

# **PROJECT RESOURCE MANAGEMENT**

## **Based on PMBOK 6<sup>th</sup> Edition**

# Professional Background



Crysanthus  
Raharjo, PMP

## Summary of Qualifications

- ▶ Program Manager – PT. Astra Graphia Information Technology (AGIT)
- ▶ VP Communication of PMI Indonesia Chapter (2017-2020)
- ▶ More than 8 years in IT Program & Project Management especially in Software Development and Implementation in Express, Finance (Banking & Insurance), and Supply Chain industries.
- ▶ 5 years as Mentor for PMP Study Group by PMI Indonesia Chapter
- ▶ PMP Certified since 2013

## Education Background

- ▶ BSc. (Hons) in Computing and Software Engineering, Oxford Brookes University, United Kingdom

# Course Agenda

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Introduction to Resource Management

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Process - Plan Resource Manacement

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Process – Estimate Activity Resources

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Process – Acquire Resources

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Process – Develop Team

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Process – Manage Team

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Process – Control Resources

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Q & A



## Introduction to Project Resource Management

# What is Resource in Project Management?



# Project Resource Management

- ▶ Project Resource Management includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project.



# Trends and Emerging Practices in Project Resource Management

## ► Resource Management Methods.

Due to the scarce nature of critical resources, in some industries, several trends have become popular in the past several years. There is extensive literature about lean management, just in-time (JIT) manufacturing, Kaizen, total productive maintenance (TPM), theory of constraints (TOC), and other methods.

## ► Emotional Intelligence (EI)

The project manager should invest in personal EI by improving inbound (e.g., self-management and self-awareness) and outbound (e.g., relationship management) competencies.

## ► Self-organizing Teams

The increase in using agile approaches mainly for the execution of IT projects has given rise to the self-organizing team, where the team functions with an absence of centralized control.

## ► Virtual teams/distributed teams.

The globalization of projects has promoted the need for virtual teams that work on the same project, but are not co-located at the same site.



# Tailoring Considerations in Project Resource Management

**Diversity**  
What is the diversity background of the team?



**Physical location**  
What is the physical location of team members and physical resources?



**Industry-specific resources**  
What special resources are needed in the industry?



**Acquisition of team members**  
How will team members be acquired for the project? Are team resources full-time or part-time on the project?



**Management of team**  
How is team development managed for the project? Are there organizational tools to manage team development or will new ones need to be established?



**Life cycle approaches**  
What life cycle approach will be used on the project? Resource Management Methods.



# Considerations for Agile/Adaptive Environments

## ► Self-organizing Teams

Self-organizing teams with generalizing specialists will give much benefit for project with high variability where **this type of team will maximize the team's focus and collaboration.**

## ► Collaboration

Collaboration is intended to boost productivity and facilitate innovative problem solving. Collaborative teams may facilitate accelerated integration of distinct work activities, improve communication, increase knowledge sharing, and provide flexibility of work assignments in addition to other advantages.

Also, **collaborative teams are often critical to the success of projects with a high degree of variability and rapid changes, because there is less time for centralized tasking and decision making.**

## ► Planning

Planning for physical and human resources is much less predictable in projects with high variability. In these environments, **agreements for fast supply and lean methods are critical to controlling costs and achieving the schedule.**



## 9.1 Plan Resource Management

## Plan Resource Management

- ▶ Plan Resource Management is the process of defining how to estimate, acquire, manage, and use team and physical resources.
- ▶ The key benefit of this process is that it establishes the approach and level of management effort needed for managing project resources based on the type and complexity of the project.
- ▶ This process is performed once or at predefined points in the project.
- ▶ Resource planning is used to determine and identify an approach to ensure that sufficient resources are available for the successful completion of the project

# Plan Resource Management: Inputs, Tools & Techniques, and Outputs



## Inputs

- 1 Project charter
- 2 Project management plan
- Quality management plan
- Scope baseline
- 3 Project documents
  - Project schedule
  - Requirements documentation
  - Risk register
  - Stakeholder register
- 4 Enterprise environmental factors
- 5 Organizational process assets



## Tools & Techniques

- 1 Expert judgment
- 2 Data representation
  - Hierarchical charts
  - Responsibility assignment matrix
  - Text-oriented formats
- 3 Organizational theory
- 4 Meetings



