

IOWA STATE UNIVERSITY



Project Progress Control

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Goal

1. What is project progress control?
2. Why do we need it?
3. When do we do it?
4. What does it include?

What Do We Have ? Project Plan

1. Project scope
2. Stakeholders
3. Solution
4. Schedule
5. Budget
6. Risk
7. Quality management
8. Human resources
9. Communication
10. Change management
11. Intellectual property



What Next?



Next - Another Project Plan

1. Project scope
2. Stakeholders
3. Solution
4. Schedule
5. Budget
6. Risk
7. Quality management
8. Human resources
9. Communication
10. Change management
11. Intellectual property



Few Months Later - Stakeholders Meeting



<https://process-sme.eu/2017/08/24/project-meeting-workshop-narvik/>

What is Wrong?

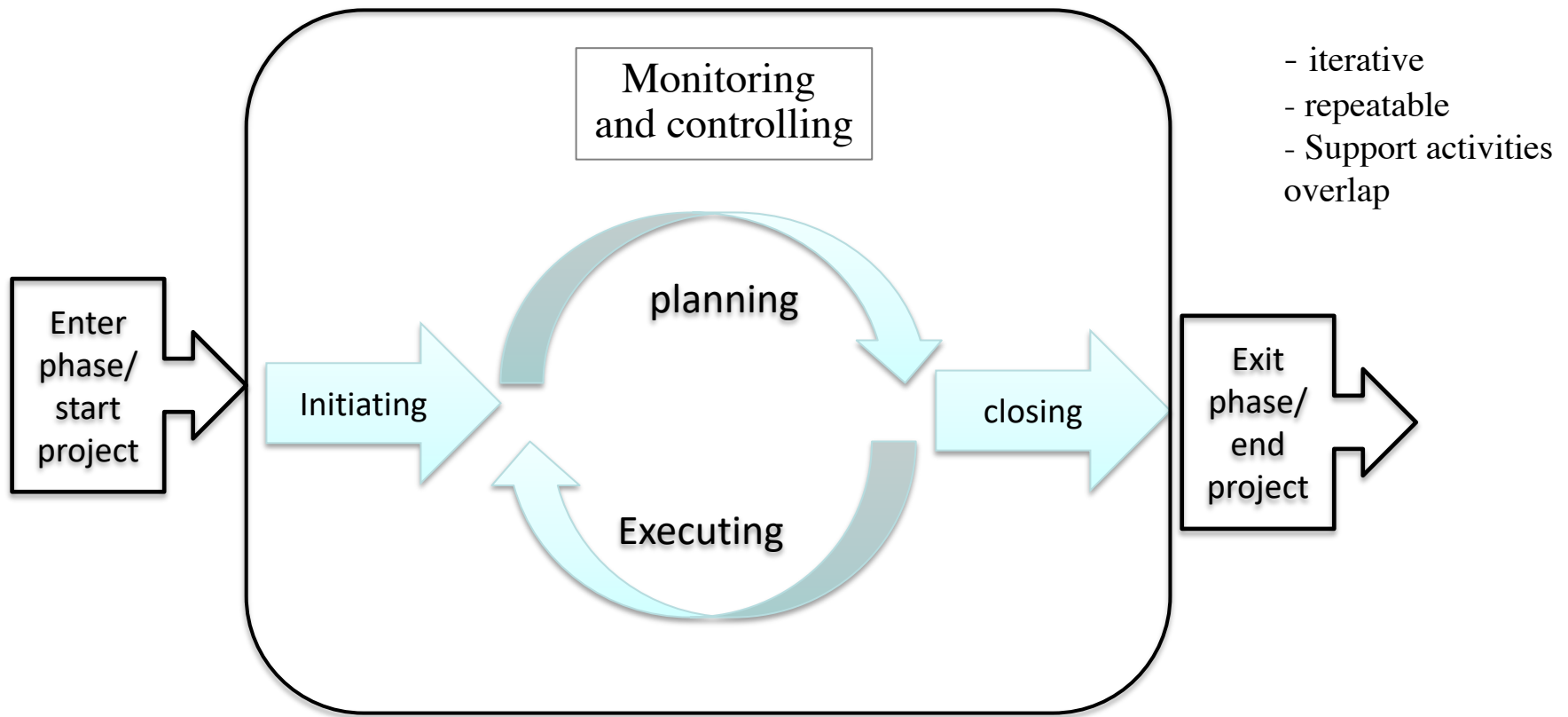
1. Only half of the deliverables are completed
2. The software is not as expected
3. The senior team members (that participated in the planning session) are not in the team anymore
4. The list of defects is big

How to avoid these?

1. Only half of the deliverables are completed
2. The software is not as expected
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Project Management Processes

What is monitoring and control?

