



# **Master 2 Pharmacotechnie et Biopharmacie**

Project management\_fundamentals

# What is a project?

## 3 components

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### 1 Schedule

A start

An end

### 2 Specific scope

Desired results

Products

### 3 Resources

People

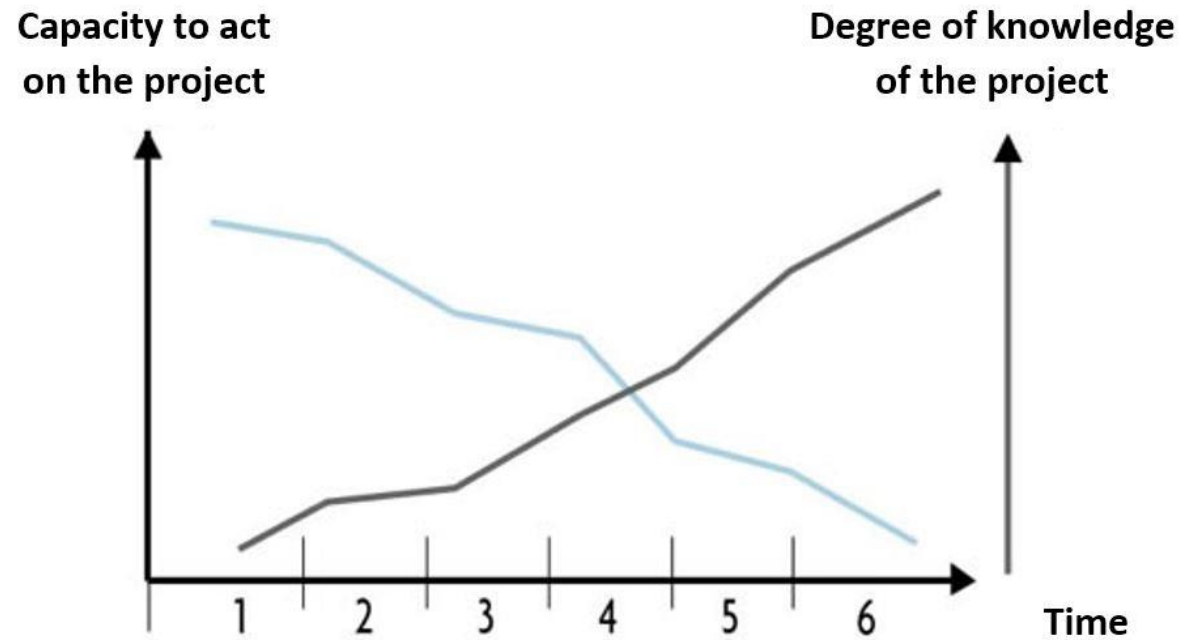
Funds

Innovate = Create more value

Innovation = project

# What is project management?

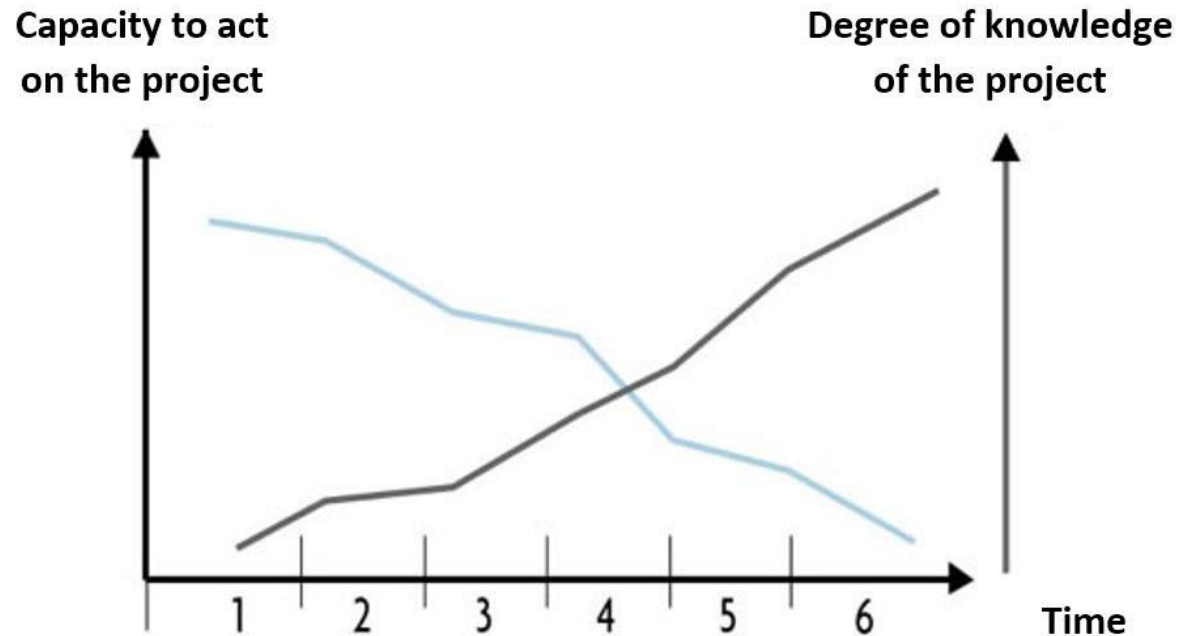
## The paradox of project management



The paradoxical temporality (Midler 1993)

# What is project management?

## The paradox of project management



The paradoxical temporality (Midler 1993)

## Project management

- Application of knowledge, skills, tools, and techniques to project activities to meet project requirements
- Planning, executing, and monitoring
- Achieve goals on time, within scope, and on budget.

