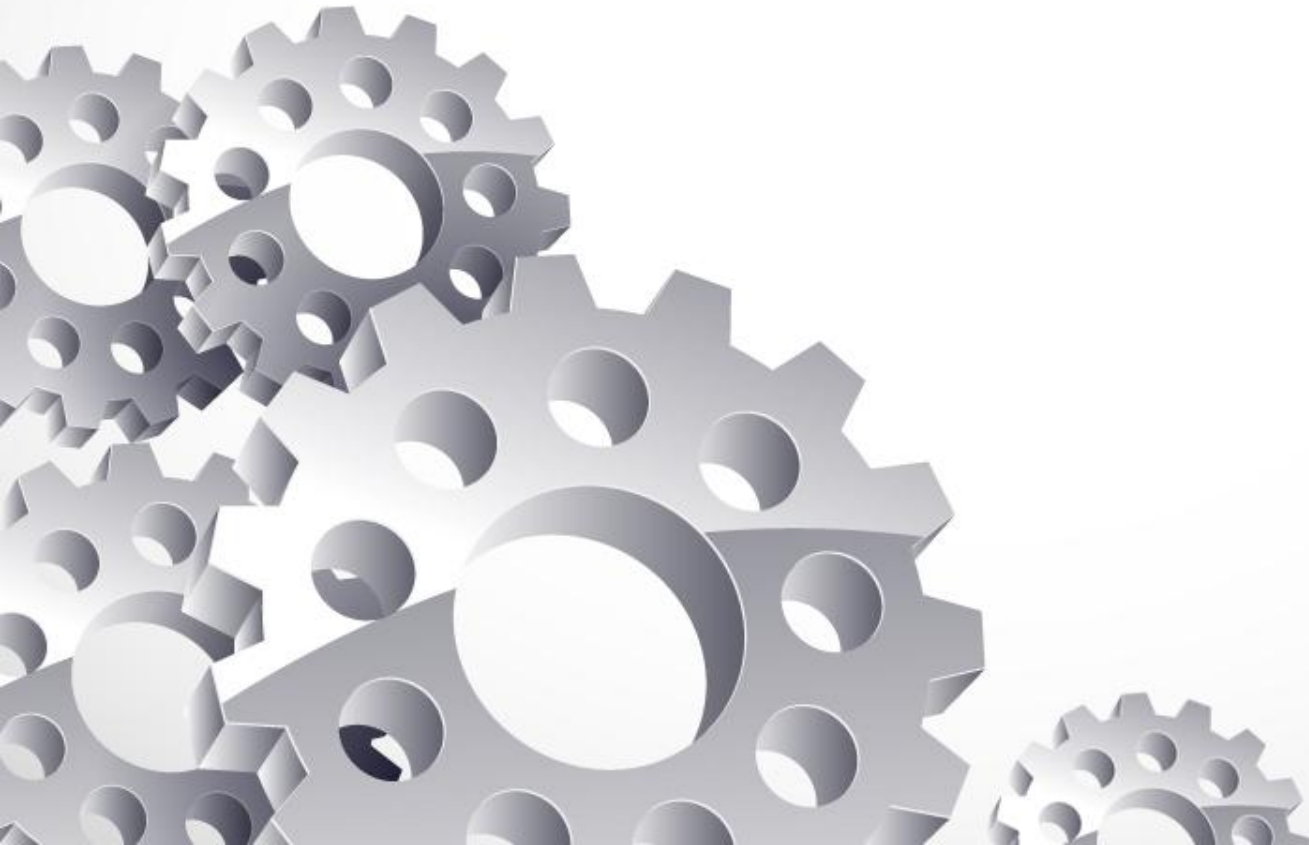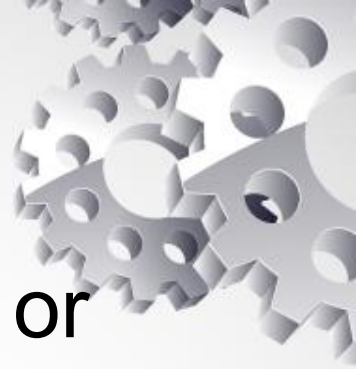# Software Project management foundations and basic processes

Lecture 1

Projects are planned to achieve a goal

- a project is "a piece of planned work or activity that is completed over a period of time and intended to achieve a particular aim"

- Projects are by definition ephemeral; they come and go, depending on an organization's needs, and eventually come to a close.

Project Performance

- When thinking about project performance, note that clients and other stakeholders consider more than just cost and schedule metrics when deciding whether a project was a success or a failure.

