

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)

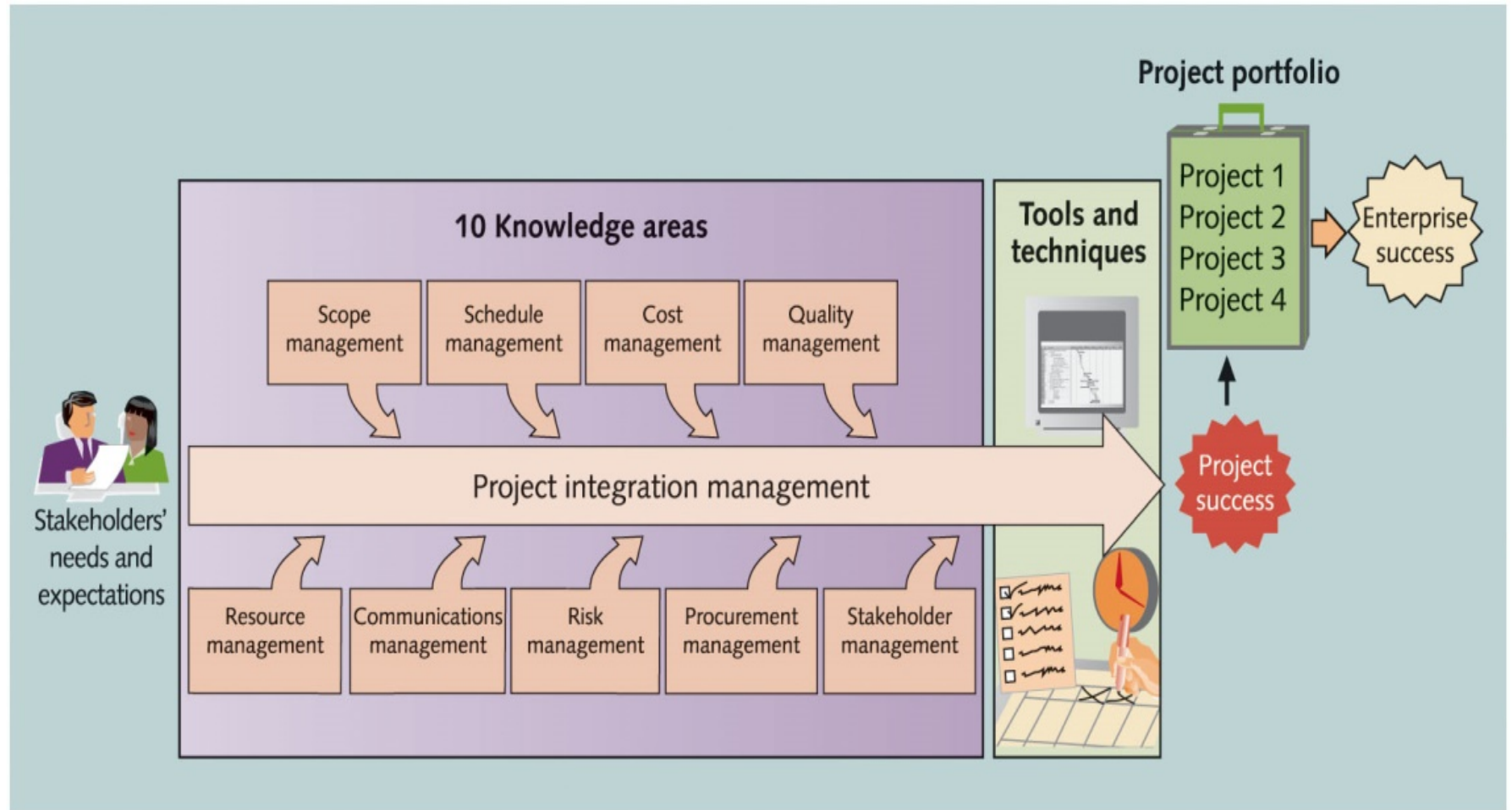


FIGURE 1-2 Project management framework

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

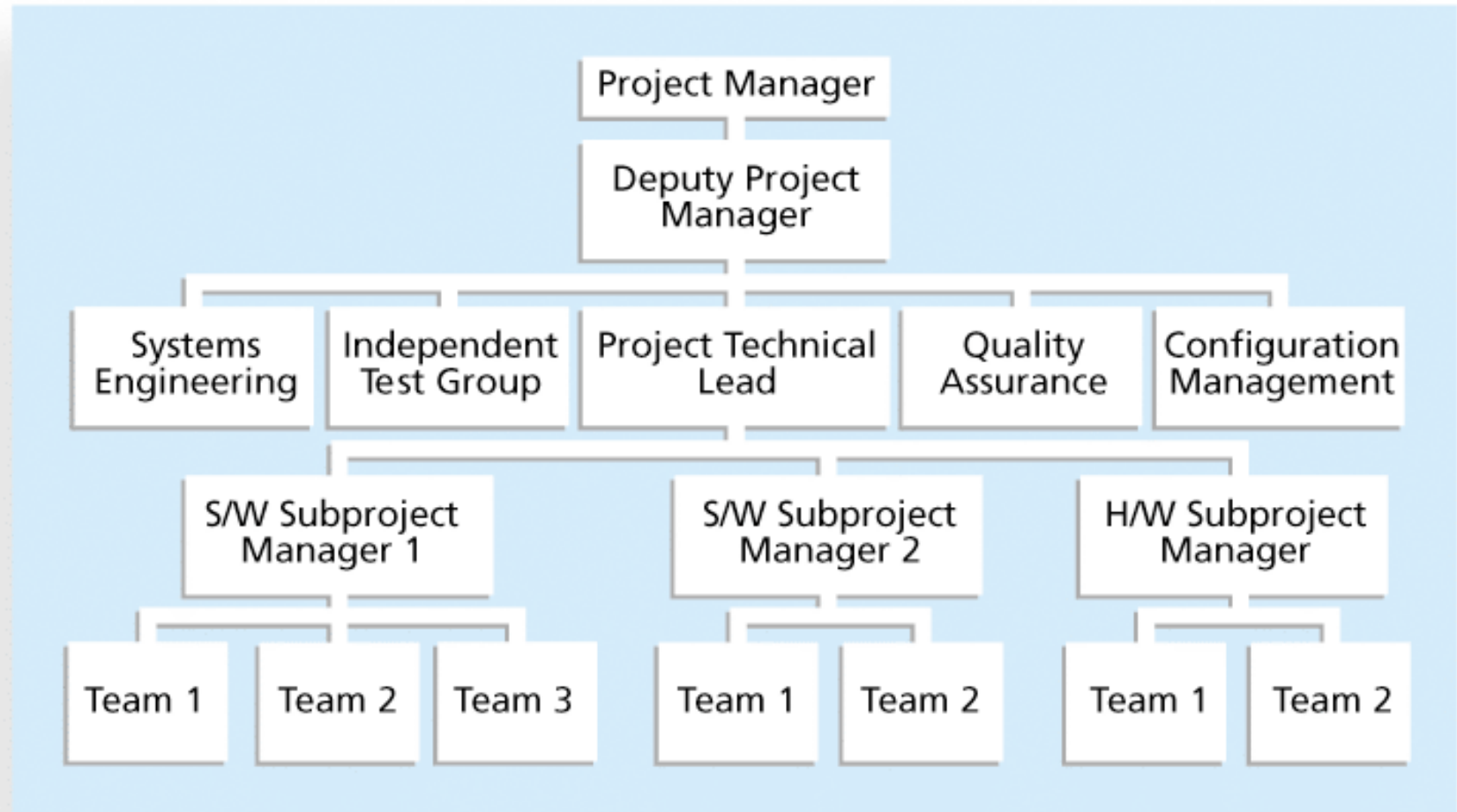
Project Start

Project Finish

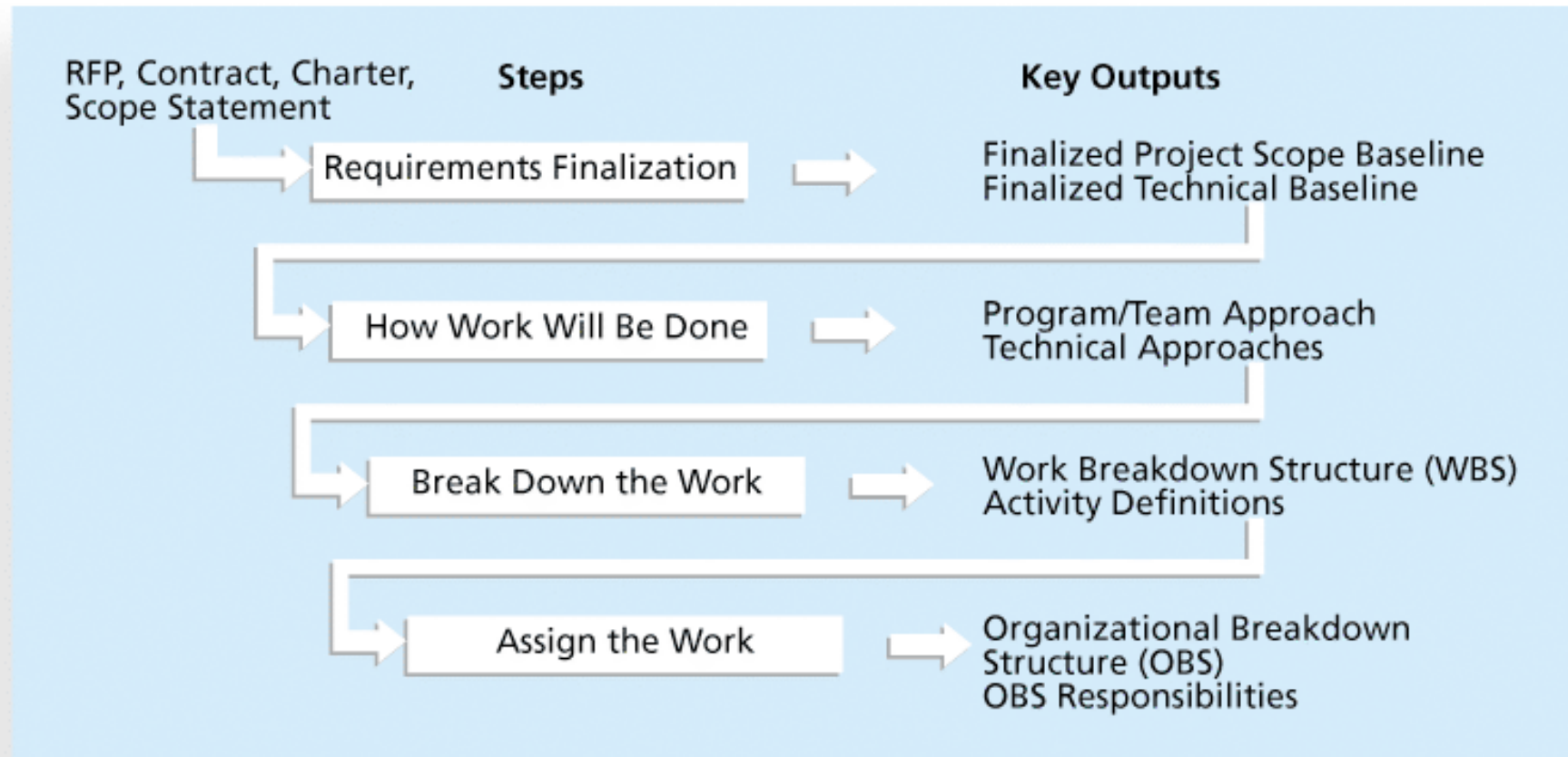
Developing the Human Resource Plan

