deliver, what work is in scope                    | Defines HOW and WHEN the work will be executed                   |
| Purpose                  | Ultimate vision or goal. Products, services or results to deliver | Roadmap to achieve the deliverables                              |
| Orientation              | Deliverables  | Tasks, activities, actions                                       |
| Component naming         | Nouns and adjectives  | Verbs  |
| WBS ID                   | Yes   | Optional. A well-defined WBS has it to link it with the schedule |
| Created by               | Project Manager with stakeholders                                 | Project Scheduler (sometimes is a role of the Project Manager)   |
| Work sequencing          | No  | Yes  |
| Creation order           | The WBS is created first  | The schedule is created after the WBS                            |
| Baseline                 | Scope baseline  | Schedule baseline  |
| Project area             | Scope Management  | Time Management  |
| Process group            | Initiation / Planning (to establish the scope)                    | Planning (to create the schedule)                                |

Table 9.1 WBS and schedule comparison chart

# PMI – Project Planning

## 0. Project Definition process



**Figure 9.5** WBS and WBS Dictionary as inputs for Cost Management

| PARTIAL - PROJECT COMMUNICATION PLAN |  |  |                          |                          |                                   |
|--------------------------------------|--|--|--------------------------|--------------------------|-----------------------------------|
| What to communicate                  | Audience                               | Purpose  | When Frequency           | Mean or method           | Responsible                       |
| Initiation information               | Customer, Sponsors, Team               | Inform of scope, risks, plans, assumptions                       | Once. Kick-off           | Kick-off meeting         | Project Manager                   |
| Top Management Status Report         | Program Mgr, Sponsors, Functional Mgrs | Inform of status, risks, escalations, activities, key & upcoming | Every other Friday       | Document sent by e-mail  | Project Manager                   |
| Status and Coordination Meeting      | Sub-teams                              | Progress evaluation, status, coordination, issues                | Daily                    | Face to face. 11-11:15am | Sub-team leaders                  |
| Sub-teams progress report            | Project Manager                        | Progress versus plan. Scope Control                              | Every Monday             | E-mail                   | Sub-team leaders                  |
| Change Control Review Meeting        | Managers affected by the project       | Review Change Control Forms                                      | As Change Requests arise | Face to face meetings    | Business Analyst, Project Manager |

**Table 10.1** Project Communications Plan

**Figure 9.2** Scope and Time Management key components relationship

# EPC Construction Company

## 1. Work Breakdown Structure

| bg® STRUCTURE TYPES COMPARISON CHART |                                    |  |
|--------------------------------------|------------------------------------|--|
| Structure Acronym                    | Structure Name                     | Representation of  |
| WBS                                  | Work Breakdown Structure           | <b>Work</b> , scope, deliverables  |
| RBS                                  | Risk Breakdown Structure           | <b>Risk</b> categories   |
| RBS                                  | Resource Breakdown Structure       | <b>Resources</b> (human and materials) needed and its organization   |
| OBS                                  | Organizational Breakdown Structure | Project's <b>organization</b> : people, groups, departments and functions involved, as well as reporting relationships |
| CBS                                  | Contract Breakdown Structure       | <b>Contracts</b> and subcontracts  |
| CBS                                  | Cost Breakdown Structure           | Project <b>costs</b>   |
| BOM                                  | Bill of Materials                  | Item <b>materials</b> , assemblies, components, and/or parts.  |

Table 3.1 bg® Structure Types Comparison Chart

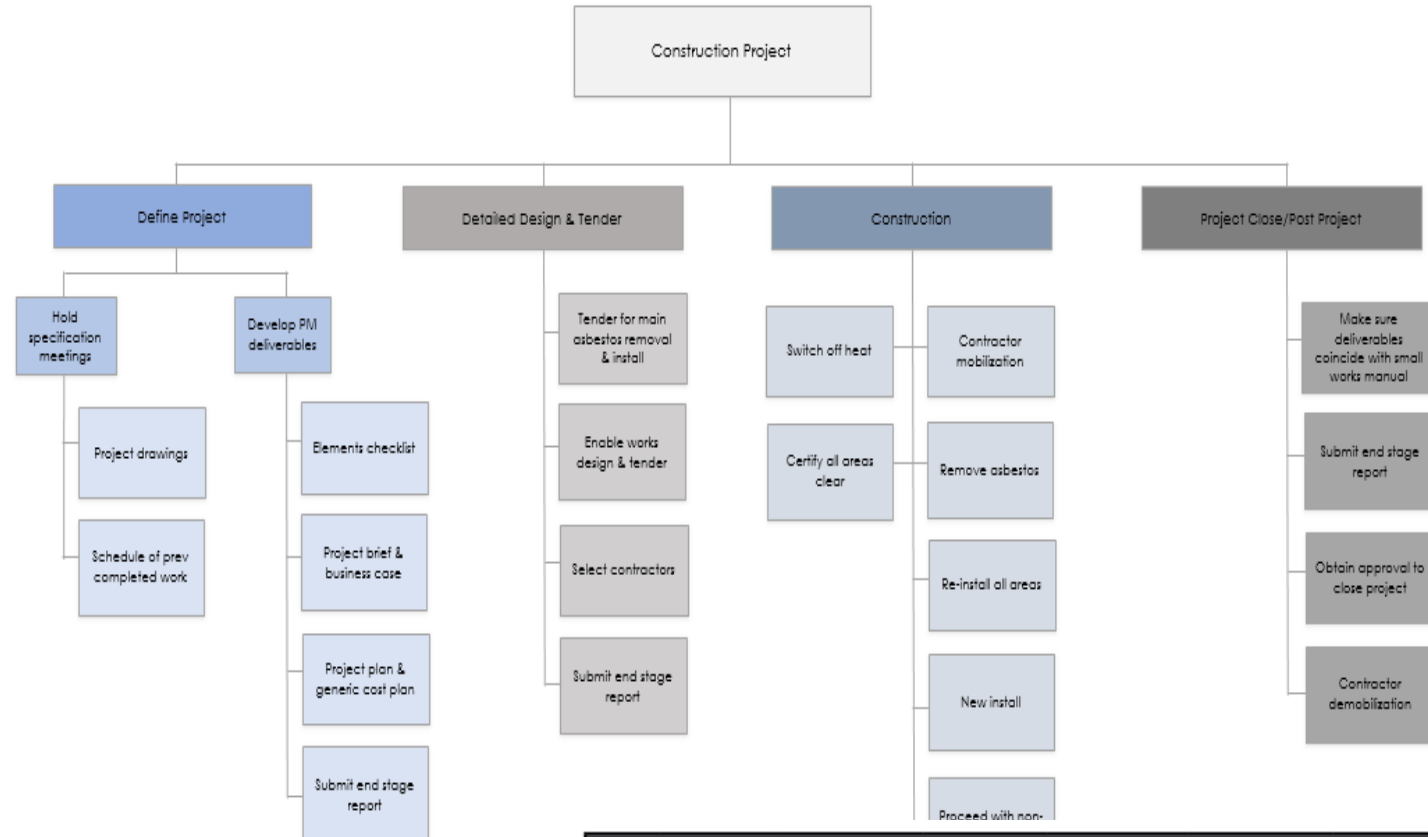


Figure 6.3 WBS representation types

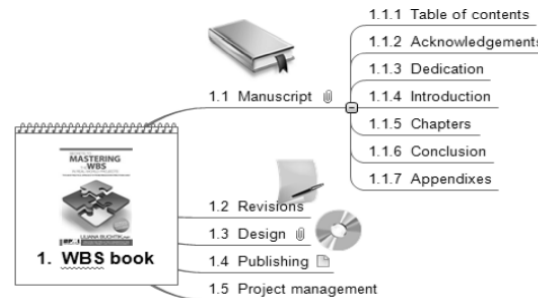


Figure 7.7 Different views of MindView®

| RESPONSIBILITY ASSIGNMENT MATRIX (RAM) |                  |                   |                  |                    |              |                        |
|--|------------------|-------------------|------------------|--------------------|--------------|------------------------|
| Person                                 | Role             | 1.5.2 Master Plan | 1.1 Site Content | 1.6 System Manuals | 1.2 Training | 1.3.1 Software Release |
| Tom                                    | Sponsor          | Approver          | Approver         |                    | Participates | Approver               |
| Luis                                   | Project Manager  | Responsible       | Approver         | Approver           | Approver     | Approver               |
| Fred                                   | Writer           | Input Required    |                  | Responsible        | Responsible  | Reviewer               |
| Lilian                                 | Tech Leader      | Input Required    | Reviewer         | Approver           | Participates | Approver               |
| Sayed                                  | Business Analyst | Input Required    | Reviewer         | Reviewer           | Participates | Reviewer               |
| Frank                                  | Developer        | Informed          | Informed         |                    | Responsible  |                        |

Table 10.3 RAM integrated with the WBS

# EPC Construction Company

## 1. Breakdown Structure

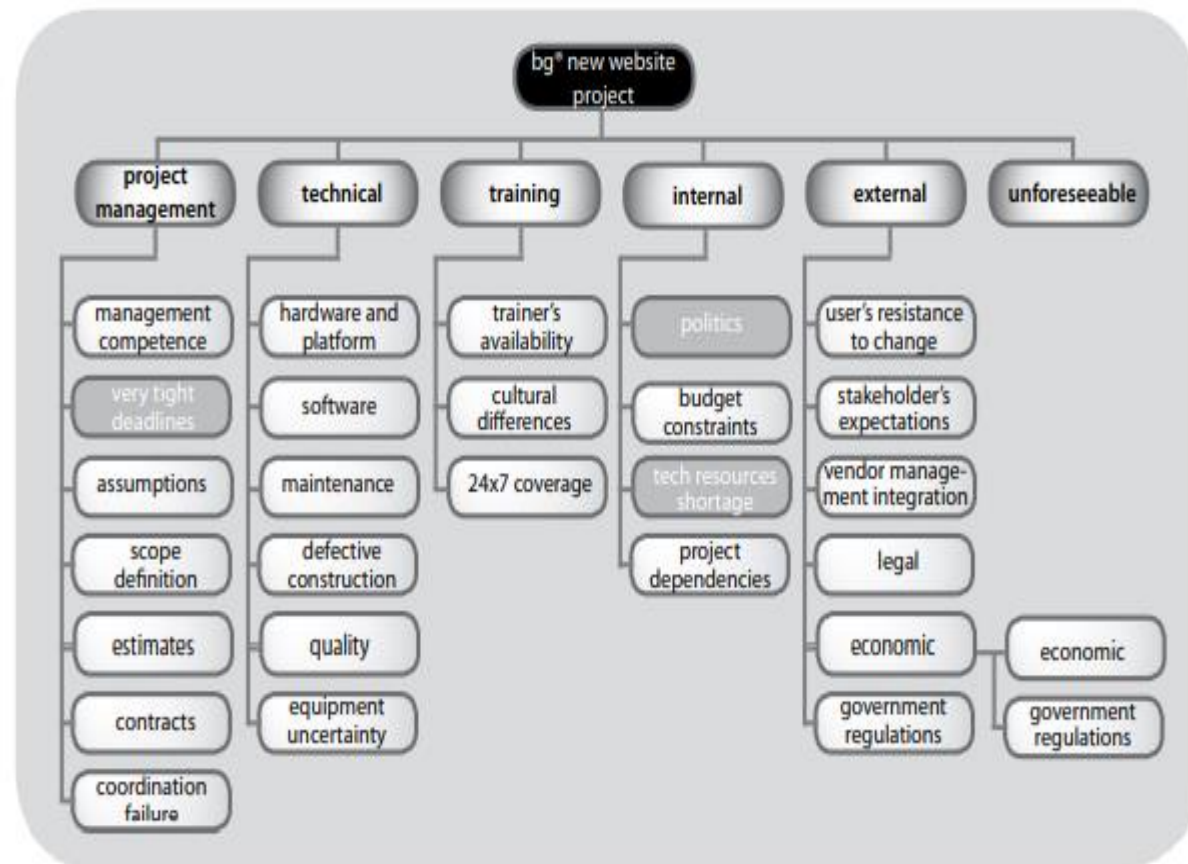


Figure 3.3 Risk Breakdown Structure (RBS)

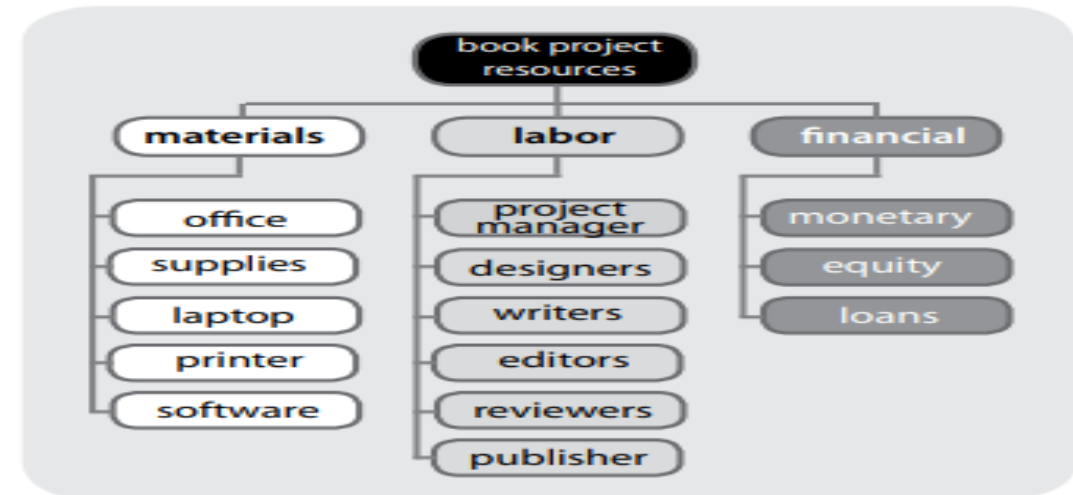


Figure 3.4 Resource Breakdown Structure

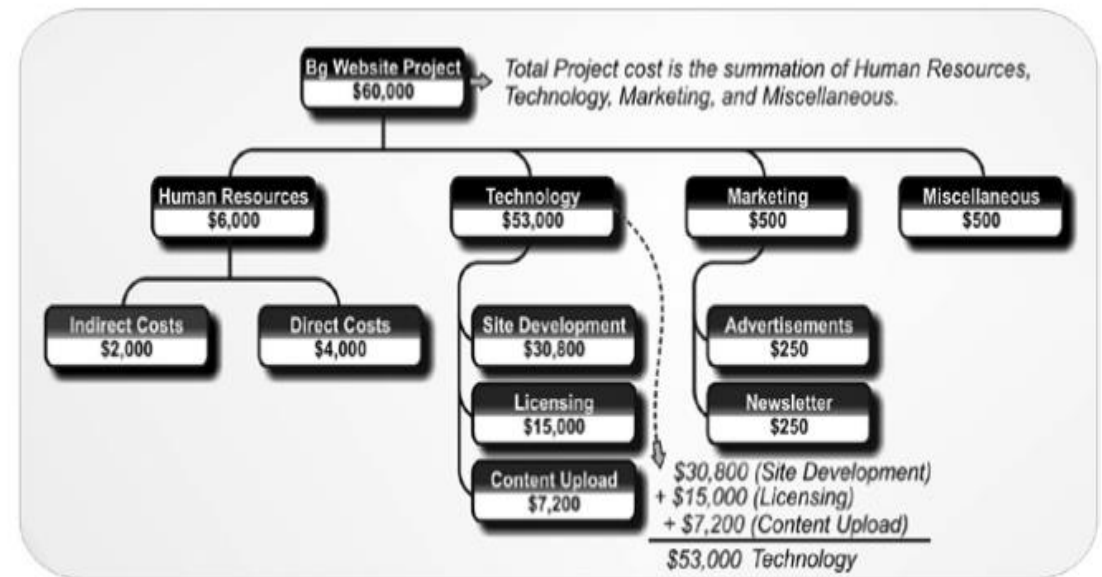


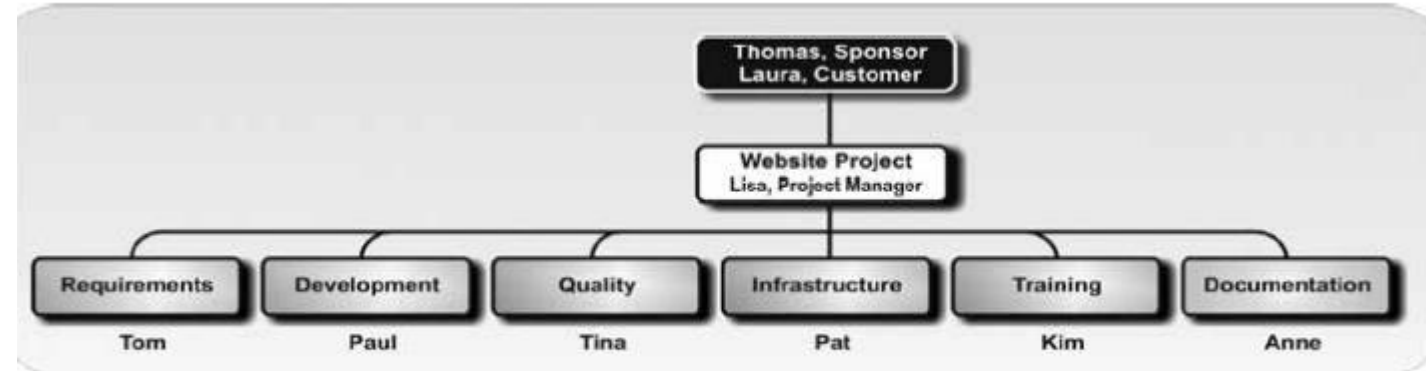
Figure 3.7 Cost Breakdown Structure (CBS)

# EPC Construction Company

## 1. Breakdown Structure

| BILL OF MATERIALS (BOM)        |            |                     |        |      |
|--------------------------------|------------|---------------------|--------|------|
| Item                           | Component  | Material            | Impact | Unit |
| Building - Structural concrete | Beam       | Cement              | 0.34   | Ton  |
|                                |            | Coarse aggregate    | 1.25   | Ton  |
|                                |            | Sand                | 0.7    | Ton  |
|                                |            | Steel reinforcement | 0.12   | Ton  |
|                                | Column     | Cement              | 0.34   | Ton  |
|                                |            | Coarse aggregate    | 1.25   | Ton  |
|                                |            | Sand                | 0.7    | Ton  |
|                                |            | Steel reinforcement | 0.1    | Ton  |
|                                | Foundation | Cement              | 0.34   | Ton  |
|                                |            | Coarse aggregate    | 1.25   | Ton  |
|                                |            | Sand                | 0.7    | Ton  |
|                                |            | Steel reinforcement | 0.9    | Ton  |

**Figure 3.8** Bill of Materials (BOM)



**Figure 3.5** Organizational Breakdown Structure (OBS)

### 1. Website project - CONTRACTS

#### 1.1. Website design files

1.1.1. Home page files - *Inventive, Inc.*

1.1.2. Other pages files - *Inventive, Inc.*

1.2. Website modules - *Developing, Inc.*

1.3. Videos - *ABC Productions, Inc.*

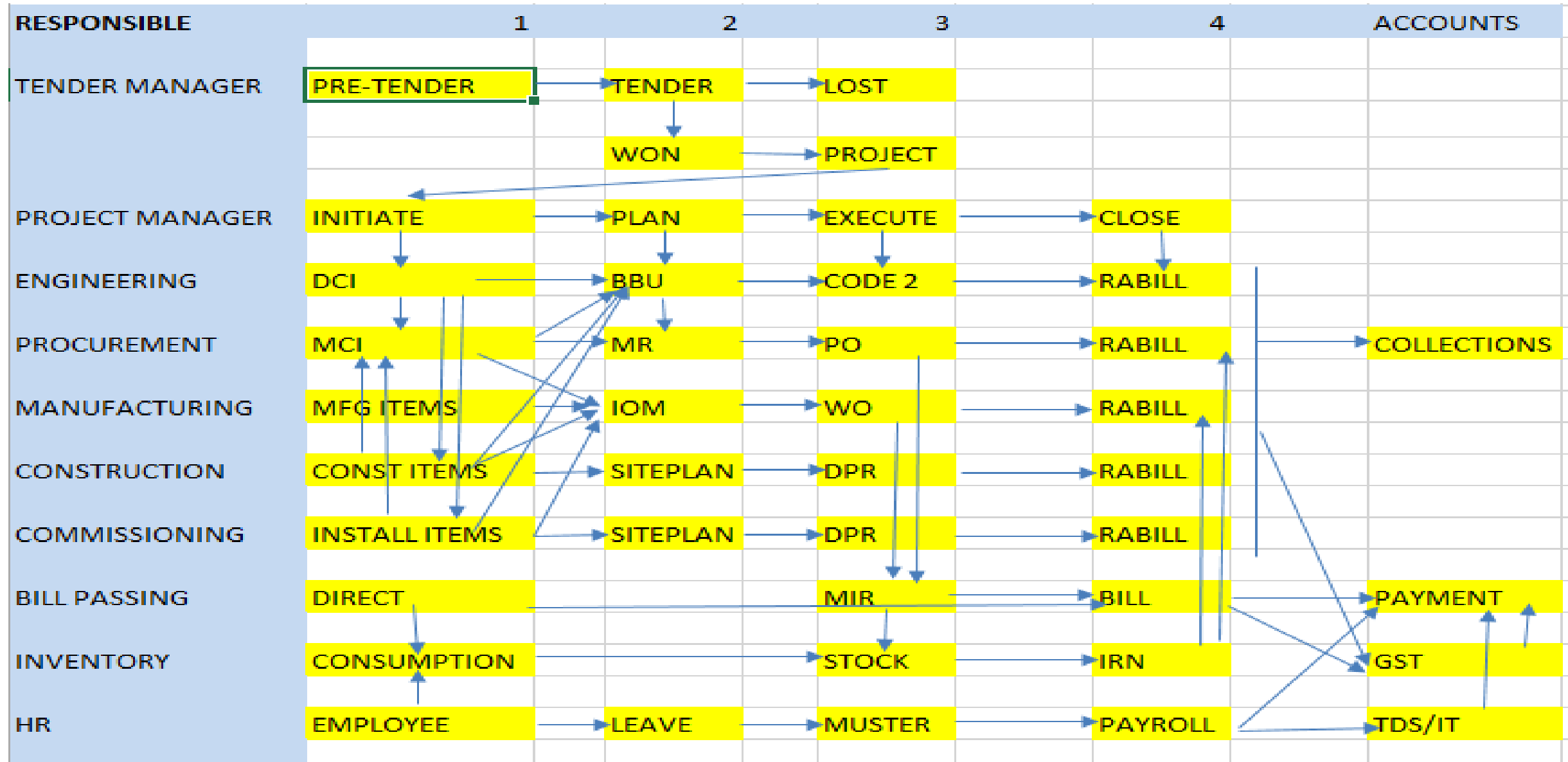
1.4. Newsletters - *MarkMail, Ltd.*

1.5. Hosting - *TelecSouth, Inc.*

**Figure 3.6** Contract Breakdown Structure (CBS)

# EPC Construction Company

## 2. Network Diagram





# PMI – Project Management Information System Software

**MobileERP**

ROHITKUMAR B. KHARVA / Projects  
Paramount Limited

ETM ENTERPRISE TASK MANAGEMENT

- My Home
- My Documents
- My Tasks
- My Tickets
- My Activities
- My Masters

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
- Completed Projects
- Order Management

EPM ENTERPRISE PROCESS MGMT

- Process Dictionary
- Process Design
- Process Release
- Process Activity
- Process Task
- Process Investigations
- Process Library

EBI ENTERPRISE BI REPORTING

- My Apps

Project | Process | Documents | Analytics | Quality

PMI | Process | Create | Edit | Approve | Print | OnHold | Approved | Rejected | Project | Planning | Capacity | Material | Manpower | Machinery | Assign | DoWork | Scheduler | Calendar | B/O | MTO | MTS | Kanban | Progress | Cycletime | S Curve | MRP | ROP | STK | Reports | Dashboard

QMS | Initiate | Planning | Execution | Monitoring & Control | Analysis & Closure | All

**INITIATE**

- ID: ENGINEERS INDIA LIMITED - ONGC  
URAN  
ONGC  
PROJECT .ROHITKUMAR B. KHARVA  
-Work-
- ID: ENGINEERS INDIA LIMITED - CPCL(DE-OILER PACKAGE)  
CPCL  
PROJECT .ROHITKUMAR B. KHARVA  
-Work-

**PLANNING**

- ID: IOCL(Gujarat Refinery)  
IOCL  
PROJECT .ROHITKUMAR B. KHARVA  
-Work-

**EXECUTION**

**CLOSURE**

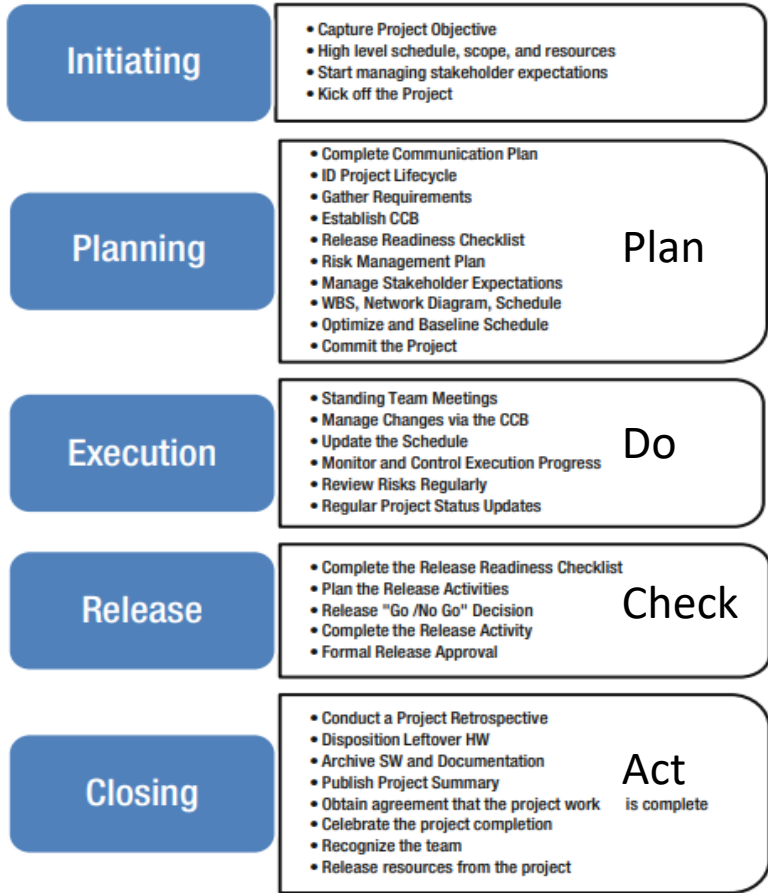
- ID: HPCL RAJASTHAN REFINERY LIMITED-632  
HRRL  
PROJECT .ROHITKUMAR B. KHARVA  
-Work-

Activate Windows  
Go to Settings to activate Windows.

