

MODULE

6

Process—
Managing and Closing

MODULE
6

Process—
Managing and Closing

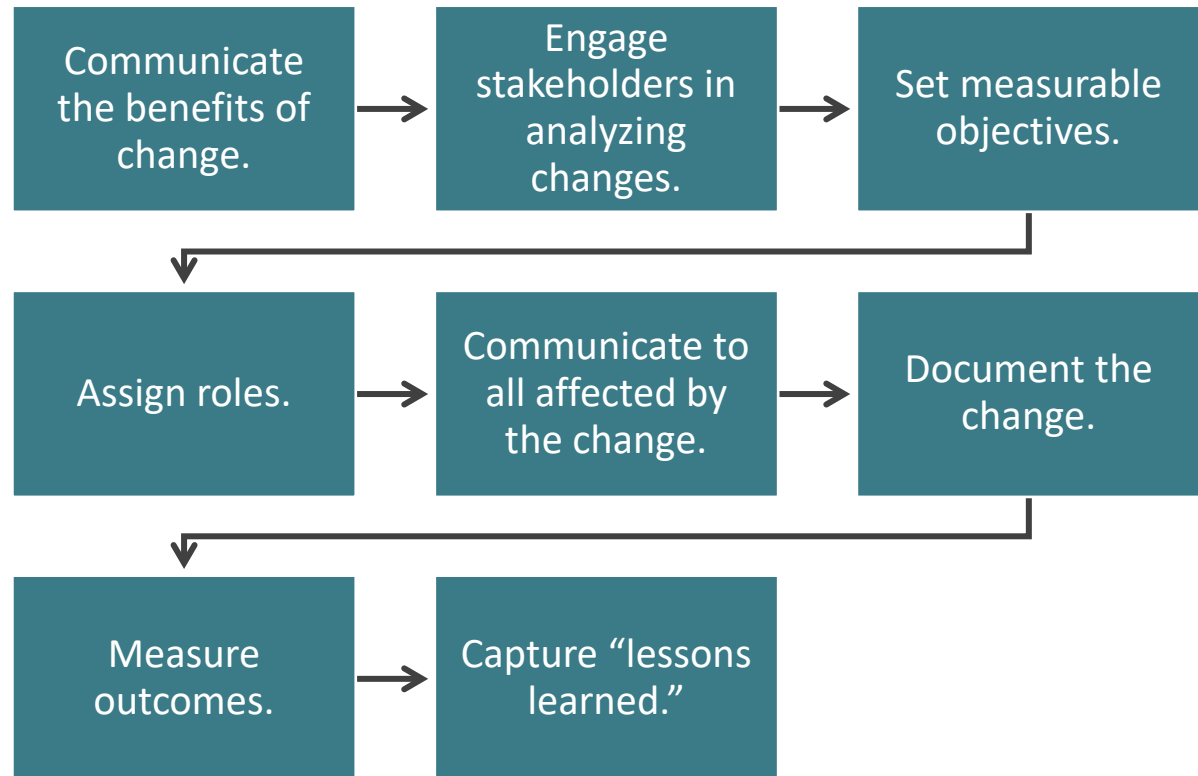
CHAPTER

1

Change Control

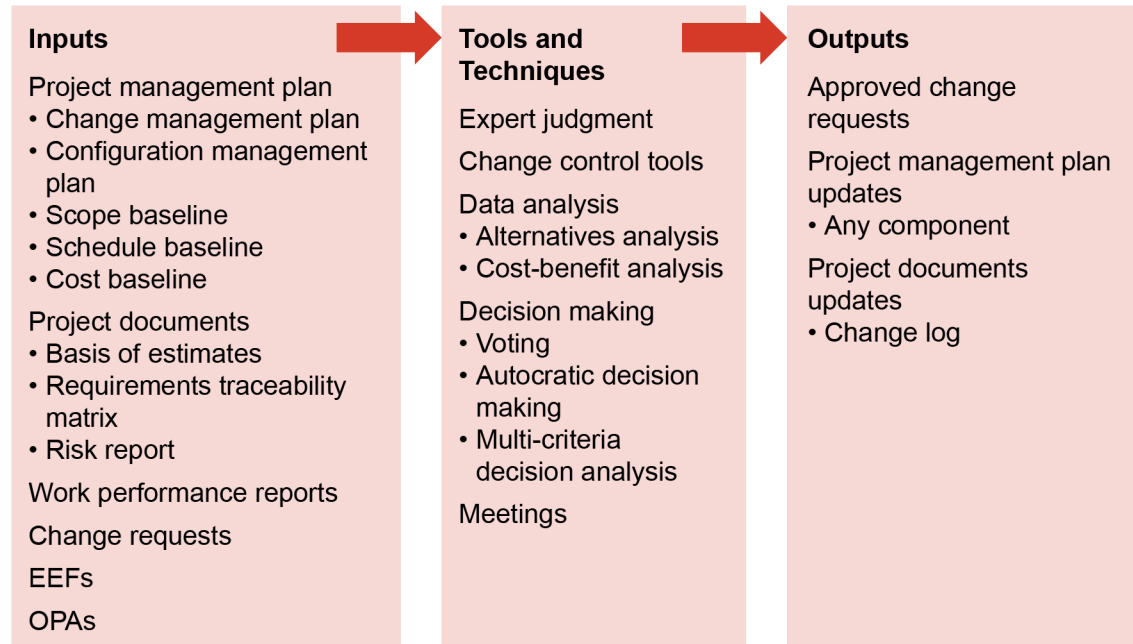
Determining Change Control Strategy

- In predictive projects, change is perceived as a risk that must be controlled and documented closely.
- In agile projects, change is assumed. The emphasis is on implementing change efficiently and transparently.
- Related principle from *The Standard for Project Management*: **“Embrace adaptability and resiliency.”**



Predictive: Perform Integrated Change Control

- Reviewing change requests
- Approving and managing changes to deliverables, OPAs, project documents, project management plan
- Communicating disposition of changes



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 4-12, Page 113. Material from this publication has been reproduced with the permission of PMI.

Uncontrolled Changes to Project Scope

Scope creep

“Uncontrolled expansion to product or project scope without adjustments to time, cost, and resources”

Gold plating

Uncontrolled “improvements” made with best intentions by team

- Uncontrolled changes create risks of exceeding schedule and budget, decreasing quality, having inaccurate documentation, and damaging deliverables.
- Project managers can help by:
 - Clearly communicating to all stakeholders what **is** and **is not** in scope.
 - Using the integrated change control process.



Discussion Question

A government body says that they need to add a citizen body to the stakeholders on a new emergency services center project. How should the project manager respond?

- A. Add the stakeholder to the stakeholder register.
- B. Explain that the new stakeholder will increase project risks.
- C. Explain that this cannot be done since the project has already been scoped.
- D. Initiate the change control process.

