

# CSIT214/CSCI814/HCSC814

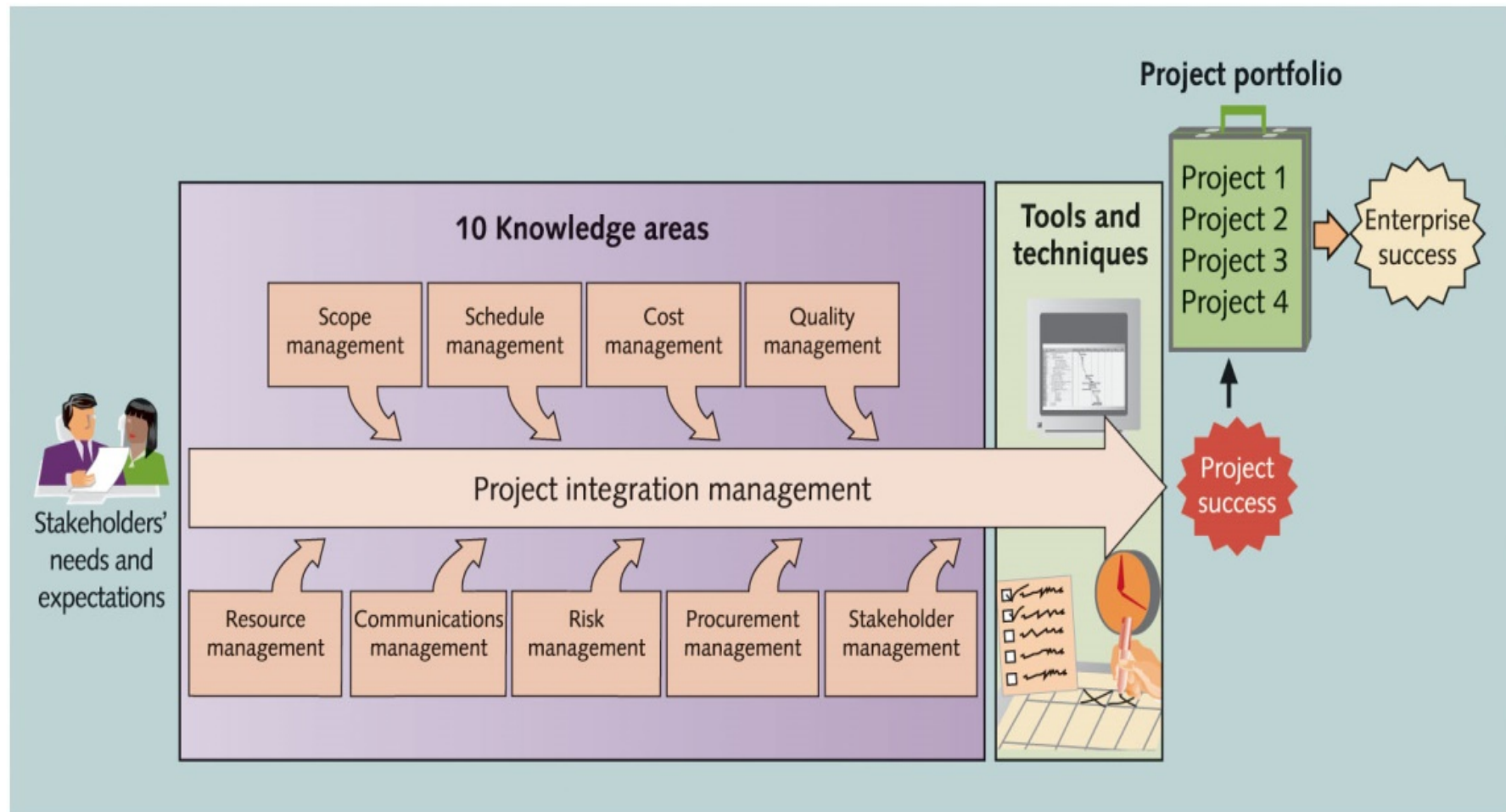
## IT Project Management



### 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

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- ❑ What are the most important asset in a corporate?
  - People
  
- ❑ What determine the success and failure of organizations and projects?
  - People

# Question

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

# What motivate people?

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- 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?

