

MODULE

5

Process—  
Secondary Constraints

MODULE  
5

Process—  
Secondary Constraints

CHAPTER

1

Resources

# Predictive: Project Resource Management

KNOWLEDGE AREAS	PROCESS GROUPS				
	Initiating	Planning	Executing	Monitoring and Controlling	Closing
<b>Project Resource Management</b>		<ul style="list-style-type: none"> <li>• Plan Resource Management</li> <li>• Estimate Activity Resources</li> </ul>	<ul style="list-style-type: none"> <li>• Acquire Resources</li> <li>• Develop Team</li> <li>• Manage Team</li> </ul>	<ul style="list-style-type: none"> <li>• Control Resources</li> </ul>	

**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.

- Focused on managing physical and human resources.
- Project manager identifies, acquires, and manages resources.

## Resource Management and *PMBOK® Guide—Sixth Edition* Processes

**Create WBS** helps define project staffing needs.

**Estimate Activity Durations** may depend on the ability to acquire staff with the right knowledge to complete the work.

Resource management often intersects with other project management processes.

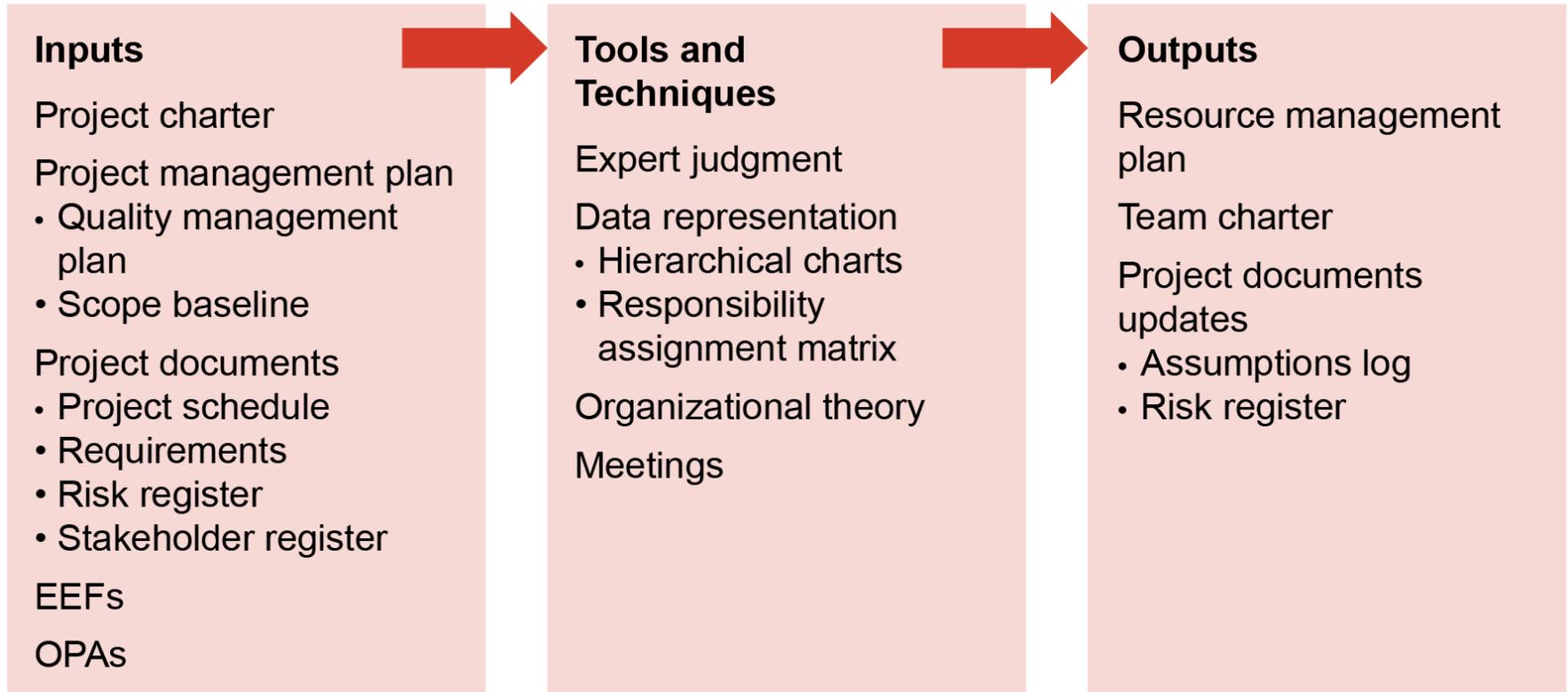
**Manage Stakeholder Engagement** may require resolving conflicts between stakeholders and team members.

**Control Quality** may be affected by team capabilities and motivation.

## Planning Project Resources on Agile/Hybrid Projects

- Mindset: feed projects to stable teams (mature, high velocity).
- Self-organizing, self-managing teams, no central control if feasible.
- Don't remove resources during iteration.
- Generalizing specialists reduce resource constraints.
- Collaborative team environment: productivity and innovative problem solving.
- Total expense planning: salaries/contractors maximum in total.