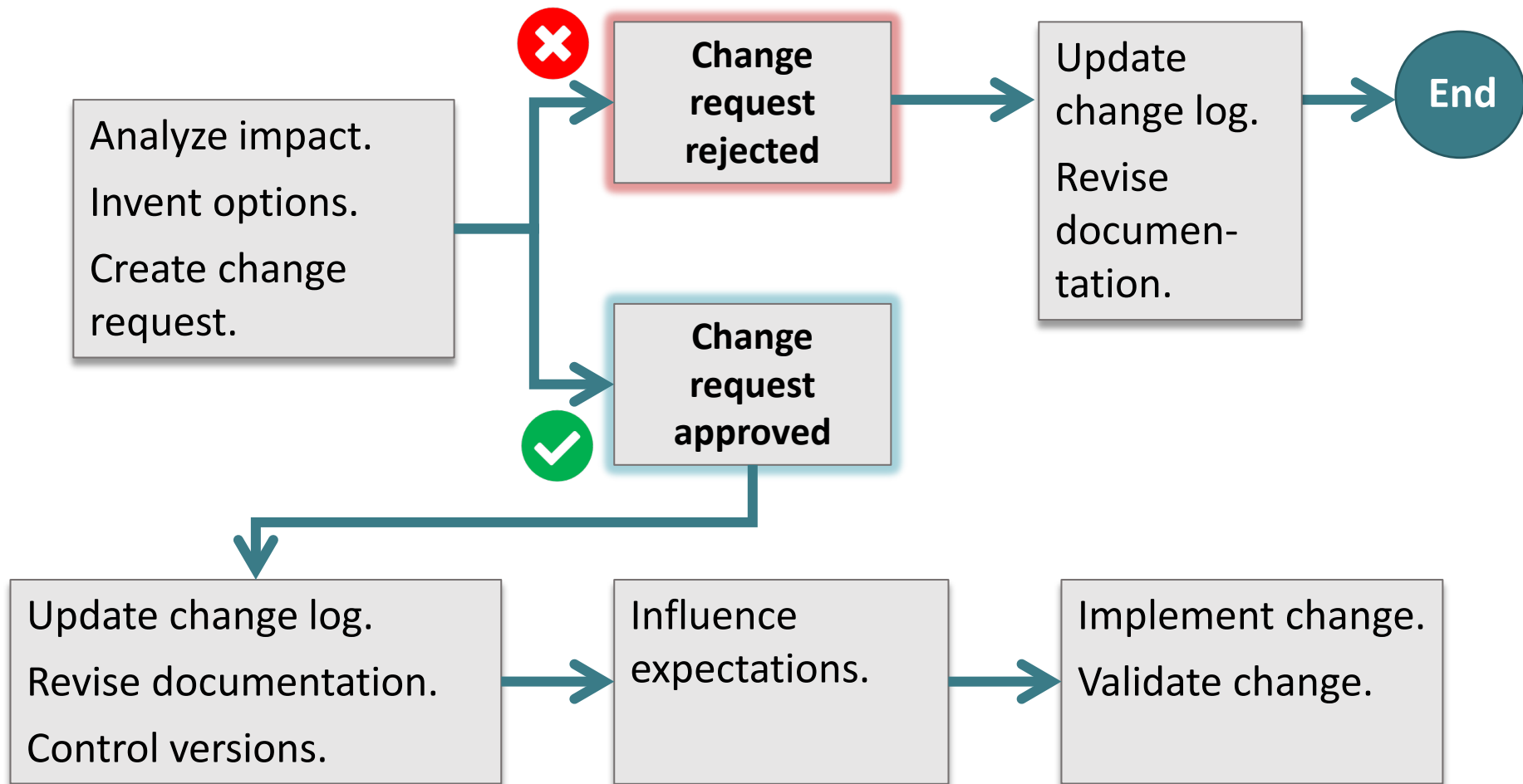
Types of Change Requests

Corrective Action	Preventive Action	Defect Repair
To realign work with plan	To ensure future alignment of work with plan	To modify a nonconforming component

Change Control System

- Procedures to manage and control changes (OPAs)
- Varying levels of formality
- Change control board (or officer)
 - Chartered group
 - Members designated in charter, representing various stakeholders and experts
 - Responsibility to review change requests, consider impacts, accept or reject requests, and document decisions and follow-up actions

Integrated Change Control Process





Discussion Question

A project consultant notes that a recently released technology will increase the functionality of the deliverable. How should the project manager respond?

- A. Thank the consultant and do nothing, since this is beyond scope.
- B. Ask the sponsor for direction.
- C. Analyze the impact on the project.
- D. Submit a change request to the CCB.

Change Log

Comprehensive list of changes approved (and rejected) during the project

- Description
- Date
- Impacts
- Status
- Owner

PROJECT CHANGE LOG					
Project Name:				Project Sponsor:	
#	Description:	Owner:	Date:	Project Impact:	Status:
1					
2					
3					

Agile Change Control Methodologies

- Manage expectations by informing product owner.
- Don't allow the change control process to become an impediment. Negotiate an efficient process.
- Adjust iteration length to anticipated rate of change.
- Don't make changes during an iteration. Return the task to backlog for replanning.

“Welcome changing requirements, even late in development. Agile processes harness change for the customer’s competitive advantage.”

—*Agile Manifesto principle*

MODULE
6

Process—
Managing and Closing

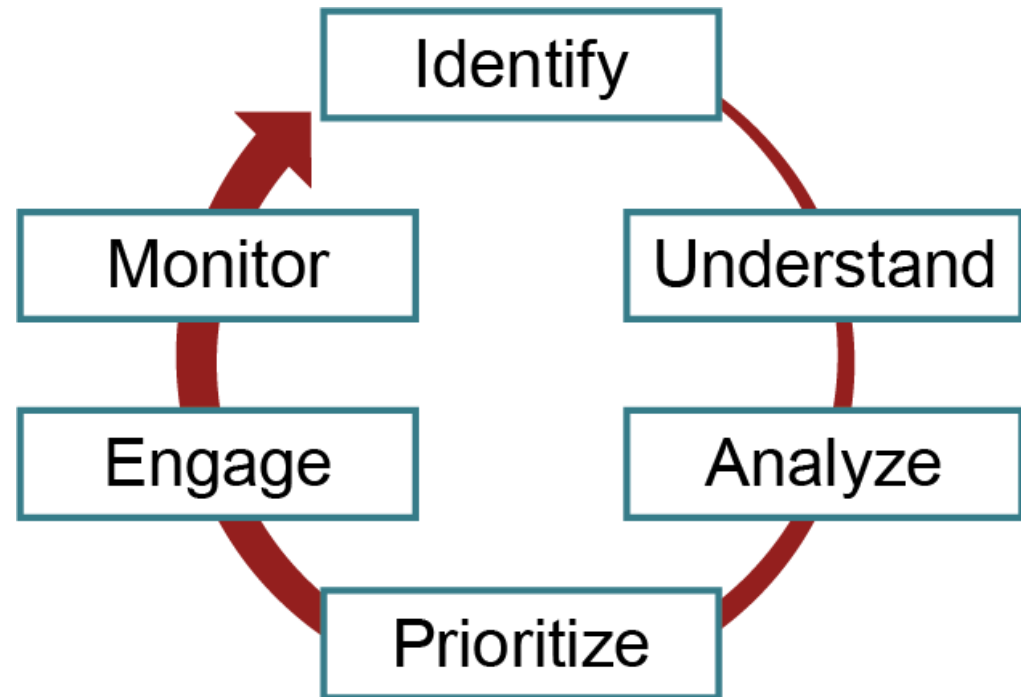
CHAPTER

2

Stakeholder Performance Domain

Stakeholder Performance Domain

- Understand stakeholder categories and stakeholders' relative levels of power, influence, interest, and support.
- Communicate effectively.
- Follow an iterative process.



Importance of Stakeholders

- Identifying stakeholders, understanding their needs, and keeping them involved and satisfied are critical to project success.
- Related principle from *The Standard for Project Management*: **“Effectively engage with stakeholders.”**

Stakeholder Engagement on Agile/Hybrid Projects

In agile projects, stakeholders:

- Help create and map user stories.
- Provide critical feedback during iterations.
- Participate directly in decision making.
- Help identify and manage risks proactively.

Predictive: Project Stakeholder Management

KNOWLEDGE AREAS	PROCESS GROUPS				
	Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project Stakeholder Management	<ul style="list-style-type: none"> Identify Stakeholders 	<ul style="list-style-type: none"> Plan Stakeholder Engagement 	<ul style="list-style-type: none"> Manage Stakeholder Engagement 	<ul style="list-style-type: none"> Monitor Stakeholder Engagement 	

Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Table 1-4, Page 25. Material from this publication has been reproduced with the permission of PMI.

