

**School of Computer Science and Engineering
(CSE)**

**COMP9900 Information Technology Project
COMP3900 Computer Science Project**

2023 Term 3

Week 4

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Outline

- Introduction to Project Management
- Progressive Demo A
- Retrospective A
- Week 4 Lab Tasks
- Q & A

Introduction to Project Management

What is a Project?

Definition of a Project

- "A project is a **temporary** endeavour undertaken to create a **unique** product, service or result" (PMI, 2018)
- "... a unique endeavour that has a **beginning** and an **end**" (Baca, 2007)
- "A project is an endeavour to accomplish a specific **objective** through a unique set of **interrelated tasks** and the effective utilization of **resources**" (Gido & Clements, 2003)

What is a Project?

Project Attributes

- Projects come in all shapes and sizes, and it is important to distinguish between **organisational operations** and **projects**
- The following attributes help to identify projects
 - objective
 - temporary
 - unique
 - interdependent tasks
 - resources
 - customer
 - uncertainty

What is a Project?

Examples of Projects

- Projects can be **large** or **small** and involve **one** person or **thousands** of people. They can be done in **one day** or take **years** to complete
- Examples of projects
 - staging a theatrical production
 - developing and introducing a new product
 - planning a wedding
 - designing and implementing a computer system
 - modernising a factory
 - rebuilding a town after a natural disaster (Gido & Clements, 2003)

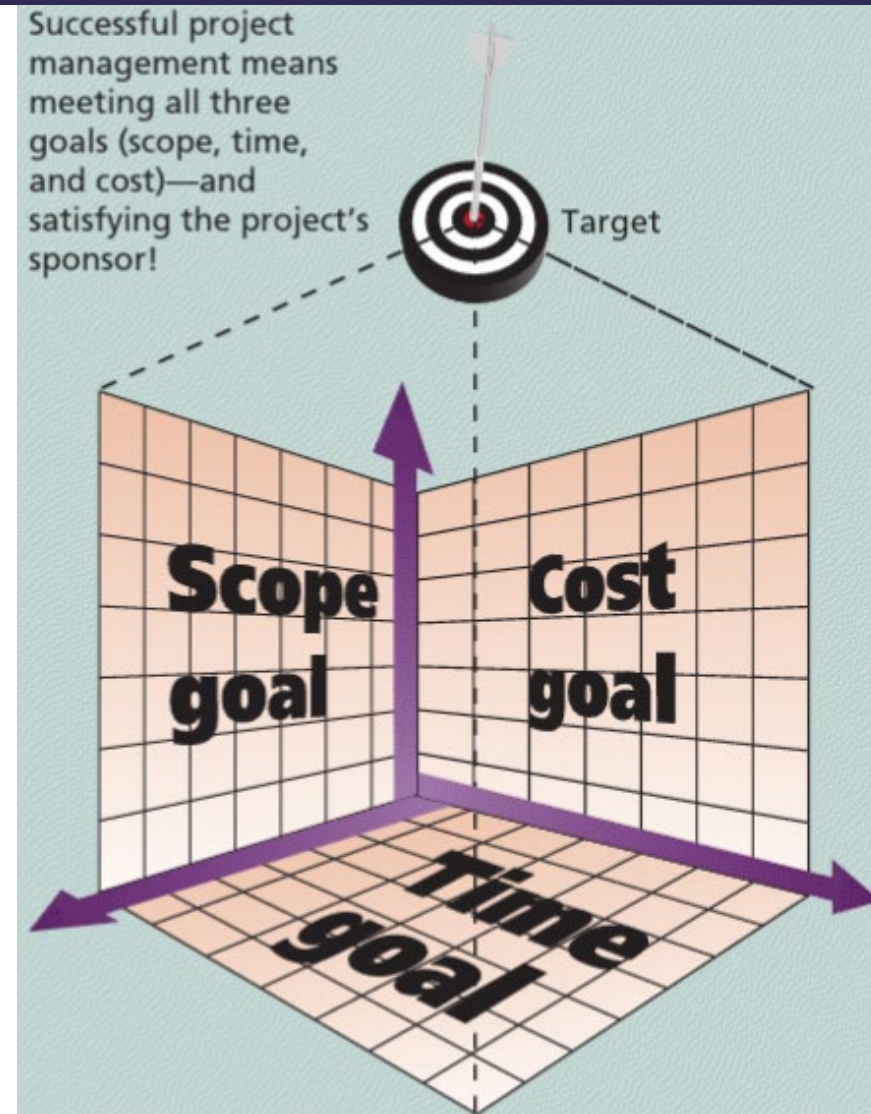
The Triple Constraint

Definition of the **Triple Constraint**

- Every project is constrained in different ways by its **scope**, **time**, and **cost** goals
- The **scope** constraint refers to what must be done to produce the project's end result
- The **time** constraint refers to the amount of time available to complete a project
- The **cost** constraint refers to the budgeted amount available for the project
- These limitations are sometimes referred to in project management as the **triple constraint**