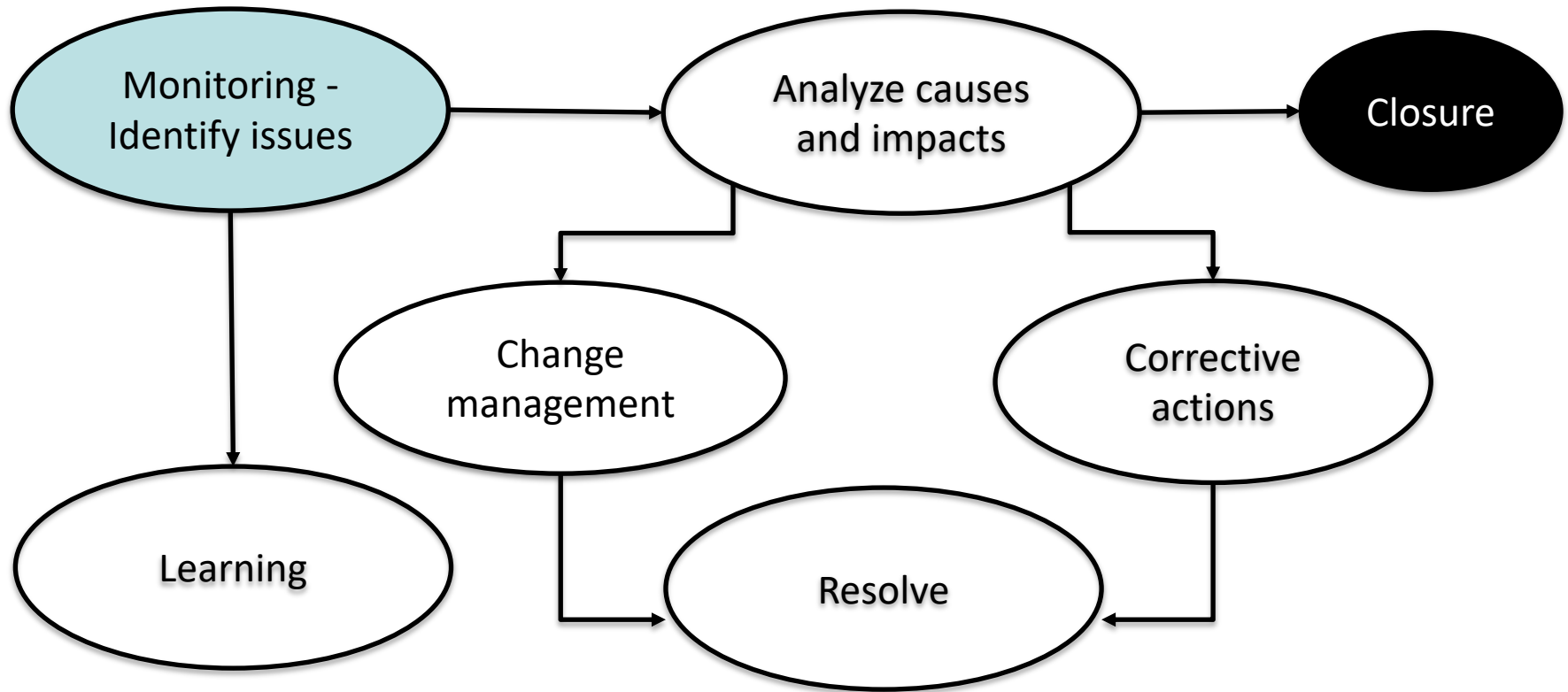


What is Project Monitoring and Control

“Monitoring and control project is the process of tracking, reviewing, and reporting the progress to meet the performance objectives defined in the project plan”

PMBOK GUIDE

Project Monitoring and Control



What do we need to monitor?

Aspects that Should be Monitored

1. Project scope
2. Stakeholders
3. Solution
4. Schedule
5. Budget
6. Risk
7. Quality management
8. Human resources
9. Communication
10. Change management
11. Intellectual property



Relationships Between the Aspects and Issue Examples

What are these relationships?

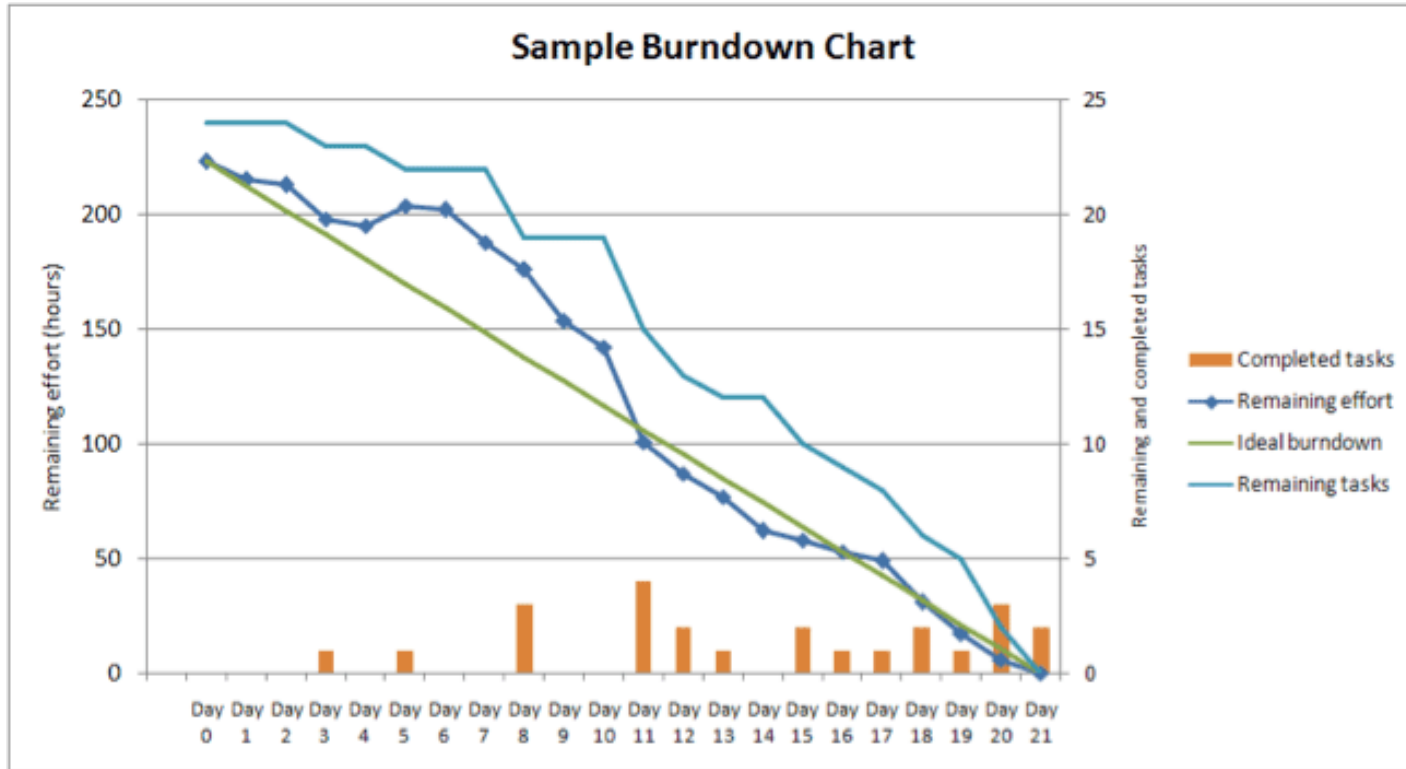
- A. Only half of the deliverables are completed
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- 1. Project scope
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Monitoring – Tracking Techniques

