CSE5PM : Lecture 3
Part I: Project Management Phases

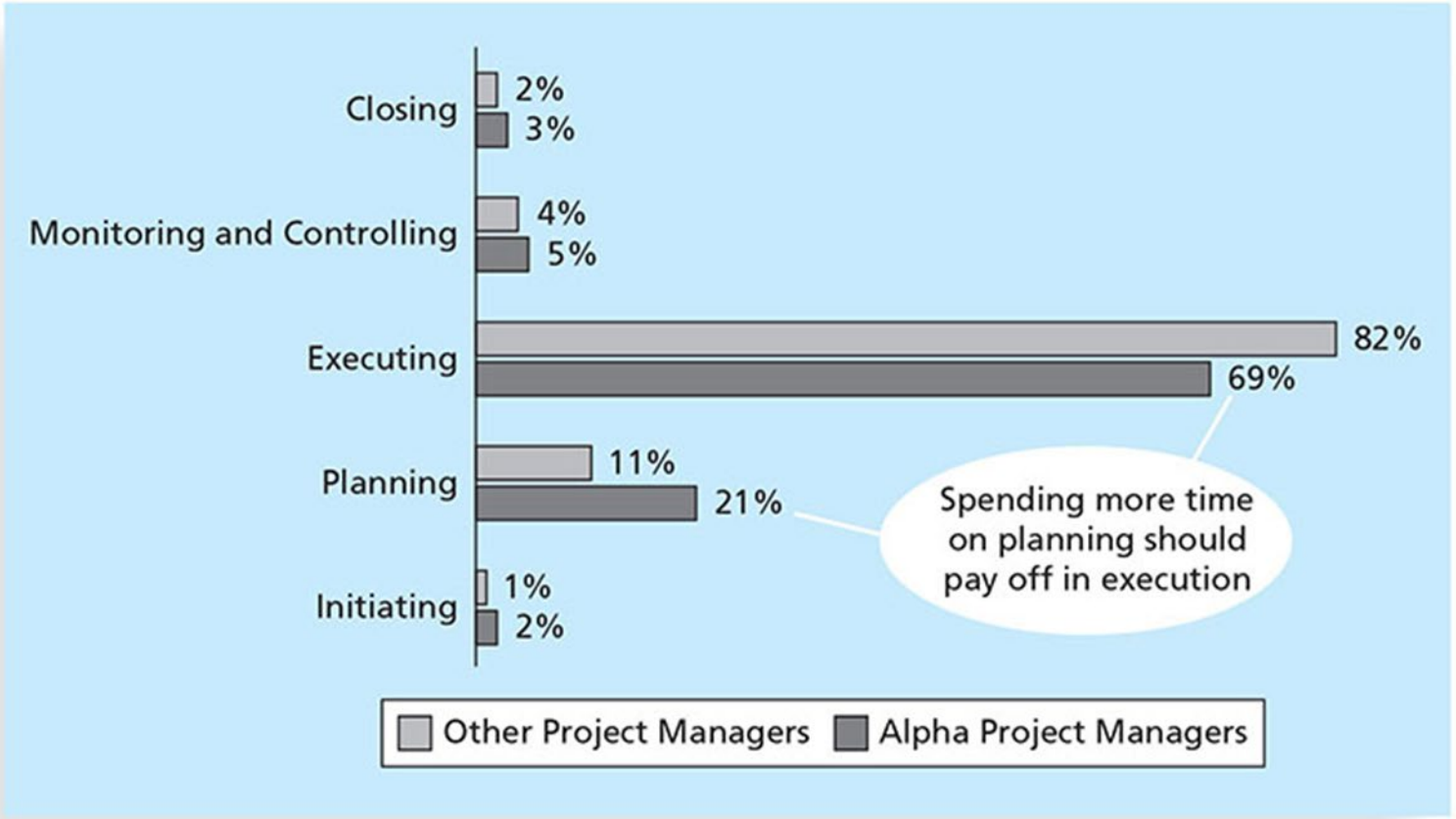
Topic Overview : Project Management Phases
Project Management Process groups

- Project Initiation
- Project Planning
- Project Execution
- Project Closure

Project Management Process Groups

- A **process** is a series of actions directed toward a particular result
- Project management can be viewed as a number of interlinked processes
- The project management process groups include:
  - *Initiating processes*
    - Defining and authorizing a project or project phase
  - *Planning processes*
    - Devising and maintaining a workable scheme to ensure that the project addresses the organization's needs
  - *Executing processes*
    - Coordinating people and resources to carry out the various plans and produce the products, services or results of the project or phase
  - *Monitoring and controlling processes*
    - Regularly measuring and monitoring progress ro ensure that the project objectives are met
  - *Closing processes*
    - Formalizing acceptance of the project or phase, closing out contracts, documenting lessons learned

Percentage of Time Spent on Each Process Group



Source: Andy Crowe

What Went Wrong?