# What is a project?

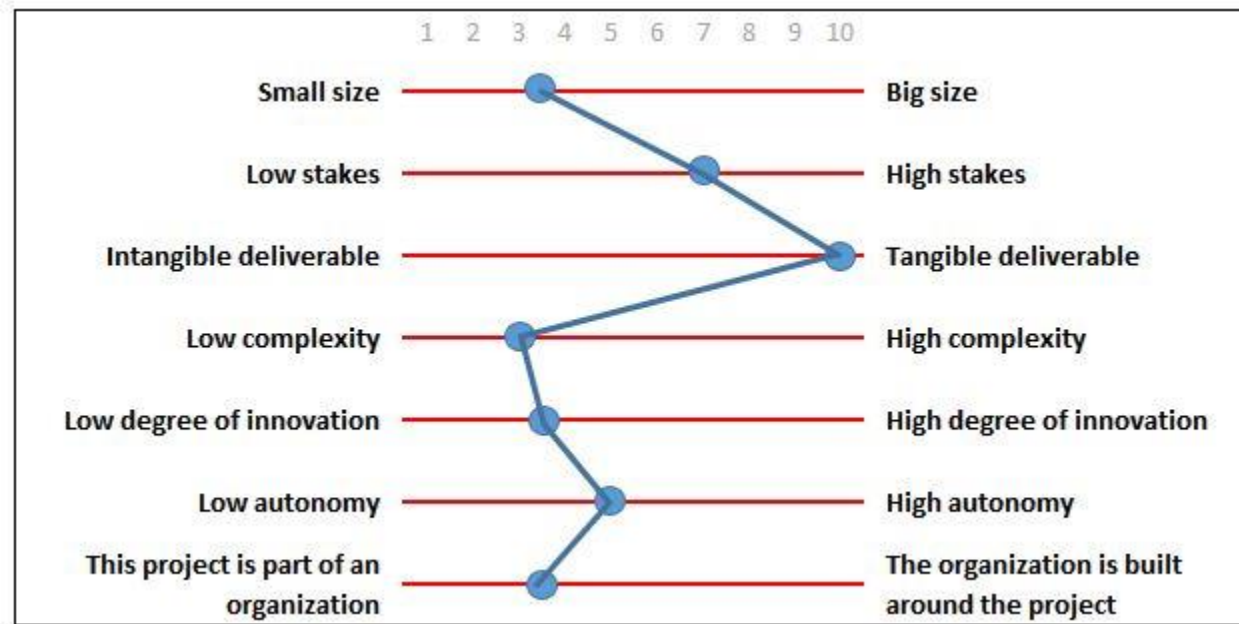
## Project profile

### What is it?

- Define a project unique characteristics

### Key criteria

- Business importance
- Risk & innovation
- Team autonomy
- Scope/Budget



Gives a clear vision of how to manage priorities and risks

# What is a project?

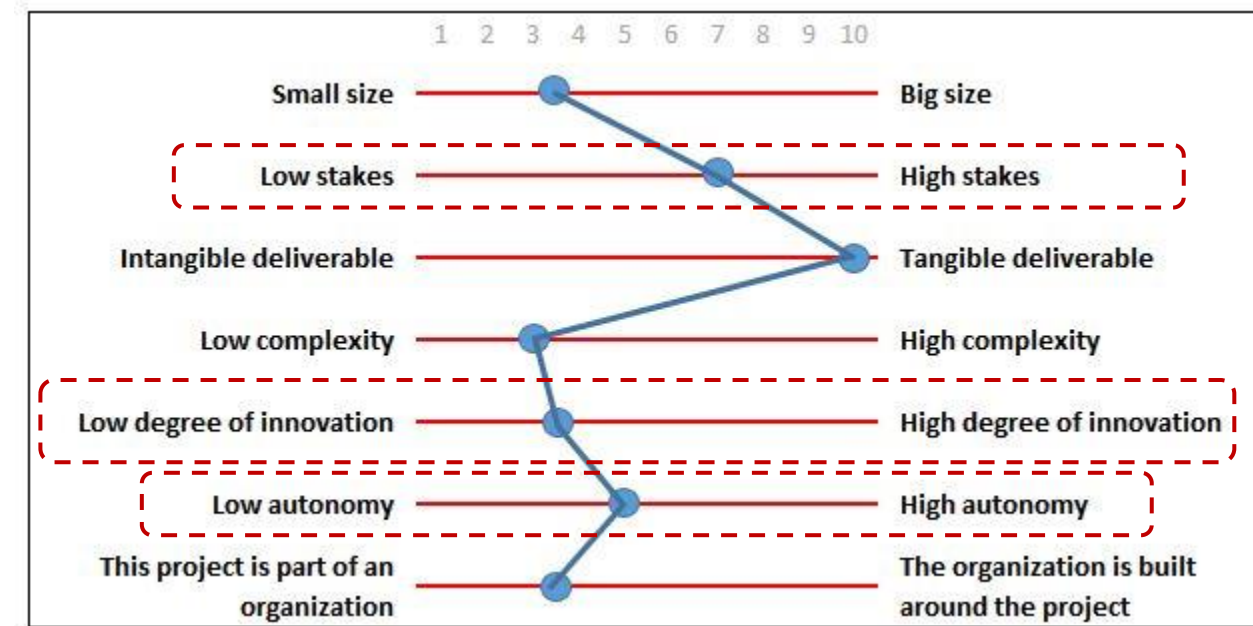
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Gives a clear vision of how to manage priorities and risks

# What is a project?

## Project and operation

	Project	Operation
Environment	<ul style="list-style-type: none"><li>• Innovative</li><li>• Temporary organization</li></ul>	<ul style="list-style-type: none"><li>• Repetitive</li><li>• Stable organization</li></ul>
Process	<ul style="list-style-type: none"><li>• Unique</li><li>• Irreversible decisions</li></ul>	<ul style="list-style-type: none"><li>• Recurring</li><li>• Reversible decisions</li></ul>
Uncertainty	<ul style="list-style-type: none"><li>• High</li><li>• Exogeneous variables</li><li>• Degrees of freedom</li></ul>	<ul style="list-style-type: none"><li>• Low</li><li>• Endogeneous variables</li><li>• Controlled actions</li></ul>
Cash-flow	<ul style="list-style-type: none"><li>• Negative</li><li>• Invest before getting a return</li></ul>	<ul style="list-style-type: none"><li>• Positive</li><li>• Operating generates a profit</li></ul>
Activities	<ul style="list-style-type: none"><li>• Ensure the future of the business</li></ul>	<ul style="list-style-type: none"><li>• Keep the business running</li></ul>
Difficulty	<ul style="list-style-type: none"><li>• Managing a complex “leap into the unknown”</li></ul>	<ul style="list-style-type: none"><li>• Intervening quickly in case of a blockage</li></ul>



# What is a project?

## Project stakeholders

### Client, sponsor, funder

- request, pay, use, or decide to stop the project

### Project manager

- steer the project

### Project team: project actors, suppliers, consultants

- implement the project

### User

- support or oppose the project without working on it





# Project management

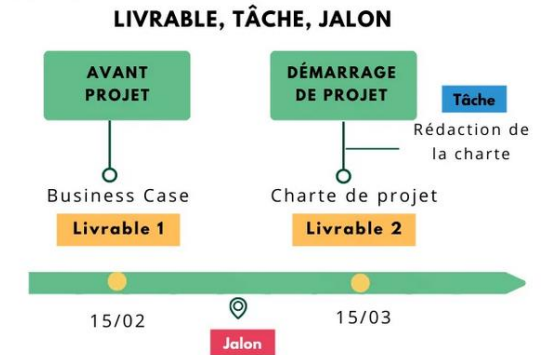
## Deliverables / milestones

### Deliverables

- The end result

### Features

- Specific: clearly defined and measurable
- Associated with specific project phases
- Must meet stakeholder requirements and expectations.



### Milestones

- A significant point or event in a project
- Marks the completion of a major phase.
- Used to measure progress

### Features

- Associated with specific dates
- Key Performance Indicators (KPIs): Help assess project health and timelines

# Project tools

## SWOT matrix

### Informed Decision-Making

- identifying strategic options

### Resource Allocation

- prioritize initiatives based on strengths and opportunities

### Risk Management

- Assesses potential threats to develop mitigation strategies.