The Triple Constraint

The Triple Constraint (Schwalbe, 2018)



The Triple Constraint

Quadruple Constraint

- **Quality** is often a key factor in projects, as is **customer or sponsor satisfaction**
- Some people, in fact, refer to the quadruple constraint of project management, including quality along with scope, time and cost
- Others believe that quality considerations, including **customer satisfaction**, must be part of setting the scope, time and cost goals of a project
- A project team may meet scope, time and cost goals but fail to meet quality standards or satisfy their sponsor, if they have not adequately addressed these concerns

What is Project Management?

Definition of Project Management

- Project management is the application of **knowledge, skills, tools** and **techniques** to project activities to **meet** project **requirements** (PMI, 2018)
- Project managers must not only endeavour to meet specific **scope, time, cost**, and **quality** goals of projects, they must also organize the entire process to meet the **needs** and **expectations** of the people involved in or affected by project activities (Schwalbe, 2018)

What is Project Management?

Advantages of Project Management

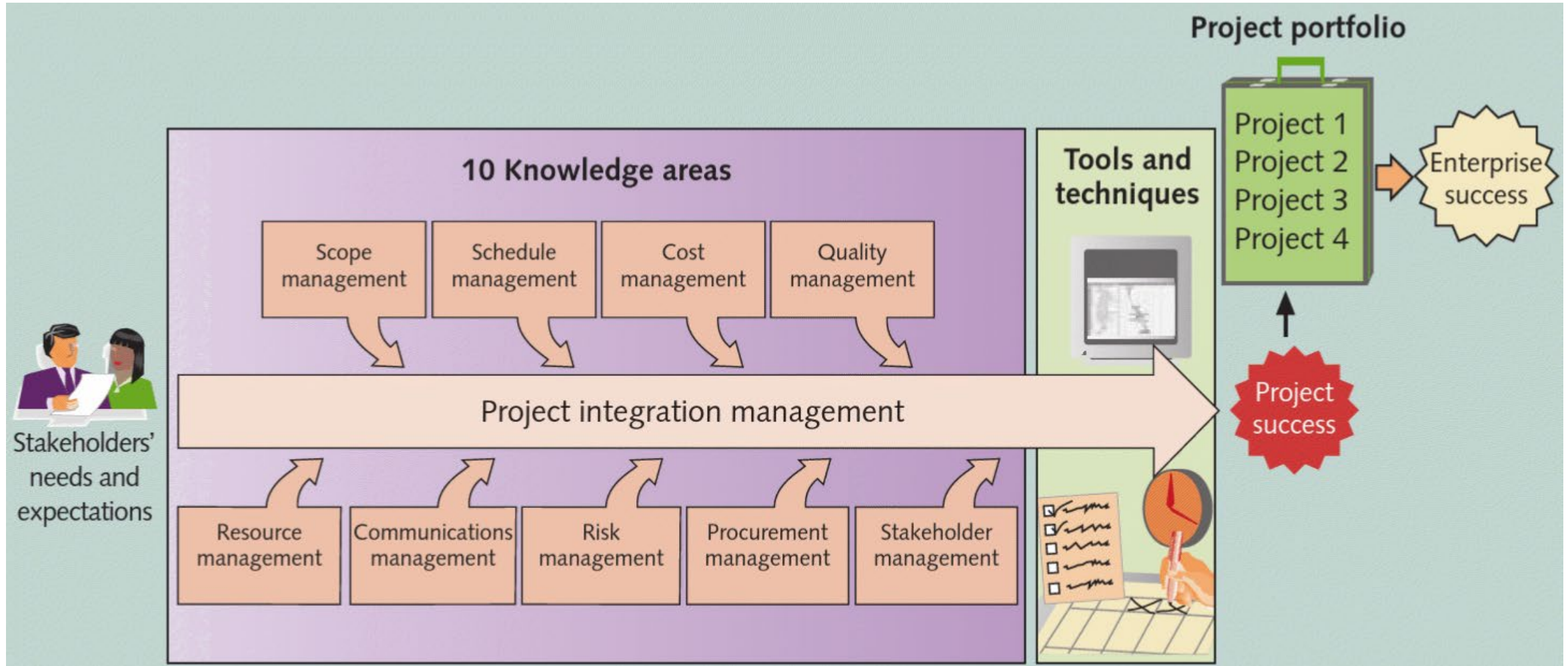
- Project management is an advanced and specialised branch of management
- Benefits include:
 - improved customer relations
 - shorter development times
 - lower costs and higher profits
 - produces higher quality and increased reliability
 - improves productivity
 - facilitates better internal coordination
 - informs stakeholders
 - provides assurance and reduces risk
 - provides tools and environment to plan, monitor, track, and manage schedules, resources, costs, and quality
 - sets up a history or metrics base for future planning as well as good documentation
 - fosters an environment where team members learn and grow