Philip A. Pell, PMP, commented on how the U.S. IRS needed to improve its project management process. “Pure and simple, good, methodology-centric, predictable, and repeatable project management is the SINGLE greatest factor in the success (or in this case failure) of any project… The project manager is ultimately responsible for the success or failure of the project.”*

A 2014 U.S. Government Accountability Office (GAO) report stated that IRS had significant cost and schedule variances in over 68 percent of its major IT projects

*Comments posted on CIO Magazine Web site on article “For the IRS, There’s No EZ Fix,” (April 1, 2004).

Media Snapshot

- Just as information technology projects need to follow the project management process groups, so do other projects, such as the production of a movie.
- Processes involved in making movies might include screenwriting (initiating), producing (planning), acting and directing (executing), editing (monitoring and controlling), and releasing the movie to theaters (closing).
- Many people enjoy watching the extra features on a DVD that describe how these processes lead to the creation of a movie… This acted "…not as promotional filler but as a serious and meticulously detailed examination of the entire filmmaking process."

* Project managers in any field know how important it is to follow a good process.

*Jacks, Brian, "Lord of the Rings: The Two Towers Extended Edition (New Line)", Underground Online (accessed from *www.ugo.com* August 4, 2004).

Mapping the Process Groups to the Knowledge Areas

You can map the main activities of each PM process group into the ten knowledge areas using the PMBOK® Guide, Sixth Edition, 2017

Note that there are activities from each knowledge area under the planning process groups

Mapping Project Management Process Groups to Knowledge Areas*

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Integration Management	Develop project charter, Develop preliminary project scope statement	Develop project management plan	Direct and manage project execution	Monitor and control project work, Integrated change control	Close project
Project Scope Management		Scope planning, Scope definition, Create WBS		Scope verification, Scope control	
Project Time Management		Activity definition, Activity sequencing, Activity resource estimating, Activity duration estimating, Schedule development		Schedule control	
Project Cost Management		Cost estimating, Cost budgeting		Cost control	

*Source: PMBOK® Guide, Sixth Edition, 2017.

continued

KNOWLEDGE AREA	PROJECT MANAGEMENT PROCESS GROUPS				
	INITIATING	PLANNING	EXECUTING	MONITORING & CONTROLLING	CLOSING
Project Quality Management		Quality planning	Perform quality assurance	Perform quality control	
Project Human Resource Management		Human resource planning	Acquire project team, Develop project team	Manage project team	
Project Communications Management		Communications planning	Information distribution	Performance reporting, Manage stakeholders	
Project Risk Management		Risk management planning, Risk identification, Qualitative risk analysis, Quantitative risk analysis, Risk response planning		Risk monitoring and control	
Project Procurement Management		Plan purchases and acquisitions, Plan contracting	Request seller responses, Select sellers	Contract administration	Contract closure

*Source: PMBOK® Guide, Sixth Edition, 2017.

Developing an IT Project Management Methodology

- Just as projects are unique, so are approaches to project management
- Many organizations develop their own project management methodologies, especially for IT projects
- A **methodology** describes *how* things should be done; a **standard** describes *what* should be done
- PRINCE2, Agile, RUP, and Six Sigma provide different project management methodologies

Global Issues

- A 2011 study of organizations across India included the following findings:
- Two-thirds of organizations in some stage of Agile adoption are realizing key software and business benefits in terms of faster delivery of products to the customer, an improved ability to manage changing requirements, and higher quality and productivity in IT.
- Organizations struggle with the magnitude of the cultural shift required for Agile, opposition to change, a lack of coaching and help in the Agile adoption process, and a lack of qualified people.
- The daily stand-up, iteration planning, and release planning are the most commonly used practices, while paired programming and open workspaces are not popular

What Went Right?