# Project tools

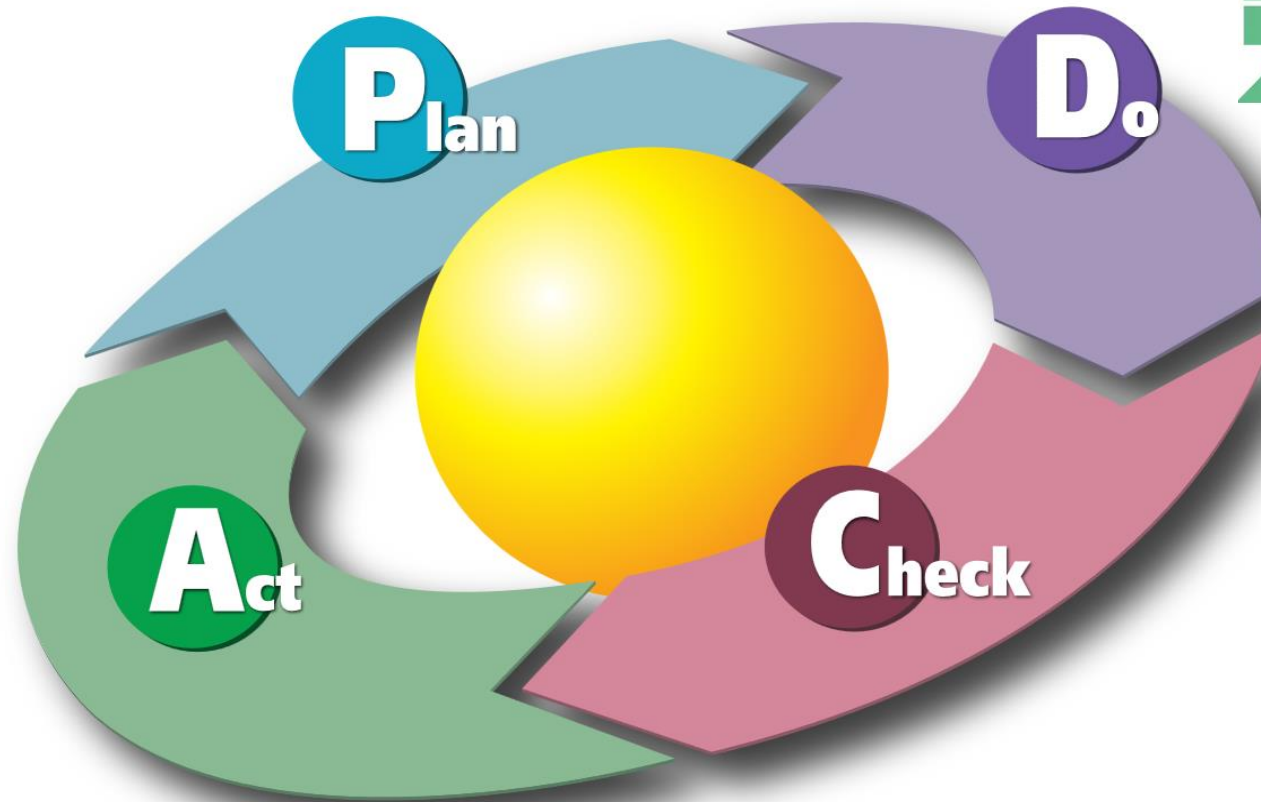
## Action cycle PDCA

Plan

Do (*Effet tunnel*)

Check

Act



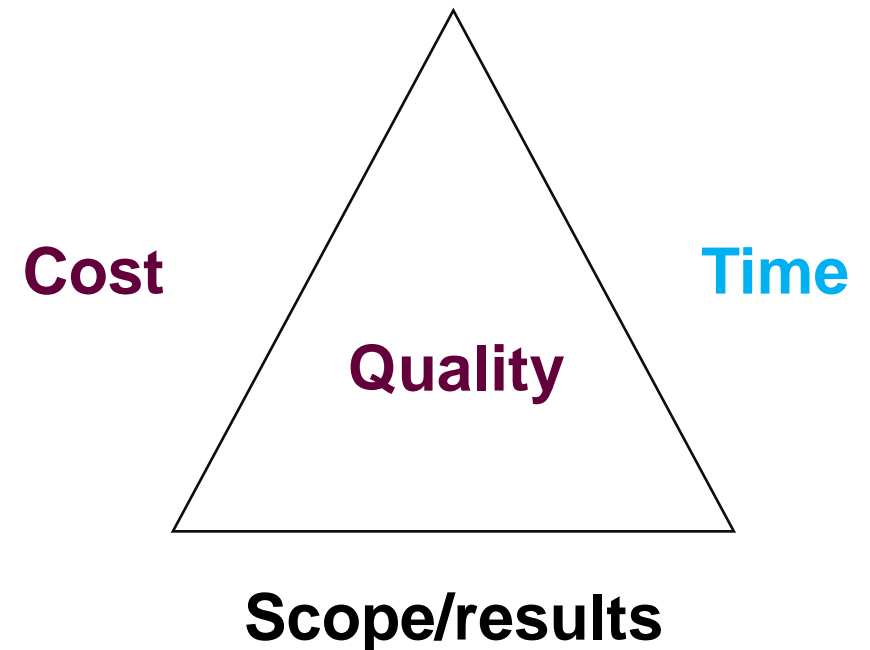
# Project tools

## Time – Cost – Scope triangle

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### Time – Cost – Scope triangle

- **Scope:**
  - *technical specifications*
  - *functions, reliability, ergonomity...*
- **Budget**
  - *salaries, purchases, machines amortization, subcontracting*
- **Deadlines:** a project is time-limited
  - *Penalties for late completion, termination date*