What is Project Management?

The **PMI** and **PMBOK**

- The Project Management Institute (PMI) <http://www.pmi.org/> is the world's leading not-for-profit association for the project management profession (PMI, 2018)
- Primary goal is to advance the practice, science and profession in a conscientious and proactive manner
- Membership supports all project professionals to pursue a new balance of global and local best practices, relationship building and sharing resources
- The PMI is the world leader in the production of project management literature in particular the PMBOK® guide

What is Project Management?



The Project Management Framework (Schwalbe, 2018)

Project Management Skills

Project Management **Job Functions**

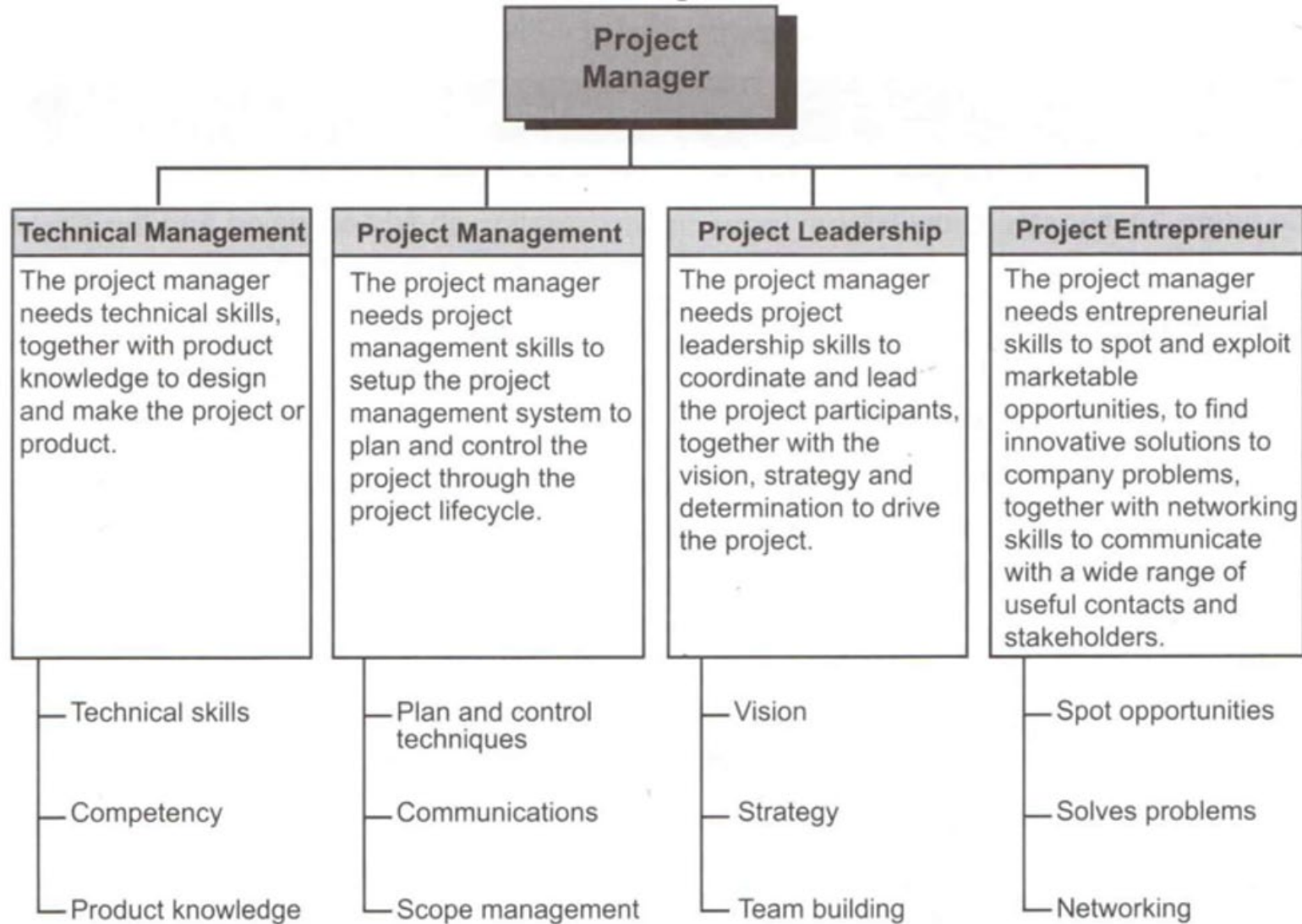
- Tasks include:
 - define scope
 - identify stakeholders
 - develop detailed task list
 - estimate time requirements
 - identify resources and budget
 - evaluate project requirements
 - identify and evaluate risks
 - contingency plan
 - identify interdependencies
 - identify and track critical milestones
 - participate in project phase review
 - secure needed resources
 - manage the change control process
 - report project status