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# What is PMI Standard Process & Checklist for project management?.



| INITIATE  | PLANNING   | EXECUTION   | CLOSURE   |
|---|--|---|---|
| 5675. PROJECT INITIATE<br>PREPARE DCI/L1/L2/L3                | 5676. PROJECT PLANNING<br>PREPARE BBU, PLAN, ESTIMATE, BUDGET  | 5677. PROJECT EXECUTION<br>PREPARE MR/PO/MIR/DPR/RABILL   | 5678. PROJECT CLOSURE<br>MONITOR, CONTROL, DELIVER & SIGNOFF  |
| <b>PROJECT</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 20           | <b>PROJECT</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 50  | <b>PROJECT</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 90   | <b>PROJECT</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 100  |
| <b>What Next</b>  | <b>What Next</b>   | <b>What Next</b>  | <b>What Next</b>  |
| 1.4.1 Develop Project Charter<br>2.13.1 Identify Stakeholders | 1.4.2 Develop Project Management Plan<br>2.5.1 Plan Scope Management<br>3.5.2 Collect Requirements<br>4.5.3 Define Scope<br>5.5.4 Create WBS<br>6.6.1 Plan Schedule Management<br>7.6.2 Define Activities<br>8.6.3 Sequence Activities<br>9.6.4 Estimate Activity Durations<br>10.6.5 Develop Schedule<br>11.7.1 Plan Cost Management<br>12.7.2 Estimate Costs<br>13.7.3 Determine Budget<br>14.8.1 Plan Quality Management<br>15.9.1 Plan Resource Management<br>16.9.2 Estimate Activity Resources<br>17.10.1 Plan Communications Management<br>18.11.1 Plan Risk Management<br>19.11.2 Identify Risks<br>20.11.3 Perform Qualitative Risk Analysis<br>21.11.4 Perform Quantitative Risk Analysis<br>22.11.5 Plan Risk Responses<br>23.12.1 Plan Procurement Management<br>24.13.2 Plan Stakeholder Engagement | 1.4.3 Direct and Manage Project Work<br>2.4.4 Manage Project Knowledge<br>3.8.2 Manage Quality<br>4.9.3 Acquire Resources<br>5.9.4 Develop Team<br>6.9.5 Manage Team<br>7.10.2 Manage Communications<br>8.11.6 Implement Risk Responses<br>9.12.2 Conduct Procurements<br>10.13.3 Manage Stakeholder Engagement | 1.4.5 Monitor and Control Project Work<br>2.4.6 Perform Integrated Change Control<br>3.5.5 Validate Scope<br>4.5.6 Control Scope<br>5.6.6 Control Schedule<br>6.7.4 Control Costs<br>7. 8.3 Control Quality<br>8.9.6 Control Resources<br>9.10.3 Monitor Communications<br>10.11.7 Monitor Risks<br>11.12.3 Control Procurements<br>12.13.4 Monitor Stakeholder Engagement<br>13.4.7 Close Project or Phase |

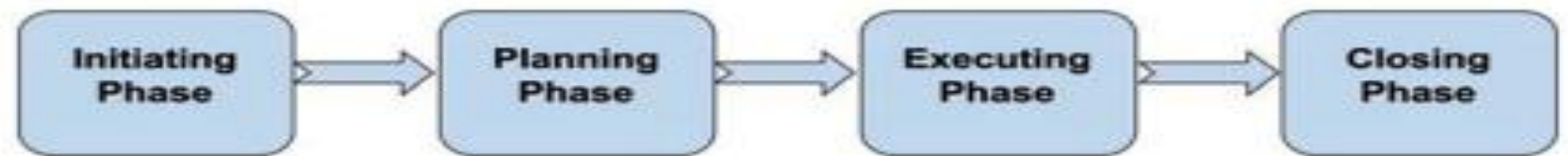


Figure I-1. Basic project workflow

Figure 4-2. "Plan, Do, Check, Act" Cycle

# PMI – Project Management Software Overview

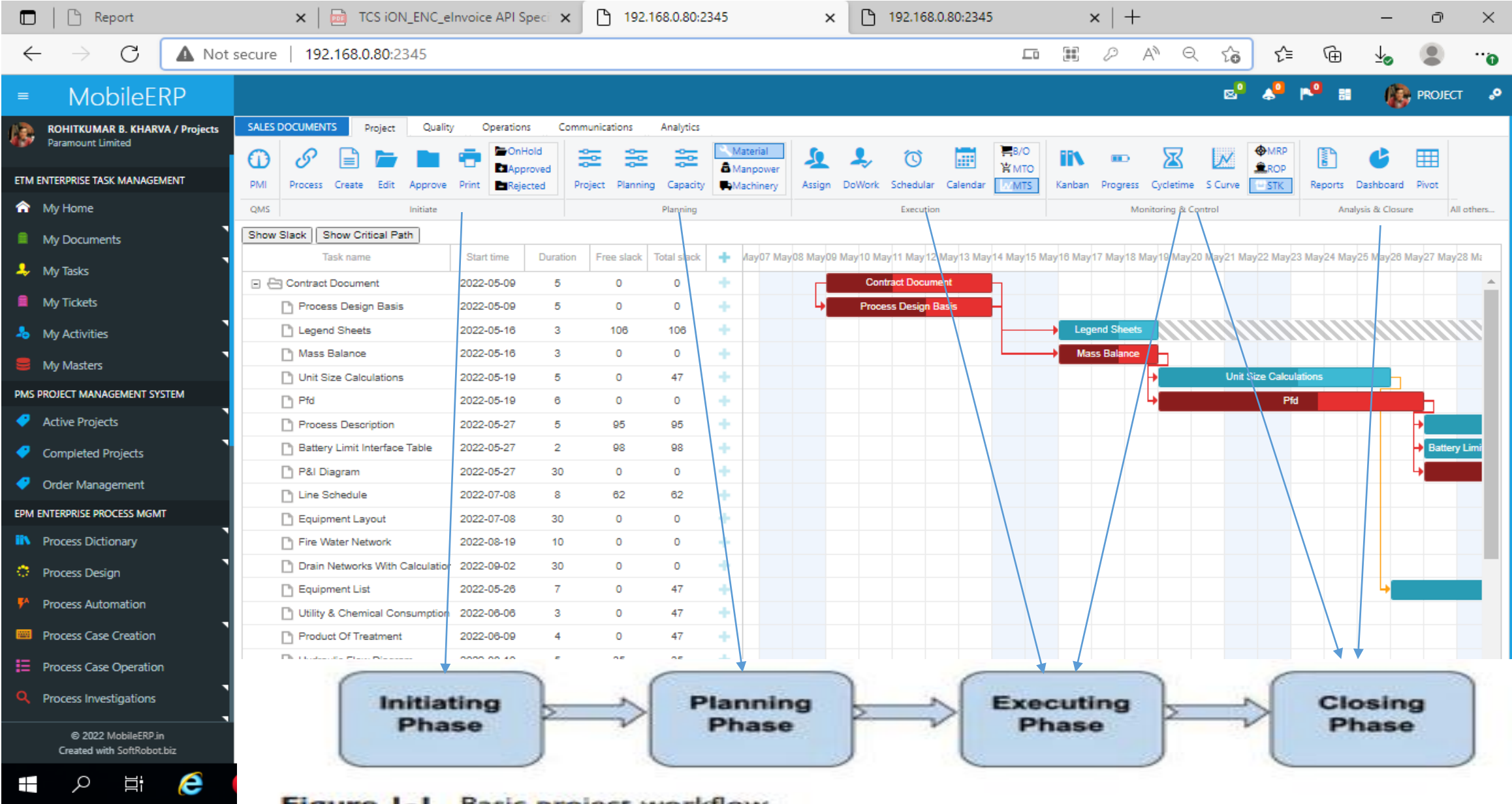


Figure I-1. Basic project workflow

# PMI – Project Initiation Documents

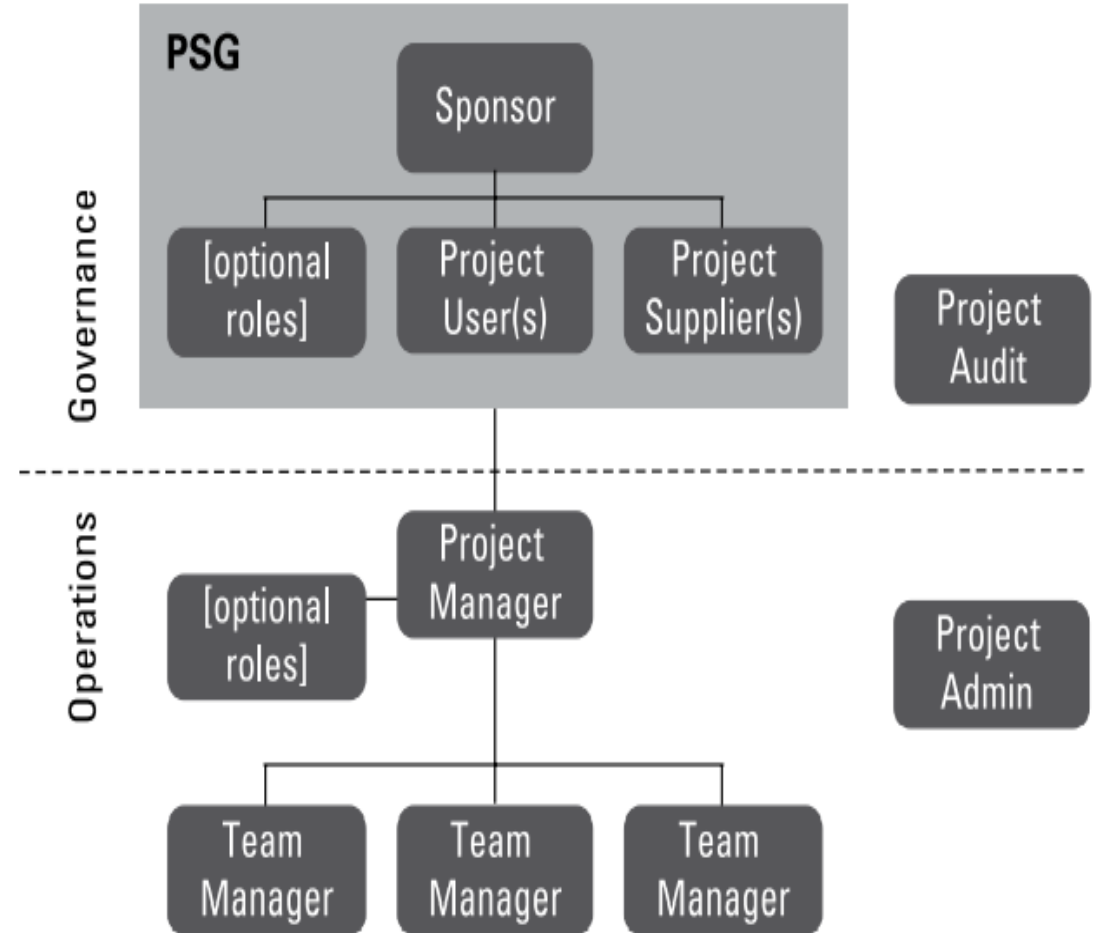
- ❑ **Project Charter:** The strategic view of the project. This will be maintained throughout. Amongst other things it contains the scope statement to say what the project is, the objectives and, importantly, the full Business Case.

## *Project Justification Checklist*

It's easy to be too focused on benefits, or even a given level of financial benefits, when you're thinking about whether a project is justified or not. However, while achieving business benefits is the most common project justification, it isn't the only one. Have a look at this list to check your project out.

- ❑ **Benefits:** Okay, the most common justification first. The project will pay back with business benefits which outweigh the cost and effort involved in running the project.
- ❑ **Compliance:** You have to run the project whether there are benefits or not. That might be compliance with legal requirements or something like an HQ instruction that 'All regional offices will run a project . . .'
- ❑ **Enabling:** The project itself won't deliver benefits, but it will put something in place that will allow other projects

## Project Stakeholders



**Figure 6-1:** An ISO compliant organisational structure.

# PMI – Project Initiation Software – Define Project

MobileERP

ROHITKUMAR B. KHARVA / Projects  
Paramount Limited

ETM ENTERPRISE TASK MANAGEMENT

- My Home
- My Documents
- Tender (1)
- Sales Documents (38)
- Purchase Documents (73)
- Purchase Order (17)
- Mfg Order (0)
- Project (224)
- lom (0)
- Mr (1)
- My Tasks
- My Tickets
- My Activities
- My Masters

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
- Completed Projects
- Order Management

EPM ENTERPRISE PROCESS MGMT

- Process Dictionary

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Project Quality Operations Communications Analytics

PM Process Create Edit Approve Print OnHold Approved Rejected Project Planning Capacity Material Manpower Machinery Assign DoWork Scheduler Calendar B/O MTO MTS Kanban Progress Cyclotime S Curve MRP ROP STK Reports Dashboard Pivot

QMS Initiate Planning Execution Monitoring & Control Analysis & Closure All others...

1. PROJECT ORDER, PLANNING, COSTING AND BUDGETING - ECM-Enterprise Content Management System

Page Checklist Library Uploads Chatter Meetings Emails OnHold Drill Share

## PROJECT ORDER, PLANNING, COSTING AND BUDGETING

BPCL KOCHI (607)

|               |                                       |             |   |
|---------------|---------------------------------------|-------------|---|
| PROJECTID     | 1                                     | CONSULTANT  | M/S. ENGINEERS INDIA LIMITED.   |
| PROJECTDATE   | 04/11/2019 12:14:12                   | OWNER       | M/S. HPCL RAJASTHAN REFINERY LIMITED. (HRRL/RAJASTHAN REFINERY PROJECT (RRP) AT PACHPADRA TEHSIL, BARMER DISTRICT, RAJASTHAN, INDIA |
| PROJECTNAME   | EFFLUENT TREATMENT PLANT, BPCL, KOCHI | SCALE       | N.T.S   |
| CUSTOMER      | BPCL KOCHI (607)                      | LGA_NO      | HRRL/LGA/2019/55  |
| PRICEBIDID    | 0                                     | LGA_DT      | 28/12/2019  |
| PROJECTNO     | BPCL                                  | JOB_NO      | B223  |
| PROJECTTYPEID | 1                                     | PLJOB_NO    | PL631   |
| SITEID        | 1                                     | PREPARED BY | ASHISH  |
| UID           | 23                                    | AMOUNT      | 2570000000  |
| CALENDERID    | 16                                    |             |   |

| Sr# | TENDER ITEM | TYPE     | DISCIPLINE | TASKNO | TASKCODE | TASK     | QTY  | UOM | PROJGROUPID | WTG | StartDate  | EndDate    | DURATION | LEVEL | ESTIMATE   |
|-----|-------------|----------|------------|--------|----------|----------|------|-----|-------------|-----|------------|------------|----------|-------|------------|
| 1   |             | Dominate |            |        |          | EFFLUENT | 1.00 |     |             |     | 27/12/2019 | 27/12/2019 | 1        | 1     | 200,000.00 |

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# PMI – Project Initiation Software – Define Project Requirements

Generate DCI, BBU, MR, WO Automatically using this document

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- My Home
- My Documents
- My Tasks
- My Tickets
- My Activities
- My Masters
- Category
- Equipmentlist

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
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- Process Dictionary
- Process Design
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## EQUIPMENTLIST

My Masters > EQUIPMENTLIST

MobileERP Edit EQUIPMENTLIST Page View

Equipmentlistid: 1

Equipmentlistdate: 12/05/2022 Cal

Project: 3 IOCL Jobno: 670 Siteid: 1

Save Document

CURRENT PAGE NO: 3 --> | 1 2 3 TOTAL RECORDS: 66

| EQUIPMENTS                                   | QTY | Equipment_List                      | Unit_Size_Calculation    | HCRM                                | Process_Datasheet                   | GAD                                 | MR                                  | Action               |
|--|-----|-------------------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|
| 61 <small>Dosing Pumps</small>               | 2   | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <span>Delete</span>  |
| 62 <small>Flash Mixer Agitator</small>       | 2   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <span>Delete</span>  |
| 63 <small>Flocculation Tank Agitator</small> | 2   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <span>Delete</span>  |
| 64 <small>Anoxic Tank Mixer</small>          | 2   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <span>Delete</span>  |
| 65 <small>Sludge Sump Agitator</small>       | 2   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <span>Delete</span>  |
| 66 <small>Dosing Tank Agitators</small>      | 2   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <span>Delete</span>  |
| 0 <small></small>                            | 1   | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <span>Add New</span> |

TOTAL QTY: 127.00

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# PMI – Project Initiation Software – Define Stakeholders Departments & Disciplines

The screenshot displays the MobileERP Project Manager interface for the HRRL project. The left sidebar contains navigation options under 'ETM ENTERPRISE TASK MANAGEMENT' and 'PMS PROJECT MANAGEMENT SYSTEM'. The main content area is divided into two sections: 'Billing Items' and 'Billing Process'. The 'Billing Items' section lists various departments with their respective item counts. The 'Billing Process' section lists the number of steps for each department. The 'Discipline' section features a search bar, a table of disciplines with their IDs and item counts, and a pagination control showing 1 to 6 of 6 entries.

**MobileERP** | ROHITKUMAR B. KHARVA / Projects | Paramount Limited

**Project Manager - HRRL** | Project > HRRL

### Billing Items

| Department    | Count |
|---------------|-------|
| Engineering   | 617   |
| Procurement   | 227   |
| Manufacturing | 170   |
| Construction  | 942   |
| Installation  | 243   |
| Piping        | 4     |
| Painting      | 7     |
| Commissioning | 1     |

### Billing Process

| Department    | Steps   | Count |
|---------------|---------|-------|
| Engineering   | 9 steps | 9     |
| Procurement   | 7 steps | 7     |
| Manufacturing | 8 steps | 8     |
| Construction  | 6 steps | 6     |
| Installation  | 6 steps | 6     |
| Piping        | 7 steps | 7     |
| Painting      | 6 steps | 6     |
| Commissioning | 3 steps | 3     |

### Discipline

Search:  Show entries: 10

| ID | DISCIPLINE | NO OF ITEMS |
|----|------------|-------------|
| 10 | Process    | 128         |
| 12 | Civil      | 1808        |
| 21 | Electrical | 71          |
| 22 | Instrument | 96          |
| 23 | Mechanical | 293         |
| 29 | Piping     | 94          |

Showing 1 to 6 of 6 entries

Prev 1 Next

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# PMI – Project Initiation Software – Define Billing Items

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- My Tickets
- My Activities
- My Masters

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
- Completed Projects
- Order Management

EPM ENTERPRISE PROCESS MGMT

- Process Dictionary
- Process Design
- Process Automation
- Process Case Creation
- Process Case Operation
- Process Investigations
- Process Library

EBI ENTERPRISE BI REPORTING

- My Apps
- My Dashboards
- My Reports
- My Trees

ECM ENTERPRISE CONTENT MGMT

- My Sites/Documents

Project Manager - HRRL

Project > HRRL

Billing Items

- Engineering 617
- Procurement 227
- Manufacturing 170
- Construction 942
- Installation 243
- Piping 4
- Painting 7
- Commissioning 1

Billing Process

- Engineering 9 steps 9
- Procurement 7 steps 7
- Manufacturing 8 steps 8
- Construction 6 steps 6
- Installation 6 steps 6
- Piping 7 steps 7
- Painting 6 steps 6
- Commissioning 3 steps 3

Engineering - Knaban / Daily Planning / Profitability / Bill Breakup

Search:  Show entries: 10

| ID   | NO                   | SUPPLY ITEM                              | WTG   | QTY | UOM | RATE   | BBU    | LINKS |
|------|----------------------|--|-------|-----|-----|--------|--------|-------|
| 1001 | RL-632-ETP-1-PDS-021 | Process Data Sheet - Equipment           | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1002 | RL-632-ETP-1-PDS-022 | Process Data Sheet - Agitator            | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1003 | RL-632-ETP-1-PDS-023 | Process Data Sheet - Pumps               | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1004 | RL-632-ETP-1-PDS-024 | Process Data Sheet - Blower, Compressor  | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1007 | RRL-632-ETP-2-PD-002 | Process Description & Treatment Philosop | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1008 | RL-632-ETP-2-USC-003 | Unit Size Calculation                    | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1010 | L-632-ETP-2-HCRM-011 | Hydraulic Calculation Rising Mains - Pum | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1012 | RL-632-ETP-2-PDS-021 | Process Data Sheet - Equipment           | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1013 | RL-632-ETP-2-PDS-023 | Process Data Sheet - Pumps               | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |
| 1014 | RL-632-ETP-2-PDS-024 | Process Data Sheet - Blower              | 0.005 | 1   | DWG | 310000 | 310000 | DRILL |

Showing 1 to 10 of 617 entries

Prev 1 2 3 4 5 ... 62 Next

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# PMI – Project Initiation Software – Define Billing Process

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EBI ENTERPRISE BI REPORTING

- My Apps
- My Dashboards
- My Reports
- My Trees

ECM ENTERPRISE CONTENT MGMT

- My Sites/Docs

## Project Manager - HRRL

Project > HRRL

**Billing Items**

- Engineering 617
- Procurement 227
- Manufacturing 170
- Construction 942
- Installation 243
- Piping 4
- Painting 7
- Commissioning 1

**Billing Process**

- Engineering 9 steps 9
- Procurement 7 steps 7
- Manufacturing 8 steps 8
- Construction 6 steps 6
- Installation 6 steps 6
- Piping 7 steps 7
- Painting 6 steps 6
- Commissioning 3 steps 3

### Business Process Design Master HRRL Engineering QuickModeler - GraphicModeler - GraphicViewer

| 1. Code-II  | 2. Code-I   | 3. 3D Model  | 4. Handover  | 5. As Built  | 6. Mechanical   | 7. Commissioning  | 8. Testing   | 9. Completion  |
|---|---|--|--|--|---|---|--|--|
| 6342. 55% on submission of drawgs & P&IDs (defined for review category in tender document) and their approval under Code-II on pro- rata basis. (INR) | 6342. 15% submission of drawings and P&IDs (defined for review category in tender document) and their approval under Code-I on pro- rata basis. (INR) | 6342. 5 % on submission and approval of 3D model at 30%, 60%, 90% stages and final issuance to site. (INR) | 6342. 5% on Completion of project documentation & data handover system (INR) | 6342. 10 % on submission of As Built drawings for the Unit(s) along-with its electronic files against the CONTRACTORS certified Running Account Bill(s) along with operation and instruction manuals | 6342. 5% on Mechanical Completion of the Unit(s) against the CONTRACTORs certified Running Account Bill(s). | 6342. 2% on Commissioning of the Unit(s) against the CONTRACTORs certified Running Account Bill(s). | 6342. 2% on completion of Performance Guarantee Test Run of the Unit(s) against the CONTRACTORS certified Running Account Bill(s). | 6342. 1% on completion of all work in all respect and acceptance thereof and submission of all final documents against contractors certified Final bill. |
| <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 55   | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 15   | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 5   | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 5                       | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 10  | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 5  | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 2  | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 2   | <b>ENGINEERING</b><br>DAYS: 1<br>HRS: 1<br>PROGRESS: 1   |
| <u>What Next</u>  | <u>What Next</u>  | <u>What Next</u>   | <u>What Next</u>   | <u>What Next</u>   | <u>What Next</u>  | <u>What Next</u>  | <u>What Next</u>   | <u>What Next</u>   |
| 1.CHECKLIST 1<br>2.CHECKLIST 2  | 1.CHECKLIST 1<br>2.CHECKLIST 2  | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3  | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3                              | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3  | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3   | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3   | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3  | 1.CHECKLIST 1<br>2.CHECKLIST 2<br>3.CHECKLIST 3  |

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# PMI – Project Planning Documents

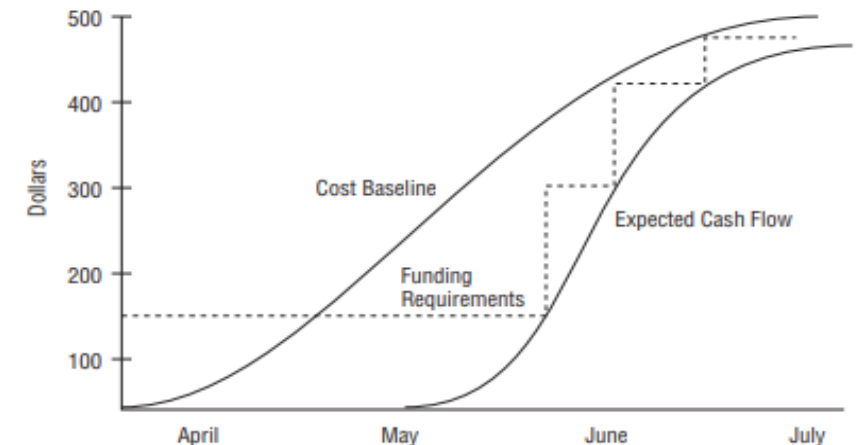
❑ **Project Management Plan (PMP):** The tactical view of how you'll manage the project. You'll need some or all of the following:

- ❑ **Project Plan:** With the product, activity and resource plans and also the budget.
- ❑ **Risk Plan:** How you will control risk on the project, including reporting procedures.
- ❑ **Quality Plan:** The level of quality to be achieved, and how you will achieve it.
- ❑ **Communications Plan:** What information will be needed and how it will be communicated.
- ❑ **Stakeholder Plan:** If you have a significant amount of Stakeholder management to do, how you will do it.

**TABLE 7.1** CPM Calculation

| Activity Number | Activity Description   | Dependency | Duration | Early Start | Early Finish | Late Start | Late Finish | Float/Slack |
|-----------------|------------------------|------------|----------|-------------|--------------|------------|-------------|-------------|
| 1               | Project Deliverables   | —          | 12       | 4/1         | 4/12         | 4/1        | 4/12        | 0           |
| 2               | Procure Hardware       | 1          | 2        | 4/13        | 4/14         | 6/19       | 6/20        | 68          |
| 3               | Test Hardware          | 2          | 8        | 4/15        | 4/22         | 6/21       | 6/28        | 68          |
| 4               | Procure Software Tools | 1          | 10       | 4/13        | 4/22         | 4/13       | 4/22        | 0           |
| 5               | Write Programs         | 4          | 45       | 4/23        | 6/6          | 4/23       | 6/6         | 0           |
| 6               | Test and Debug         | 5          | 22       | 6/7         | 6/28         | 6/7        | 6/28        | 0           |
| 7               | Install                | 3, 6       | 8        | 6/29        | 7/6          | 6/29       | 7/6         | 0           |
| 8               | Training               | 7          | 3        | 7/7         | 7/9          | 7/7        | 7/9         | 0           |
| 9               | Acceptance             | 8          | 1        | 7/10        | 7/10         | 7/10       | 7/10        | 0           |

**FIGURE 7.5** Cost baseline, funding requirements, and cash flow



# PMI – Project Plan

| Project Name—Construction Project (Sample) |  |          |                    |            |            |            |              |               |
|--|--|----------|--------------------|------------|------------|------------|--------------|---------------|
| Activity ID                                | Activity Name                                  | Duration | Remaining Duration | Start      | Finish     | Successors | Actual Start | Actual Finish |
| <b>1</b>                                   | <b>SUMMARY SCHEDULE</b>                        | 1349     | 540                | 24-Jan-10A | 18-Jun-14  |            | 24-Jan-10    |               |
| <b>1.1</b>                                 | <b>MILESTONES</b>                              | 58       | 0                  | 24-Jan-10A | 31-Mar-10A |            | 24-Jan-10    | 31-Mar-10     |
| <b>1.1.1</b>                               | <b>MOBILIZATION</b>                            | 58       | 0                  | 24-Jan-10A | 31-Mar-10A |            | 24-Jan-10    | 31-Mar-10     |
| A1000                                      | SIGNING OF CONTRACT                            | 0        | 0                  | 24-Jan-10A |            | A1020      | 24-Jan-10    |               |
| A1020                                      | PRELIMINARY SITE SURVEY                        | 7        | 0                  | 24-Jan-10A | 31-Jan-10A | A1030      | 24-Jan-101   | 31-Jan-10     |
| A1030                                      | SITE OFFICE MOBILIZATION & SETUP               | 45       | 0                  | 08-Feb-10A | 31-Mar-10A | A1170      | 08-Feb-10    | 31-Mar-10     |
| <b>1.2</b>                                 | <b>ENGINEERING</b>                             | 449      | 0                  | 01-Feb-10A | 21-Jul-11A |            | 01-Feb-10    | 21-Jul-11     |
| <b>1.2.1</b>                               | <b>CIVIL</b>                                   | 92       | 0                  | 01-Feb-10A | 18-May-10A |            | 01-Feb-10    | 18-May-10     |
| <b>1.2.1.1</b>                             | <b>LAYOUTS</b>                                 | 51       | 0                  | 01-Feb-10A | 31-Mar-10A |            | 01-Feb-10    | 31-Mar-10     |
| A1170                                      | PREPARATION OF CIVIL SHOP DRAWINGS             | 28       | 0                  | 01-Feb-10A | 04-Mar-10A | A1180      | 01-Feb-10    | 04-Mar-10     |
| A1180                                      | SUBMISSION OF CIVIL SHOP DRAWINGS              | 3        | 0                  | 04-Mar-10A | 07-Mar-10A | A1190      | 04-Mar-10    | 07-Mar-10     |
| A1190                                      | APPROVAL OF CIVIL SHOP DRAWINGS                | 21       | 0                  | 08-Mar-10A | 31-Mar-10A | A1290      | 08-Mar-10    | 31-Mar-10     |
| <b>1.2.1.2</b>                             | <b>PIPE SUPPORTS &amp; PITS</b>                | 41       | 0                  | 01-Apr-10A | 18-May-10A |            | 01-Apr-10    | 18-May-10     |
| A1290                                      | PREPARATION OF PIPE SUPPORTS AND PITS DRAWINGS | 18       | 0                  | 01-Apr-10A | 21-Apr-10A | A1300      | 01-Apr-10    | 21-Apr-10     |
| A1300                                      | SUBMISSION OF PIPE SUPPORTS AND PITS DRAWINGS  | 2        | 0                  | 22-Apr-10A | 24-Apr-10A | A1310      | 22-Apr-10    | 24-Apr-10     |

# Project Planning - Risk Plan



Figure 3-3. Risk planning flow diagram

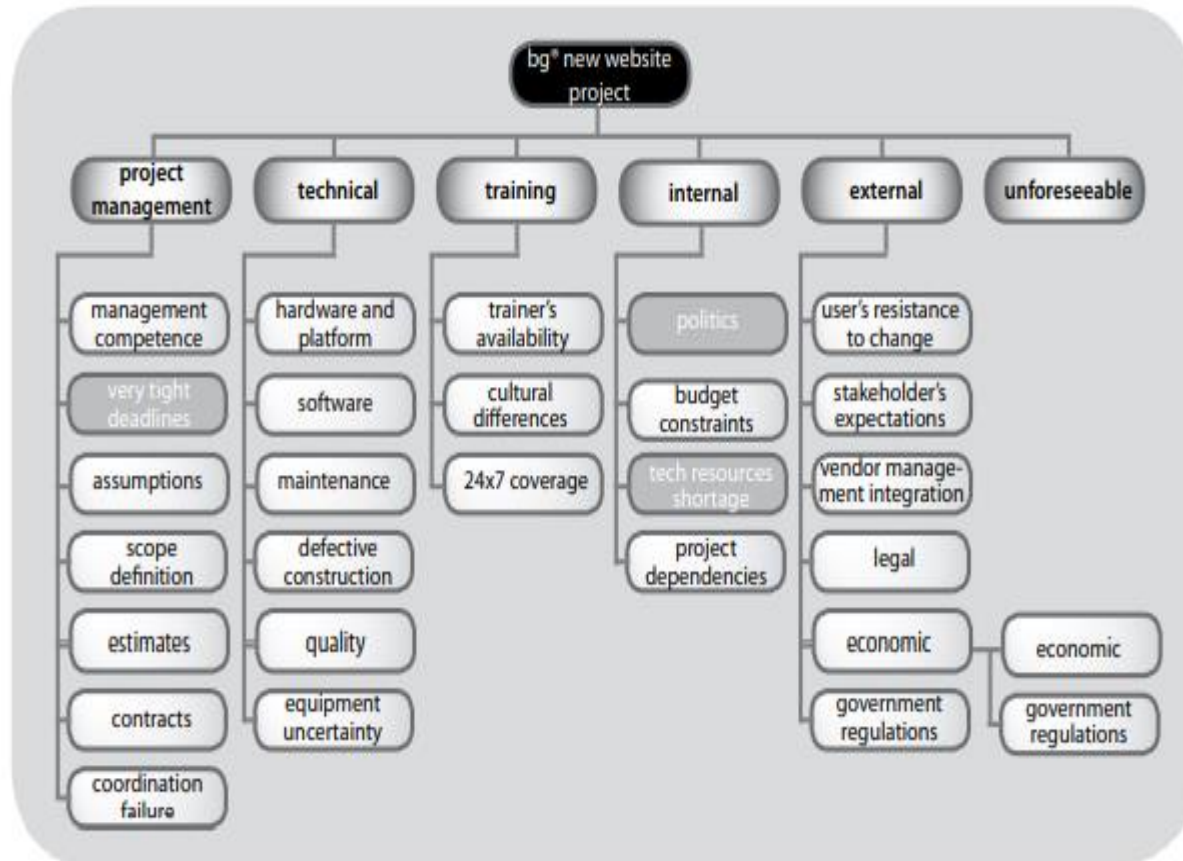


Figure 3.3 Risk Breakdown Structure (RBS)

# Why Projects Fail?.

Table 10-1. Common Root Causes of Project Failure Linked to Poor Execution of the Project Management Mechanics

## Failure Characteristics

## Breakdown in the PM Mechanics

Schedule slips due to significant amount of unplanned work

Incomplete or missing WBS  
 Incomplete or missing Network Diagram  
 No explicit buffers included in the schedule  
 Poor change control process

Significant amount of firefighting

Inadequate risk management (risk identification, response plans, tracking)

Final deliverable wasn't what was expected

Poor stakeholder management  
 Inadequate requirements gathering  
 Insufficient change control

Surprise "No Go" decision

Insufficient stakeholder management  
 Inadequate release readiness planning

"No Go" decision due to a failure to meet compliance requirements (legal, regulatory, privacy, etc.)