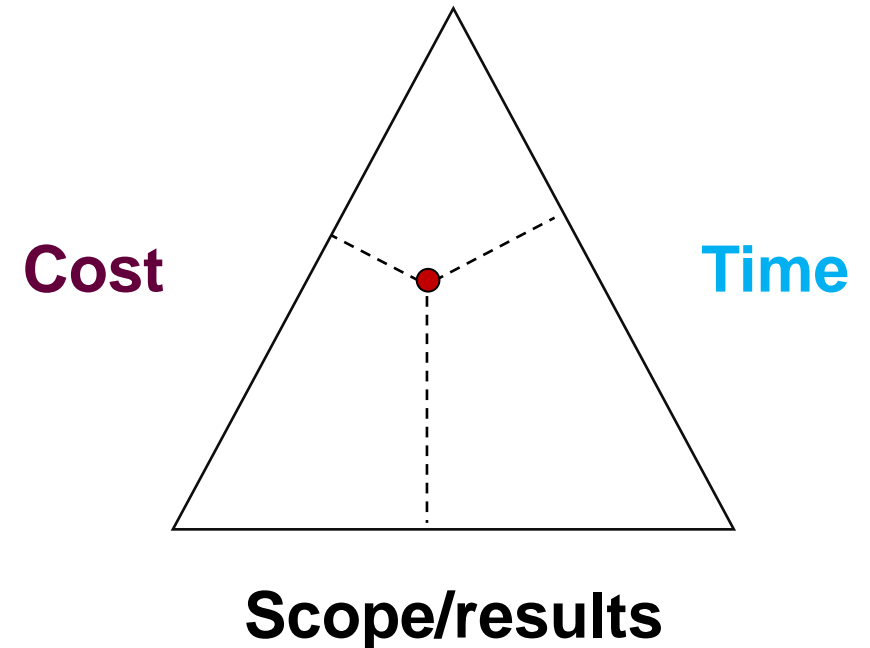
# Project tools

## Time – Cost – Scope triangle

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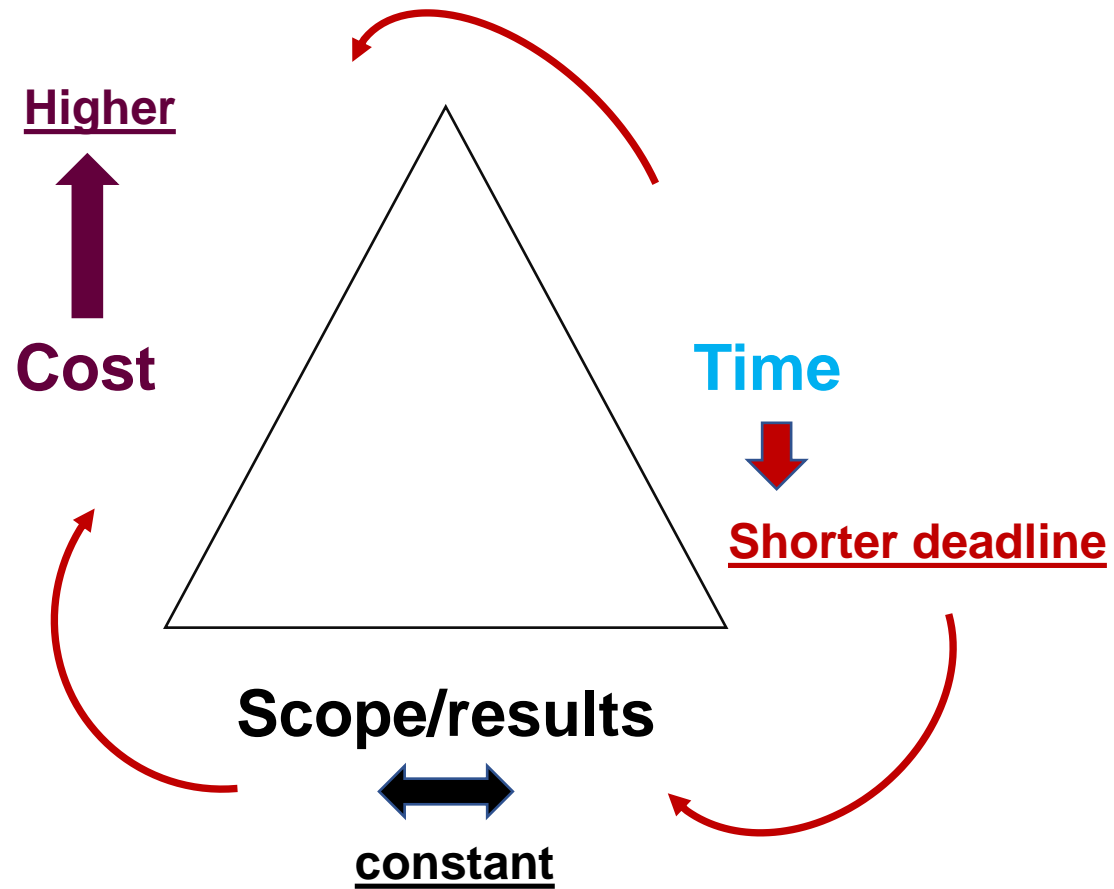
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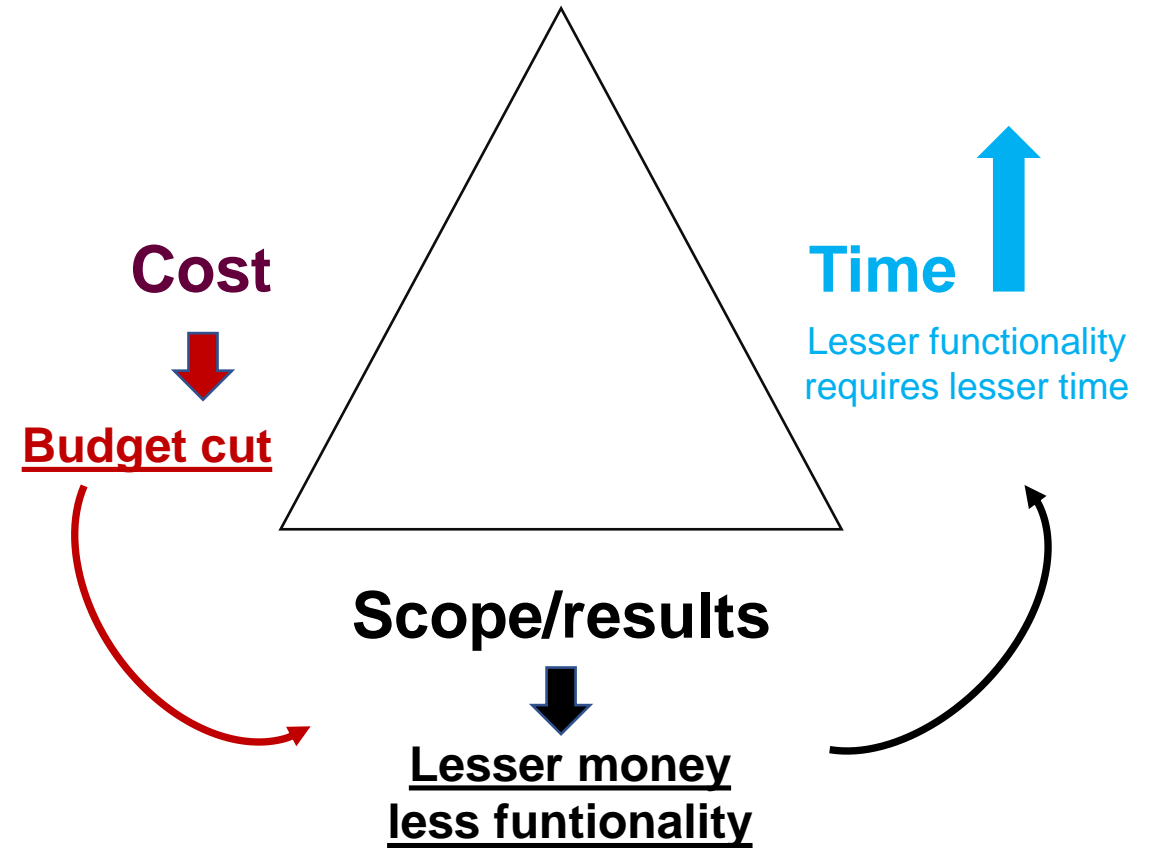
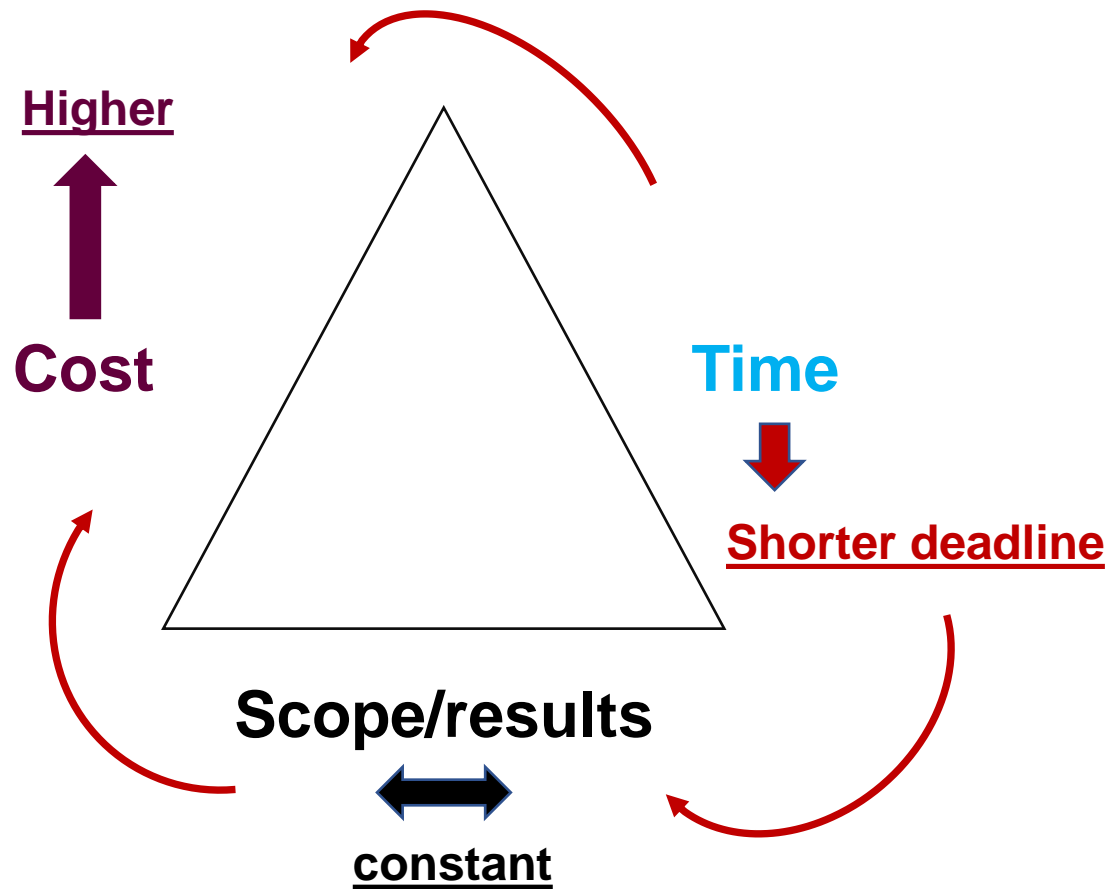
# Project tools