Project Management Skills

Suggested Skills

- PMI (2018) **requires** the following:
 - project management body of knowledge (PMBOK) guide
 - application area knowledge, standards and regulations
 - understanding the project environment
 - general knowledge and skills
 - interpersonal skills
- Project management authors **suggest**:
 - communicator, analyst, strategist, coordinator, documenter, problem solver, manager, and leader (Baca, 2007)
 - personal characteristics (Nicholas, 2001)

Project Management Skills



Profile of a complete project manager (Burke & Barron, 2014)

Process Groups

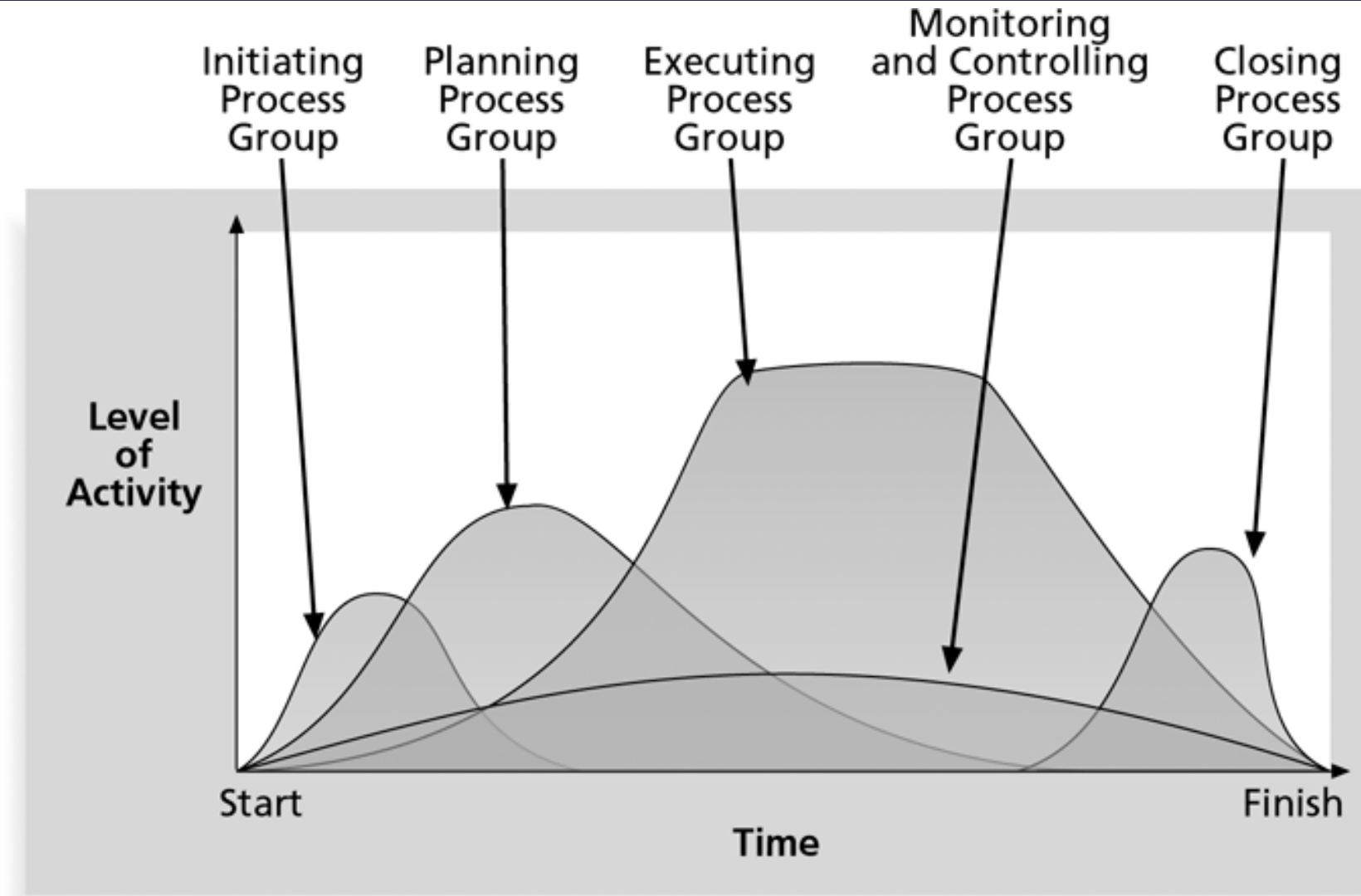
Project Processes

- Project management is integrative and viewed as a number of related processes
- Projects are composed of processes
- Process is
 - a series of actions bringing about a result
 - concerned with describing and organising the work of the project
 - performed by people
 - fall into major categories of project management and product-oriented processes

Process Groups

- Grouped into **five** categories known as **process groups**
- Processes are **interlinked**
- Groups
 - initiating
 - planning
 - executing
 - controlling
 - closing

Process Groups



Level of activity and overlap of process groups over time (Schwalbe, 2018; PMI, 2018)

Process Groups

Project **Initiation**

- Purpose
 - main goal is to formally select and start of projects or phase
 - some use a pre-initiation phase (business case)
- Key outputs
 - assign project manager
 - identify key stakeholders
 - project charter

Process Groups

Project **Planning**

- Overview
 - to guide execution
 - every knowledge area includes planning information
- Key outputs
 - team contract
 - scope statement
 - work breakdown structure (WBS)
 - project schedule (Gantt chart)
 - cost management plan

Process Groups

Project **Executing**

- Overview
 - takes most time and most resources
 - important output of execution is work results
 - PMs use leadership skills to handle challenges
- Key outputs include
 - work results
 - deliverables
 - baseline changes

Process Groups

Project **Monitoring and Controlling**

- Overview
 - measuring progress toward objectives, monitoring deviation from plan, and corrections
 - affects all process groups and occurs during all phases of the project life cycle
- Key outputs include
