Project Management, Risk, and Reliability

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Learning Objectives

- Describe the five project management process groups, map them to the project management knowledge areas, discuss why organizations develop their own project management methodologies, and understand the importance of top management commitment and organizational standards in project management;
- Discuss the initiating process, including pre-initiating tasks, breaking large projects down into smaller projects, and initiating tasks;
- Identify project stakeholders and perform a stakeholder analysis;
- Prepare a business case to justify the need for a project;
- Create a project charter to formally initiate a project;
- Describe the importance of holding a good project kick-off meeting;
- Develop a preliminary project scope statement to help understand project requirements.

The Importance of Top Management Commitment

- Without top management, many projects will fail.
- Some projects have a senior manager called a **champion** who acts as a key proponent for a project.
- Projects are part of the larger organisational environment, and many factors are out of the project manager's control.

How Top Managers Help Project Managers Succeed

- Provide adequate resources
- Timely approval on unique needs
- Deal with other departments
- Deal with 'politics'
- Leadership development
- Develop and enforce organisational standards
- Support project management office (PMO)

Project Management Office (PMO)

Definition: **Project Management Office (PMO)**

A **project management office (PMO)** is an organisational entity created to assist project managers in achieving project goals.

A **PMO** can help development standards and methodologies standards and methodologies, provide career paths for project managers, and assist project managers with training and certification.

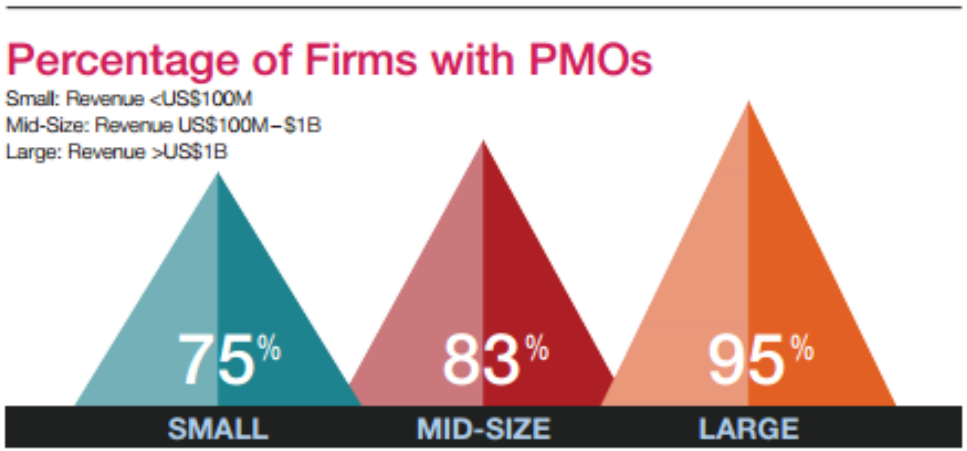


Figure: Source: "The State of the PMO 2016"

Project Management Office (PMO)

Possible Goals of a PMO

- Collect, organise, and integrate project data for the entire organisation;
- Research, develop, and share best practices in project management;
- Develop and maintain templates, tools, standards, and methodologies;
- Develop and provide a formal career path for project managers;
- Provide project management consulting services;
- Provide a structure to house project managers while then are acting in those roles or are between projects.

Developing a Project Management Methodology

Definition: **Methodology**

A **methodology** describes how things should be done.

- The *PMBOK Guide* is a methodology and a **standard** that describes best practices for what should be done to manage a project.
- Another project management methodology is **PRojects IN Controlled Environments (PRINCE2)**. This was originally developed for IT projects and was released in 1996 by the U.K. Office of Government.
- **Agile** is yet another project management methodology which is used by many software development projects. This methodology focuses on iterative workflow and incremental delivery of software in short iterations.

Agile Project Management

Definition: Agile

Relating to or denoting a method of project management used especially for software development, that is characterised by the division of tasks into short phases of work and frequent reassessment and adaptation of plans.

- Early software development projects used a waterfall approach, where requirements were defined in detail before any software was written.
- As the rate of change of business technology increased, this approach became unrealistic for many projects.

Scrum

- **Scrum** is the leading agile development method for completing projects with a complex, innovative scope of work.
- The term was coined in 1986 in a Harvard Business Review study that compared high-performing, cross-functional teams to the scrum formation used by rugby teams.

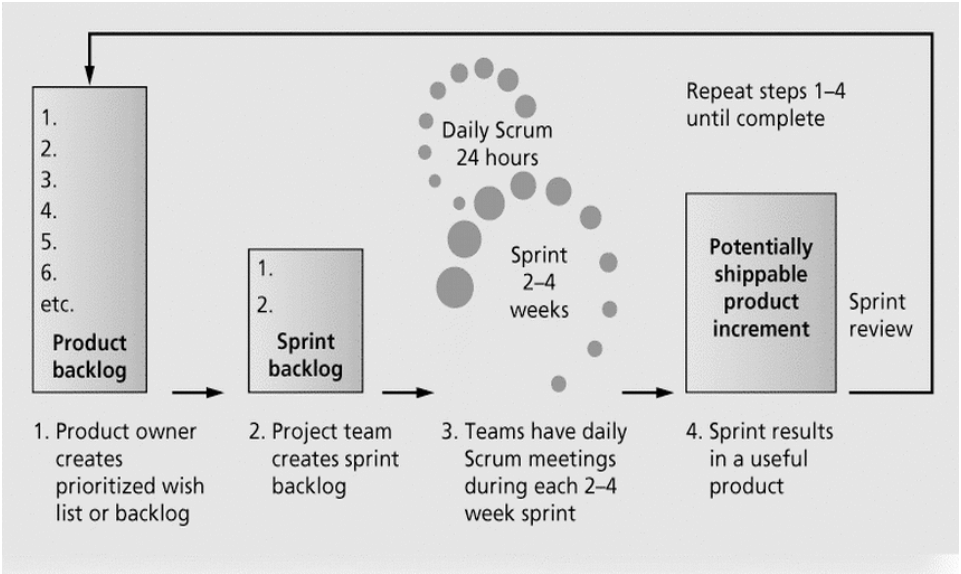


Figure: The figure shows the scrum framework

Developing a Project Management Methodology

The project management methodology that this course will be focused on is the *PMBOK*, shown below.

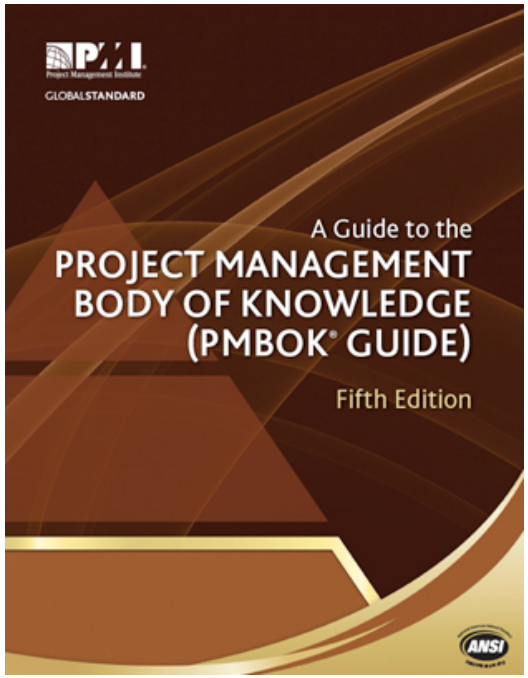


Figure: PMBOK stands for project management body of knowledge, and is the project management methodology.

