

CSIT214/CSCI814/HCSC814

IT Project Management

Project Resource Management

Acknowledgement: Slides are adapted from "Information Technology Project Management" by Kathy Schwalbe, 2016

Project management framework (review)

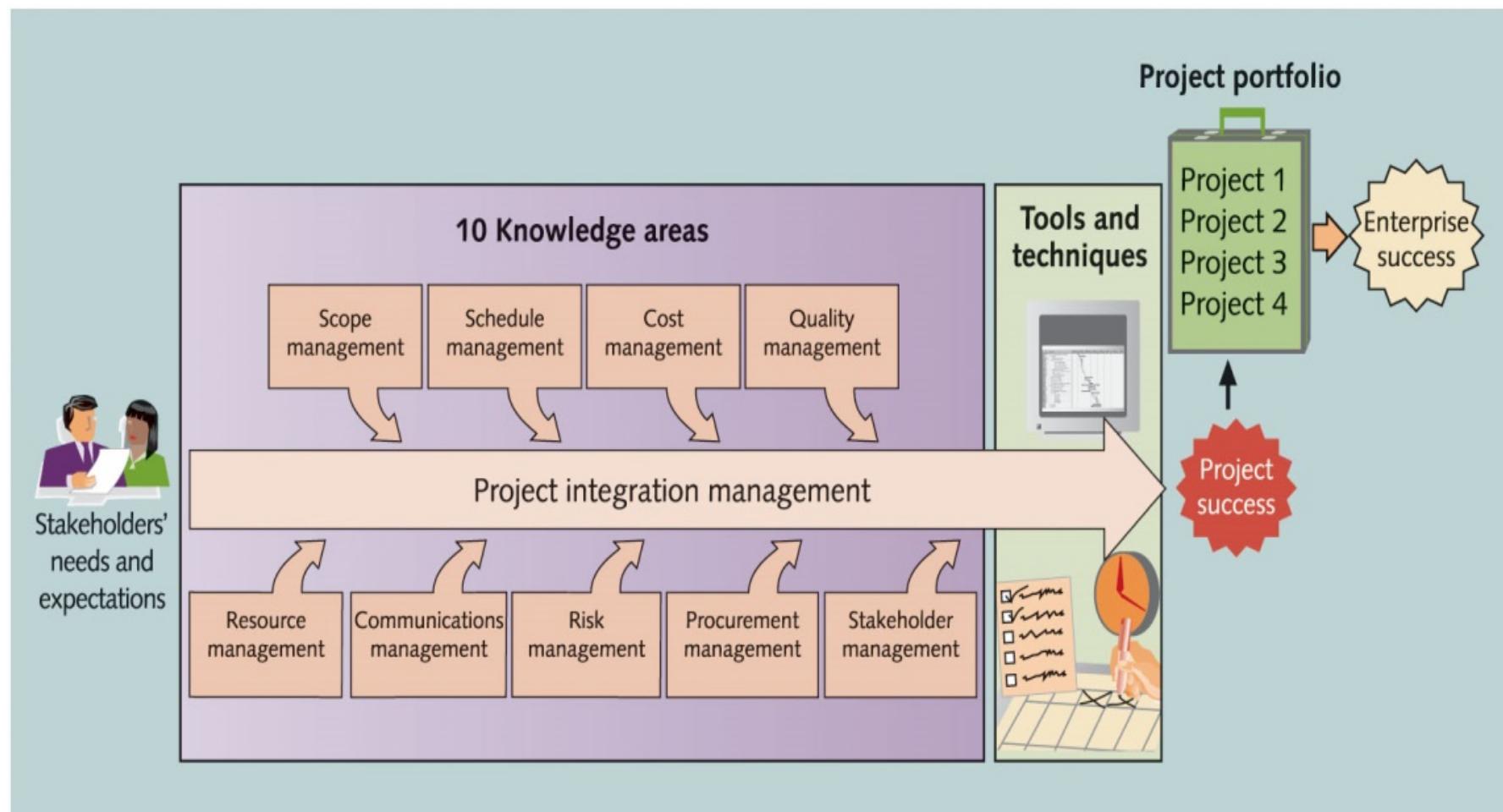


FIGURE 1-2 Project management framework

The Importance of Human Resource Management

- What are the most important asset in a corporate?
 - People

- What determine the success and failure of organizations and projects?
 - People

Question

- ❑ Identify the reasons why managing human resources is one of the toughest challenges in project management.