Late realization that the team cannot deliver on time

Weak or insufficient schedule  
 Inadequate monitoring of project performance metrics

Insufficient change control

## RISK CHECKLIST

# PMI – Project Planning - others

# Sample Communication Plan

## Project Cost Management

| # | Category | Original Budget | Revised Budget | Actual Cost | Total | Comments |
|---|----------|-----------------|----------------|-------------|-------|----------|
| 1 | Software |                 |                |             |       |          |
| 2 | Hardware |                 |                |             |       |          |

## Project Quality Management Plan - Sample

| Measure                            | Unit | Frequency                                  | Target              | How  | Source of Data                               |
|------------------------------------|------|--|---------------------|--|--|
| Defect removal efficiency          | %    | At the completion of every build iteration | 99% (5% tolerance)  | Investigate the reason for deviation by analyzing defect severity, origin and effort spent<br><br>Work product review reports and test defects log | (Defects removed / Defects found) x 100      |
| Requirement Volatility Index       | %    | Monthly                                    | 99% (3% tolerance)  | Change request logs and resulting effort estimation  | (Change Requests / Total Requirements) x 100 |
| Schedule Variance                  | days | Monthly                                    | 0 (10% tolerance)   | MS Project (Forecast – Baseline)   | Project Schedule                             |
| Cost Variance                      | \$   | Monthly                                    | 0 (10% tolerance)   | MS Project (Forecast – Baseline)   | Project Schedule                             |
| Customer Satisfaction Index        | %    | Pre-project and post-project               | 95% (10% tolerance) | Comparison of Index pre and post-implementation  | Survey                                       |
| Major Defects Per Business Process | #    | Monthly                                    | 0 (20 tolerance)    | Inspection by Quality Manager  | Defect Log                                   |

| Stakeholder          | Information                | Frequency      | Method                       | Responsibility  |
|----------------------|----------------------------|----------------|------------------------------|-----------------|
| Steering Committee   | Milestone Report           | Monthly        | Email                        | Project Manager |
| Project Sponsor      | Progress Report            | Weekly         | Email                        | Project Manager |
| Project Team         | Progress Report            | Weekly         | Email/Post to Portal site    | Project Manager |
|                      | Meeting Minutes            | Weekly         | Email/Post to Portal site    | Project Manager |
|                      | Action Items               | Weekly         | Face to Face in Team Meeting | Project Manager |
| All Management Staff | Training Needs             | March, 2008    | Staff Meeting                | Sponsor         |
|                      | Changes project will bring | February, 2008 | Email and Letter             | Sponsor         |

## Sample Stakeholder Plan

| Stakeholder       | Title/role                | Interest: How much does the project affect them (1, 2, 3) | Influence: How much do they have? (1, 2, 3) | What's the stakeholder's most important goal? | How will he/she contribute?  | Best way to manage   | Contact info |
|-------------------|---------------------------|---|---|---|--|--|--------------|
| John V. Mashberg  | Project Manager           | 1   | 1   | To stay on time and on budget; no surprises   | Daily lead; will delegate smaller projects, but ultimately responsible | Phone call updates for high level milestones; weekly email summaries and occasional in-person meetings |              |
| Cyril Johnston    | Utility company President | 1   | 1   | Budget and timeline; happy constituents       | Very little on daily basis, but wants to be in the know                | Monthly meetings with milestones and budget info   |              |
| Utility employees |                           | 2   | 3   | Want to feel in the loop and valued           | Very little, but will want to be informed if asked by public           | General company-wide updates along with many other initiatives   |              |
|                   |                           | 2   | 2 (They can be                              | To protect                                    | May discuss in   | Get deep input   |              |

# PMI – Project Planning Software – Project Dept, Discipline & Milestone

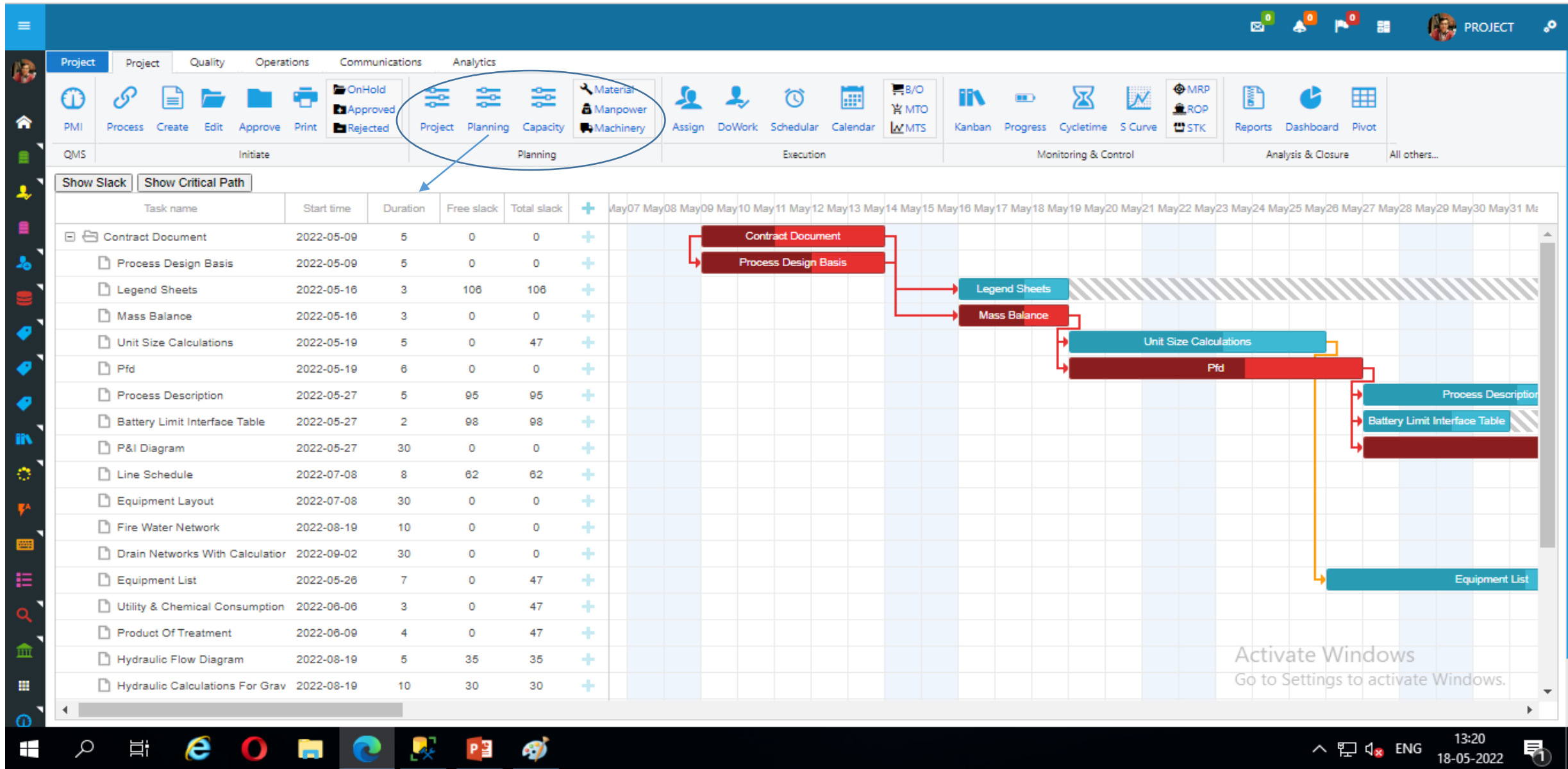
The screenshot displays a Project Planning Software interface. The top navigation bar includes tabs for Project, Quality, Operations, Communications, and Analytics. The toolbar contains various icons for project management, including a blue circle highlighting the 'Project' and 'Planning' buttons. The main workspace shows a Gantt chart for Project HRRL, with a task list on the left and a Gantt chart on the right. The task list includes:

| Task name     | Start time | Duration |   |
|---------------|------------|----------|---|
| Project HRRL  | 2022-01-01 | 450      | + |
| Planning      | 2022-01-02 | 60       | + |
| DCI Design    | 2022-01-02 | 60       | + |
| Engineering   | 2022-03-11 | 60       | + |
| Process       | 2022-05-11 | 60       | + |
| Civil         | 2022-05-11 | 60       | + |
| Electrical    | 2022-05-11 | 60       | + |
| Instrument    | 2022-05-11 | 60       | + |
| Mechanical    | 2022-05-11 | 60       | + |
| Piping        | 2022-05-11 | 60       | + |
| Procurement   | 2022-03-20 | 180      | + |
| Construction  | 2022-08-29 | 160      | + |
| Commissioning | 2022-12-20 | 60       | + |
| Closure       | 2023-03-02 | 30       | + |

The Gantt chart shows the project duration from 2022-01-01 to 2023-03-02. The chart is divided into quarters for each year. The project is represented by a large blue bar. Sub-tasks are shown as smaller blue bars, with arrows indicating dependencies. The sub-tasks are: Planning (2022-01-02 to 2022-02-01), DCI Design (2022-01-02 to 2022-02-01), Engineering (2022-03-11 to 2022-05-10), Process (2022-05-11 to 2022-07-10), Civil (2022-05-11 to 2022-07-10), Electrical (2022-05-11 to 2022-07-10), Instrument (2022-05-11 to 2022-07-10), Mechanical (2022-05-11 to 2022-07-10), Piping (2022-05-11 to 2022-07-10), Procurement (2022-03-20 to 2022-09-18), Construction (2022-08-29 to 2023-02-18), Commissioning (2022-12-20 to 2023-02-19), and Closure (2023-03-02 to 2023-03-02).

Activate Windows  
Go to Settings to activate Windows.

# PMI – Project Planning Software – Gantt chart with Critical Path & Slack



# PMI – Project Planning Software – Resource Levelling + Capacity Planning



Project | Quality | Operations | Communications | Analytics

PMI | Process | Create | Edit | Approve | Print | OnHold | Approved | Rejected | Project | Planning | Capacity | Material | Manpower | Machinery | Assign | DoWork | Scheduler | Calendar | B/O | MTO | MTS | Kanban | Progress | Cycletime | S Curve | MRP | ROP | STK | Reports | Dashboard | Pivot

QMS | Initiate | Planning | Execution | Monitoring & Control | Analysis & Closure | All others...

show gantt view

| Task name        | Start time | Owner      | Duration | April, 2019      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|------------------|------------|------------|----------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  |            |            |          | 02 Apr           | 03 Apr | 04 Apr | 05 Apr | 06 Apr | 07 Apr | 08 Apr | 09 Apr | 10 Apr | 11 Apr | 12 Apr | 13 Apr | 14 Apr | 15 Apr | 16 Apr | 17 Apr | 18 Apr |
| Unassigned       | 2019-04-03 |            | 12       | Unassigned       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Analysis         | 2019-04-03 | Unassigned | 6        | Analysis         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Release v1.0     | 2019-04-19 | Unassigned | 0        |                  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Beta Release     | 2019-04-05 | Unassigned | 0        |                  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| John             | 2019-04-03 |            | 8        | John             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Interior office  | 2019-04-03 | John       | 7        | Interior office  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Integrate System | 2019-04-05 | John       | 2        | Integrate System |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Test             | 2019-04-09 | John       | 4        | Test             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Design database  | 2019-04-03 | John       | 4        | Design database  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Mike             | 2019-04-03 |            | 24       | Mike             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

Resource: All

| Name        | Complete | Workload | Capacity | 02 Apr | 03 Apr | 04 Apr | 05 Apr | 06 Apr | 07 Apr | 08 Apr | 09 Apr | 10 Apr | 11 Apr | 12 Apr | 13 Apr | 14 Apr | 15 Apr | 16 Apr | 17 Apr | 18 Apr |
|-------------|----------|----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| QA          | 50%      | 71h      | 240h     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| John        | 50%      | 71h      | 240h     | -      | 10/8   | 10/8   | 12/24  | -      | -      | 12/16  | 8/8    | 8/24   | 8/8    | 3/24   | -      | -      | -      | -      | -      | -      |
| Development | 36%      | 133h     | 480h     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| Mike        | 48%      | 63h      | 240h     | -      | 9/16   | 9/24   | 9/8    | -      | -      | 9/24   | 9/24   | 3/16   | 3/16   | -      | -      | -      | -      | -      | -      | -      |

Activate Windows  
Go to Settings to activate Windows.

# PMI – Project Planning Software – Material / Subcon Planning

The screenshot displays a project planning software interface. At the top, there is a navigation bar with tabs for Project, Quality, Operations, Communications, and Analytics. Below this is a toolbar with various icons for project management, including 'Material', 'Manpower', and 'Machines'. A blue circle highlights the 'Material' icon in the toolbar.

The main area shows a Gantt chart for the project, spanning from September 22nd to October 5th, 2018. The chart is divided into several task categories:

- House Construction** (Total duration: 42 days)
- Architectural design** (Total duration: 4 days)
- Construction Phase** (Total duration: 27 days)

Individual tasks and their durations are listed in the table below:

| Task name                       | Start time | Resources | Duration |
|---------------------------------|------------|-----------|----------|
| House Construction              | 2018-09-23 |           | 42       |
| Architectural design            | 2018-09-23 |           | 4        |
| Create a draft of architecture  | 2018-09-23 |           | 2        |
| Prepare construction documents  | 2018-09-24 | Anna      | 2        |
| Agreement to architectural plan | 2018-09-26 | Anna      | 1        |
| Agreement with client           | 2018-09-27 | Anna      | 1        |
| Construction Phase              | 2018-09-28 |           | 27       |
| Foundation                      | 2018-09-28 |           | 5        |
| Excavation                      | 2018-09-28 | Finn      | 2        |
| Pour concrete                   | 2018-10-02 | J, C      | 3        |
| Ground floor                    | 2018-10-05 |           | 5        |

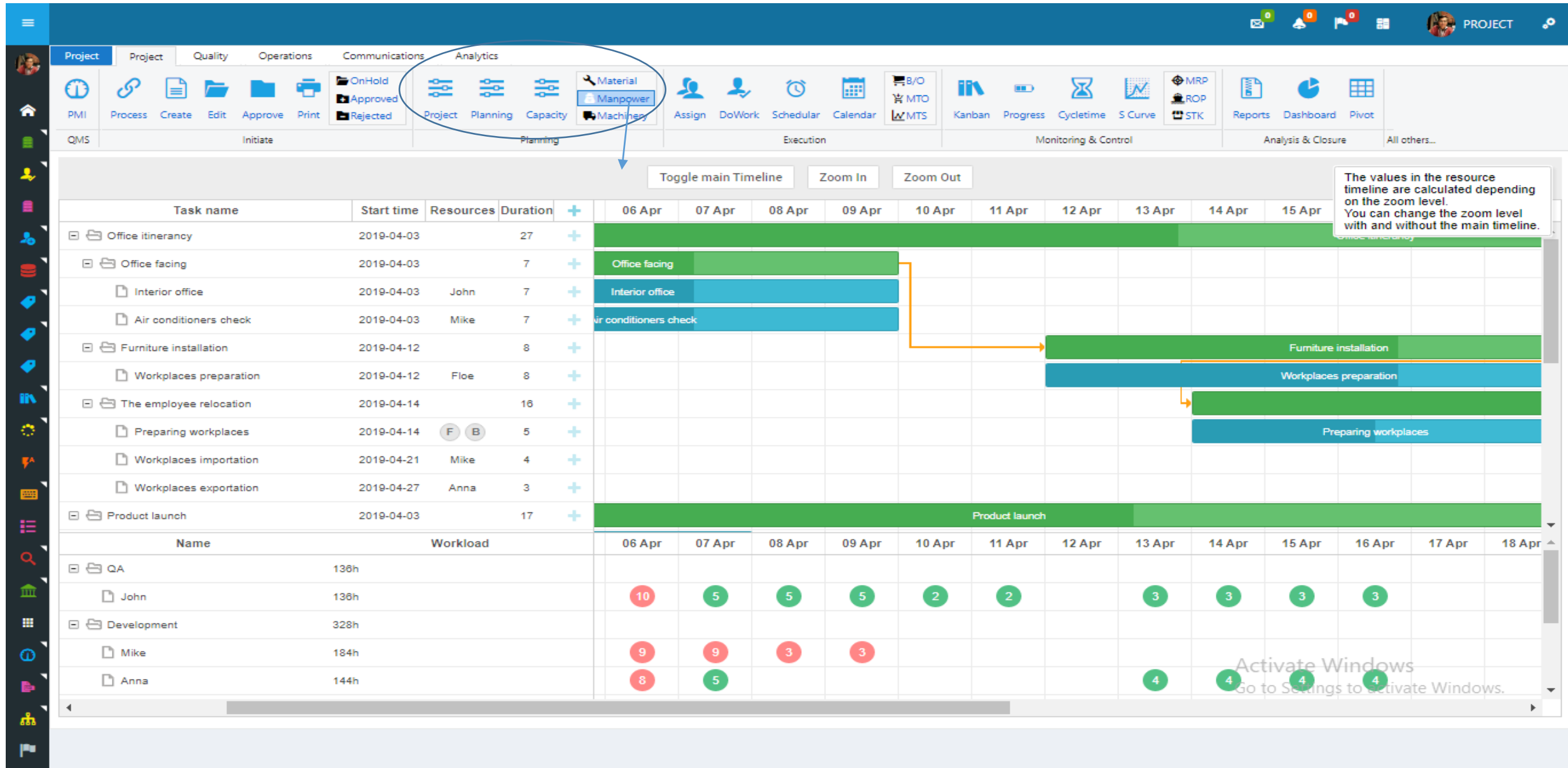
Below the Gantt chart, a resource allocation table shows the hours and materials allocated to various resources:

| Name                      | Allocated |
|---------------------------|-----------|
| Jake, Construction worker | 40 hours  |
| Tom, Plumber              | 40 hours  |
| Mike, Electrician         | 44 hours  |
| Joe, Handyman             | 48 hours  |
| Concrete                  | 35 m3     |

The interface also includes a sidebar with various icons and a top right corner with a 'PROJECT' label and a user profile picture.



# PMI – Project Planning Software – Manpower Planning



# PMI – Project Planning Software – Machinery Planning

PROJECT

Project Quality Operations Communications Analytics

PMI Process Create Edit Approve Print

OnHold Approved Rejected

Material  
Manpower  
**Machinery**

Assign DoWork Scheduler Calendar

B/O MTO MTS Kanban Progress Cycletime S Curve

MRP ROP STK Reports Dashboard Pivot

QMS
Initiate
Planning
Execution
Monitoring & Control
Analysis & Closure
All others...

### TODAYS BOOKING

NOS

■ LOCAL PAID BOOKING ■ LOCAL TOPAY BOOKING ■ EXPORT BOOKING

### TRANSPORTER AND FLEET MANAGEMENT

| ONGOING VEHICLES |          |       |             |              |               |                |
|------------------|----------|-------|-------------|--------------|---------------|----------------|
| MAKE             | PLATE NO | ROUTE | PICKUP DATE | PICKUP POINT | DELIVERY DATE | DELIVERY POINT |
| TATA             | PJ 4566  | NH8   | 01-01-2020  | MUMBAI       | 04-01-2020    | DELHI          |
| BMW              | HR 6768  | NH10  | 02-01-2020  | GODHRA       | 05-01-2020    | PATAN          |
| MERC             | KO 6788  | NH12  | 03-01-2020  | TORONTO      | 06-01-2020    | NEW YORK       |

| AVAILABLE VEHICLES |          |          |          |
|--------------------|----------|----------|----------|
| MAKE               | PLATE NO | CAPACITY | LOCATION |
| MERC               | JK5757   | 20T      | DELHI    |
| NISSAN             | KL6868   | 25T      | MUMBAI   |
| BMW                | JK8990   | 30T      | NY       |

**BOOKED BUT NOT DISPATCHED**  
9

Total Amount ₹ 9,871

**RECEIVED BUT NOT DELIVERED**  
2

Total Amount ₹ 1,582

**LR Options**

LR No.  Options: Select GO

**LR Tracking**

LR No.  GO

#### Time Log Sheet

Period From 01/02/2011 to 12/02/2011  
Baby Roller--(Baby Roller No.1)--(Baby Roller No.1)

| Date       | Work Mode | Starting | Closing  | TOTAL | NW Hr | Description | Diesel (Qty) |
|------------|-----------|----------|----------|-------|-------|-------------|--------------|
| 01/02/2011 | Working   | 1,510.00 | 1,520.00 | 10.00 | 6.00  | -           | -            |
| 04/02/2011 | Working   | 1,520.00 | 1,550.00 | 30.00 | 5.00  | -           | -            |
| Total      |           |          |          | 40    | 11    |             |              |

| Summary              |      |           |          |               |            |              |
|----------------------|------|-----------|----------|---------------|------------|--------------|
| Work Mode ( Per KM ) |      |           |          |               |            |              |
| Working              | Idle | BreakDown | ShutDown | Diesel Issued | Diesel Avg | Working Days |
| 40                   | 0    | 0         | 0        | 0             | 0          | 2            |

Activate Windows  
Go to Settings to activate Windows.

# PMI – Project Execution Documents

- ❑ **Project Log:** This functions as the Project Manager's journal. It contains reminders, notes, records of important phone calls, lessons being learned from the project, and so on. It's both simple and really useful.
- ❑ **Risk Log:** Another simple yet powerful log, the Risk Log has information on each risk and how it is being managed. It should be made available 'read-only' to everyone on the project so that everyone is aware of the risks and is watching out for them.
- ❑ **Change Log:** Not mentioned by many of the project approaches except the PRIME method, this log is powerful. If you keep a list of changes in this log you can quickly track which changes have been accepted, which have been rejected, who suggested them and, importantly, what they cost.
- ❑ **Stakeholder Log:** If you have a significant number of stakeholders in your project, you can keep a list in the log, perhaps grouped according to their interest. For example, operations staff, suppliers, other organisations that you work with and who will be affected.

## Kanban Board:

- ❑ **Quality Checklist:** A list of tests and other quality activities being done in a stage. Each item is then ticked off when it is done. The checklist is a simple but powerful tool for making sure that a planned test hasn't simply been overlooked.
- ❑ **Work Checklist:** A list of products to be developed in a stage, and then the date when each is delivered having been completed and successfully passing any tests. This is an extremely powerful progress checking tool.

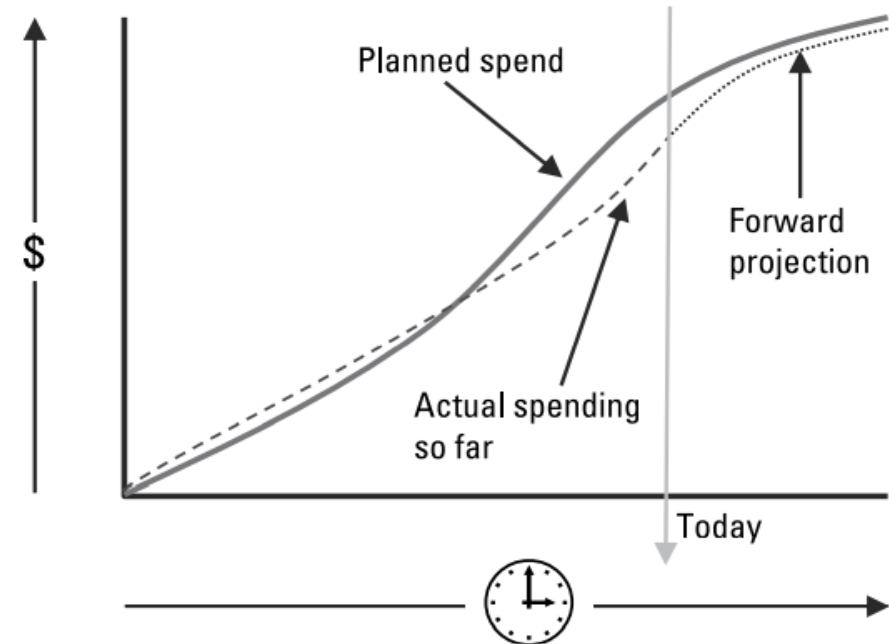


Figure 20-2: The S Curve

# PMI – Project Execution Logs

| Project Log       |                    |  |  |                         |            |              |                |               |  |
|-------------------|--------------------|--|--|-------------------------|------------|--------------|----------------|---------------|--|
| Project           |                    |  |  |                         | Project #  |              |                |               |  |
| Project manager   |                    |  |  |                         | Sponsor    | 0            |                |               |  |
| Project artifacts |                    |  |  |                         | Updated    |              |                |               |  |
| ID                | Issue Description  | Project Impact                               | Action Plan/Resolution                     | Owner                   | Importance | Date Entered | Date to Review | Date Resolved |  |
| 1                 | What is the issue? | How will this impact scope, schedule & cost? | How do you intend to deal with this issue? | Who manages this issue? |            |              |                |               |  |
| 2                 |                    |  |  |                         |            |              |                |               |  |
| 3                 |                    |  |  |                         |            |              |                |               |  |
| 4                 |                    |  |  |                         |            |              |                |               |  |
| 5                 |                    |  |  |                         |            |              |                |               |  |
| 6                 |                    |  |  |                         |            |              |                |               |  |

# Stakeholder Engagement Matrix

| Stakeholder | Risk | Influence Project Level | Interest Project Level | Project Phases |             |             |             |             | Engagement Level |
|-------------|------|-------------------------|------------------------|----------------|-------------|-------------|-------------|-------------|------------------|
|             |      |                         |                        | Initiation     | Planning    | Execution   | Control     | Close       |                  |
| Ricky Point | High | High                    | Low                    | RESPONSIBLE    | CONSULTED   | CONSULTED   | INFORMED    | CONSULTED   | High             |
| Martin Keg  | High | Low                     | High                   | CONSULTED      | RESPONSIBLE | INFORMED    | INFORMED    | CONSULTED   | Medium           |
| Zeher Ram   | High | High                    | Low                    | CONSULTED      | RESPONSIBLE | RESPONSIBLE | INFORMED    | CONSULTED   | Medium           |
| Zucker Tag  | High | High                    | High                   | CONSULTED      | RESPONSIBLE | CONSULTED   | INFORMED    | CONSULTED   | High             |
| Suman Meher | High | Low                     | Low                    | CONSULTED      | CONSULTED   | ACCOUNTABLE | INFORMED    | CONSULTED   | Low              |
| Mohan Tashe | High | High                    | High                   | RESPONSIBLE    | ACCOUNTABLE | CONSULTED   | RESPONSIBLE | RESPONSIBLE | High             |

= High  
 = Medium  
 = Low  
 = High  
 = Medium  
 = Low

# Change Control Log

| ID | Short Description of Change  | Date Requested | Date Needed | Date Change Made | Approved By         |
|----|--|----------------|-------------|------------------|---------------------|
| 1  | Add videography to scope of the wedding  | 3/15/06        | 10/14/06    | 07/15/06         | Father of the bride |
| 2  | Wedding dress cost exceeded budgeted amount – need to increase cost of the project | 4/1/06         | 4/5/06      | 4/5/06           | Father of the bride |

# RISK LOG

**Burndown Chart**

Shows how much work is yet to be completed

**Burnup Chart**

Shows how much work has been completed

**Combined Burn Chart**

Shows how much work has been completed and how much remains

| Reference | Risk Description   | Date  | Likelihood    | Impact | Risk Rating | Response   | Owner |
|-----------|--|-------|---------------|--------|-------------|--|-------|
| 1         | The main supplier cannot deliver on time because of other commercial commitments                       | 03/21 | Likely        | High   | High        | Include financial penalties in contract; build contingency into the schedule; monitor contractor performance | Annie |
| 2         | The lead time for the leased line exceeds 90 days  | 03/21 | Unlikely      | Medium | Medium      | Order leased line earlier than necessary; incur additional rental fees                                       | Jim   |
| 3         | Release of the new system is delayed because user acceptance testing commences after the planned start | 03/21 | Very likely   | High   | High        | Employ temporary staff to free up resources for testing; revise project schedule                             | Mark  |
| 4         | There is insufficient capacity to create additional database instances for data migration and testing  | 04/18 | Very unlikely | Medium | Low         | Prioritize projects; temporarily remove alternative development instance                                     | Jim   |

Risk Log

# PMI – Project Execution - Checklists

## Quality Checklist

| Quality Checklist  |              |    |     |      |          |
|--|--------------|----|-----|------|----------|
| Project:   |              |    |     |      | Date:    |
| Quality Item   | Verification |    |     |      | Comments |
|  | Yes          | No | N/A | Date |          |
| Does the project have an approved quality management plan?                           |              |    |     |      |          |
| Has the quality management plan been reviewed by all stakeholders?                   |              |    |     |      |          |
| Do all stakeholders have access to the quality management plan?                      |              |    |     |      |          |
| Is the quality management plan consistent with the rest of the overall project plan? |              |    |     |      |          |
| Have product quality metrics been established, reviewed, and agreed upon?            |              |    |     |      |          |
| Have process quality metrics been established, reviewed, and agreed upon?            |              |    |     |      |          |
| Do all metrics support a quality standard which is acceptable to the customer?       |              |    |     |      |          |
| Do all metrics have agreed upon collection mechanisms?                               |              |    |     |      |          |

**Project Name**  
**Consultant Name**

**DAILY CHECKLIST STATUS**

**QC Checklist**

| Sr.No. | Checklist No. | Description | Activity | Area/Location | Action | Remedial Action <sup>1</sup> | Remark |
|--------|---------------|-------------|----------|---------------|--------|------------------------------|--------|
|        |               |             |          |               |        |                              |        |
|        |               |             |          |               |        |                              |        |
|        |               |             |          |               |        |                              |        |

## Work Checklist

Farahdoun Limited - Gujarat  
SUMMARY OF BILLING BREAKUP OF ENGINEERING  
EFFLUENT TREATMENT PLANT, HRRL, RAJASTHAN

| TASK  | ESTIMATE | BUDGET | BBU    | COST | PROFIT   | 55% on submission of drawgs & P&IDs (defined for review category in tender document) and their approval under Code-II on pro-rata basis. (INR) | 15% submission of drawings and P&IDs (defined for review category in tender document) and their approval under Code-I on pro-rata basis. (INR) | 5% on submission and approval of 3D model at 30%, 60%, 90% stages and final issuance to site. (INR) | 5% on Completion of project documentation & data handover system (INR) | 10% on submission of As Built drawings for the Unit(s) along-with its electronic files against the CONTRACTORs certified Running Account Bill(s) along with operation and instruction manuals | 5% on Mechanical Completion of the Unit(s) against the CONTRACTORs certified Running Account Bill(s). | 2% on Commissioning of the Unit(s) against the CONTRACTORs certified Running Account Bill(s). | 2% on completion of Performance Guarantee Test Run of the Unit(s) against the CONTRACTORs certified Running Account Bill(s). | 1% on completion of all work in all respect and acceptance thereof and submission of all final documents against contractors certified Final bill. | TOTAL  |
|---|----------|--------|--------|------|----------|--|--|---|--|---|---|---|--|--|--------|
|   |          |        |        |      |          | 55%  | 15%  | 5%  | 5%   | 10%   | 5%  | 2%  | 2%   | 1%   | 100%   |
| 1. Design and Detailed Engineering of ETP & Hazardous Waste Handling Facilities tender, Break up of FORM (SP-1) |          |        |        |      | 80560000 |  |  |   |  |   |   |   |  |  |        |
| 1.1 Residual Design & Basic Engineering (SP-4)  |          |        |        |      | 62000000 |  |  |   |  |   |   |   |  |  |        |
| BEP-1-OWS / CRWS / SPENT CAUSTIC TREATMENT PROCESS P&IDs  |          |        |        |      | 27662800 |  |  |   |  |   |   |   |  |  |        |
| Control & Instrument Philosophy   | 0        | 0      | 21700  | 0    | 21700    | 11935  | 3255   | 1085  | 1085   | 2170  | 1085  | 434   | 434  | 217  | 21700  |
| Line Schedule   | 0        | 0      | 21700  | 0    | 21700    | 11935  | 3255   | 1085  | 1085   | 2170  | 1085  | 434   | 434  | 217  | 21700  |
| Legend Sheet  | 0        | 0      | 21700  | 0    | 21700    | 11935  | 3255   | 1085  | 1085   | 2170  | 1085  | 434   | 434  | 217  | 21700  |
| P&I Diagram - Battery Limit Inlet Lines to OWS Tank   | 0        | 0      | 620000 | 0    | 620000   | 341000   | 93000  | 31000   | 31000  | 62000   | 31000   | 12400   | 12400  | 6200   | 620000 |
| P&I Diagram - OWS Tank & API Feed Pump  | 0        | 0      | 620000 | 0    | 620000   | 341000   | 93000  | 31000   | 31000  | 62000   | 31000   | 12400   | 12400  | 6200   | 620000 |





# PMI – Project Execution Software – Assign Work

The screenshot displays the PMI Project Execution Software interface. The top navigation bar includes tabs for Project, Quality, Operations, Communications, and Analytics. A blue circle highlights the 'Assign' button in the 'Execution' section of the top bar. The main content area is titled 'MANAGER DECISION MAKING SCREEN' and 'MONITOR DELAYS AND ASSIGN RIGHTS FOR EACH ACTIVITY - DOCUMENT: REVISIONID: 28'. It shows a table for 'EFFLUENT TREATMENT PLANT, HRRL, RAJASTHAN- Control & Instrument Philosophy - REVISION NO: 1' with columns for STEPS (1-6), PROCESS, TASK, LOCATION, DEPARTMENT, and PROGRESS.

| STEPS           | 1                                   | 2  | 3  | 4  | 5  | 6   |
|-----------------|-------------------------------------|--|--|--|--|---|
| PROCESS         | Code-II                             | Code-I   | Approval   | Handover   | Submission   | Mechanical  |
| TASK            | 55% on submission of drawgs & P&IDs | 15% submission of drawings and P&IDs (defined for review category in tender document) and their approval under Code-II on pro- rata basis. (INR) | 5 % on submission and approval of 3D model at 30%, 60%, 90% stages and final issuance to site. (INR) | 5% on Completion of project documentation & data handover system (INR) | 10 % on submission of As Built drawings for the Unit(s) along-with its electronic files against the CONTRACTORs certified Running Account Bill(s) along with operation and instruction manuals | 5% on Mechanical Completion of the Unit(s) against th CONTRACTOR certified Running Account Bill(s). |
| LOCATION        | Office                              | Office   | Office   | Office   | Office   | Office  |
| DEPARTMENT(DID) | Process(6342)                       | Process(6342)  | Process(6342)  | Process(6342)  | Process(6342)  | Process(6342)   |
| PROGRESS        | 55                                  | 15   | 5  | 5  | 10   | 5   |



# PMI – Project Execution Software – Do Work

The screenshot displays the PMI Project Execution Software interface. The top navigation bar includes tabs for Project, Quality, Operations, Communications, and Analytics. Below this, a secondary bar contains various functional icons grouped into categories: Initiate, Planning, Execution, Monitoring & Control, and Analysis & Closure. The 'Execution' category is highlighted with a blue circle, and the 'DoWork' icon within it is pointed to by a blue arrow. The main workspace is a Kanban board with three columns: 'ToDo 5/2022', 'InProgress', and 'Completed'. Each column contains project cards with details such as project name, plan, start time, and delay. A Windows taskbar is visible at the bottom, and a watermark for 'Activate Windows' is present in the bottom right corner.