1. Analytics techniques – use metrics
 - Compare progress in performing the project tasks with schedule
 - Compare the planned vs effective cost items
 2. Meetings
 - Meetings with the sponsors
 - Meetings with the developers and testers
 - Meetings with the customers
- ❖ Monitoring planned risk and identifying new risk

Monitoring – Tracking



Milosz 2011

Monitoring – Tracking

Open 3 Closed 6 All 9 📡 📅 Edit issues New issue

🔄 Search or filter results... Created date ▾

Code The Interviews performed with Companies #9 · opened 1 month ago by moataz 🕒 Code the interviews Task	🔍 🗨️ 0 updated 1 month ago
Automatic Identification of Entry Points #8 · opened 5 months ago by moataz 🕒 Apply the assurance case techniques on the Compier application Task	CLOSED 🔍 🗨️ 0 updated 1 month ago
Architecture Team Meeting #7 · opened 5 months ago by moataz 🕒 John Deree - Progress 📅 Jun 7, 2018 Task	CLOSED 🔍 🗨️ 1 updated 5 months ago
Progress Tracking Meeting #6 · opened 5 months ago by moataz 🕒 John Deree - Progress 📅 Jun 1, 2018 Task	CLOSED 🔍 🗨️ 0 updated 5 months ago
Code the interviews #5 · opened 5 months ago by othmanel 🕒 Code the interviews Task	CLOSED 🔍 🗨️ 0 updated 1 month ago
Transcribe the interviews #4 · opened 5 months ago by othmanel 🕒 Code the interviews Task	🔍 🗨️ 0 updated 1 month ago
Analyse the call graph to trace the path #3 · opened 5 months ago by othmanel 🕒 Apply the assurance case techniques on the Compier application Task	CLOSED 🔍 🗨️ 0 updated 1 month ago
relate the assurance case to entry points or exit points #2 · opened 5 months ago by othmanel 🕒 Apply the assurance case techniques on the Compier application Task	🔍 🗨️ 0 updated 5 months ago
Identify entry points and exits of the application #1 · opened 5 months ago by othmanel 🕒 Apply the assurance case techniques on the Compier application 📅 May 31, 2018	CLOSED 🔍 🗨️ 0 updated 5 months ago