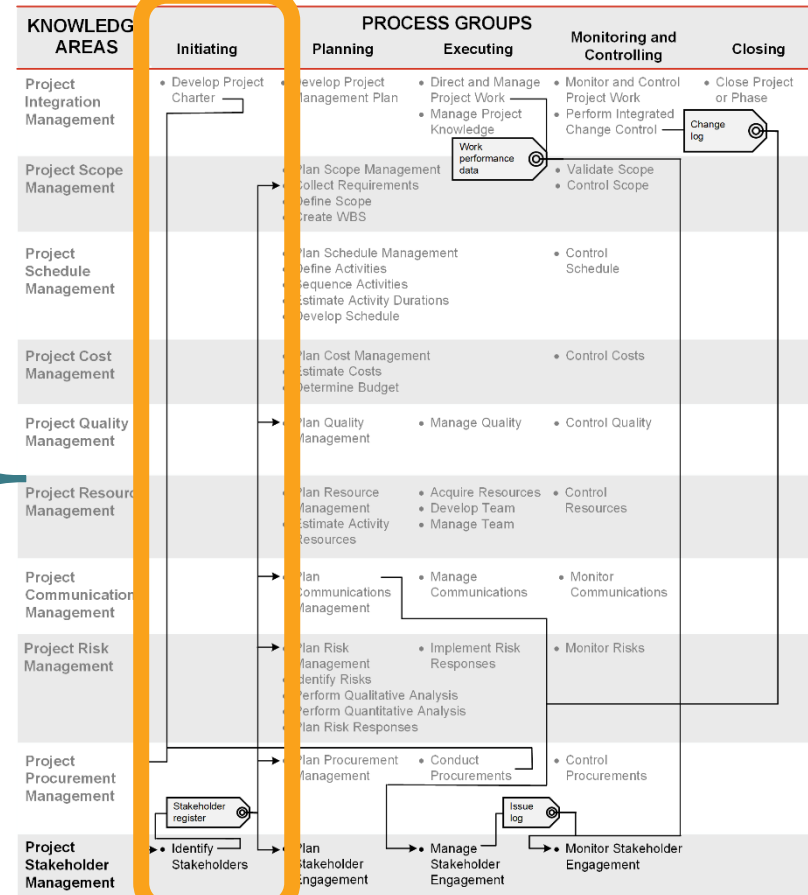
- Identifies the people, groups, or organizations that could impact or be impacted by a project
- Manages stakeholder expectations and develops strategies to keep them engaged throughout a project

Predictive: Identify Stakeholders Process

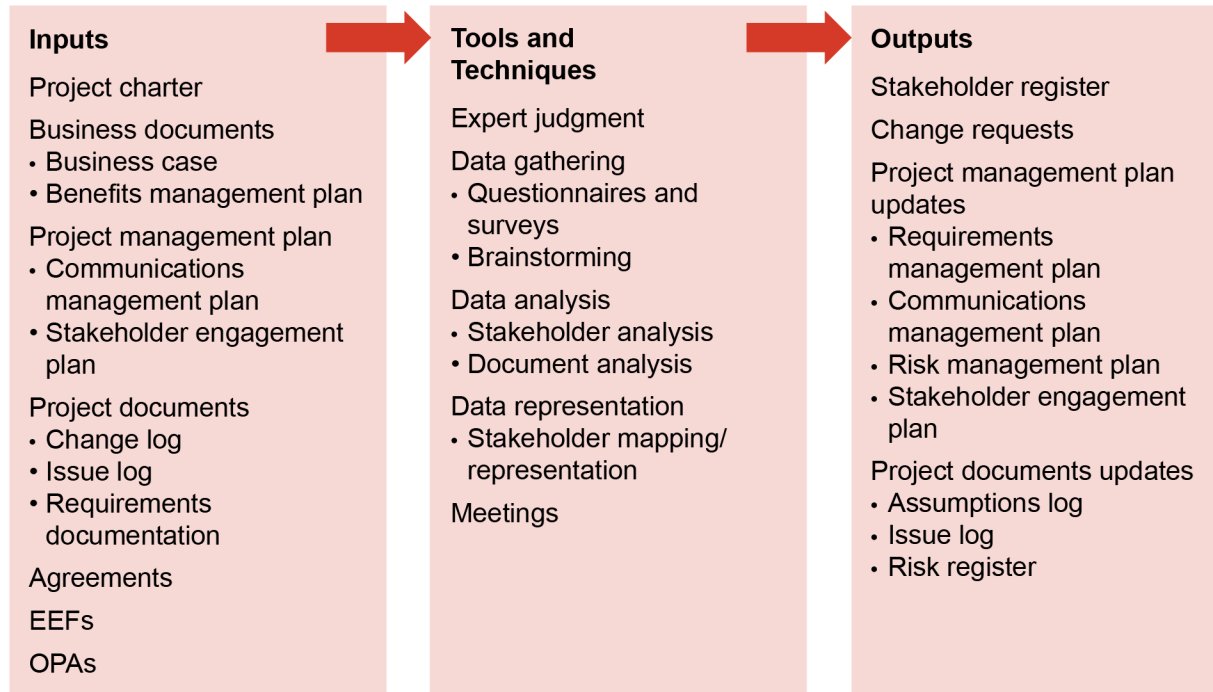
Initiating processes performed alongside each other

Develop Project Charter

Identify Stakeholders



Predictive: Identify Stakeholders



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 13-2, Page 507. Material from this publication has been reproduced with the permission of PMI.

- Identifies those impacted by a decision, activity, or outcome for a project.
- Project managers can use captured information to identify the appropriate focus for each stakeholder.

Output: Stakeholder Register

Major requirements

Power and impact: role and knowledge, skills, and abilities

Degree and direction of potential influence on the project

Actual, potential, and desired interest

Current expectations and how they need to be shaped

Current and desired engagement (e.g., unaware to supportive)

Internal versus external

The stakeholder register is a living document.

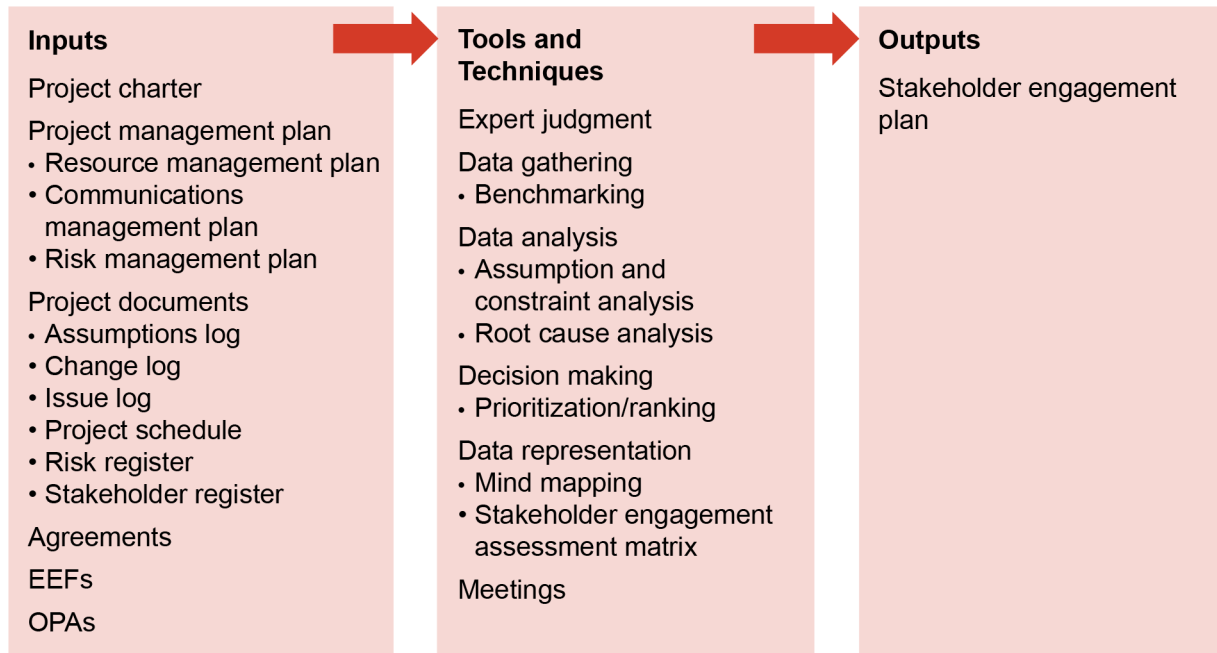


Discussion Question

What is the primary purpose of the stakeholder register?

- A. To record stakeholder issues on the project
- B. To list all stakeholders
- C. To map communication issues with each stakeholder
- D. To serve as a change log

Predictive: Plan Stakeholder Engagement



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 13-4, Page 516. Material from this publication has been reproduced with the permission of PMI.

- This process provides a clear, actionable plan to interact with project stakeholders to support the project's interest.