**Navigation Bar:**

- Project | Quality | Operations | Communications | Analytics
- PMI | Process | Create | Edit | Approve | Print | OnHold | Approved | Rejected | Project | Planning | Capacity | Material | Manpower | Machinery | Assign | DoWork | Scheduler | Calendar | B/O | MTO | MTS | Kanban | Progress | Cycletime | S Curve | MRP | ROP | STK | Reports | Dashboard | Pivot
- QMS | Initiate | Planning | Execution | Monitoring & Control | Analysis & Closure | All others...

**ToDo 5/2022:**

- 5.EPC Project-  
PROJECT INITIATE  
PREPARE DCI/L1/L2/L3-PROJECT-ENGINEERS INDIA LIMITED - CPCL(DE-OILER PACKAGE)PL: CPCL  
Plan: 1 Days 1 Hrs  
Start: 17/05/2022 12:48:51  
Delay: 1 days-[Start](#)
- 85.EPC Invoicing-  
RCVD-Collections Entry when payments received-INVOICE-Paramount Limited - Assam  
Plan: 1 Days 1 Hrs  
Start: 26/04/2022 14:58:08  
Delay: 22 days-[Start](#)
- 86.EPC Invoicing-  
RCVD-Collections Entry when payments received-INVOICE-INDIAN OIL CORPORATION LIMITED-ASSAM-DEBTORS  
Plan: 1 Days 1 Hrs  
Start: 26/04/2022 14:58:09

**InProgress:**

- 4.EPC Project-  
PROJECT INITIATE -PREPARE DCI/L1/L2/L3-PROJECT-ENGINEERS INDIA LIMITED - ONGC URANPL: ONGC  
Plan: 1 Days 1 Hrs  
Start: 07/05/2022 18:15:44  
Delay: 11 days-[Start](#)
- 3.EPC Project-  
PROJECT PLANNING - PREPARE BBU-PROJECT-IOCL(Gujarat Refinery)PL: IOCL  
Plan: 1 Days 1 Hrs  
Start: 08/04/2022 17:59:37  
Delay: 40 days-[Start](#)
- End  
0

**Completed:**

- 2.EPC Project-  
PROJECT CLOSURE-PROJECT-HPCL RAJASTHAN REFINERY LIMITED-632PL: HRRL  
Plan: 1 Days 1 Hrs  
Start: 06/05/2022 13:47:01  
Delay: 12 days-[Start](#)
- End  
0

Activate Windows  
Go to Settings to activate Windows.

# PMI – Project Tracking, Monitoring & Closure Documentation

- ❑ **Stage Progress Report:** For the Project Manager to report progress to the Steering Group, possibly copied to others such as organisational managers and Project Managers of any interfacing projects.
- ❑ **Team Progress Report:** Where you have a project with multiple teams working, the Team Leaders will need to inform the Project Manager of progress on their current work assignments.
- ❑ **Stage Completion Report:** Produced at the end of each stage, this report is used by the Project Manager to inform the Project Steering Group of how the stage went. So, what was the final time and cost? Were there any problems that will affect future stages? This report may be given as a presentation at the Stage Gate.
- ❑ **Project Completion Report:** Produced by the Project Manager at the end of the project, it reports how the whole project went. It should also record any lessons learned during the project, good and bad, that may be of value to future projects.
- ❑ **Project Evaluation Report:** Produced after the end of the project, this sets down information on benefits realisation (what the actual benefits were compared to what was expected when the project started) and the suitability of project deliverables after an initial period of use.

- ❑ **Project Issue (or Project Memo):** A communication from anyone in the project to the Project Manager, but you may choose to use them for written communications between the Project Manager and the Steering Group too.
- ❑ **Work Package:** A work assignment given to a Team Leader by a Project Manager. It sets down what work is to be done and how. A project team will work through one or more Work Packages in a Delivery Stage.

## *Project Completion Checklist*

There's quite a lot to do towards the end of a project so you're a long way from putting your feet up, breathing a sigh of relief and thinking it's all over. Here's a checklist to help you get organised and make sure that you don't miss anything.

- ❑ **Product completion:** Check to be quite sure that all project products are completed, which includes successfully passing any tests and checks. If you're doing version control you should check that too and make sure that everything has a 'complete' status.
- ❑ **Signoffs and handovers:** Check that all necessary products have been signed off as okay, and that any handovers to users have been done.
- ❑ **Handover documentation:** If there should be formal handover documentation (such as legal documents), check that it's been completed and is properly stored.
- ❑ **Acceptance criteria:** Check to ensure that the project acceptance criteria (set down in the Charter) have been met. Hopefully that will be all of them, but see the tip below if not.

# PMI – Project Tracking, Monitoring, Delivery & Closure

## Project Management Basics

Summary: Project is 43% complete; continuing to make progress as planned; no issues.

| Organization Project Name  |                        |                           |                                  |                |  |  |
|--|------------------------|---------------------------|----------------------------------|----------------|--|--|
| Project Name and High-Level Description  |                        |                           |                                  |                |  |  |
| Exec Sponsor:  |                        |                           | PM:                              |                |  |  |
| Start Date:  |                        | End Date:                 |                                  | Report Period: |  |  |
| Status:  | Schedule               | Resources                 | Budget                           |                |  |  |
| Key Activities   | Recent Accomplishments | Upcoming Key Deliverables | Status                           |                |  |  |
| Activity #1  |                        |                           | Concern                          |                |  |  |
| Activity #2  |                        |                           | On Track                         |                |  |  |
| Activity #3  |                        |                           | Issue                            |                |  |  |
| <div style="display: flex; justify-content: space-around; text-align: center;"> <span>On Track</span> <span>Complete</span> <span>Concern</span> <span>Issue</span> <span>On Hold</span> <span>Canceled</span> <span>Not Started</span> </div> |                        |                           |                                  |                |  |  |
| Current Key Risks - Threats and opportunities; Mitigation  |                        |                           | Current Key Issues - Description |                |  |  |
|  |                        |                           |                                  |                |  |  |

| <p><b>Key Milestones</b></p> <table border="1"> <thead> <tr> <th>Milestone</th> <th>Plan</th> <th>Trend</th> <th>Actual</th> </tr> </thead> <tbody> <tr> <td>Project Start</td> <td>12/20</td> <td>-</td> <td>12/20</td> </tr> <tr> <td>1st Draft Comp</td> <td>7/16</td> <td>6/1</td> <td>-</td> </tr> <tr> <td>Editing Comp</td> <td>8/15</td> <td>8/15</td> <td>-</td> </tr> <tr> <td>Final Proof</td> <td>10/1</td> <td>10/1</td> <td>-</td> </tr> <tr> <td>Book Published</td> <td>10/15</td> <td>10/15</td> <td>-</td> </tr> </tbody> </table> <p>Remaining Schedule Buffer: 3 weeks</p> | Milestone  | Plan  | Trend  | Actual | Project Start | 12/20 | - | 12/20 | 1st Draft Comp | 7/16 | 6/1 | - | Editing Comp | 8/15 | 8/15 | - | Final Proof | 10/1 | 10/1 | - | Book Published | 10/15 | 10/15 | - | <p><b>Highlights:</b></p> <ul style="list-style-type: none"> <li>Submitted first draft of Ch 3</li> <li>First draft of Ch 4 50%</li> </ul> <p><b>Lowlights:</b><br/>Missed a drawing for Ch 3; plan to complete this next week</p> |
|--|--|-------|--------|--------|---------------|-------|---|-------|----------------|------|-----|---|--------------|------|------|---|-------------|------|------|---|----------------|-------|-------|---|--|
| Milestone  | Plan   | Trend | Actual |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| Project Start  | 12/20  | -     | 12/20  |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| 1st Draft Comp   | 7/16   | 6/1   | -      |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| Editing Comp   | 8/15   | 8/15  | -      |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| Final Proof  | 10/1   | 10/1  | -      |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| Book Published   | 10/15  | 10/15 | -      |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |
| <p><b>Plans for next week:</b></p> <ul style="list-style-type: none"> <li>Submit first draft of Ch4</li> <li>Complete 50% of Ch5 first draft</li> </ul>  | <p><b>Risks:</b></p> <ul style="list-style-type: none"> <li>Weeklong business trip at the end of the month; limited ability to work on this project while traveling</li> </ul> <p><b>Key Decisions:</b><br/>Complete first draft manuscript before summer vacation (6/1)</p> |       |        |        |               |       |   |       |                |      |     |   |              |      |      |   |             |      |      |   |                |       |       |   |  |

Figure 4-1. Project status report example

# PMI – Project Tracking, Monitoring, Delivery & Closure

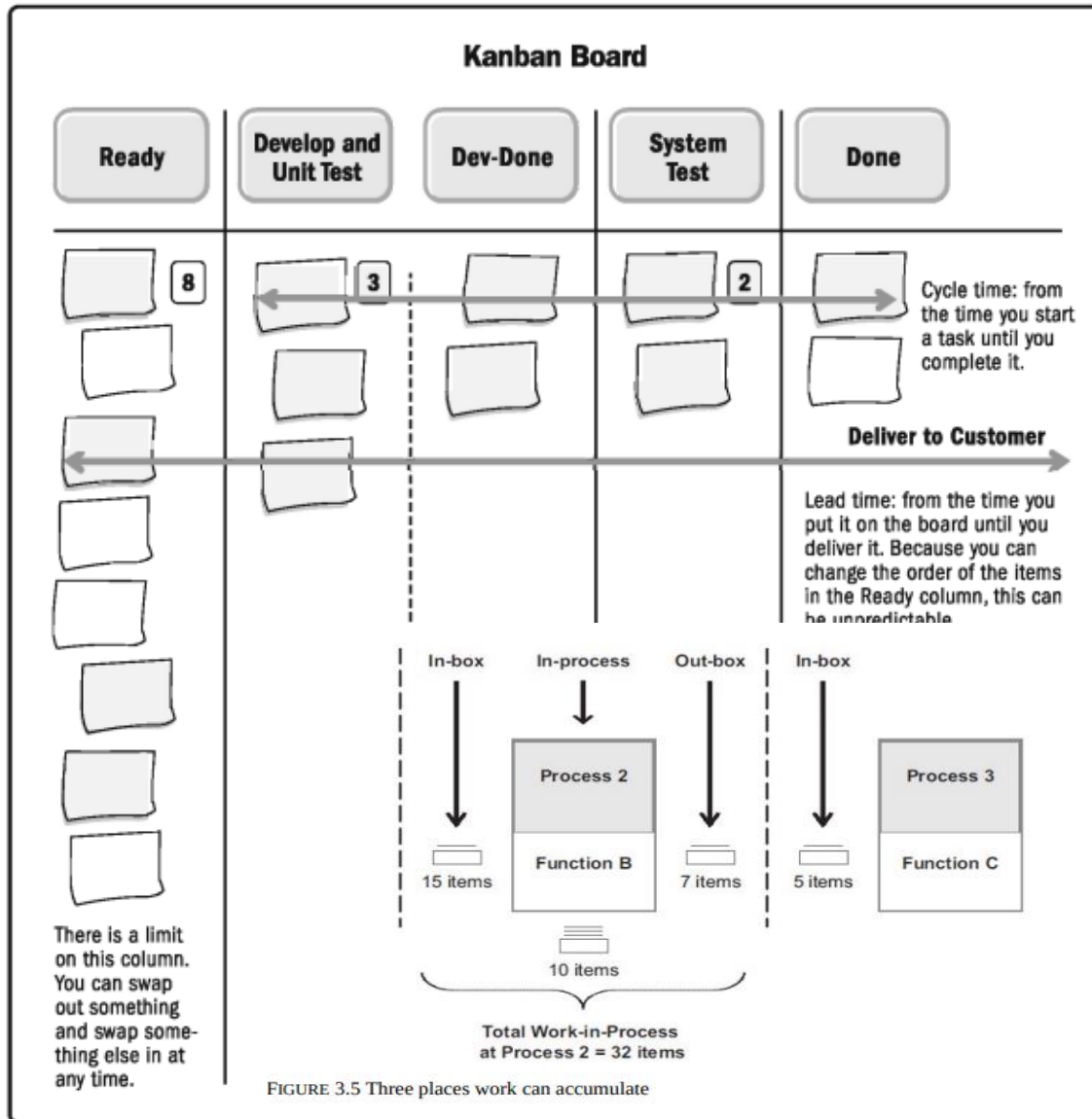


FIGURE 3.5 Three places work can accumulate

Figure 2-29. Task Board or Kanban Board

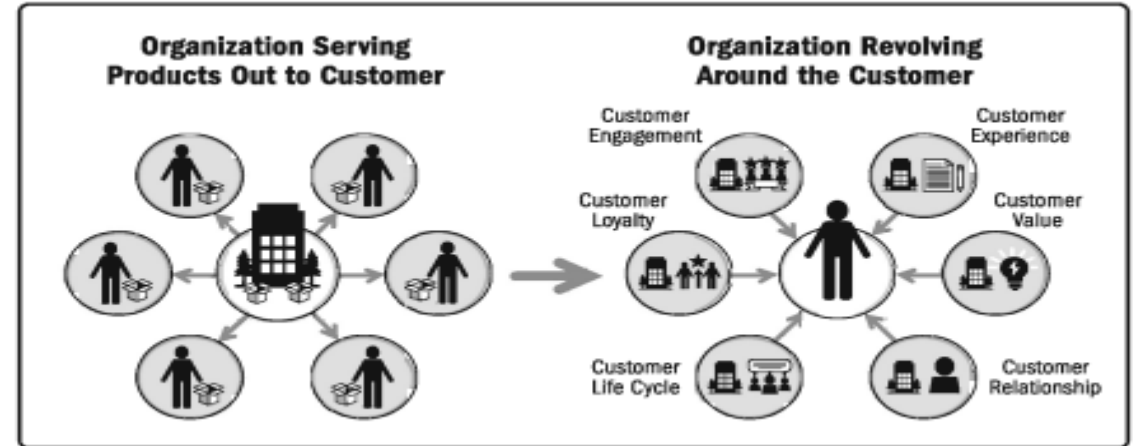


Table 3-1. Common Situations and Tailoring Suggestions

| Situation   | Tailoring Suggestion  |
|---|---|
| Poor quality deliverables   | Add more feedback verification loops and quality assurance steps.   |
| Team members unsure of how to proceed or undertake their work   | Add more guidance, training, and verification steps.  |
| Long delays waiting for approvals   | Try streamlining approval decisions through fewer people authorized to make decisions up to certain value thresholds.   |
| Too much work in progress or high rates of scrap  | Use techniques like value stream mapping and kanban boards to visualize the work, identify the issues, and propose solutions.   |
| Stakeholders are not engaged or share negative feedback   | Evaluate whether sufficient information is being shared with stakeholders; feedback loops are present and working; and deeper engagement may work better than simply communicating.                         |
| Lack of visibility and understanding of project progress  | Check to ensure appropriate measures are being collected, analyzed, shared, and discussed during team and stakeholder meetings; validate agreement with the measures within the team and with stakeholders. |
| Issues and/or risks for which the team is unprepared continue to surface, requiring the team to react rather than progress work | Explore root causes to identify whether there are related gaps in project processes or activities.  |

# PMI – Project Tracking, Monitoring & Closure Software

The screenshot displays a project management software interface with a top navigation bar and a main workspace. The top bar includes a menu icon, a user profile, and the word "PROJECT". Below this is a secondary navigation bar with tabs for "Project", "Quality", "Operations", "Communications", and "Analytics". A toolbar contains various icons for actions like "On Hold", "Approved", "Rejected", "Material", "Manpower", "Machinery", "Assign", "DoWork", "Scheduler", "Calendar", "B/O", "MTO", "MTS", "Kanban", "Progress", "Cycletime", "S Curve", "MRP", "ROP", "STK", "Reports", "Dashboard", and "Pivot". The main workspace is divided into four vertical panels: "INITIATE", "PLANNING", "EXECUTION", and "CLOSURE". The "EXECUTION" panel is currently selected and highlighted. Each panel contains a list of project entries with details such as ID, company name, and project name. A red circle highlights the "Kanban", "Progress", "Cycletime", and "S Curve" icons in the toolbar. The bottom of the screen shows a Windows taskbar with various application icons and a system tray with the date and time.

**Project Details:**

| Panel    | ID   | Company | Project Name                  |
|----------|--|---------|-------------------------------|
| INITIATE | ENGINEERS INDIA LIMITED - ONGC URAN              | ONGC    | PROJECT .ROHITKUMAR B. KHARVA |
| INITIATE | ENGINEERS INDIA LIMITED - CPCL(DE-OILER PACKAGE) | CPCL    | PROJECT .ROHITKUMAR B. KHARVA |
| PLANNING | IOCL(Gujarat Refinery)                           | IOCL    | PROJECT .ROHITKUMAR B. KHARVA |
| CLOSURE  | HPCL RAJASTHAN REFINERY LIMITED-632              | HRRL    | PROJECT .ROHITKUMAR B. KHARVA |

# Project Tracking Delay Risk

Figure 3-12 Project Toll Gate Dashboard



## Project Progress & Cycletime

| PROJECT NAME                               | STATUS | TOLL GATE 1 |          |        | TOLL GATE 2 |          |        | TOLL GATE 3 |          |        | TOLL GATE 4 |          |        | NOTES / CRITICAL ISSUES |
|--|--------|-------------|----------|--------|-------------|----------|--------|-------------|----------|--------|-------------|----------|--------|-------------------------|
|  |        | Plan        | Estimate | Actual | Plan        | Estimate | Actual | Plan        | Estimate | Actual | Plan        | Estimate | Actual |                         |
| Enterprise Ticketing Solution              | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Enterprise Vault                           | Hold   |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Fair Grounds OTB Failover Testing          | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Network Refresh                            | Hold   |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Epiphany Service                           | R      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| CDI Video Teleconferencing                 | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Youbet Merger Program                      | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Enterprise Printing Analysis               | Y      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| CDI Webex Services                         | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Twinspires Call Center Expansion           | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Hullabalou & Ticketmaster Interface        | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Peak-10 Clean-up                           | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Hullabalou Mobile App                      | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Digital Asset Management                   | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| FGRC Oasis Upgrade                         | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| SABO Derby Invitation Process Enhancements | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |
| Avamar System Training                     | G      |             |          |        |             |          |        |             |          |        |             |          |        |                         |

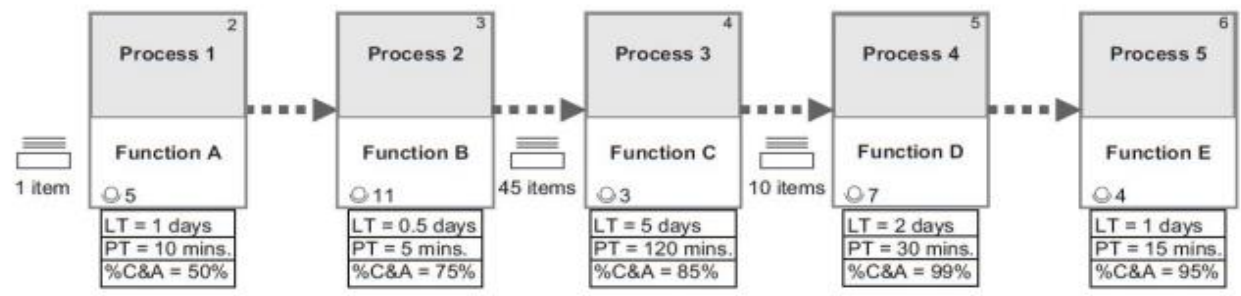


FIGURE 3.8 Value stream map progressive build: process details

| #           | Department | SYSTEM             | PROCESS    | STARTDOC | DATAENTRY | RESPONSIBLE                                     | CT       | AVGCT  | AVG COST                                | FREQUENCY                          | CASES   |   |  |  |  |  |   |   |  |              |              |            |            |            |            |            |            |            |   |      |
|-------------|------------|--------------------|------------|----------|-----------|---|----------|--|---|------------------------------------|---|---|--|--|--|--|---|---|--|--------------|--------------|------------|------------|------------|------------|------------|------------|------------|---|------|
| 13          | Stores     | EPC Purchase Store | PO > MIR   | ORDER    | PURCHASE  | KEYUR J. BHATT                                  | 12       | 4  | 0                                       | 2011                               | 24  |   |  |  |  |  |   |   |  |              |              |            |            |            |            |            |            |            |   |      |
| #           | DOCID      | ORDERDATE          | ORDERNO    | PLJG_NO  | PROJECTNO | SUPPLIERNAME                                    | AMOUNT   | UNAPPROVED PO RECEIVED AGAINST MR-Edit/Approve | APPROVED PO SENT TO VENDOR - Print/Send | ORDER ACCEPTANCE / VENDOR APPROVAL | VENDOR DOCS RECEIVED AND UPLOADED BY PURCHASE | ENGR REVIEWS VENDOR DOCS AND SEND TO CLIENT | CLIENT REVIEWS VENDOR DOCS AND SEND APPROVAL | CLIENT APPROVES VENDOR DOCS AND SEND TO ENGG | PURCHASE ISSUE MFG CLEARANCE TO VENDOR | PURCHASE RECEIVE INSPECTION CALL FROM VENDOR | INSPECTION DONE BY CLIENT/TPI AGAINST INSPECTION CALL | ISSUE DISPATCH CLEARANCE TO VENDOR AGAINST RELEASE NOTE | MATERIAL INWARD AT SITE FROM VENDOR AGAINST DC | PERFORMANCE  | DRILL        |            |            |            |            |            |            |            |   |      |
| PROCESS     | Start      |                    |            |          |           |   |          |  |   |                                    |   | PR  | PO   | QA   | VD                                     | ER   | CR  | CA  | MC   | IC           | ID           | DC         | MIR        | End        |            |            |            |            |   |      |
| LEADTIME    |            |                    |            |          |           |   |          |  |   |                                    |   | 1d  | 1d   | 1d   | 1d                                     | 1d   | 1d  | 1d  | 1d   | 1d           | 1d           | 1d         | 1d         | 1d         | 12 Days    |            |            |            |   |      |
| PROGRESS    |            |                    |            |          |           |   |          |  |   |                                    |   | 10%   | 20%  | 30%  | 40%                                    | 50%  | 60%   | 70%   | 80%  | 85%          | 90%          | 95%        | 100%       |            | CYCLETIME  | DETAILS    |            |            |   |      |
| RESPONSIBLE |            |                    |            |          |           |   |          |  |   |                                    |   | PURCHASE                                    | PURCHASE                                     | PURCHASE                                     | PURCHASE                               | ENGINEERING                                  | ENGINEERING   | ENGINEERING   | PURCHASE                                       | PURCHASE     | PURCHASE     | PURCHASE   | PURCHASE   | From       | To         | Days       | Report     |            |   |      |
| 1           | 34         | 01/04/2022         | PO/1/22-23 | 0        | 0         | MEASUREMENT & CONTROL                           | 33880    | Delay 0 days                                   | Delay 0 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 21/04/2022 | 22/04/2022 | 23/04/2022 | 24/04/2022 | 25/04/2022 | 14/04/2022 | 14/04/2022 | 0 | Show |
| 2           | 35         | 06/04/2022         | PO/2/22-23 | PL832    | HRRL      | M/S Vaidhavi Fitting India Pvt. Ltd.            | 180      | Delay 10 days                                  | Delay 10 days                           | Delay 17 days                      | Delay 10 days                                 | Delay 10 days                               | Delay 14 days                                | Delay 13 days                                | Delay 23/04/2022                       | 24/04/2022                                   | 25/04/2022  | 26/04/2022  | 27/04/2022                                     | 16/04/2022   | 16/04/2022   | 0          | Show       |            |            |            |            |            |   |      |
| 3           | 38         | 11/04/2022         | PO/3/22-23 | PL832    | HRRL      | M/S BOMBAY CHEMICAL EQUIPMENT                   | 43200    | Delay 10 days                                  | Delay 14 days                           | Delay 13 days                      | Delay 12 days                                 | Delay 11 days                               | Delay 10 days                                | Delay 9 days                                 | Delay 27/04/2022                       | 28/04/2022                                   | 29/04/2022  | 30/04/2022  | 01/05/2022                                     | 20/04/2022   | 20/04/2022   | 0          | Show       |            |            |            |            |            |   |      |
| 4           | 37         | 11/04/2022         | PO/4/22-23 | PL832    | HRRL      | TUBE TURN (INDIA) PVT LTD.                      | 1060     | Delay 10 days                                  | Delay 14 days                           | Delay 13 days                      | Delay 12 days                                 | Delay 11 days                               | Delay 10 days                                | Delay 9 days                                 | Delay 27/04/2022                       | 28/04/2022                                   | 29/04/2022  | 30/04/2022  | 01/05/2022                                     | 20/04/2022   | 20/04/2022   | 0          | Show       |            |            |            |            |            |   |      |
| 5           | 38         | 12/04/2022         | PO/5/22-23 | PL832    | HRRL      | M/S. UI PIPE FITTINGS PVT. LTD.                 | 16049    | Delay 10 days                                  | Delay 14 days                           | Delay 13 days                      | Delay 12 days                                 | Delay 11 days                               | Delay 10 days                                | Delay 9 days                                 | Delay 27/04/2022                       | 28/04/2022                                   | 29/04/2022  | 30/04/2022  | 01/05/2022                                     | 20/04/2022   | 20/04/2022   | 0          | Show       |            |            |            |            |            |   |      |
| 6           | 39         | 11/04/2022         | PO/8/2223  | 0        | 0         | TAMILNADU PETROPRODUCTS LIMITED                 | 717800   | Delay 0 days                                   | Delay 0 days                            | Delay 4 days                       | Delay 3 days                                  | Delay 2 days                                | Delay 1 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 28/04/2022 | 08/05/2022 | 08/05/2022 | 7          | Show       |            |            |   |      |
| 7           | 40         | 26/04/2022         | PO/7/2223  | 0        | 0         | CHEMICALS (INDIA) COMPANY                       | 87800    | Delay 0 days                                   | Delay 0 days                            | Delay 4 days                       | Delay 3 days                                  | Delay 2 days                                | Delay 1 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 29/04/2022 | 08/05/2022 | 08/05/2022 | 7          | Show       |            |            |   |      |
| 8           | 41         | 28/04/2022         | PO/8/2223  | PL832    | HRRL      | SCHNEIDER ELECTRIC SYSTEM INDIA PRIVATE LIMITED | 16477887 | Delay 2 days                                   | Delay 1 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 03/05/2022 | 08/05/2022 | 08/05/2022 | 3          | Show       |            |            |   |      |
| 9           | 42         | 28/04/2022         | PO/9/2223  | PL832    | HRRL      | EL-O-MATIC (INDIA)PVT.LTD.                      | 11452830 | Delay 2 days                                   | Delay 1 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 11/05/2022 | 12/05/2022 | 13/05/2022 | 14/05/2022 | 03/05/2022 | 03/05/2022 | 03/05/2022 | 0 | Show |
| 10          | 43         | 27/04/2022         | PO/10/2223 | PL832    | HRRL      | Paramont Limited - Gujarat                      | 7849     | Delay 2 days                                   | Delay 1 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 03/05/2022 | 08/05/2022 | 08/05/2022 | 3          | Show       |            |            |   |      |
| 11          | 44         | 28/04/2022         | PO/11/2223 | 0        | 0         | NITEX ENTERPRISES                               | 4800     | Delay 2 days                                   | Delay 1 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 03/05/2022 | 08/05/2022 | 08/05/2022 | 3          | Show       |            |            |   |      |
| 12          | 45         | 28/04/2022         | PO/12/2223 | PL833    | ICOL      | RAM TRADERS                                     | 6886     | Delay 2 days                                   | Delay 1 days                            | Delay 0 days                       | Delay 0 days                                  | Delay 0 days                                | Delay 0 days                                 | Delay 0 days                                 | Delay 0 days                           | Delay 0 days                                 | Delay 0 days  | Delay 0 days  | Delay 0 days                                   | Delay 0 days | Delay 0 days | 03/05/2022 | 08/05/2022 | 08/05/2022 | 3          | Show       |            |            |   |      |