Project Management Process Groups

Definition: **Process**

A **process** is a series of actions directed towards a particular result

Definition: **Process Groups**

Project management **process groups** progress from initiating activities to planning activities, executing activities, monitoring and controlling activities, and closing activities.

Description of Process Groups

- **Initiating processes**: include actions to begin projects and project phases
- **Planning processes**: include devising and maintaining a workable scheme to ensure that the project meets its scope, time, and cost goals as well as organisational needs
- **Executing processes**: include coordinating people and other resources to carry out the project plans and produce the deliverables of the project or phase.
- **Monitoring and controlling processes**: measure progress towards achieving project goals, monitor deviation from plans, and take corrective action to match progress with plans and customer expectations
- **Closing processes**: include formalising acceptance of the project or phase and bringing it to an orderly end

Project Management Process Groups

The process groups have clear dependencies and are performed in the same sequence on each project.

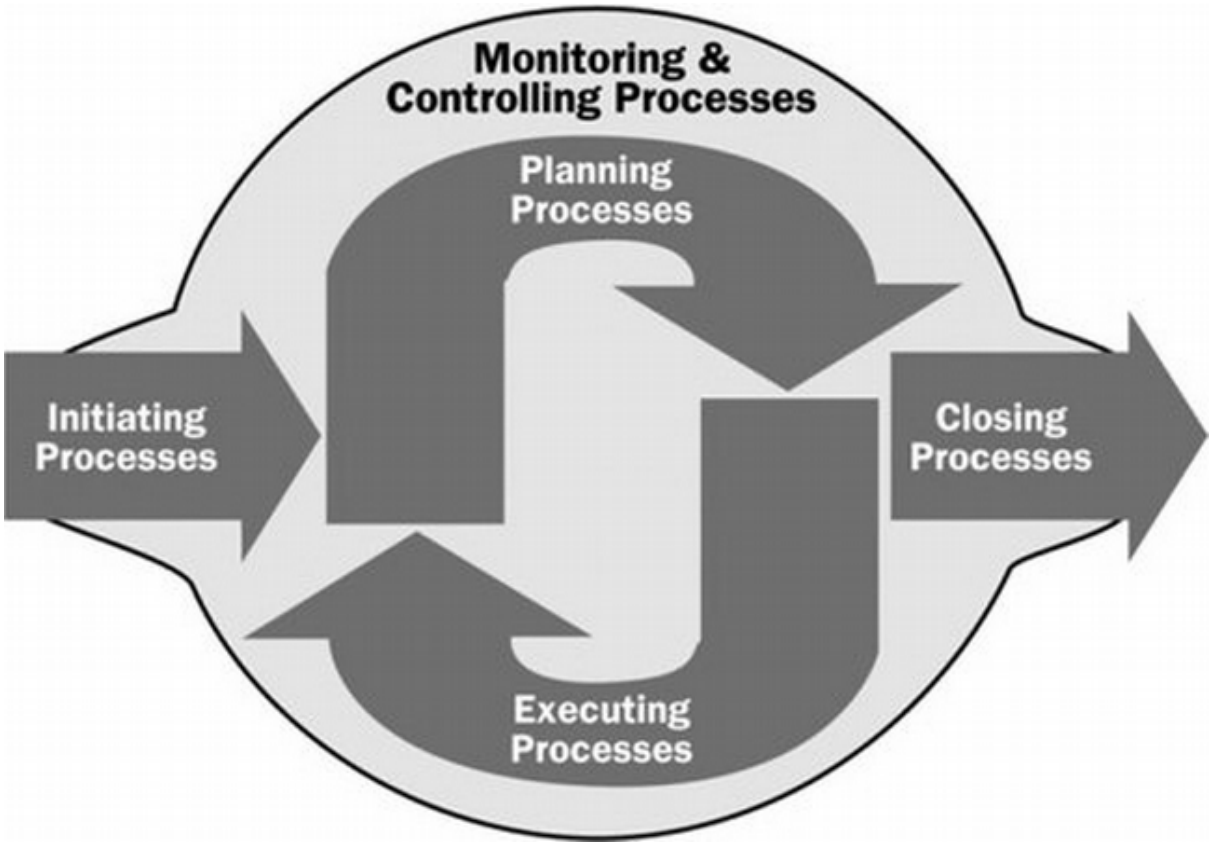


Figure: The diagram helps to understand how the process groups are sequenced

Characteristics of the Process Groups

The level of activity and length of each process group varies for every project:

- Normally, executing tasks require the most resources and time, followed by planning tasks;
- Monitoring and controlling processes are done throughout the project's lifespan;
- Initiating and closing tasks are usually the shortest (at the beginning and end of a project or phase, respectively), and they require the least amount of resources and time.

Note that process groups apply to the entire project as well as to the project phases.

Definition: Phase

A **phase** is a distinct stage in project development, and most projects have distinct phases.