Stakeholder Engagement Plan

Indicates:

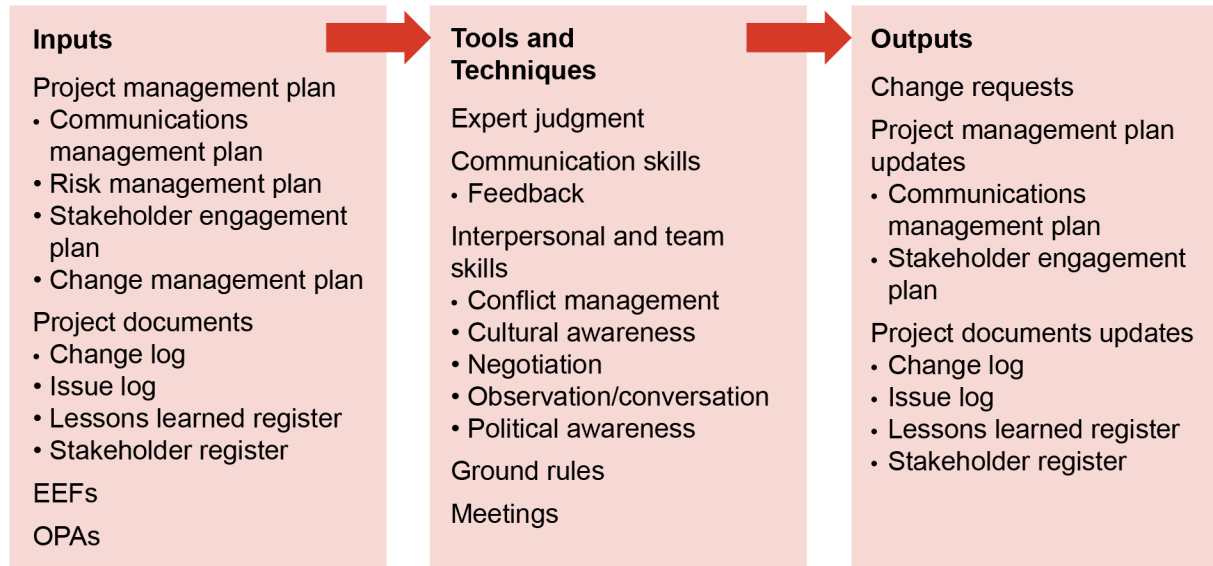
- Desired and current stakeholder engagement levels
- Stakeholder interrelationships and overlap
- How project will impact stakeholders
- Communication requirements by phase
- Required reports
- Expected impact of various reports
- How plan will be kept up to date

Managing Stakeholder Engagement on Agile Projects

The iterative nature of agile projects creates challenges in managing expectations and communicating change.

- During planning meetings, stakeholder priorities should be rechecked.
- During each review meeting, expectations should be checked and satisfaction confirmed.
- Stakeholders must be informed of changes made during previous iterations.

Predictive: Manage Stakeholder Engagement



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 13-7, Page 523. Material from this publication has been reproduced with the permission of PMI.

- Allows the project manager to increase support and minimize resistance from stakeholders



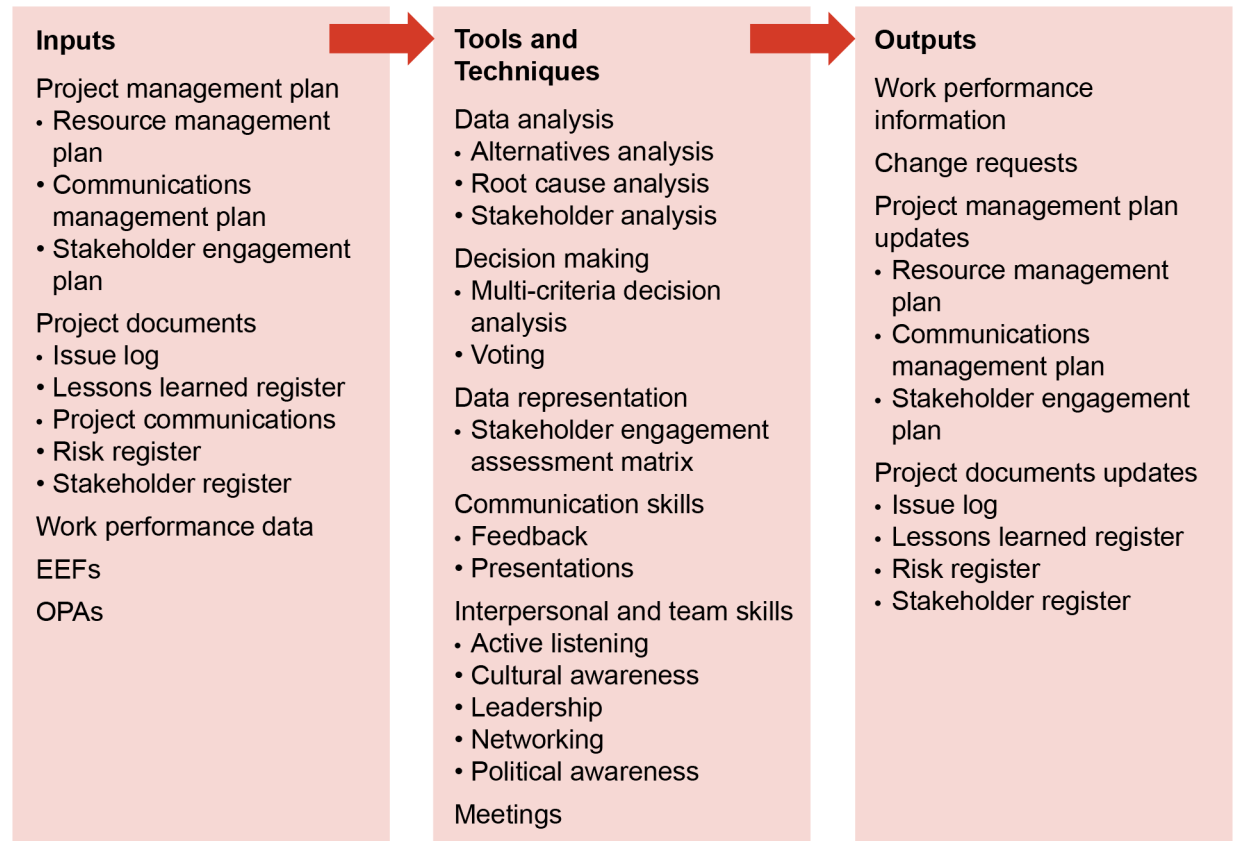
Discussion Question

Which of the following is an input to the Manage Stakeholder Engagement process?

- A. Assumptions log
- B. Risk register
- C. Change log
- D. Interpersonal and team skills

Predictive: Monitor Stakeholder Engagement

- Maintains or increases the efficiency and effectiveness of stakeholder engagement activities



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 13-9, Page 530. Material from this publication has been reproduced with the permission of PMI.

MODULE
6

Process—
Managing and Closing

CHAPTER

3

Communications

Project Manager's Role in Communications

Use interpersonal skills to anticipate audience's needs.

Customize communications.

