Section 4.0

Project Implementation
Roadmap to Project Management Success

Form Project Team
- Statement of Work
- Work Breakdown Structure
- Responsibility Matrix
- Network
- Gantt
- Resource Plan
- Budget

Perform Tasks
- Network
- Gantt
- Resource Plan
- Budget

LEADERSHIP
- Project Background
- Project Deliverables
- Work Breakdown Structure
- Responsibility Matrix

COMMUNICATION
- Purpose
- Project Deliverables
- Work Breakdown Structure
- Responsibility Matrix

PROJECT NOTEBOOK
- Network
- Gantt
- Resource Plan
- Budget

MEETINGS
- Perform Tasks
- Track Progress
- Manage Change

IMPLEMENT
- Update Plan
- Resolve Issues
- Manage Change

CLOSE-OUT
- Conduct Close-Out Meeting
- Share Lessons Learned
- Evaluate Success

TIME
- Gantt
- Resource Plan
- Budget

BREAKDOWN
- Network
- Gantt
- Resource Plan
- Budget

LESSONS LEARNED
- Perform Tasks
- Track Progress
- Manage Change
Factors that Ensure Success

- Update the project plan
- Stay within scope
- Authorized change implementation
- Providing deliverables on time
- Conducting project reviews
- MBWA
  - Progress
  - Performance
  - Moral
Project Manager’s Role

- Managing customer expectations
- Carrying out project start-up activities
- Directing and supporting the project team by using leadership skills
- Tracking activities
- Communicating project status
- Managing change to control deviations from the established plan
- Resolving issues in a timely manner
- Maintaining the project notebook
Project Notebook

- Project History
- Project Plan
- Project Implementation
- Project Close-Out
- Project Administration
Implementation Model

Step 1: Perform Tasks
Step 2: Track Progress
Step 3: Manage Change
Step 4: Update the Plan

Resolve Issues
Roadmap to Project Management Success

- Form Project Team
- Statement of Work
- Work Breakdown Structure
- Responsibility Matrix
- Network
- Gantt
- Project Management Plan
- Resource Plan
- Budget
- Perform Tasks
- Conduct Close-Out Meeting
- Share Lessons Learned
- Evaluate Success
- Update Plan
- Resolve Issues
- Manage Change
- Track Progress
- Perform Tasks
- Leadership
- Communication
- Lessons Learned
- Reports
- Meetings
- Plan
- Implement
- Close-Out
Collect Project Data

- Team Member Status Reports
- Team Member Status Review Meetings
- Automated Information Systems
- Supplier Status Reports/Meetings

Project Manager
Reporting Activity Progress

- Estimate to complete (ETC)
- 80 hour rule
**Percent Completion Reporting**

<table>
<thead>
<tr>
<th>Period</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned</td>
<td>20</td>
<td>40</td>
<td>60</td>
<td>90</td>
<td>100</td>
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<td>Actual</td>
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<td>40</td>
<td>60</td>
<td>90</td>
<td>94</td>
<td>96</td>
<td>97</td>
<td>97.5</td>
</tr>
</tbody>
</table>

Everything looks fine until you reach 90%!
Reporting Project Progress

- Progress review meeting
- Project reports
## Project Progress Data

<table>
<thead>
<tr>
<th>Audience</th>
<th>Level of Detail Presented</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senior management</strong></td>
<td>Summary data:</td>
</tr>
<tr>
<td><strong>Project sponsor</strong></td>
<td>– Summary activities</td>
</tr>
<tr>
<td><strong>Customer</strong></td>
<td>– Decision matrix</td>
</tr>
<tr>
<td><strong>Program manager</strong></td>
<td>– Major risks</td>
</tr>
<tr>
<td><strong>Project manager</strong></td>
<td>– Serious Issues</td>
</tr>
<tr>
<td><strong>Team members</strong></td>
<td>Detail data:</td>
</tr>
<tr>
<td>**Cross-functional groups</td>
<td>– All activities</td>
</tr>
<tr>
<td></td>
<td>– Detail Gantt charts</td>
</tr>
<tr>
<td></td>
<td>– All milestones</td>
</tr>
<tr>
<td></td>
<td>– All risks and issues</td>
</tr>
</tbody>
</table>
Project Progress Review Meetings