# PMI – Project Execution Risk – FMEA

| Risk Identification |         |        |               |                              |   |                                     | Qualitative Risk Assessment |                   |             |           | Risk Response Plan |                   | Monitoring and Control   |                        |   |                                  |
|---------------------|---------|--------|---------------|------------------------------|---|-------------------------------------|-----------------------------|-------------------|-------------|-----------|--------------------|-------------------|--|------------------------|---|----------------------------------|
| #                   | RMP No. | Status | Risk Category | Risk Event                   | Cause   | Effect                              | Threat or Opportunity       | Primary Objective | Probability | Impact    | Risk Matrix        | Response Strategy | Response Actions   | Responsible Entity     | Interval or Milestone Check             | Status: Date and Review Comments |
| 1                   |         | Active | External      | Project not fully funded     | Budget Constraints- allocation in doubt or subject to change                        | Project delayed                     | Threat                      | Time              | High        | Very High |                    | Mitigate          | Project may be divided into 2or 3 phases with options in the contract                | Progam Engineer        | Monthly                                 | xx/xx/2008                       |
| 2                   |         | Active | Design        | Inaccurate cost estimate     | Unit pricing effected by rock excavation and disposal site issues                   | EE is underestimated                | Threat                      | Cost              | Medium      | Medium    |                    | Mitigate          | Increased unit price for excavation to match rock excavation price                   | Geotechnical Manager   | At completion of subsurface exploration | xx/xx/2008                       |
| 3                   |         | Active | Construction  | Unidentified utility impacts | Unidentified utilities  | Project cost increases              | Threat                      | Cost              | Low         | Low       |                    | Transfer          | Contingency plan. Contractor is responsible for coordination.                        | Utility Engineer       | Monthly                                 | xx/xx/2008                       |
| 4                   |         | Active | External      | Permit delays                | Permits expire. Permits or agency actions are delayed or take longer then expected. | Fines, penalties and project delays | Threat                      | Time              | Medium      | Low       |                    | Transfer          | Consultant responsible for coordinating permits and identifying permit requirements. | Environmental Engineer | Monthly                                 | xx/xx/2008                       |
| 5                   |         | Active | Construction  | Differing site conditions    | Unexpected geotechnical issues. Natural or manmade obstructions.                    | Increased project costs             | Threat                      | Cost              | Medium      | Medium    |                    | Mitigate          | Thorough geotechnical investigations performed                                       | Geotechnical Engineer  | At completion of subsurface exploration | xx/xx/2008                       |
|                     |         |        |               |                              |   |                                     |                             |                   |             |           |                    |                   |  |                        |   |                                  |

# PMI – Project Execution Risk Registers

| US 41 Risk Assessment - Segment 1 |             |              |                                    |  |  |                      |                        |                       |             |        |                |                      |             |       |                |
|-----------------------------------|-------------|--------------|------------------------------------|--|--|----------------------|------------------------|-----------------------|-------------|--------|----------------|----------------------|-------------|-------|----------------|
| Risk Category                     | Risk Number | Risk Type    | Risk Name                          | Description (S.M.A.R.T.)   | Risk Symptoms (or Trigger)   | Affected Activity ID | Pre-Workshop Risk Data |                       |             |        |                |                      |             |       |                |
|                                   |             |              |                                    |  |  |                      | Probability            | Cost (in millions \$) |             |        |                | Schedule (in months) |             |       |                |
|                                   |             |              |                                    |  |  |                      |                        | Min                   | Most Likely | Max    | Expected Value | Min                  | Most Likely | Max   | Expected Value |
| Utility/Facility Disturbances     | 3.1         | Construction | Utility Conflicts                  | Utility facilities may be unsurveyed and in conflict with construction due to inaccurate or incomplete survey locates. Location of underground utilities not marked in field or markers are removed. Contractor may disturb marked utilities.  | Utility facilities are unearthed during construction.  |                      | 75%                    | \$0.00                | \$1.00      | \$3.00 | \$0.88         | 0.00                 | 0.50        | 3.00  | 0.63           |
| Traffic during Construction       | 5.1         | Construction | Lambeau/ Oneida Traffic            | There are issues associated with the August 1 deadline and the start of the NFL season. The facilities need to be able to accommodate the traffic.   |  |                      | 30%                    | \$0.20                | \$0.75      | \$2.00 | \$0.26         | 0.00                 | 0.00        | 0.00  | 0.00           |
| Permits/Agreements                | 9.5         | Design       | 404 Permit Documentation Approval  | Mitigation site plan documentation approval  | COE denies mitigation plan   |                      | 10%                    |                       |             |        | \$0.00         | 0.25                 | 2.00        | 4.00  | 0.20           |
|                                   | 9.9         | Design       | Local Agreements                   | This is risk related to scope pertaining to local agreements. Scope decisions need to be made and local agreement committing to the scope needs to occur. This could delay getting 1078s out.  |  |                      | 25%                    |                       |             |        |                | 1.00                 | 3.00        | 12.00 | 1.04           |
| Stormwater / Water Quality        | 10.1        | Design       | Wildlife Hazard Assessment         | Need to balance the need for stormwater management/need for ponds with FAA and USDA guidance to avoid/minimize potential for wildlife hazards within 5 miles of Austin Straubel Airport. This is a cost risk (Med/High)  | FAA/USDA/Airport and WisDOT/DNR cannot come to agreement on pond locations/sizes or mitigation requirements. |                      | 20%                    | \$0.10                | \$0.25      | \$0.50 | \$0.05         |                      |             |       | 0.00           |
|                                   | 10.2a       | Design       | 401 WQC- stormwater                | Stormwater mgt. plan showing adequate TSS removal is needed prior to DNR issuing WQC. No WQC means you do not have a valid 404. Corridor analysis of stormwater management and wetland mitigation site development is behind schedule. This could potentially delay all projects, with the primary concern being the earlier LETs. | Denial of WQC  |                      | 50%                    |                       |             |        |                |                      |             |       |                |
|                                   | 10.2b       | Construction | Construction Impacts of Stormwater | The construction cost impacts from a permit denial will result in cost to do mitigation  |  |                      | 50%                    |                       |             |        |                |                      |             |       |                |

Table 10.2 Risk register entry

| Ref. | Risk event                            | Chance | Impact | Overall | Rank | Action                                  | Owner | Outcome  | Closure |
|------|---------------------------------------|--------|--------|---------|------|---|-------|--|---------|
| 3.1  | New product leaflet not ready on time | 3      | 9      | 27      | 7th  | Penalty clause in contract for printing | CM    | Awaited, delivery est. 14 days prior to product launch |         |

Figure 7.3 Example of a Risk Register

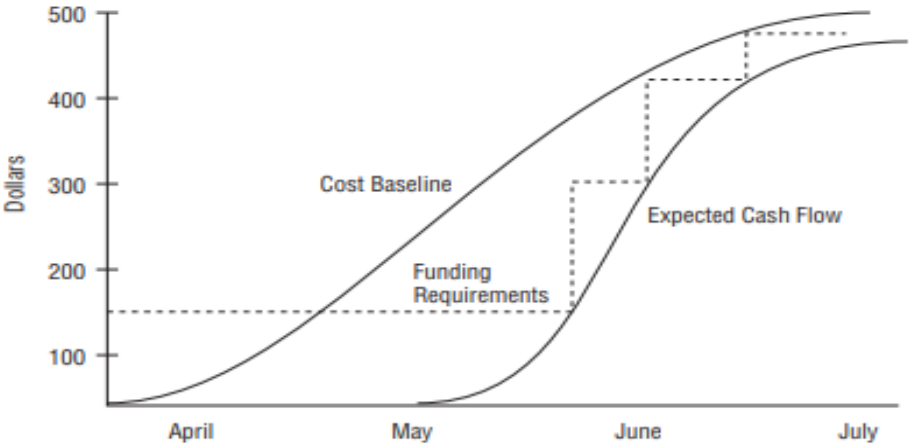


# Project Tracking Profitability Risk

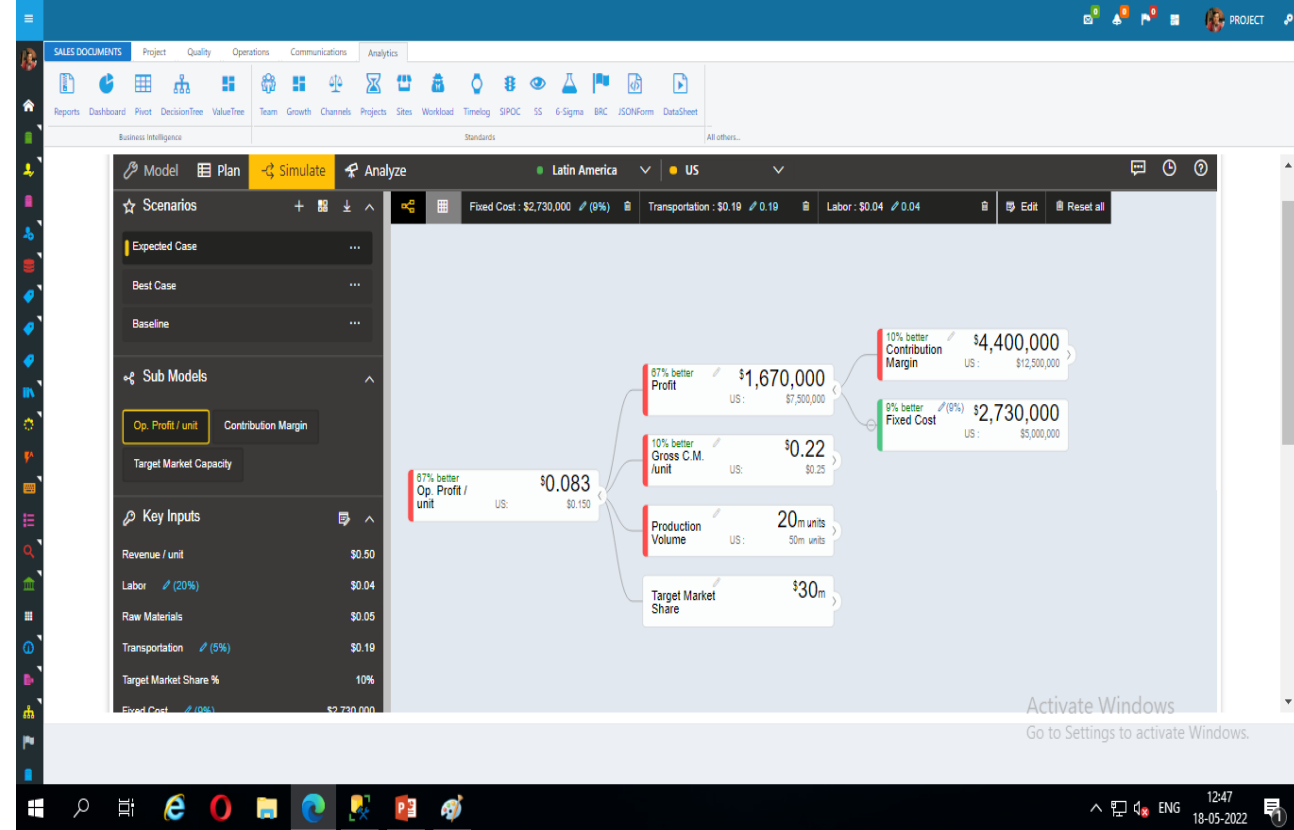
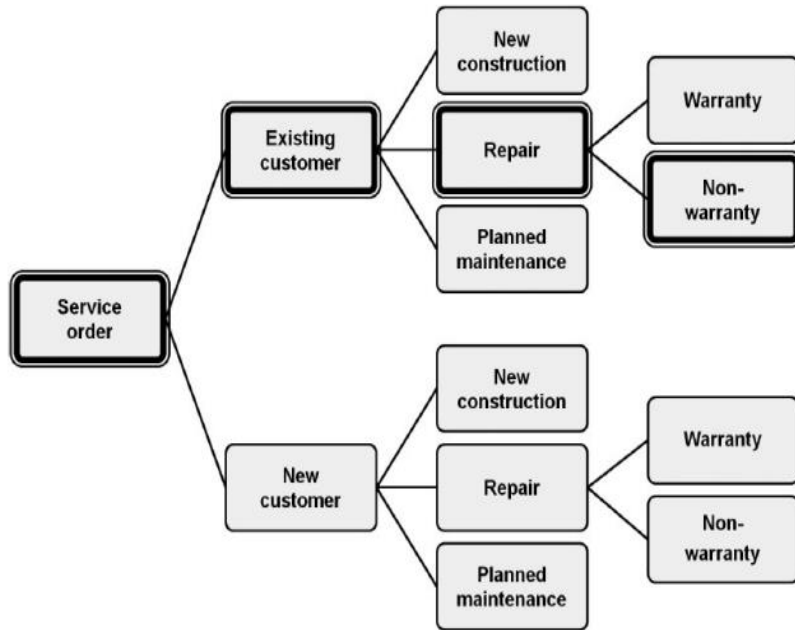
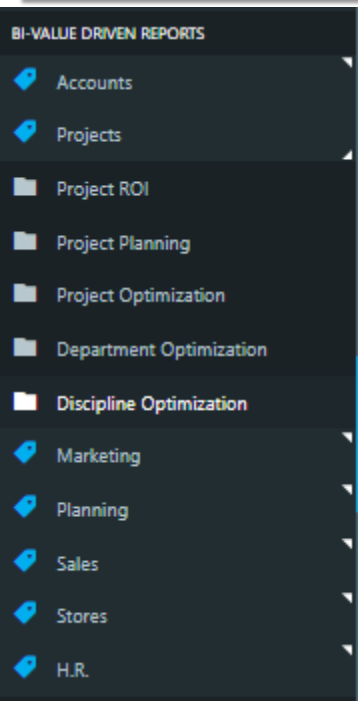
Paramount Limited - Gujarat  
**SUMMARY OF BILLING BREAKUP OF ENGINEERING EFFLUENT TREATMENT PLANT, HRRL, RAJASTHAN**

| PROFITABILITY REPORT |  |          |        |               |      |               |         |               |
|----------------------|--|----------|--------|---------------|------|---------------|---------|---------------|
| #                    | TASK   | ESTIMATE | BUDGET | BBU           | COST | PROFIT        | BILLWTG | AMOUNT        |
| 1                    | 55% on submission of drawgs & P&IDs (defined for review category in tender document) and their approval under Code-II on pro-rata basis. (INR)   | 0.00     | 0.00   | 43,560,000.00 | 0.00 | 43,560,000.00 | 55.00   | 43,560,000.00 |
| 2                    | 15% submission of drawings and P&IDs (defined for review category in tender document) and their approval under Code-I on pro-rata basis. (INR)   | 0.00     | 0.00   | 11,880,000.00 | 0.00 | 11,880,000.00 | 15.00   | 11,880,000.00 |
| 3                    | 5 % on submission and approval of 3D model at 30%, 60%, 90% stages and final issuance to site. (INR)   | 0.00     | 0.00   | 3,960,000.00  | 0.00 | 3,960,000.00  | 5.00    | 3,960,000.00  |
| 4                    | 5% on Completion of project documentation & data handover system (INR)   | 0.00     | 0.00   | 3,960,000.00  | 0.00 | 3,960,000.00  | 5.00    | 3,960,000.00  |
| 5                    | 10 % on submission of As Built drawings for the Unit(s) along-with its electronic files against the CONTRACTORs certified Running Account Bill(s) along with operation and instruction manuals | 0.00     | 0.00   | 7,920,000.00  | 0.00 | 7,920,000.00  | 10.00   | 7,920,000.00  |
| 6                    | 5% on Mechanical Completion of the Unit(s) against the CONTRACTORs certified Running Account Bill(s).  | 0.00     | 0.00   | 3,960,000.00  | 0.00 | 3,960,000.00  | 5.00    | 3,960,000.00  |
| 7                    | 2% on Commissioning of the Unit(s) against the CONTRACTORs certified Running Account Bill(s).  | 0.00     | 0.00   | 1,584,000.00  | 0.00 | 1,584,000.00  | 2.00    | 1,584,000.00  |
| 8                    | 2% on completion of Performance Guarantee Test Run of the Unit(s) against the CONTRACTORs certified Running Account Bill(s).   | 0.00     | 0.00   | 1,584,000.00  | 0.00 | 1,584,000.00  | 2.00    | 1,584,000.00  |
| 9                    | 1% on completion of all work in all respect and acceptance thereof and submission of all final documents against contractors certified Final bill.   | 0.00     | 0.00   | 792,000.00    | 0.00 | 792,000.00    | 1.00    | 792,000.00    |
|                      |  | 0.00     | 0.00   | 79,200,000.00 | 0.00 | 79,200,000.00 | 100.00  | 79,200,000.00 |

**FIGURE 7.5** Cost baseline, funding requirements, and cash flow

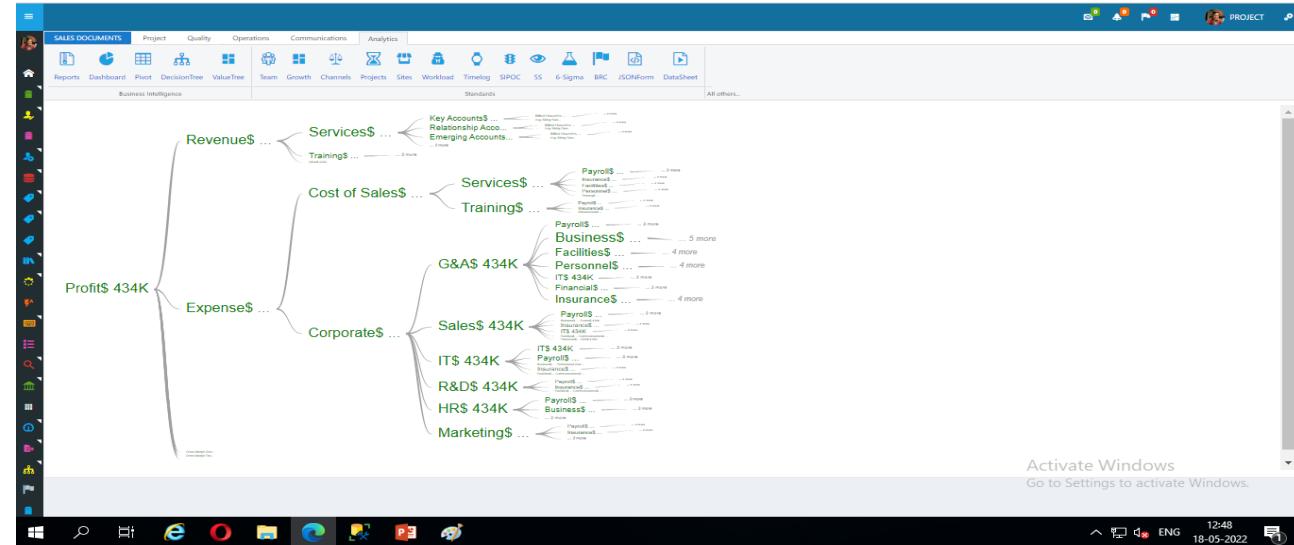


# PMI -Project Cost Tracking



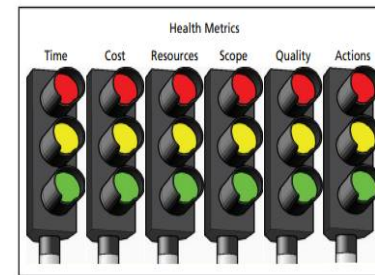
## Value Stream Management

- Do policies need to be changed to enable improved performance?
- Are there organization departmental reporting structures that can be changed to reduce conflicting goals or align resources?
- Do existing performance metrics (if any) encourage desired behaviors and discourage dysfunctional behavior?
- What key performance indicators (KPIs) will we use to monitor value stream performance?
- Who will monitor the KPIs? How frequently? Who else will results be communicated to?
- What visual systems can be created to aid in managing and monitoring the value stream?
- Are the key processes within the value stream clearly defined with their own KPIs, standardized appropriately, and measured and improved regularly?



# Project Health Matrix Dashboard

Figure S-12 Core Project Health Metrics



Business Intelligence      Standards      All others...

## Active Project List

DELAYED

CRITICAL

28.FINOLEX INDUSTRIES LTD (DEBTORS)

27.

GREEN

PROCESS

SALES & DISTRIBUTION

YOGURT PRODUCTION

SORBET PRODUCTION

ACAI PRODUCTION

PURCHASE & STORES

NEW PROCESS

## My Project Dashboard



52

YTD PROJECTS#  
... COMPLETED ON TIME



29

YTD PROJECTS#  
... DELAYED DUE TO MACHINE  
OUTAGE



23

YTD PROJECTS#  
... DELAYED DUE TO QUALITY ISSUES.



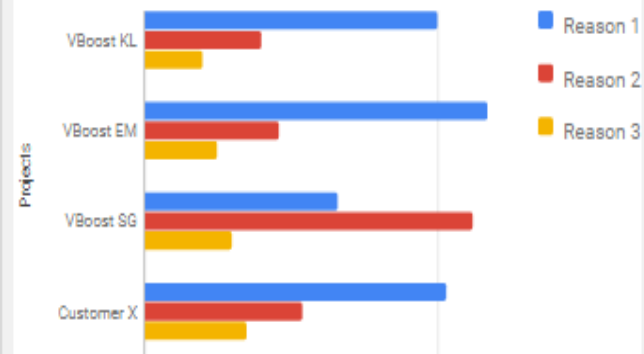
50/20

YTD PROJECTS#  
..... ON BUDGET / BUDGET OVERRUN

## YTD PROJECT BUDGET OVERRUN REASONS.

### Project Performance

Reasons for budget overruns



## PROJECT STATUS DETAILS

| CLIENT     | PRODUCT                  | QTY | PROCESS STAGE | ETA       | STATUS   | PROJECT MGR |
|------------|--------------------------|-----|---------------|-----------|----------|-------------|
| Vboost KL  | Yogert 6L Tub            | 10  | Packing       | 20/5/2021 | Delayed  | Durgesh     |
| Vboost EM  | Sorbat 3L Bottle         | 40  | Preparation   | 10/6/2021 | Delayed  | Mr. Wong    |
| Vboost SG  | Yogert 3L Tub            | 70  | Mixing        | 20/7/2021 | Critical | Tom         |
| Customer X | Strawberry Yogert 6L Tub | 10  | Churning      | 30/7/2021 | Ontime   | Abbas       |
| Vboost KL  | Yogert 6L Tub            | 70  | Packing       | 20/8/2021 | Ontime   | Durgesh     |
| Vboost EM  | Sorbat 3L Bottle         | 90  | Preparation   | 10/8/2021 | Ontime   | Mr. Wong    |
| Customer B | Yogert 3L Tub            | 30  | Mixing        | 20/9/2021 | Ontime   | Tom         |

# Project/Process Value Matrix

TABLE 4.1 Basic future state value stream performance metrics

| Metric                       | Current State | Projected Future State | Projected % Improvement |
|------------------------------|---------------|------------------------|-------------------------|
| Total Lead Time              | 9.5 days      | 3.5 days               | 63.2%                   |
| Total Process Time           | 180 minutes   | 160 minutes            | 11.1%                   |
| Activity Ratio               | 3.9%          | 9.5%                   | 143.6%                  |
| Rolled % Complete & Accurate | 30.0%         | 89.3%                  | 197.7%                  |
| <i>User defined</i>          |               |                        |                         |
| <i>User defined</i>          |               |                        |                         |

Figure 5-17 Planned versus Assigned Labor

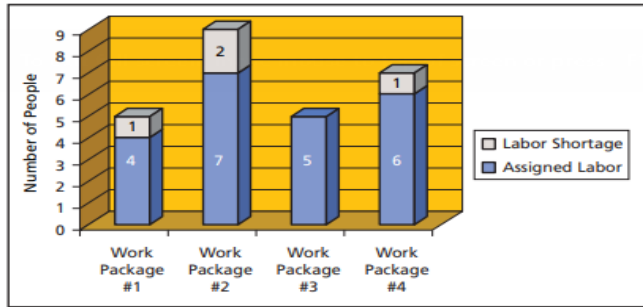


Figure 5-18 Pay Grade of the Assigned Resources

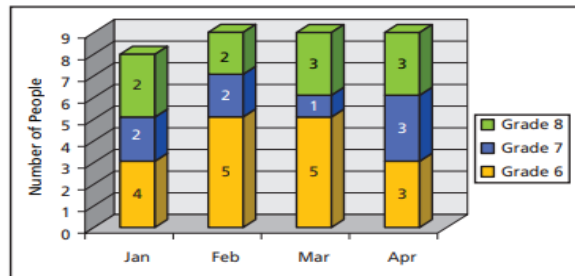


Figure 5-16 Project Value Attributes

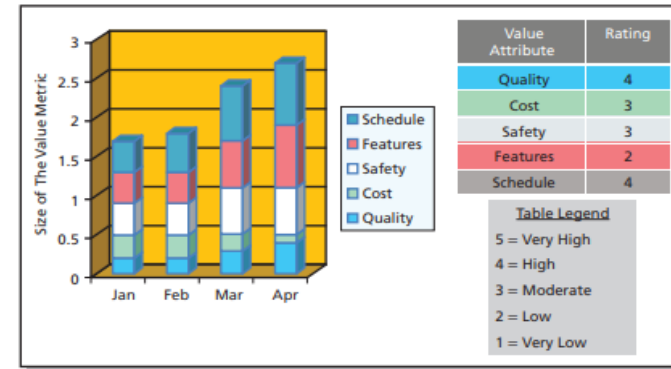


Figure 5-19 Hours Worked on Regular Time, Overtime, and Unstaffed Hours

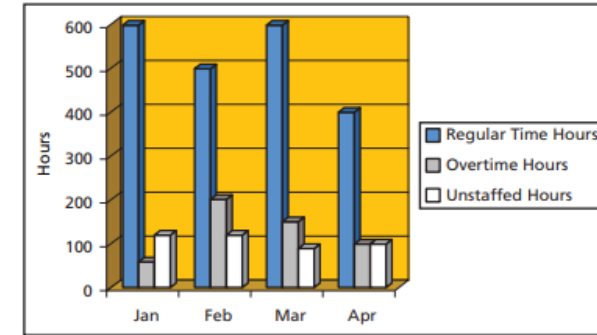
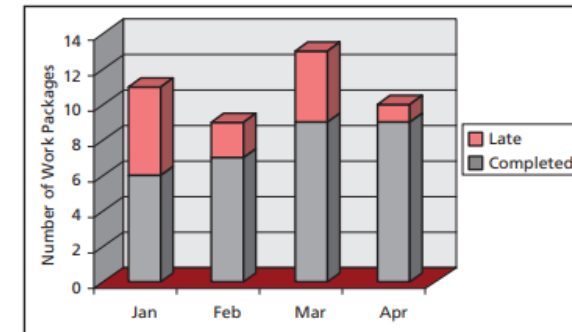


Figure 5-20 Work Packages Scheduled for Completion, Including Those Completed and Those Still Open



# Project/Process Cost Matrix

## COST OVERVIEW

01/09/15 - 02/11/16

COST  
**\$20,557.00**

REMAINING COST  
**\$14,613.00**

% COMPLETE  
**16%**

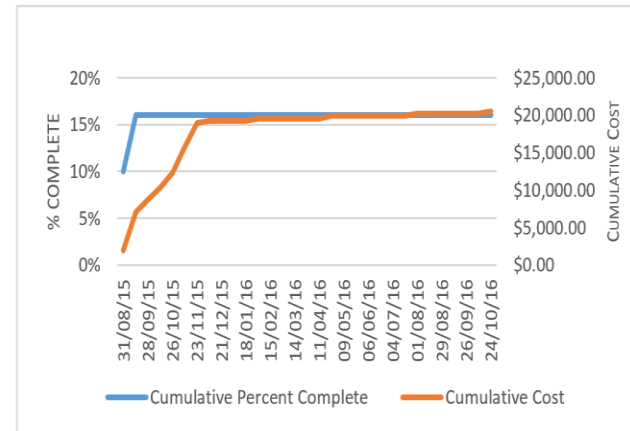
### COST STATUS

Cost status for top level tasks.

| Name               | Actual Cost | Remaining Cost | Baseline Cost | Cost       | Cost Variance |
|--------------------|-------------|----------------|---------------|------------|---------------|
| Project Overhead   | \$408.00    | \$1,360.00     | \$1,768.00    | \$1,768.00 | \$0.00        |
| Project Start      | \$0.00      | \$0.00         | \$0.00        | \$0.00     | \$0.00        |
| Preparation        | \$5,096.00  | \$524.00       | \$6,618.00    | \$5,620.00 | -\$998.00     |
| Foundation         | \$440.00    | \$2,202.00     | \$2,642.00    | \$2,642.00 | \$0.00        |
| Structure          | \$0.00      | \$4,011.00     | \$4,011.00    | \$4,011.00 | \$0.00        |
| Final Assembly     | \$0.00      | \$2,360.00     | \$2,160.00    | \$2,360.00 | \$200.00      |
| Extra Options      | \$0.00      | \$2,876.00     | \$2,876.00    | \$2,876.00 | \$0.00        |
| Maintenance visits | \$0.00      | \$1,280.00     | \$1,280.00    | \$1,280.00 | \$0.00        |

### PROGRESS VERSUS COST

Progress made versus the cost spent over time. If % Complete line below the cumulative line, your project may be over budget.



### COST STATUS

Cost status for all top-level tasks. Is your baseline zero?

