



MONASH University

Information Technology

FIT2002

IT Project Management

Lecture 10

Project Resource Management

Video 1: *Project Resource Management*

Learning Objectives

- Define project resource management and understand its processes
- Discuss resource management planning, in particular human resource

What is Project Resource Management?

- To identify, acquire and manage the resources needed for the successful completion of the project.
- Processes include
 1. **Planning resource management:** defining how to estimate, acquire, manage and utilize physical and team resources.
 2. **Estimate activity resources:** estimating team resources and the type and quantities of material, equipment and supplies necessary to perform project work
 3. **Acquiring resources:** getting the necessary resources and personnel required for the project

What is Project Resource Management?

- Processes include (cont...)
 3. **Developing the project team:** building individual and group skills to enhance project performance
 4. **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
 5. **Control resources:** ensuring that the physical resources assigned and allocated to the project are available as planned, as well as performing corrective action as necessary

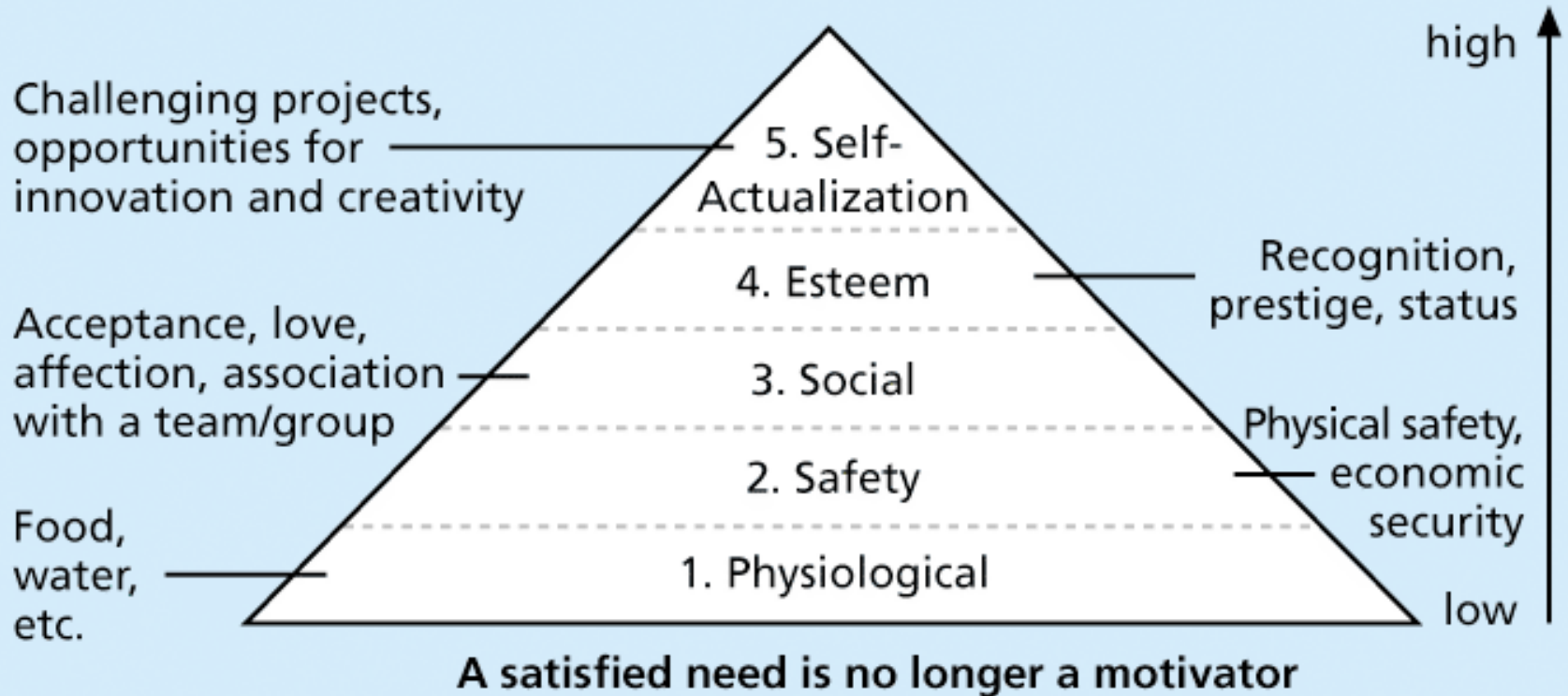
The Importance of Human Resource Management