Monitoring – Tracking

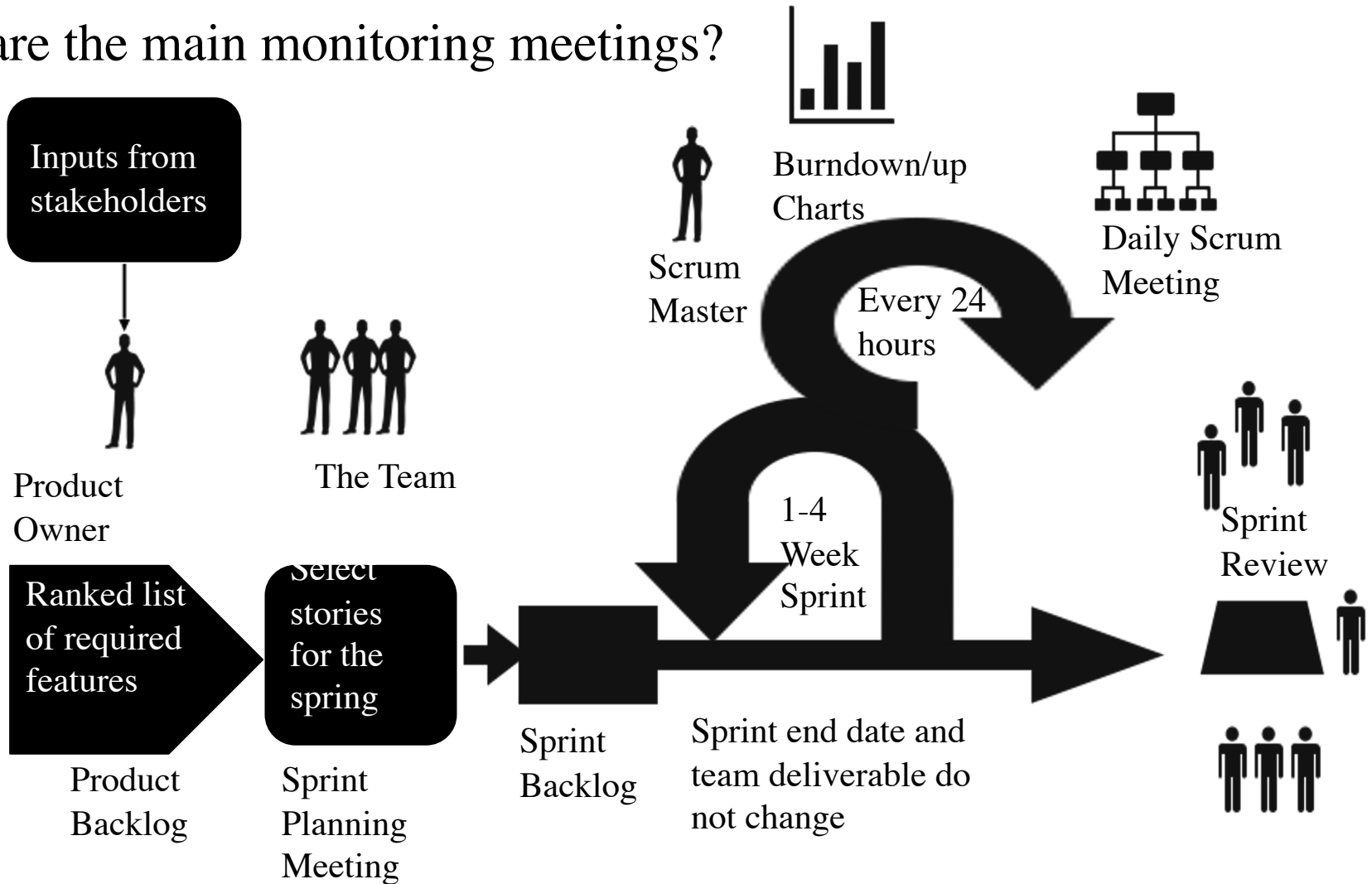
And.. Use dashboards



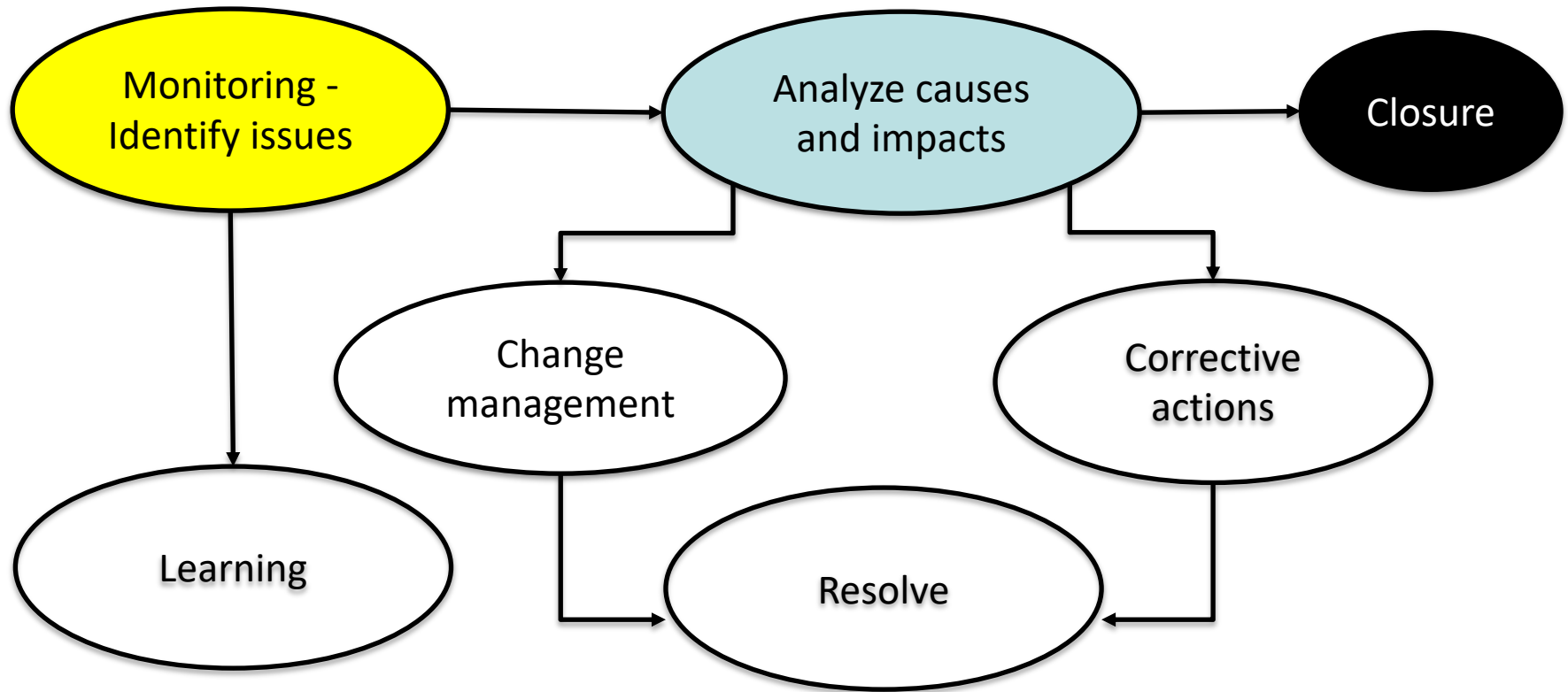
<https://www.pinterest.it/pin/539024649121238331/>

Scrum Meetings

What are the main monitoring meetings?