[Try setting as baseline](#)

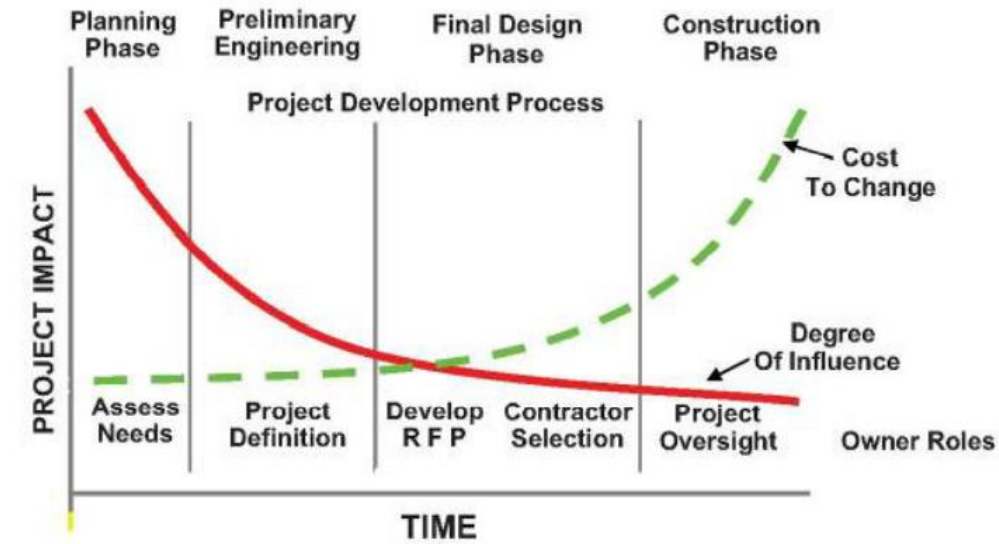
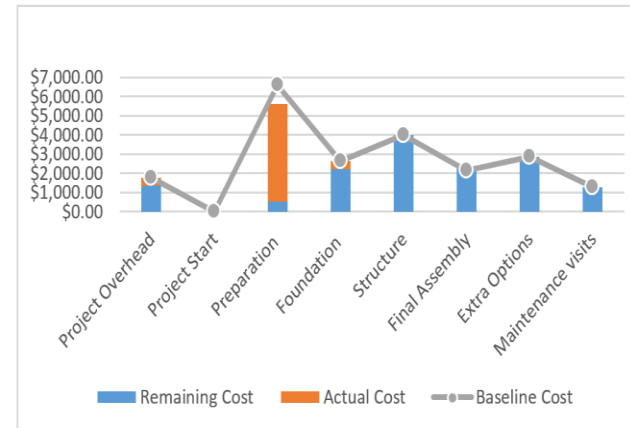


Figure 3-6 Cost Impacts & Mitigation Capability By Phase

## Conformance versus Nonconformance Costs

### Cost of Conformance

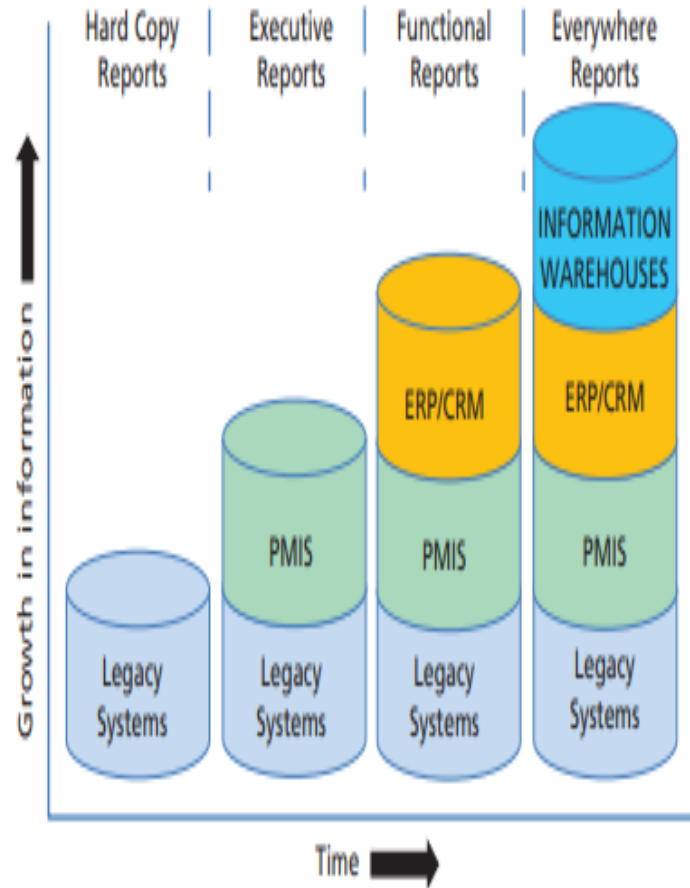
- Planning
- Training and indoctrination
- Field testing
- Product design validation
- Process validation
- Test and evaluation
- Quality audits
- Maintenance and calibration
- Other

### Cost of Nonconformance

- Scrap
- Rework
- Expedition
- Additional material or inventory
- Warranty repairs or service
- Complaint handling
- Liability judgments
- Product recalls
- Productive corrective actions

# What is Project Management Information System?

Figure 1-5 Growth of Information Systems to Support Project Management



## Dashboard

**Cycle Time**  
5 days or less  
were required to complete  
85%  
of items

**WIP**  
19 items  
are currently in progress

**Monte Carlo: How Many**  
101 items or more  
can be completed in  
30 days  
with a certainty of  
85%

**Stability**

|              | Today | Last Week | Last Month |
|--------------|-------|-----------|------------|
| Arrival Rate | 4.24  | 4.80      | 0.00       |
| Throughput   | 3.12  | 2.90      | 0.00       |
| WIP Age      | 2.89  | 1.74      | 0.00       |

**Monte Carlo: Remaining**  
19 remaining items  
can be completed in  
6 days or less  
with a certainty of  
85%

Controls for this Chart

Workflow Stages

Select All Clear All

- Backlog
- Analysis/Doing
- Analysis/Done
- Development/Doing
- Development/Done
- QA/Doing
- QA/Done
- Deployment
- Done

# QA/QC: Process Analysis Tools – 2,3,4,6

| Sr. No. | Name of Quality Tool                     | Usage  |
|---------|--|--|
| Tool 1  | Benchmarking                             | To identify best practices in the industry and improve the process or project.     |
| Tool 2  | Cause and effect                         | To identify possible cause and its effect in the process.                          |
| Tool 3  | Cost of quality                          | To identify hidden or indirect cost affecting the overall cost of product/project. |
| Tool 4  | Critical to quality                      | To identify quality features or characteristics most important to the client.      |
| Tool 5  | Failure Mode and Effects Analysis (FMEA) | To identify and classify failures according to their effects.                      |
| Tool 6  | 5 Why Analysis                           | Used to analyze and solve any problem where the root cause is unknown.             |
| Tool 7  | 5W2H                                     | The questions used to understand why the things happen the way they do.            |
| Tool 8  | Process mapping/Flowcharting             | It is a technique used for designing, analyzing, and communicating work processes. |

FIGURE 2.28 Process analysis tools.

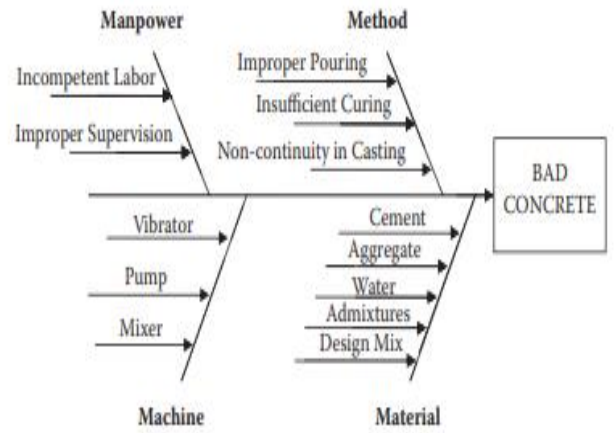


FIGURE 1.4 Cause-and-effect diagram for bad concrete.

| Serial Number | Why | Related Analyzing Question  |
|---------------|-----|---|
| 1             | Why | Why did the cable burn?   |
| 2             | Why | Why did the earth leakage relay not trip?   |
| 3             | Why | Why did the circuit breaker not trip?   |
| 4             | Why | Why was poor cable insulation not noticed?  |
| 5             | Why | Why was undersize rating of breaker with respect to current-carrying capacity of cable not noticed? |

FIGURE 2.33 Whys analysis for cable burning.

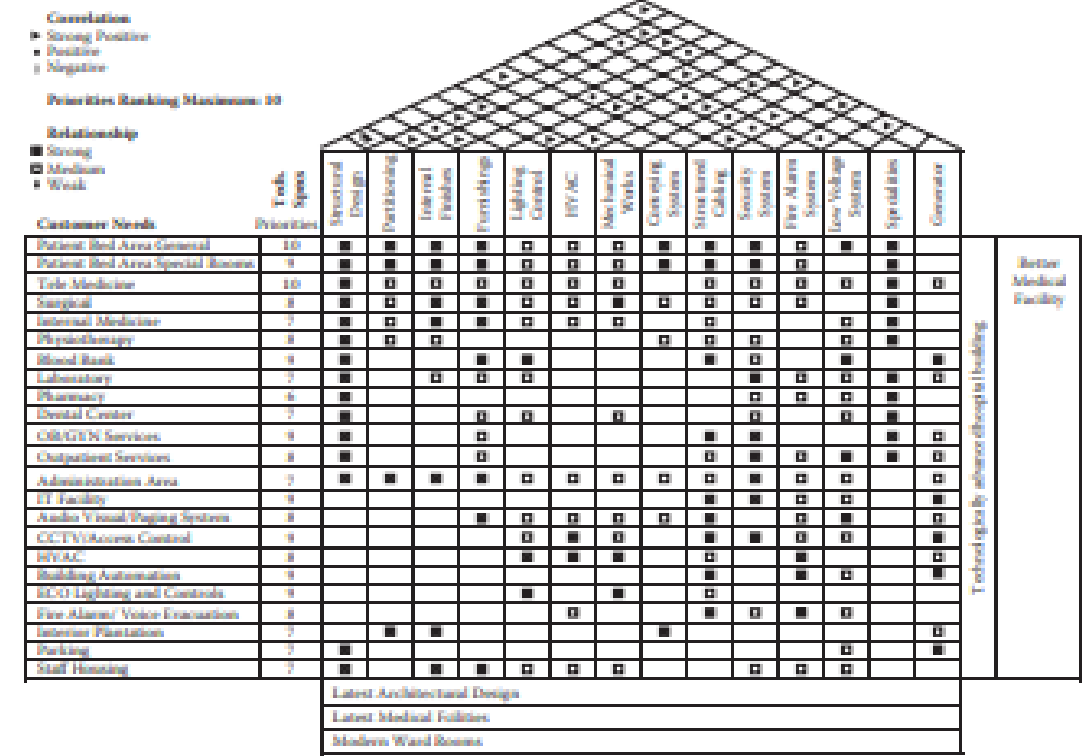


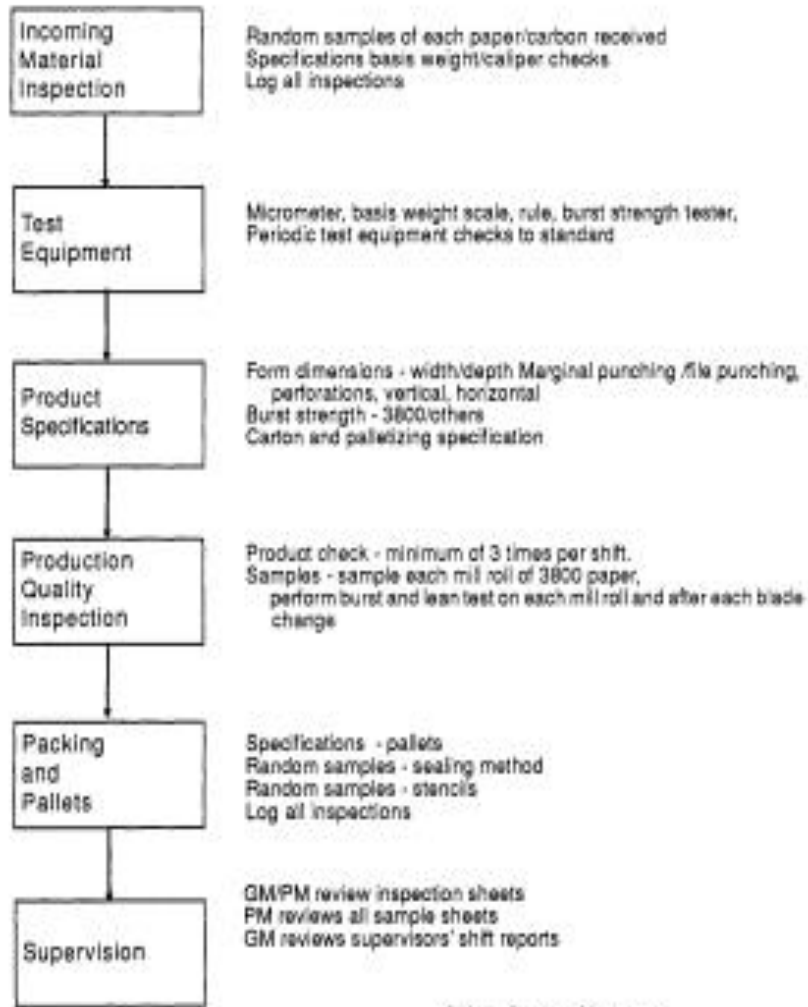
FIGURE 2.51 House of quality for hospital building.

TABLE 2.2

| Cost of Quality  |  |
|--|--|
| Cost of Compliance   | Cost of Noncompliance  |
| <ul style="list-style-type: none"> <li>Quality planning</li> <li>Process control planning</li> <li>Quality training</li> <li>Quality audit</li> <li>Design review</li> <li>Product design validation</li> <li>Work procedure</li> <li>Method statement</li> <li>Process validation</li> <li>Field testing</li> <li>Third party inspection</li> <li>Receiving inspection</li> <li>Prevention action</li> <li>In-process inspection</li> <li>Outside endorsement</li> <li>Calibration of equipment</li> <li>Laboratory acceptance testing</li> </ul> | <ul style="list-style-type: none"> <li>Scrap</li> <li>Rework</li> <li>Corrective action</li> <li>Additional material/inventory cost</li> <li>Expedition</li> <li>Customer complains</li> <li>Product recalls</li> <li>Warranty</li> <li>Maintenance service</li> <li>Field Repairs</li> <li>Rectification of returned material</li> <li>Re-inspection or re-test</li> <li>Downgrading</li> <li>Loss of business</li> </ul> |

# QA/QC: Process Analysis Tools – 1,8

## QUALITY ASSURANCE PROGRAM OFFICE ELECTRONICS, INC.



GM = General Manager  
PM = Plant Manager

Figure V.6. Quality Assurance System

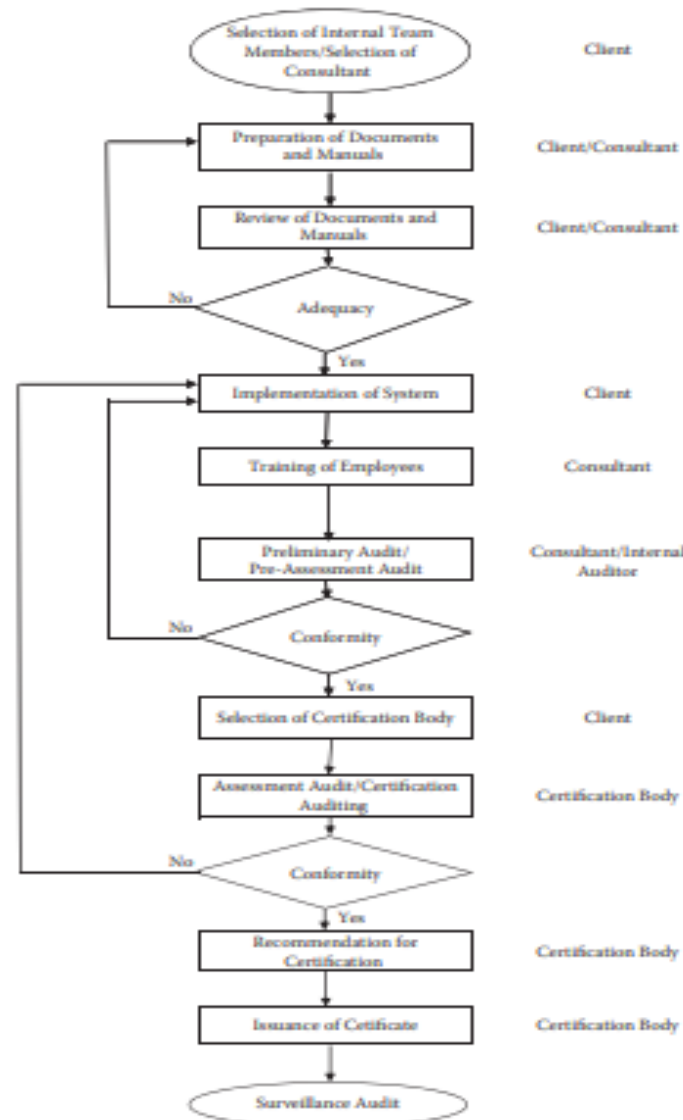


FIGURE 2.2  
ISO certification process diagram.

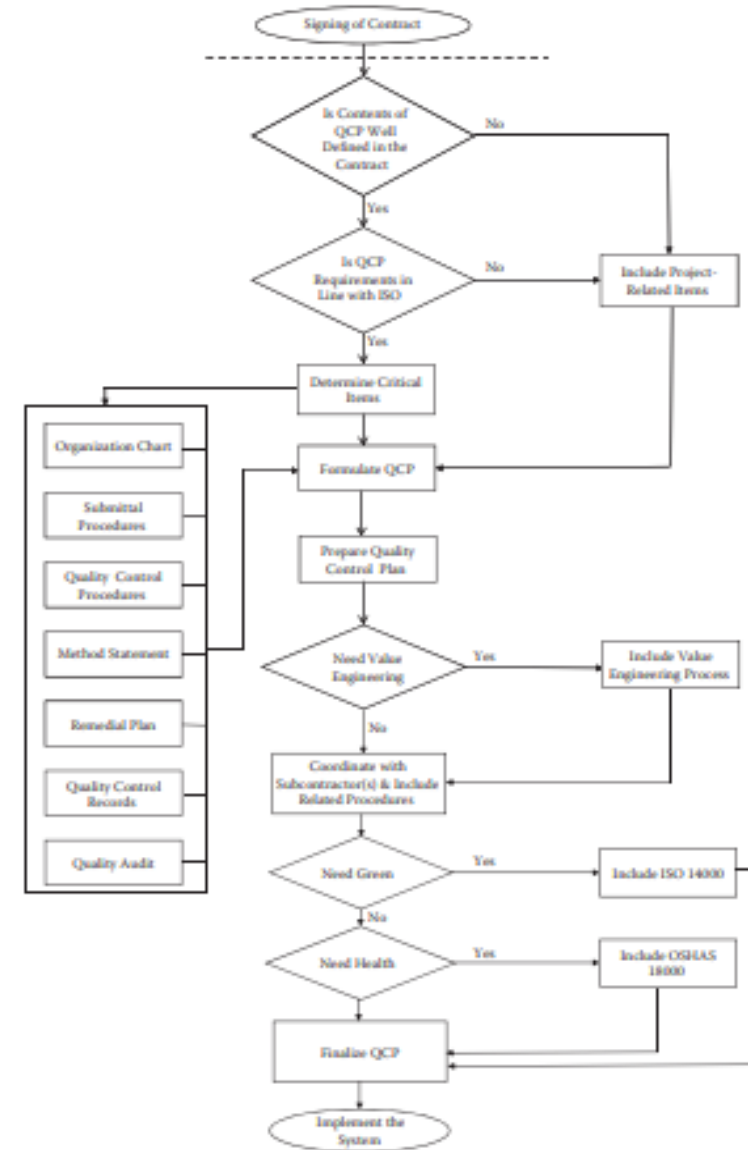


FIGURE 2.4  
Logic flow diagram for development of IQMS.



# QA/QC: Innovative Quality Tools – 3,4,6

| Sr. No. | Name of Quality Tool    | Usage   |
|---------|-------------------------|---|
| Tool 1  | Brainstorming           | Used to generate multiple ideas.  |
| Tool 2  | Delphi Technique        | Used to get ideas from select group of experts.   |
| Tool 3  | 5W2H                    | The questions used to understand why the things happen the way they do.   |
| Tool 4  | Mind mapping            | Used to create a visual representation of many issues that can help one gain a better understanding of the situation. |
| Tool 5  | Nominal group technique | Used to enhance brainstorming by ranking the most useful ideas.   |
| Tool 6  | Six Sigma DMADV         | Used primarily for the invention and innovation of modified or new products, services, or processes.                  |
| Tool 7  | TRIZ                    | Used to provide systematic methods and tools for analysis and innovative problem solving.                             |

FIGURE 2.41 Innovation and creative tools.

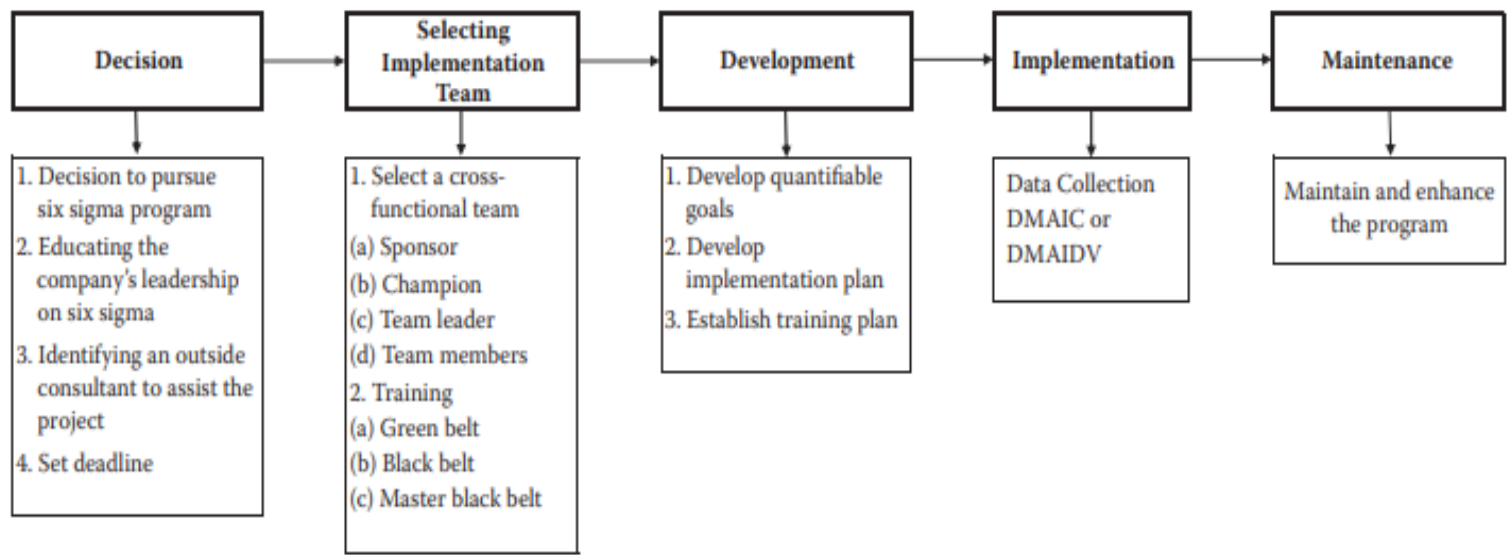


FIGURE 1.30 Six Sigma roadmap.

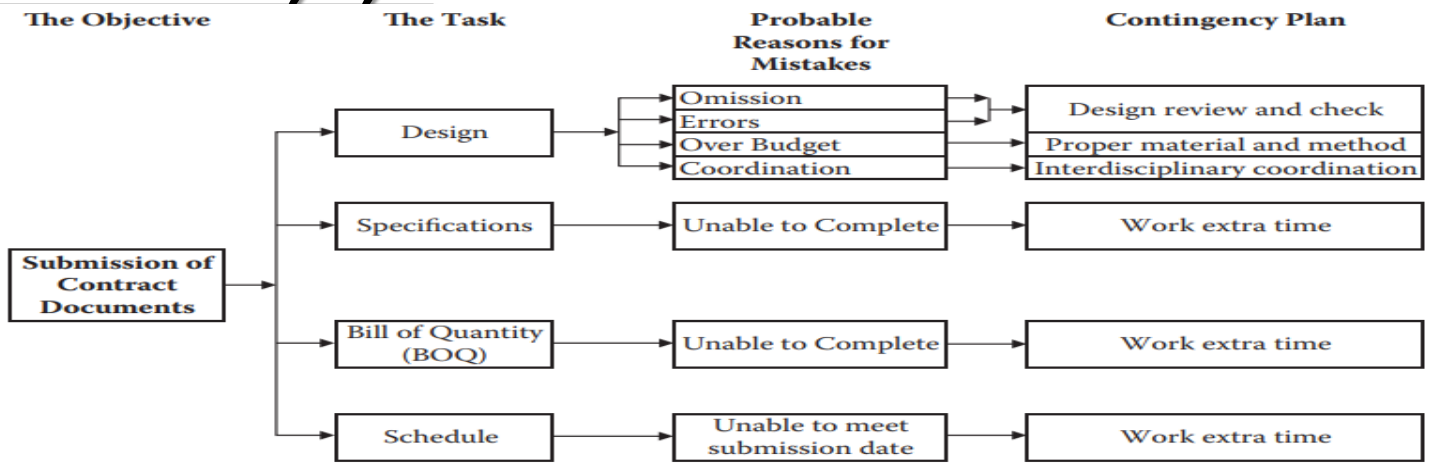


FIGURE 2.26 Process decision diagram.

| Serial Number | Why      | Related Analyzing Question                        |
|---------------|----------|---|
| 1             | Why      | Why did the slab collapse?                        |
| 2             | What     | What is the reason for the collapse?              |
| 3             | Who      | Who is responsible?                               |
| 4             | Where    | Where is the mistake?                             |
| 5             | When     | When did the slab collapse?                       |
| 6             | How many | How many persons were affected (injured or died)? |
| 7             | How much | How much was the loss in terms of cost and time?  |

FIGURE 2.34

| Serial Number | Why      | Related Analyzing Question                               |
|---------------|----------|--|
| 1             | Why      | Why a new product?                                       |
| 2             | What     | What advantage will it have over other similar products? |
| 3             | Who      | Who will be the customers for this product?              |
| 4             | Where    | Where can we market the product?                         |
| 5             | When     | When will the product be ready for sale?                 |
| 6             | How many | How many pieces will be produced/sold per year?          |
| 7             | How much | How much market share we will get for this product?      |

FIGURE 2.44 5W2H analysis for new product.



# QA/QC: Lean Tools-2,3,7,13

| Sr. No. | Name of Quality Tool                 | Usage  |
|---------|--------------------------------------|--|
| Tool 1  | Cellular Design                      | A self-contained unit dedicated to performing all the operational requirements to accomplish sequential processing.  |
| Tool 2  | Concurrent Engineering               | Used for product cycle reduction time. It is a systematic approach for creating a product design that simultaneously considers all elements of the product life cycle. |
| Tool 3  | 5S                                   | Used to eliminate waste that results from improper organization of work area.  |
| Tool 4  | Just in time (JIT)                   | Used to reduce inventory levels, improve cash flow, and reduce space requirements for storage of material.   |
| Tool 5  | Kanban                               | Used to signal that more material is required to be ordered. It is used to eliminate waste from inventory.   |
| Tool 6  | Kaizen                               | Used for continually eliminating waste from manufacturing processes by combining the collective talent of the company.   |
| Tool 7  | Mistake proofing                     | Used to eliminate the opportunity for error by detecting the potential source of error.  |
| Tool 8  | Outsourcing                          | Contracting out certain works, processes, and services to specialists in the discipline area.  |
| Tool 9  | Poka-Yoke                            | Used to detect the abnormality or error, fix or correct the error, and take action to prevent the error.   |
| Tool 10 | Single minute exchange of die (SMED) | Used to reduce setup time for changeover to new process.   |
| Tool 11 | Value stream mapping                 | Used to establish flow of material or information and eliminate waste and add value.   |
| Tool 12 | Visual management                    | Addresses both visual display and control. It exposes waste elimination/prevention.  |
| Tool 13 | Waste reduction                      | Focuses on reducing waste.   |

FIGURE 2.46  
Lean tools.

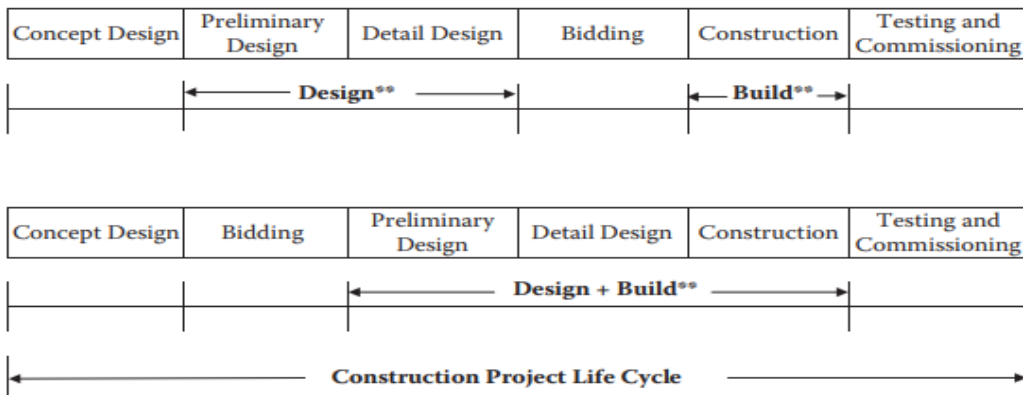
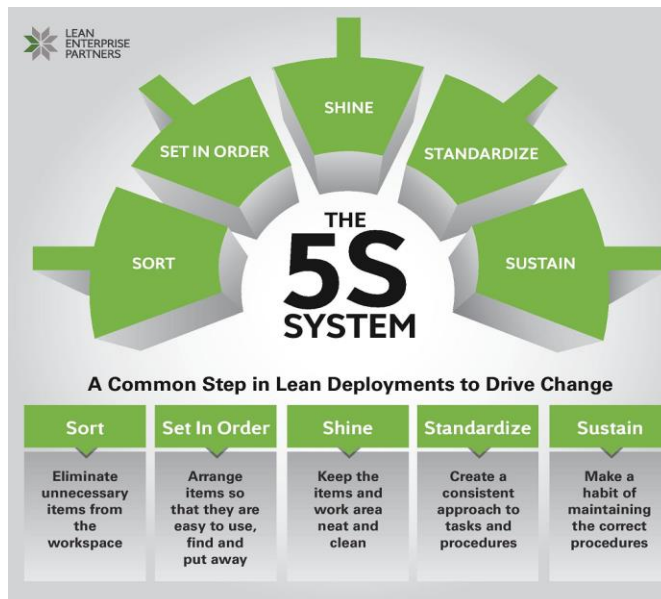


FIGURE 2.48  
Concurrent engineering.

| Serial Number | Items         | Points to be Considered to Avoid Mistakes   |
|---------------|---------------|---|
| 1             | Information   | <ol style="list-style-type: none"> <li>1. Terms of Reference (TOR)</li> <li>2. Client's preferred requirements matrix</li> <li>3. Data collection</li> <li>4. Regulatory requirements</li> <li>5. Codes and standards</li> <li>6. Historical data</li> <li>7. Organizational requirements</li> </ol>                          |
| 2             | Mismanagement | <ol style="list-style-type: none"> <li>1. Compare production with actual requirements</li> <li>2. Interdisciplinary coordination</li> <li>3. Application of different codes and standards</li> <li>4. Drawing size of different trades/specialist consultants</li> </ol>  |
| 3             | Omission      | <ol style="list-style-type: none"> <li>1. Review and check design with TOR</li> <li>2. Review and check design with client requirements</li> <li>3. Review and check design with regulatory requirements</li> <li>4. Review and check design with codes and standards</li> <li>5. Check for all required documents</li> </ol> |
| 4             | Selection     | <ol style="list-style-type: none"> <li>1. Qualified team members</li> <li>2. Available material</li> <li>3. Installation methods</li> </ol>   |

FIGURE 2.49  
Mistake proofing for eliminating design errors.



## 7 Wastes of Lean



## Waste Reduction

1. Defective parts
2. Delays, waiting
3. Excess inventory
4. Misused resources
5. Overproduction
6. Processing
7. Transportation
8. Untapped resources
9. Wasted motion

# QA/QC: Lean Tools – 5,6,7,8,9

## **2.7.8 Outsourcing**

Outsourcing is contracting out certain work, processes, and services to a specialist in a particular discipline or area. For example, in construction projects, the following is a list of some of the work that is outsourced (subcontracted):

1. Structural concrete
2. Waterproofing work
3. HVAC work
4. Fire suppression work
5. Water supply piping
6. Electrical work

## **2.7.9 Poka Yoke**

Poka Yoke is a quality management concept developed by Shigeo Shino to prevent human errors occurring in the production line. The main objective of Poka Yoke is to achieve zero defects.