- 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

The diagram illustrates a Responsibility Assignment Matrix (RAM) with 'WBS activities' on the horizontal axis and 'OBS units' on the vertical axis. An arrow points from the label 'WBS activities' to the top of the matrix. Another arrow points from the label 'OBS units' to the left side of the matrix. The matrix is a table with 8 rows and 9 columns. The first column lists the OBS units, and the subsequent 8 columns are labeled with WBS activity codes (1.1.1 through 1.1.8). The cells contain 'R' for Responsible organizational unit or 'P' for Performing organizational unit, or are empty.

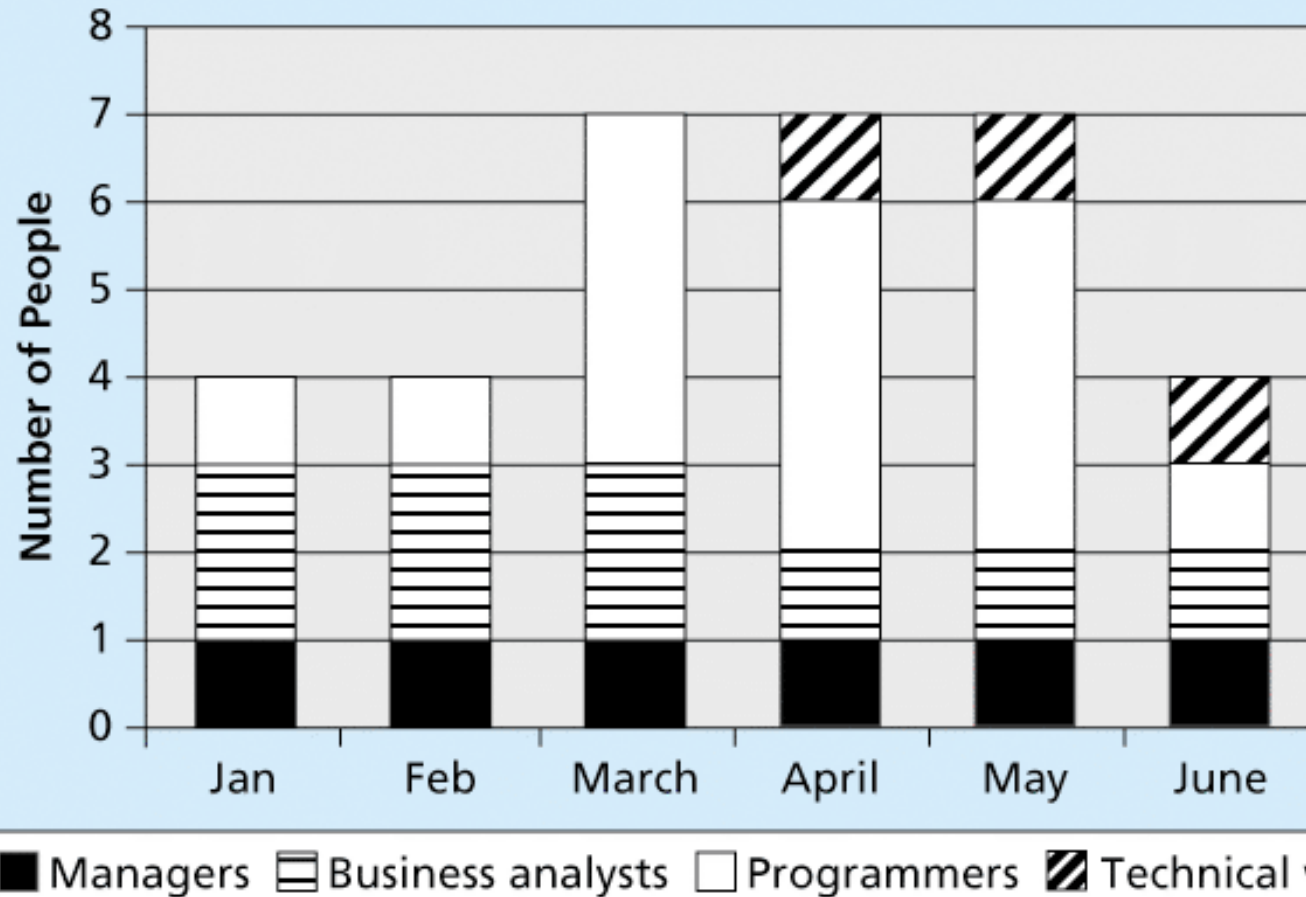
	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8
Systems Engineering	R	R P					R	
Software Development			R P					
Hardware Development				R P				
Test Engineering	P							
Quality Assurance					R P			
Configuration Management						R P		
Integrated Logistics Support							P	
Training								R P