- Many corporate executives have said, “People are our most important asset”
- People determine the success and failure of organisations and projects
- Proactive organisations are addressing workforce needs by
 - improving benefits
 - redefining work hours and incentives
 - finding future workers

Keys to Managing People

- Psychologists and management theorists have devoted much research and thought to the field of managing people at work
- Some theories related to human resource management:
 - **Motivation** theories – Maslow, Herzberg & McGregor
 - Covey's 7 habits to improve **effectiveness** on projects
 - Daniel Goleman author of Emotional Intelligence and Primal Leadership
 - **Emotional intelligence** – managing one's own emotions and understanding the emotions of others for improved performance
 - Six **leadership** style – visionary, coaching, affiliative, democratic, pacesetting and commanding

Maslow's Hierarchy of Needs



Herzberg's Motivational and Hygiene Factors

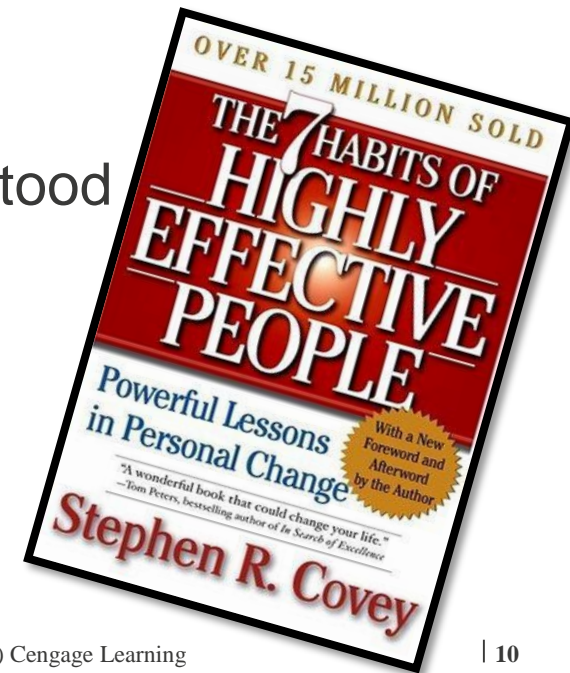
- Frederick Herzberg wrote several famous books and articles about worker motivation. He distinguished between
 - **motivational factors**: achievement, recognition, the work itself, responsibility, advancement, and growth, which produce job satisfaction
 - **hygiene factors**: cause dissatisfaction if not present, but do not motivate workers to do more. Examples include larger salaries, more supervision, and a more attractive work environment

McGregor's Theory X and Y

- Douglas McGregor popularised the human relations approach to management in the 1960s
- **Theory X:** assumes workers dislike and avoid work, so managers must use coercion, threats and various control schemes to get workers to meet objectives
- **Theory Y:** assumes individuals consider work as natural as play or rest and enjoy the satisfaction of esteem and self-actualization needs
- Theory Z: introduced in 1981 by William Ouchi and is based on the Japanese approach to motivating workers, emphasizing trust, quality, collective decision making, and cultural values

Covey and Improving Effectiveness

- Project managers can apply Covey's 7 habits to improve effectiveness on projects
 - Be proactive
 - Begin with the end in mind
 - Put first things first
 - Think win/win
 - Seek first to understand, then to be understood
 - Synergise
 - Sharpen the saw