## **2.7.10 Single Minute Exchange of Die (SMED)**

SMED is used to reduce setup time for changeover to a new process. For example, a spare circuit breaker of a similar rating can be used as an immediate replacement for a damaged circuit breaker in the electrical distribution board

## **2.7.5 Kanban**

Kanban is used to signal that more material is required to be ordered. It is used to eliminate waste from inventory and inventory control, thus avoiding the extra storage required for a large inventory. In construction projects, electrical wires for circuiting can be ordered to be received on site when the wire-pulling work is under way. Similarly, concrete blocks and false ceiling tiles can be ordered and received as and when required.

## **2.7.6 Kaizen**

Kaizen is used for continually improving through small changes to eliminate waste from the manufacturing process by combining the collective talent of every employee of the company.

# QA/QC: Kaizen -6

MobileERP

ROHITKUMAR B. KHARVA / Projects  
Paramount Limited

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
- Completed Projects
- Order Management

EPM ENTERPRISE PROCESS MGMT

- Process Dictionary
- Process Design
- Process Automation
- Process Case Creation
- Process Case Operation
- Process Investigations
- Process Library

EBI ENTERPRISE BI REPORTING

- My Apps
- My Dashboards
- My Reports
- My Trees

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## Inventory Storage Layout

### MATERIAL STORE-ATLADRA

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

### FACTORY UNIT-1-POLCON

|    |    |    |    |    |    |
|----|----|----|----|----|----|
| 51 | 52 | 53 | 54 | 55 | 56 |
| 57 | 58 | 59 | 60 | 61 | 62 |

### FACTORY UNIT-2-PTL

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |

Click on above Rack Numbers to see further details....

### Reck No: 0

|                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| - L6-R48-B1-V1-S1 | - L6-R48-B1-V1-S2 | - L6-R48-B2-V1-S1 | - L6-R48-B2-V1-S2 | - L6-R48-B3-V1-S1 | - L6-R48-B3-V1-S2 | - L6-R48-B4-V1-S1 | - L6-R48-B4-V1-S2 | - L6-R48-B5-V1-S1 | - L6-R48-B5-V1-S2 | - L6-R48-B6-V1-S1 | - L6-R48-B6-V1-S2 | - L6-R48-B7-V1-S1 | - L6-R48-B7-V1-S2 | - L6-R48-B8-V1-S1 | - L6-R48-B8-V1-S2 |
| - L6-R48-B1-V2-S1 | - L6-R48-B1-V2-S2 | - L6-R48-B2-V2-S1 | - L6-R48-B2-V2-S2 | - L6-R48-B3-V2-S1 | - L6-R48-B3-V2-S2 | - L6-R48-B4-V2-S1 | - L6-R48-B4-V2-S2 | - L6-R48-B5-V2-S1 | - L6-R48-B5-V2-S2 | - L6-R48-B6-V2-S1 | - L6-R48-B6-V2-S2 | - L6-R48-B7-V2-S1 | - L6-R48-B7-V2-S2 | - L6-R48-B8-V2-S1 | - L6-R48-B8-V2-S2 |
| - L6-R48-B1-V3-S1 | - L6-R48-B1-V3-S2 | - L6-R48-B2-V3-S1 | - L6-R48-B2-V3-S2 | - L6-R48-B3-V3-S1 | - L6-R48-B3-V3-S2 | - L6-R48-B4-V3-S1 | - L6-R48-B4-V3-S2 | - L6-R48-B5-V3-S1 | - L6-R48-B5-V3-S2 | - L6-R48-B6-V3-S1 | - L6-R48-B6-V3-S2 | - L6-R48-B7-V3-S1 | - L6-R48-B7-V3-S2 | - L6-R48-B8-V3-S1 | - L6-R48-B8-V3-S2 |
| - L6-R48-B1-V4-S1 | - L6-R48-B1-V4-S2 | - L6-R48-B2-V4-S1 | - L6-R48-B2-V4-S2 | - L6-R48-B3-V4-S1 | - L6-R48-B3-V4-S2 | - L6-R48-B4-V4-S1 | - L6-R48-B4-V4-S2 | - L6-R48-B5-V4-S1 | - L6-R48-B5-V4-S2 | - L6-R48-B6-V4-S1 | - L6-R48-B6-V4-S2 | - L6-R48-B7-V4-S1 | - L6-R48-B7-V4-S2 | - L6-R48-B8-V4-S1 | - L6-R48-B8-V4-S2 |
| - L6-R48-B1-V5-S1 | - L6-R48-B1-V5-S2 | - L6-R48-B2-V5-S1 | - L6-R48-B2-V5-S2 | - L6-R48-B3-V5-S1 | - L6-R48-B3-V5-S2 | - L6-R48-B4-V5-S1 | - L6-R48-B4-V5-S2 | - L6-R48-B5-V5-S1 | - L6-R48-B5-V5-S2 | - L6-R48-B6-V5-S1 | - L6-R48-B6-V5-S2 | - L6-R48-B7-V5-S1 | - L6-R48-B7-V5-S2 | - L6-R48-B8-V5-S1 | - L6-R48-B8-V5-S2 |
| - L6-R48-B1-V6-S1 | - L6-R48-B1-V6-S2 | - L6-R48-B2-V6-S1 | - L6-R48-B2-V6-S2 | - L6-R48-B3-V6-S1 | - L6-R48-B3-V6-S2 | - L6-R48-B4-V6-S1 | - L6-R48-B4-V6-S2 | - L6-R48-B5-V6-S1 | - L6-R48-B5-V6-S2 | - L6-R48-B6-V6-S1 | - L6-R48-B6-V6-S2 | - L6-R48-B7-V6-S1 | - L6-R48-B7-V6-S2 | - L6-R48-B8-V6-S1 | - L6-R48-B8-V6-S2 |

L=Line, R=Rack, B=Bay, V=Level, S=Slot

Activate Windows  
Go to Settings to activate Windows.

# QA/QC: Lean Visual Management-12

PROJECT

Tender Project Quality Operations Communications Analytics

Reports Dashboard Pivot DecisionTree ValueTree

Team Growth Channels Projects Sites Workload Timelog SIPOC 5S 6-Sigma BRC JSONForm DataSheet

Business Intelligence
Standards
All others...

**MobileERP 5S Visual Dashboard - Document: WorkOrder / Week No: 25 / From: April 18, 2021 to April 24, 2021**

22 Defects Non Conformity

45 Marked Deviations

28 Checklist Failures

5 Safety Failures

65 % Progress

**PEOPLE**

| PROCESS    | PREPARATION     | MIXING      | CHURNING      | METALDETECTOR | WRAPPING      | FROZEN        | CLEANING     | PACKING     |  |
|------------|-----------------|-------------|---------------|---------------|---------------|---------------|--------------|-------------|--|
| WC STATUS  | WORKING         | BREAKDOWN   | MAINTENANCE   | SETUP         | NO MATERIAL   | IDLE          | TOOLING      | TRAINING    |  |
| PEOPLE     | <br>Jackson<br> | <br>Amy<br> | <br>Samir<br> | <br>Madan<br> | <br>Akira<br> | <br>Harsh<br> | <br>Jhon<br> | <br>Jay<br> |  |
| DUE TODO   | 2 Tasks         | 3 Tasks     | 5 Tasks       | 3 Tasks       | 2 Tasks       | 0 Tasks       | 2 Tasks      | 0 Tasks     |  |
| INPROGRESS | 1 Tasks         | 1 Tasks     | 1 Tasks       | 1 Tasks       | 5 Tasks       | 0 Tasks       | 7 Tasks      | 0 Tasks     |  |
| OVERDUE    | 3 Tasks         | 0 Tasks     | 0 Tasks       | 0 Tasks       | 0 Tasks       | 0 Tasks       | 0 Tasks      | 0 Tasks     |  |

**PERFORMANCE**

Activate Windows  
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# QA/QC: Lean JIT Management via MRP-4

## Dispatch with Demand-driven replenishment MRP2 **MOBILEERP**

[All](#) [SOID](#) [Orderwise](#) [CUSTID](#) [Custwise](#) [Wholesale](#) [Typewise](#) [Customers](#) [EnterSO](#) [EditSO](#) [Drilldown](#) [Scoreboard](#) [Offer](#) [Order](#) [Invoice](#)

[Enter Sales Order Details](#) [Credit Check](#) [OA Check](#)

|                                    |        |             |      |          |            |                      |                       |                       |                       |
|------------------------------------|--------|-------------|------|----------|------------|----------------------|-----------------------|-----------------------|-----------------------|
| SALESORDERID:11                    | ITEMID | ITEMNAME    | UNIT | OrderQTY | PendingQTY | StockCheck           | Schedule              | BOMEntry              | Warranty              |
| SONO:643202980                     | 1      | VIC Karaoke | NOs  | 1        | 1          | <a href="#">Plan</a> | <a href="#">Enter</a> | <a href="#">Enter</a> | <a href="#">Enter</a> |
| SALESORDERDATE:28/05/2019 11:15:33 |        |             |      |          |            |                      |                       |                       |                       |
| CUSTOMERNAME:WHOLESALE DEALER      |        |             |      |          |            |                      |                       |                       |                       |

[Enter Payment Schedule](#)

**Data Entry Status**  
 SalesOrder Master Entry:OK  
 SalesOrder Detail Entry:OK  
 Delivery Schedule Entry:Pending  
 BOM Entry:Pending  
 Warranty Entry: Pending  
 Credit Check: Pending  
 Stock Check: Pending  
[REFRESH & CHECK ERROR](#)

### Overall Stock Position

#### Stock Summary

| Supply      | Till date Qty | Pending Qty |
|-------------|---------------|-------------|
| Qty on hand | 278           | 278         |
| Qty on PR   | 2             | 1           |
| Qty on PO   | 6             | 5           |
| Qty on WO   | 0             | 0           |
| Net Supply  | 286           | 284         |

| Demand             | Till date Qty | Pending Qty |
|--------------------|---------------|-------------|
| Qty on Sales Order | 8             | 1           |
| Qty on Forecast    | 9             | 9           |
| Net Demand         | 17            | 10          |

Net Available

269

274

#### Item Picture Factbox

|          |             |
|----------|-------------|
| ItemID   | 1           |
| Itemname | VIC Karaoke |
| Pic.     |             |

### MRP-MATERIAL PLANNING SHEET

| DATE                | DATA   | QTY | STOCK |
|---------------------|--|-----|-------|
| 28/05/2019          | Stock  | 278 | 278   |
| 08/02/2016          | FORECASTID:116<br>ASHAPURA DISTRIBUTORS          | 8   | 270   |
| 01/04/2016          | FORECASTID:233<br>ASHAPURA DISTRIBUTORS          | 1   | 269   |
| 23/05/2017 21:35:47 | PURCHASEORDERID:4<br>DUARACOAT                   | 1   | 270   |
| 23/05/2017 21:36:00 | PURCHASEORDERID:5<br>NARMADA VALLEY ELECTRONICS  | 1   | 271   |
| 23/05/2017 21:41:03 | PURCHASEORDERID:6<br>NARMADA VALLEY ELECTRONICS  | 1   | 272   |
| 24/07/2017 01:24:39 | PURCHASEORDERID:10<br>NARMADA VALLEY ELECTRONICS | 1   | 273   |
| 22/05/2019 12:19:31 | PURCHASEORDERID:15<br>VITAL ELECTROCOMP          | 1   | 274   |
| 31/05/2019          | SALESORDERID:11<br>WHOLESALE DEALER              | 1   | 273   |
| 31/05/2019          | INDENT/PRID:34<br>Jignesh                        | 1   | 274   |

### Storewise Stock

| STOREID | STORENAME | STOCK |
|---------|-----------|-------|
| 1       | FACTORY   | 278   |

### MRP Example

| Widgets                | Week 1 | Week 2 | Week 3 | Week 4 |
|------------------------|--------|--------|--------|--------|
| Gross requirements     |        |        | 100    | 50     |
| Scheduled receipts     |        | 60     |        |        |
| On hand                | 20     | 80     | -20    | -50    |
| Net requirements       |        |        | 20     | 50     |
| Planned order releases |        | 20     | 50     |        |

# What is Lean Value Stream based Process Design-11.

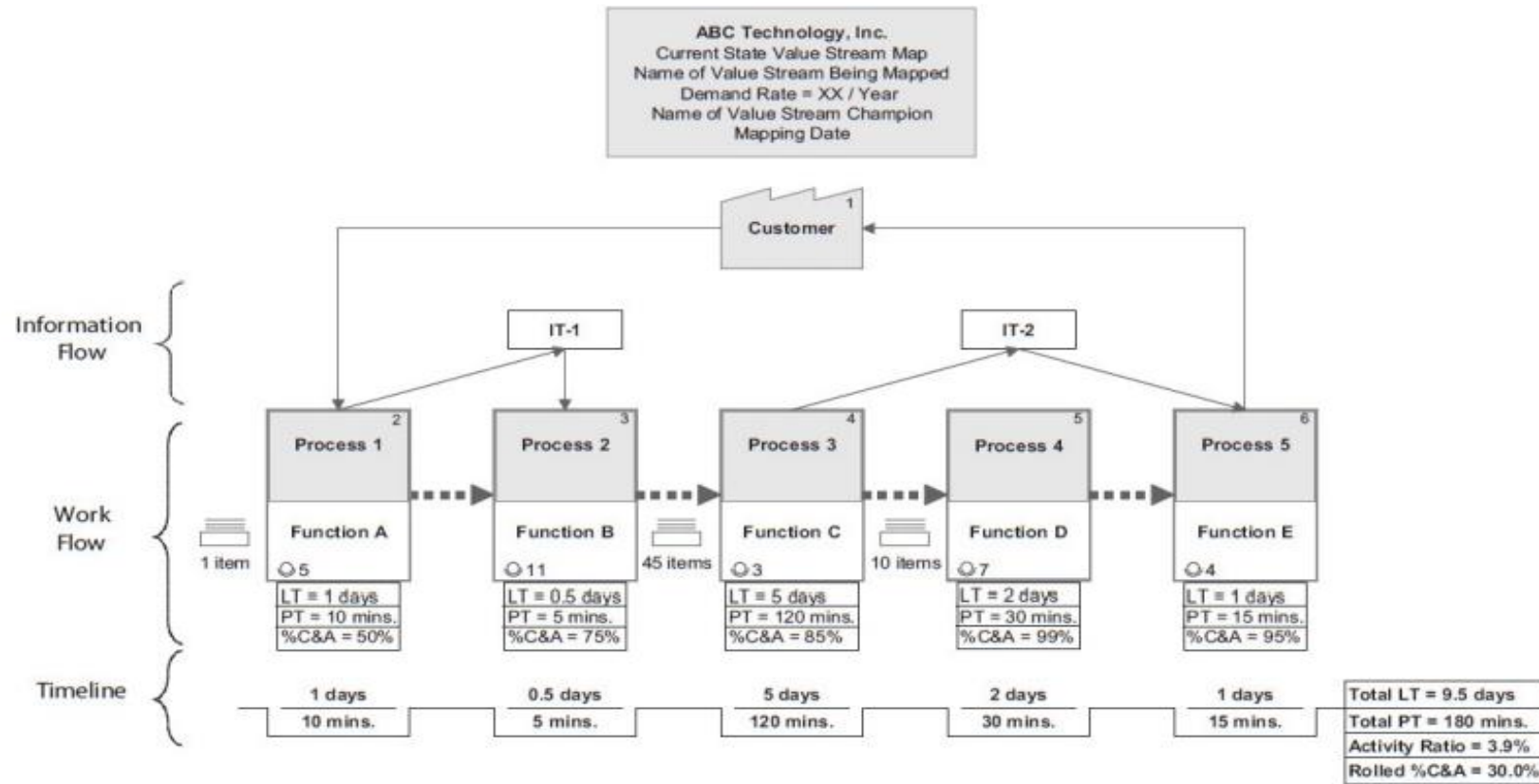


FIGURE 1.2 Basic current state value stream map

The term value stream was coined by James Womack, Daniel Jones, and Daniel Roos in the book that launched the Lean movement, *The Machine that Changed the World* (1990), and further popularized by James Womack and Daniel Jones in *Lean Thinking* (1996). A value stream is the sequence of activities an organization undertakes to deliver on a customer request. More broadly, a value stream is the sequence of activities required to design, produce, and deliver a good or service to a customer, and it includes the dual flows of information and material. Most value streams are highly cross-functional: the transformation of a customer request to a good or service flows through many functional departments or work teams within the organization.

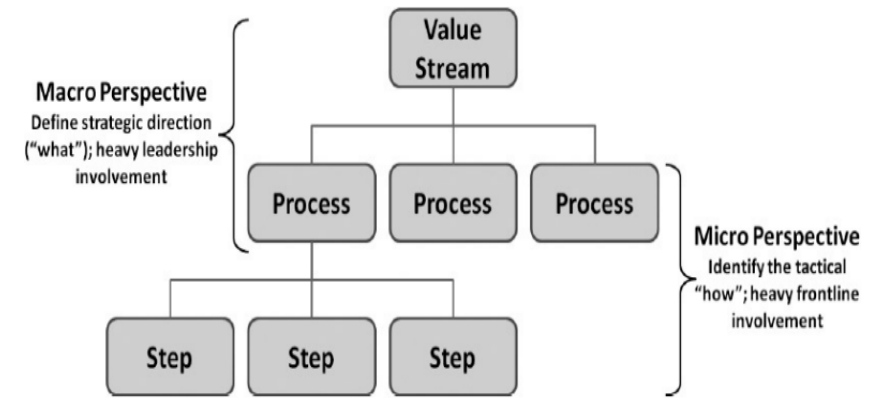


FIGURE 1.1 Granularity of work

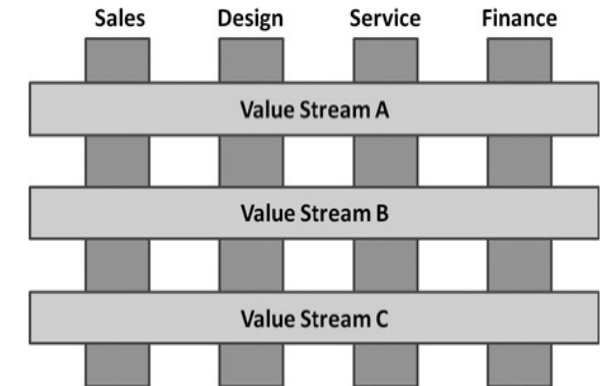
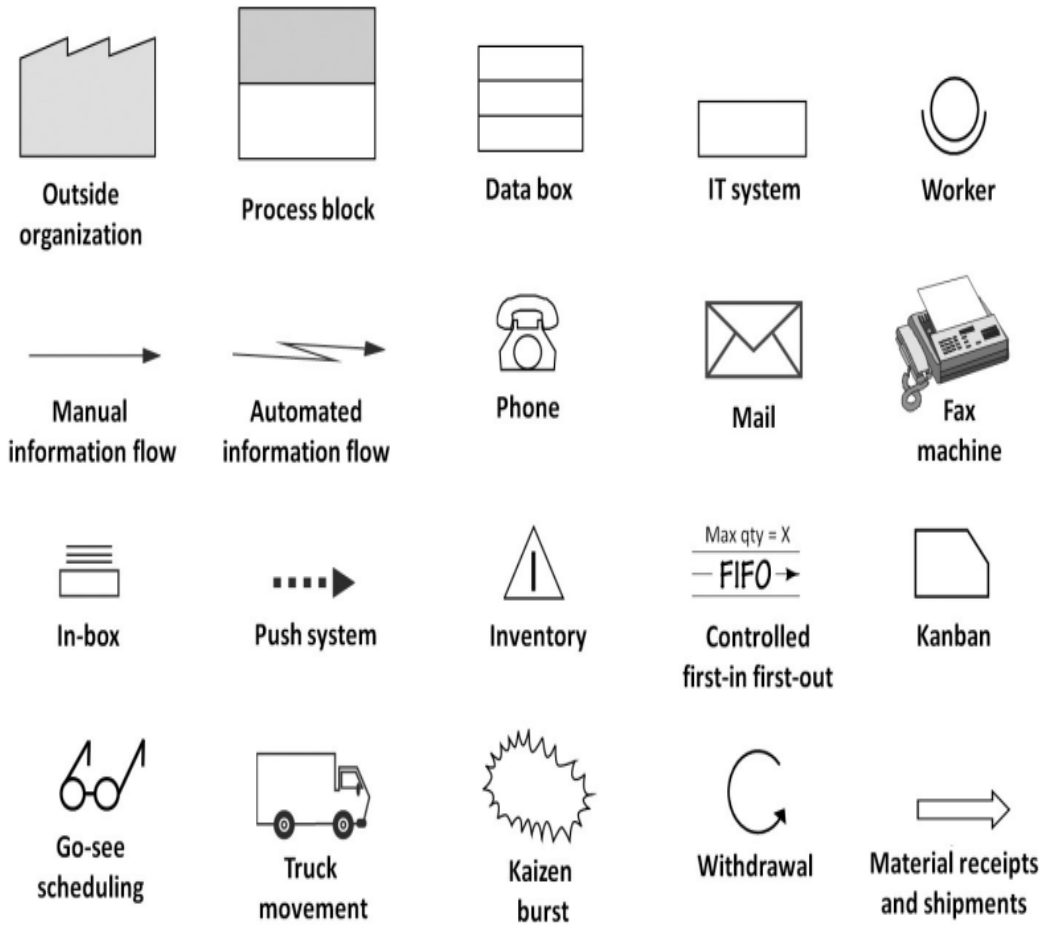


FIGURE 1.3 Vertical organization structure versus horizontal reality



# Lean Value Stream Process Design Icons & Process Drawing Software



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 PMS PROJECT MANAGEMENT SYSTEM  
 Active Projects  
 Completed Projects  
 Order Management  
 EPM ENTERPRISE PROCESS MGMT  
 Process Dictionary  
 Process Design  
 Process Automation  
 Process Case Creation  
 Process Case Operation  
 Process Investigations  
 Process Library  
 EBI ENTERPRISE BI REPORTING  
 My Apps  
 My Dashboards  
 My Reports  
 My Trees  
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23.12.1 Plan Procurement Management  
 24.13.2 Plan Stakeholder Engagement

Customer  
 Notices QR code  
 Scan QR code  
 Scan successful?  
 No  
 Open product information in mobile app  
 Is informed  
 Yes  
 Moved up the labels?

print to console  
 Activate Windows  
 Go to Settings to activate Windows [BPMN.IO](#)

FIGURE A.1 Common value stream mapping icons

# QA/QC: Lean Value Stream Transformation EPC Process Design-11

## Current – ASIS Process

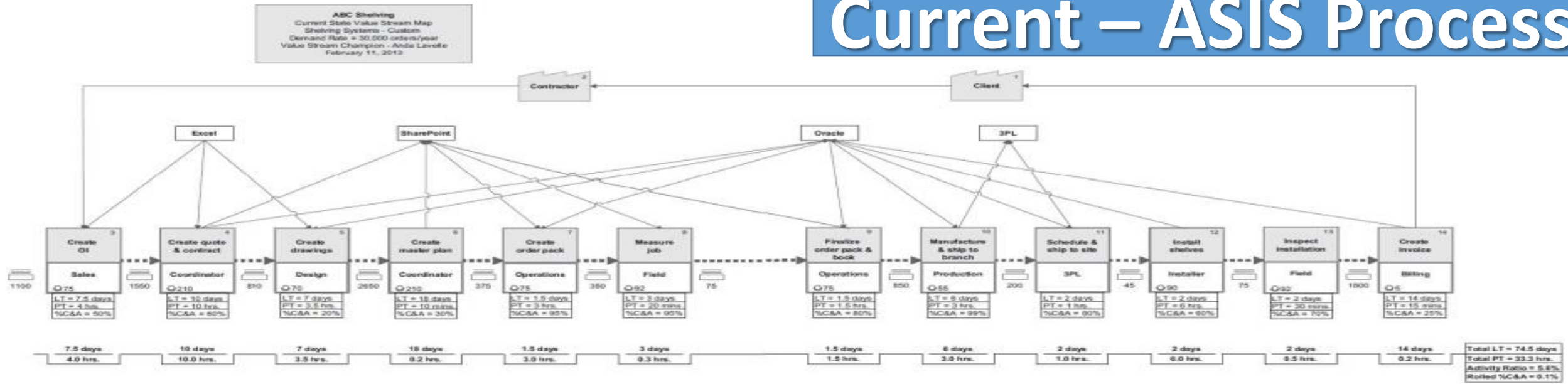
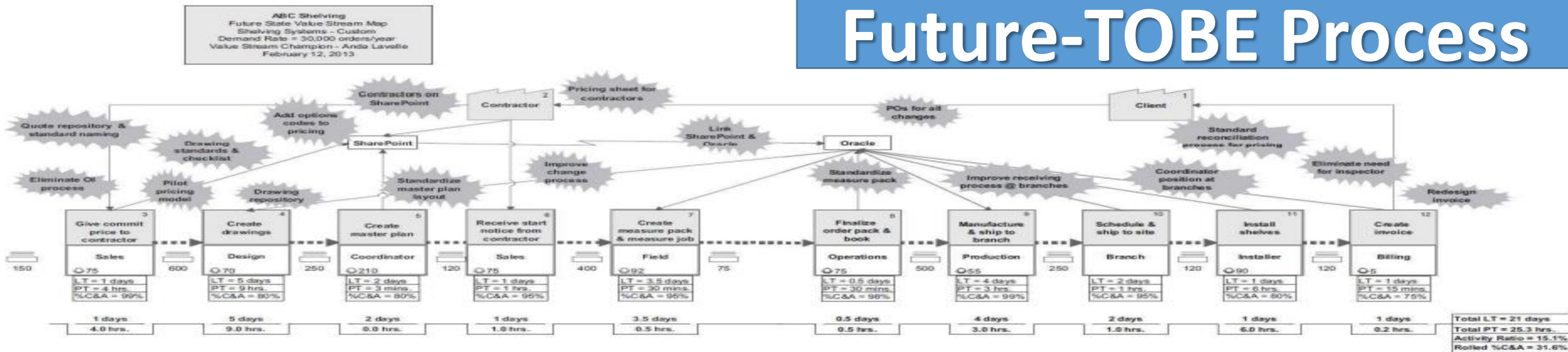


FIGURE E.1 Current state value stream map for custom shelving systems

## Future-TOBE Process



# Lean Value Stream Transformation Repair Process Design

## Current – ASIS Process

## Future-TOBE Process

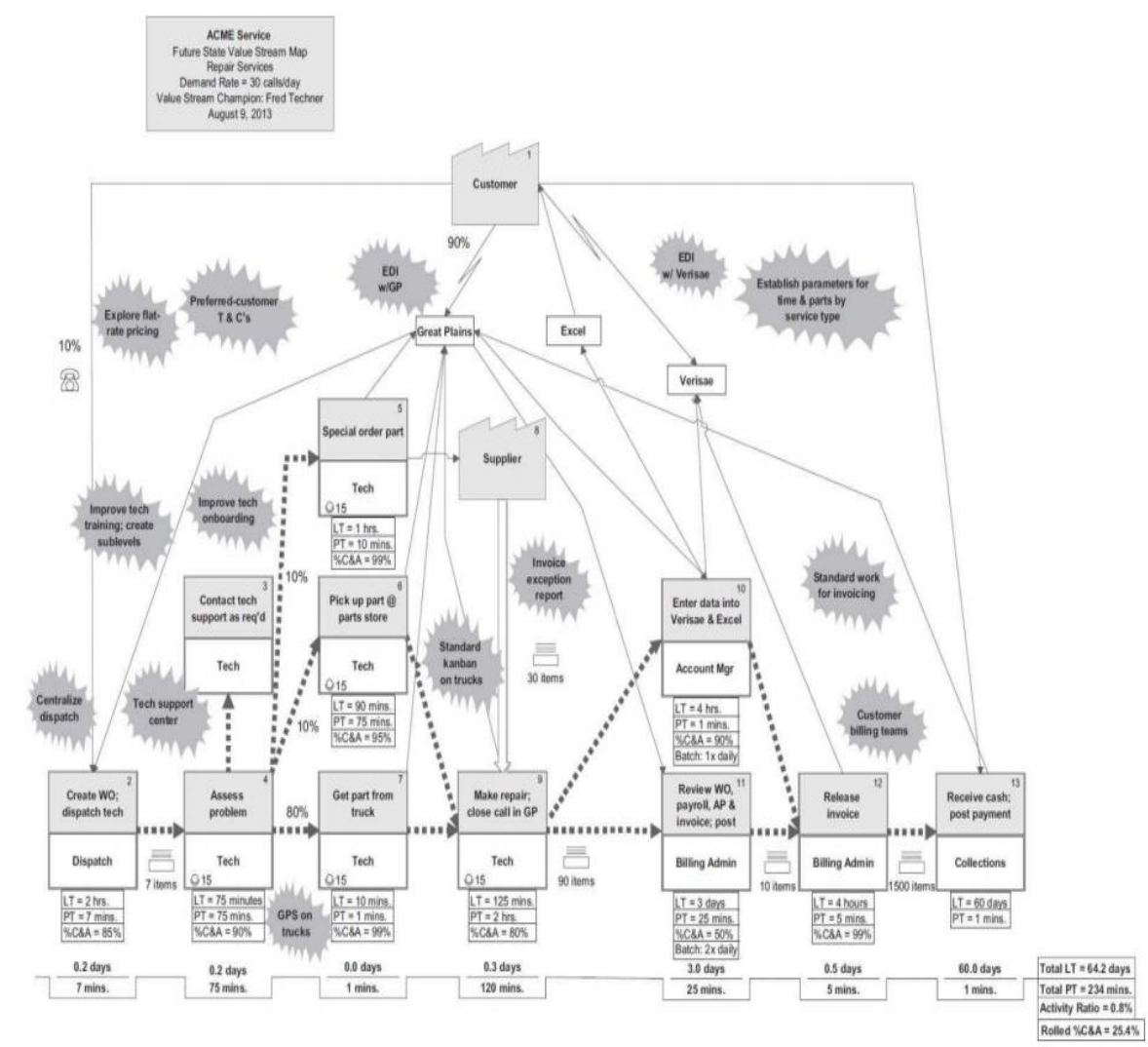
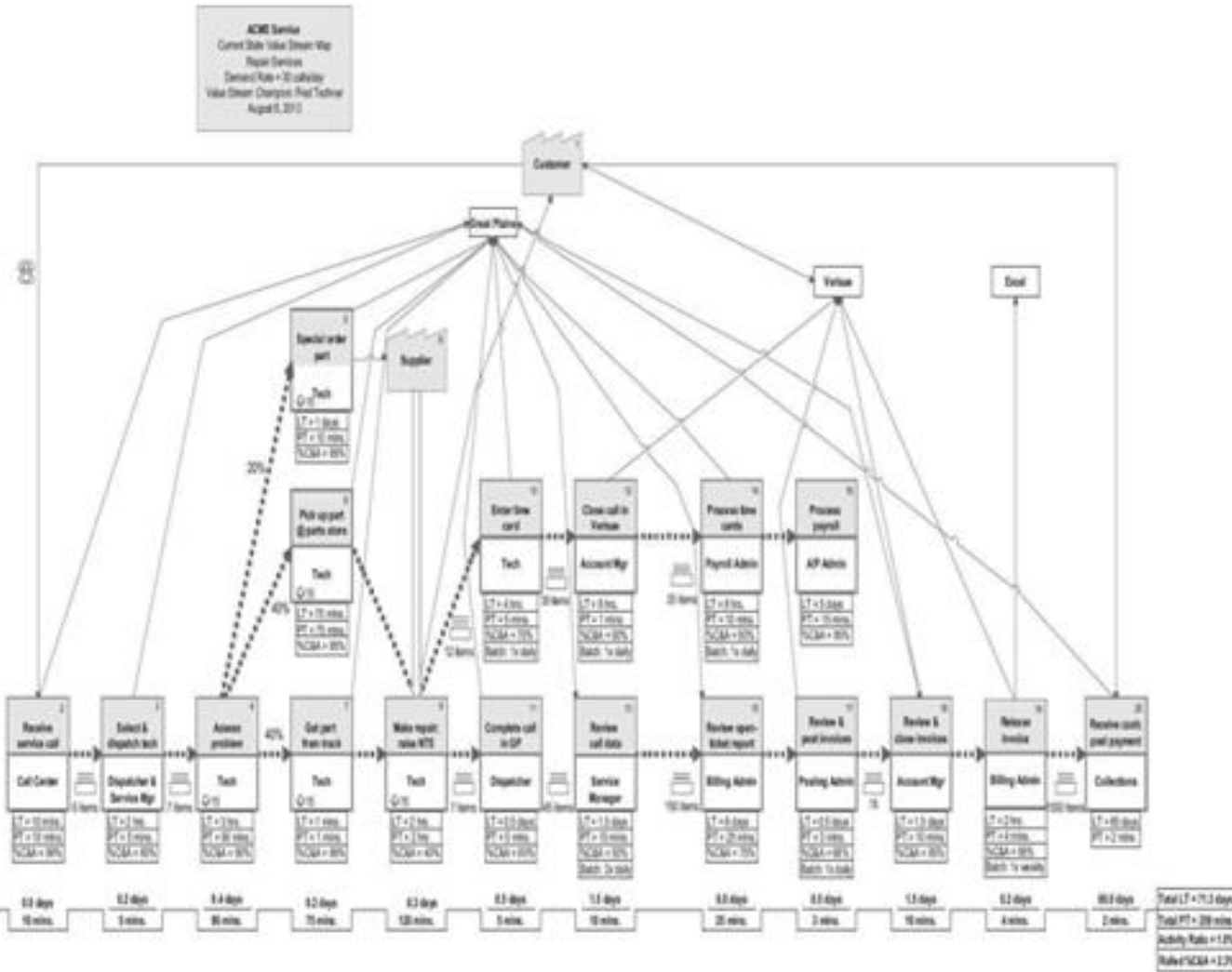