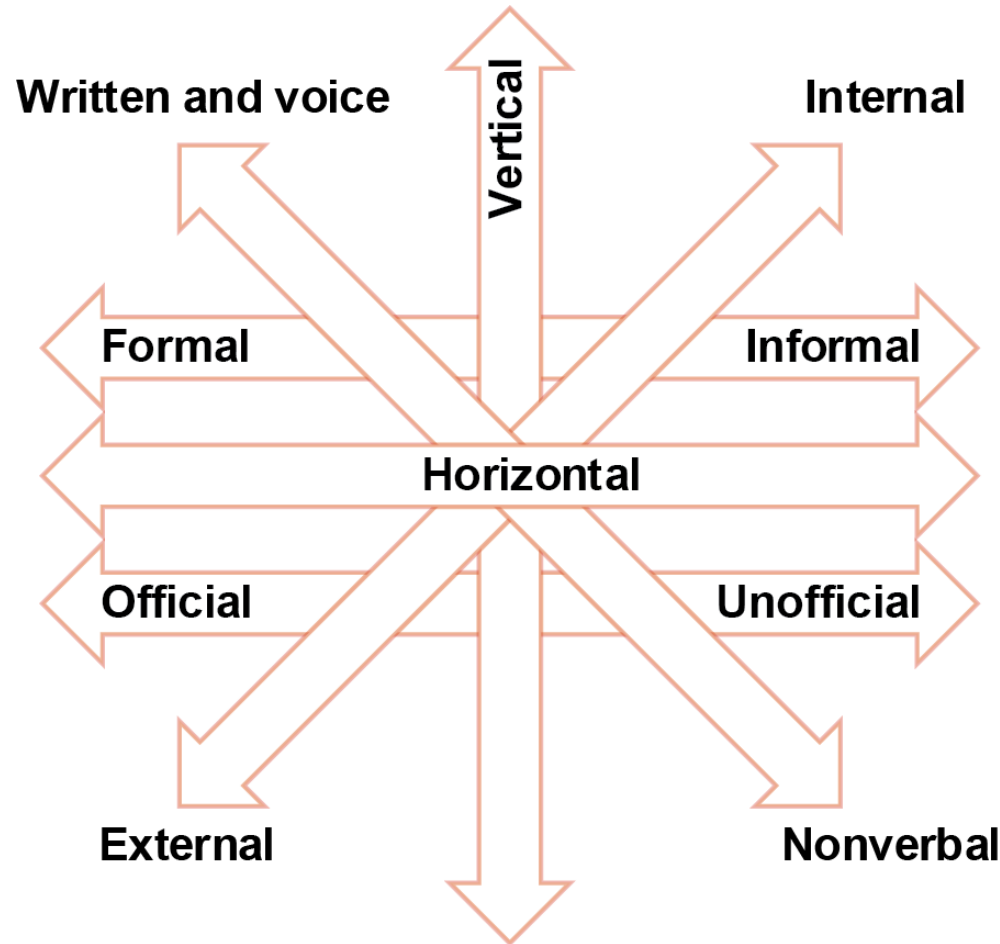
Ensure access to project information now and in the future.

Create clear, accurate messages that add to understanding.

Ensure that all team communications meet criteria for effective communications.

Principle in *The Standard for Project Management*: “Effectively engage with stakeholders.”

Communication Dimensions



Communication on Agile Projects

- Stakeholders are included in project meetings and regular stakeholder reviews.
- Short daily standup meetings are held to discuss:
 - Achievements.
 - Issues.
 - Plans for today's work.
- Good communication is necessary due to high change.
- Streamlined access to information is needed.
- Frequent team checkpoints are required.
- Colocation is preferred if possible.

Agile Communication Tactics

Fishbowl window

- Videoconferencing from start of workday to end
- Allows spontaneous communication

Remote pairing

- Used to share screens
- Allows voice and video communication

Predictive: Project Communications Management

KNOWLEDGE AREAS	PROCESS GROUPS				
	Initiating	Planning	Executing	Monitoring and Controlling	Closing
Project Communications Management		<ul style="list-style-type: none"> Plan Communications Management 	<ul style="list-style-type: none"> Manage Communications 	<ul style="list-style-type: none"> Monitor Communications 	

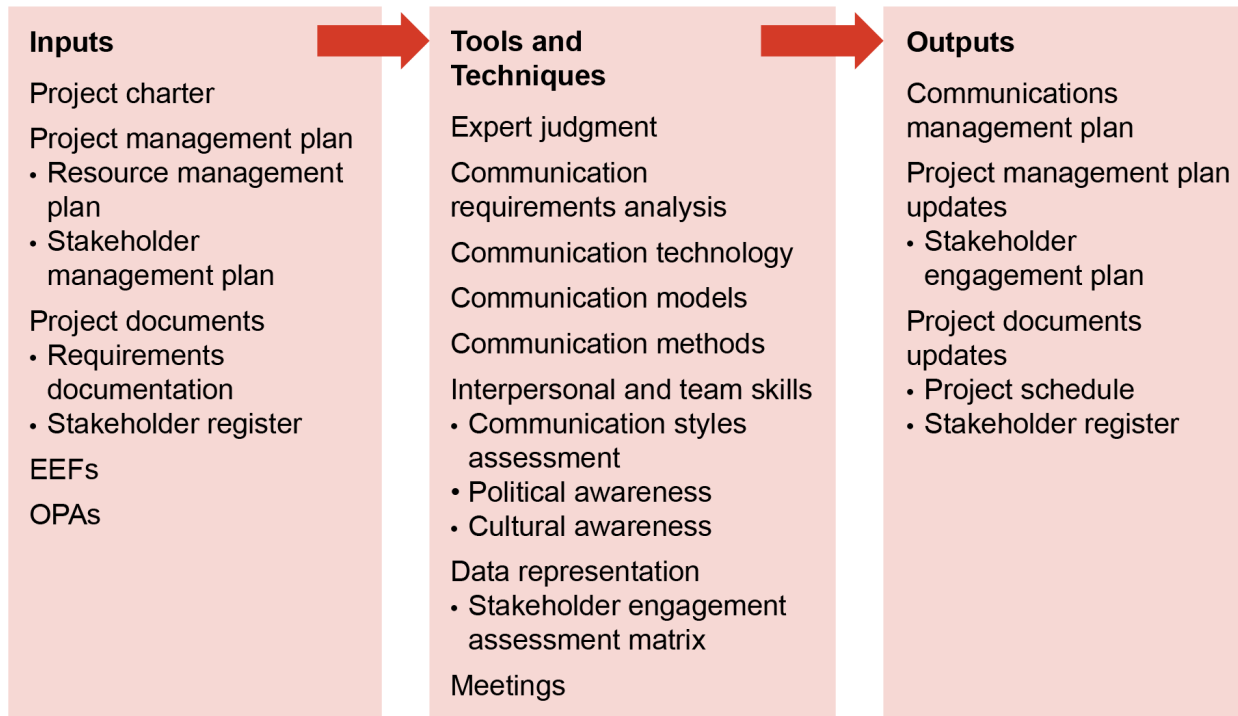
Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Table 1-4, Page 25. Material from this publication has been reproduced with the permission of PMI.

- Communications management focuses on collecting project data and information and getting it to the right people at the right time.
- Communication is key for project success.

Planning Communications Management on Agile Projects

- Goals: flexibility, transparency, streamlined
- Face to face when possible
- If necessary, large teams can be deconstructed into smaller sub-teams (**Scrum of Scrums**, or **SoS**).

Predictive: Plan Communications Management



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 10-2, Page 366. Material from this publication has been reproduced with the permission of PMI.

The Benefits of a Plan

Determining the **who, what, when, why, where**, and **how** of communications can avoid:

- Misinterpreted messages.
- Missed or delayed communications.
- Communications to the wrong audience.
- Sending irrelevant data.

Communication Channels

The number of potential two-way interactions that can occur between stakeholders.

- Indicate complexity of communication on a project
- More stakeholders = more lines of communication
- Example:

$$\text{Communication Channels} = \frac{n(n-1)}{2}$$

$$\frac{12(12-1)}{2} = \frac{12 \times 11}{2} = \frac{132}{2} = 66 \text{ channels}$$



Discussion Question

A project manager has 15 stakeholders assigned to the project. How many communication channels would this project have?