Project Monitoring and Control



Address Actual vs. Plan

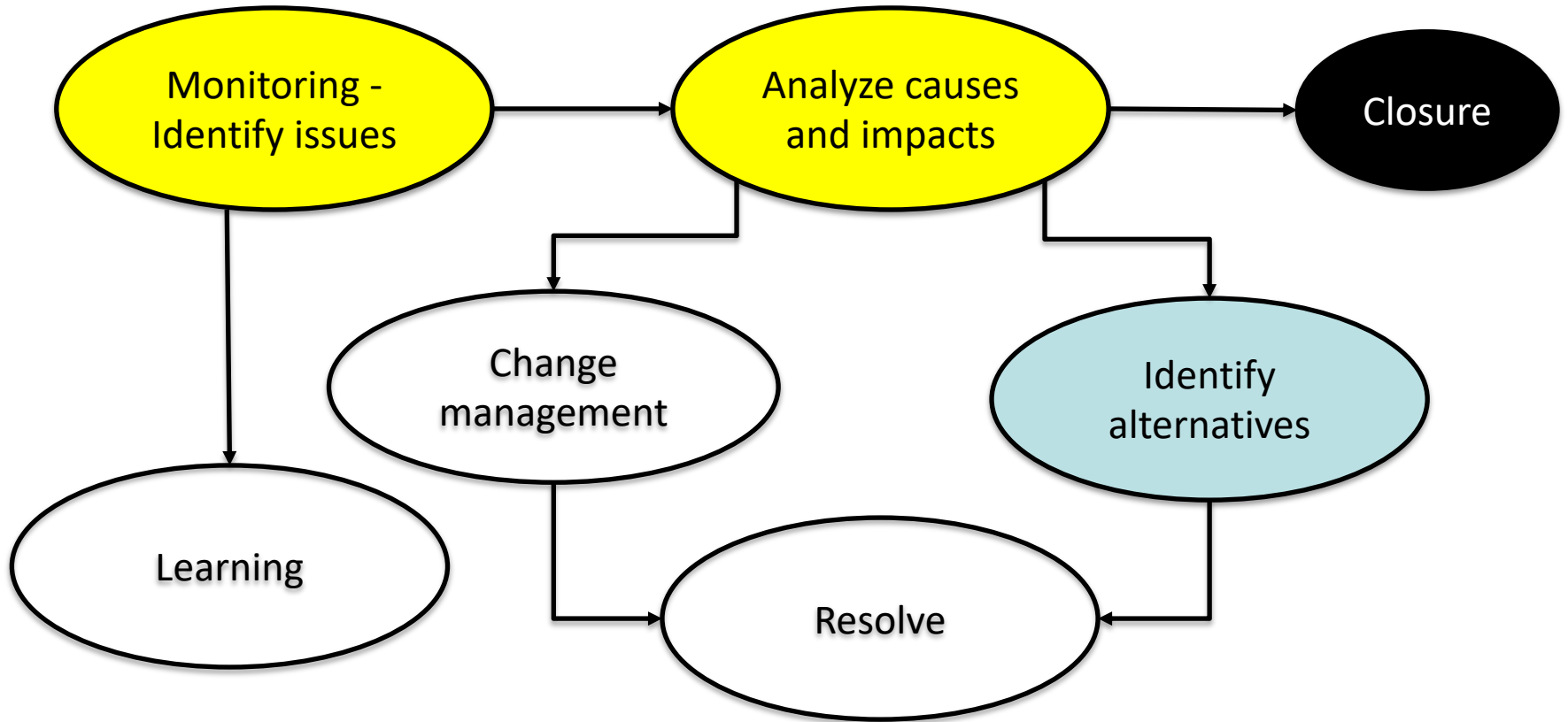
- E.g., Identify the **causes** of the differences in the project schedule
- Consider complexity, proximity to milestone, overall cost, holiday season in the tracking

Monitoring – Causes of Issues

They include:

1. Lack of training on specific technologies
2. Lack of documentations on specific technologies
3. Selected technologies do not address the needs
4. Trained people quit
5. Lack of infrastructure for testing
6. Collaboration challenges due communication problems
7. Frequent absence of key team members
8. Conflicts between team members
9. Scope change because customer needs are different from requirements