Guidelines for Time Spent in Each Process Group

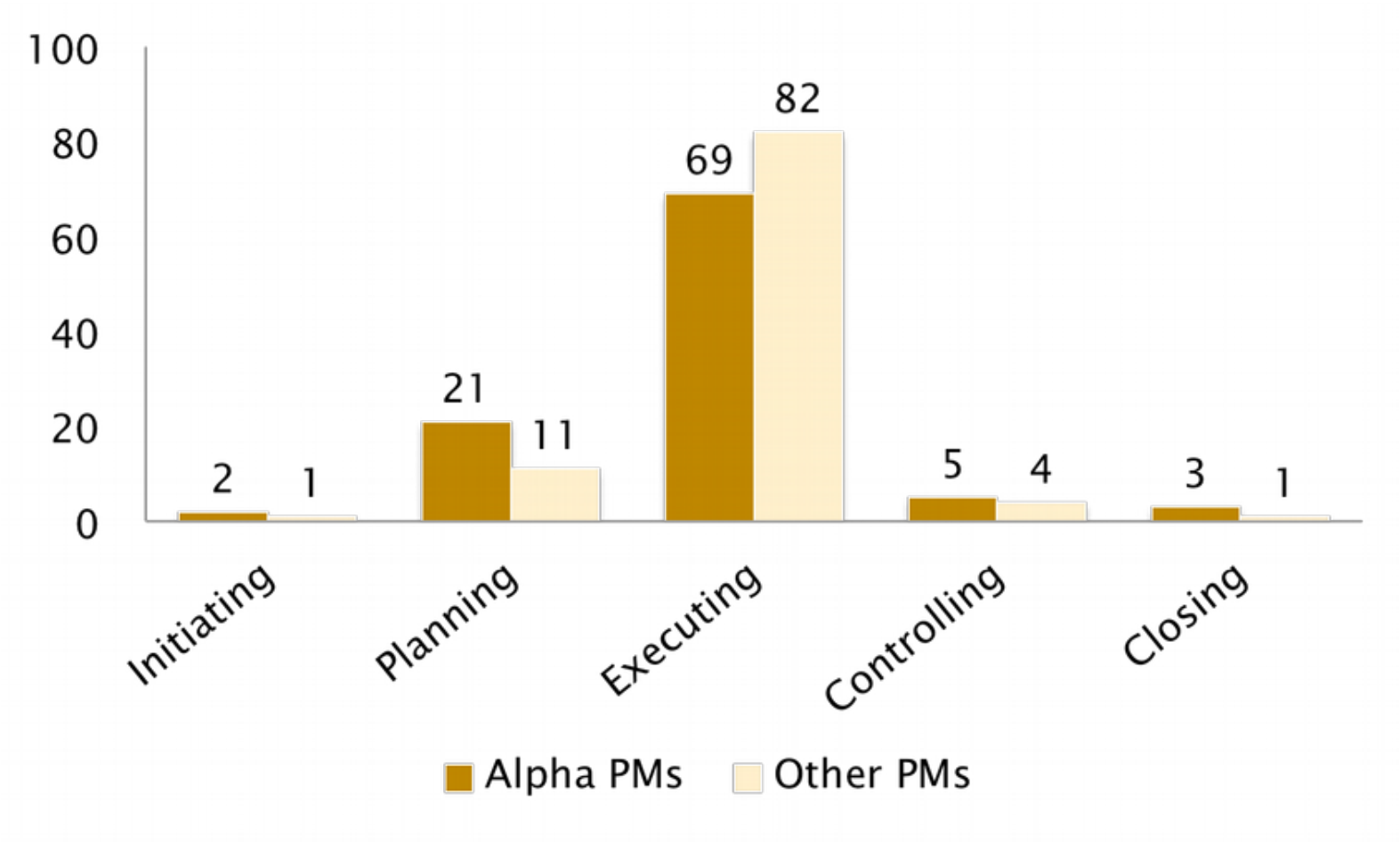
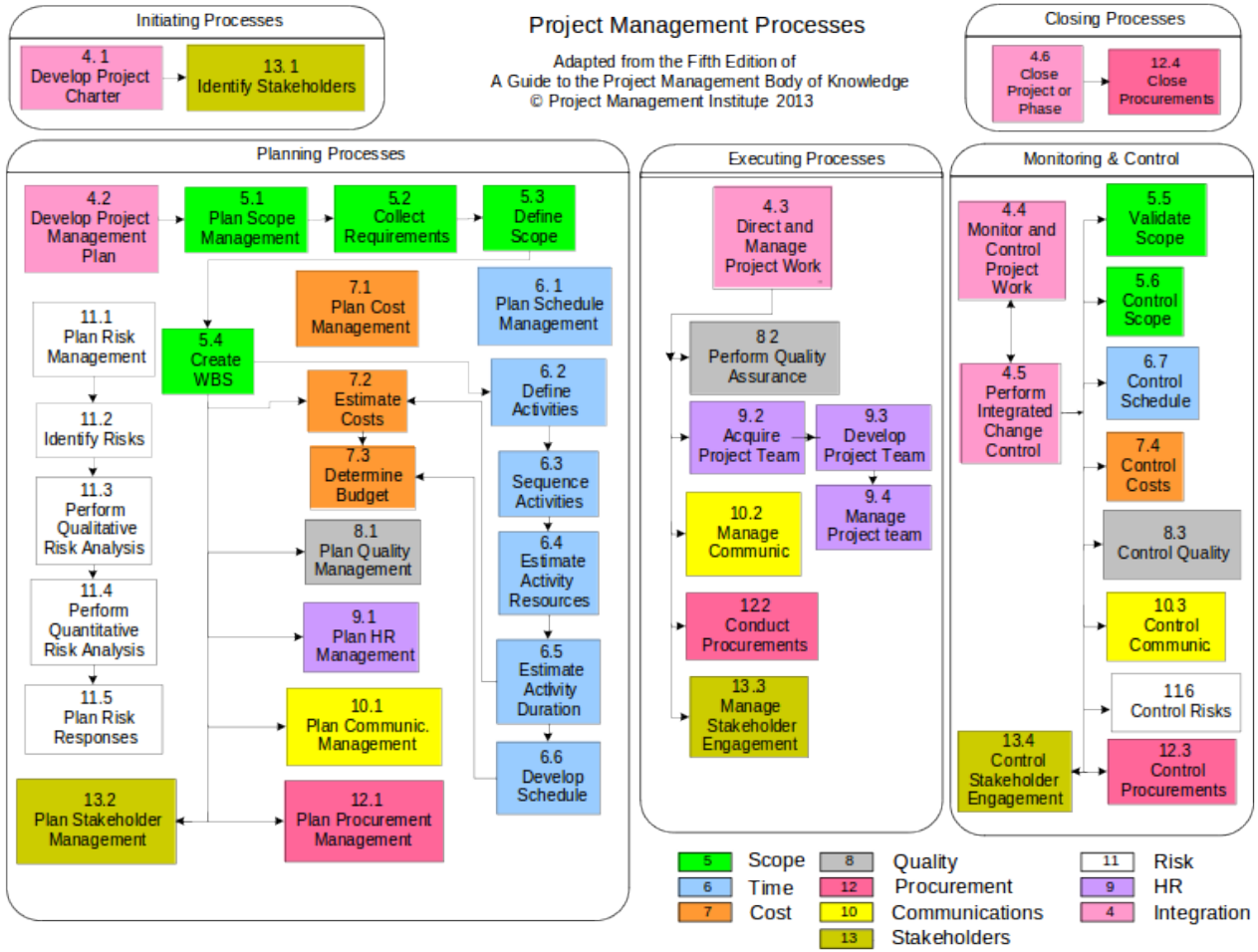


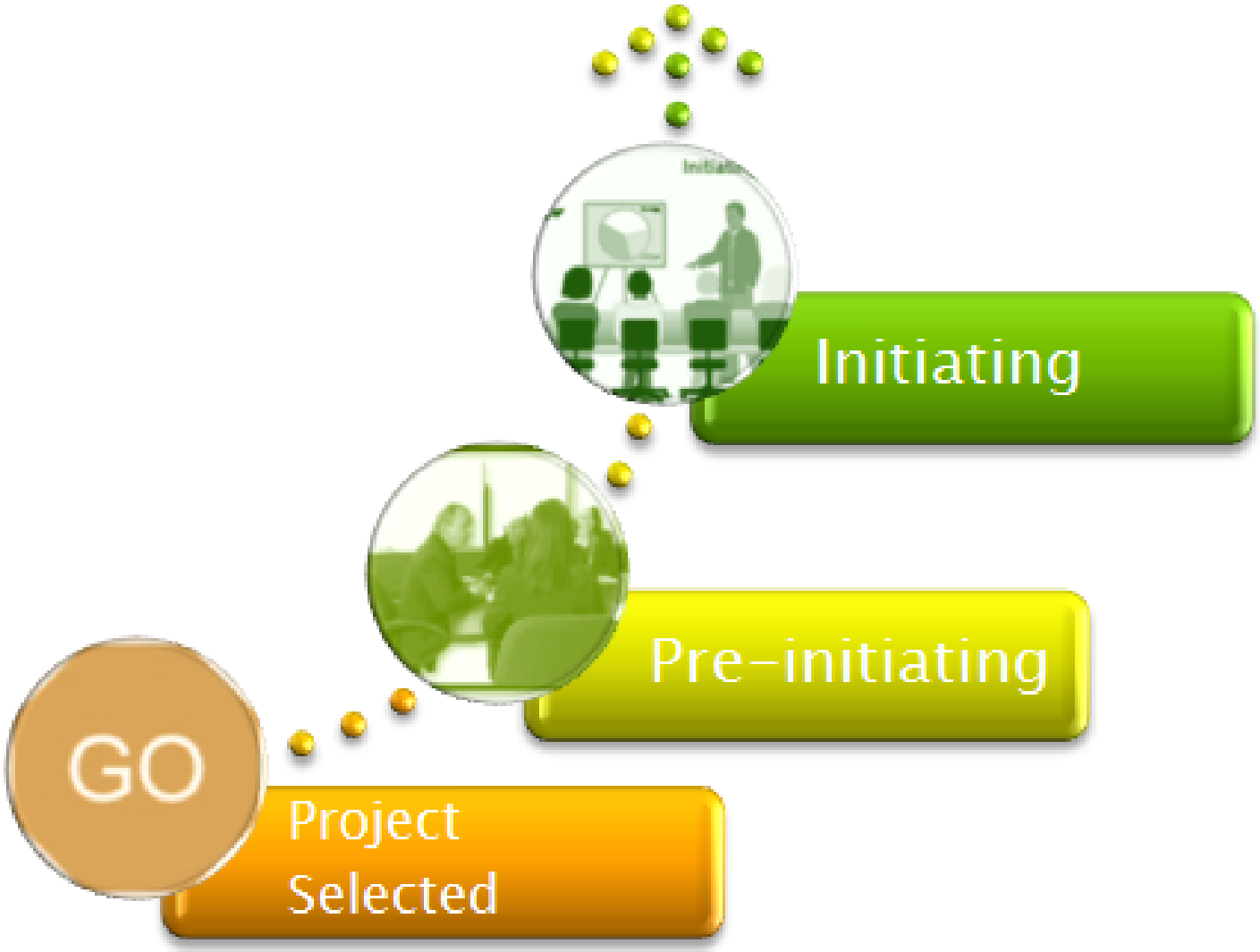
Figure: The graph shows the approximate percentage of the total time that a project will spend on each process group

