Project Management Workshop For Global Procurement

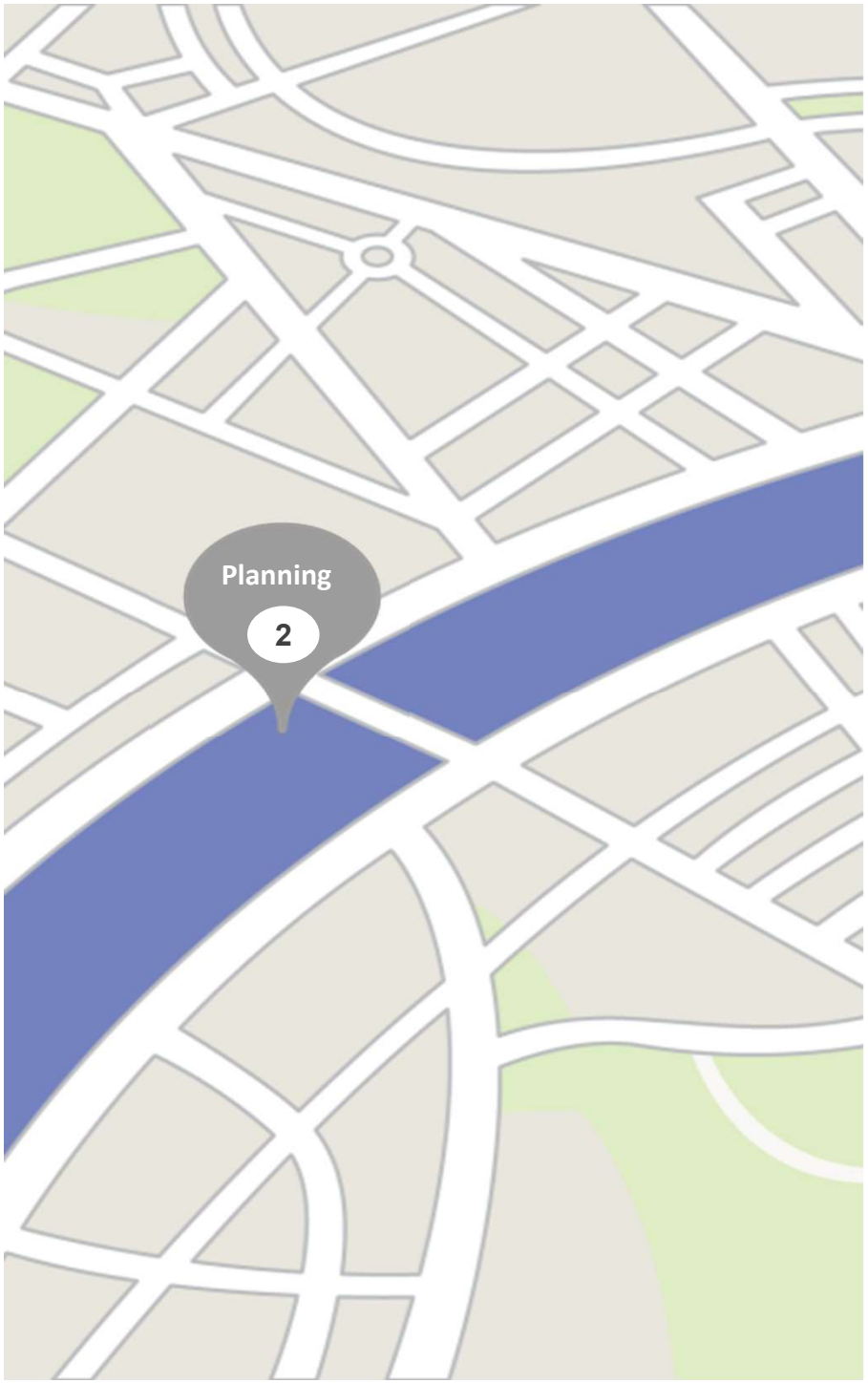
Erez Klaus, PMP®

Day # 2

RBS PROJECTS LTD.

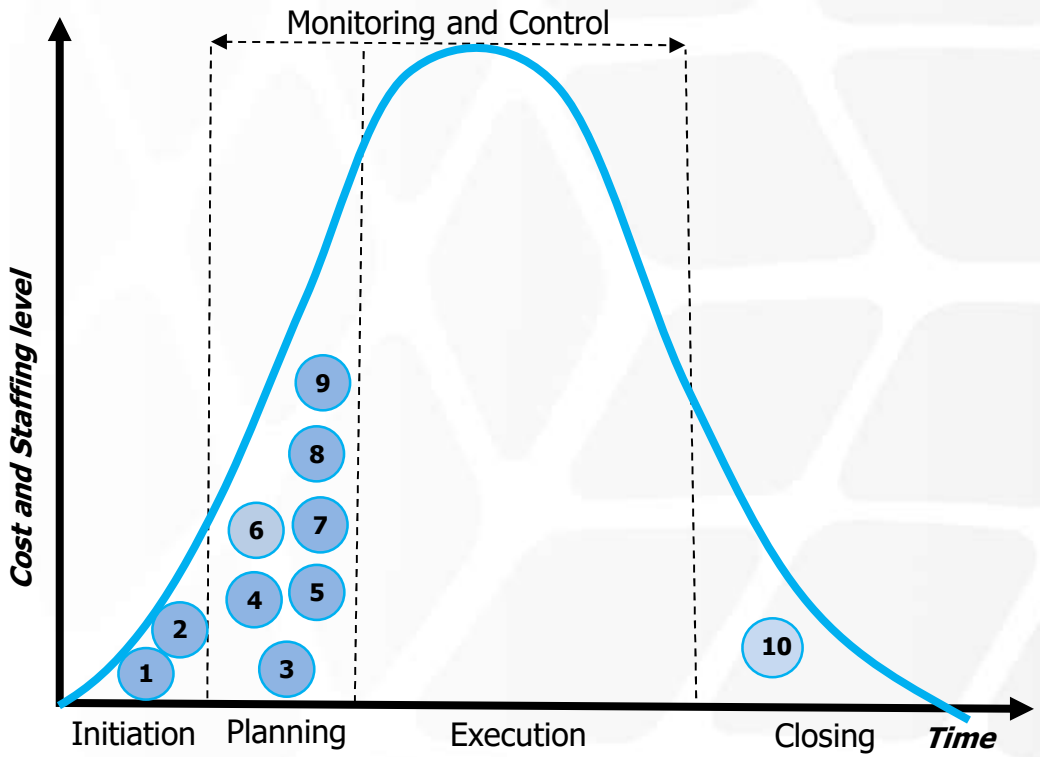
November 2021

Project Management Institute



Schedule Management

PM Tool-Box



#	Tool
1	Project Charter
2	Stakeholders Analysis
3	WBS
4	Network Diagram
5	Gantt Chart
6	Budget
7	Risk Map
8	R&R/RACI
9	Communication Plan
10	Lessons Learned

Planning Project Schedule

It is important to know for a project manager:

- When **can** the activities start and end?
- When **must** the activities start and end ?
- What activities **can be late** without damaging other activities?

9 steps to create a work plan

1. Set Milestones

- ✓ Contractual milestones
- ✓ Internal milestones

2. Set the WBS

- ✓ Close the project contents and objectives
- ✓ Set up work packs

3. Set Activities

- ✓ Each WBS work package is a collection of activities)
- ✓ Edit a detailed list of tasks

4. Identify the dependencies

- ✓ Set dependencies between tasks

5. Assign Resources

- ✓ Beware of over allocation
- ✓ Perform resource smoothing

6. Set Duration

- ✓ Evaluate the amount of work time required to complete each activity with an estimated resource figure

7. Follow the critical path

- ✓ Manage tasks on the critical path to prevent / reduce late performances
- ✓ Make as many real revisions as possible for tasks, dependencies and resources

8. Add Buffers

- ✓ Protect contractual milestones
- ✓ Should be about 5-10% of the duration of the project, depending on the size and complexity of the project