What motivate people?

- Watch this video clip and answer the following question

<https://www.youtube.com/watch?v=u6XAPnuFjJc>

- Which of the following motivators should managers focus on?
 - A) Autonomy
 - B) Mastery
 - C) Purpose
 - D) Money

What is Project Human Resource Management?

- Making the **most effective use of the people** involved with a project
- Key activities for human resource management in a project:
 - **Planning human resource management:** identifying and documenting project roles, responsibilities, and reporting relationships
 - **Acquiring the project team:** getting the needed personnel assigned to and working on the project
 - **Developing the project team:** building individual and group skills to enhance project performance
 - **Managing the project team:** tracking team member performance, motivating team members, providing timely feedback, resolving issues and *conflicts*, and coordinating changes to help enhance project performance

Project Human Resource Management Summary

Planning

Process: **Plan human resource management**
Output: Human resource plan

Executing

Process: **Acquire project team**
Outputs: Project staff assignments, resource calendars, project management plan updates
Process: **Develop project team**
Outputs: Team performance assessments, enterprise environmental factors updates

Monitoring and Controlling

Process: **Manage project team**
Outputs: Change requests, project management plan updates, project documents updates, enterprise environmental factors updates, and organizational process assets updates

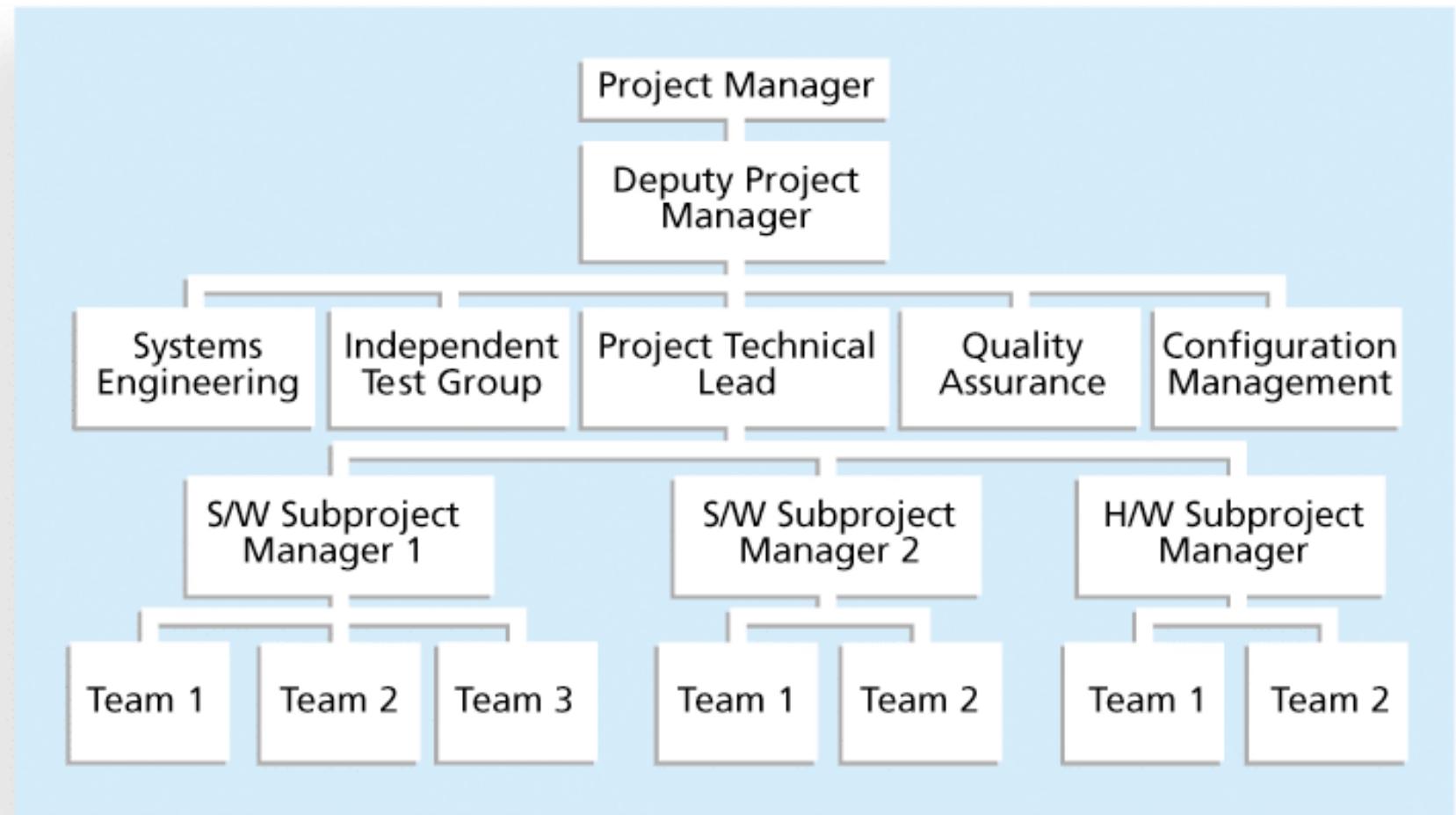
Project Start

Project Finish

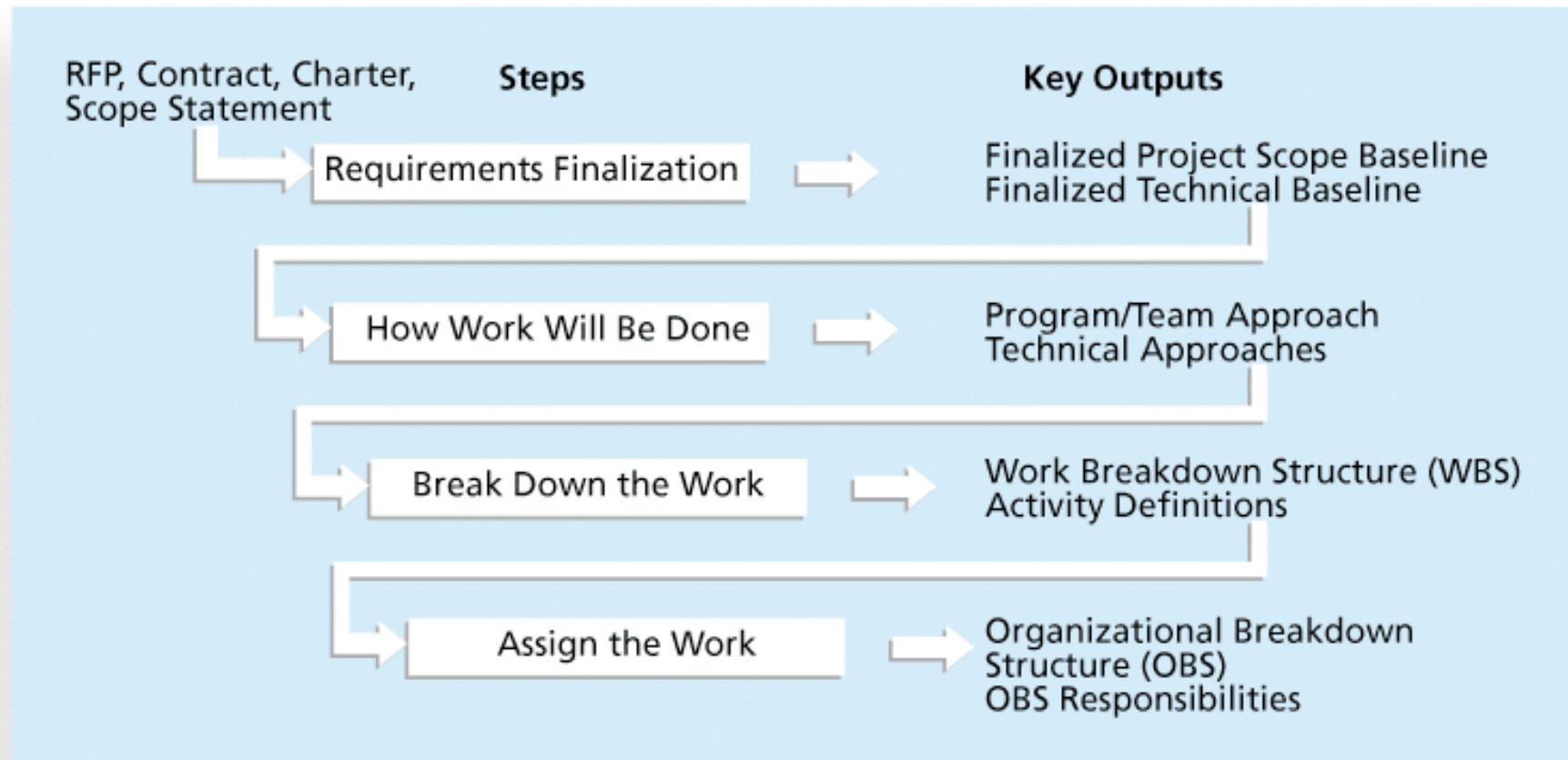
Developing the Human Resource Plan

- ❑ Involves identifying and documenting project roles, responsibilities, and reporting relationships
 - project organizational charts
 - staffing management plan
 - responsibility assignment matrixes
 - resource histograms