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- ❑ 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

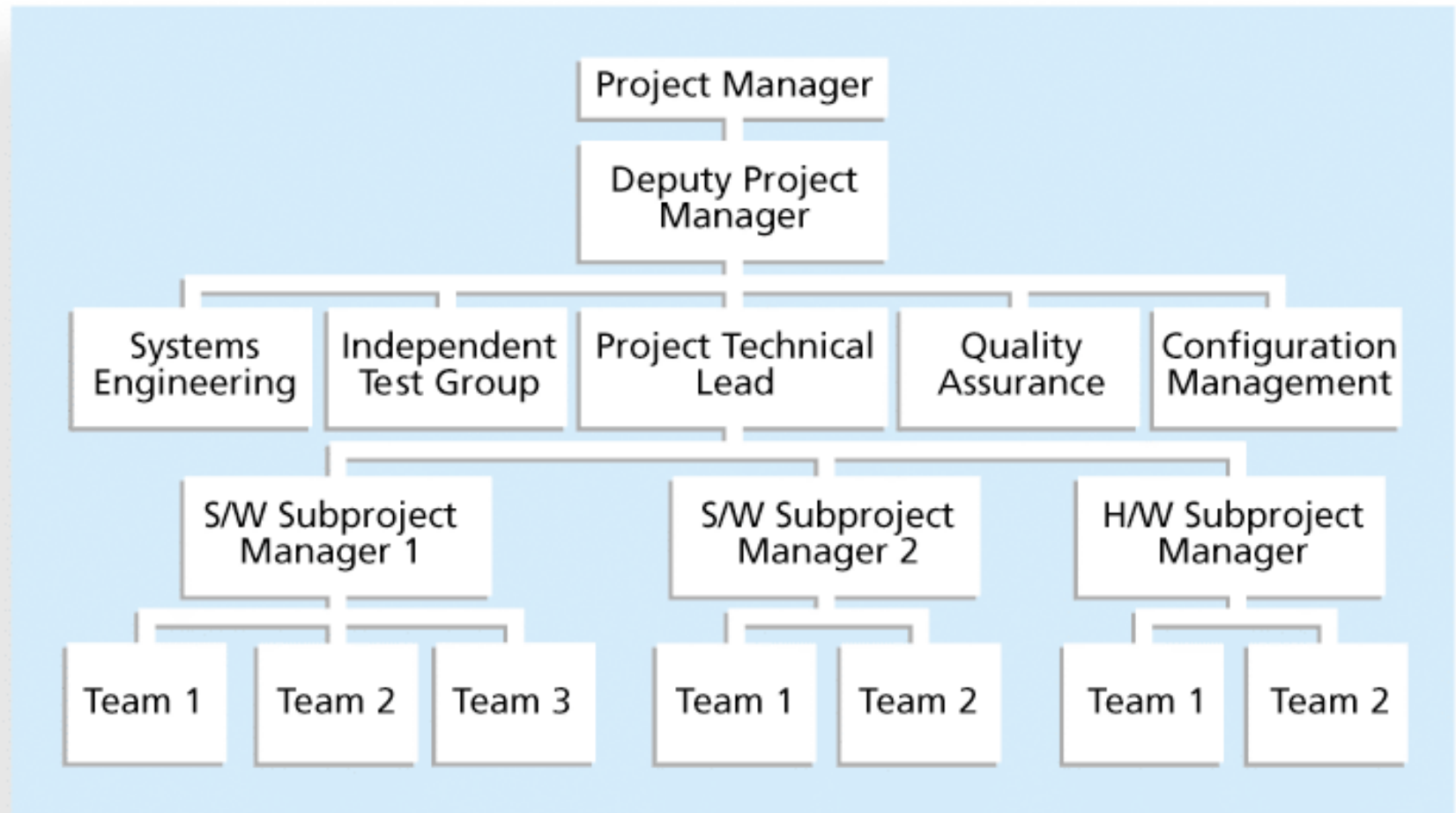
# Developing the Human Resource Plan

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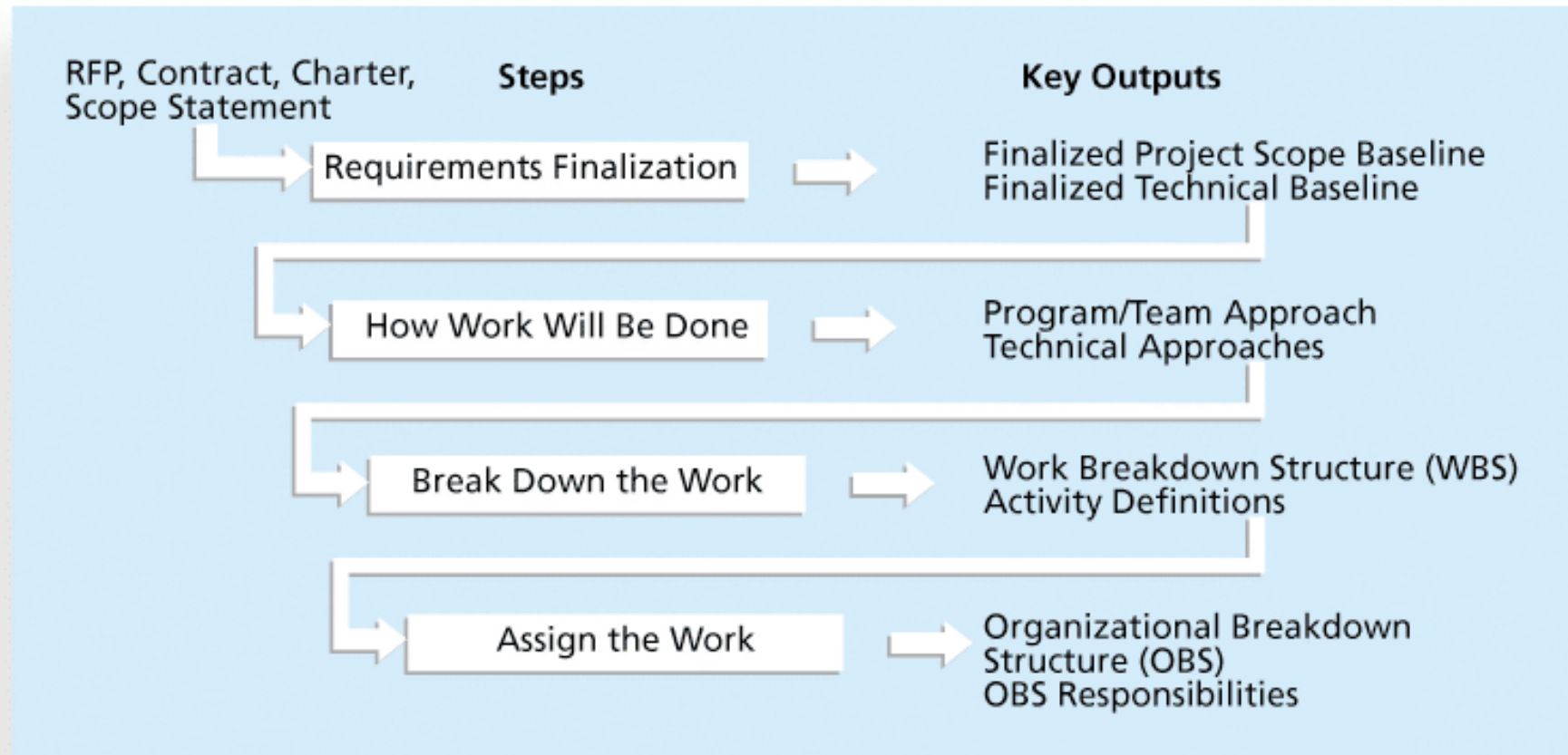
- Involves identifying and documenting project roles, responsibilities, and reporting relationships
  - project organizational charts
  - staffing management plan
  - responsibility assignment matrixes
  - resource histograms