9. Freeze the Baseline Plan

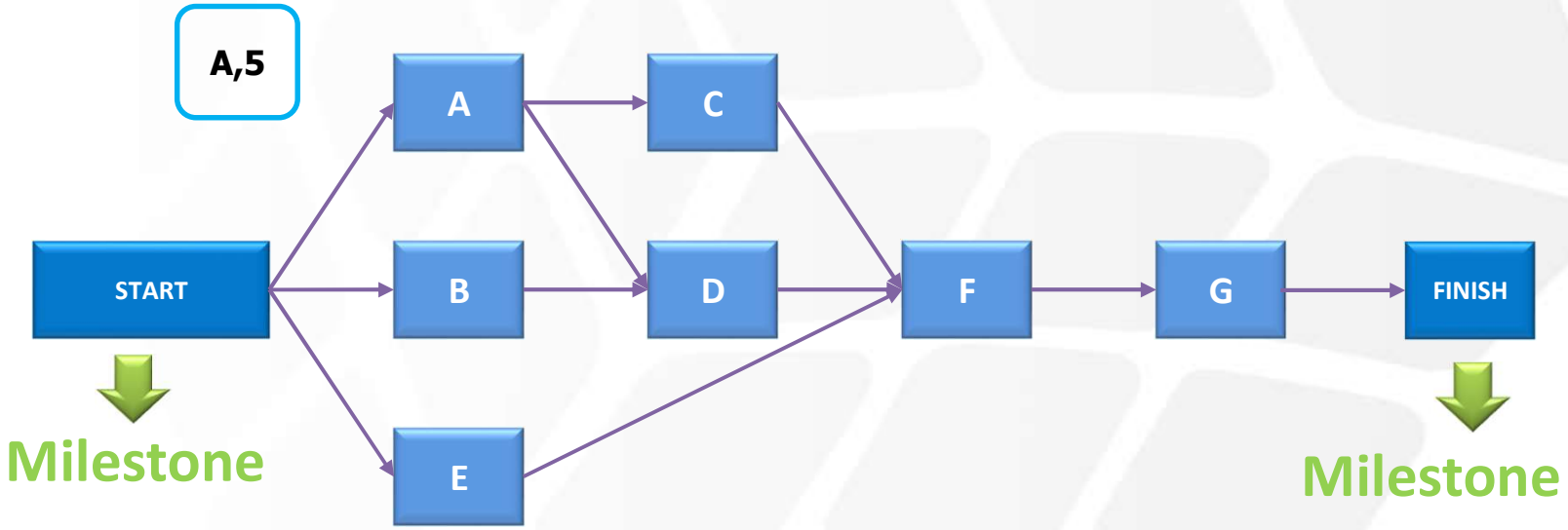
Milestone

A significant point or event in the project

- Development milestones:
  - KOM
  - DR
  - TRR
  - PRR
- Deliveries milestones
- Contract milestones
- Payment milestones
- Customer final approvals

Project Network Diagram

- A graphical representation of the logical relationships among the project schedule activities. Showing the entire project as a network of arrows and intersections
- Arrows represent the relationship between activities

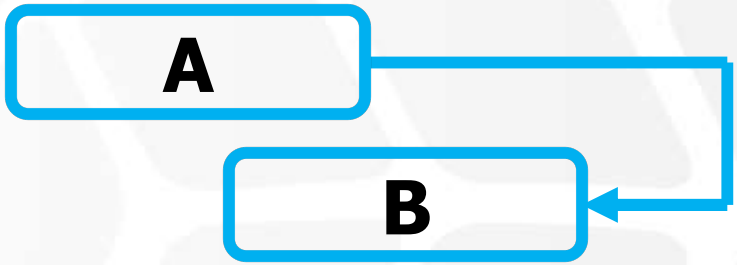


Connections do not reflect availability of resources !

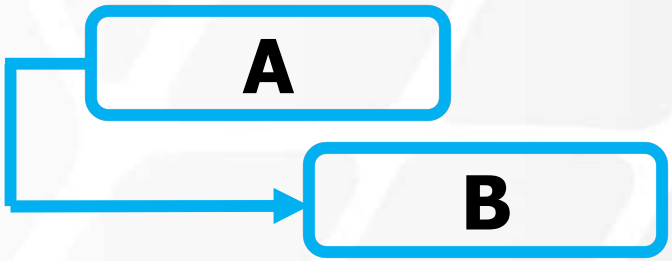
Precedence Relationships Types

Finish to Start

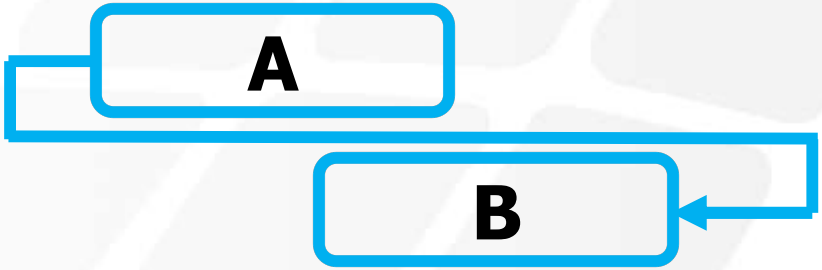
Finish to Finish



Start to Start



Start to Finish



Building a Network

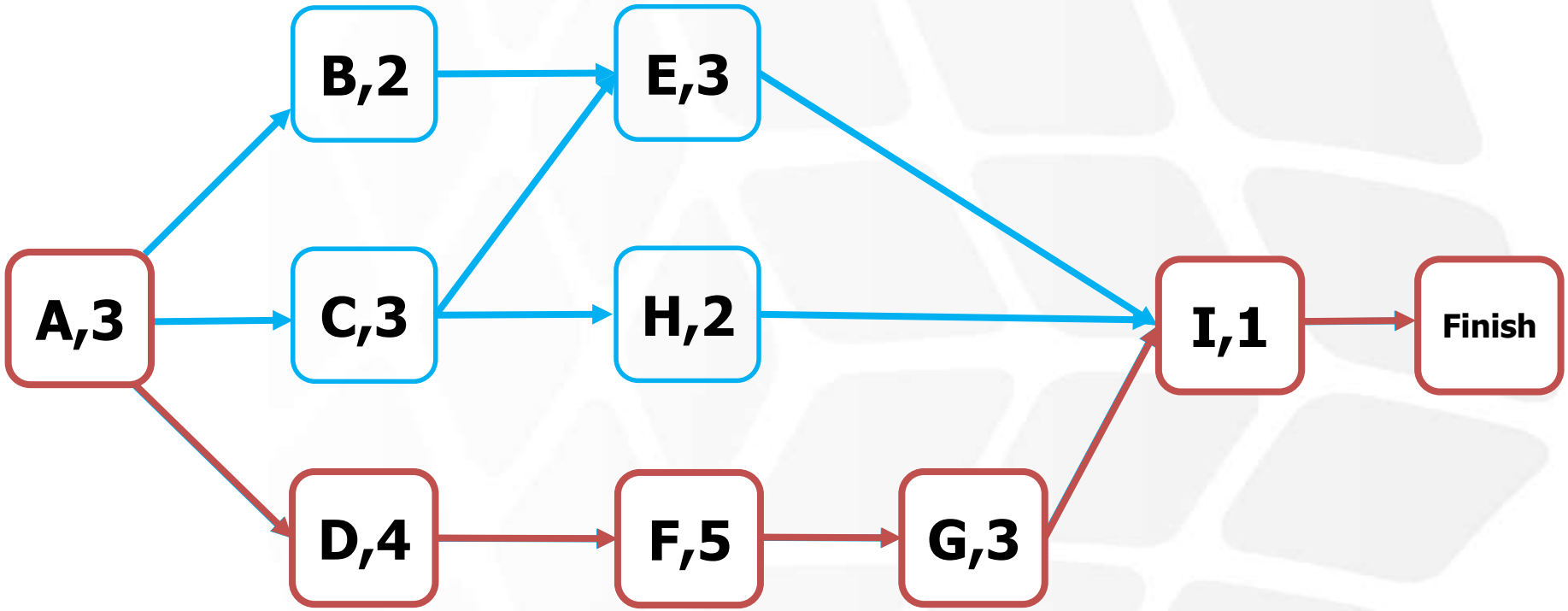
Action	Predecessor	Duration
A	-	3
B	A	2
C	A	3
D	A	4
E	B, C	3
F	D	5
G	F	3
H	C	2
I	E, H, G	1

Critical Path

The sequence of activities that represents the longest path through a project, which determines the shortest possible duration

- Delay in one of these tasks will cause delay in a project completion
- Deserves the biggest attention of project management
- “Almost critical” paths: float is lower than a given value

Critical Path (Example)



9 Days – ABEI

10 Days – ACEI

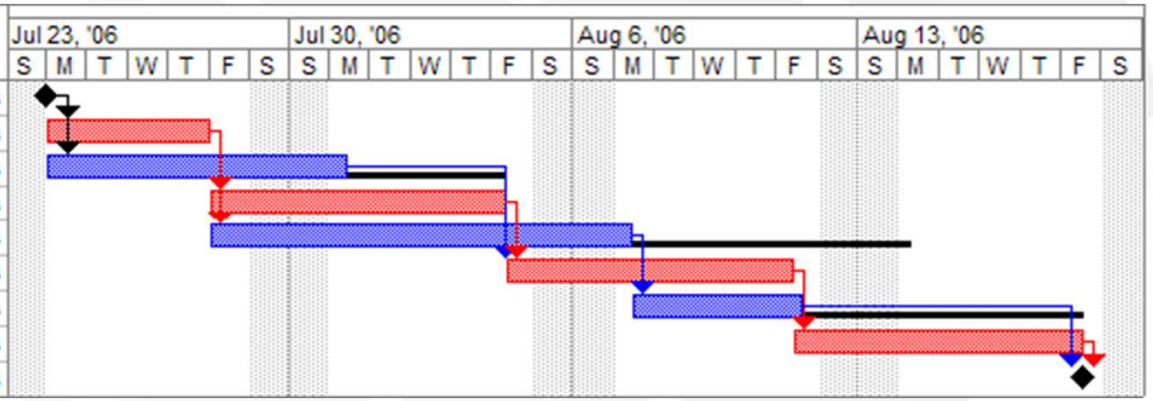
9 Days – ACHI

16 Days – ADFGI

Gantt Chart

A bar chart of schedule information where activities are listed on the vertical axis, dates are shown on the horizontal axis, and activity durations are shown as horizontal bars placed according to start and finish dates

ID	Task Name	Predecessors	Duration
1	Start		0 days
2	a	1	4 days
3	b	1	5.33 days
4	c	2	5.17 days
5	d	2	6.33 days
6	e	3,4	5.17 days
7	f	5	4.5 days
8	g	6	5.17 days
9	Finish	7,8	0 days



It is important to relate each task to a WBS ID !