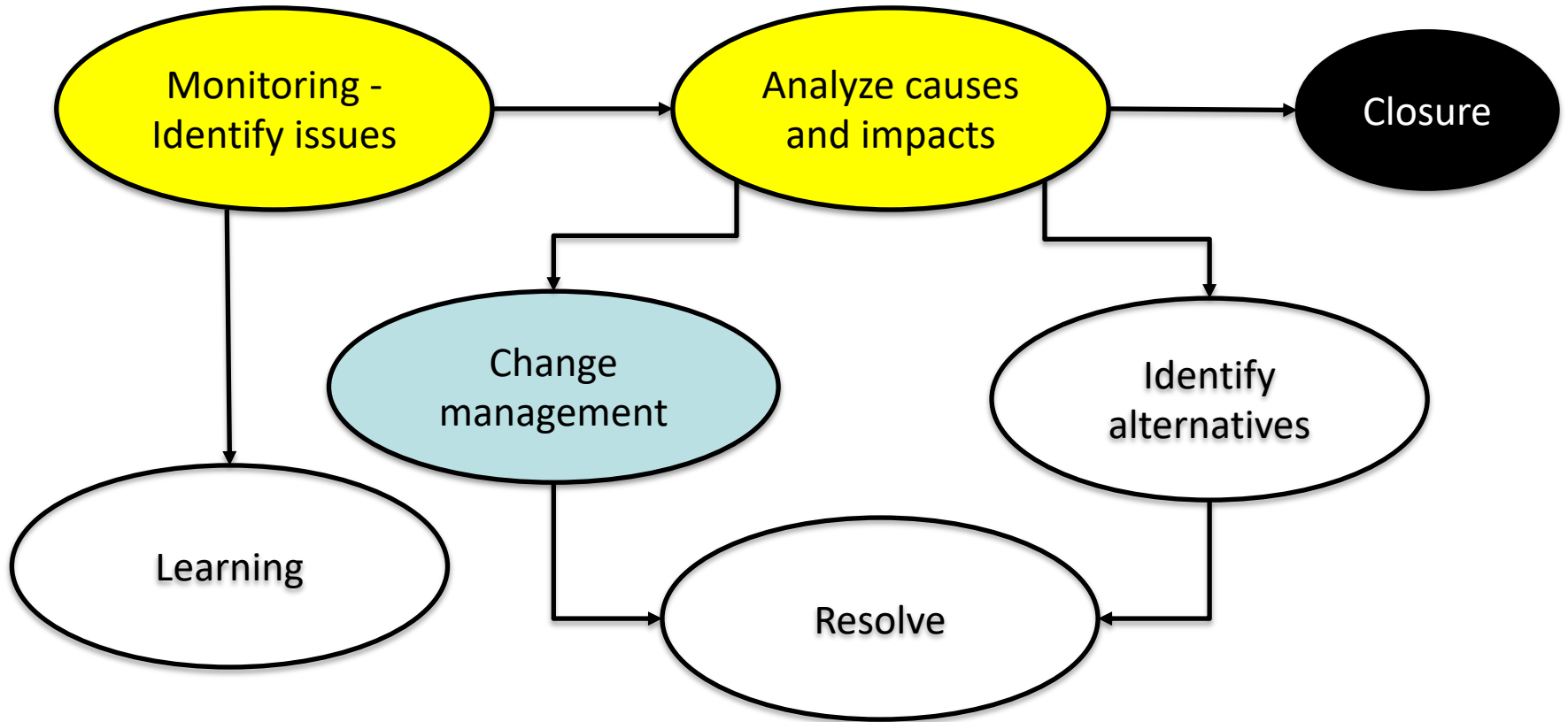
Project Monitoring and Control



Identify Alternatives

- Identify actions that allow to mitigate the issues
- Evaluate the cost and feasibility of each of the alternatives

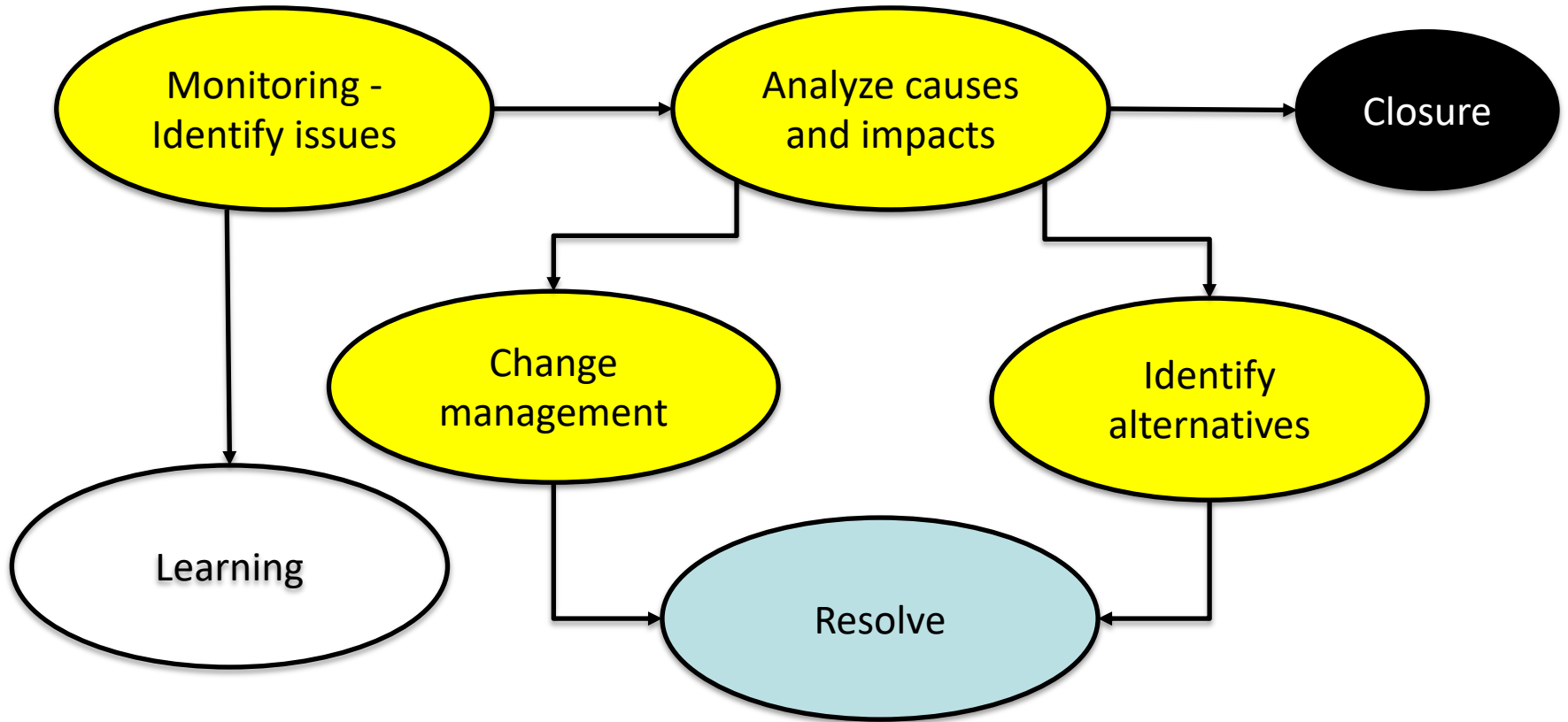
Project Monitoring and Control



Change Management

- Some issues impact the scope and need for further control
 - Change in scope due to requirements change requests
 - Change in scope due to design implications
- Assess the impact of the scope change
 - Evaluate benefits and schedule/cost impacts