## Time – Cost – Scope triangle



# Project tools

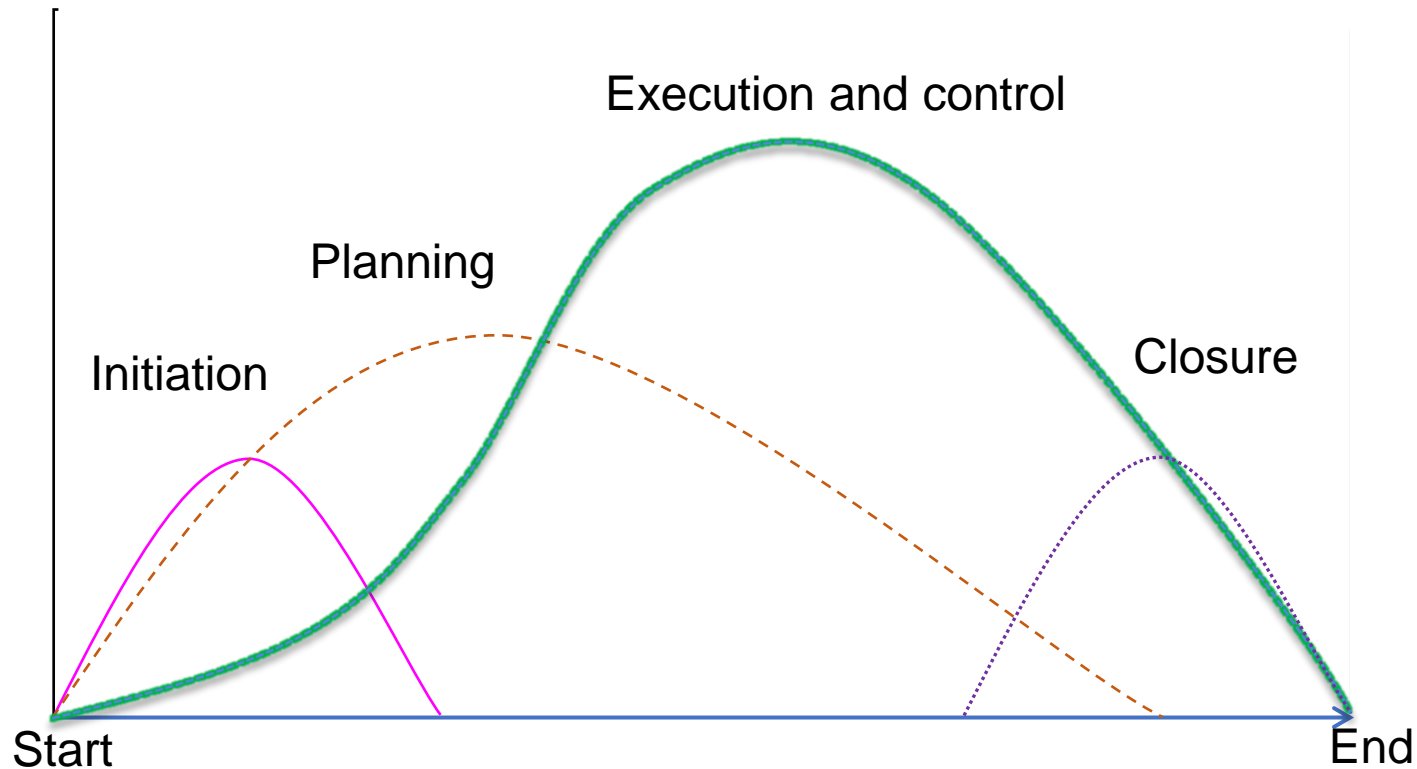
## Time – Cost – Scope triangle





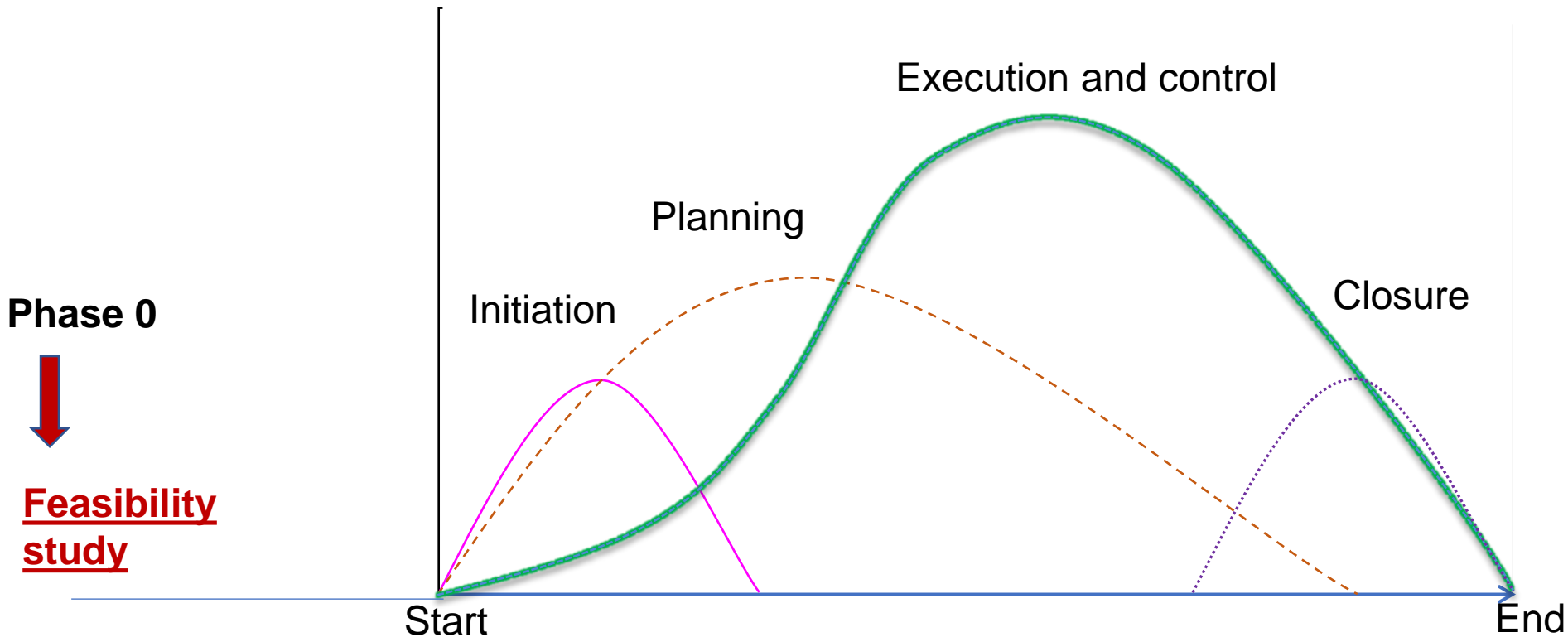
# The Five Phases of Project Management

## Project Management Institute (PMI) Framework



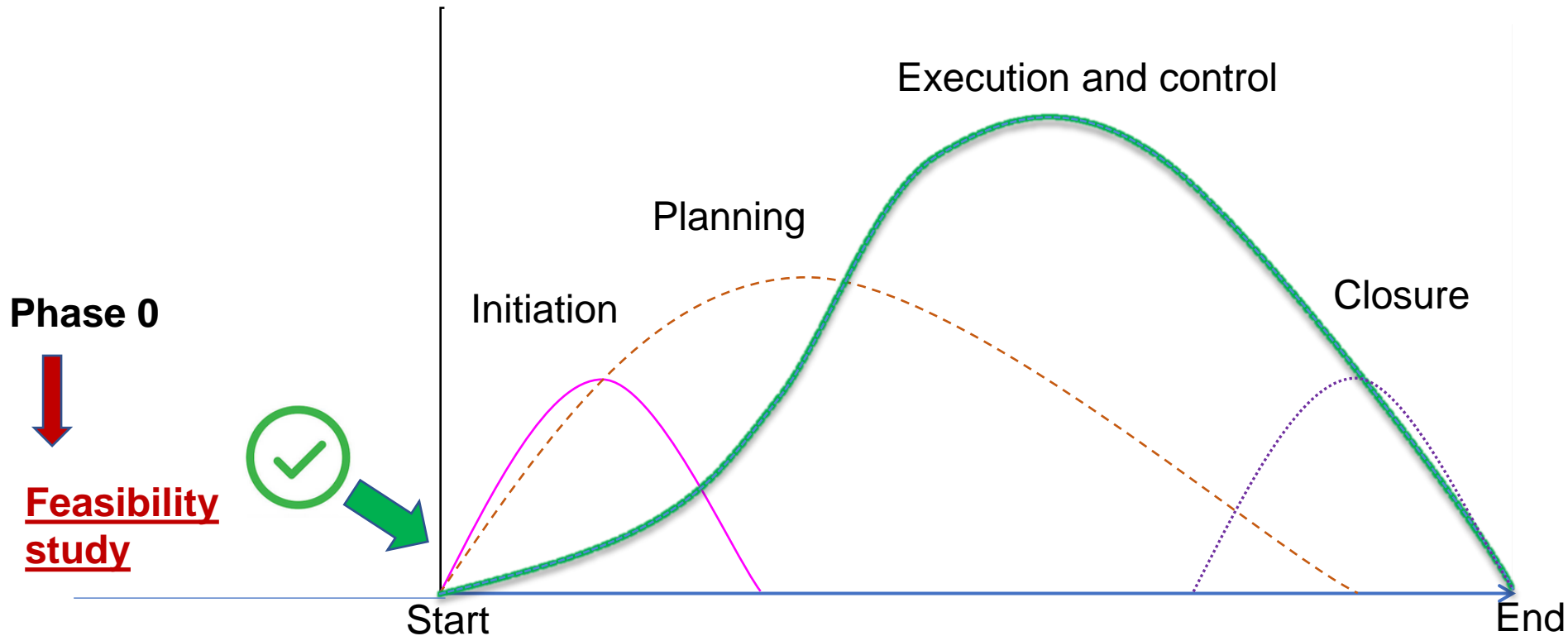
# The Five Phases of Project Management

Project Management Institute (PMI) Framework



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Project Management Institute (PMI) Framework



# Initiation

## Setting the Foundation

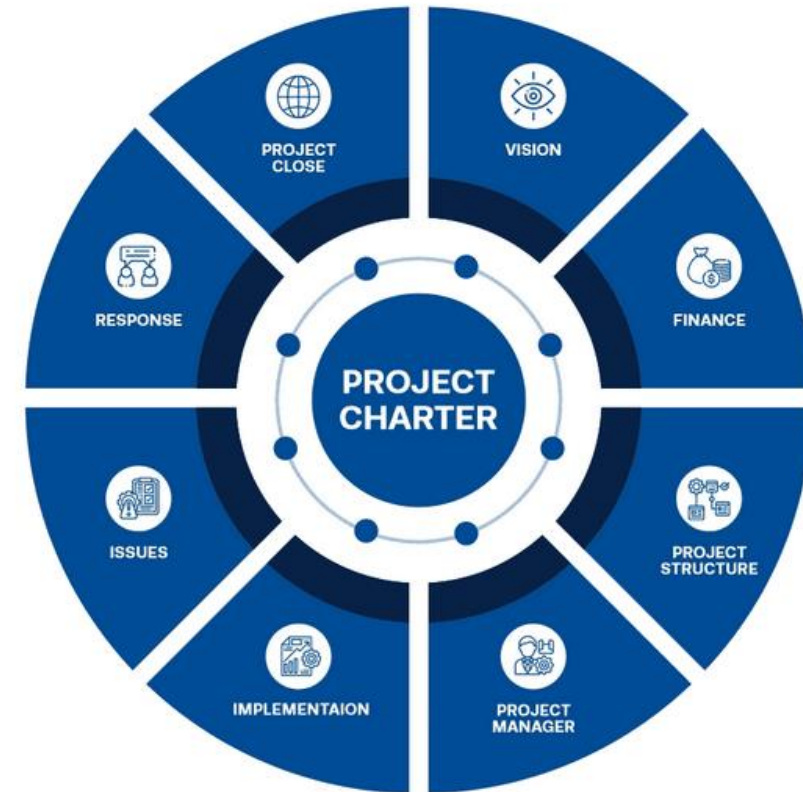


### Key Activities

- Define the project scope
- Identify stakeholders
- Define objectives and constraints

### Deliverables

- Project charter
- Initial risk assessment



Ensures the project is formally started

# Initiation

## Setting the Foundation



### Project charter

- Project goals - Reasons for undertaking the project
- Context
- Deliverables and constraints
- Main Risks
- Budget & available resources
- Stakeholders & Actors

PROJECT CHARTER					
Project Title	Project and Portfolio Management Tool			Project Manager	Sameer Patel
Project Start Date	May 21, 2017	Project End Date	August 31, 2017	Project Sponsor	Randy Hadden
Business Need					
All Information Technology projects that require agreement on the Memorandum of Understanding between the Customer and the Service Provider are approved through email. This project was initiated to reduce the manual approvals and create a system to obtain and track the approvals to reduce any discrepancies and loss of data.					