- Organizations that excel in project management complete 89 percent of their projects successfully compared to only 36 percent of organizations that do not have good project management processes

- PMI estimates that poor project performance costs over $109 million for every $1 billion invested in projects and programs

Project Management Phases (PMI Approach)
Project Management Process groups

Initiation

- This phase marks the start of the project, the objective here is to define the project at a high level. Project documents and artefacts start to emerge here.
- The first is usually to come up with a business case, feasibility assessments are also carried out. It may make business sense, but can it be done.
- Key stakeholders carried out due diligence to assist in determining if the project is a “go” or “no go”.
- If it is a go, a project charter is drafted to map out the objectives and requirements of the project. These are initial documents, done at a high level. More detailed and refined documents are left for later phases.
- It is during this phase that the type and scope of project are determined. Failure to Initiating a project well has knock on effects and can significantly contributed to project failure.
- Key risk controls at this stage are acquiring better understanding of the business environment and any risks. Risks are reported and recommendations made on how to monitor, manage or mitigate them. The requisite controls are then factored into the project.

Project Management Phases (PMI Approach)

Planning

- This usually begins with the setting goals. The goals, and performance against these goals determines what success looks like.
- To ensure that enough rigour has gone into the goals setting a S.M.A.R.T goal setting approach is usually used.
- This means, goals should be:
  - **Specific** – They should answer: who, what, where, when, which, and why.
  - **Measurable** – criteria should be created to measure or approximate progress.
  - **Attainable** – goals should be can be challenging but they should be achievable, not just for success but for staff morale as well
  - **Relevant** –Employees should understand the relevance of the goals being set, and thus willing to work hard to pursue them
  - **Timely** things evolve, so success needs be defined within a given time-frame

Project Management Phases(PMI Approach)

Planning

- It is during this phase that the scope is set and the project developed. Costs are set and the budget formulated. Quality is defined, availability of resources determined, and a realistic timetable put in place.
- The scope, timetable and budget of the project are used to establish baselines and measures to determine if a project is on track to succeed.

- Project roles and responsibilities are clearly laid out, so the team and stakeholders know what they are accountable for.
- All in in all, this is the phase in which the project is planned to an appropriate level of detail, and the documents and artefacts products here reflect that.

(You will explore detailed planning in your practicals)

Project Management Phases(PMI Approach)

Execution

- The execution phase is when the project team kicks off delivering on the required deliverables from the planning phase.
- Project resources and time have to be skilfully allocated and managed to ensure the project remains achieves the scope within its given constraints.
- Documentation is also produced with regards to each specific task, these documents are used to assess if deliverables are within the project's requirements. Documentation also provides information regarding what has already been completed for that project. It can also later be used as a paper trail of work done. Done right, appropriate documentation a key contributor to project success.
- Project performance is Monitored and measured frequently to identify deviations from scope and requirements. Corrective action is taken, this is known as Controlling. Monitoring and controlling .
- In iterative projects, Monitoring and Controlling provides feedback between project cycles, to bring deliverables in line with customer requirements.

Project Management Phases(PMI Approach)

Execution

- Project maintenance is also carried out on an ongoing basis by supporting the end-users, fixing errors, and updating production over time.
- During the project the scope may change as things evolve. The change is managed by keeping stakeholders and the project team in the and updating project documentation as required.

Project Management Phases(PMI Approach)

Closing

- Closing marks the end of the project, it includes the formal acceptance of the project and it's deliverables by the customer.
- All activities and deliverables are finalised across the project groups. Contracts and any other open items are completed and closed out.
- Project team members are recognised for their work, and some project managers will go in so far as to organise small work events to celebrate the project teams achievements.
- Documentation is archived and Post Implementation Reviews are held with the project team to capture and document the lessons learned. This is especially key and allows for improvements to be applied to future projects.

Project Management Phases(Agile Approach) An Informed Decision

- It is not a snap decision whether to use an agile approach or not, just like flying or driving somewhere on a trip
- Projects with less rigid constraints, experienced and preferably co-located teams, smaller risks, unclear requirements, and more flexible scheduling would be more compatible with an agile approach
- The following example uses Scrum roles, artifacts, and ceremonies

Scrum Roles

Product owner: The person responsible for the business value of the project and for deciding what work to do and in what order, as documented in the product backlog.

Scrum Master: The person who ensures that the team is productive, facilitates the daily Scrum, enables close cooperation across all roles and functions, and removes barriers that prevent the team from being effective.

Scrum team or development team: A cross-functional team of five to nine people who organize themselves and the work to produce the desired results for each **sprint**, which normally lasts 2-4 weeks.