# Predictive: Plan Resource Management

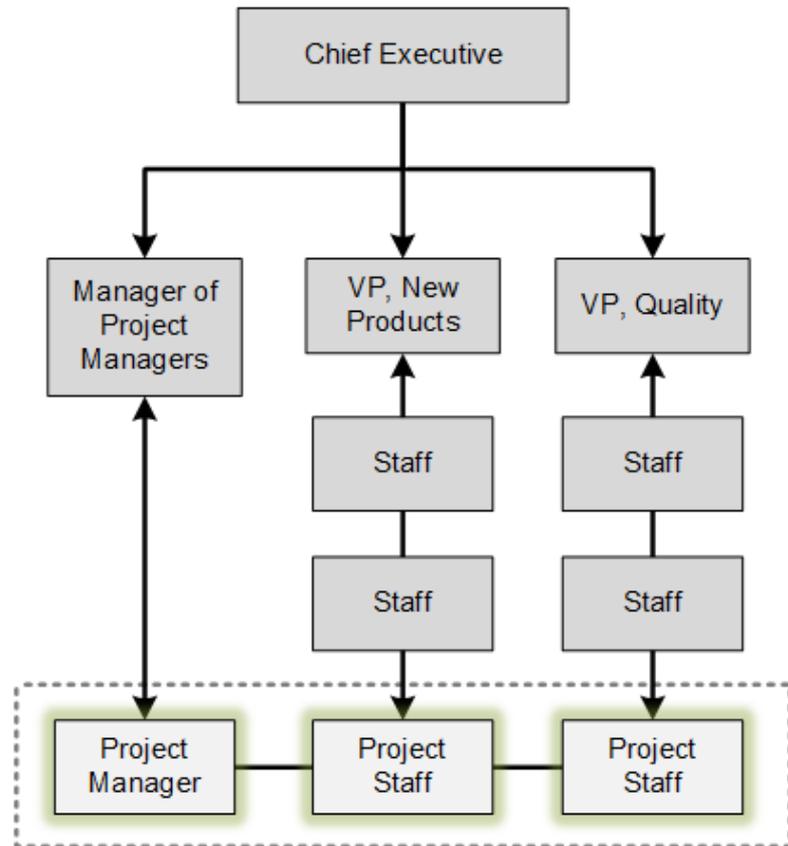


Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 9-2, Page 312. Material from this publication has been reproduced with the permission of PMI.

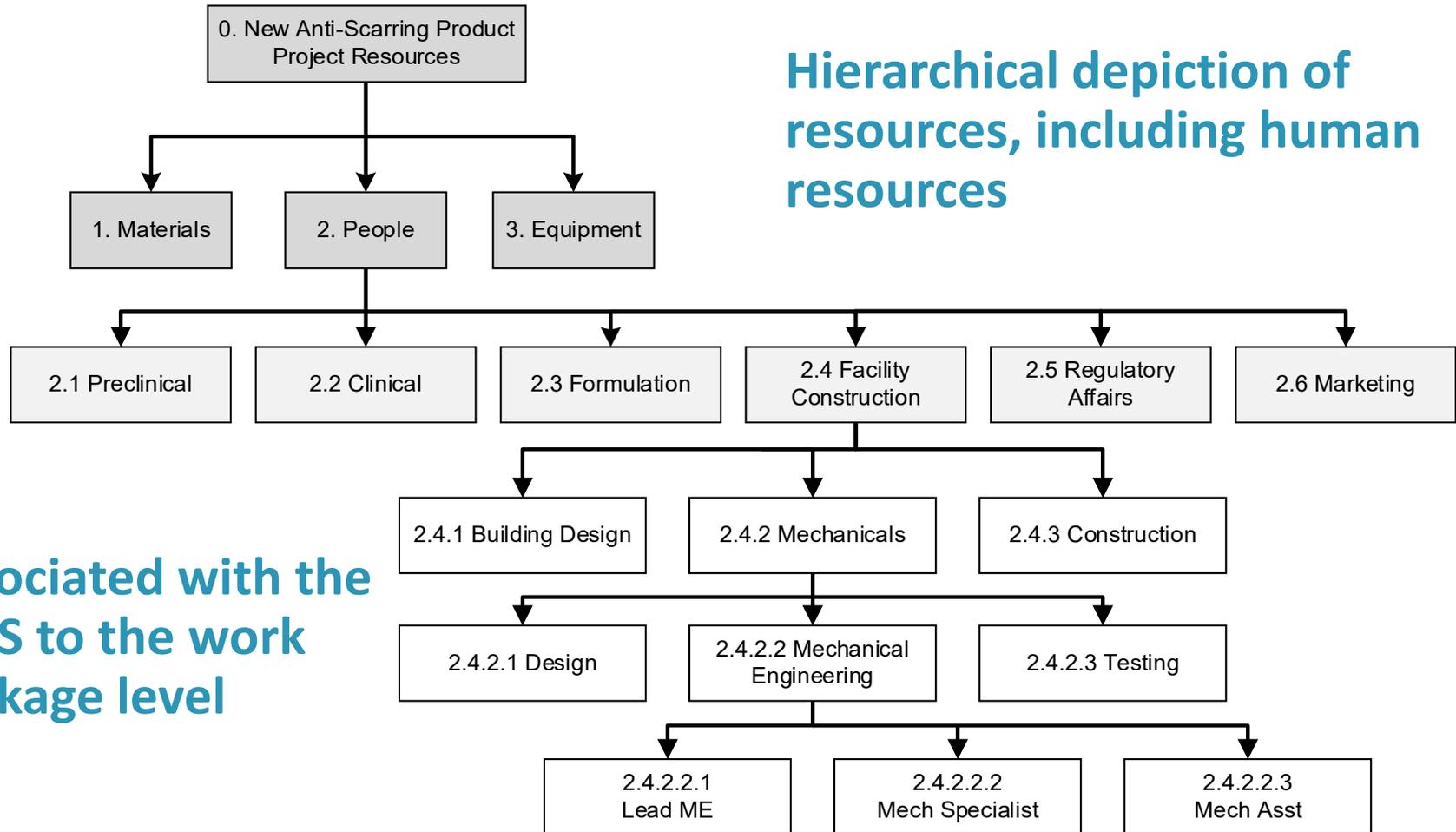
# Organizational Breakdown Structure (OBS) Chart