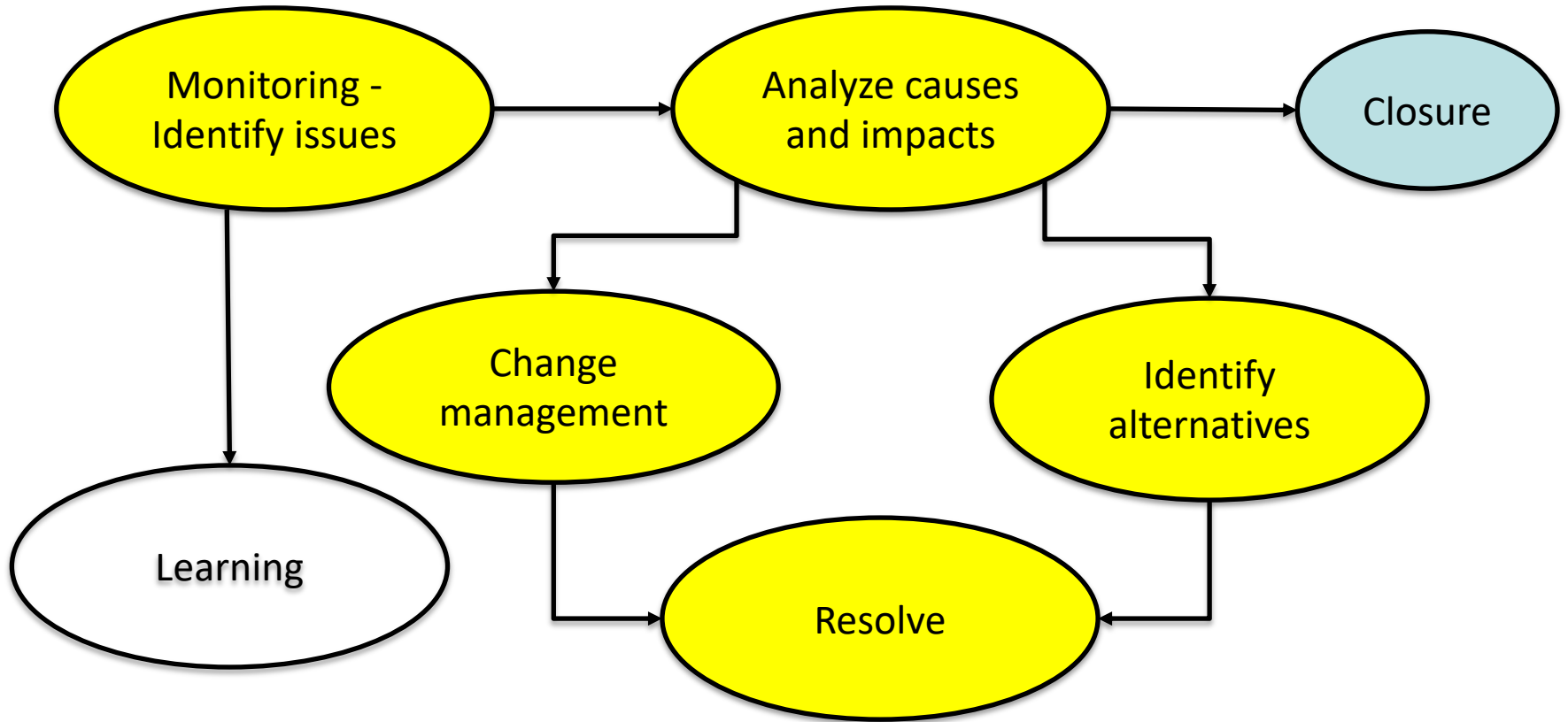
Project Monitoring and Control



Resolve – Example of Corrective Actions

1. Revisit the schedules (critical path)
2. Break large activities into smaller tasks
3. Identify needs for extra-resources
4. Communicate with customers
5. Plan training
6. Request external consultants
7. Request extra funds
8. Review status with management

Project Monitoring and Control



How can we know that the project is in trouble?

Troubled Project Indicators

There are red flags that indicate potential failure of a project, they include

1. Planning indicators
2. Budget indicators
3. Schedule indicators
4. Control indicators

Troubled Project - Planning Indicators

1. Lack of a detailed project schedule
2. Not involving the stakeholders
3. Many high-level risks
4. Absence of management
5. Not enough resources

Troubled Project - Budget Indicators

1. Project over budget
2. Not clear causes for the budget deviations

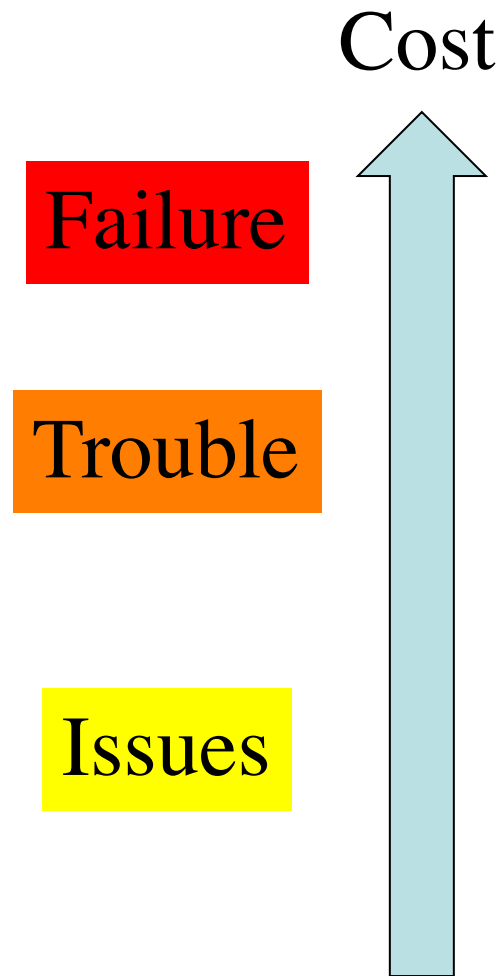
Troubled Project - Schedule Indicators

1. Tasks are too large
2. Inaccurate estimations
3. Task dependencies are not identified
4. Milestones are not sufficiently frequent

Troubled Project - Control Indicators

1. Lack of processes
2. Lack of staff commitment
3. Poor communication
4. Schedule not up-to-date
5. Project manager departure
6. **High staff turn-over**

