Project Monitoring and Controlling

CS413 - Software Engineering Project Management

Department of Computer Engineering, Bilkent University

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Key Terms

• Monitoring. Collecting project performance data, producing performance measures, and reporting and disseminating performance information
Key Terms

- **Controlling.** Comparing actual performance with planned performance, analyzing variances, assessing trends to effect process improvements, evaluating possible alternatives, and recommending appropriate corrective action as needed.
Key Terms

- **Control Account.** A management control point where scope, budget, actual cost, and schedule are integrated and compared to earned value for performance measurement.
Key Terms

• Control Chart. A graphic display of process data over time and against established control limits
Key Terms

- **Corrective Action.** An intentional activity that realigns the performance of the project work with the project management plan.
Monitoring and Controlling Process Group

- Consists of those processes required to
  - Track, review, and regulate the progress and performance of the project
  - Identify any areas in which changes to the plan are required
  - Initiate the corresponding changes
Monitoring and Controlling Process Group

- The key benefit of this Process Group is that project performance is measured and analyzed at regular intervals, appropriate events, or when exception conditions occur in order to identify and correct variances from the project management plan.
Monitoring and Controlling Process Group

- Continuous monitoring provides the project team and other stakeholders with insight into the status of the project and identifies any areas that require additional attention
Monitoring and Controlling Process Group

- The Monitoring and Controlling Process Group monitors and controls the work being done within each Knowledge Area, each Process Group, each life cycle phase, and the project as a whole
The dashed circular arrow indicates that the process is part of the Project Integration Management Knowledge Area. This Knowledge Area coordinates and unifies the processes from the other Knowledge Areas.
Monitor and Control Project Work

• The process of tracking, reviewing, and reporting the overall progress to meet the performance objectives defined in the project management plan
Monitor and Control Project Work

- The key benefit of this process is that it allows stakeholders to understand the current state of the project, to recognize the actions taken to address any performance issues, and to have visibility into the future project status with cost and schedule forecasts.
Monitor and Control Project Work: Inputs and Outputs

**Inputs**
1. Project management plan
2. Project documents
3. Work performance information
4. Agreements
5. Enterprise environmental factors
6. Organizational process assets

**Outputs**
1. Work performance reports
2. Change requests
3. Project management plan updates
4. Project documents updates
Perform Integrated Change Control

• The process of reviewing all change requests; approving changes and managing changes to deliverables, organizational process assets, project documents, and the project management plan; and communicating the decisions
Perform Integrated Change Control

- The key benefit of this process is that it allows for documented changes within the project to be considered in an integrated manner while addressing overall project risk, which often arises from changes made without consideration of the overall project objectives or plans.
Perform Integrated Change Control

**Inputs**
1. Project management plan
2. Project documents
3. Work performance reports
4. Change requests
5. Enterprise environmental factors
6. Organizational process assets

**Outputs**
1. Approved change requests
2. Project management plan updates
3. Project documents updates

Perform Integrated Change Control: Inputs and Outputs
Validate Scope

• The process of formalizing acceptance of the completed project deliverables
Validate Scope

- The key benefit of this process is that it brings objectivity to the acceptance process and increases the probability of final product, service, or result acceptance by validating each deliverable.
Validate Scope

**Inputs**
1. Project management plan
2. Project documents
3. Verified deliverables
4. Work performance data

**Outputs**
1. Accepted deliverables
2. Work performance information
3. Change requests
4. Project documents updates

Validate Scope: Inputs and Outputs
Control Scope

• The process of monitoring the status of the project and product scope and managing changes to the scope baseline
Control Scope

- The key benefit of this process is that the scope baseline is maintained throughout the project
Control Scope

**Inputs**
1. Project management plan  
2. Project documents  
3. Work performance data  
4. Organizational process assets

**Outputs**
1. Work performance information  
2. Change requests  
3. Project management plan updates  
4. Project documents updates

(Control Scope: Inputs and Outputs)
Control Schedule

• The process of monitoring the status of the project to update the project schedule and manage changes to the schedule baseline
Control Schedule

• The key benefit of this process is that the schedule baseline is maintained throughout the project
Control Schedule