# Sample Organizational Chart for a Large IT Project



# Work Definition and Assignment Process



# Work Breakdown Structure (WBS)

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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 →

OBS units ↓

	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

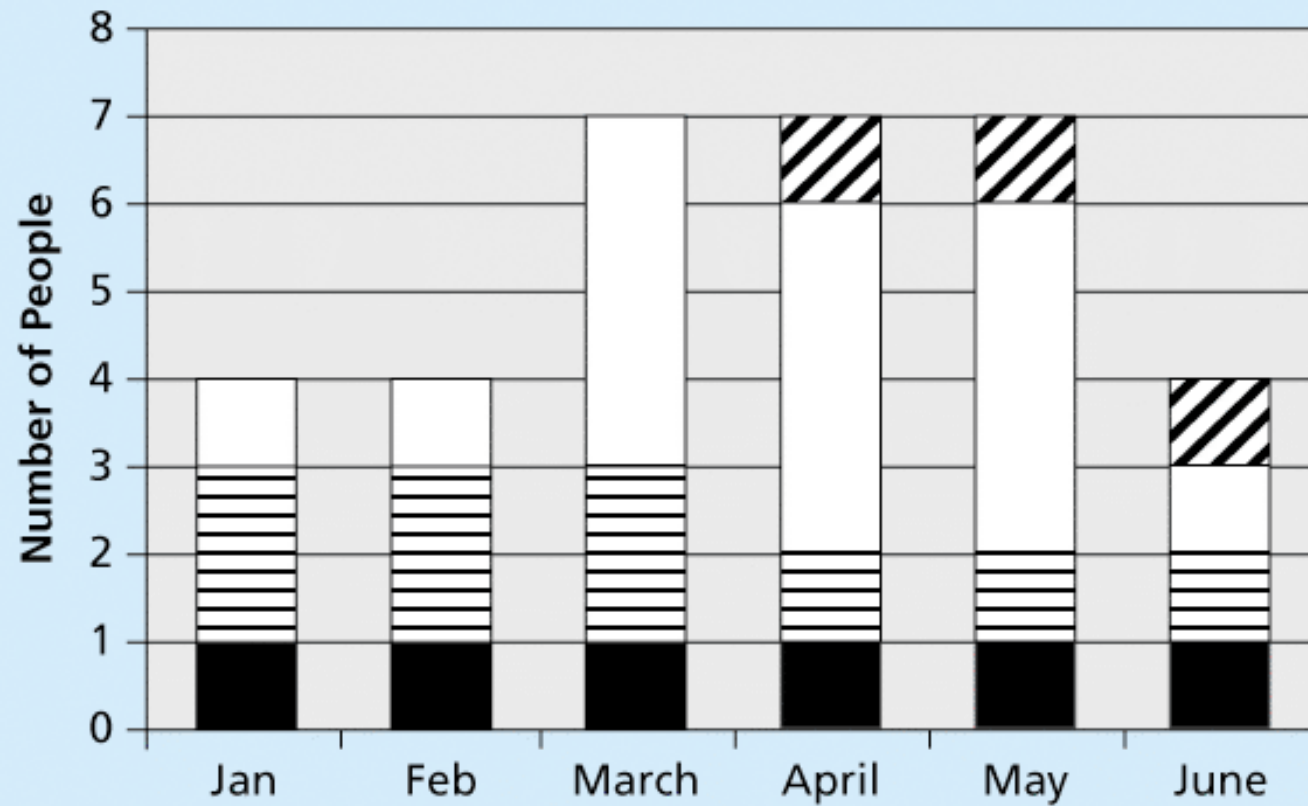
R = Responsible organizational unit  
P = Performing organizational unit

# Staffing Management Plans and Resource Histograms

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- ❑ 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