Measuring Progress

Actual Start

following work authorization

Actual Completion

meeting completion criteria previously determined

Time Left To Completion

as compared to the original estimate of the duration

% Of Completion

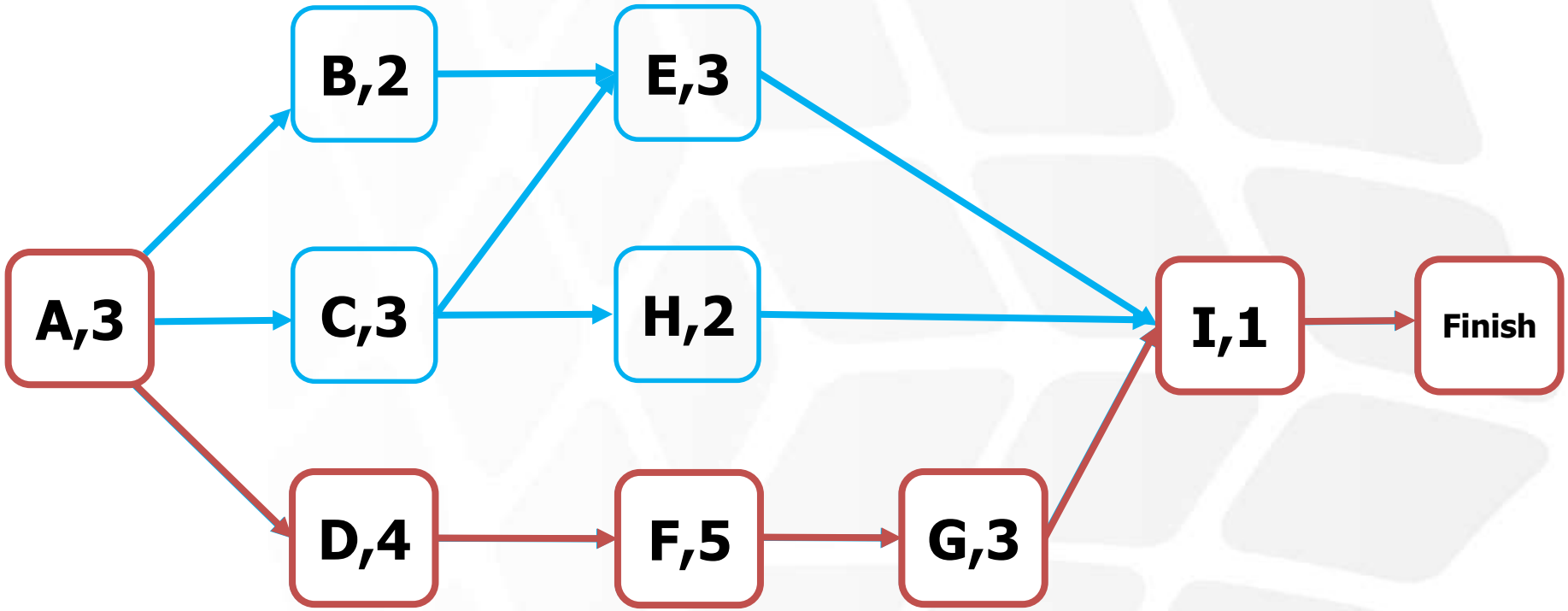
several methods of assessment

Teamwork

1. Divide into the work groups
2. Create a project network diagram for your WBS
3. Good Luck!

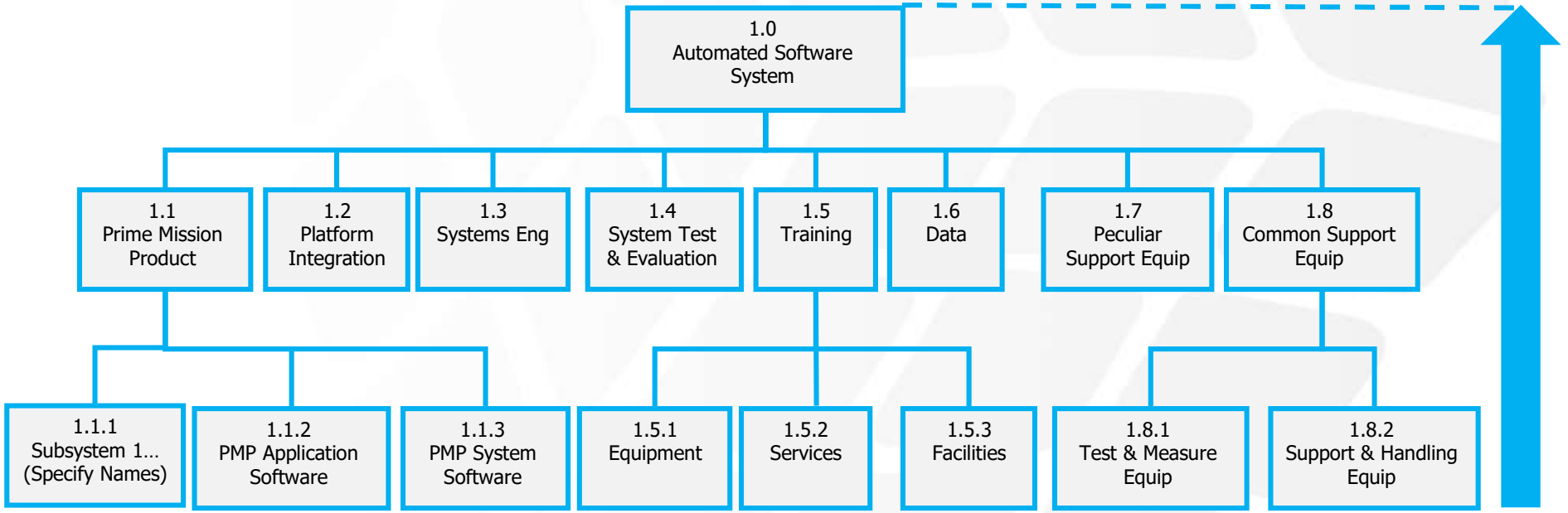
https://templates.office.com/en-us/Gantt-project-planner-TM02887601

Solution



Bottom-Up Estimating

A method of estimating project duration or cost by aggregating the estimates of the lower-level components of the WBS



This definition is taken from the Glossary of Project Management Institute, A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2017

Analogous Estimating

A technique for estimating the duration or cost of an activity or a project using historical data from a similar activity or project

- Requires some form of a historical database
- A form of expert judgment
- Most reliable when the previous activities are similar in fact and not just in appearance
- Used when there is a limited amount of information about the project

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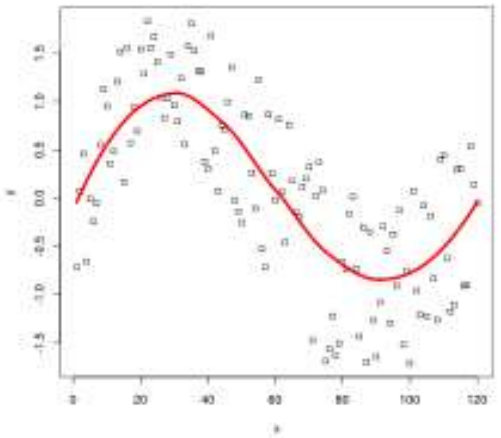
Parametric Estimating

An estimating technique in which an algorithm is used to calculate cost or duration based on historical data and project parameters

Example:

$$\mathbf{T} = -4.25+0.12*\mathbf{X_1}+0.96*\mathbf{X_2}+1.33*\mathbf{X_3}+0.06*\mathbf{X_4}+ +0.48*\mathbf{X_5}+0.2*\mathbf{X_6}$$

N - job number
T - time (in labor hours)
X1 - area to be covered in sq. Yards
X2 - size of tile 1=12*12; 2=18*18
X3 - type of tile (brand 1, brand 2)
X4 - length of walls
X5 - type of foundations
X6 - number of rooms



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Three-Point Estimating

Triangular Distribution-

Expected Activity Duration

$$\frac{P + M + O}{3}$$

Beta Distribution-

Expected Activity Duration

$$\frac{P + 4M + O}{6}$$

Beta Activity **Standard Deviation**

$$\frac{P - O}{6}$$

O-Optimistic

M-Most likely

P-Pessimistic

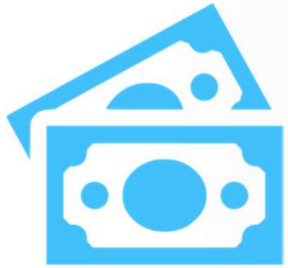
Resource

RESOURCE

...is an asset required to perform a certain task. Skilled human resources, equipment, services, supplies, commodities, material, budgets, or funds.