- Key to understanding organizational reporting lines and project manager's authority

Strong Matrix Organizational Structure



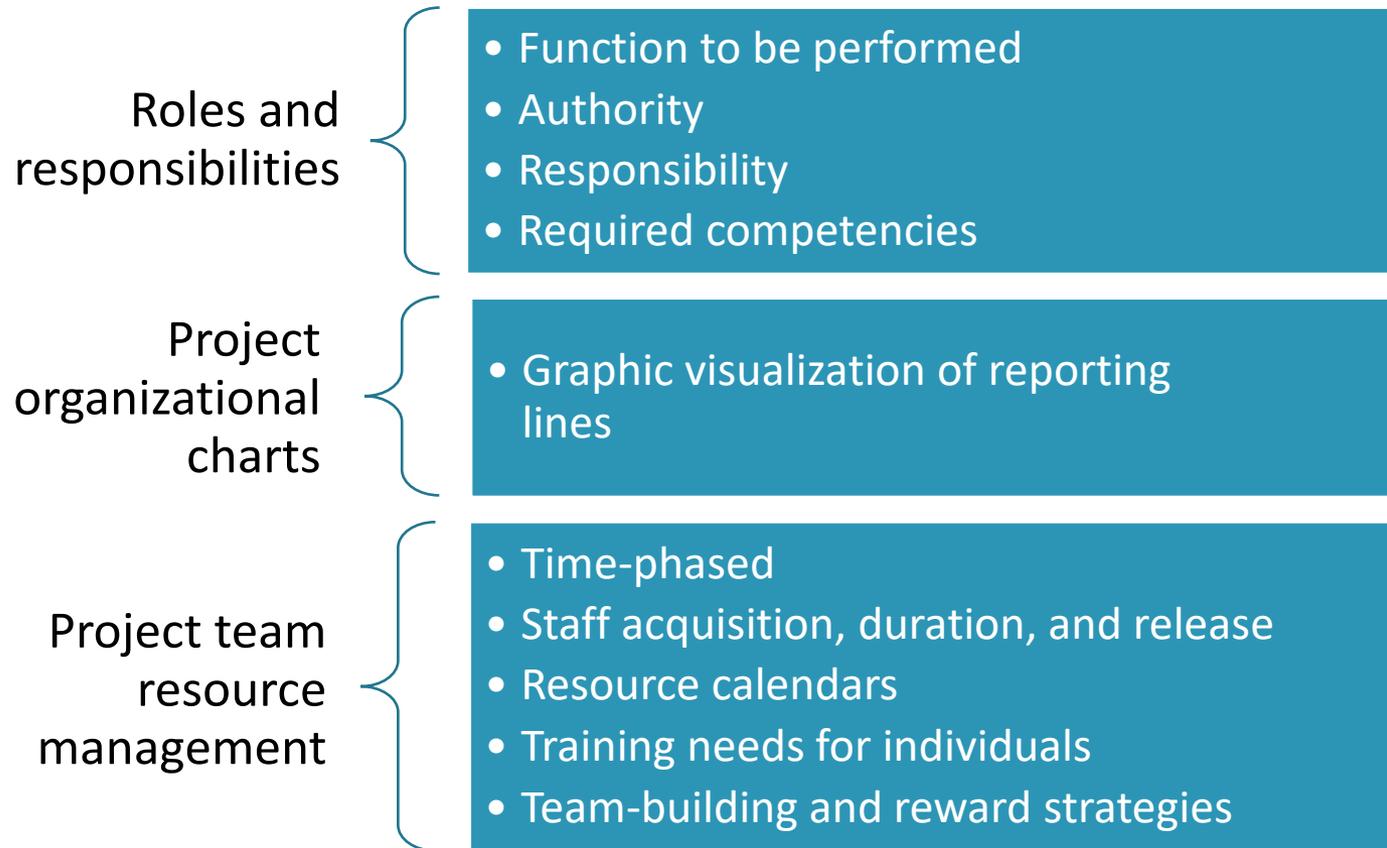
# Resource Breakdown Structure (RBS) Chart