Scrum Artifacts

An artifact is a useful object created by people

Scrum artifacts include:

- **Product backlog**: A list of features prioritized by business value
- **Sprint backlog**: The highest-priority items from the product backlog to be completed within a sprint
- **Burndown chart**: Shows the cumulative work remaining in a sprint on a day-by-day basis

Scrum Ceremonies

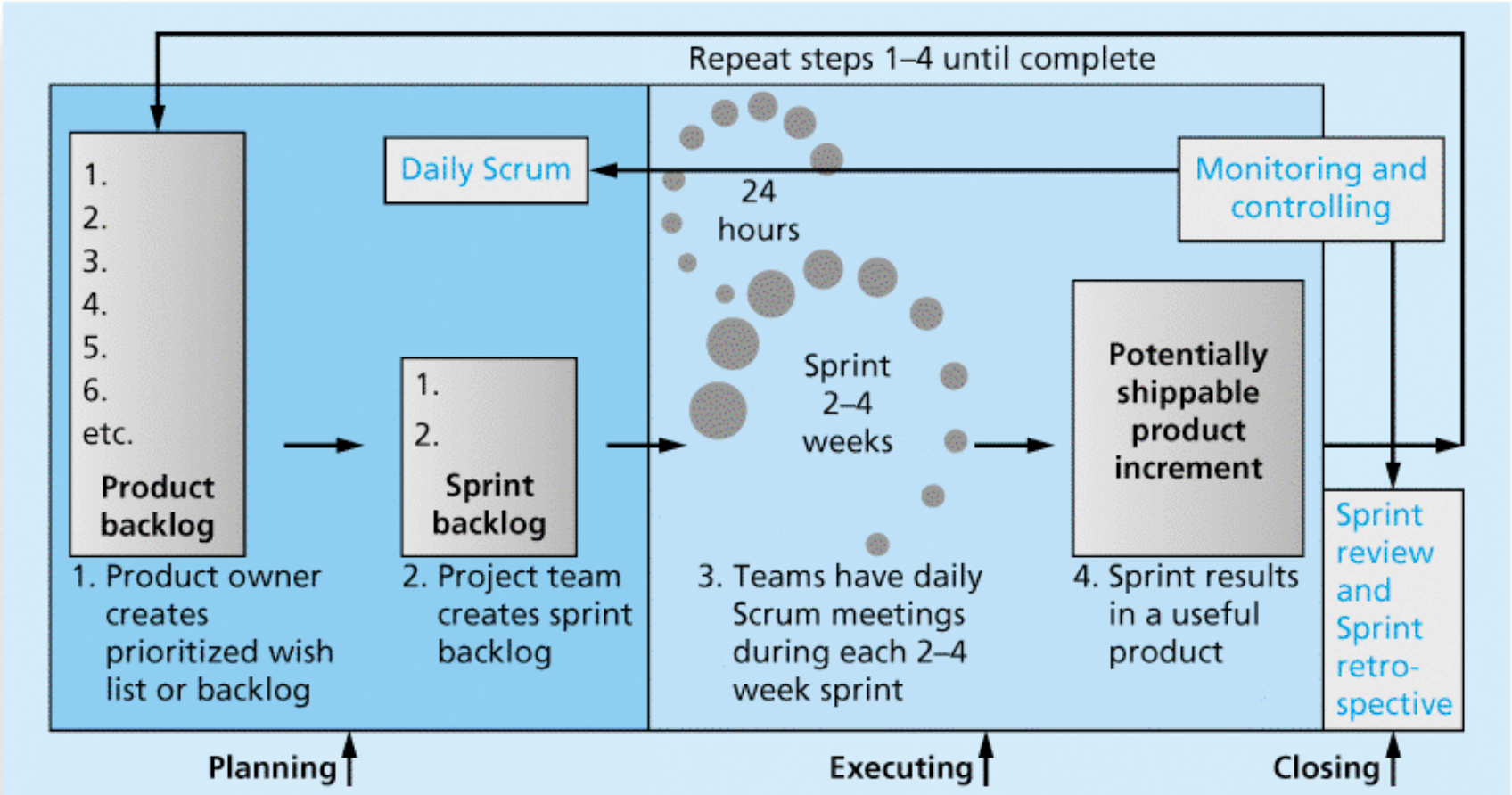
Sprint planning session: A meeting with the team to select a set of work from the product backlog to deliver during a sprint.

Daily Scrum: A short meeting for the development team to share progress and challenges and plan work for the day.

Sprint reviews: A meeting in which the team demonstrates to the product owner what it has completed during the sprint.

Sprint retrospectives: A meeting in which the team looks for ways to improve the product and the process based on a review of the actual performance of the development team.