Depletable / Nonrecurring

- ✓ Used up by the task
- ✓ Required quantities can be scheduled to support plan
- ✓ Can be held in inventory



Recurring / Nondepletable

- ✓ Availability limited at any point of time – no inventory possible
- ✓ At task completion is released and becomes available to support other tasks
- ✓ May affect schedule

Resource Utilization Profile

Resource Utilization

proportion of time during which a resource is used

Resource Profile

a graph of resource requirements as a function of time

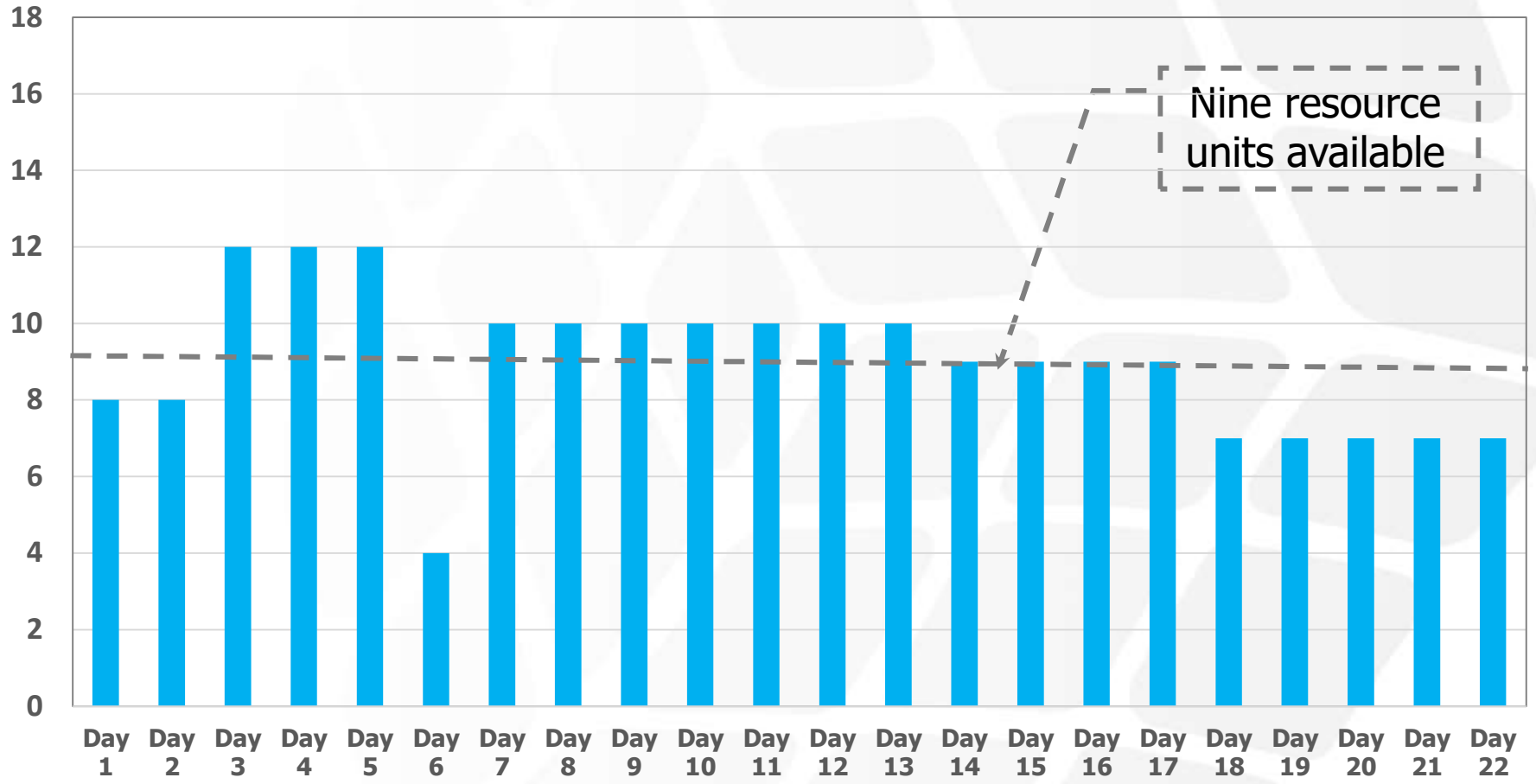
Better resource utilization and lower costs can be achieved by:

- ✓ Exploiting slack
- ✓ Considering early start and late start schedules.

Effective Resource Utilization

- Level resource requirements over time
- Account for resource capacity and productivity
- Design for flexible capacity
- Do cross training
- Plan excess capacity based on deviation costs
- Change resource level by project phase
- Control only key resources
- Avoid over-utilization