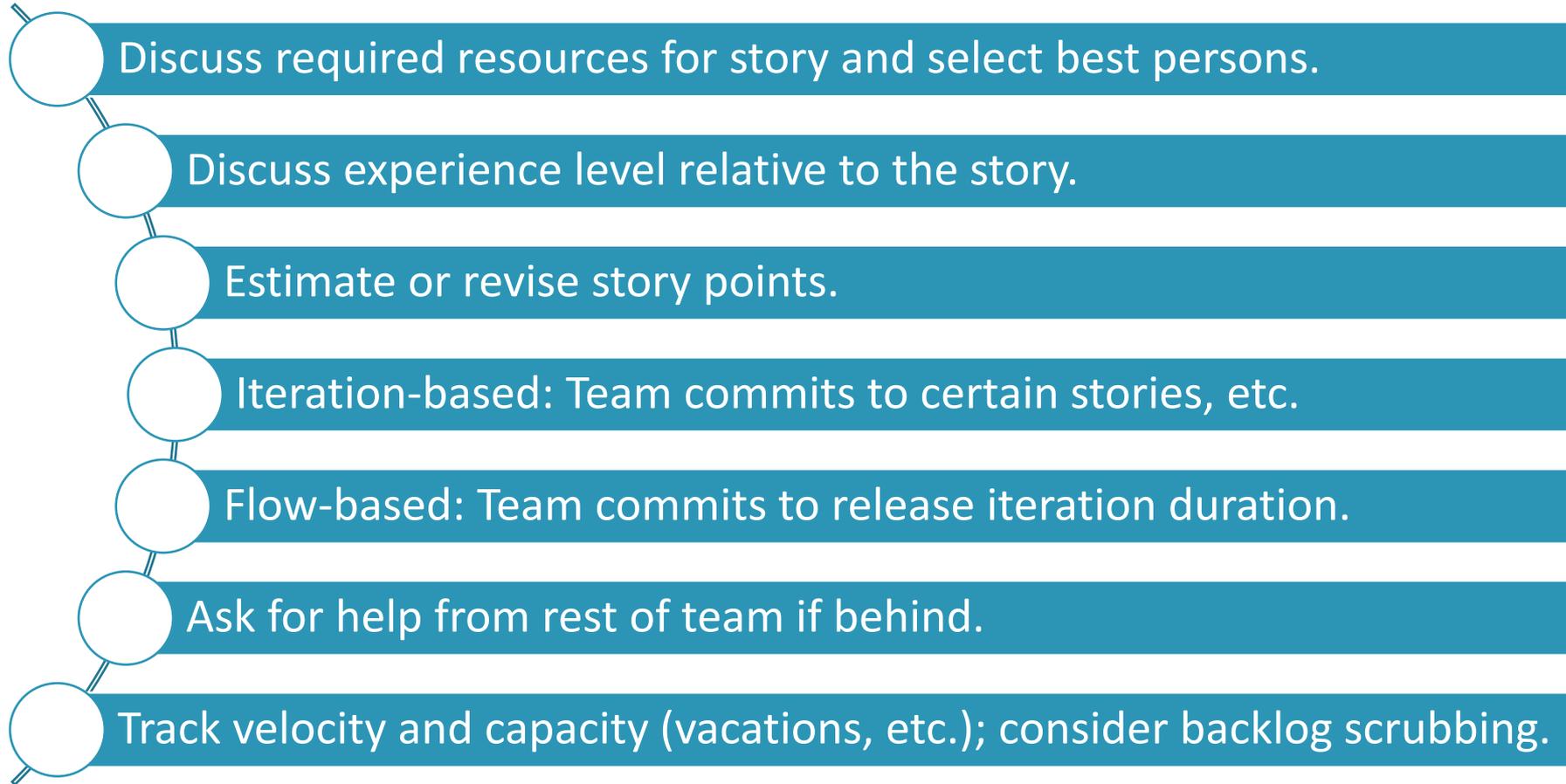
Hierarchical depiction of resources, including human resources