FIGURE D.1 Current state value stream map for repair services

FIGURE D.2 Future state value stream map for repair services

# Lean Value Stream Process Design+Programming Software

MobileERP

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Paramount Limited

ETM ENTERPRISE TASK MANAGEMENT

- My Home
- My Documents
- Tender
- Sales Documents
- Purchase Documents
- Purchase Order
- Mfg Order
- Project
- lom
- Mr
- My Tasks
- My Tickets
- My Activities
- My Masters

PMS PROJECT MANAGEMENT SYSTEM

- Active Projects
- Completed Projects
- Order Management

EPM ENTERPRISE PROCESS MGMT

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| MR   | INQUIRY  | OFFER   | TR                                    | TQ   | SELECTION                                | CR                                  | FINALIZE                                 | LOI                                       | PR  |
|--|--|---|---------------------------------------|--|--|-------------------------------------|--|---|---|
| 5823. ISSUE OF MR-MATERIAL REQUEST BY ENGG | 3281. ISSUE OF RFQ TO APPROVED VENDOR LIST BY PURCHASE | 1838. OFFER RECEIVED AND ENETERED BY PURCHASE | 4517. TECHNICAL REVIEW BY ENGINEERING | 6713. ENGG RAISE AND RESOLVE TECHNICAL QUERIES | 6718. RECOMMENDATION OF PREFERRED VENDOR | 6718. COMMERCIAL REVIEW BY PURCHASE | 1838. COMMERCIAL NEGOTIATION WITH VENDOR | 1838. ISSUE OF LETTER OF INTENT TO VENDOR | 4517. ISSUE OF PR TO PURCHASE W.R.T TOTAL REQUIREMENT |
| ENGINEERING                                | PURCHASE   | PURCHASE                                      | ENGINEERING                           | ENGINEERING                                    | ENGINEERING                              | PURCHASE                            | PURCHASE                                 | PURCHASE                                  | PURCHASE  |
| DAYS: 1<br>HRS: 1<br>PROGRESS: 0           | DAYS: 1<br>HRS: 1<br>PROGRESS: 10                      | DAYS: 1<br>HRS: 1<br>PROGRESS: 20             | DAYS: 1<br>HRS: 1<br>PROGRESS: 30     | DAYS: 1<br>HRS: 1<br>PROGRESS: 40              | DAYS: 1<br>HRS: 1<br>PROGRESS: 50        | DAYS: 1<br>HRS: 1<br>PROGRESS: 60   | DAYS: 1<br>HRS: 1<br>PROGRESS: 70        | DAYS: 1<br>HRS: 1<br>PROGRESS: 80         | DAYS: 1<br>HRS: 1<br>PROGRESS: 100                    |
| What Next                                  | What Next  | What Next                                     | What Next                             | What Next                                      | What Next                                | What Next                           | What Next                                | What Next                                 | What Next   |

```

graph LR
    Start((Notifies QR code)) --> X{X}
    X --> Scan[Scan QR code]
    Scan --> Y{Scan successful?}
    Y -- No --> Open[Open product information in mobile app]
    Y -- Yes --> Y
    Open --> End((Is informed))
    
```

Activate Windows  
Go to Settings to activate Windows.

## Current – ASIS Process

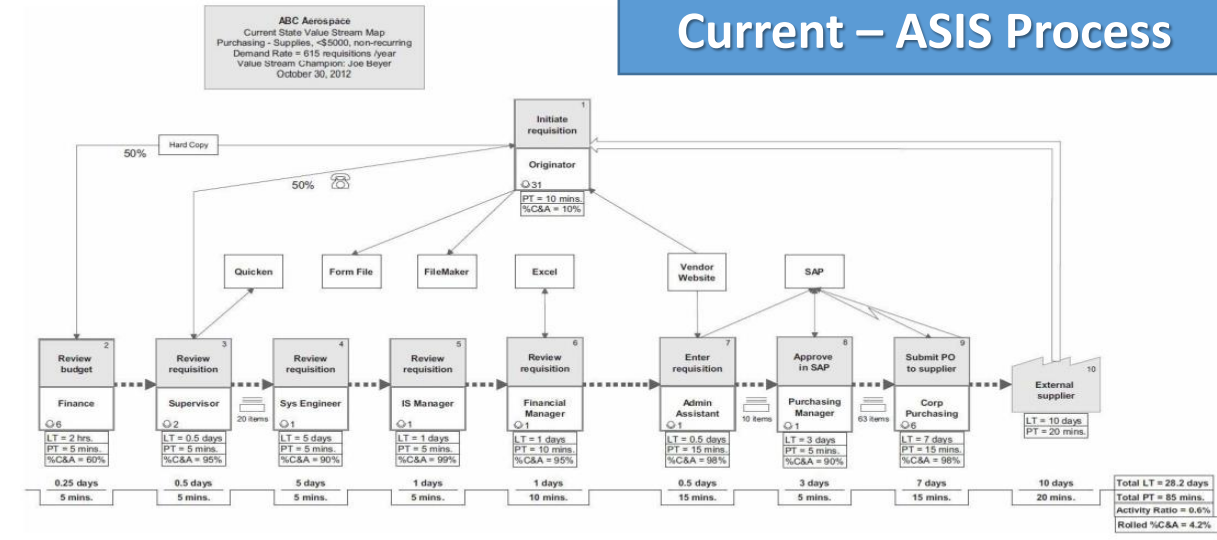
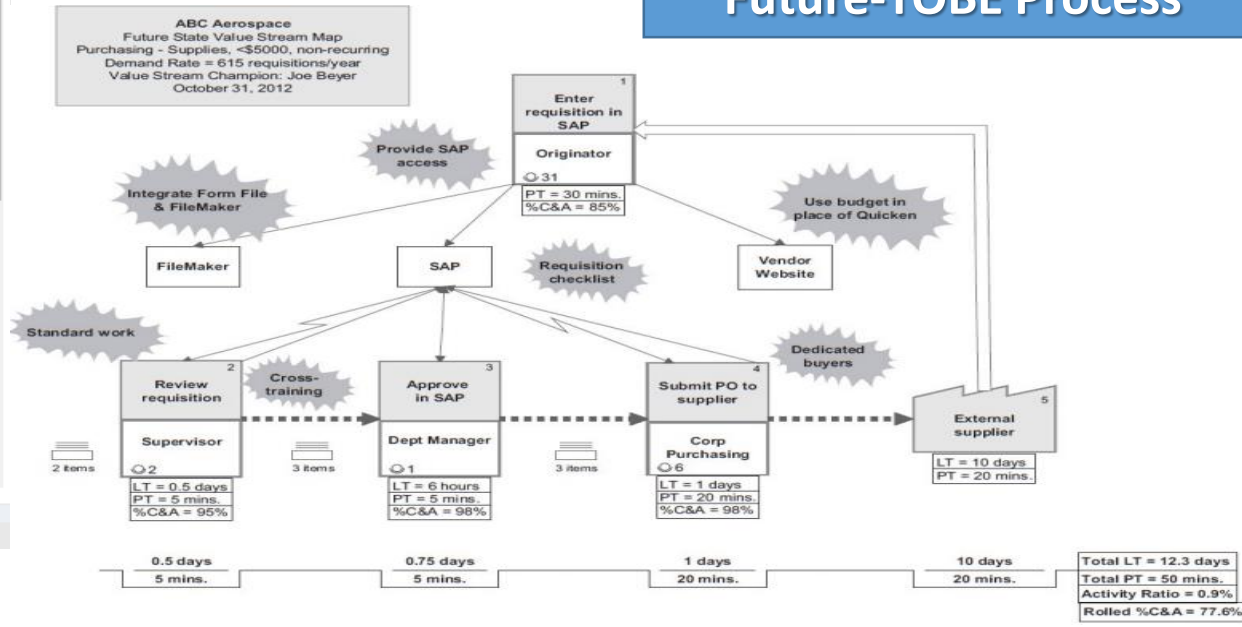
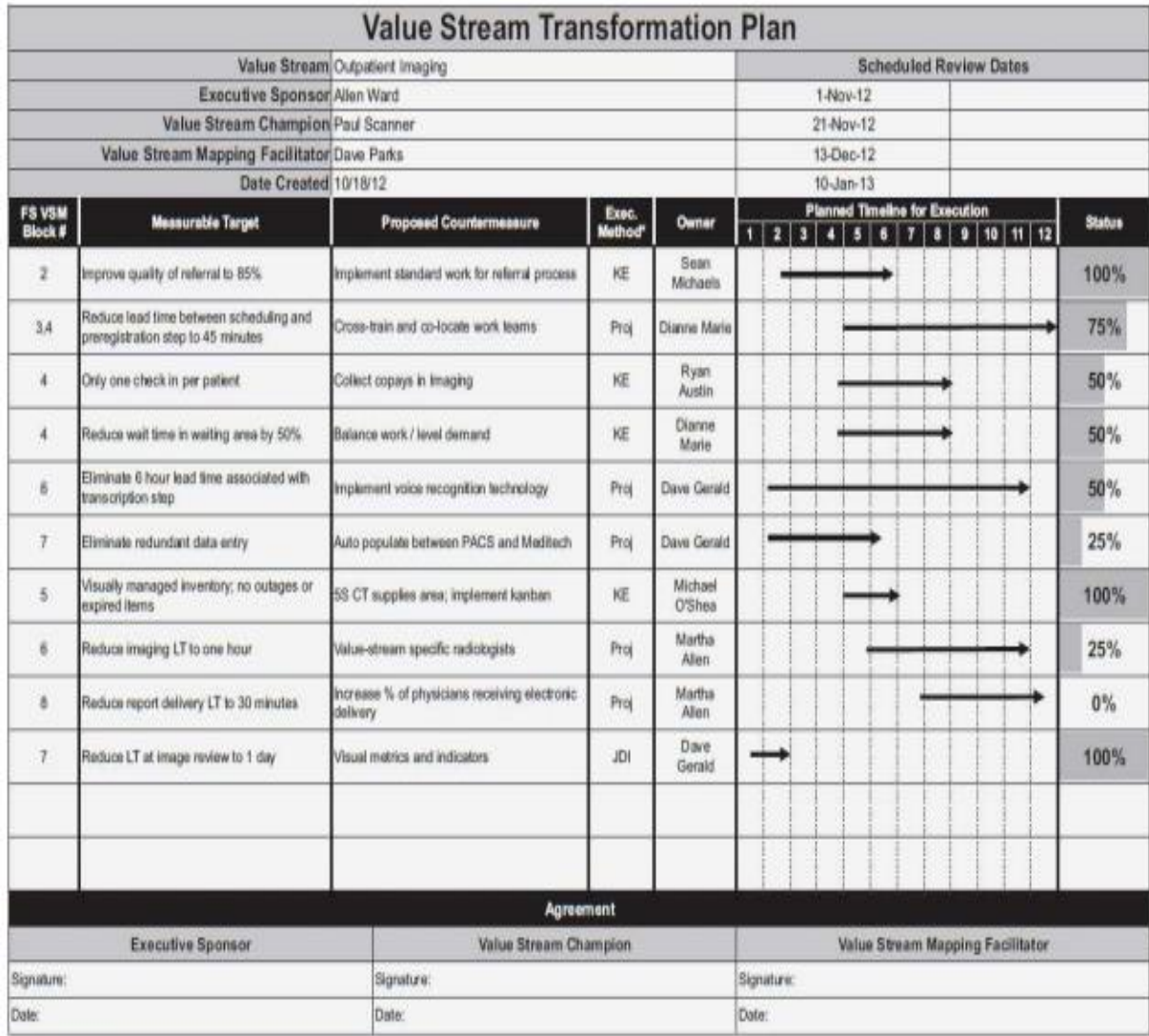


FIGURE C.1 Current state value stream map for supplies purchasing

## Future-TOBE Process



# Lean Value Streams Transformation Plan



\* Execution Method = JDI (Just-do-it), KE (Kaizen Event), or Proj (Project)

FIGURE 5.1 Sample Value Stream Transformation Plan

| Metric                       | Current State | Projected Future State | Projected % Improvement |
|------------------------------|---------------|------------------------|-------------------------|
| Total Lead Time              | 27.4 days     | 15.0 days              | 45.3%                   |
| Total Process Time           | 4.8 hours     | 3.4 hours              | 29.2%                   |
| Activity Ratio               | 2.2%          | 2.8%                   | 27.3%                   |
| Rolled % Complete & Accurate | 5.9%          | 34.7%                  | 488.1%                  |

## Current – ASIS Process

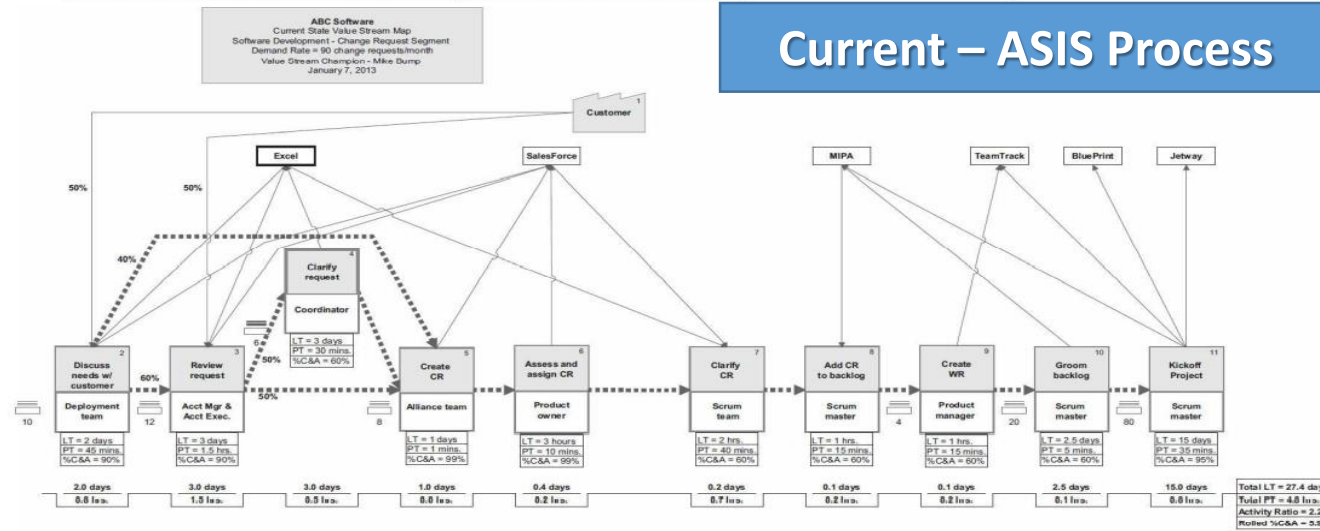


FIGURE F.1 Current state value stream map for software development change request

## Future-TOBE Process

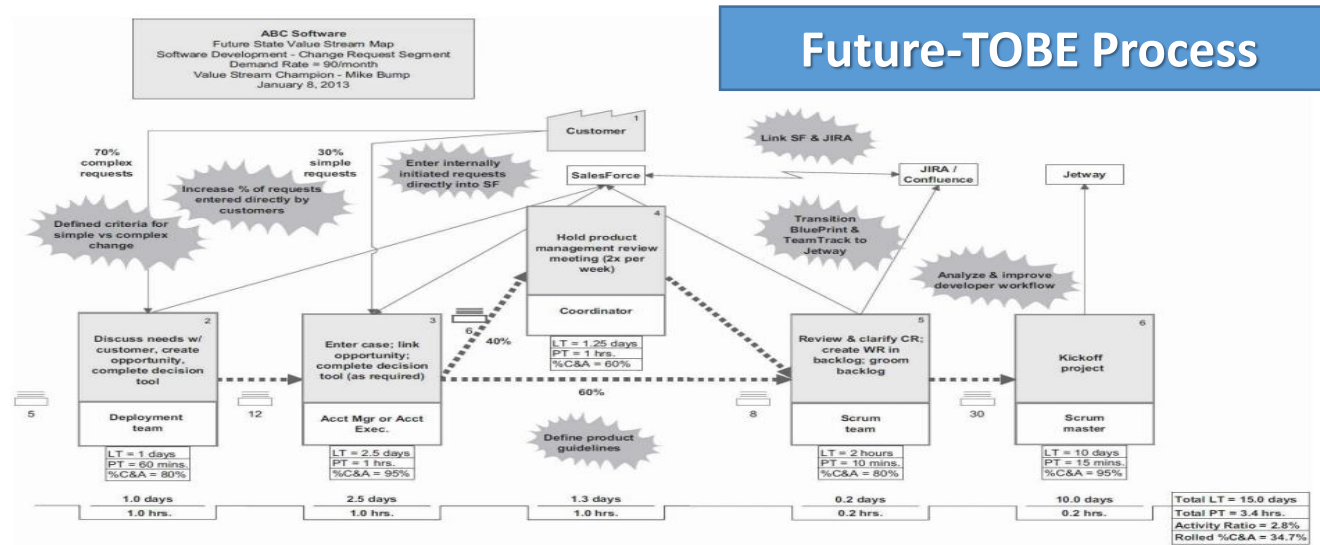
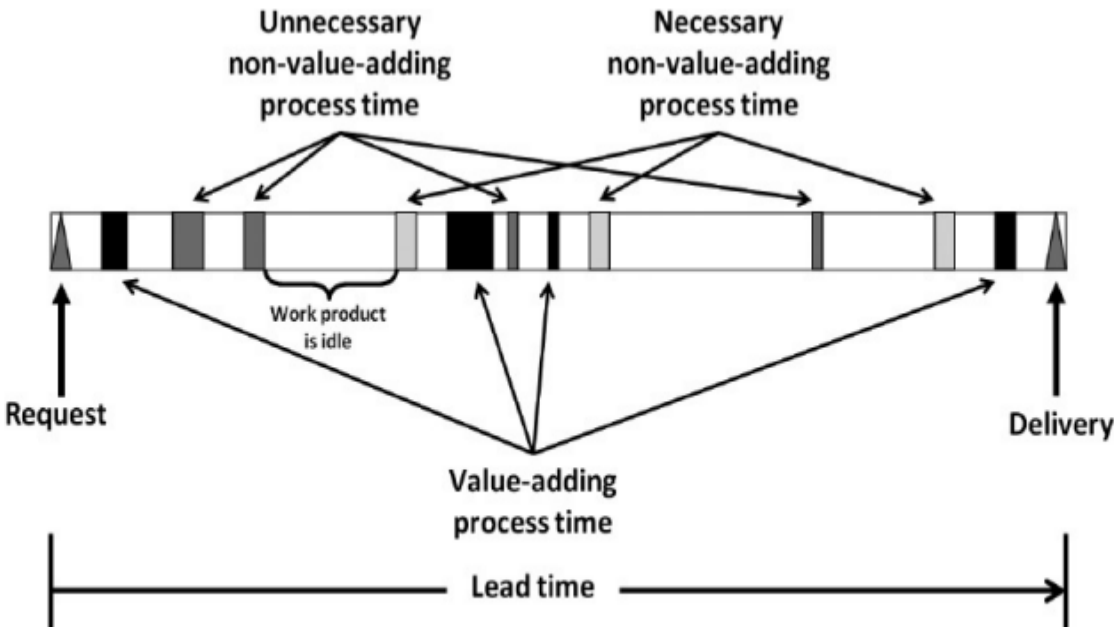


FIGURE F.2 Future state value stream map for software development change request

# Lean Process Performance Matrix



- Loopbacks
- Unnecessary handoffs
- Rework due to errors and lack of clarity
- Batching
- Functions missing or getting involved too early or too late in the process
- Redundant activities
- High variation in how work is performed
- No documented standard work
- Excessive inspection (review, approval, audits)
- Overspecialization of staff
- Existing technology not fully leveraged
- Underutilization of skills
- Compliance overkill
- Delays due to juggling multiple responsibilities
- Push and overburden

FIGURE 3.14 Common process findings

## Process Management

| #  | Department    | SYSTEM                    | PROCESS                      | STARTDOC      | DATAENTRY     | RESPONSIBLE                      | CT  | AVGCT | AVGCOST | FREQUENCY | CASES | INVESTIGATION                            |
|----|---------------|---------------------------|------------------------------|---------------|---------------|----------------------------------|-----|-------|---------|-----------|-------|--|
| 1  | Tender        | EPC Tender                | Tender > Project             | LEADS         | TENDER        | MANISH PATIL                     | 9   | 0     | 0       | 50        | 1     | <a href="#">Process / Delay / Cycles</a> |
| 2  | Projects      | EPC Project               | Project > DCI > BBU > RABILL | PROJECT       | PROJECT       | ROHITKUMAR B. KHARVA             | 4   | 0     | 0       | 3         | 3     | <a href="#">Process / Delay / Cycles</a> |
| 3  | Design        | IOCL DESIGN               | DCI > Code 2 > MR            | DCI           | PROJECT       | Greeshma Mishra                  | 13  | 0     | 0       | 741       | 195   | <a href="#">Process / Delay / Cycles</a> |
| 4  | Engineering   | HRRL Engineering          | BBU > Completion             | REVISION      | ENGINEERING   | ROHITKUMAR B. KHARVA             | 9   | 20    | 0       | 617       | 4     | <a href="#">Process / Delay / Cycles</a> |
| 5  | Procurement   | HRRL Procurement/Supply   | BBU > Supply                 | PROCUREMENT   | PROCUREMENT   | KEYUR J. BHATT                   | 7   | 0     | 0       | 227       | 2     | <a href="#">Process / Delay / Cycles</a> |
| 6  | Manufacturing | HRRL Site Manufacturing   | BBU > Build                  | MO            | MANUFACTURING | Shaktipratap Raashpratap Yadav   | 8   | 0     | 0       | 170       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 7  | Construction  | HRRL Construction/Civil   | BBU > Construct              | CO            | CONSTRUCTION  | Kharva Mehul Vipinbhai           | 6   | 0     | 0       | 942       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 8  | Installation  | HRRL Installation Works   | BBU > Install                | INST          | CONSTRUCTION  | Hemant Prabhudas Prajapati       | 6   | 0     | 0       | 50        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 9  | Piping        | HRRL Piping Works         | BBU > Piping                 | PIPE          | CONSTRUCTION  | Patel Sanketkumar Dharmendrabhai | 7   | 0     | 0       | 40        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 10 | Painting      | HRRL Painting Works       | BBU > Painting               | PAINT         | CONSTRUCTION  | Sujal Shashikant Shah            | 6   | 0     | 0       | 5         | 0     | <a href="#">Process / Delay / Cycles</a> |
| 11 | Commissioning | HRRL Plant Commissioning  | BBU > Handover               | CM            | COMMISSIONING | ROHITKUMAR B. KHARVA             | 3   | 0     | 0       | 1         | 0     | <a href="#">Process / Delay / Cycles</a> |
| 12 | Planning      | EPC IOM/NonProject Supply | IOM > RFQ > PO               | IOM           | PURCHASE      | KEYUR J. BHATT                   | 10  | 0     | 0       | 1001      | 0     | <a href="#">Process / Delay / Cycles</a> |
| 12 | Planning      | EPC Procurement/Internal  | MR > RFQ > PR>PO             | MR            | PURCHASE      | KEYUR J. BHATT                   | 10  | 0     | 0       | 3202      | 1     | <a href="#">Process / Delay / Cycles</a> |
| 13 | Stores        | EPC Purohase/Store        | PO > MIR                     | PORDER        | PURCHASE      | KEYUR J. BHATT                   | 12  | 4     | 0       | 2011      | 24    | <a href="#">Process / Delay / Cycles</a> |
| 14 | Manufacturing | EPC Factory Manufacturing | WO > IRN > MIR               | MFGORDER      | SHOPFLOOR     | PARMAR GAURANGKUMAR DEEPAKSHAI   | 8   | 0     | 0       | 500       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 15 | Accounts      | EPC BillPassing           | MIR > PI > PV                | PINVOICE      | PLANNING      | CHANDRAKANT H. PATEL             | 13  | 0     | 0       | 6034      | 74    | <a href="#">Process / Delay / Cycles</a> |
| 16 | Stores        | EPC Fulfillment           | BBU > IRN > DPR > RABILL     | PROJECTDPR    | WAREHOUSE     | Vaibhav Kanubhai Panchal         | 5   | 0     | 0       | 400       | 1     | <a href="#">Process / Delay / Cycles</a> |
| 17 | Accounts      | EPC Invoicing             | RABILL > Proforma > SI > SV  | INVOICE       | ACCOUNTS      | Sushil Bipinohandra Chokshi      | 5   | 21    | 0       | 400       | 60    | <a href="#">Process / Delay / Cycles</a> |
| 17 | Accounts      | EPC GST                   | GSTR1>GSTR3B                 | TAXFILED      | ACCOUNTS      | Sushil Bipinohandra Chokshi      | 0   | 0     | 0       | 12        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 18 | Accounts      | EPC Treasury              | BANK+BG+LC+EMD>RECONCILE     | BANKBOOK      | ACCOUNTS      | MITESHBHAI BHUPENDRABHAI BHATIYA | 0   | 0     | 0       | 12        | 10    | <a href="#">Process / Delay / Cycles</a> |
| 18 | Accounts      | EPC Taxation              | Declaration>TDS              | DECLARATION   | ACCOUNTS      | Pranav Kanaiyalal Patel          | 0   | 0     | 0       | 12        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 18 | Accounts      | EPC Accounting            | VOUCHER > BLIPL > Audit      | VOUCHER       | AUDITOR       | Harsh Kantilal Shah              | 0   | 0     | 0       | 12053     | 591   | <a href="#">Process / Delay / Cycles</a> |
| 19 | H.R.          | HR Recruitment            | Vacancy to Employee          | JOBS          | HR            | Pandya Sandipkumar Harshadobhai  | 9   | 0     | 0       | 540       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 20 | H.R.          | HR Orientation            | Joining to Workallotment     | EMPLOYEE      | HR            | Pandya Sandipkumar Harshadobhai  | 9   | 0     | 0       | 132       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 21 | H.R.          | HR Appraisal              | Apraisal to Training         | PARFORM       | HR            | Pandya Sandipkumar Harshadobhai  | 8   | 0     | 0       | 320       | 0     | <a href="#">Process / Delay / Cycles</a> |
| 22 | H.R.          | HR Training               | Training to SkillMatrix      | TRAININGREQ   | HR            | Pandya Sandipkumar Harshadobhai  | 9   | 0     | 0       | 54        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 23 | H.R.          | HR Leave                  | Leave Sanction               | LEAVEAPP      | HR            | Pandya Sandipkumar Harshadobhai  | 4   | 0     | 0       | 3200      | 0     | <a href="#">Process / Delay / Cycles</a> |
| 24 | H.R.          | HR Seperation             | Resign to Settlement         | RESIGNATION   | HR            | Pandya Sandipkumar Harshadobhai  | 11  | 0     | 0       | 56        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 25 | H.R.          | HR Retirement             | Retirement to Settlement     | RETIREMENT    | HR            | Pandya Sandipkumar Harshadobhai  | 11  | 0     | 0       | 5         | 0     | <a href="#">Process / Delay / Cycles</a> |
| 26 | H.R.          | HR Payroll                | MusteroI>Payroll             | MONTHLYTRAN   | HR            | Pandya Sandipkumar Harshadobhai  | 15  | 0     | 0       | 12        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 27 | QA-QC         | ISO 9001:2015             | QMS to Improvement           | AUDITREPORT   | HR            | Greeshma Mishra                  | 7   | 0     | 0       | 12        | 0     | <a href="#">Process / Delay / Cycles</a> |
| 28 | Computer      | DevOps Support            | TKT>Solution                 | ISSUE         | HELPSDESK     | NIRAV SHAH                       | 5   | 0     | 0       | 1500      | 0     | <a href="#">Process / Delay / Cycles</a> |
| 28 | Computer      | CRM Website Marketing     | WEBSITE>SEO                  | WEBSITE       | DWORKER       | BHAVIK A. DANA                   | 6   | 0     | 0       | 12        | 5     | <a href="#">Process / Delay / Cycles</a> |
| 28 | Computer      | DevOps ERP Project        | REQ>Software                 | ERP           | IMPLEMENT     | ASHISH G. KANTAWALA              | 105 | 0     | 0       | 1         | 33    | <a href="#">Process / Delay / Cycles</a> |
| 29 | Director      | EPM Ent.Process Mgmt      | All Above                    | PROJECTMASTER | DIRECTOR      | SHRI SAMIR K. TULI               | 80  | 0     | 0       | 1         | 31    | <a href="#">Process / Delay / Cycles</a> |

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