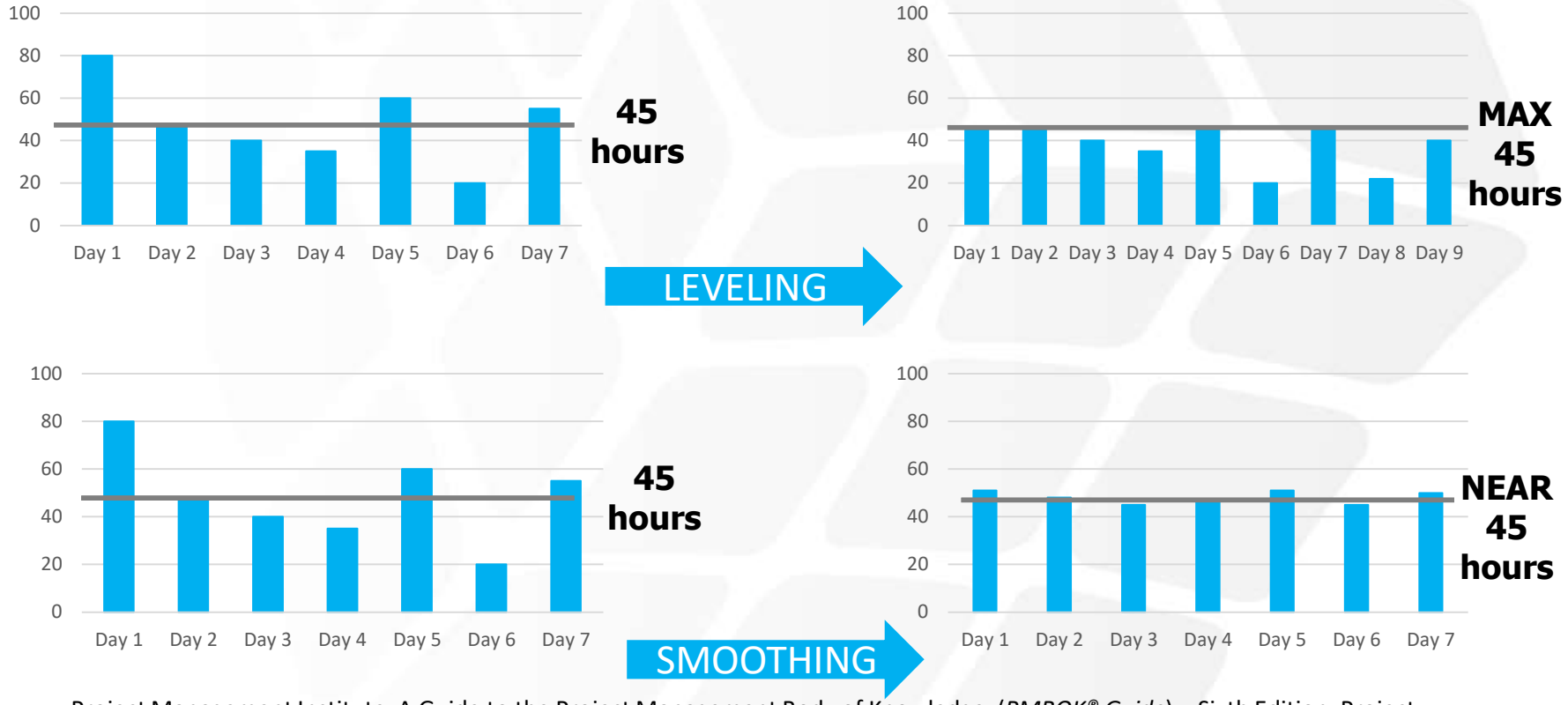
Resource Profile – Over-utilization



Resource optimization

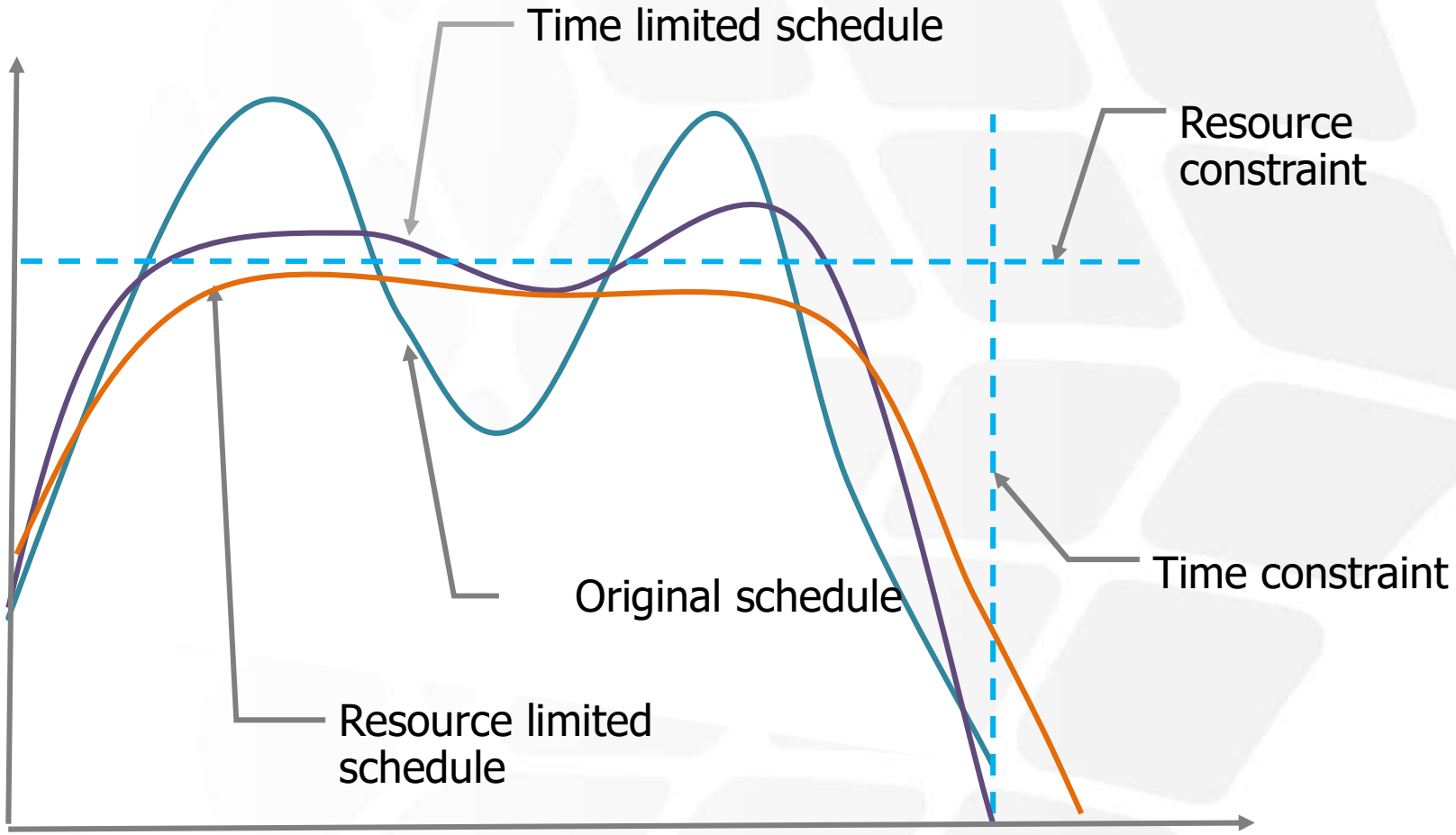
Resource Smoothing

A technique that adjusts the activities of a schedule model such that the requirements for resources on the project do not exceed certain predefined resource limits

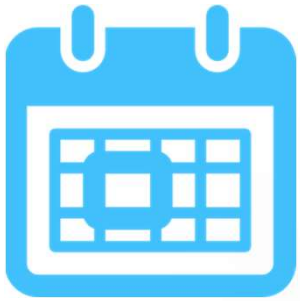


Project Management Institute, A Guide to the Project Management Body of Knowledge, (*PMBOK® Guide*) – Sixth Edition, Project Management Institute Inc., 2013, Page 211.

Conflicting Constraints



Control Schedule



The process of monitoring the status of thr project to update project schedule and manage changes to the schedule baseline

Control defined: Measurement, Comparison to standard or plan, Corrective action

Monitor actual progress and update the original plans continually

The basis of any control system is a statement of the project goals - baseline

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Measuring Progress

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following work authorization

Actual Completion

meeting completion criteria previously determined

Time Left To Completion

as compared to the original estimate of the duration

% Of Completion

several methods of assessment

Evaluating Work Package in Progress

Based On Weight
Of **Deliverables**

Based On Weight
Of **Work Phases**

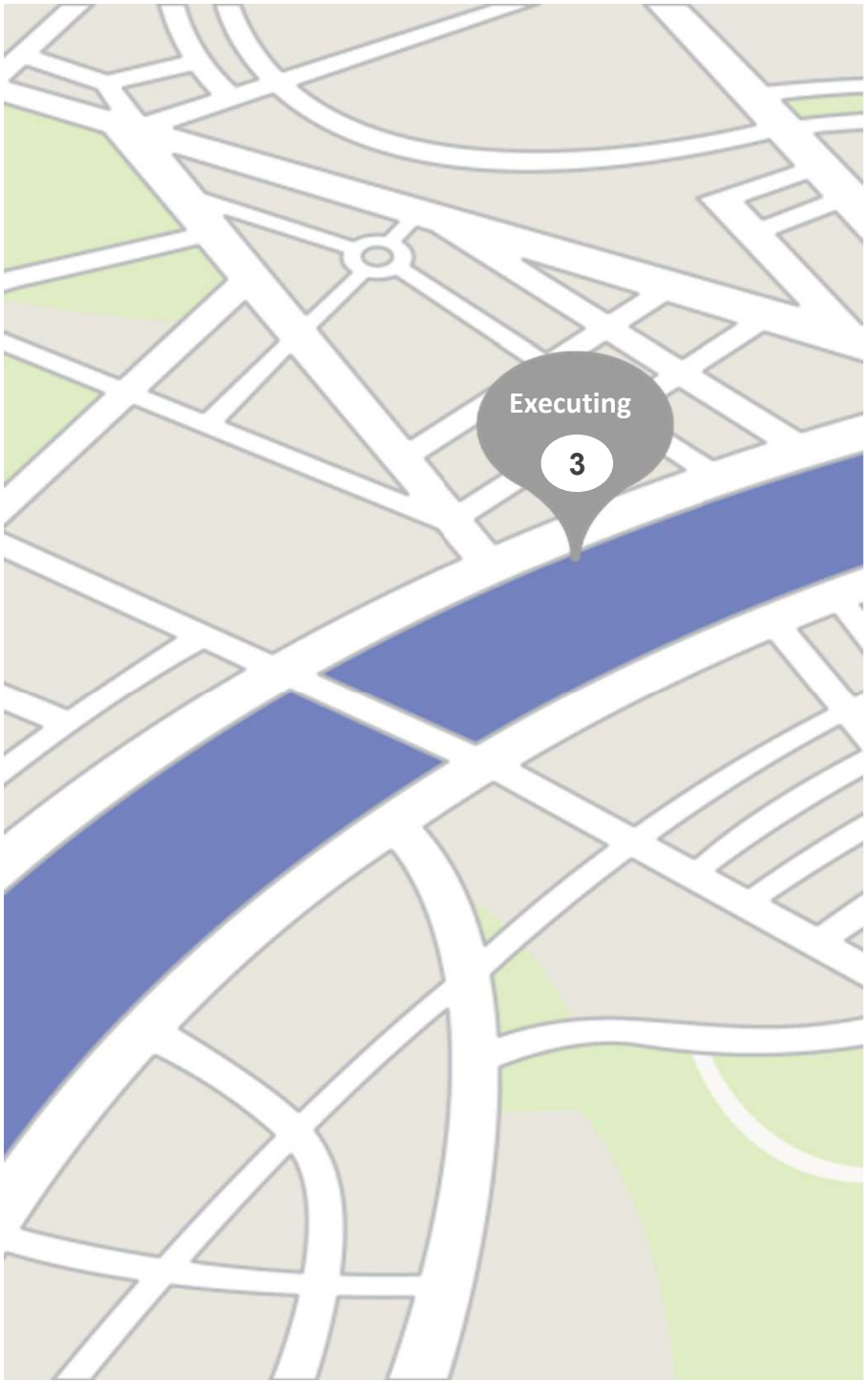
Binary
not completed - 0%
completed - 100%