Sample Organizational Chart for a Large IT Project



Work Definition and Assignment Process



Work Breakdown Structure (WBS)

TASK	TIME	DELIVERABLE
1. Analysis		
1.1 Write Questionnaires	3 days	Manager and user Questionnaire
1.2 Conduct Interviews	3 days	Interview report
1.3 Develop SRS	5 days	SRS document draft
1.4 Review SRS	2 days	Reviewed and approved SRS

Responsibility Assignment Matrices

- A **responsibility assignment matrix (RAM)** is a matrix that maps the work of the project as described in the WBS to the people responsible for performing the work as described in the OBS

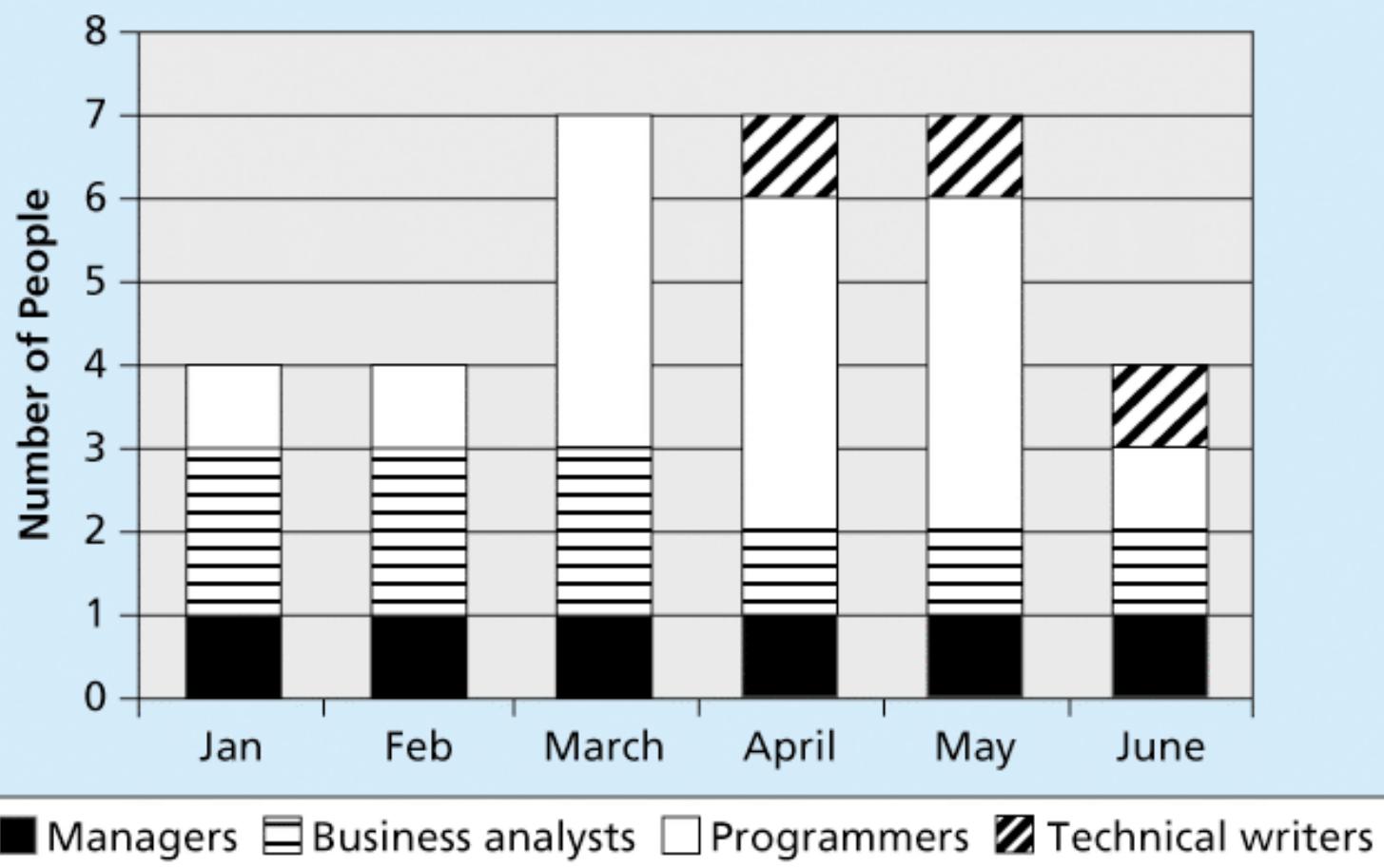
WBS activities →		1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8
OBS units ↓	Systems Engineering	R	R P					R	
	Software Development			R P					
	Hardware Development				R P				
	Test Engineering	P							
	Quality Assurance					R P			
	Configuration Management						R P		
	Integrated Logistics Support							P	
	Training								R P