Communications Technology Factors

Urgency and frequency

- Formal, regular, or ad hoc
- Size of decision-making window

Availability/accessibility

- Accessible by all or some
- Inability to meet in person (e.g., in a pandemic)
- Technological compatibility of devices

Ease of use

- Friendly to least savvy stakeholder
- Ability to train on higher levels of technology

EEFs

- Face-to-face or virtual project environment
- Multiple time zones, languages, and cultures

Confidentiality

- Need to safeguard information
- Restrictions on how sensitive information is expressed

Communication Media

- Documents
- Audio/video recordings
- Worksheets (spreadsheets)
- Slide shows
- Emails
- Instant messaging/texting
- Phone calls/voice mails
- Conference calls
- Videoconferences
- Interactive virtual classrooms
- Websites
- Intranet upload/download sites
- Meetings

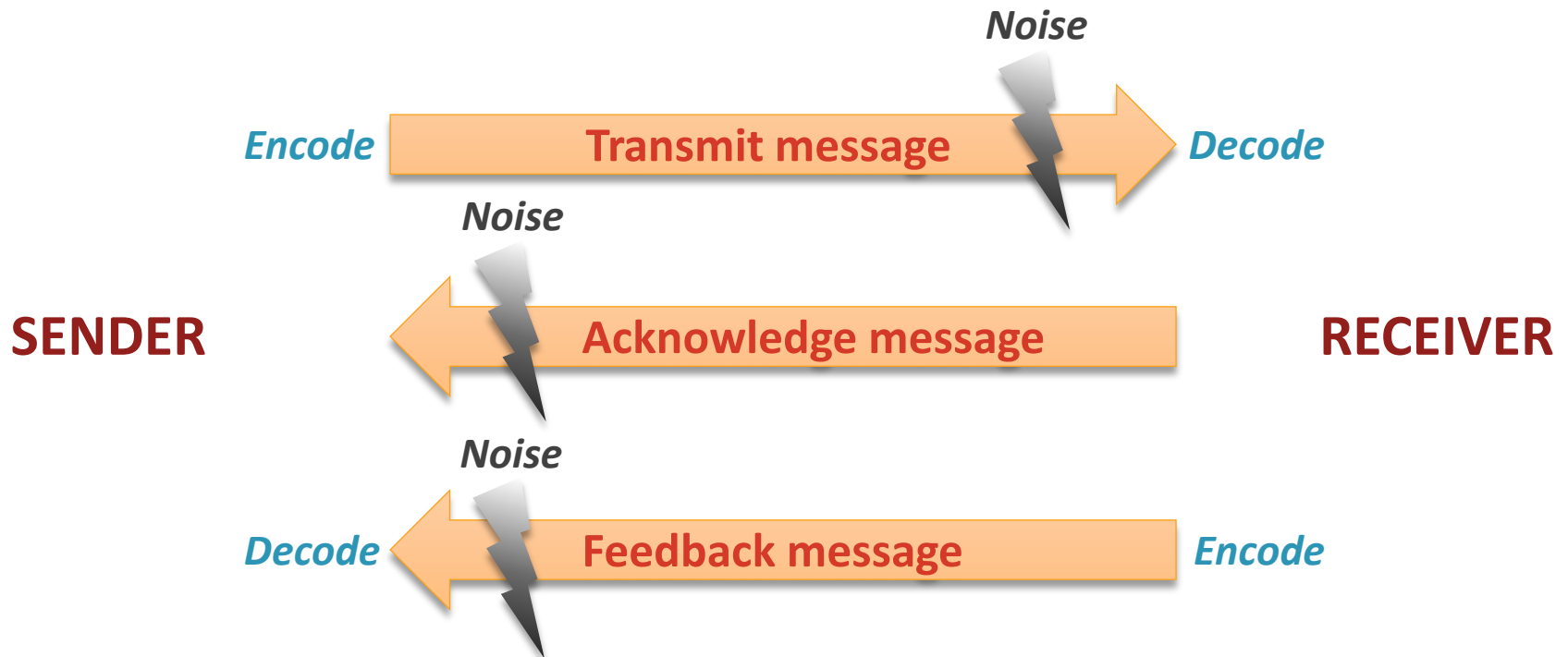
Choose the richest form of communication that is effective/feasible.

Media Richness

Cockburn's Communication Channel Effectiveness and Richness Model

- Effectiveness: Convey message with least noise.
- Richness: How much learning the medium can transmit.
- Feedback or interaction increases effectiveness and richness.

Sender-Receiver Communication Model



**Revise and retransmit as needed*

Cultural Dimensions

Browaeys and Price's Cross-Cultural Communication Model

- Encoding or decoding message impacted by:
 - Knowledge and experience.
 - Communication style.
 - Language.
 - Cultural background.
 - Relationship to other person(s).

Communication Methods

Push

- Pushed from the sender to the receiver(s).
- No acknowledgment or feedback steps.

Pull

- Pulls information in from other parties or sources.
- Repositories of information accessed on demand.
- Creator of information receives no feedback.

Interactive

- Two-way conversations that involve transmission, acknowledgment, and feedback.
- Promotes common understanding.

Communications Management Plan

Provides details on:

- Stakeholder communication requirements
 - Desired level of detail
 - Reason information is needed
- Communications
 - Roles
 - Timing
 - Structures and procedures
- Time, budget, and resource requirements for communication activities

Provides the

Why?

or the intent of the plan.

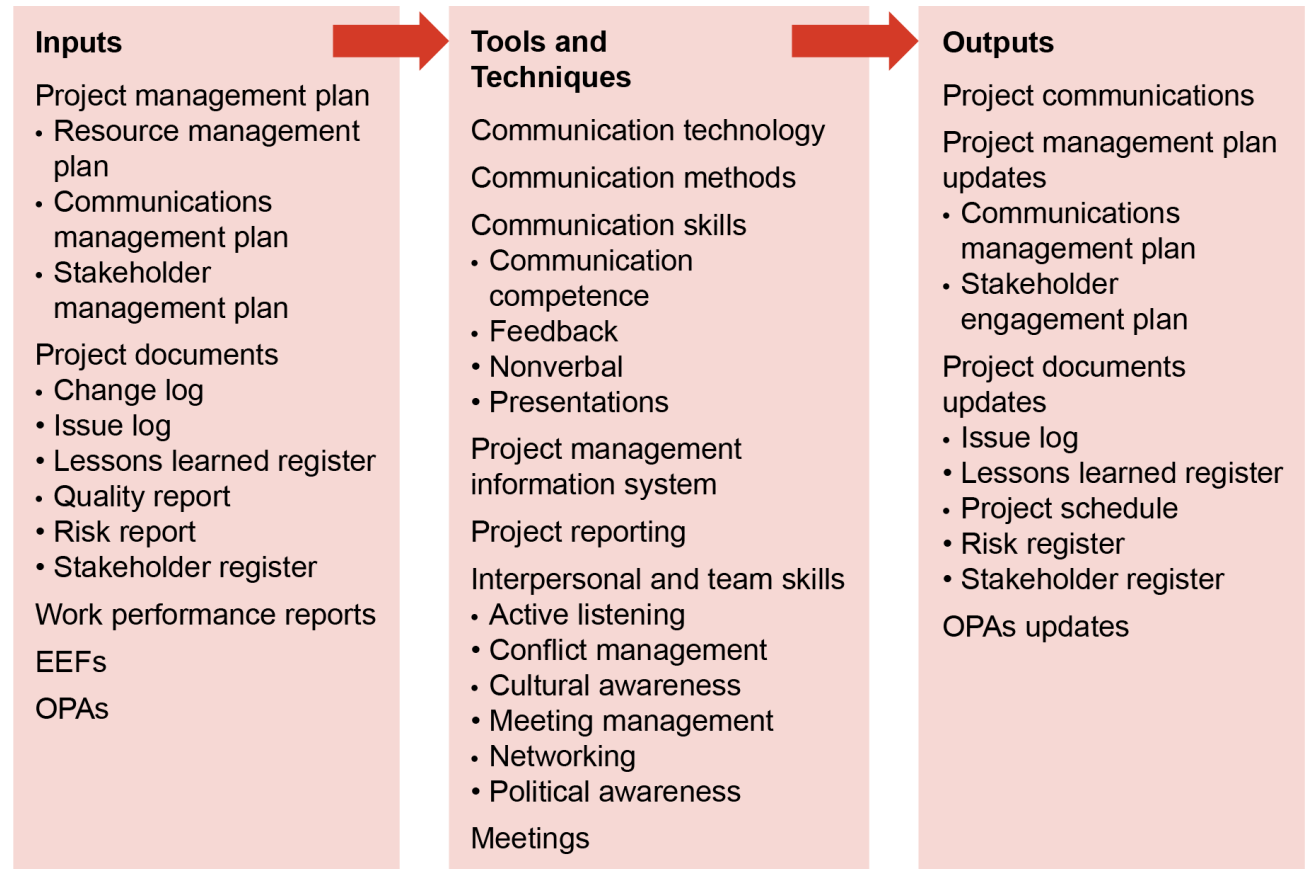
Managing Communications on Agile/Hybrid Projects

Ceremonies are an efficient way to communicate information and make decisions.