Mapping of Knowledge Area to Process Group

Figure: This diagram will act as a map to the project management process - we will use it again and again to orient your learning of project management.



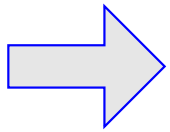
What Happens Prior to the Initiating Process?



What Happens Prior to the Initiating Process?

Pre-initiating (Senior Management)

- Identify scope, time, and cost;
- Identify project sponsor;
- Select project manager;
- Develop **business case** for the project;
- Review processes and expectations;



Initiating (Project Manager)

- Identify and understand all project stakeholders;
- Develop project charter
- Hold kick-off meeting
- Preliminary scope statement

What Happens Prior to the Initiating Process?

Pre-initiating Processes

It is good practice to lay the groundwork for a project before it officially starts. After a project is approved, senior managers should meet to accomplish the following tasks:

- Determine the scope time, and cost **constraints** for the project;
- Identify the **project sponsor**;
- Select the **project manager**;
- Meet with the project manager to review the process and expectations for managing the project;
- Determine if the project should be divided into two or more smaller projects because it is easier to manage smaller projects than larger ones.

What Happens Prior to the Initiating Process?

Business Case

A **business case** is just a document that provides financial justification for investing in a project. Typically a **business case** will contain:

- Introduction and background
- Business Objective
- Current situation and problem/opportunity statement
- Critical assumptions and constraints
- Analysis of options and recommendation
- Preliminary project requirements
- Budget estimate and financial analysis
- Schedule estimate
- Potential risks

What Happens Prior to the Initiating Process?

Business Case

A business case is a standard document used by project managers. To get an idea of what a business case document looks like try Googling *business case templates*.

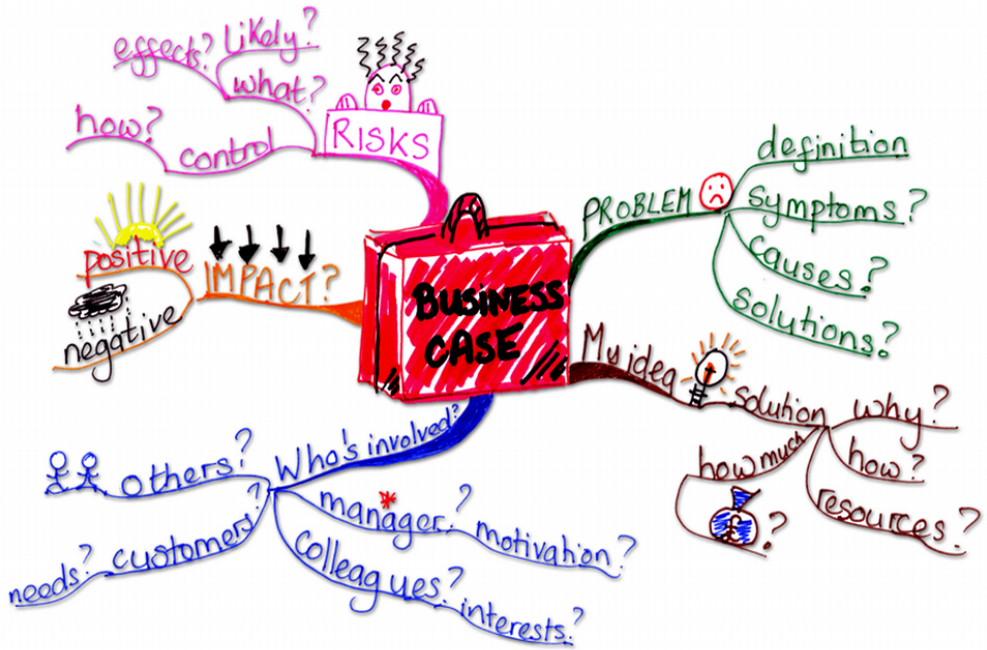
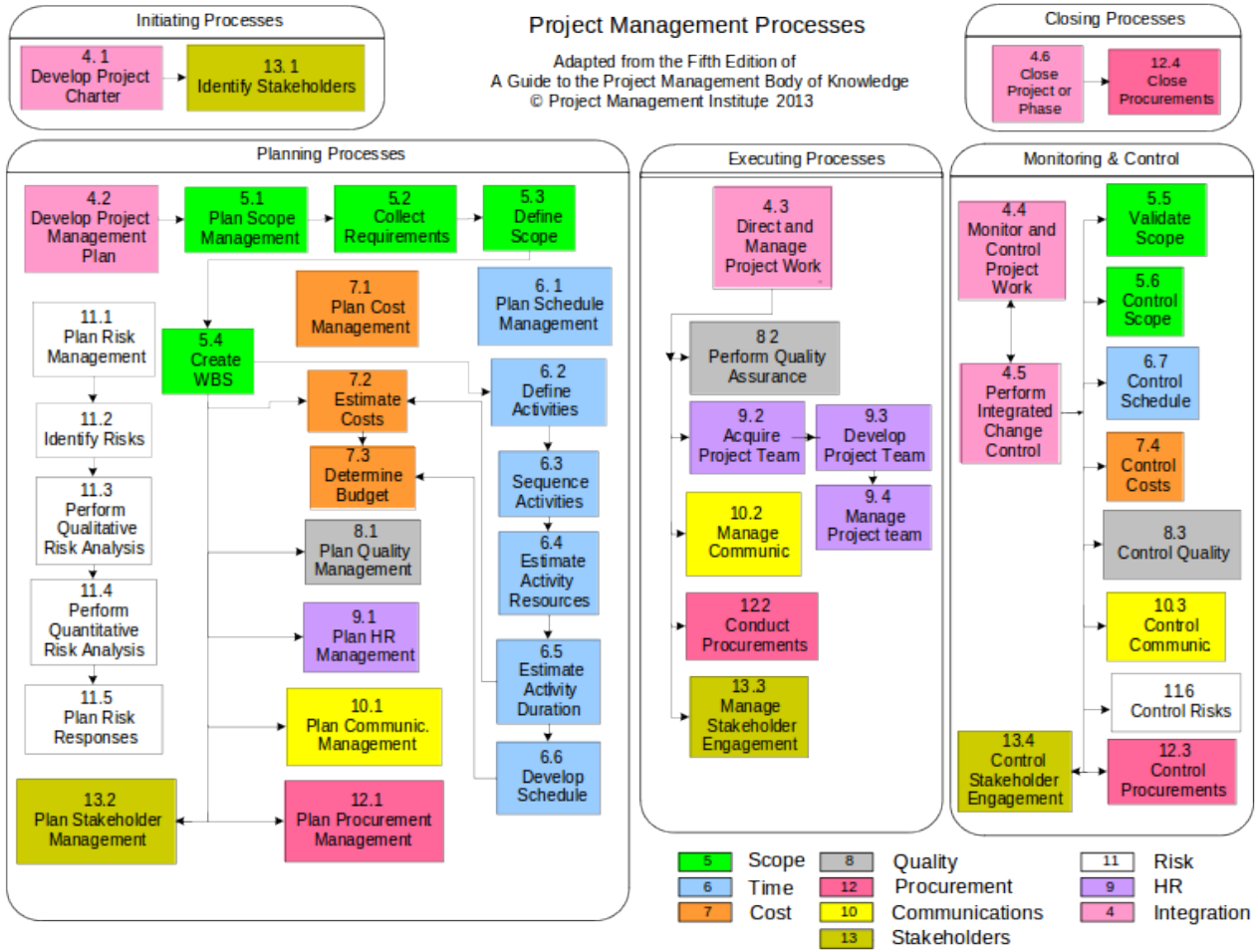