EVALUATING METHODS

Three levels
not started - 0%
in progress - 50%
completed - 100%

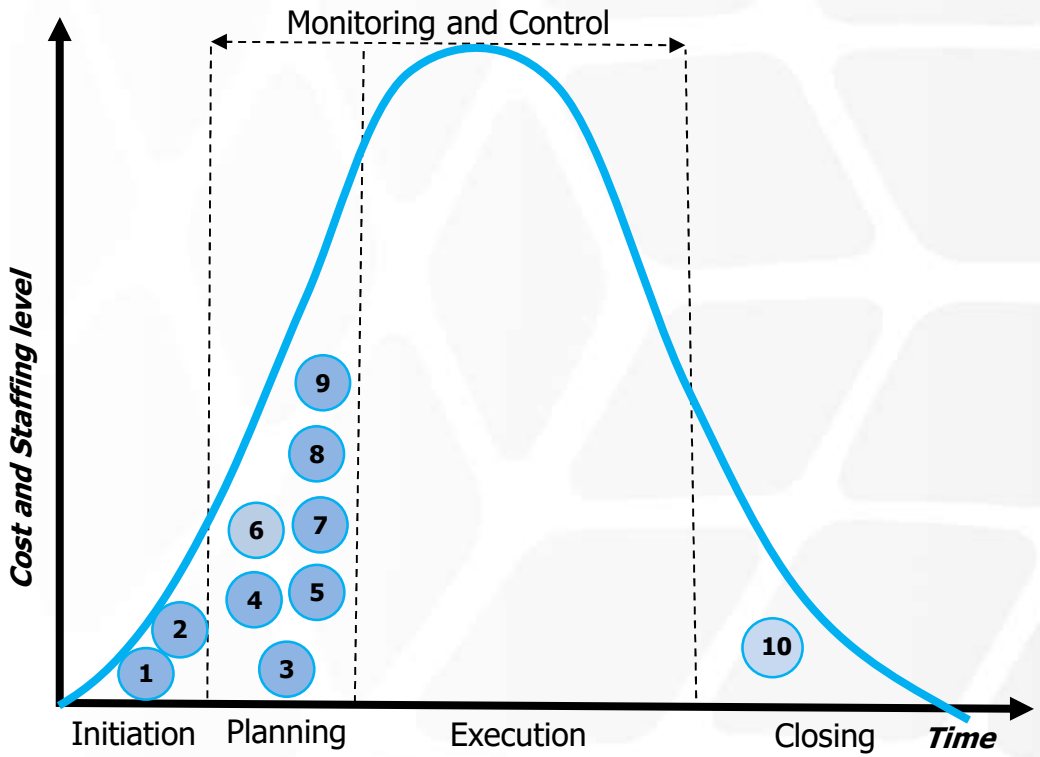
Based On **Inputs**

Based On **Outputs**



Human Resource Management

PM Tool-Box



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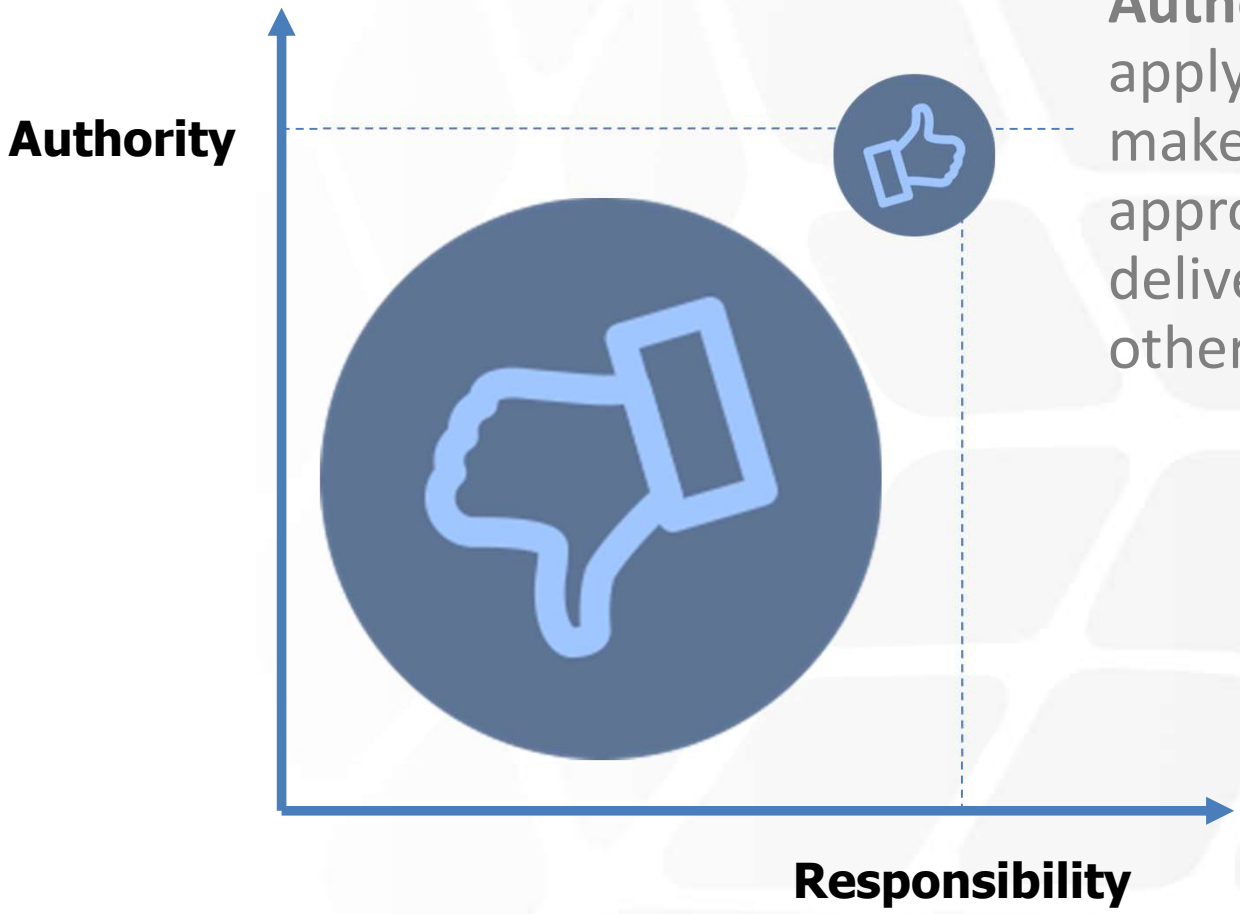
Building a winning team

- Team players members
- Team aligned : Project business case, goals and objectives
- Recognition and awards
- Team training and improving performance
- Facilitating communication and bridging cultural differences
- Positive culture and atmosphere

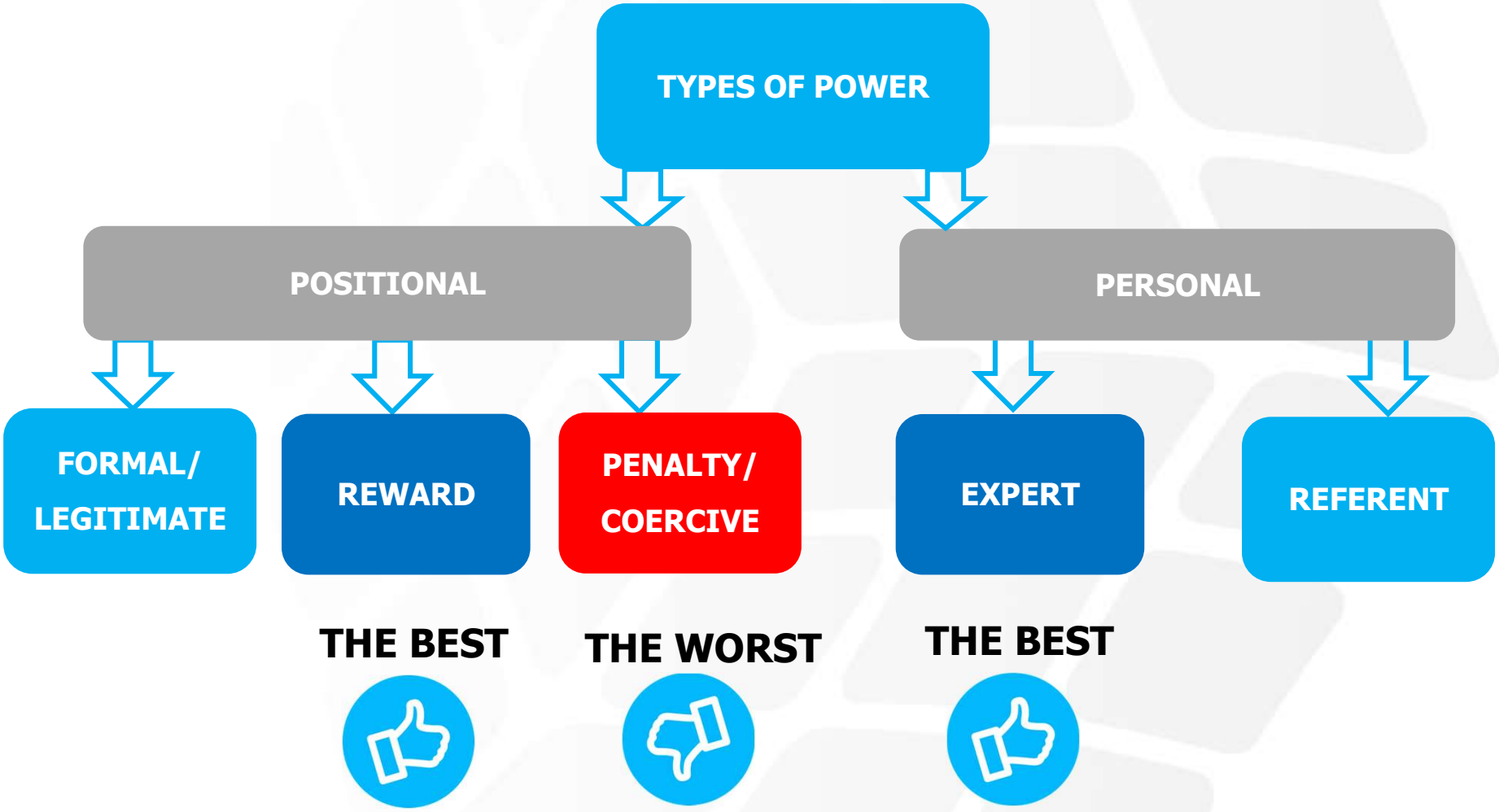
Responsibility and Authority



Authority: the rights to apply project resources, make decisions, sign approvals, accept deliverables, influence others