 - work results
 - change requests
 - schedule updates
 - budget updates
 - risk updates
 - status reports

Process Groups

Project **Closing**

- Overview
 - gain stakeholder and customer acceptance of product and bring project or phase, to an end
 - unfinished projects should be closed out to learn from the past
- Key outputs include
 - lessons learned report
 - project archives
 - project final report
 - formal acceptance and closure

Project Management Process Groups (Schwalbe, 2018)

In Week 5



In Week 5



In Week 7



| Knowledge Areas | Project Management Process Groups | | | | |
|---------------------------------------|-----------------------------------|--|---|---|----------------------------|
| | Initiating Process Group | Planning Process Group | Executing Process Group | Monitoring and Controlling Process Group | Closing Process Group |
| 4. Project Integration Management | 4.1 Develop Project Charter | 4.2 Develop Project Management Plan | 4.3 Direct and Manage Project Work | 4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control | 4.6 Close Project or Phase |
| 5. Project Scope Management | | 5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS | | 5.5 Validate Scope 5.6 Control Scope | |
| 6. Project Time Management | | 6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule | | 6.7 Control Schedule | |
| 7. Project Cost Management | | 7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget | | 7.4 Control Costs | |
| 8. Project Quality Management | | 8.1 Plan Quality Management | 8.2 Perform Quality Assurance | 8.3 Control Quality | |
| 9. Project Human Resource Management | | 9.1 Plan Human Resource Management | 9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team | | |
| 10. Project Communications Management | | 10.1 Plan Communications Management | 10.2 Manage Communications | 10.3 Control Communications | |
| 11. Project Risk Management | | 11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses | | 11.6 Control Risks | |
| 12. Project Procurement Management | | 12.1 Plan Procurement Management | 12.2 Conduct Procurements | 12.3 Control Procurements | 12.4 Close Procurements |
| 13. Project Stakeholder Management | 13.1 Identify Stakeholders | 13.2 Plan Stakeholder Management | 13.3 Manage Stakeholder Engagement | 13.4 Control Stakeholder Engagement | |