- Even projects completed on time and within budget may miss the mark at some level when it comes to meeting expectations.

project failure and success

In-between projects

Project failure

Project success

Project failure can be defined as a significant breach of the contractors' legal responsibilities to the owner (for example, bankruptcy or material breach of contract related to meeting desired project objectives such as cost, schedule, safety, and quality).
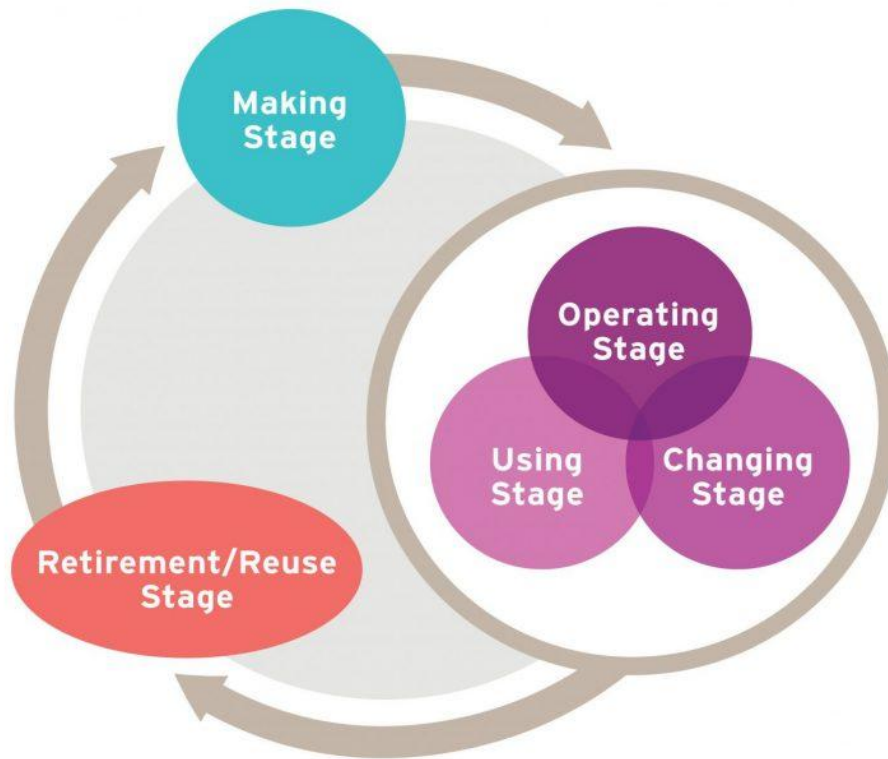
Most projects fall somewhere between failure and success.

Project success can be defined as meeting or exceeding the expectations of the client.

A Project's Life Cycle

Making Stage
- Cost, time, quality, and safety

Using Stage
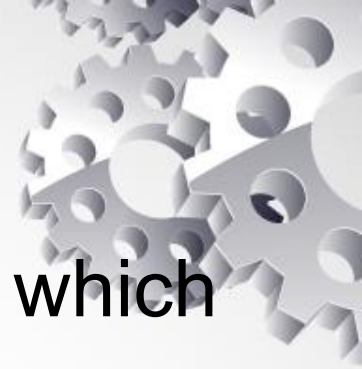- Suitability of purpose

Operating Stage
- Effectiveness and cost

Project Outcome

- the term project outcome refers to a project's measurable output in terms of scope, cost, schedule, quality, and other issues such as safety.

- In a broader sense, the term also refers to the impact a project has compared to its larger goals.

Project Success

- project success refers to the degree to which a project is done well.
- As with failure, clients and other stakeholders often have varying definitions of success that change over time depending on their perspective and their role on the project.
- the evaluation of a project's success is a subjective judgment; different stakeholders will have different initial ideas about a project's overall success based on their own expectations and objectives.

Project Success vs. Failure

- Success: Delivered on time, within budget, meets user needs, and quality standards

- Failure: Missed deadlines, cost overruns, or poor user satisfaction

- Example: CHAOS Report shows over 50% of projects face major challenges

Sustainability and Living Order

- Sustainability efforts inspired by a recognition of the realities of living order are well underway in the construction industry.

- Software developers

- can develop sustainable software by, for example, writing code that runs even on outdated hardware, thereby minimizing the amount of computer equipment that ends up in landfills

Characteristics of a Software Project

- Intangible product output (software)
- Requires innovation and problem-solving
- Complex, dynamic, and team-based
- Involves evolving requirements and technologies

The Software Project Environment

- Includes technical, organizational, and social contexts

- Influenced by policies, culture, and stakeholder expectations

- Managed through effective communication and leadership

Project Management Process Groups

- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

Scheduling Concepts

- Gantt Charts – visualize task timelines
- Milestones – major project events
- Dependencies – relationships between tasks
- Critical Path – sequence determining project duration

Stakeholders in Software Projects

- Project Manager
- Development Team
- Clients and Users
- Sponsors and Executives
- Regulatory Bodies

- Stakeholder alignment is essential for success.

Project Planning Basics

- Establish project objectives and deliverables
- Break work into manageable parts using WBS (Work Breakdown Structure)
- Estimate time, cost, and resources

- Risk Management: identifying and mitigating uncertainties
- Quality Management: ensuring outputs meet requirements
- Balance between speed, cost, and performance

Key Tools and Techniques

- Gantt and PERT charts
- CPM (Critical Path Method)
- Project Management Software (MS Project, Jira, Trello)
- Regular review and reporting mechanisms

Thank You