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

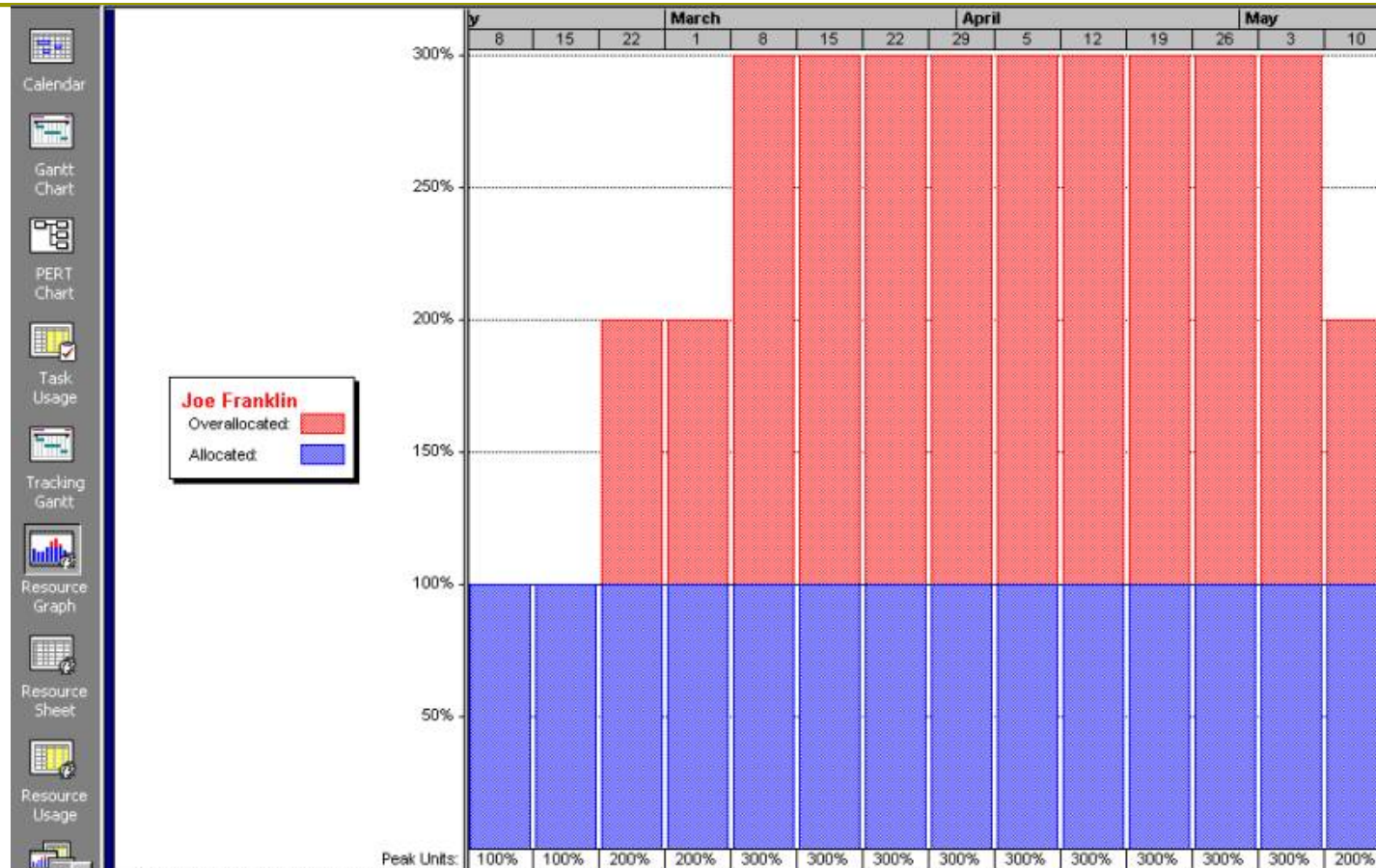
Sample Resource Histogram



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 time

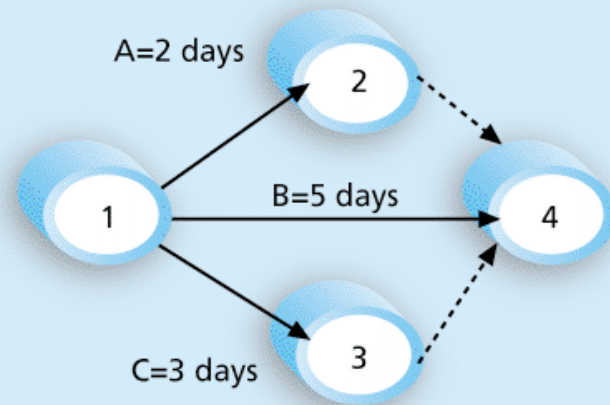
Sample Histogram Showing an Overallocated Individual