Figure: An example of a mind map to help you generate ideas for your business case.

Project Charter

Figure: The task of developing a project charter is in the **Integration** knowledge area, and belongs to the **Initiating** process group.



Creating a Project Charter

Definition: **Project Charter**

A **project charter** is a document that formally recognises the existence of a project and provides a summary of the project's objectives and management

- A project charter authorises the project manager to use organisational resources to complete the project;
- The project manager plays a major role in developing the project charter;
- A crucial part of the project charter is the sign off section.
- Instead of project charters, some organisations initiate projects using a simple letter of agreement or formal contracts

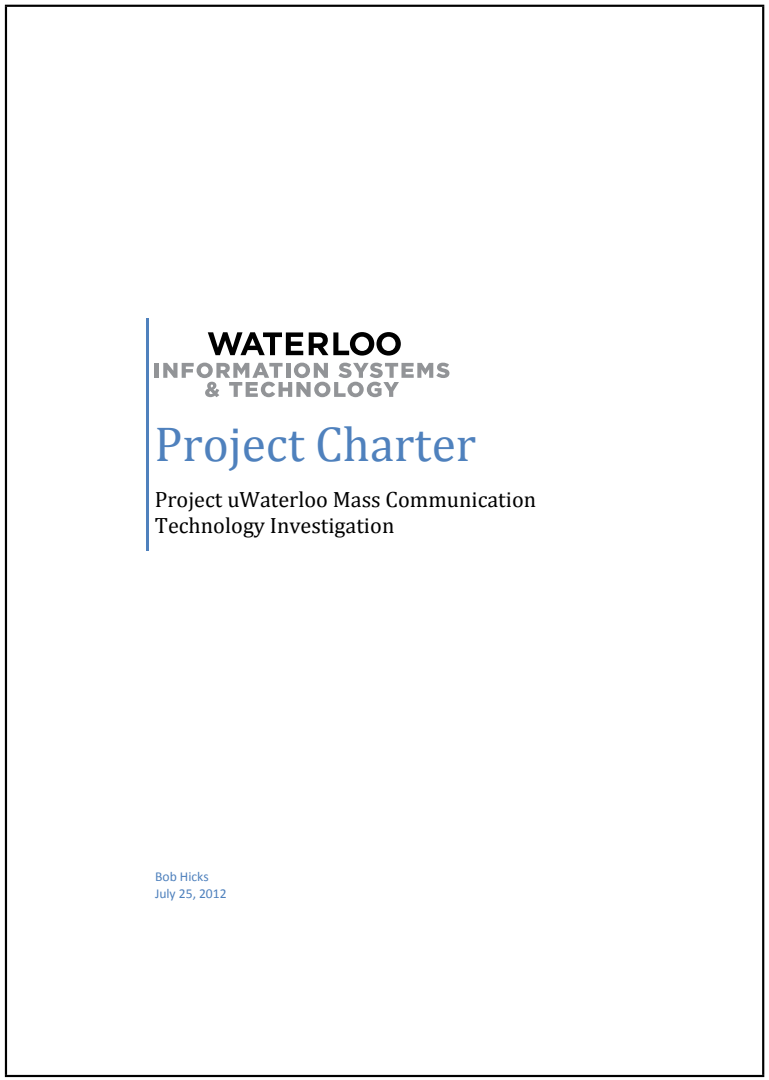
Contents of a Project Charter

- The project's title and date of authorisation;
- The project manager's name and contact information;
- A summary schedule or timeline, including the planned start and finish dates. If a summary milestone schedule is available, it should also be included or referenced;
- A summary of the project's estimated cost and budget allocation;
- A brief description of the project's objectives, including the business need or other justification for authorising the project;
- Project success criteria, including project approval requirements and who signs off on the project.

Contents of a Project Charter (Continued)

- A summary of the planned approach for managing the project, which should describe stakeholder needs and expectations, important assumptions and constraints, and should refer to related documents, such as a communications management plan, as available;
- A roles and responsibilities matrix;
- A sign-off section for signatures of key project stakeholders;
- A comments section in which stakeholders can provide important comments related to the project.