■ Managers    ▨ Business analysts    □ Programmers    ▩ Technical writers

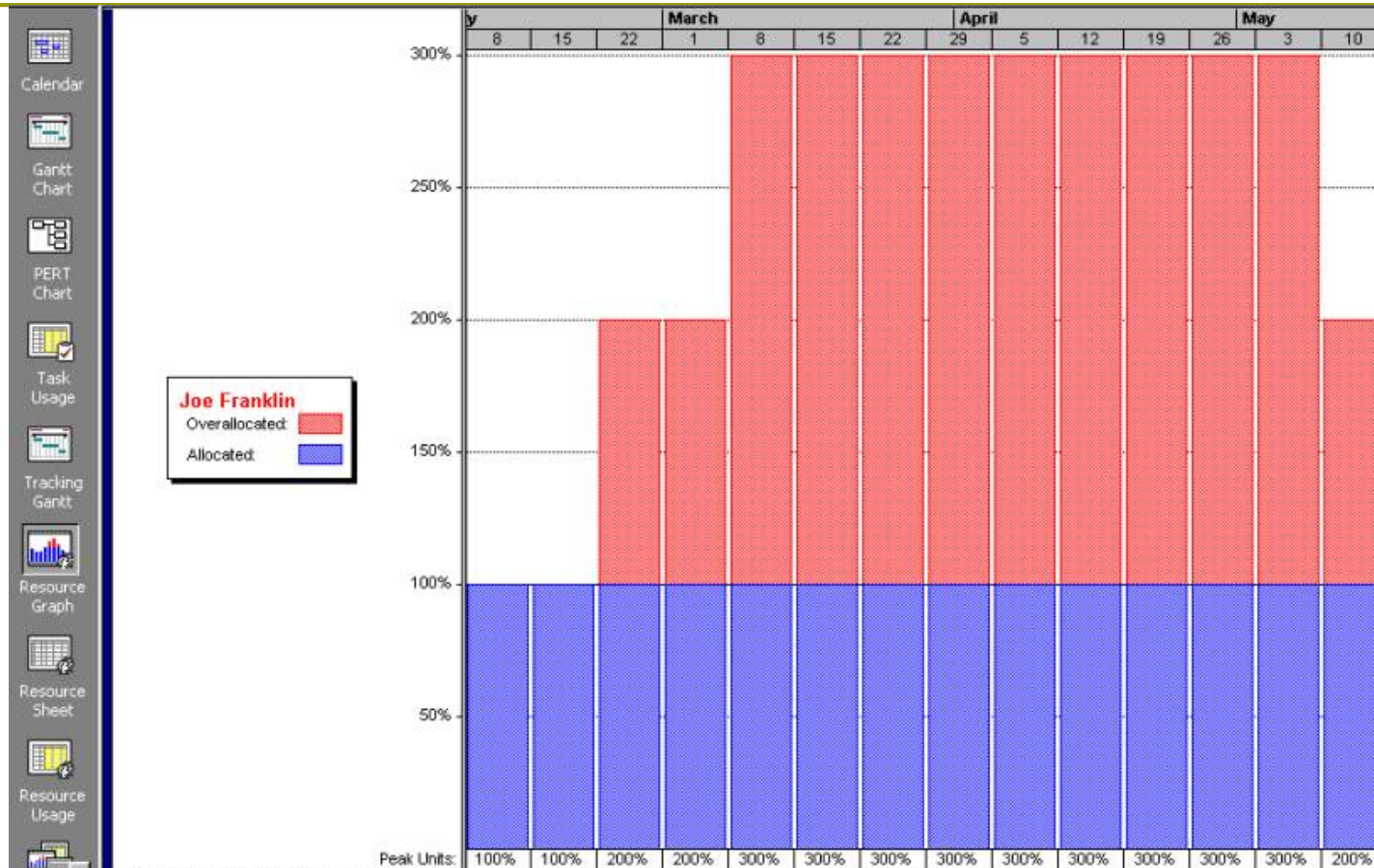
# Resource Loading

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- ❑ **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