When assigning a task make sure the assignee has the proper authority to make him responsible

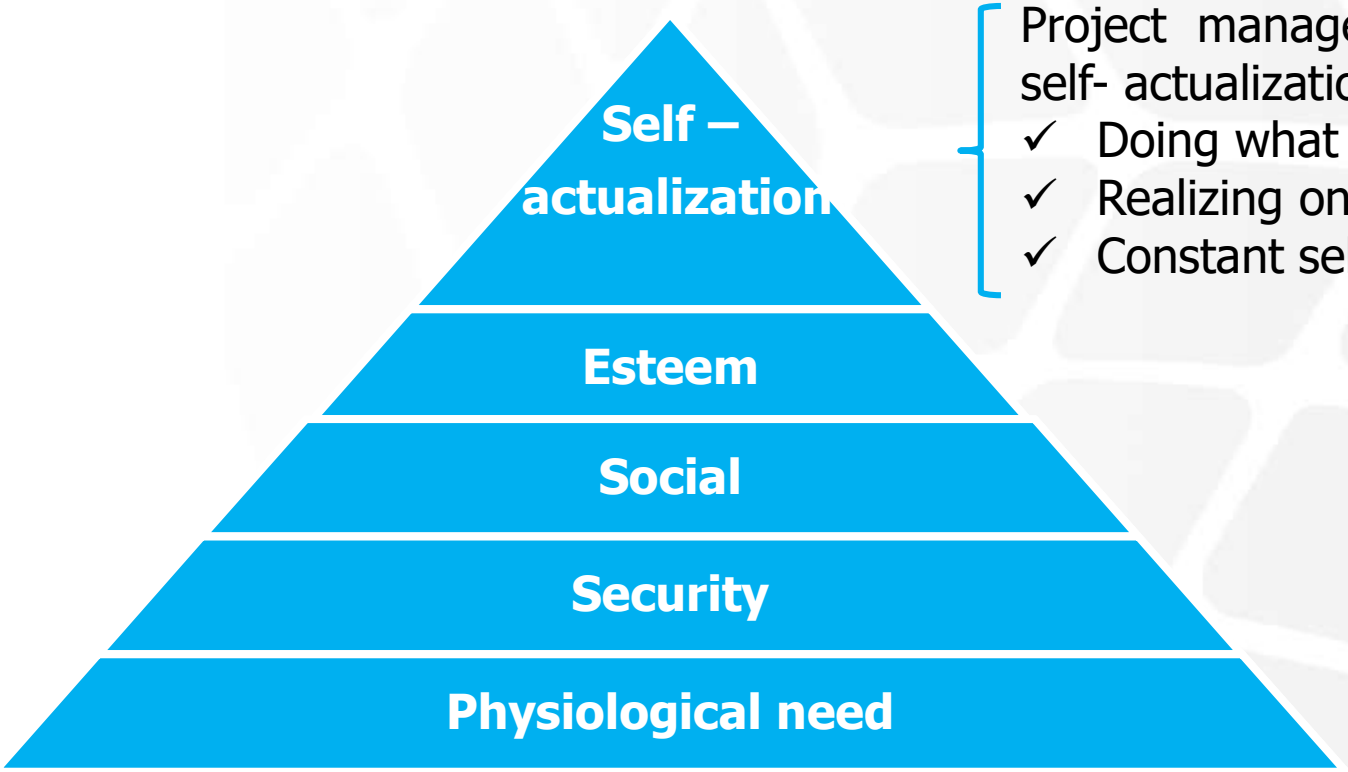
Influencing People



Organizational Motivation Theories

Maslow's Hierarchy of Needs

This theory states that human beings have basic needs and that people need to meet lower-level needs before they can move onto the next level of needs. This theory is shown as a pyramid.

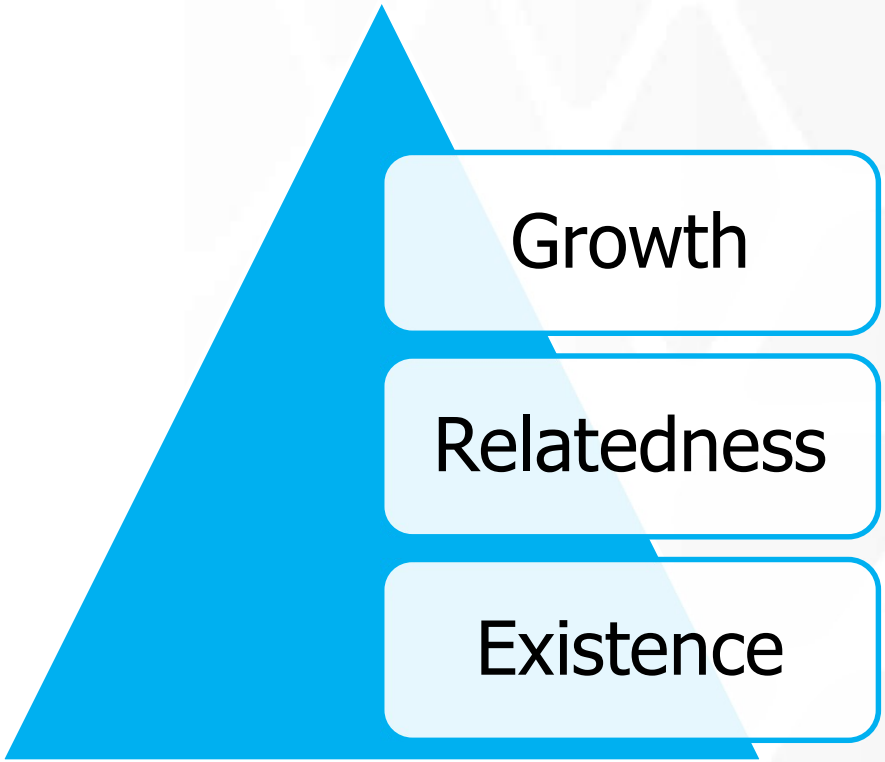


Project managers tend to favor self- actualization:

- ✓ Doing what one can do best
- ✓ Realizing one's potential
- ✓ Constant self-development

Alderfer's ERG Model

ERG Theory is similar to Maslow's Hierarchy of Needs, but it focuses on existence, relatedness, and growth needs.



fulfilled by personal achievement and self-actualization

the need to feel connected to other individuals or a group.

needs for food, drink, shelter, and safety.

Herzberg's Motivation Theory

Two aspects to the work environment are hygiene and motivation. According to the theory hygiene factors don't motivate a worker to perform. However, the way they are implemented — or not implemented — can lead to employee dissatisfaction. On the other hand, motivation factors lead to higher individual performance.

Hygiene Factors	Motivation Factors
Policies	Achievement
Administration	Recognition
Working conditions	Growth
Salary	Advancement
Status	Interest in the job
Supervision	Job challenge
Security	Promotion

McClelland's Theory of Needs

People are motivated by power, achievement, or affiliation, and that how you manage a person is different based on what motivates that individual.

Need	Behaviour
Power	These people like to organize, motivate, and lead others. Rewards should be focused on giving them more responsibility.
Achievement	These people are result oriented. They like to reach a goal and be recognized for it. They like challenges that are reasonable.
Affiliation	These people seek acceptance and belonging. They like being part of a team.