Project Scope			Deliverables		
Create an in-house PPM to include all Global IT projects.			<ol style="list-style-type: none"> <li>1. Generate consolidated project status report</li> <li>2. Extract Global Headcount details for all projects</li> </ol>		
Risks and Issues			Assumptions/Dependencies		
<ol style="list-style-type: none"> <li>1. Data discrepancy due to large amount of projects</li> <li>2. Involvement of multiple teams</li> </ol>			<ol style="list-style-type: none"> <li>1. All Global IT projects to be added to the tool</li> <li>2. Managers to provide regular updates for the projects</li> </ol>		
Financials					
Budget to complete this project is \$3000					
Milestones Schedule					
Milestone		Target Completion Date		Actual Date	
Upload all Global IT Projects to the tool		May 20, 2017			
Complete UAT testing for the tool		July 30, 2017			
Project Team			Approval/Review Committee		
Project Manager	Randy Hadden		Sponsor	Randy Hadden	
Project Manager	Sameer Patel		Business Division Head	Aniket Bhonsle	
Team Members	Vice President, Senior Manager, Analyst		Business Unit Head	Sunil Rajan	
			Finance Manager	Ketan Shah	

# Planning

## Developing the roadmap\_

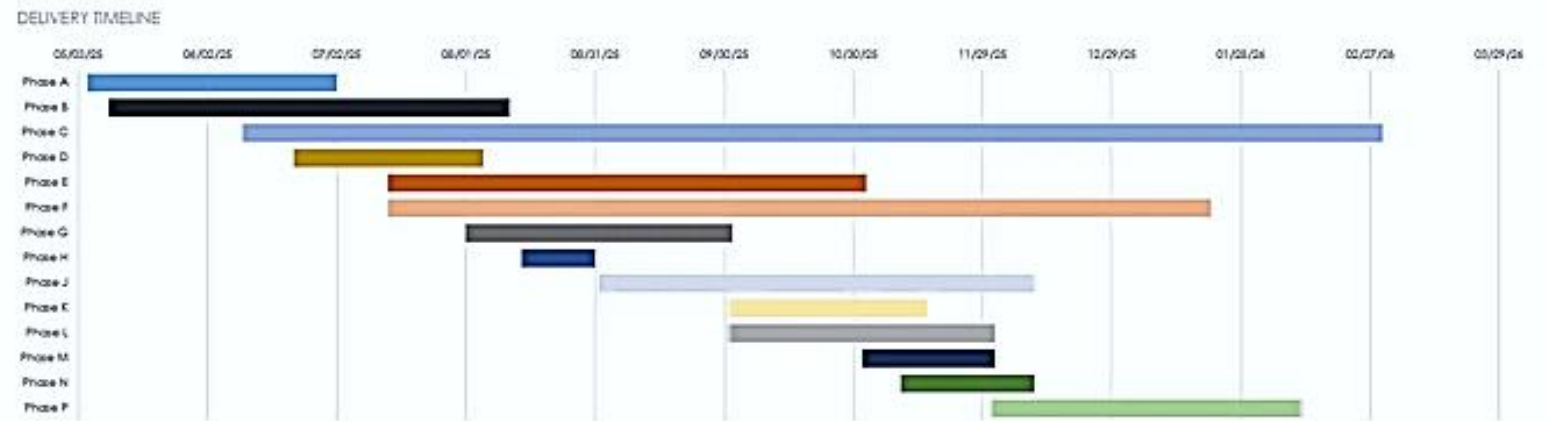


### Key Activities

- Define project scope
- Set up a project timeline and milestones
- Allocate resources
- Create a budget

### Deliverables

- Project plan
- Risk register



# Planning

Why? What? Who? When?