R = Responsible organizational unit
P = Performing organizational unit

Staffing Management Plans and Resource Histograms

- ❑ A **staffing management plan** describes when and how people will be added to and taken off the project team
- ❑ A **resource histogram** is a column chart that shows the number of resources assigned to a project over time

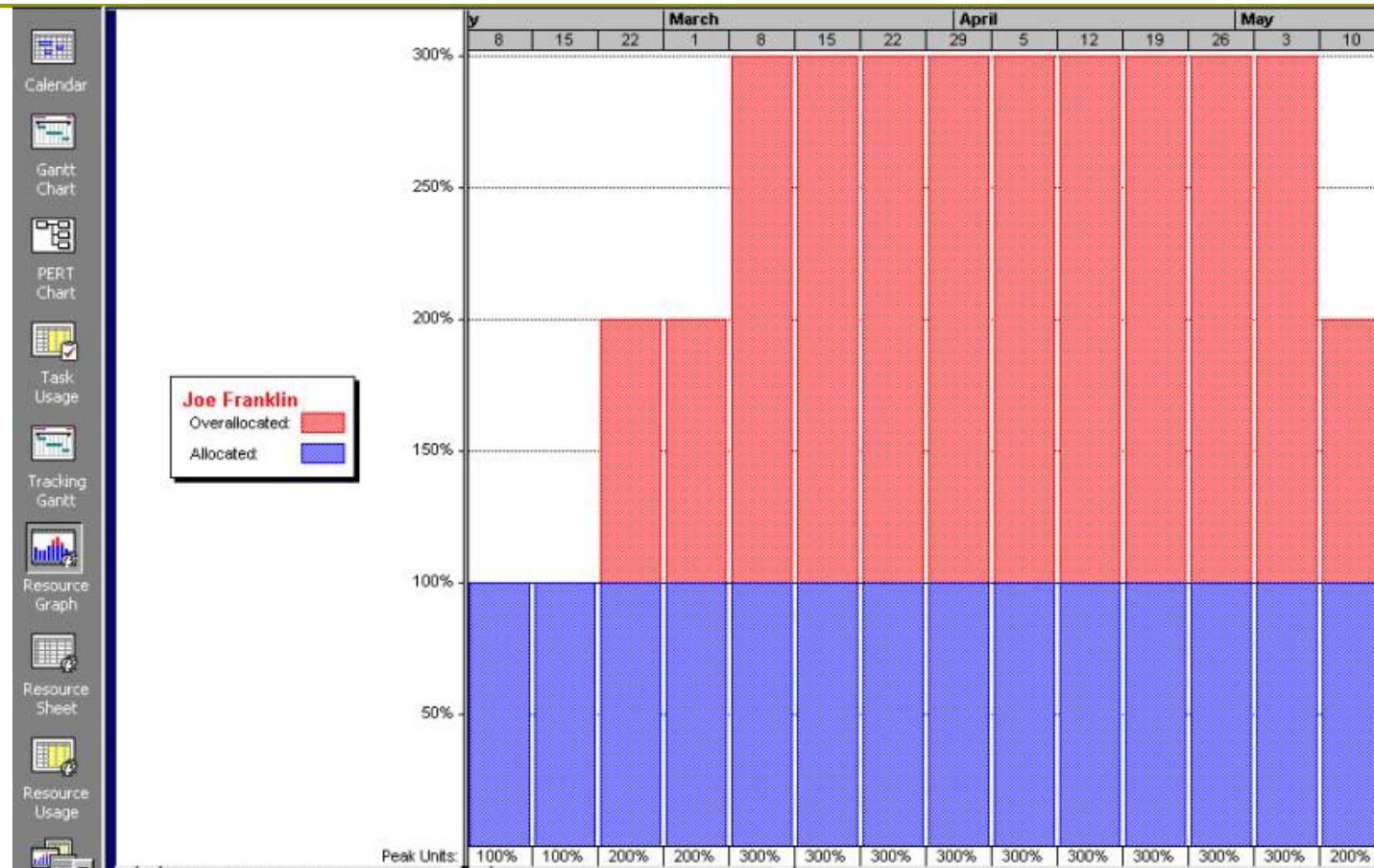
Sample Resource Histogram



Resource Loading

- **Resource loading** refers to the amount of individual resources an existing schedule requires during specific time periods
- Helps project managers develop a general understanding of the demands a project will make on the organization's resources and individual people's schedules
- **Overallocation** means more resources than are available are assigned to perform work at a given time¹⁵

Sample Histogram Showing an Overallocated Individual



Resource Leveling

- How to reduce overallocation?
 - **Resource leveling** is a technique for resolving resource conflicts by delaying tasks
 - The main purpose of resource leveling is to create a smoother distribution of resource usage and reduce overallocation

Resource Leveling Example

A=2 days

2

1