- Daily standups communicate progress and identify (but do not resolve) impediments.
- Refinement meetings convey additional or new information.
- Reviews/demonstrations capture and clarify feedback.
- Retrospectives capture knowledge.

Predictive: Manage Communications

- The Executing process that puts the communication plan into practice



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 10-5, Page 379. Material from this publication has been reproduced with the permission of PMI.

Project Reporting

The process used to collect and distribute **project information**; can include status reports, progress measurements, and forecasts.

- The project manager collects **work performance data** at regular intervals.
- The team analyzes the data against baselines. At this point, the data becomes **work performance information**.
- The project manager ensures that the right people receive the right information in the form of **work performance reports**.

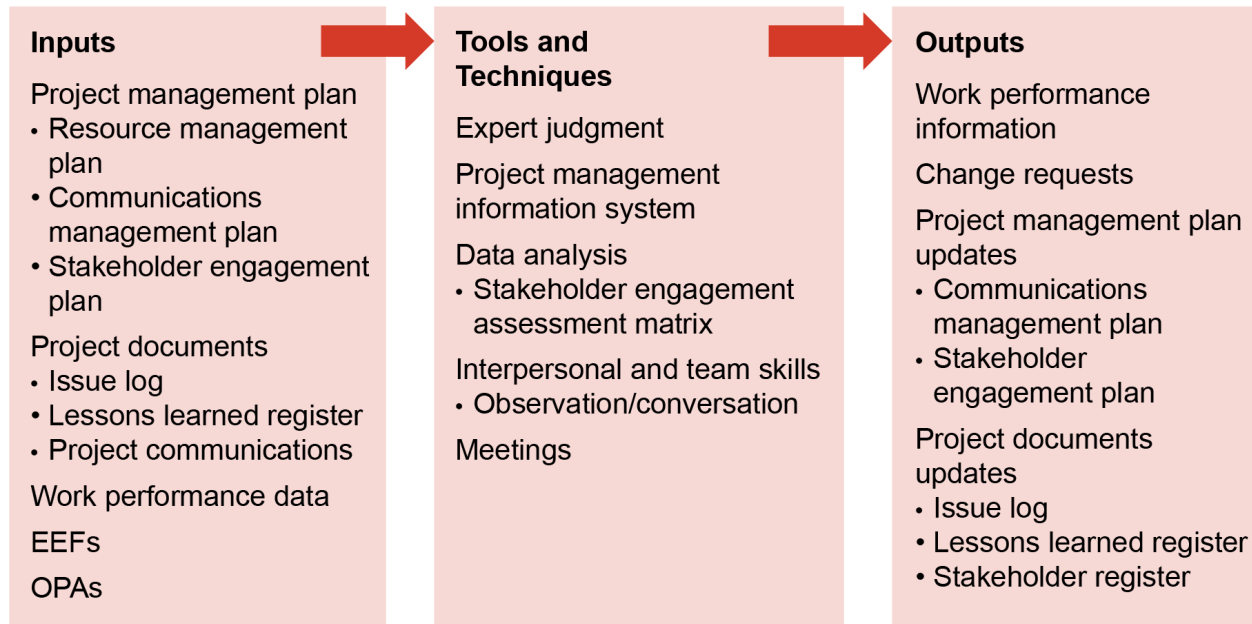


Discussion Question

As project manager, every week you prepare a report summarizing project progress and forecasts. What type of communication is this?

- A. Work performance information
- B. Work performance data
- C. Status report
- D. Variance report

Predictive: Monitor Communications



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 10-7, Page 388. Material from this publication has been reproduced with the permission of PMI.

- Work performance data becomes status/progress reports (information).

Feedback Loop

- **Monitor Communications** is a feedback loop for all Communications Management processes.
- Communications improvements or error corrections may be fed back into a new iteration of planning and management.
- Requires approval via integrated change control.



MODULE
6

Process—
Managing and Closing

CHAPTER

4

Knowledge
Transfer

Benefits of Knowledge Transfer

- Improved quality and efficiency of teamwork
 - Less time wasted in duplicative searches and work
 - More and better collaboration
 - Reduced risk through greater transparency
 - Better continuity as team membership changes
- Improved future performance for the entire organization

Knowledge transfer

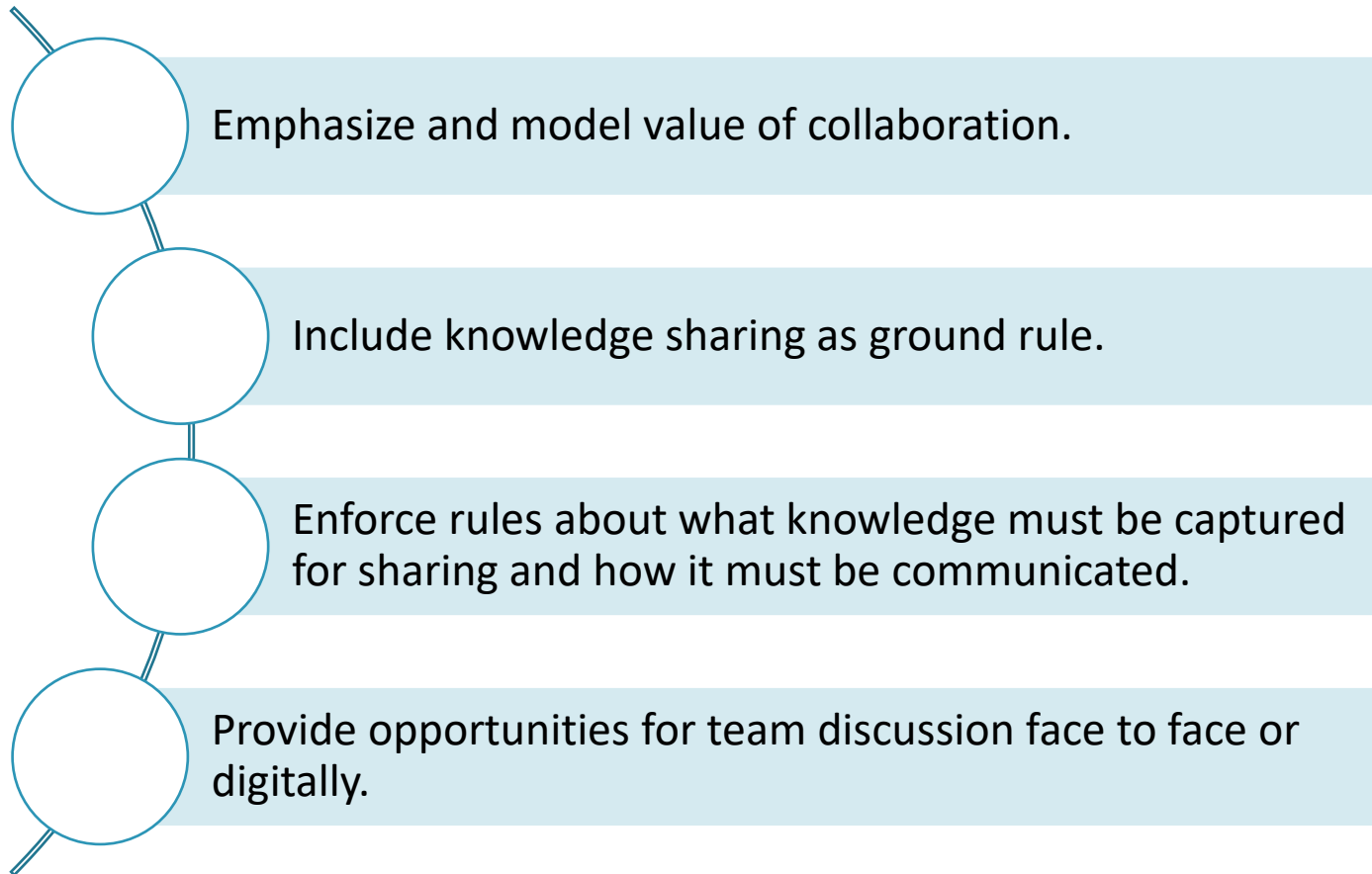
Sharing of wisdom and experience

Types of Knowledge

Category	Type of Information	Means of Communication	Challenges
Explicit	Words, pictures, numbers	Verbal, print, digital	Lack of context
Tacit	Insights, experiences, “know-how”	Personal transfer	Needs a trusting environment that fosters communication

Tacit knowledge is shared by connecting persons who need the knowledge with persons who have the knowledge.

