Section 4.0
Project Implementation

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 Administrative

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
- PLAN
- IMPLEMENTATION
- CLOSE-OUT
**Roadmap to Project Management Success**

- **Break Timer**
- **Share Lessons Learned**
- **Evaluate Success**
- **Conduct Close-Out Meeting**

**Collect Project Data**

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

**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>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>20</td>
<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>Project manager</td>
<td>Summary data:</td>
</tr>
<tr>
<td>Team members</td>
<td>- All activities</td>
</tr>
<tr>
<td>Cross-functional groups</td>
<td>- Team responsibility charts</td>
</tr>
<tr>
<td></td>
<td>- All milestones</td>
</tr>
<tr>
<td></td>
<td>- All risks and issues</td>
</tr>
</tbody>
</table>

|          | Detail data: |
|          | - All activities |
|          | - Team responsibility chart |
|          | - All milestones |
|          | - All risks and issues |
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

Roadmap to Project Management Success

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

Gantt Chart

Cost Performance

<table>
<thead>
<tr>
<th>Week</th>
<th>Planned Value</th>
<th>Actual Costs</th>
</tr>
</thead>
<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>
</tr>
<tr>
<td>3</td>
<td>$16,000</td>
<td>$30,000</td>
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<tr>
<td>4</td>
<td>$30,000</td>
<td>$48,000</td>
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<tr>
<td>5</td>
<td>$44,000</td>
<td>$66,000</td>
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<td>6</td>
<td>$54,000</td>
<td>$64,000</td>
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<td>7</td>
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<td>$83,000</td>
<td>$89,000</td>
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<tr>
<td>10</td>
<td>$89,000</td>
<td></td>
</tr>
</tbody>
</table>

Cost Performance Chart

Earned Value Analysis (EVA)
- Performance status based on costs
- Project projection tool
- Originated by government

Earned Value Analysis System

Project Management Plan
Deliverables identified in the WBS
EV Criteria (calculating % complete)

Weekly Reports
- Monitoring breakdown by deliverable
- Project Status Reports
- Revised % complete & ETC

Earned Value Analysis System
- Budget Data
- Time reporting at the Work Package level
- Payroll time report at the same level
- ETC/EAC

Break Timer

Gantt Chart
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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$3,000</td>
<td>$8,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>2</td>
<td>$6,000</td>
<td>$16,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>3</td>
<td>$16,000</td>
<td>$30,000</td>
<td>$18,000</td>
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<tr>
<td>4</td>
<td>$30,000</td>
<td>$44,000</td>
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<tr>
<td>5</td>
<td>$44,000</td>
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<td>$36,000</td>
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<td>6</td>
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<td>7</td>
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<tr>
<td>9</td>
<td>$83,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$89,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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>
</tr>
</thead>
<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>
Break Timer

Earned Value Cost Projections

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.

Break Timer

Managing Project Change

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

Resolve Issues

Managing Project Change

Categories of Change

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

Change Request Process

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>Quantity impact on quality</td>
<td>Quantity impact on cost</td>
<td>Quantity impact on schedule</td>
<td>Indicate level of risk: 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 next critical path schedule 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**

1. **Step 1: Perform Tasks**
2. **Step 2: Track Progress**
3. **Step 3: Manage Change**
4. **Step 4: Update the Plan**
5. **Resolve Issues**
Section 4.0

End of Implementation Phase