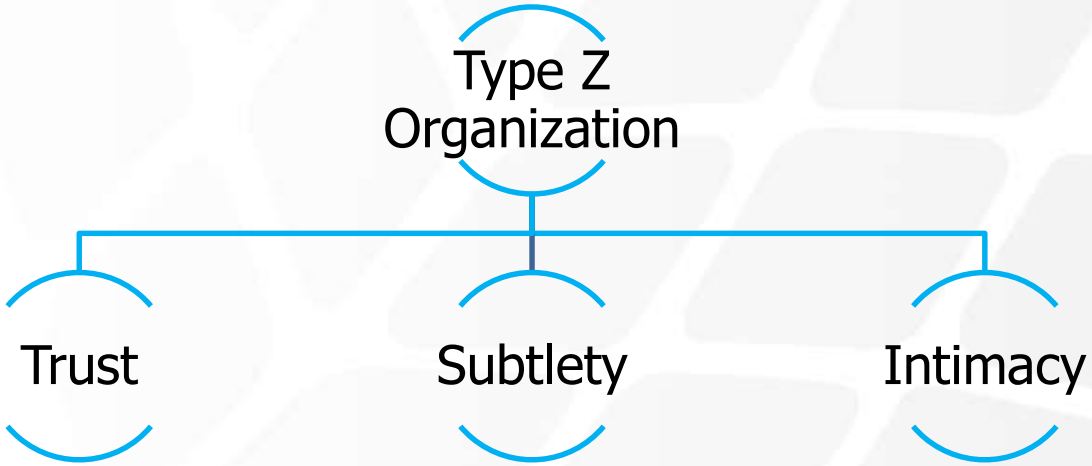
McGregor's Theory X and Y

Theory X 	**Theory Y** 
The average worker has an inherent dislike of work and will avoid it if possible.	The average worker wants to be active and finds the physical and mental effort on the job to be satisfying.
Because of their dislike for work, most people must be controlled before they will work hard enough.	The greatest results come from willing participation, which will tend to produce self-direction toward goals without coercion or control.
The average worker prefers to be directed and dislikes responsibility.	The average worker seeks the opportunity for personal improvement and self-respect.
The average worker is not ambitious, and desires security above everything else.	Imagination, creativity, and ingenuity can be used to solve work problems by a large number of employees.

Ouchi's Theory Z

Theory Z stresses the importance of a caring and benevolent relationship between leaders and followers, and presumes that workers will get motivated by **a strong social relationship with the company**. Loyalty to the company will increase by providing a job for life, in which the company takes genuine interest in the well-being of the employee.

Three Major Features:



Fielder's Contingency Model

Leader-member relations	GOOD				POOR			
Task structure	HIGH		LOW		HIGH		LOW	
Position power	S	W	S	W	S	W	S	W
Relationship-oriented managers most effective at…				✓	✓	✓	✓	
Task-oriented managers most effective at …	✓	✓	✓					✓

Kinds of Leadership Situations

Very Favorable

Very Unfavorable

Goal – Setting Theory

Authors of this theory are Dr. Locke and Dr. Gary Latham. The core idea is that employees are motivated by **clear goals and useful feedback**

Five Principles Of Goal Setting:

- Clarity
- Challenge
- Commitment
- Feedback
- Task complexity

Blake-Mouton Managerial Grid

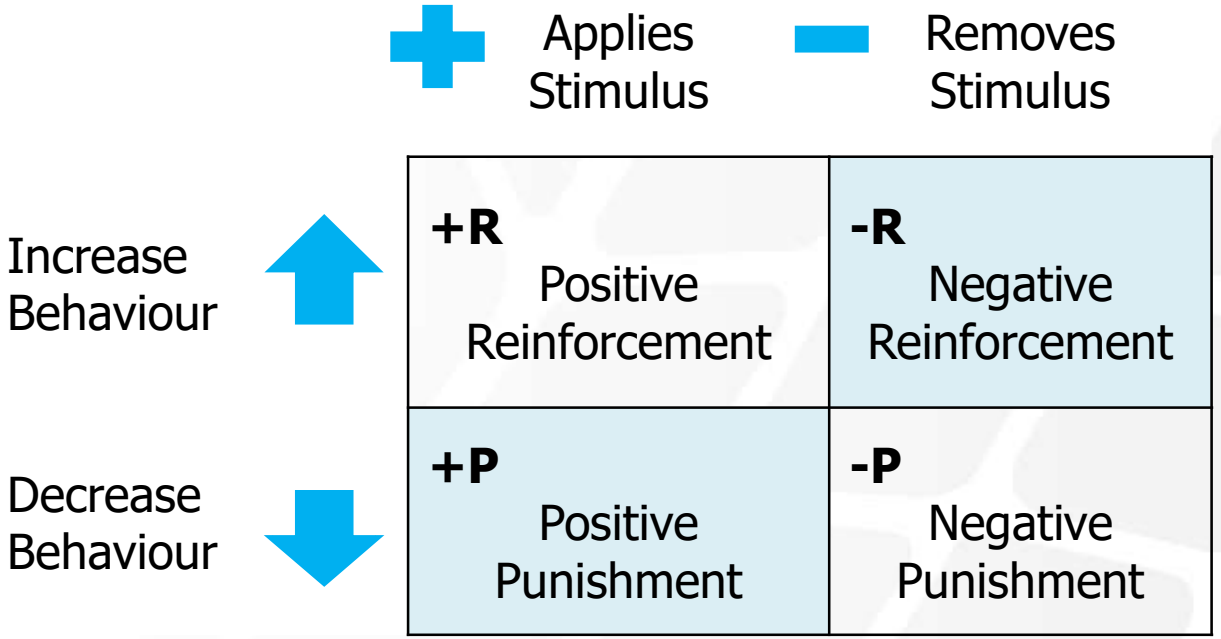
Vroom's Expectancy Theory

Victor Vroom states that "intensity of work effort depends on the perception that an individual's effort will result in a desired outcome."

Employees are motivated when they believe the following:

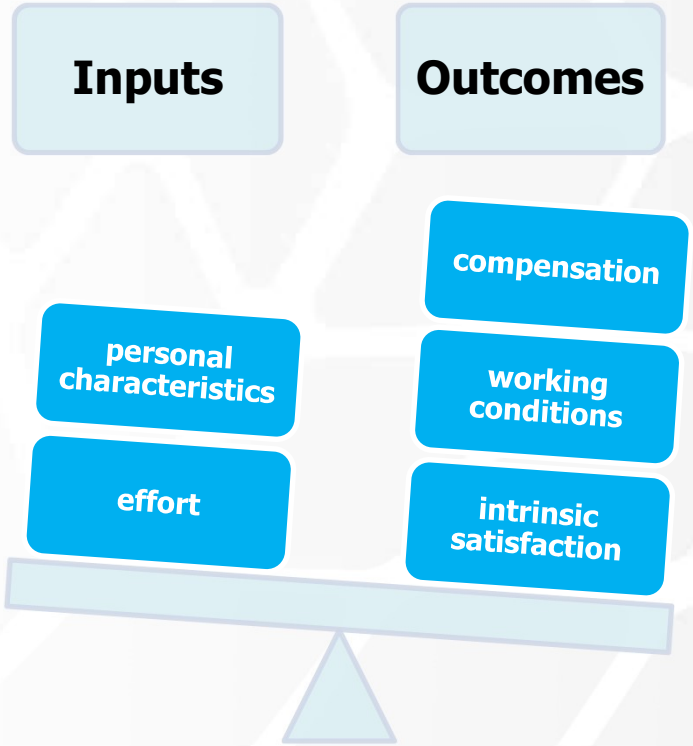
Reinforcement Theory

Behavior is affected by reinforcement. People engage in behaviors with positive reinforcements and avoid behaviors with negative reinforcements. Reinforcement should be delivered: contingent upon a specific behavior, immediately after the behavior happens, consistently, proportionally.



Equity Theory

Explains behavioral dynamics in terms of human exchange relationships: People seek to balance the ratios of inputs to outcomes from the exchange.



Assignment Matrix

RACI Chart	Person				
Activity	**Anna Portfolio Manager**	**Ben Project Manager**	**Carlos Project Coordinator**	**Dina Business Owner**	**Ed Functional Manager**
Create Charter	A	R	I	I	I
Collect Requirements	I	A	R	C	C
Submit Change Request	I	A	R	R	C
Develop Test Plan	A	C	I	I	R

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

Only one Accountable Person for each Activity!

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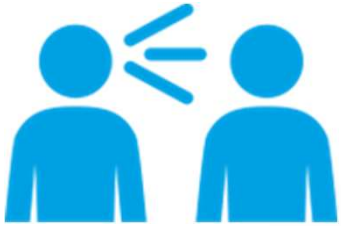
Conflict Management



Handling, controlling, and guiding a conflictual situation to achieve a resolution

Traditional View

- ✓ Is Caused By Troublemakers
- ✓ Bad
- ✓ Should Be Avoided

Current View

- ✓ Inevitable
- ✓ Often Beneficial
- ✓ A Natural Result Of Change
- ✓ Can Be Managed

Resolving Conflict Techniques

Win-Win

Collaborate/ Problem Solve

- ✓ Focus on the problem
- ✓ Objective solution
- ✓ Open dialogue
- ✓ Final solutions, ultimate resolutions

Compromise/ Reconcile

- ✓ Bargaining
- ✓ Falls short of ideal solution
- ✓ Trade-offs
- ✓ Does provide definitive resolution

Smooth/ Accommodate

- ✓ Avoid conflict
- ✓ Appeasing
- ✓ Does not provide long-lasting solutions

Withdraw/Avoid

- ✓ Giving up
- ✓ Passive
- ✓ Does not solve the problem

Force/Direct

- ✓ Using power
- ✓ Win - Lose
- ✓ Hard feelings, which may come back to haunt

Thank You!

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