## What is requested

- Specifications

## Specifications + Work packages

- Work breakdown structure (WBS)

## WBS + who does what

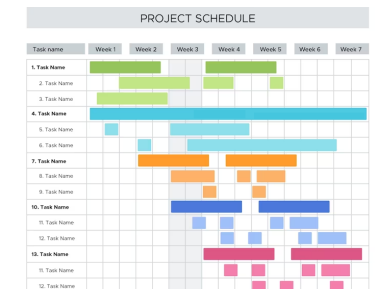
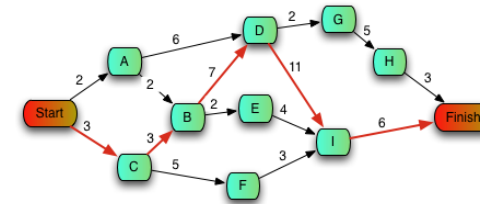
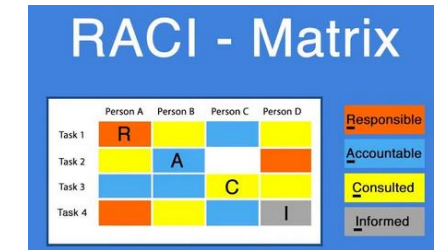
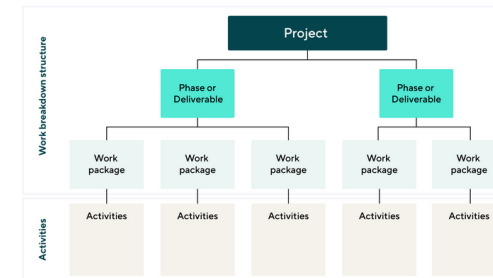
- RACI matrix/organizational breakdown structure (OBS)

## OBS + duration and order of tasks

- PERT

## PERT + available resources

- Gantt, project calendar





# Planning tools

## WBS – Work Breakdown Structure\_Diagram of works

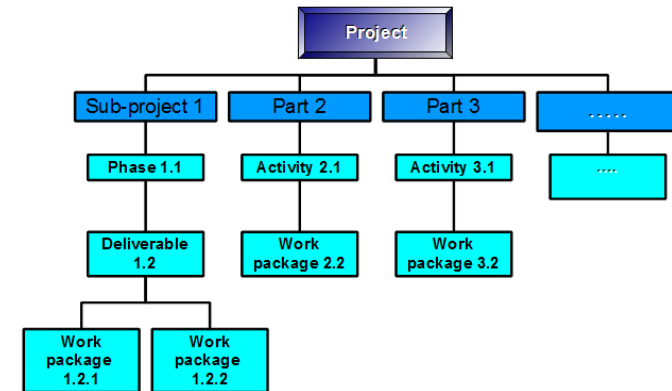


### What

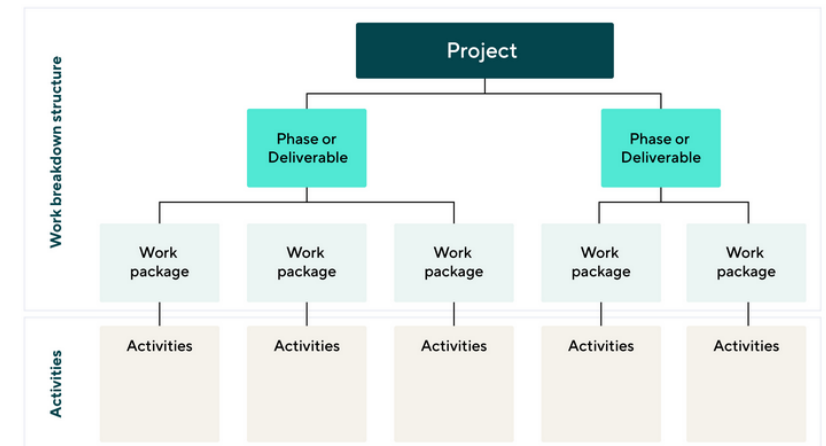
- Hierarchical breakdown of project tasks

### Why

- Helps organize tasks into manageable section

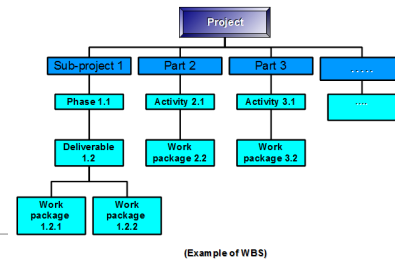


(Example of WBS)



# Planning tools

## WBS – Work Breakdown Structure\_How breakdown into packages



## The project

- The global task

## Successive decomposition

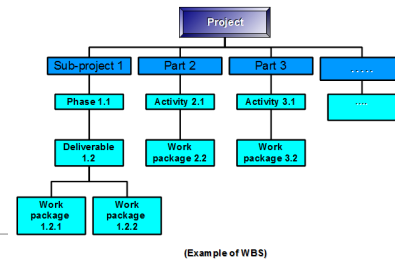
- Based on a specific criteria (e.g., know-how / location)
- Maintain a consistent logic
- No overlaps
- Account for all parts of the global task

## The work packages

- Small enough to manage effectively
- A single individual assigned as responsible
- One SMART deliverable