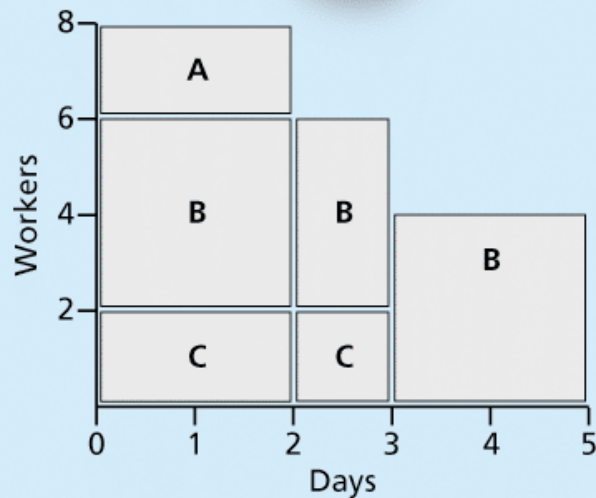
Resource Leveling

- 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

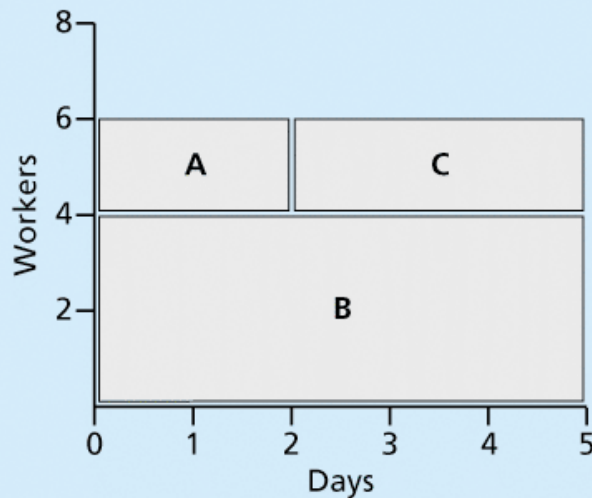
Resource Leveling Example



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

