Software Project Human Resource Management

Project Human Resource Management

- Making the most effective use of the people involved with a project
- Processes include
  - Human resource planning: 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

Keys to Managing People

- Psychologists and management theorists have devoted much research and thought to the field of managing people at work

- Important areas related to project management include
  - motivation theories
  - influence and power
  - Effectiveness

- Intrinsic motivation
  - causes people to participate in an activity for their own enjoyment

- Extrinsic motivation
  - causes people to do something for a reward or to avoid a penalty

Herzberg's Motivational and Hygiene Factors

- Frederick Herzberg 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 salaries, more supervision, and work conditions etc.

McClelland's Acquired-Needs Theory

- Specific needs are acquired or learned over time and shaped by life experiences, including:
  - Achievement:
    - Achievers like challenging projects with achievable goals and lots of feedback
  - Affiliation:
    - People with high affiliation desire harmonious relationships and need to feel accepted by others, so managers should try to create a cooperative work environment for them
  - Power:
    - People with a need for power desire either personal power (not good) or institutional power(good for the organization).
    - Provide institutional power seekers with management opportunities

McGregor's Theory X and Y

- Douglas McGregor - 1960s
- Theory X:
  - assumes workers dislike and avoid work, so managers must use pressure, 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, reduce boss culture.

Ways to Influence that Help and Hurt Projects

- Projects are more likely to *succeed* when project managers influence with

  – expertise

- Projects are more likely to *fail* when project managers rely too heavily on

  – authority
  – penalty

Power

- **Power** is the potential ability to influence behavior to get people to do things they would not otherwise do
- Types of power include
    - Coercive
    - Legitimate
    - Expert
    - Reward
    - Referent

- Coercive Power is often the least effective but most employed (and abused) type of power in the corporate world.
  Coercive Power is forcing someone to do something against their will or setting up "consequences" to employee actions.

- Reward Power is another widely used method in business today. The results of Reward power are mixed and it is therefore the second weakest form of power.
  Reward Power is the concept of do this and get that. Or (said another way) if you do this, you will receive something in return.

- **Legitimate Power** is in all organizations.
  Legitimate Power is the power of position or role. This is the typical "command and control" structure that is employed by the Military world.

- **Referent Power** is the "cult of personality".This is the power and ability for an individual to attract others and to build loyalty within them.
  Referent Power is also the power of respect. This can occur through time if a leader is successful and has a well known track-record of success.

- Informational Power is the newest addition to the types of power by French and Raven. Nonetheless, it is in the top 3 most effective types of power. Informational Power is the power of having information that another does not have.

- Closely related to Informational Power,

Expert Power is when an individual possesses in-depth information, knowledge, or expertise in the area that they are responsible for. This type of power is often the most effective type of power.

Improving Effectiveness - Covey's 7 Habits

- 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
  - Synergize (team work)
  - Sharpen the saw

Empathic Listening and Rapport

- Good project managers are **empathic listeners** - they listen with the intent to understand
- Before you can communicate with others, you have to have **rapport** – a relation of harmony

Resource Management

- Matching the activity plan to available resources and if necessary change the plan to fit the resources

- The result of resource allocation will normally be a number of schedules including:

  – Activity Schedule: indicating the plan start and completion dates for each activity

  – Resource schedule: showing the dates on which each resource will be required and the level of its requirement

  – Cost schedule: showing the cumulative expenditure incurred by the resource

What is Resource Allocation

- The process of resource allocation
  - After the activities have been identified using various techniques and tabulated into a Work-Break-Down, the resources need to be allocated to complete the identified tasks.

- The resource is any item or person required for the execution of the project, that include:
  - Ranging from Paper clip to key personnel
    - Project manager must not engage to plan normal stationary items – the job of office manager

Who allocates resources?

- Project Manager.
  - Concentrate on resources where there is a possibility that they might not be sufficiently available when required.
    - Senior Software Developers are the hardest to find – these need to be very carefully planned for in advance.
    - Developers do not like to wait for work, they prefer to be busy with activities and tasks that show clear progress.
   - Book their time in advance

Resource Categories

- Resource will fall into following categories
  - Labour: Even the project manager, system analysts and software developers
  - Equipment: Obvious items including workstations and office equipment
  - Materials (Consumed items – floppy disks, CDs).
  - Space (Rooms, Cubicles).
  - Services (Telecomm, Cleaning services).
  - Time (The most rigid item of all).
  - Money
  - Note: These are broad categories only.