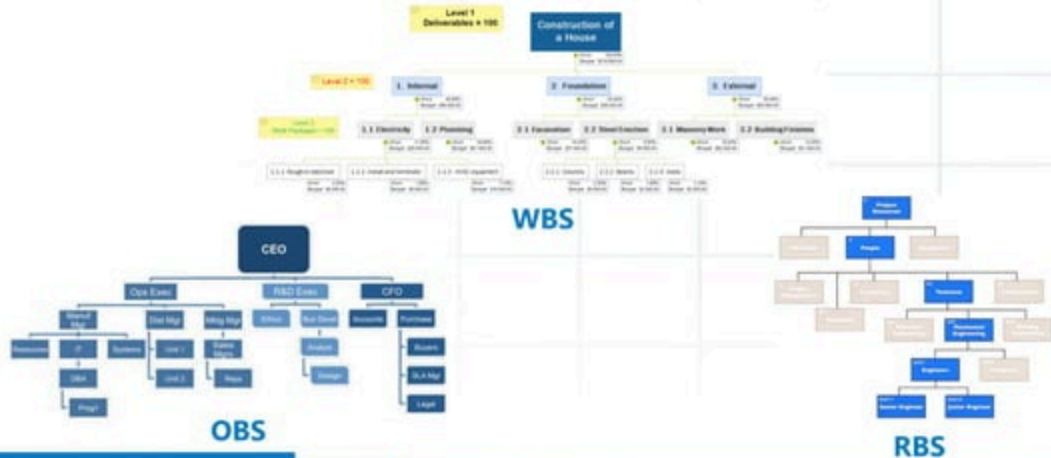
## Outputs

- 1 Resource management plan
- 2 Team charter
- 3 Project documents updates
  - Assumption log
  - Risk register



## Tools & Techniques – Data Representation (Hierarchical Charts)

- The objective is to ensure that each work package has an unambiguous owner and that all team members have a clear understanding of their roles and responsibilities.



## Tools & Techniques – Data Representation (RAM & Text-oriented formats)

Team Member	PM - Crysanthus	PMO - Albert	SAP QM/QM - Arum	SAP PP - Samsuddin	SAP MM & WM - Fauziah	SAP CO - Orian	SAP CO - Risa	SAP FI - Pusi
<b>Activities</b>								
<b>Initiating</b>								
Create Project Charter	A	R						
Create Kick off Meeting Slide	A	R						
Kick off Meeting	A	R						
<b>Requirement Gathering</b>								
SAP Workshop								
FI	I	I						A
CO	I	I				R	A	
MM	I	I			A			
WM	I	I			A			
PP	I	I		A				
QM	I	I	A					
PM	I	I	A					

### RACI

Legend:

R = Responsible; A = Accountable; C = Consult; I = Inform

Role \_\_\_\_\_

Responsibilities \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Authority \_\_\_\_\_  
 \_\_\_\_\_

### Text-oriented formats



## Tools & Techniques – Organizational Theory (Maslow's Hierarchy of Needs)

### **Self-Actualization Needs**

Desire to become the most that one can be

### **Esteem Needs**

Respect, self-esteem, status, recognition, strength, freedom

### **Love & Belonging Needs**

Friendship, intimacy, family, series of connection

### **Safety Needs**

Personal Security, employment, resources, health, property

### **Physiological Needs**

Air, water, food, shelter, sleep, clothing, reproduction

## Tools & Techniques – Organizational Theory (Theory X,Y and Z)

X Theory



Y Theory



Z Theory



## Tools & Techniques – Organizational Theory (Herzberg's Two Factors Theory)





## 9.2 Estimate Activity Resources

## Estimate Activity Resources

- ▶ Estimate Activity Resources is the process of estimating team resources and the type and quantities of materials, equipment, and supplies necessary to perform project work.
- ▶ The key benefit of this process is that it identifies the type, quantity, and characteristics of resources required to complete the project.
- ▶ This process is performed periodically throughout the project as needed.