- Review of action items from last meeting
- Update on activities and schedule
- Problem identification and corrective action planned
- Review of issues (closed, open, new)
- Change request status
- Risk status
- Plan for next period
# PROJECT PROGRESS REPORT

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Date Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager:</td>
<td>Report Period</td>
</tr>
<tr>
<td>Authorization Reference (Purchase Order, ...):</td>
<td>Contract Charge Number</td>
</tr>
</tbody>
</table>

## Summary of Progress During Period

<table>
<thead>
<tr>
<th>Open Issues:</th>
<th>Responsibility:</th>
<th>Completion Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reports/Correspondence Issued During Period:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Meetings Attended During Period:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Work Planned for Next Period:</th>
</tr>
</thead>
</table>

## Budget Status

<table>
<thead>
<tr>
<th>Budget Status</th>
<th>Approved Budget</th>
<th>Expended During Period</th>
<th>Expended to Date</th>
<th>Remaining at End of Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Director</th>
</tr>
</thead>
</table>
Roadmap to Project Management Success

1. Form Project Team
2. Statement of Work
3. Work Breakdown Structure
4. Responsibility Matrix
5. Network
6. Gantt
7. Resource Plan
8. Budget

Plan:
- Project Notebook
- Meetings
- Leadership
- Communication
- Lessons Learned
- Reports
- Implement

Close-Out:
- Conduct Close-Out Meeting
- Share Lessons Learned
- Evaluate Success

Track Progress:
- Perform Tasks
- Track Progress
- Update Plan
- Resolve Issues
- Manage Change
- Evaluate Success
- Conduct Close-Out Meeting
Project Tracking and Control

Step 1
Perform Tasks

Step 2
Track Progress

Step 3
Manage Change

Step 4
Update the Plan

Resolve Issues
Compare Progress to Plan

- Quality reviews
- Gantt schedule performance charts
- Cost performance charts
- Earned value techniques
Quality Reviews

- Product design
- Specifications
- Manuals
- Parts
- Computer program code
Schedule Performance Charts

- Gantt charts
- Cost Performance
## Cost Performance

<table>
<thead>
<tr>
<th>Week</th>
<th>Planned Value</th>
<th>Actual Costs</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>$3,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>2</td>
<td>$6,000</td>
<td>$16,000</td>
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<td>3</td>
<td>$18,000</td>
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<td>4</td>
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<td>8</td>
<td>$80,000</td>
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<tr>
<td>9</td>
<td>$83,000</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$89,000</td>
<td></td>
</tr>
</tbody>
</table>
Earned Value Analysis (EVA)

- Performance status based on costs
- Project projection tool
- Originated by government
**Project Management Plan**
Deliverables identified in the WBS.
EV Criteria (calculating % complete)

**Actual Data**
Time reporting at the Work Package level.
Payroll/time report at the same level.

**Tracking System**

**Budget Data**
Monthly breakdown by deliverable.

**Project Status Reports**
Revised % complete & ETC.

**Actual Data Input**

**Earned Value Reports**
Budget line to end of Project.
Actual line to current date.
Earned value line (% complete X budget).
ETC/EAC.

**Earned Value Analysis System**
Earned Value Analysis (EVA) Terminology

- Planned Value (PV)
  - This is the budget for what was scheduled to have been performed within the reporting period. This may also be called the budget plan, performance measurement baseline or planned earned value for this period.

- Actual Cost (AC)
  - The actual cost of work completed within a given reporting period. This includes only those costs related to work performed to date.

- Estimate to Complete (ETC)
  - What it will cost to finish the rest of the project or an individual work task.
EVA Terminology

- **Budget at Completion (BAC)**
  - The budget approved for the project. This is also called the performance measurement baseline for the project.

- **Estimate at Completion (EAC)**
  - Forecasted project cost determined at the end of each reporting period.