Organizational Planning

- Organizational planning for the project involve:
  - Identifying, documenting, and assigning project role, responsibilities and reporting relation
  - Shown in a matrix form called a "Responsibility Assignment Matrix- RAM and Staffing management plan "
- Organizational Breakdown Structure –OBS
  - A specific type of organizational chart that shows which organizational unit is responsible for which work item

Sample Organizational Chart for an IT Project
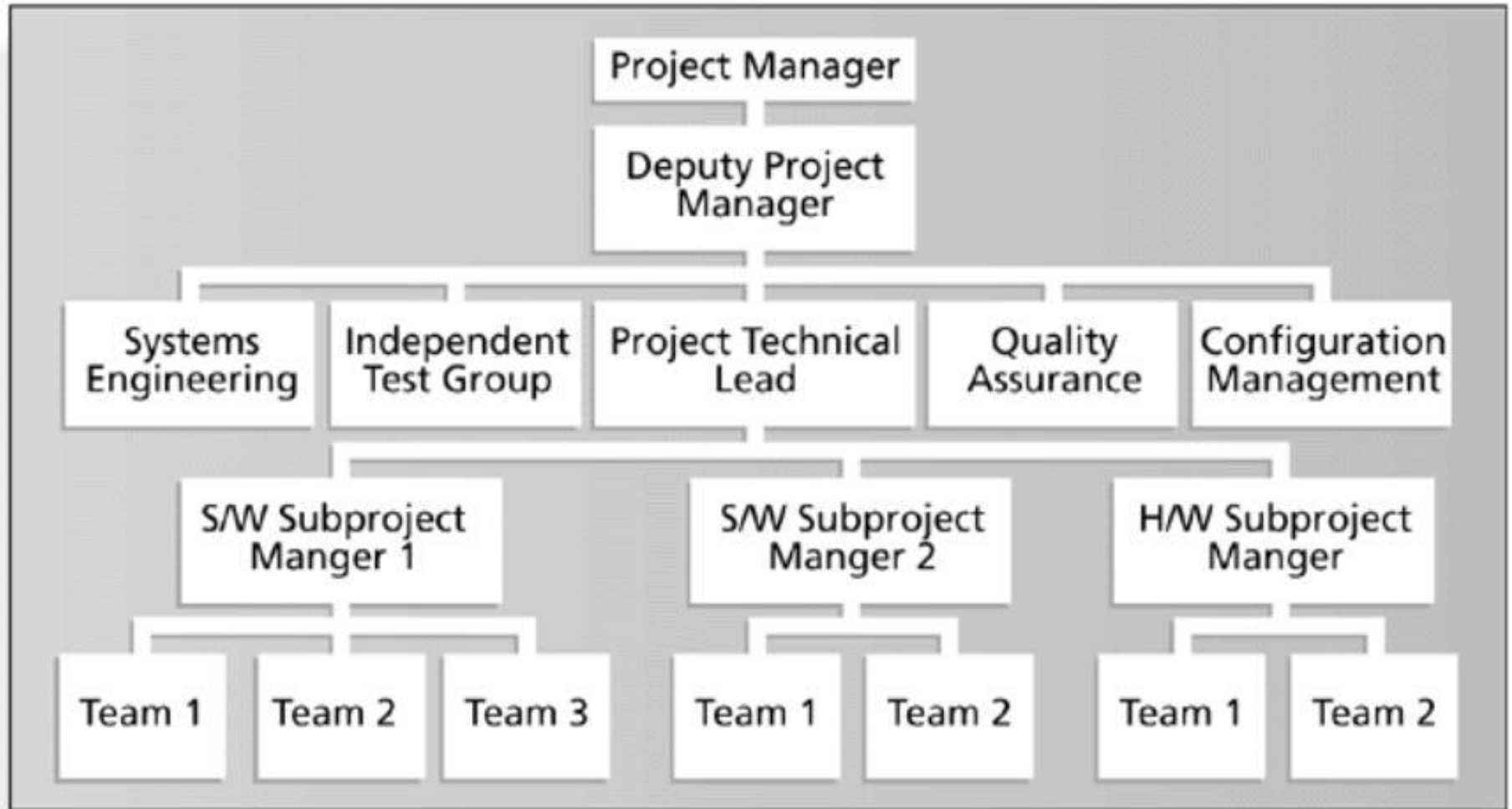
Resource Organisation