Video 2: *Project Resource Management*

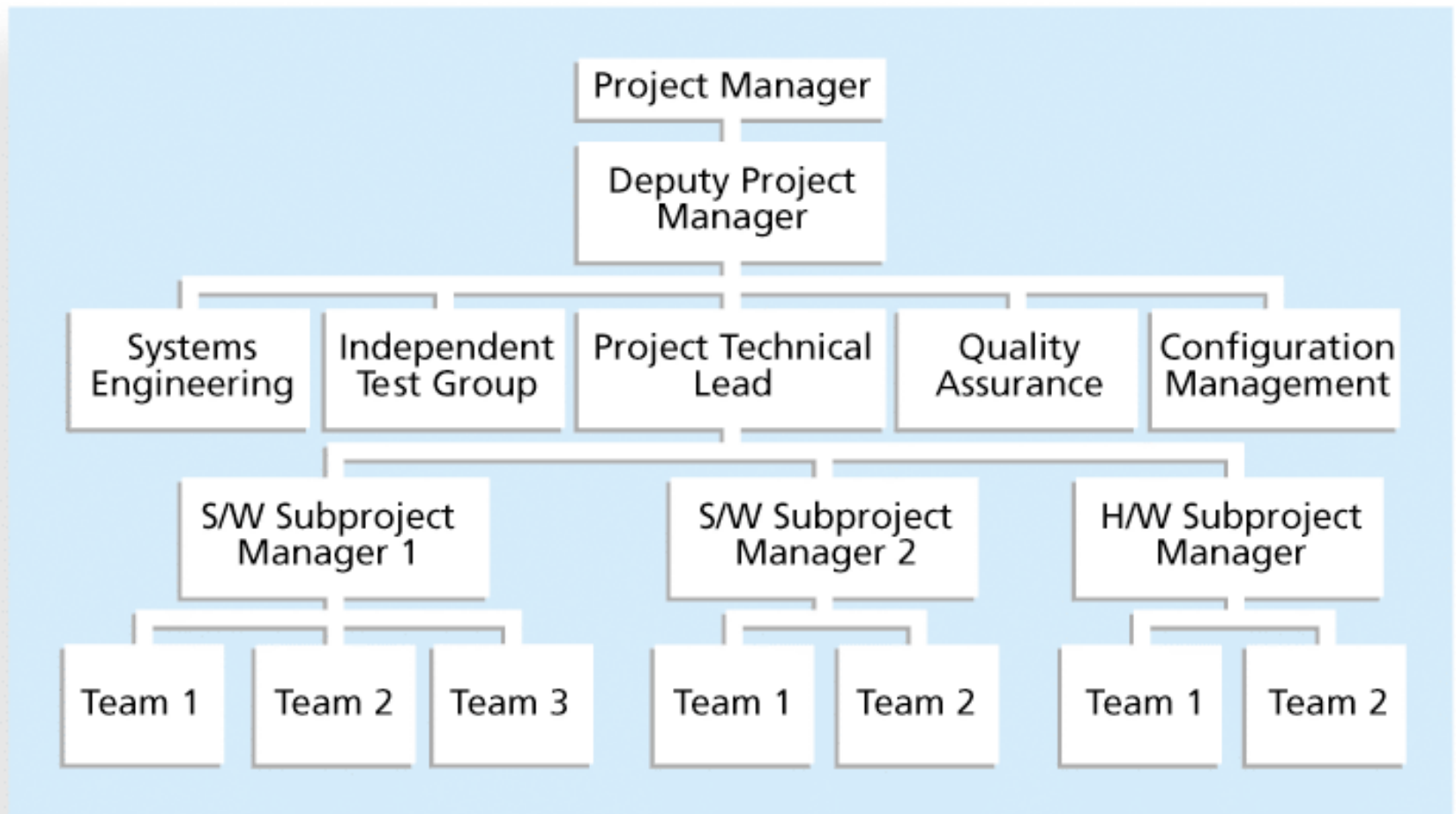
Learning Objectives

- Create a human resource plan, project organisational chart, responsibility assignment matrix, and resource histogram