Associated with the WBS to the work package level

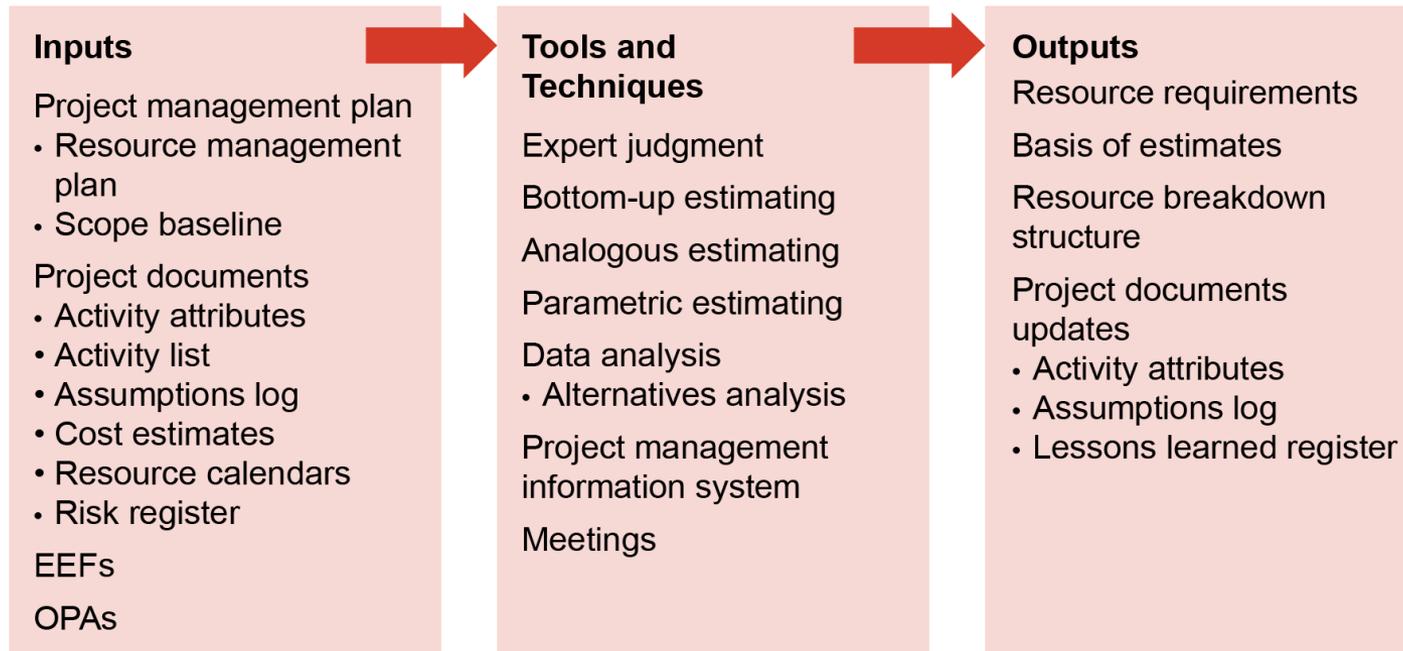
# Resource Management Plan



# Agile/Hybrid Task Resource Estimation

- 
- 1 Discuss required resources for story and select best persons.
  - 2 Discuss experience level relative to the story.
  - 3 Estimate or revise story points.
  - 4 Iteration-based: Team commits to certain stories, etc.
  - 5 Flow-based: Team commits to release iteration duration.
  - 6 Ask for help from rest of team if behind.
  - 7 Track velocity and capacity (vacations, etc.); consider backlog scrubbing.

# Predictive: Estimate Activity Resources



**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 9-6, Page 321. Material from this publication has been reproduced with the permission of PMI.

- Resource estimates and activity duration are directly related.

# Resource Calendars

- Used to identify the availability of specific resources (human, material, equipment)
- Will be a critical input into Estimate Activity Durations and Develop Schedule