- A program organization chart is essential to allocate staff effectively,
  - Develop the hierarchical program organization.
  - Identify Roles and Responsibilities.
  - Plan for number of staff in each role (at a high level).
  - Establish Teams.
- For each activity identify,
  - Work amount required (in work units)
  - Basic skill or experience level required (to even undertake the task)
  - Complexity of the task (this will help to determine the experience required)
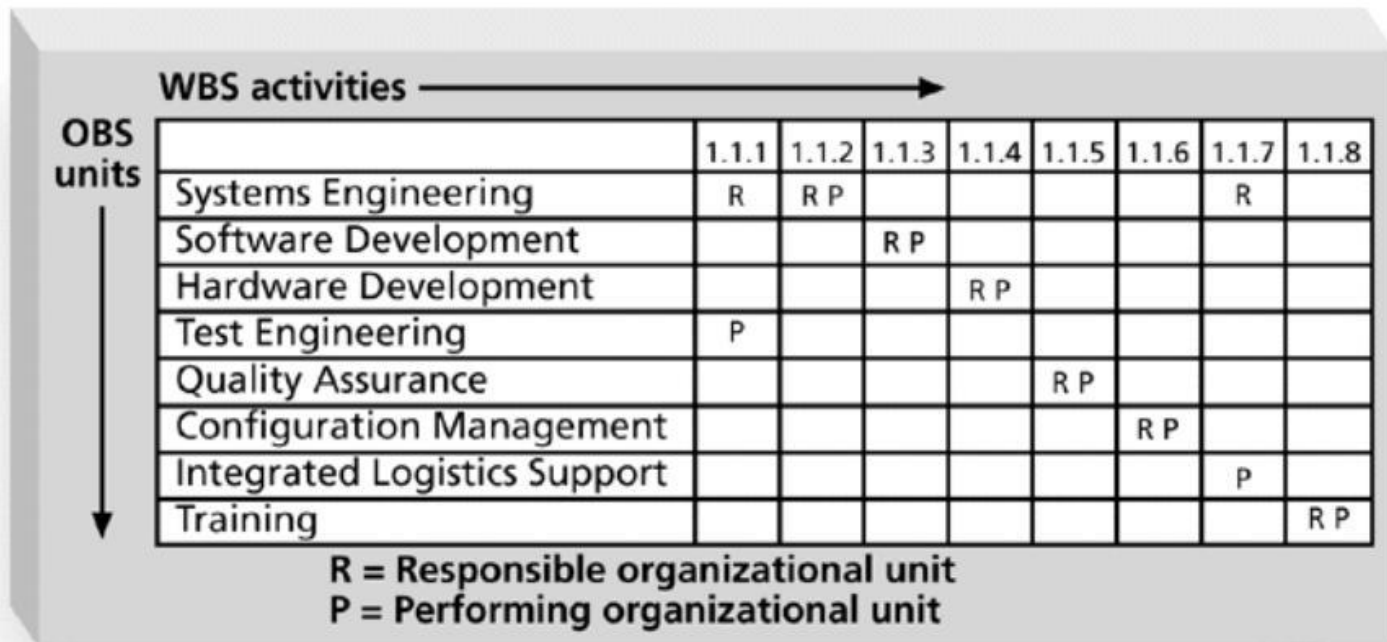 - Task Category (Unskilled, skilled, leadership, expert, management)

Role and Responsibility Assignments

- Include following:
  - Role:
    - Define the accountable person by title
  - Authority:
    - Has the authority to assign project resources, make decisions and sign-off
  - Responsibility:
    - The work assigned to team member
  - Competency:
    - Determines what skill is needed to complete activity

- Examining the Staffing Pool
  - Availability
  - Ability
  - Experience
  - Interest level
  - Cost

- Acquiring the resource

- Assembling the team

- Developing the team

Responsibility Assignment Matrices RAM or RACI Chart

- A **responsibility assignment matrix (RAM)**
  - 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

- RAM allocate work to responsible and performing organizations, team or individuals depending on the desired level of details

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
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

RAM Showing Stakeholder Roles

- RAM is also helpful to define the role and responsibilities on project including
  - the role of the stakeholder in the project i.e accountable or just participant in part of the project
  - Providing some input, review or sign-off
- An effective tool for project manager to communicate roles and responsibilities of important stakeholders

Items	Stakeholders				
	A	B	C	D	E
Unit Test	S	A	I	I	R
Integration Test	S	P	A	I	R
System Test	S	P	A	I	R
User Acceptance Test	S	P	I	A	R

A = Accountable
P = Participant
R = Review Required
I = Input Required
S = Sign-off Required

RACI stands for

- Responsible- the person who does the work
- Accountable- the approver who is accountable for the complete and thorough completion of the task or project
- Consulted- the person whose opinion is sought
- Informed- The person who is kept up to date

RACI Chart

Activity	Resource				
	Ravi	George	Tuvin	Carlos	Missy
Define test criteria	A	R	I	I	R
Schedule regression test	I	A	C	I	I
Perform test	C	R	R	A	C
Publish test results	I	I	A	I	C