- **Earned Value (EV)**
  - This is the budgeted cost for the work that has actually been performed within the given reporting period. Actual earned value is the sum of the budgets for all work that has been completed for the reporting period. At the activity level, it is equal to the percent complete of an activity times its original budget.
## Earned Value Costs

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Planned Value</th>
<th>Actual Costs</th>
<th>Earned Value</th>
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<tr>
<td>1</td>
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<td>$89,000</td>
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</table>
Earned Value Analysis

<table>
<thead>
<tr>
<th>Week</th>
<th>PV</th>
<th>AC</th>
<th>EV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>8</td>
<td>3</td>
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<tr>
<td>2</td>
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<td>3</td>
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</tr>
<tr>
<td>8</td>
<td>80</td>
<td>89</td>
<td></td>
</tr>
</tbody>
</table>

- **PV** (Planned Value)
- **EV** (Earned Value)
- **AC** (Actual Cost)

[Graph showing Total Costs (X1000) vs Weeks with data points for PV, AC, EV]
**Earned Value Exercise**

- Calculate the Earned Value Data for the project:
  - CV and CPI
  - SV and SVI
  - % Complete
  - % Spent
- Is the project in trouble?
## Exercise Answers

<table>
<thead>
<tr>
<th>EVA Parameter</th>
<th>Indicator Value</th>
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<tbody>
<tr>
<td>CV</td>
<td>-$30,000</td>
</tr>
<tr>
<td>CPI</td>
<td>0.545</td>
</tr>
<tr>
<td>SV</td>
<td>-$8,000</td>
</tr>
<tr>
<td>SPI</td>
<td>0.818</td>
</tr>
<tr>
<td>% Complete</td>
<td>40.4%</td>
</tr>
<tr>
<td>% Spent</td>
<td>74.2%</td>
</tr>
</tbody>
</table>
EVA Projections

Estimate At Completion (EAC) = BAC/CPI
= $89/0.545 = 163.3$

Estimate to Complete (ETC) = EAC – AC
= $163.3 - 66 = 97.3$

Estimated Additional Time = 2.2 Weeks

To complete this project it is estimated to take an additional $97,300 and it will be approximately two weeks late.
Managing Project Change

Step 1: Perform Tasks

Step 2: Track Progress

Step 3: Manage Change

Step 4: Update the Plan

Resolve Issues
Categories of Change

- Customer requested
  - Typically the largest source of change
- All others
  - Internal company requests
  - Government regulation
  - Team members
Customer submits a formal change request

Project team analyzes the request.

Analyze the request for changes to:
- SCOPE
- COST
- SCHEDULE
- QUALITY

Approved?

Yes

Incorporate change as requested.

Update the project plan to reflect change in scope, cost, schedule and requirements.

No

Notify customer of review results

Update the plan and close the change request

Change Request Form

Formal plan for controlling change.
Addressing Project Changes

- Call a team meeting.
- Explain what the change is.
- Obtain feedback from team members.
- Identify alternative corrective options.
- Prepare a decision matrix.
- Select a recommended option(s).
- Present information to upper management/customer.
- Implement the approved course of action.
## Decision Matrix

<table>
<thead>
<tr>
<th>OPTION</th>
<th>IMPACT ON QUALITY</th>
<th>IMPACT ON COST</th>
<th>IMPACT ON SCHEDULE</th>
<th>RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe course of action for this option</td>
<td>Quantify impact on quality</td>
<td>Quantify impact on cost</td>
<td>Quantify impact on schedule</td>
<td>Indicate level of risk as: H - high M - medium L - low</td>
</tr>
<tr>
<td>Use overtime to complete work that’s behind schedule</td>
<td>No impact on quality</td>
<td>Will increase cost by 5%</td>
<td>Will get project back on schedule</td>
<td>L</td>
</tr>
<tr>
<td>Overlap work on later critical path activities by adding staff</td>
<td>No impact on quality</td>
<td>Will increase cost by 10%</td>
<td>Will get project back on schedule</td>
<td>H</td>
</tr>
</tbody>
</table>
Issue Resolution

- Disagreements that should be ...
  - Documented
  - Assigned
  - Scheduled
  - Tracked
  - Escalated
  - Resolved
Plan Updates

Step 1
Perform Tasks

Step 2
Track Progress

Step 3
Manage Change

Step 4
Update the Plan

Resolve Issues
Section 4.0

End of Implementation Phase