## Estimate Activity Resources: Inputs, Tools & Techniques, and Outputs



### Inputs

- 1 Project management plan
  - Resource management plan
  - Scope baseline
- 2 Project documents
  - Activity attributes
  - Activity list
  - Assumption log
  - Cost estimates
  - Resource calendars
  - Risk register
- 3 Enterprise environmental factors
- 4 Organizational process assets



### Tools & Techniques

- 1 Expert judgment
- 2 Bottom-up estimating
- 3 Analogous estimating
- 4 Parametric estimating
- 5 Data analysis
  - Alternatives analysis
- 6 Project management information system
- 7 Meetings



### Outputs

- 1 Resource requirements
- 2 Basis of estimates
- 3 Resource breakdown structure
- 4 Project documents updates
  - Activity attributes
  - Assumption log
  - Lessons learned register





## 9.3 Acquire Resources



## Acquire Resources

- ▶ Acquire Resources is the process of obtaining team members, facilities, equipment, materials, supplies, and other resources necessary to complete project work.
- ▶ The key benefit of this process is that it outlines and guides the selection of resources and assigns them to their respective activities.
- ▶ This process is performed periodically throughout the project as needed.

# Acquire Resources: Inputs, Tools & Techniques, and Outputs



## Inputs

- 1 Project management plan
  - Resource management plan
  - Procurement management plan
  - Cost baseline
- 2 Project documents
  - Project schedule
  - Resource calendars
  - Resource requirements
  - Stakeholder register
- 3 Enterprise environmental factors
- 4 Organizational process assets



## Tools & Techniques

- 1 Decision making
  - Multicriteria decision analysis
- 2 Interpersonal and team skills
  - Negotiation
- 3 Pre-assignment
- 4 Virtual teams



## Outputs

- 1 Physical resource assignments
- 2 Project team assignments
- 3 Resource calendars
- 4 Change requests
- 5 Project Mgmt. Plan updates
  - Resource management plan
  - Cost baseline
- 6 Project documents updates
  - Lessons learned register
  - Project schedule
  - Resource breakdown structure
  - Resource requirements
  - Risk register
  - Stakeholder register
- 7 EEF updates
- 8 OPA updates

## Tools & Techniques – Team Resources Selection Criteria

### Knowledge

Consider if the team member has relevant knowledge of the customer, similar implemented projects, and nuances of the project environment

### Attitude

Determine if the team member has the ability to work with others as a cohesive team



### Experience

Verify that the team member has the relevant experience that will contribute to the project success

### Skills

Determine if the team member has the relevant skills to use a project tool

### International Factors

Consider team member location, time zone, and communication capabilities



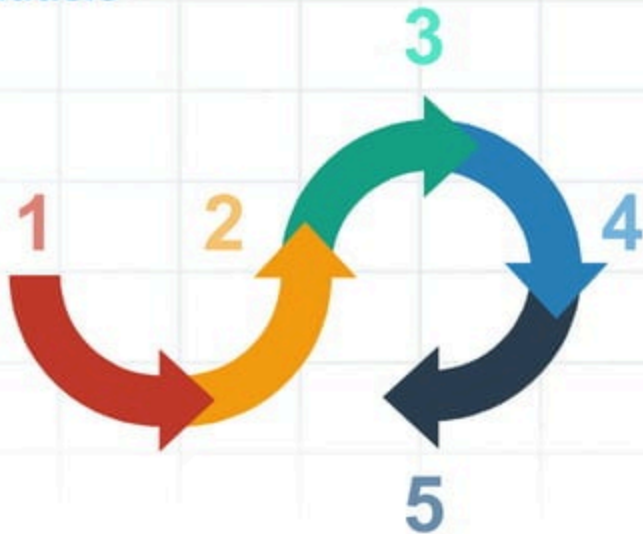
## 9.4 Develop Team

## Develop Team

- ▶ Develop Team is the process of improving competencies, team member interaction, and the overall team environment to enhance project performance.
- ▶ The key benefit of this process is that it results in improved teamwork, enhanced interpersonal skills and competencies, motivated employees, reduced attrition, and improved overall project performance.
- ▶ This process is performed throughout the project.

## Develop Team – Tuckman Ladders

1. **Forming.** This phase is where the team members meet and learn about the project and their formal roles and responsibilities.
2. **Storming.** During this phase, the team begins to address the project work, technical decisions, and the project management approach.
3. **Norming.** In this phase, team members begin to work together and adjust their work habits and behaviors to support the team.
4. **Performing.** Teams that reach the performing stage function as a well-organized unit. They are interdependent and work through issues smoothly and effectively.
5. **Adjourning.** The team completes the work and moves on from the project.