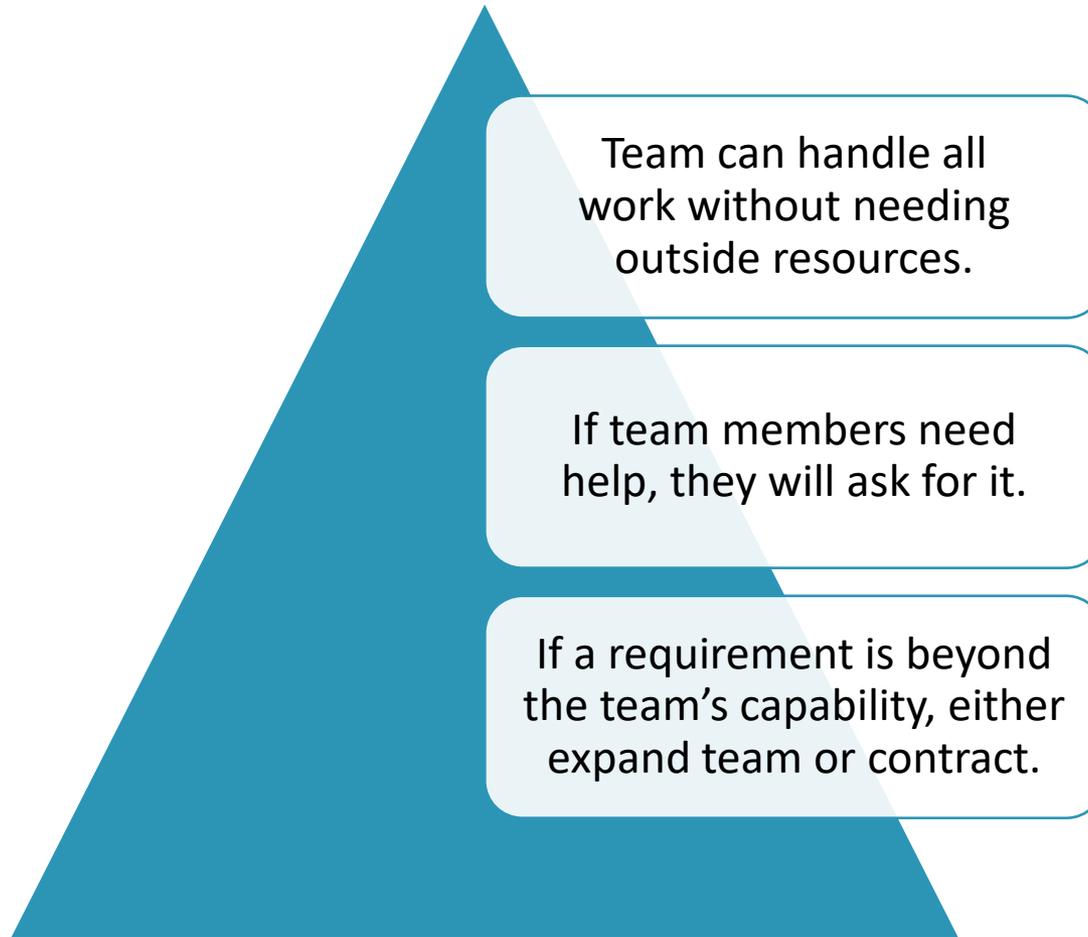


# Resource Estimating Tools

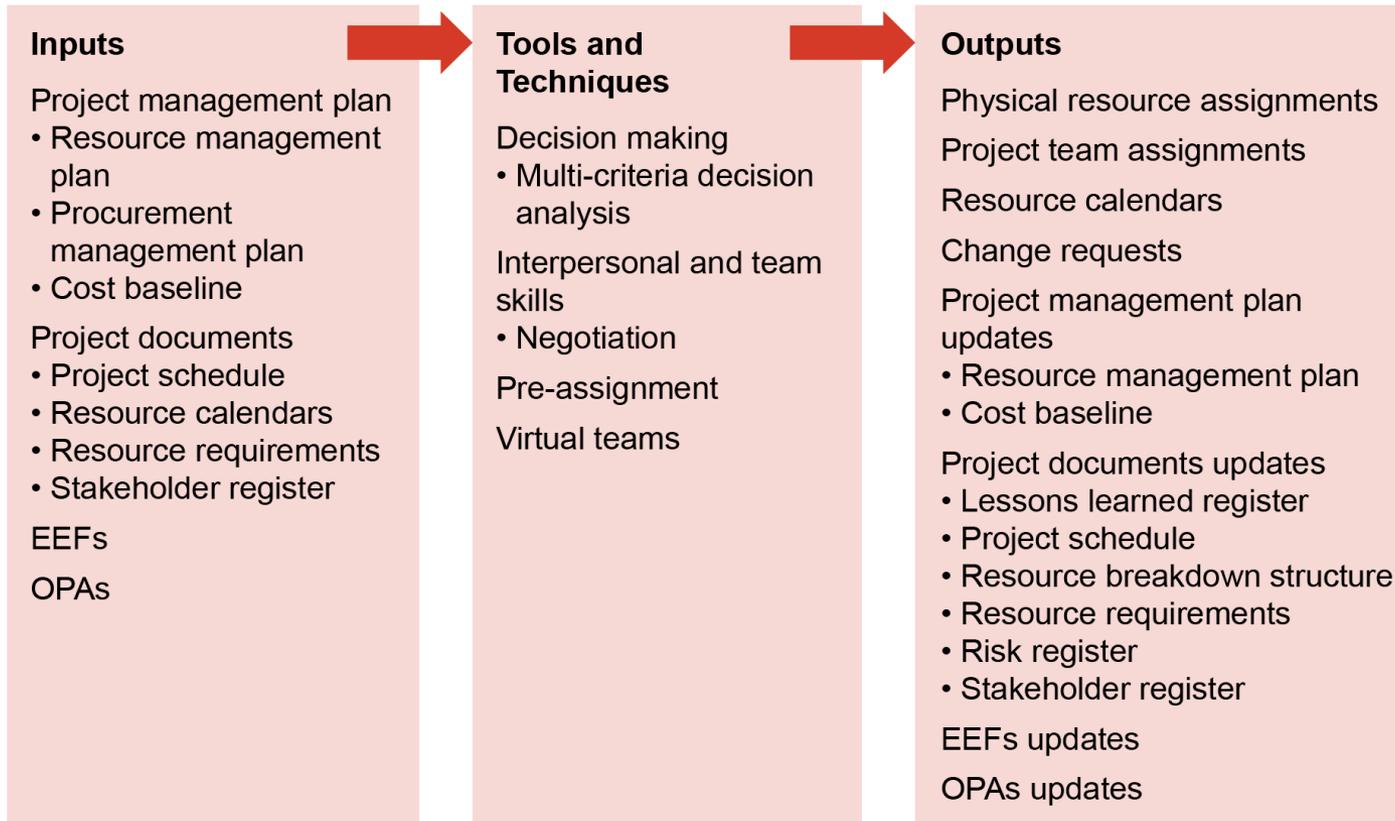
How do you estimate what resources will be required?

- **Alternatives analysis:** Comparing time required to perform in-house or by contractor, to build a component or tool or to purchase it.
- **Bottom-up estimating:** Requirements for each work package are assessed and then rolled up to determine resources needed for each higher level.
- **Software tools:** Scheduling component can be leveraged to manage resource pools and speed estimation of resource needs.