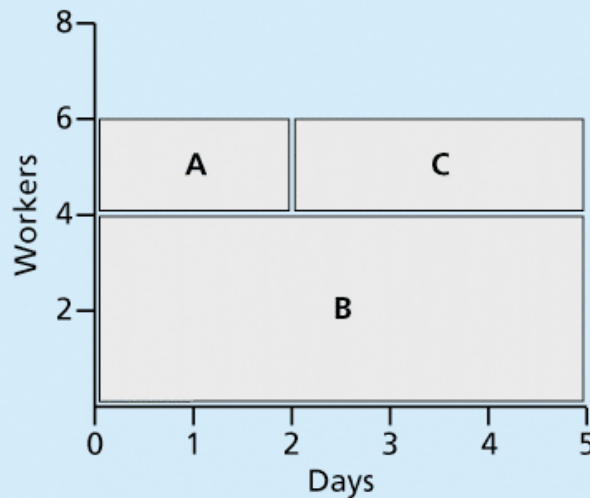
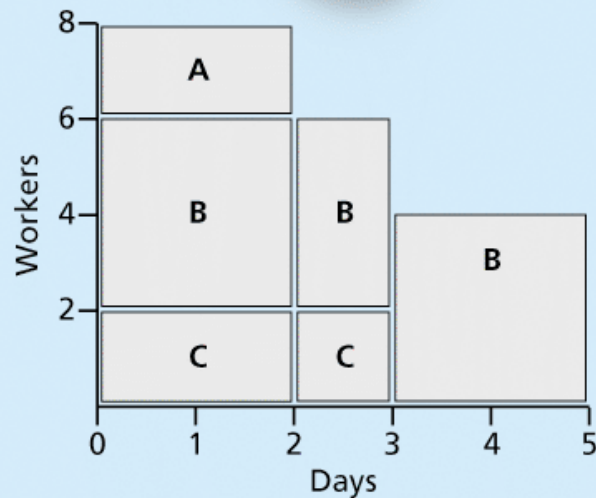
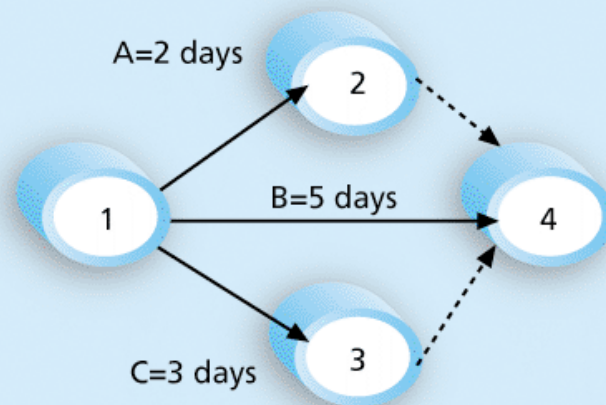


# Resource Leveling

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- 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



# Flashback quiz

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- \_\_\_\_\_ 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

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- ❑ 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

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- ❑ 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?

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- ❑ 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*

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- ❑ 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

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- ❑ 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

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- ❑ 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

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## □ Competencies include

### ■ technical

- knowledge of language, development environment, application, ...

### ■ social

- desire to collaborate
- social skills needed for collaboration

# Commitment to the team

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

# Interdependence

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- 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

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- “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

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- ❑ 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.)

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## □ 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.)

Relationship Importance	High	Smoothing/ Accommodating		Confrontation/ Problem-solving  Collaborating
	Medium		Compromise/ Reconcile	
	Low	Withdrawal/ Avoidance		Forcing/ Directing
		Low	Medium	High
		Task Importance		

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

**FIGURE 9-11** Conflict handling modes



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## ❑ 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

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- 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.<sup>34</sup> 3.

# General Advice on Teams

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- ❑ 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)

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- ❑ 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

# Flashback quiz

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- 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

# Teamwork

## Meetings

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- ❑ 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

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- ❑ 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

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