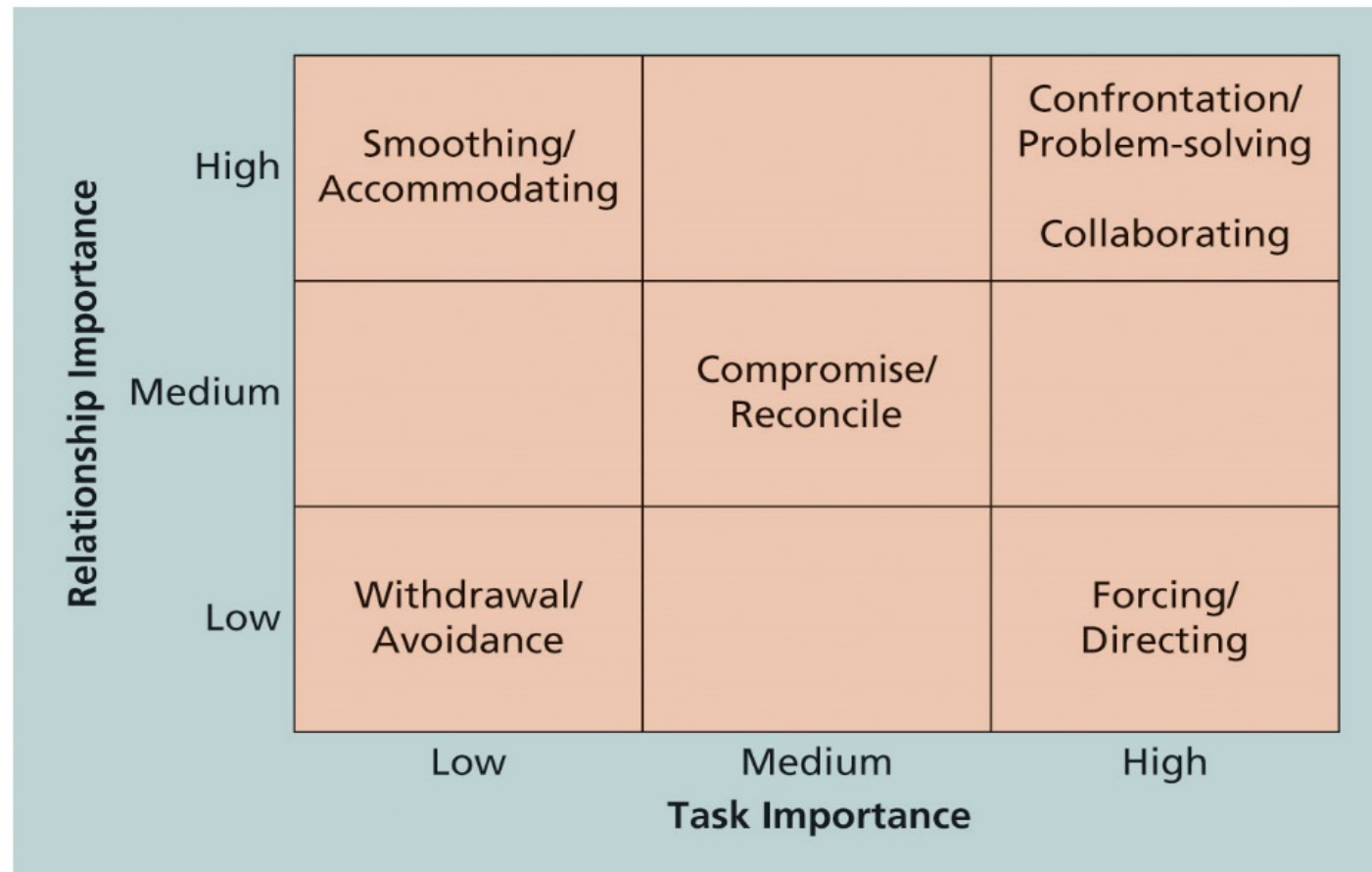
- ❑ Several tools and techniques are available to assist in managing project teams
 - Interpersonal and team skills
 - Project management information systems
 - Conflict management

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