**Inputs**
1. Project management plan
2. Project documents
3. Work performance data
4. Organizational process assets

**Outputs**
1. Work performance information
2. Schedule forecasts
3. Change requests
4. Project management plan updates
5. Project documents updates

Control Schedule: Inputs and Outputs
Control Costs

• The process of monitoring the status of the project to update the project costs and managing changes to the cost baseline
Control Costs

• The key benefit of this process is that the cost baseline is maintained throughout the project
## Control Costs

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<thead>
<tr>
<th><strong>Inputs</strong></th>
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<td>.1 Project management plan</td>
<td>.1 Work performance information</td>
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**Control Costs: Inputs and Outputs**
Control Quality

• The process of monitoring and recording results of executing the quality management activities to assess performance and ensure the project outputs are complete, correct, and meet customer expectations.
Control Quality

- The key benefit of this process is verifying that project deliverables and work meet the requirements specified by key stakeholders for final acceptance
Control Quality

**Inputs**
- 1. Project management plan
- 2. Project documents
- 3. Approved change requests
- 4. Deliverables
- 5. Work performance data
- 6. Enterprise environmental factors
- 7. Organizational process assets

**Outputs**
- 1. Quality control measurements
- 2. Verified deliverables
- 3. Work performance information
- 4. Change requests
- 5. Project management plan updates
- 6. Project documents updates

Control Quality: Inputs and Outputs
Control Resources

• The process of ensuring that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual utilization of resources and taking corrective action as necessary
Control Resources

• The key benefit of this process is ensuring that the assigned resources are available to the project at the right time and in the right place and are released when no longer needed
Control Resources

**Inputs**
1. Project management plan
2. Project documents
3. Work performance data
4. Agreements
5. Organizational process assets

**Outputs**
1. Work performance information
2. Change requests
3. Project management plan updates
4. Project documents updates

Control Resources: Inputs and Outputs
Monitor Communications

- The process of ensuring the information needs of the project and its stakeholders are met
Monitor Communications

• The key benefit of this process is the optimal information flow as defined in the communications management plan and stakeholder engagement plan
Monitor Communications

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Monitor Communications: Inputs and Outputs
Monitor Risks

• The process of monitoring the implementation of agreed-upon risk response plans, tracking identified risks, identifying and analyzing new risks, and evaluating risk process effectiveness throughout the project
Monitor Risks

• The key benefit of this process is that it enables project decisions to be based on current information about overall project risk exposure and individual project risks.
Monitor Risks

**Inputs**

1. Project management plan
2. Project documents
3. Work performance data
4. Work performance reports

**Outputs**

1. Work performance information
2. Change requests
3. Project management plan updates
4. Project documents updates
5. Organizational process assets updates

Monitor Risks: Inputs and Outputs
Control Procurements

• The process of managing procurement relationships, monitoring contract performance and making changes and corrections as appropriate, and closing out contracts.
Control Procurements

- The key benefit of this process is that it ensures that both the seller's and buyer's performance meets the project's requirements according to the terms of the legal agreements.
Control Procurements

**Inputs**
1. Project management plan
2. Project documents
3. Agreements
4. Procurement documentation
5. Approved change requests
6. Work performance data
7. Enterprise environmental factors
8. Organizational process assets

**Outputs**
1. Closed procurements
2. Work performance information
3. Procurement documentation updates
4. Change requests
5. Project management plan updates
6. Project documents updates
7. Organizational process assets updates

Control Procurements: Inputs and Outputs
Monitor Stakeholder Engagement

- The process of monitoring project stakeholder relationships, and tailoring strategies for engaging stakeholders through modification of engagement strategies and plans.
Monitor Stakeholder Engagement

- The key benefit of this process is that it maintains or increases the efficiency and effectiveness of stakeholder engagement activities as the project evolves and its environment changes.
Monitor Stakeholder Engagement

**Inputs**
1. Project management plan
2. Project documents
3. Work performance data
4. Enterprise environmental factors
5. Organizational process assets

**Outputs**
1. Work performance information
2. Change requests
3. Project management plan updates
4. Project documents updates

Monitor Stakeholder Engagement: Inputs and Outputs
Reference

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