# Acquiring Resources for Agile/Hybrid Projects

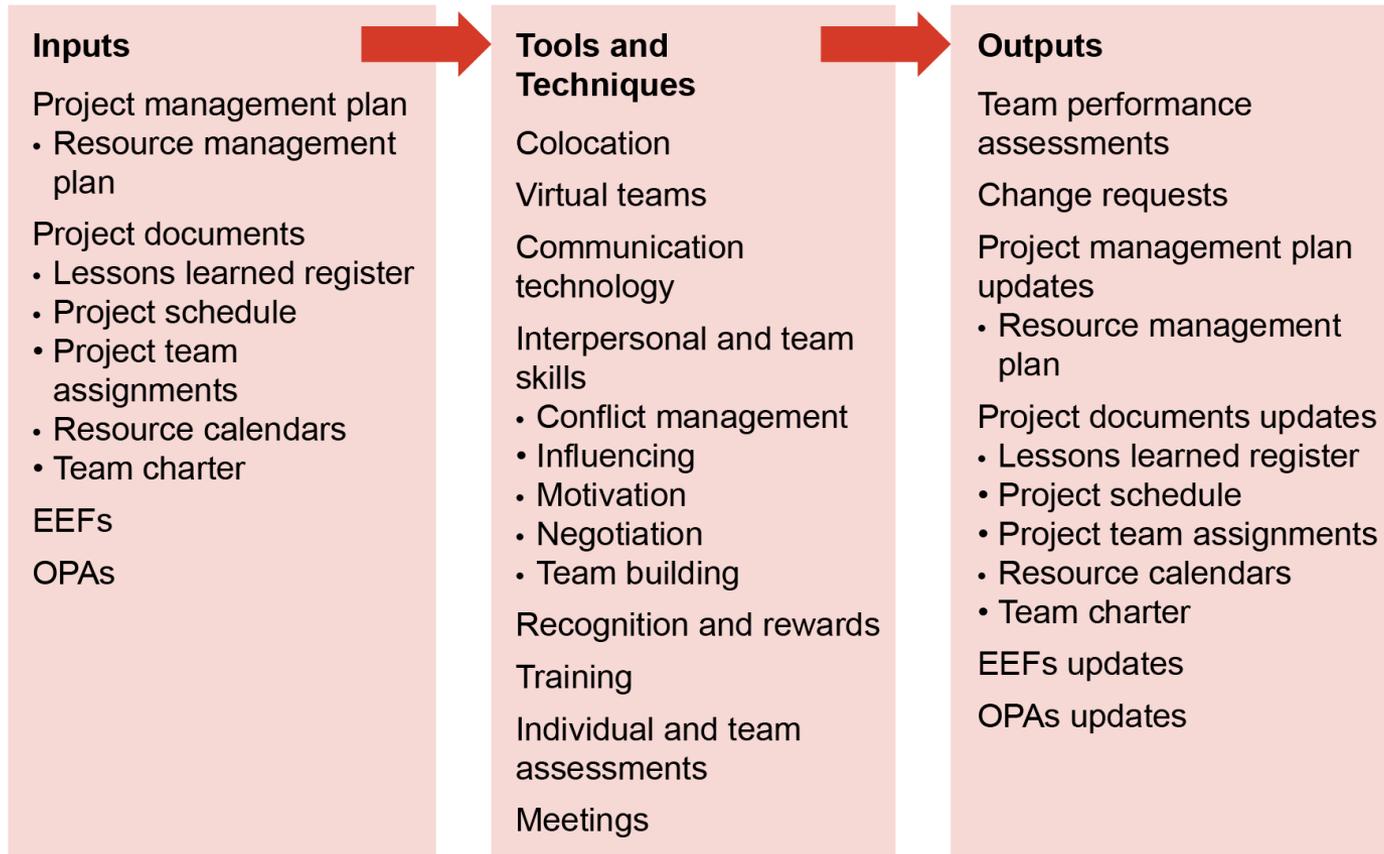


# Predictive: Acquire Resources



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 9-8, Page 328. Material from this publication has been reproduced with the permission of PMI.