Levels of Issues

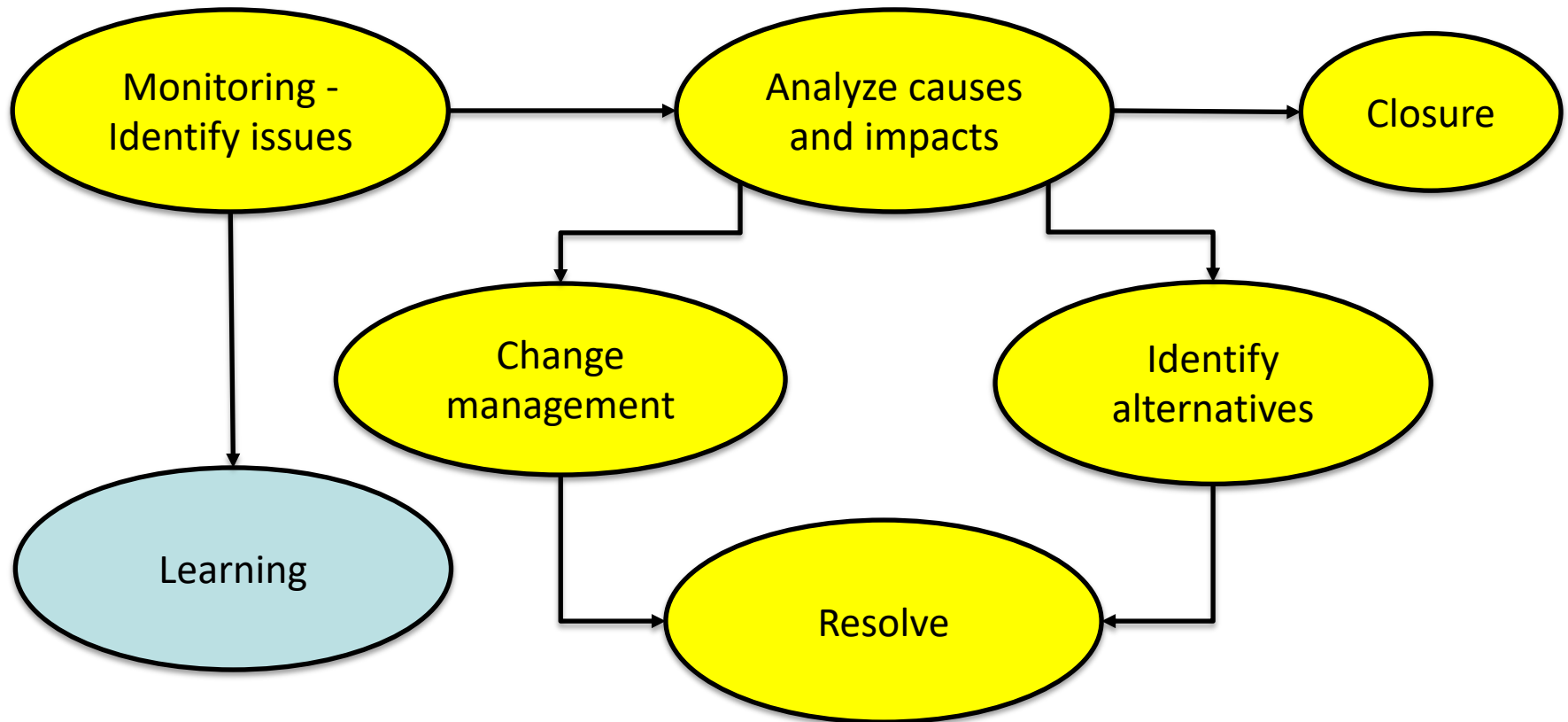


Causes of Project Failure

They include:

1. Poor project tracking
2. Out-of-date documentation
3. Out-of-date schedule
4. Lack of enthusiasm and commitment
5. Lack of involvement of stakeholders
6. Frequent use of informal processes

Learning - Retrospective



Manifesto for Agile Software Development

1. Individuals and interactions over processes and tools
2. Working software over comprehensive documentation
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

<http://agilemanifesto.org>

Manifesto for Agile Software Development

Principle 12: At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

<http://agilemanifesto.org>

Retrospective



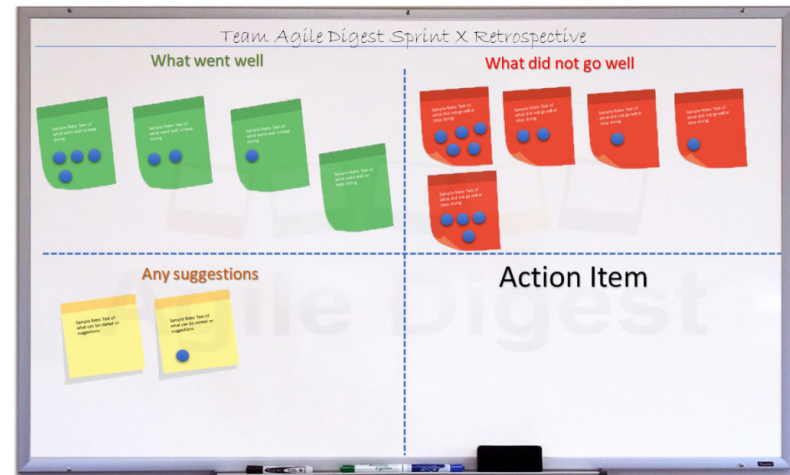
https://www.youtube.com/watch?v=n_iu8kuA0XE

Learning - Retrospective meeting

1. Enumerate the issues
2. Prioritize of issues
3. Discuss the selected issues
 - Why and how to address them
4. Identify actions to address the selected issues

Retrospective Meeting - Example of Issues

- Integration tests are going slow
 - Many integration discrepancies
 - Many bugs
- Communication issues with the scrum master
 - Many critical information were not communicated to the team members
- Problem with parking space



Retrospective Meeting

Action options

1. Hire a professional on testing
2. Revise the architecture
3. Buy a testing software
4. Set meetings to discuss the testing plan and results
5. Set a committee to investigate the issue
6. Ask for mentoring from a successful team

Self-Check

- What is project monitoring and control?
- How to monitor a project?
- How to know that a project is in trouble?
- How does Scrum support project monitoring and control?