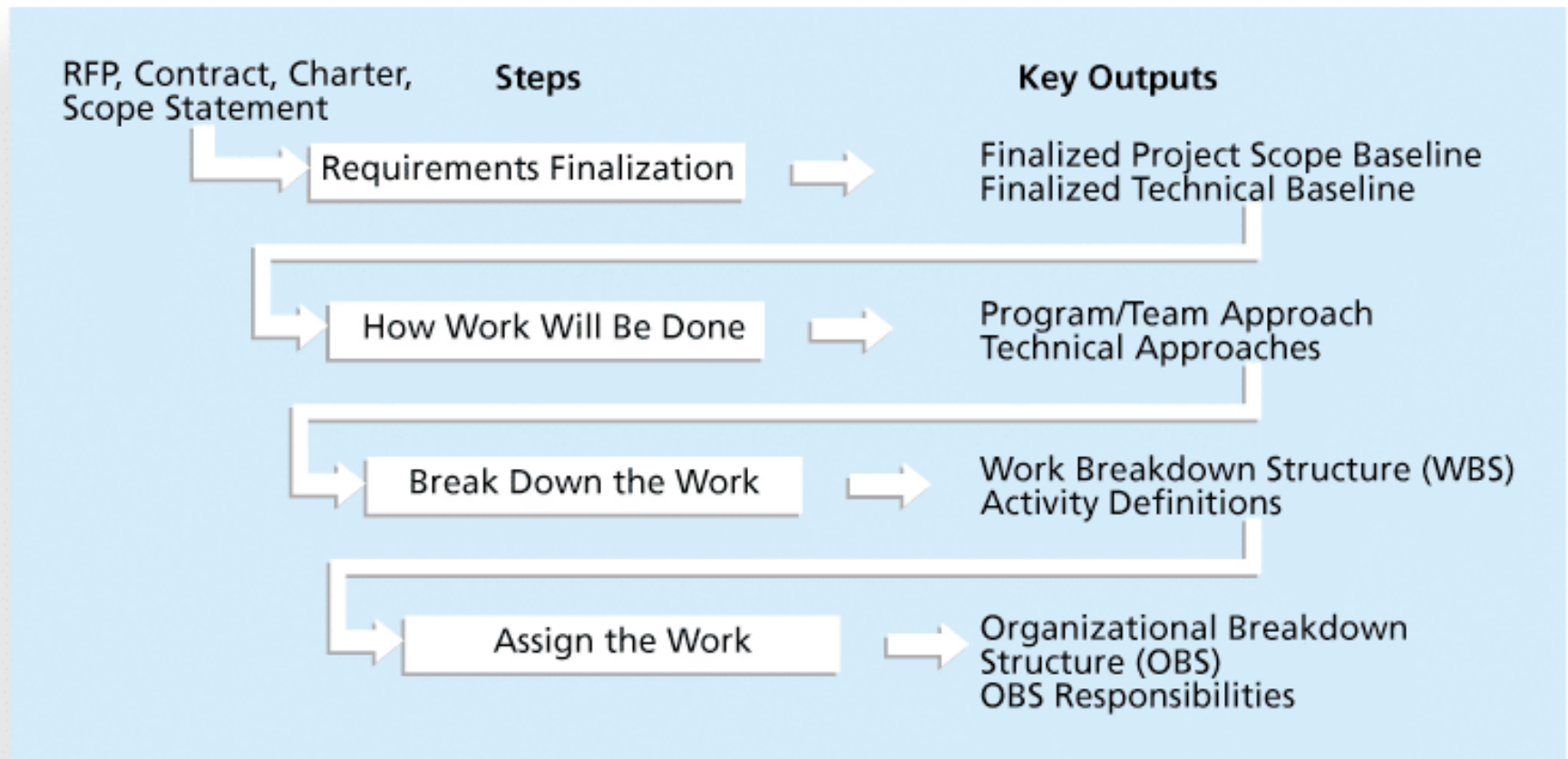
Developing the Human Resource Plan

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

Sample Organisational Chart for a Large IT Project



Work Definition and Assignment Process



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 (Organisational Breakdown Structure)
- Can be created in different ways to meet unique project needs
- Note: Organisational breakdown structure (OBS) is a specific type of organisational chart that shows which organisational units are responsible for which work items