Creating a Knowledge-Sharing Environment



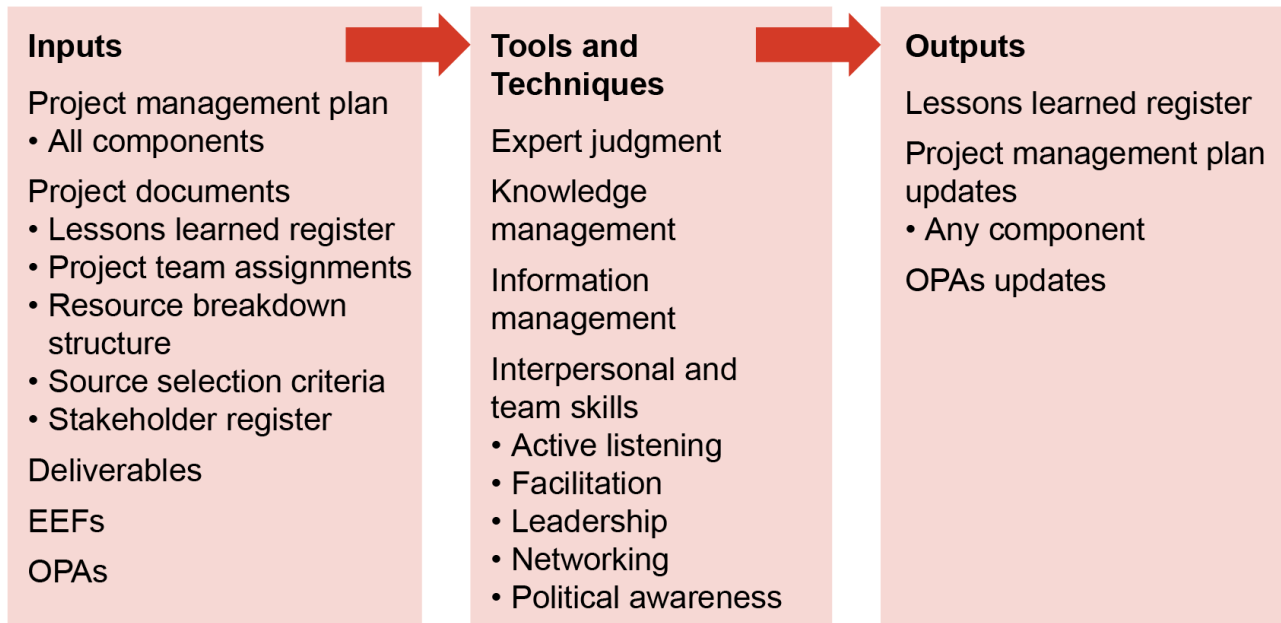
Managing Knowledge on Agile Projects

- Agile rituals (meetings) and artifacts (e.g., task board, burnup/burndown chart).
- Pair programming:
 - Side-by-side work, with one driver and an observer/commenter.
 - Supports transfer of tacit knowledge through interaction.

Documentation

- Recognize need for documentation, but make it efficient.
- Good documentation practices:
 - Document significant and stable work only.
 - Include documentation as backlog item.
 - Document with user needs in mind.
 - Use test-driven documentation (TDD) to narrow focus.
 - Use technology (e.g., screen captures, audio narration).
 - Think outside the traditional print form (e.g., whiteboards, videos).
 - Test documentation with user representative.
 - Make sure documentation is visible to all.

Predictive: Manage Project Knowledge



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 4-8, Page 98. Material from this publication has been reproduced with the permission of PMI.

- Use existing knowledge to create new knowledge and achieve project objectives while contributing to organizational learning.

MODULE
6

Process—
Managing and Closing

CHAPTER

5

Closure

Determining Closure Criteria

Agile

User story
acceptance criteria

Project-specific
definition of done
(DoD)—e.g., tested,
integrated,
transitioned into use

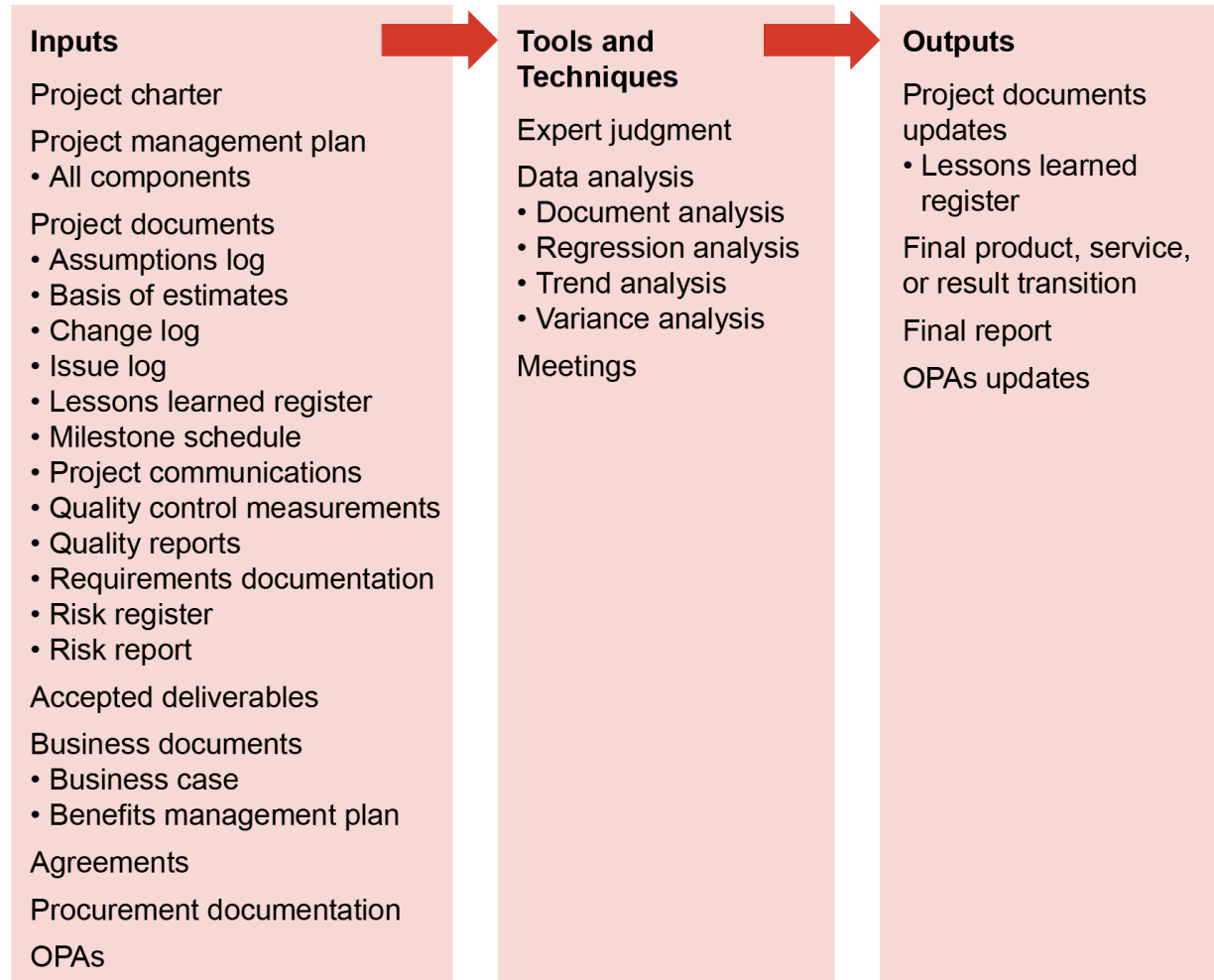
Predictive

Acceptance criteria
included in project
scope statement

Customer
acceptance of
delivered work

Predictive: Close Project or Phase

- All projects are closed, even if canceled or suspended.
- Procedures are defined by organization's OPAs.



Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*—Sixth Edition, Project Management Institute, Inc., 2017, Figure 4-14, Page 121. Material from this publication has been reproduced with the permission of PMI.

Closing Activities