# Develop Team: Inputs, Tools & Techniques, and Outputs



## Inputs

- 1 Project management plan
  - Resource management plan
- 2 Project documents
  - Lessons learned register
  - Project schedule
  - Project team assignments
  - Resource calendars
  - Team charter
- 3 Enterprise environmental factors
- 4 Organizational process assets



## Tools & Techniques

- 1 Colocation
- 2 Virtual teams
- 3 Communication technology
- 4 Interpersonal and team skills
  - Conflict management
  - Influencing
  - Motivation
  - Negotiation
  - Team building
- 5 Recognition and rewards
- 6 Training
- 7 Individual and team assessments
- 8 Meetings



## Outputs

- 1 Team performance assessments
- 2 Change requests
- 3 Project management plan updates
  - Resource management plan
- 4 Project documents updates
  - Lessons learned register
  - Project schedule
  - Project team assignments
  - Resource calendars
  - Team charter
- 5 Enterprise environmental factors updates
- 6 Organizational process assets updates





9.5 Manage Team

## Manage Team

- ▶ Manage Team is the process of tracking team member performance, providing feedback, resolving issues, and managing team changes to optimize project performance.
- ▶ The key benefit of this process is that it influences team behavior, manages conflict, and resolves issues.
- ▶ This process is performed throughout the project.

# Conflict Management – 5 Ways to Resolve Conflicts

- ▶ **Withdraw/avoid.** Retreating from an actual or potential conflict situation; postponing the issue to be better prepared or to be resolved by others.
- ▶ **Smooth/accommodate.** Emphasizing areas of agreement rather than areas of difference; conceding one's position to the needs of others to maintain harmony and relationships.
- ▶ **Compromise/reconcile.** Searching for solutions that bring some degree of satisfaction to all parties in order to temporarily or partially resolve the conflict. This approach occasionally results in a lose-lose situation.
- ▶ **Force/direct.** Pushing one's viewpoint at the expense of others; offering only win-lose solutions, usually enforced through a power position to resolve an emergency. This approach often results to a win-lose situation.
- ▶ **Collaborate/problem solve.** Incorporating multiple viewpoints and insights from differing perspectives; requires a cooperative attitude and open dialogue that typically leads to consensus and commitment. This approach can result in a win-win situation.

# Manage Team: Inputs, Tools & Techniques, and Outputs



## Inputs

- 1 Project management plan
  - Resource management plan
- 2 Project documents
  - Issue log
  - Lessons learned register
  - Project team assignments
  - Team charter
- 3 Work performance reports
- 4 Team performance assessments
- 5 Enterprise environmental factors
- 6 Organizational process assets



## Tools & Techniques

- 1 Interpersonal and team skills
  - Conflict management
  - Decision making
  - Emotional intelligence
  - Influencing
  - Leadership
- 2 Project management information system



## Outputs

- 1 Change requests
- 2 Project management plan updates
  - Resource management plan
  - Schedule baseline
  - Cost baseline
- 3 Project documents updates
  - Issue log
  - Lessons learned register
  - Project team assignments
- 4 Enterprise environmental factors updates



## 9.6 Control Resources

## Control Resources

- ▶ Control Resources is the process of ensuring that the physical resources assigned and allocated to the project are available as planned, as well as monitoring the planned versus actual utilization of resources and taking corrective action as necessary.
- ▶ The key benefit of this process is ensuring that the assigned resources are available to the project at the right time and in the right place and are released when no longer needed.
- ▶ This process is performed throughout the project.



# Control Resources: Inputs, Tools & Techniques, and Outputs



## Inputs

- 1 Project management plan
  - Resource management plan
- 2 Project documents
  - Issue log
  - Lessons learned register
  - Physical resource assignments
  - Project schedule
  - Resource breakdown structure
  - Resource requirements
  - Risk register
- 3 Work performance data
- 4 Agreements
- 5 Organizational process assets



## Tools & Techniques

- 1 Data analysis
  - Alternatives analysis
  - Cost-benefit analysis
  - Performance reviews
  - Trend analysis
- 2 Problem solving
- 3 Interpersonal and team skills
  - Negotiation
  - Influencing
- 4 Project management information system



## Outputs

- 1 Work performance information
- 2 Change requests
- 3 Project Mgmt. Plan updates
  - Resource management plan
  - Schedule baseline
  - Cost baseline
- 4 Project documents updates
  - Assumption log
  - Issue log
  - Lessons learned register
  - Physical resource assignments
  - Resource breakdown structure
  - Risk register





**Thank you for listening  
and being active!**



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