Sample Responsibility Assignment Matrix (RAM)

OBS units	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
<u>Systems Engineering</u>	R	RP					R	
Software Development			RP					
Hardware Development				RP				
<u>Test Engineering</u>	P							
Quality Assurance					RP			
Configuration Management						RP		
Integrated Logistics Support							P	
Training								RP

R = Responsible organizational unit
P = Performing organizational unit

Sample RACI Chart

	Group A	Group B	Group C	Group D	Group E
Test Plans	R	A	C	C	I
Unit Test	C	I	R	A	I
Integration Test	A	R	I	C	C
System Test	I	C	A	I	R
User Acceptance Test	R	I	C	R	A

R = responsibility

A = accountability, only one A per task

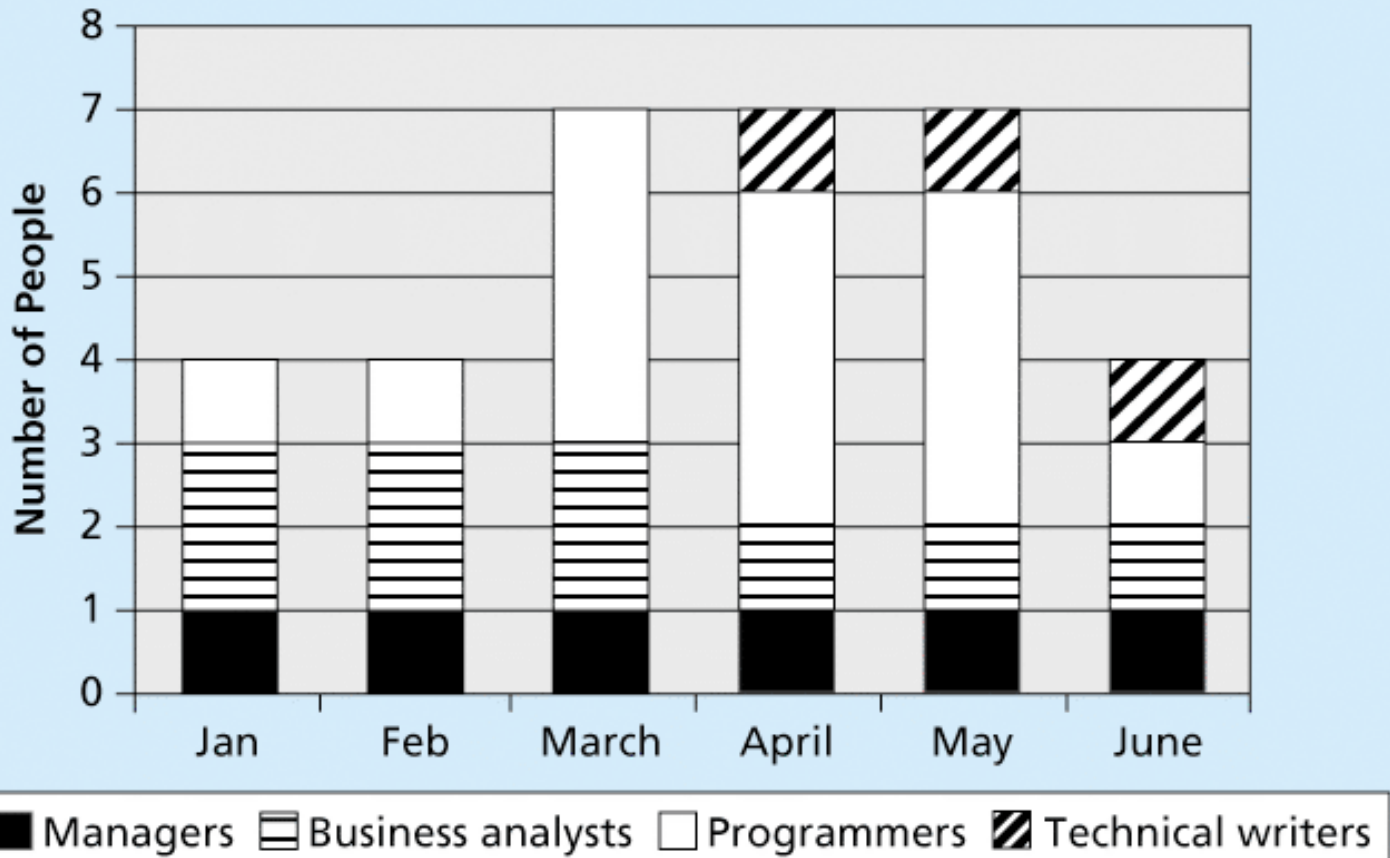
C = consultation

I = informed

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
 - describe how these resources would be acquired, trained, rewarded, and reassigned
- **A resource histogram** is a column chart that shows the number of resources assigned to a project over time

Sample Resource Histogram



Video 3: *Project Resource Management*

Learning Objectives

- Understand important issues involved in project staff acquisition and explain the concepts of resource assignments, resource loading, and resource leveling