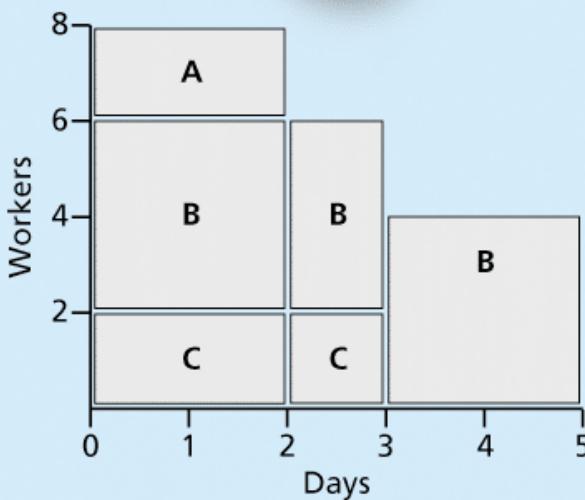
B=5 days

4

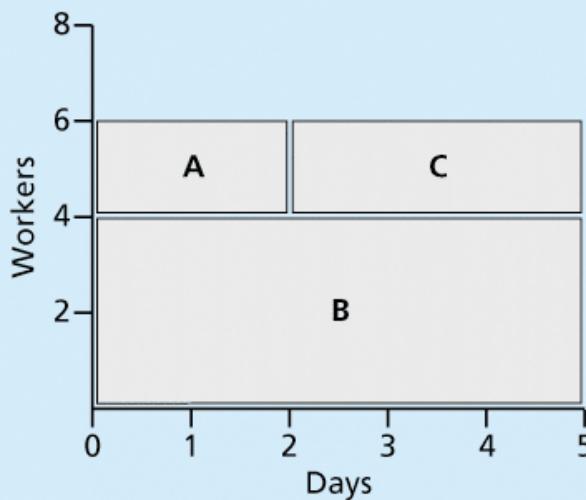
C=3 days

3

Project network with Activities A, B, and C and durations as shown. Activity A has 3 days of slack, and Activity C has 2 days of slack. Assume Activity A has 2 workers, B has 4 workers, and C has 2 workers.



Resource usage if all activities start on day one



Resource usage if Activity C is delayed 2 days, its total slack



Flashback quiz

- ❑ _____ involves tracking team member performance, motivating team members, providing timely feedback, resolving issues and conflicts, and coordinating changes to help enhance project performance.
 - a. Developing the human resource plan
 - b. Developing the project team
 - c. Acquiring the project team
 - d. Managing the project team

Managing the Project Team

- Project managers must lead their teams in performing various project activities
- After assessing team performance and related information, the project manager must decide
 - if changes should be requested to the project
 - if corrective or preventive actions should be recommended
 - if updates are needed to the project management plan or organizational process assets.