# Predictive: Develop Team

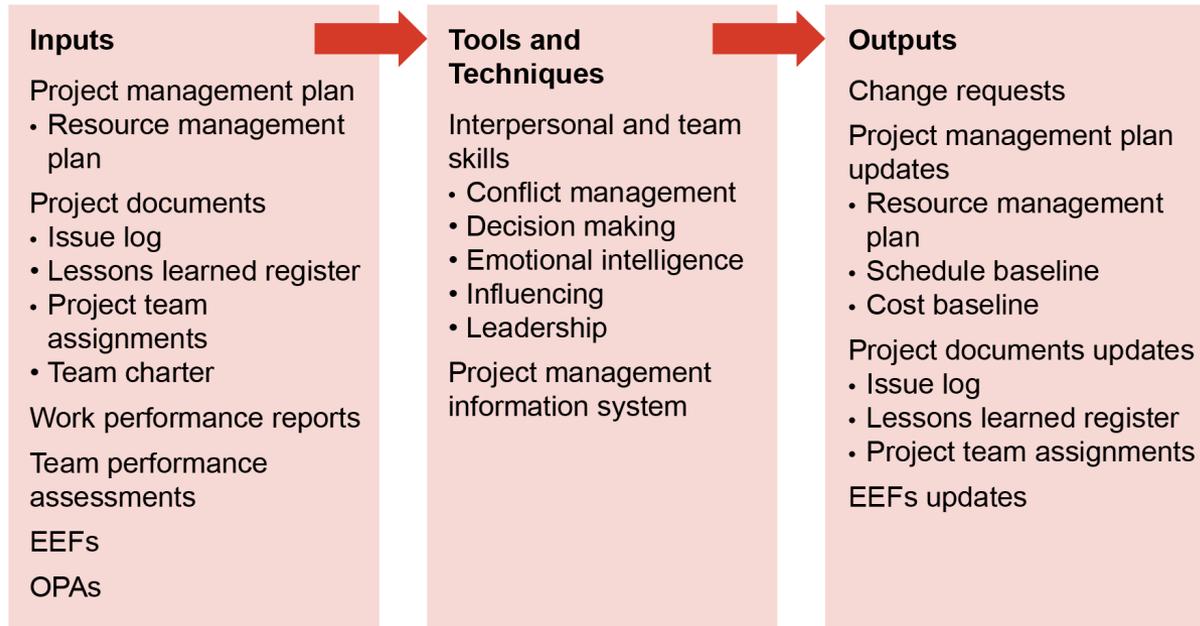


Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 9-10, Page 336. Material from this publication has been reproduced with the permission of PMI.

# Managing Agile/Hybrid Teams

- Teams manage themselves.
- Servant leaders provide performance data during retrospectives to assist self-management.
- Some management may still be necessary such as removing a team member who is unable to self-manage.

# Predictive: Manage Team



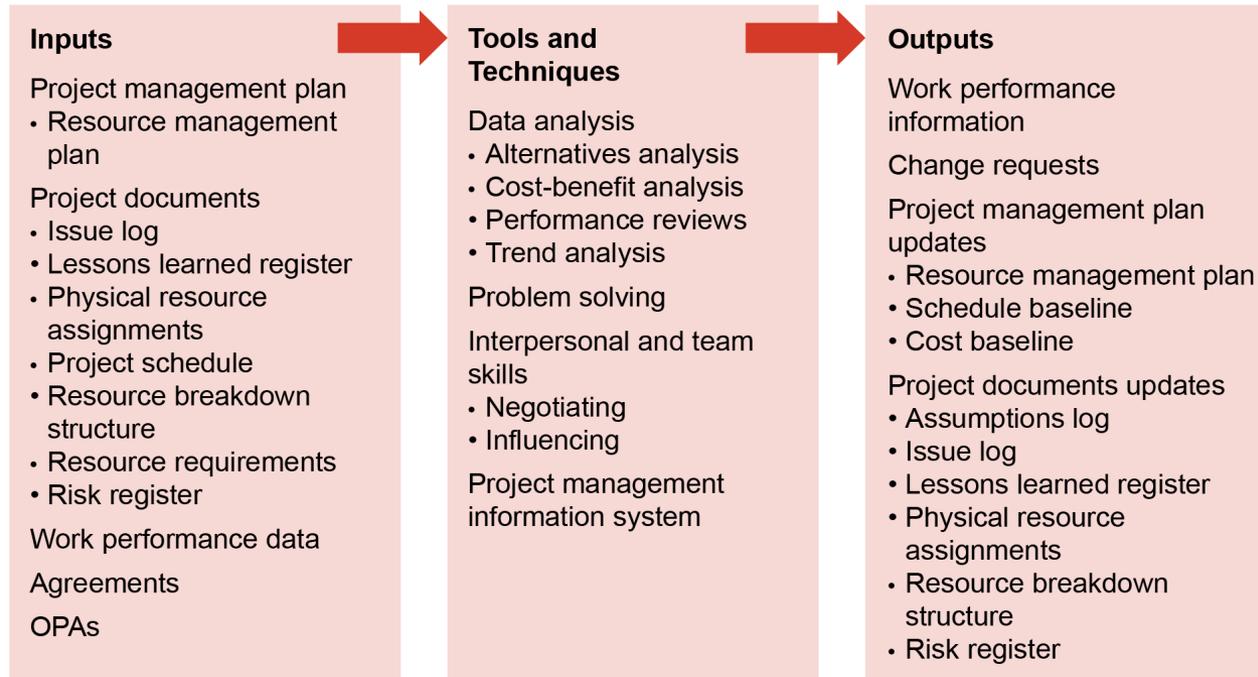
Source: Adapted from Project Management Institute, *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition*, Project Management Institute, Inc., 2017, Figure 9-12, Page 345. Material from this publication has been reproduced with the permission of PMI.

- Requires a variety of management skills to create high-performance teams

# Controlling Resources on Agile/Hybrid Projects

- Scrum master ensures that team has what it needs to succeed:
  - Central meeting space with kanban board
  - Colocated workspaces
  - IT and software/cloud-based systems

# Predictive: Control Resources



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 9-14, Page 352. Material from this publication has been reproduced with the permission of PMI.

- Focus on physical resource assignment and allocation

# Resource Problems

## Internal

- Poor storage conditions

## External

- Supplier goes out of business
- Political upheaval
- Environmental disaster
- Pandemic