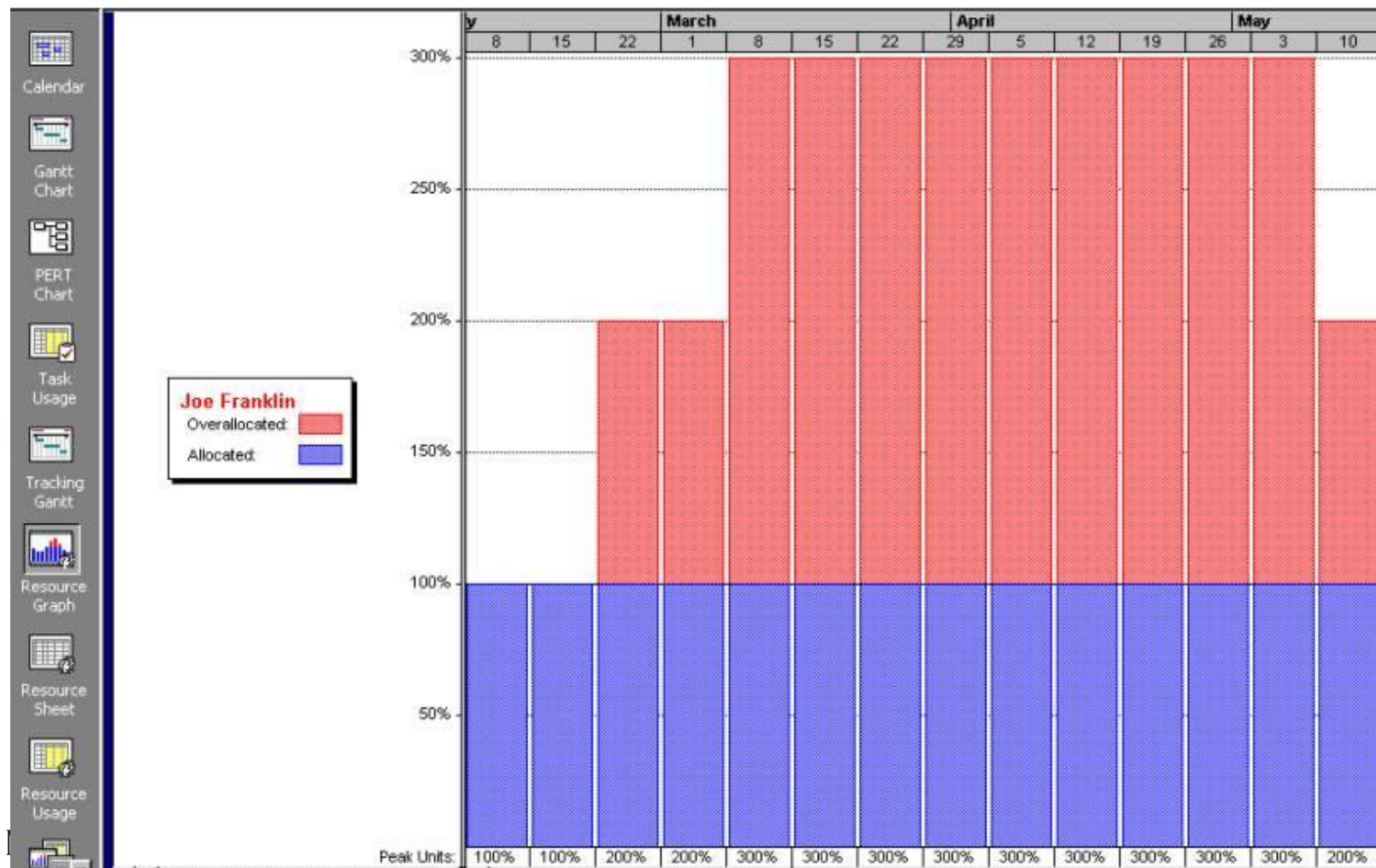
Acquiring the Project Team

- Acquiring qualified people for teams is crucial
- Are project managers doing a good job in recruiting?
- It's important to assign the appropriate type and number of people to work on projects at the appropriate times
- Staffing plans: Maintaining a complete and accurate inventory of employees' skills.

Resource Loading

- Once people are assigned to projects, two techniques are available to project managers that help them use project staff most effectively: **resource loading and resource leveling**.
- **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 organisation's resources and individual people's schedules
- **Over-allocation** means more resources than are available are assigned to perform work at a given time

Sample Histogram Showing an Overallocated Individual



Resource Leveling

- **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

Benefits of Resource Leveling

- When resources are used on a more constant basis, they require less management
- It may enable project managers to use a just-in-time inventory type of policy for using subcontractors or other expensive resources
- It results in fewer problems for project personnel and accounting department
- It often improves morale