Scrum Framework and the Process Groups



unique Scrum Activities by Process Group

Initiating:

- Determine roles
- Decide how many sprints will compose each release and the scope of software to deliver

Planning:

- Create product backlog
- Create sprint backlog
- Create release backlog
- Plan work each day in the daily Scrum
- Document stumbling blocks in a list

Executing:

- Complete tasks each day during sprints
- Produce a shippable product at the end of each sprint

Monitoring and Controlling:

- Resolve issues and blockers
- Create and update burndown chart
- Demonstrate the completed product during the sprint review meeting

Closing:

- Reflect on how to improve the product and process during the sprint reflection meeting

Planning

Not different from PMBOK® Guide

- Still create a scope statement and can use a Gantt chart for the entire project schedule; other planning similar (risk, etc.)

Different:

- Descriptions of work are identified in the product and sprint backlogs, more detailed work documented in technical stories, estimate a velocity or capacity for each sprint; release roadmap often used for schedule

Executing

Not different from PMBOK® Guide

- Still produce products, lead people, etc.

Different:

- Produce several releases of software - users of the new software might be confused by getting several iterations of the product instead of just one
- Communications different because the project team meets every morning, physically or virtually

Monitoring and Controlling

Not different from PMBOK® Guide

- Still check actual work vs. planned work

Different

- Names of key reviews are the daily Scrum and the sprint review
- A sprint board is used instead of a tracking Gantt chart or other tools
- Use a burndown chart vs. earned value chart

Closing

Not different from PMBOK® Guide

- Focus is still on acceptance of deliverables and reflection

Different:

- The retrospective is similar to a lessons-learned report, but it focuses on a shorter period of time. It is intended to answer two fundamental questions:
  - What went well during the last sprint that we should continue doing?
  - What could we do differently to improve the product or process?

Further reading…..

- https://www.projectengineer.net/the-pmboks-five-project-phases/
- https://journals.sagepub.com/doi/abs/10.1177/87569728603700303
- https://www.sciencedirect.com/science/article/abs/pii/S02637863020001
- https://www.sciencedirect.com/science/article/abs/pii/S0263786301000424
- https://www.sciencedirect.com/science/article/abs/pii/026378639500008E

LA TROBE UNIVERSITY

Lecture 3

Part II: Project Management Tasks

Topic Overview

- The importance of Planning in PM
- Project Documentation
- Monitoring and controlling
- Closing and handover

The importance of Planning in PM

- A project without a proper plan and scope has a little chance of success. Planning is critical as to ensure consistency, repeatability, and to help with coordination of multiple stakeholders.
- Communicating the plan and getting everyone onboard is also critical in a project. All parties in project must understand the expected specific outcome of their role and in some cases, how this fits into the bigger picture.
- This is why documenting every critical aspect of a project including a risk register is considered a key part of project management practice.

Project Documentation

- Documentation also helps to track and maintain budget, scope, effectiveness and validation.
- Project documentation must define the specific inputs, processes and outcomes of each task as well as a way of tracking and validating task completion. For each task, the operations team must also produce documentation defining what has been completed, how it was completed and other relevant details such as technical challenges and solutions.
- Throughout the project, documentation provides the basis of monitoring project success at different stages, and also guidance on next steps.
- Some of the key PM documents include the following:
    - Project Plan showing key activities, dates, milestones
    - Risk register
    - Key decisions register
    - Project budget tracker
- Which other PM documents do you think are important?

PM Monitoring and Controlling

- Project Monitoring and Controlling is a way of keeping track of execution such that problems can be anticipated and avoided or solved in a timely manner.
- Monitoring and Controlling tasks in a project include
  - Measuring current project activities
  - Monitoring project variables (cost, effort, scope, etc.) against the project management plan
  - Monitoring overall project performance
  - Following up on Issues and Risks remediation

PM Monitoring and Controlling Cycle

PM Closing and Handover

- A project concludes when all objectives are met or at the request of the client.
- Project handover is an important part of Project Closing whereby the project teams hands over project deliverables to the operational team or to the project owner.
- Project handover can be brief or may take weeks depending on the scope, complexity and the deliverables.
- Project closing includes the formal acceptance of the project deliverables by the client/ project owner.

Further reading…..

- http://www.csl.mtu.edu/cs3141/www/notes/Scrum%20[Compatibility%20Mode].pdf
- https://patentimages.storage.googleapis.com/eb/a2/e6/2582fc95673828/US6397202.pdf
- https://ieeexplore.ieee.org/abstract/document/820727

Thank you