Example of a Project Charter

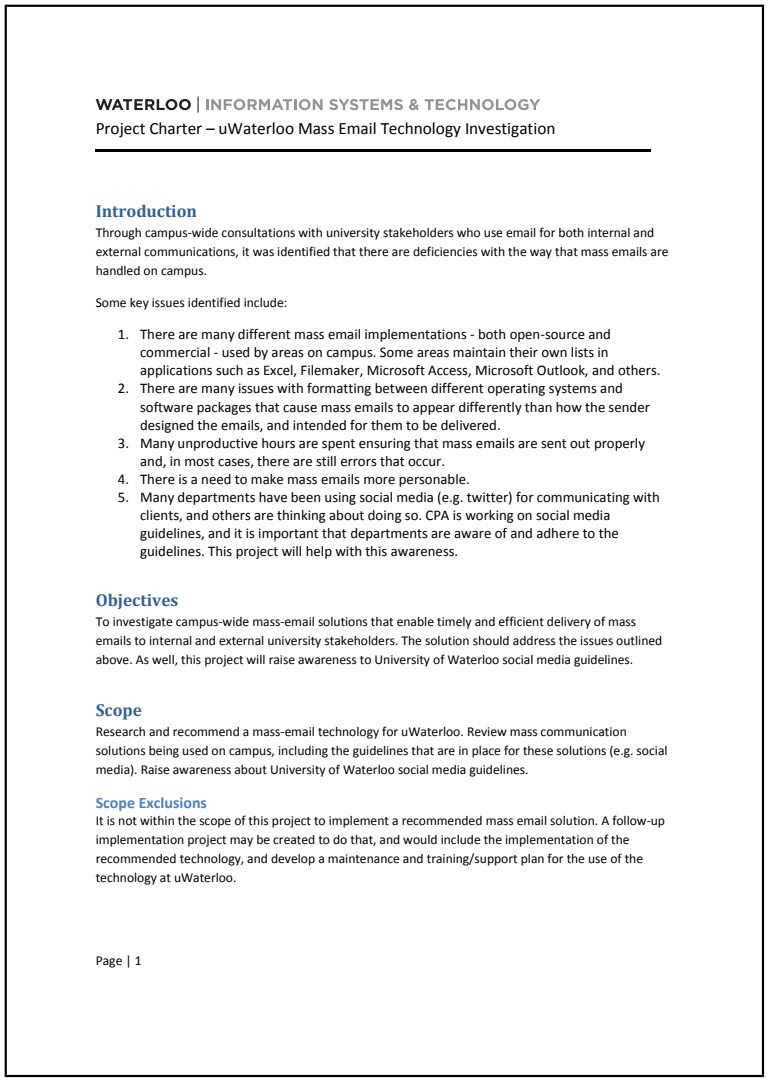


WATERLOO
INFORMATION SYSTEMS
& TECHNOLOGY

Project Charter

Project uWaterloo Mass Communication Technology Investigation

Bob Hicks
July 25, 2012



Introduction

Through campus-wide consultations with university stakeholders who use email for both internal and external communications, it was identified that there are deficiencies with the way that mass emails are handled on campus.

Some key issues identified include:

1. There are many different mass email implementations - both open-source and commercial - used by areas on campus. Some areas maintain their own lists in applications such as Excel, Filemaker, Microsoft Access, Microsoft Outlook, and others.
2. There are many issues with formatting between different operating systems and software packages that cause mass emails to appear differently than how the sender designed the emails, and intended for them to be delivered.
3. Many unproductive hours are spent ensuring that mass emails are sent out properly and, in most cases, there are still errors that occur.
4. There is a need to make mass emails more personable.
5. Many departments have been using social media (e.g. twitter) for communicating with clients, and others are thinking about doing so. CPA is working on social media guidelines, and it is important that departments are aware of and adhere to the guidelines. This project will help with this awareness.

Objectives

To investigate campus-wide mass-email solutions that enable timely and efficient delivery of mass emails to internal and external university stakeholders. The solution should address the issues outlined above. As well, this project will raise awareness to University of Waterloo social media guidelines.

Scope

Research and recommend a mass-email technology for uWaterloo. Review mass communication solutions being used on campus, including the guidelines that are in place for these solutions (e.g. social media). Raise awareness about University of Waterloo social media guidelines.

Scope Exclusions

It is not within the scope of this project to implement a recommended mass email solution. A follow-up implementation project may be created to do that, and would include the implementation of the recommended technology, and develop a maintenance and training/support plan for the use of the technology at uWaterloo.

Example of a Project Charter

Constraints, Assumptions and Risks

Constraints

- People time available
- Availability of software for testing

Assumptions

- Recommendation would be centrally funded
- People are interested in participating in this project
- Technology, people, budget is in place to implement the project and its recommendations
- Buy-in from across the campus
- Top university management support for the recommended solution

Risks

- No solution exists that will meet all the requirements
- No interest from some areas
- Losing features of current system
- Upsetting clients/staff (learning new system)
- Loss of data
- Conversion from existing systems may not be smooth
- Costs may increase, recommendation may not be cost effective or in budget
- People time may increase (installation/conversion/maintenance, increase in use across campus)
- Some areas on campus may not use the suggested solution

Dependencies

No dependencies at this time.

Budget

This is an investigative project so no budget should be needed. There may be a need to purchase a new product to evaluate or an existing product to upgrade.

Timeline

The project should be completed by December 1, 2012. An update will be provided to the campus community in October 2012. Feedback from that update may help to determine further investigation (e.g. suggestion to research another product).

Strategy

1. Document current policies and procedures for the use of University electronic mailing lists. This documentation should be in CPA's webspace.
2. Survey current solutions being used on campus, in faculties and in academic support departments
3. Gather requirements list.
4. Survey mass email technologies and policies being used by other universities.
5. Do market research on technologies currently available in the market place, including a high-level comparison of features and functionality, and cost estimates;
6. Prepare a report for the project sponsors summarizing the information collected in steps (1) through (4), and make a recommendation of a technology to implement for uWaterloo.

Resource Roles and Responsibilities

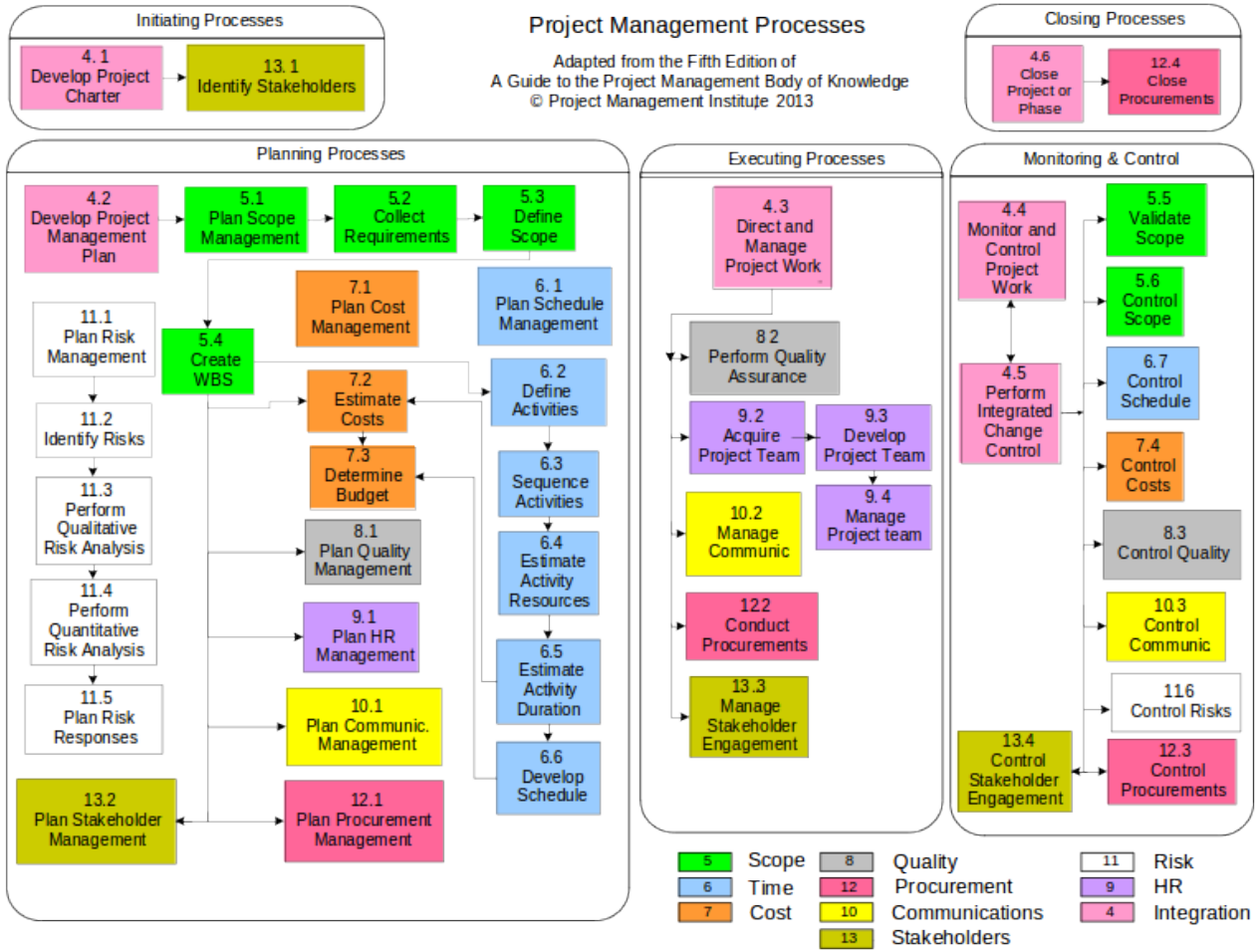
Project team will consist of 18 members:

1. Faculties: Chris Calzonetti (Math), Dawn Keenan (Arts), Craig McDonald (AHS)
2. CPA (2): Eva Grabinski, Brandon Sweet
3. Grad Office (1): Tasha Glover
4. Registrar's Office (2): Carmen Roecker, Jennifer Mackie
5. Human Resources (1): Tammy Marcinko
6. ODAA (1): Nigel Henriques
7. CECA (1): Mike Tennant
8. Library (1) : Charles Woods
9. Students: Greg Maksoz (3rd year, Computer Science), Cody Shepherd (2nd year, Math)
10. IST (7) - CSS (2): Jason Giles, Shawn Winnington-Ball; IST-CS-Housing (1): Cheryl Skingley; CS-CPA (1): Eric Bremner; IS (1): Mike Gaspic; uCS-Registrar's (1): Tom Kelly.

Team members that are familiar with mass email solutions will be asked to do a demonstration. For example, there are team members who use GroupMail. Team members from IST and Human Resources will be asked to provide information as to how various mailman groups are populated.

Identifying Stakeholders

Figure: The task of identifying stakeholders is in the **Stakeholders** knowledge area, and belongs to the **Initiating** process group.



Identifying Stakeholders

Recall that **project stakeholders**, can be positive or negative, and are the people involved in or affected by project activities. Stakeholders can be classified as **internal** of **external**:

- **Internal project stakeholders** generally include the project sponsor, project team, support staff, and internal customers for the project.
- **External project stakeholders** include the project's customers (if they are external to the organisation), competitors, suppliers, and other external groups that are potentially involved in or affected by the project, such as government officials and concerned citizens.

Identifying Stakeholders

Internal Stakeholders

Can be positive or negative - generally includes:

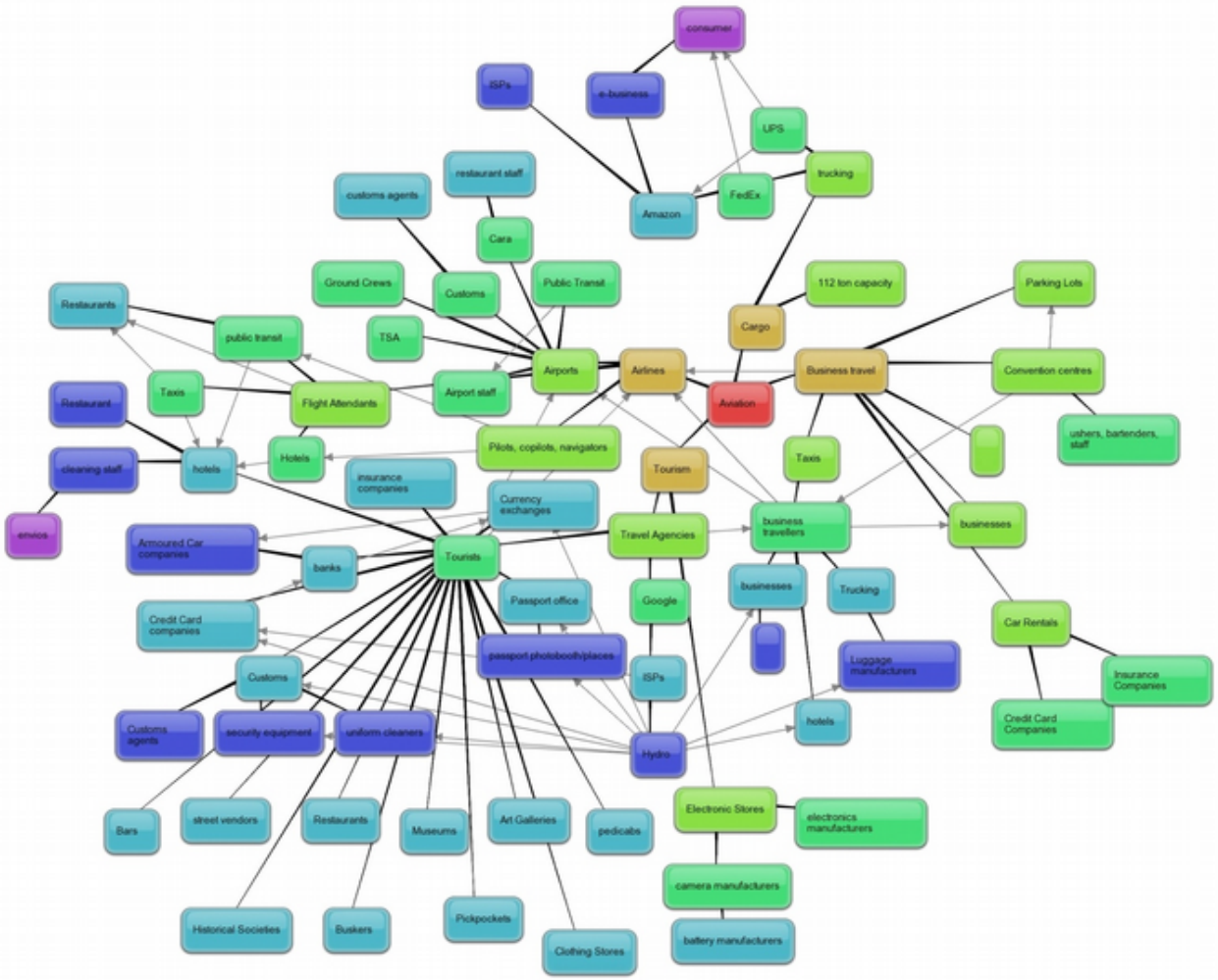
- project sponsor
- project team
- support staff
- internal customers for the project
- top management
- other functional managers
- other project managers

External Stakeholders

Generally includes:

- project's customers (if they are external to the organisation)
- competitors
- suppliers
- other external groups that are potentially involved in or affected by the project, such as government officials and concerned citizens

Using a Mindmap to Identify Stakeholders



Identifying Stakeholders

Stakeholder Register and Stakeholder Analysis

The task of identifying stakeholders can be broken down into two subtasks: creating a **stakeholder register**, and performing **stakeholder analysis**.

Definition: **Stakeholder Register**

A **stakeholder register** is a document that includes details related to the identified project stakeholders - usually available to many people, so it should not include sensitive information

Definition: **Stakeholder Analysis**

A **stakeholder analysis** is a technique for analysing information to determine which stakeholders' interests to focus on and how to increase stakeholder support throughout the project.