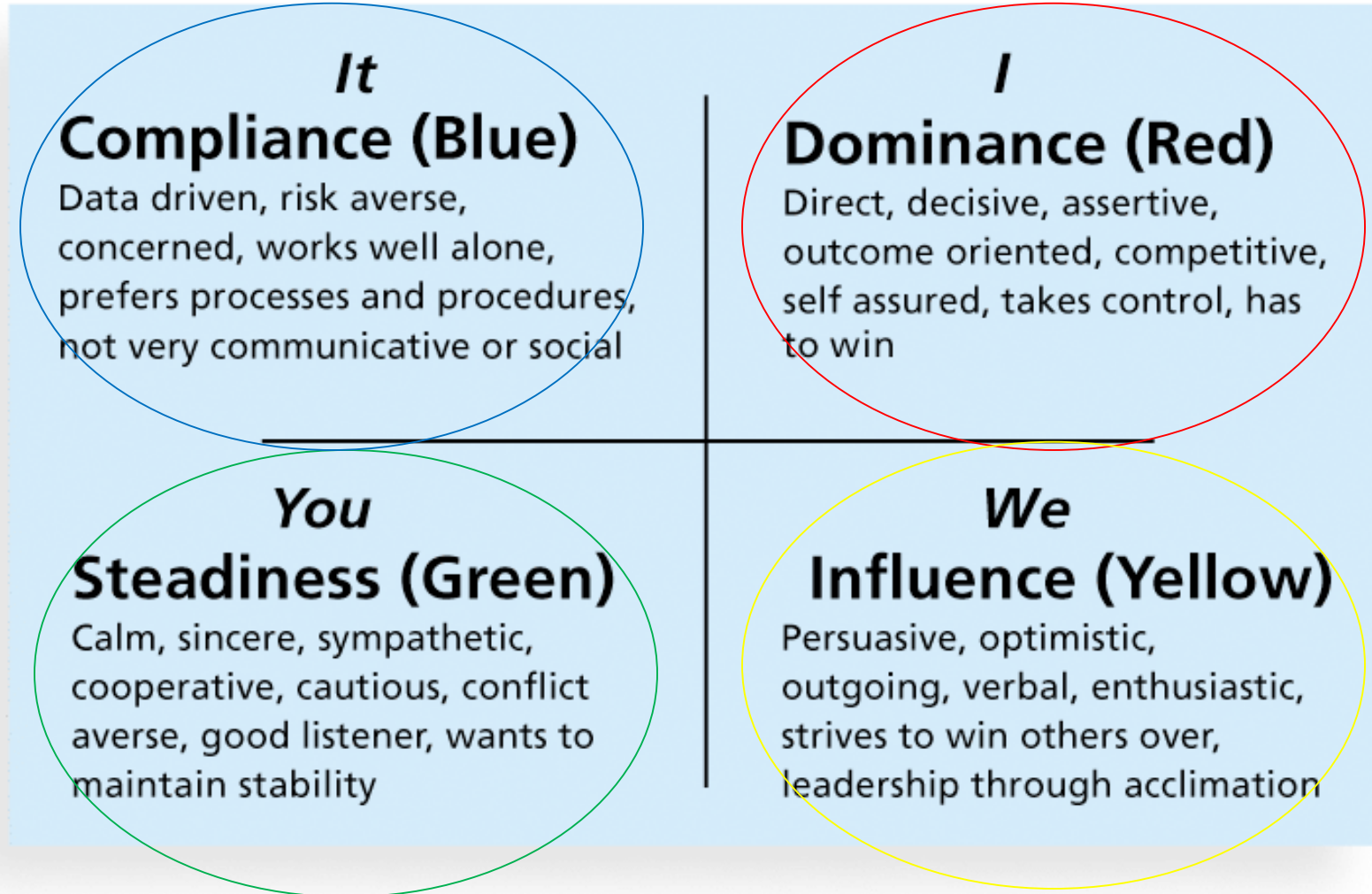
Developing the Project Team

- The main goal of **team development** is to help people work together **more effectively to improve project performance**
- It takes teamwork to successfully complete most projects
- Tuckman Model of Team Development:
 - Forming
 - Storming
 - Norming
 - Performing
 - Adjourning

Training and Team Building Activities

- Training can help people understand themselves, each other, and how to work better in teams
- Important to make sure that the timing and delivery method for the training is appropriate for specific situations and individuals
- Team building activities include
 - physical challenges
 - psychological preference indicator tools
 - Myers-Briggs Type Indicator
 - Social Styles Profile
 - DISC Profile

The DISC Profile



Reward and Recognition Systems

- Team-based reward and recognition systems can promote teamwork
- Focus on rewarding teams for achieving specific goals
- Allow time for team members to mentor and help each other to meet project goals and develop human resources

Video 4: *Project Resource Management*

Learning Objectives

- Explain and apply several tools and techniques to help manage a 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 organisational process assets.

Tools and Techniques for Managing Project Teams

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

Conflict Handling Modes

1. **Confrontation**: Directly face a conflict using a problem-solving approach
2. **Compromise**: Use a give-and-take approach
3. **Smoothing**: De-emphasize areas of difference and emphasize areas of agreement – the accommodating approach
4. **Forcing**: The win-lose approach
5. **Withdrawal**: Retreat or withdraw from an actual or potential disagreement – avoiding approach
6. **Collaborating**: Decision makers incorporate different viewpoints and insights to develop consensus and commitment

Conflict Handling Modes

Relationship Importance	High			
	Medium			
	Low			
		Low	Medium	High
		Task Importance		

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. Groupthink 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

Human Resource Management Involves Much More Than Using Software

- Patrick Lencioni: 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
- Project managers must
 - Treat people with consideration and respect
 - Understand what motivates them
 - Communicate carefully with them
 - Focus on goal of enabling team members to deliver their best