Progressive Demo A

Progressive Demo A

- Progressive Demo **A** provide an opportunity to showcase **Sprint 1** user stories and how well your team has developed functionality to support these
- The **completed user stories** to be demonstrated are shown in **Jira** and **described**, with these user stories having the correct status “**Done**” (or “**In Progress**” if acceptance criteria not yet satisfied or not yet completed) in Jira
- Your **team** should **demonstrate** the **functionality used to support each completed user story**

Progressive Demo A

One way to conduct the demo is described below:

- Use **Jira** and your **developed software** so far to do the demo
- For each user story:
 - **show, read, and describe** the completed user story from **Jira**, also showing its ideally '**Done**' status in Jira
 - walk-through and **demonstrate** the completed functionality described in the user story using your **developed software**

Progressive Demo A

- The progressive demonstration should not go beyond **12 minutes** and no less than **10 minutes**
- Team members **absent** for a progressive demo will receive **zero (0) mark out of 2.5** for that demo
- Not **necessarily** all team members **speak** during the progressive demo
- However, all team members should be involved in **preparing** it and being **present**

Retrospective A

Retrospective A

- Retrospective **A** is a **reflective** activity where team members meet to think about their **teamwork process** over **Sprint 1**
- The team will discuss:
 - What **went well**
 - What **did not go so well**
 - What the team members should **try over the next sprint** to **improve** their **teamwork process**

Retrospective A

- This meeting should follow **soon after the Sprint 1 demo** (usually in the **same day**)
- **At least one team member** should be assigned responsibility for attempting to **enforce** or **follow up** on each **action** on the '**to try**' list
- Team members **absent** for the **retrospective meeting**, as per the brief document's members present/absent list, will receive **zero (0) mark out of 2.5** for Retrospective A

Retrospective A

- A **brief retrospective report** must be **submitted to Moodle** by the **Scrum Master**
- The retrospective report includes:
 - A **title** page (similar to the Proposal's title page)
 - A **section** describing what **went well**
 - A **section** describing what **did not go well**
 - A **section** describing actions '**to try**' next sprint
 - Actions must be **concrete** and **measurable**
 - Each action in the '**to try**' list is **assigned at least one team member** who is responsible for attempting to enforce it or follow it up

Week 4 Lab Tasks

Week 4 Lab Tasks

- Get **quick feedback** from your tutor/mentor about your proposal if there are obvious concerns so that you can take them into account for your **Progressive Demo A** due in your **Week 5 lab**
- Note that we will not be accepting any new/improved version of the proposal as a per the feedback
- We will mark the version you submitted to Moodle before the due date
- The feedback, if any, should be taken into consideration in Jira site

Week 4 Lab Tasks (cont'd)

- Discuss **Progressive Demo A** with your mentor
- See the requirements on the progressive demos from **Assessment Guidelines** and **Progressive Demo A Specification** under **Assessments Hub** section in Moodle
- Each progressive demo should take **no more than 12 minutes** and **no less than 10 minutes**
- A group member absent for the progressive demo cannot receive a mark for that demo

Week 4 Lab Tasks (cont'd)

- Not necessarily all team members **speak** during the progressive demo. However, all team members **must** be involved in preparing it and being **present**
- Discuss **Retrospective A** with your mentor
- See the requirements on the retrospectives from **Assessment Guidelines** and **Retrospective A Specification** under Assessments Hub section in Moodle
- Teams need to hold their retrospective meeting **as soon as possible after the demo** (preferably the **same day**)
- Submit your **Retrospective A report** to Moodle by **Week 5 Saturday @ 9.00pm**

Week 4 Lab Tasks (cont'd)

- Discuss your project progress with your mentor and what you need to complete for your Week 5 lab Progressive Demo A
- Include discussion about what user stories you plan to present in your Week 5 Progressive Demo A if different from what is in the proposal
- If you are experiencing any group issues, please do let your mentor know as early as possible
- More importantly, keep having meetings **regularly** with your clients and get feedback from them

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Q & A