Identifying Stakeholders

Example of a Stakeholder Register

Name	Position	Internal / External	Project Role	Contact Information
Mike Sundby	VP of HR	Internal	Project champion	msundy@globalconstruction.com
Lucy Camerena	Training Director	Internal	Project sponsor	lcamerena@globalconstruction.com
Ron Ryan	Senior HR staff member	Internal	Led the Phase I project	rryan@globalconstruction.com

Figure: An example of a stakeholder register. There are many different formats - try Googling *Stakeholder Register Template*

Identifying Stakeholders

What should a stakeholder analysis include?

- Names and organisations of key stakeholders
- Their roles on the project
- Unique facts about each stakeholder
- Their levels of interest in the project
- Their influence on the project
- Suggestions for managing relationships with each stakeholder

Example of a Stakeholder Analysis

Project Name: Just-In-Time Training Project

	KEY STAKEHOLDERS				
	Mike Sundby	**Lucy Camarena**	**Ron Ryan**	**Mohamed Abdul**	**Julia Portman**
Organization	VP of HR	Training director	Senior HR staff member	Senior programmer/ analyst	VP of IT
Role on project	Project champion	Project sponsor	Led the Phase I project	Project team member	Project steering committee member
Unique facts	Outgoing, demanding, focuses on the big picture; MBA with emphasis on organizational design	Very professional, easy to work with but can stretch out discussions; Ph.D. in education	Old-timer; jealous that he wasn't asked to lead Phase II project	Excellent technical skills, English his second language, weak people skills, not excited about a training project	Thinks the company is way behind in applying IT, especially for training; wary of many suppliers
Level of interest	Very high	Very high	High	Medium	High
Level of influence	Very high; can call the shots	Very high; subject matter expert	Medium; he could sabotage the project	High; needs strong IT support for project to succeed	High; people listen to her at steering committee meetings
Suggestions on managing relationship	Keep informed, ask for advice as often as needed	Make sure she reviews work before showing to managers	Ask Lucy to talk to him to avoid problems, ask him to be available for advice	Help him see the project's importance, encourage his creativity	Compliment her a lot, ask for additional IT support as needed

Figure: An example of a stakeholder analysis matrix.

Identifying Stakeholders

Example of Stakeholder Analysis Power and Interest Grid

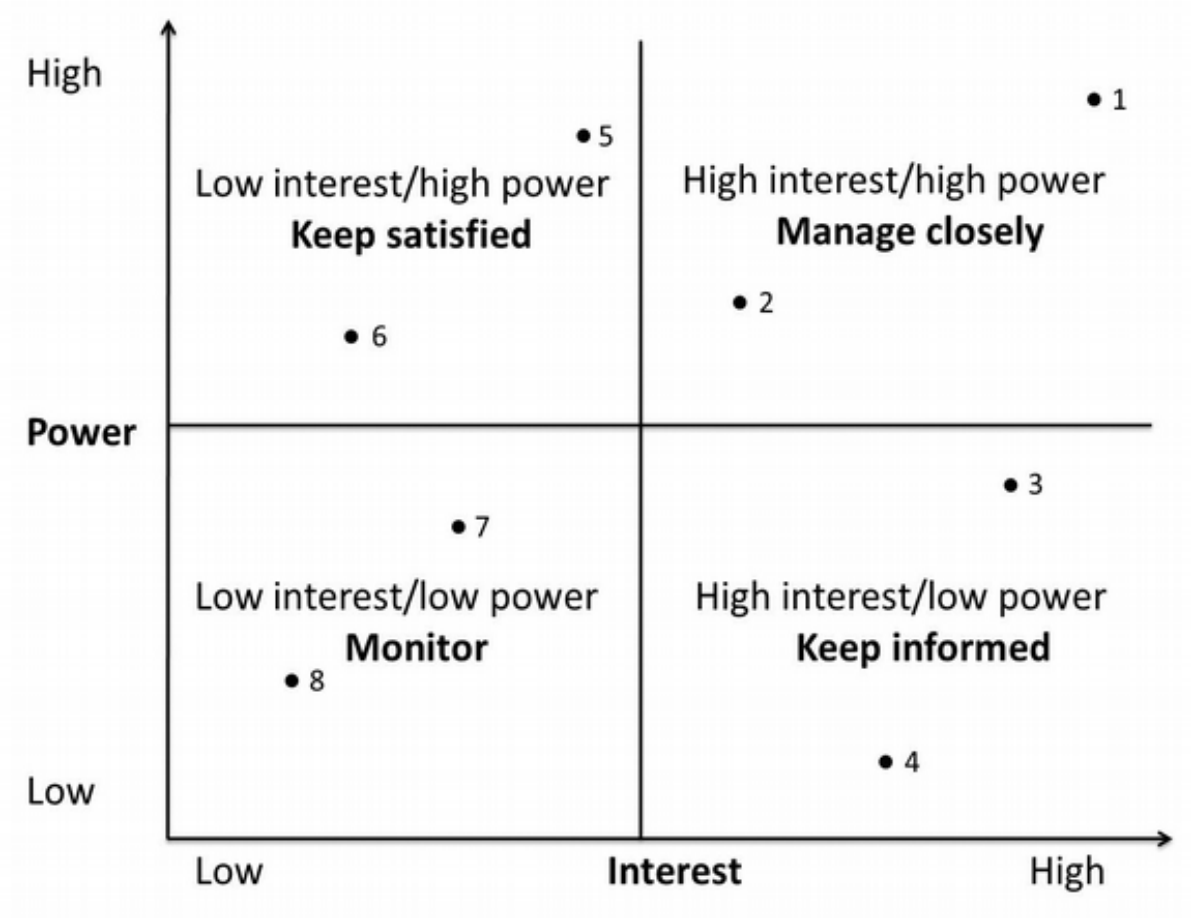


Figure: A graph, called a stakeholder power and interest grid, can help to visually explain some of the aspects of your stakeholder analysis.

Categorising Engagement Levels of Stakeholders

Stakeholders' level of engagement is typically identified as one of the following:

- **Unaware**: unaware of the project and its potential impacts on them.
- **Resistant**: aware of the project yet resistant to change.
- **Neutral**: aware of the project yet neither supportive nor resistant
- **Supportive**: aware of the project and supportive of change.
- **Leading**: aware of the project and its potential impacts and actively engaged in helping it succeed.

Holding a Project Kickoff Meeting

Definition: **Kick-off Meeting**

A **kick-off meeting** is a meeting held at the beginning of a project so that stakeholders can meet each other, review the goals of the project, and discuss future plans.

- Experienced project managers know that it is crucial to get projects off to a great start
- Often **kick-off meetings** are used to get support for a project and clarify roles and responsibilities
- The project champion should speak first and introduce the project sponsor and project manager
- Often a fair amount of work is done to prepare for the meeting
- Kick-off meetings are held face to face

Example of a Kick-off Meeting Agenda

Just-In-Time Training Project
Kick-off Meeting
July 16

Meeting Objective: Get the project off to an effective start by introducing key stakeholders, reviewing project goals, and discussing future plans

Agenda:

- Introductions of attendees
- Review of the project background
- Review of project-related documents (i.e., business case, project charter)
- Discussion of project organisational structure
- Discussion of project scope, time, and cost goals
- Discussion of other important topics
- List of action items from meeting

Action Item	Assigned To	Due Date

Figure: An example of the agenda for a kick-off meeting. There are many templates which are available on the internet - try Googling *Kick-off Meeting Template*.

The End