Tools and Techniques for Managing Project Teams

- Observation and conversation
- Project performance appraisals
- Interpersonal skills
- Conflict management
- Risk management

Check out my research on software engineering analytics to see how we develop various analytics models to support project managers:
<http://www.uow.edu.au/~hoa/>

What are the factors that will create a high performance team?

- Shared vision
- Sense of team identity
- Results-driven structure
- Competent team members
- Commitment to the team
- Mutual trust
- Interdependence among members
- Effective communication
- Sense of autonomy
- Sense of empowerment
- Small team size
- High level of enjoyment

Shared vision

- Clear understanding of objective
- Objective must involve a challenge
 - not something impossible, but feasible with some extra effort
 - this provides potential for pride in accomplishment; helps make members more strongly motivated to achieve the “vision”

Team identity

- Teams that share a common vision typically invent an identity
 - a name
 - a private world
 - shared “in” jokes and vocabulary
 - delight in the same kind of junk food
 - social engagements together
 - same work schedules and practices
 - “we” (*not “me , sarah and joe and also jun”*)

Results driven structure

- Roles of individual members must be clear.
- Members must be **accountable** at all times.
- Team must monitor work of the individual members
 - you have regular individual reporting and practices like code walk throughs

Competent team members

- Competencies include
 - technical
 - knowledge of language, development environment, application, ...
 - social
 - desire to collaborate
 - social skills needed for collaboration

Commitment to the team

- Some personal sacrifice
- Subordinate personal goals to goals of team
- Accept limitations of others
- Recognise own weaknesses

Interdependence

- McConnell suggests
 - build group into team by acknowledging and utilizing relative strengths of individuals
 - if Joe is better at debugging than you, ask him to help with your current problem

Effective communication

- “You never listen to what I say”
- McConnell singles out
 - raising problems when they arise rather than concealing them in hope that things will improve (they won’t)

Tools and Techniques for Managing Project Teams

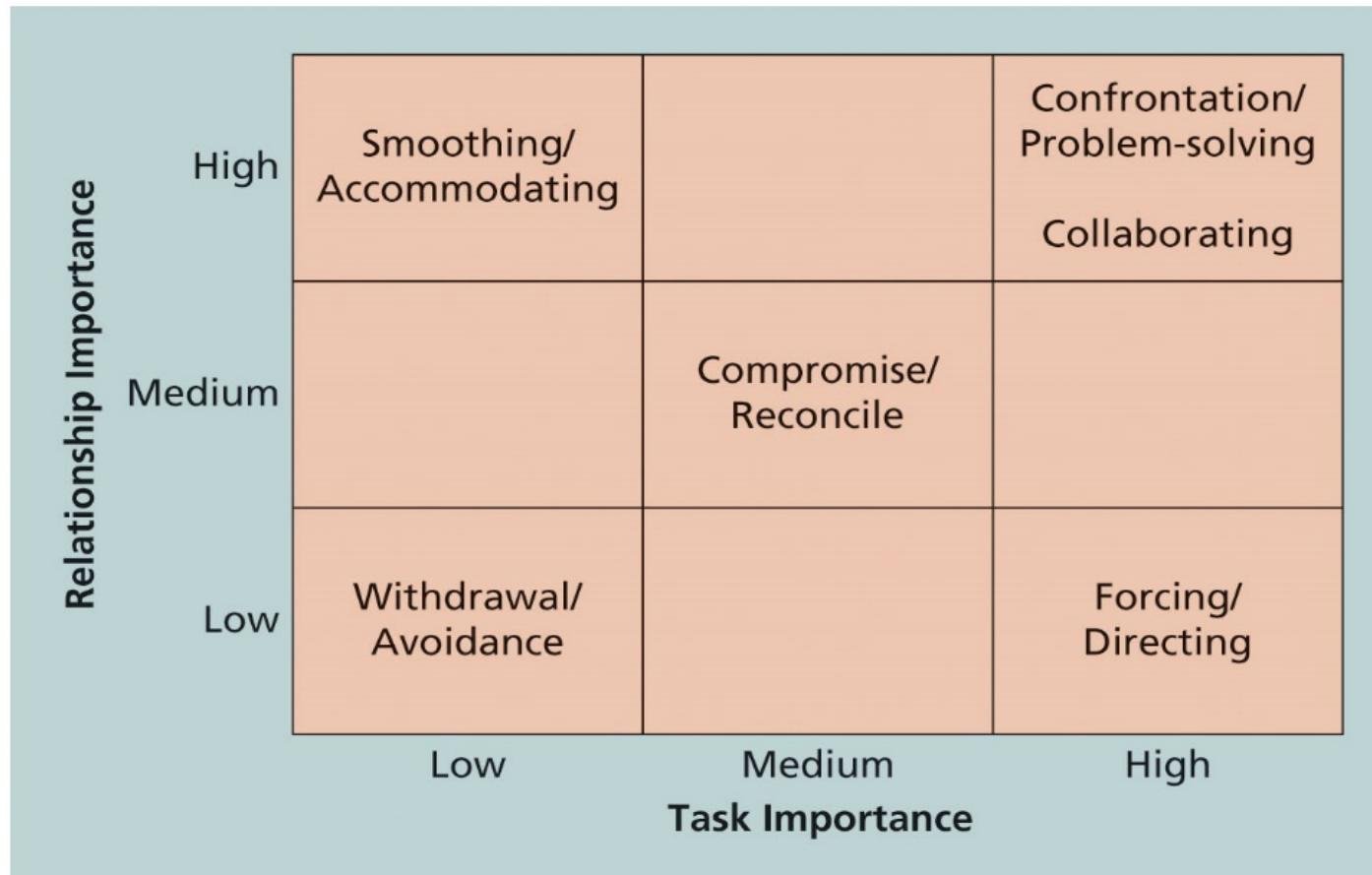
- Several tools and techniques are available to assist in managing project teams
 - Interpersonal and team skills
 - Project management information systems
 - Conflict management

Tools and Techniques for Managing Project Teams (cont.)

□ Conflict handling modes

- Confrontation: directly face a conflict using a problem-solving approach
- Compromise: use a give-and-take approach
- Smoothing: de-emphasize areas of difference and emphasize areas of agreement
- Forcing: win-lose approach
- Withdrawal: retreat or withdraw from an actual or potential disagreement
- Collaborating: decision makers incorporate different viewpoints and insights to develop consensus and commitment

Tools and Techniques for Managing Project Teams (cont.)



Source: Kathy Schwalbe, *An Introduction to Project Management, Sixth Edition* (September 2017)

FIGURE 9-11 Conflict handling modes

Tools and Techniques for Managing Project Teams (cont.)

- Conflict can be good
 - Conflict often produces important results, such as new ideas, better alternatives, and motivation to work harder and more collaboratively
 - Groupthink: conformance to the values or ethical standards of a group; can develop if there are no conflicting viewpoints
 - Research suggests that task-related conflict often improves team performance, but emotional conflict often depresses team performance

Five Dysfunctions of a Team

- Patrick Lencioni, author of several books on teams, says that “Teamwork remains the one sustainable competitive advantage that has been large untapped”*
- The five dysfunctions of teams are
 1. Absence of trust
 2. Fear of conflict
 3. Lack of commitment
 4. Avoidance of accountability
 5. Inattention to results

*Lencioni, Patrick, "Overcoming the Five Dysfunctions of a Team," Jossey-Bass: San Francisco, CA (2005), p.³⁴ 3.

General Advice on Teams

- Be patient and kind with your team
- Fix the problem instead of blaming people
- Establish regular, effective meetings
- Allow time for teams to go through the basic team-building stages
- Limit the size of work teams to three to seven members

General Advice on Teams (cont'd)

- ❑ Plan some social activities to help project team members and other stakeholders get to know each other better
- ❑ Stress team identity
- ❑ Nurture team members and encourage them to help each other
- ❑ Take additional actions to work with virtual team members

Teamwork Meetings

- ❑ Much of the development process is group based
 - Brainstorm
 - Plan
 - Review
- ❑ Group work needs good communication skills and understanding of effective organization.

Structure your meetings

- There will be a basic structure common to all meetings (meeting agenda)
 - Review “action items” from previous meeting
 - Main work
 - Identify things that must be done by next meeting.
 - Meeting minutes

Exit quiz

- ❑ _____ is a technique for resolving resource conflicts and overallocation by delaying tasks.
 - a. Resource loading
 - b. Resource levelling
 - c. Resource allocation
 - d. Resource histogram

- ❑ A(n) _____ is a column chart that shows the number of resources assigned to a project over time.
 - a. responsibility assignment matrix
 - b. resource histogram
 - c. RACI charts
 - d. organizational breakdown structure