# Planning tools

## WBS – Work Breakdown Structure\_How breakdown into packages



## The project

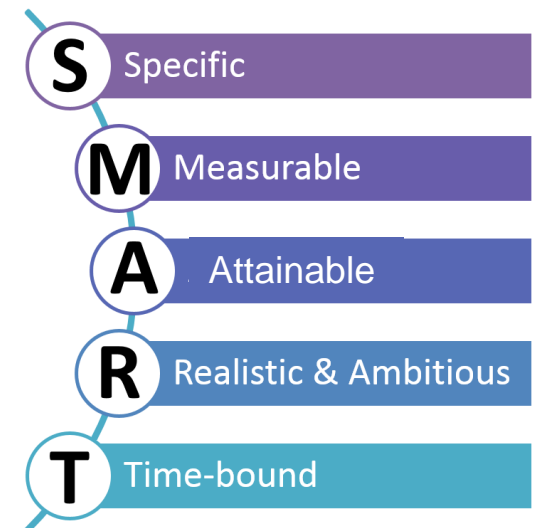
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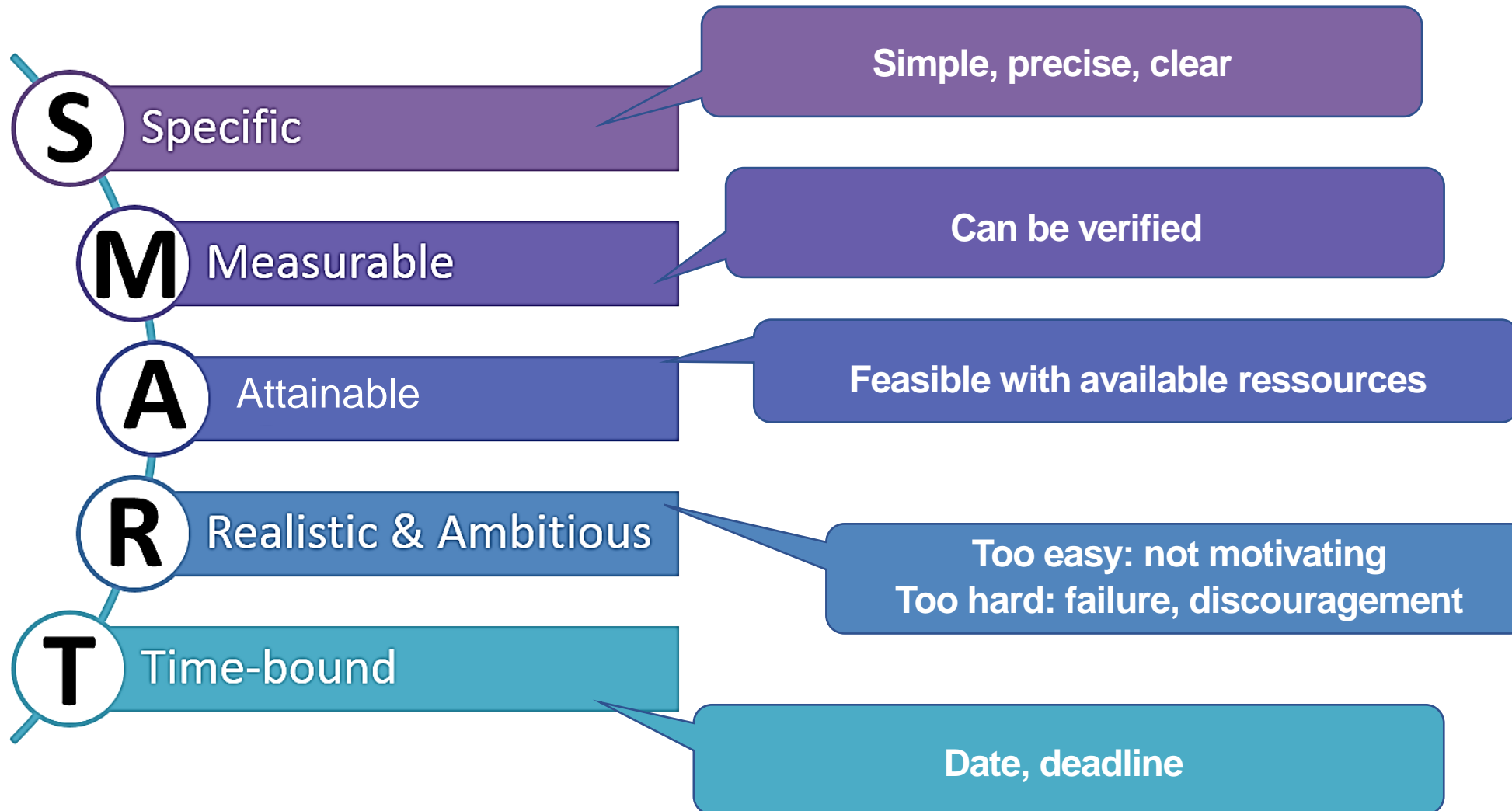
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# Planning tools

## SMART deliverables

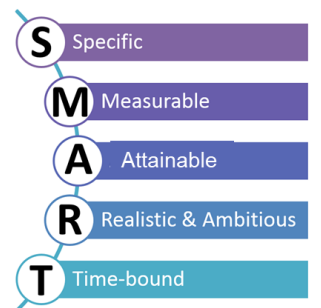


# Planning tools

## SMART deliverables

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Develop a 12-hour extended-release tablet for the active ingredient X, using common excipients (HPMC) to maintain plasma concentration within a therapeutic range of 10 to 15 µg/mL. The release of the active ingredient should reach 25% in 2 hours, 50% in 6 hours, and 90% in 12 hours, with a lot-to-lot variability of less than 10%. This formulation must be ready for stability studies within 4 months. Optimize the formulation by conducting at least three preformulation trials to adjust the proportion of excipients, the release profile, and stability before starting clinical trials

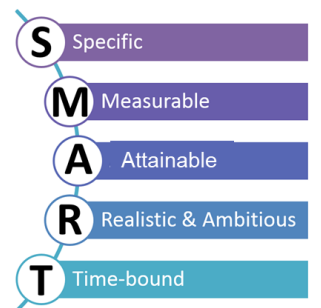


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# Planning tools

## From packages to responsibilities

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Who **performs** the work?

Who **manages** and is **responsible** for the result?

Who should be **consulted before** starting?

Who should be **kept informed**?



# Planning tools

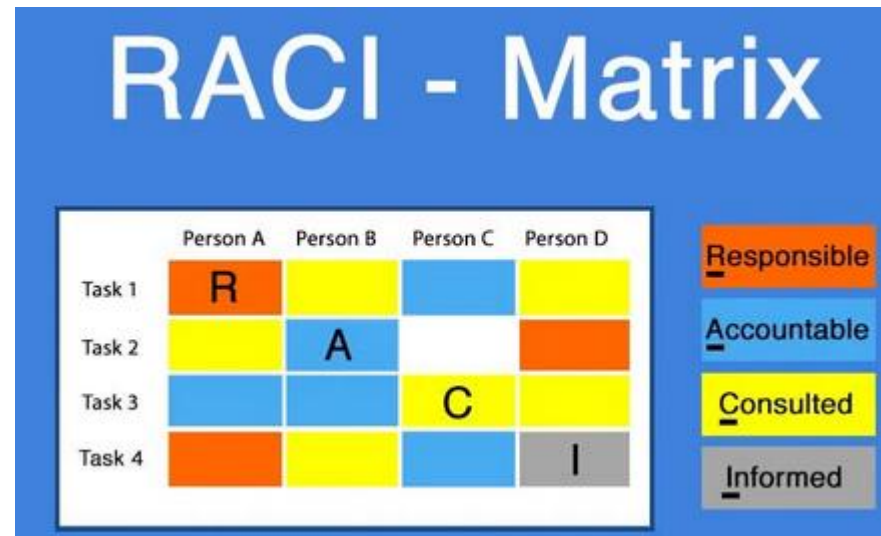
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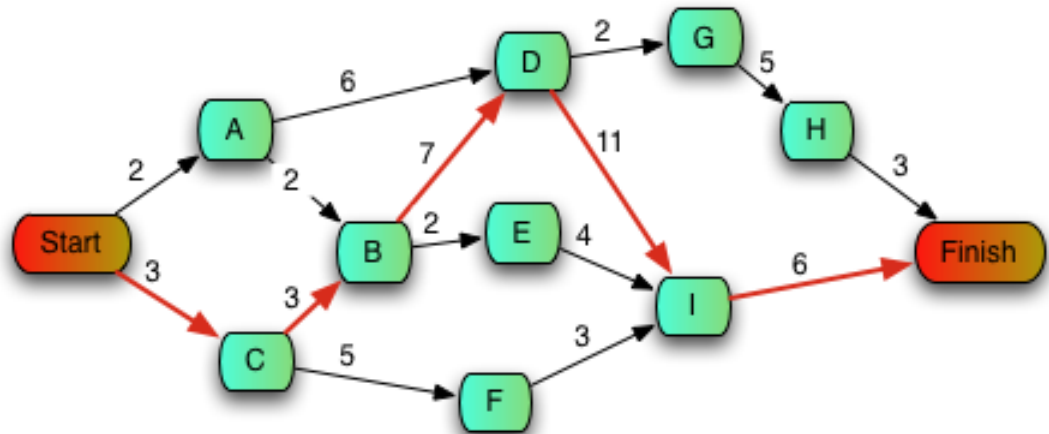
## PERT Diagram /Program Evaluation and Review Technique

### Determining the critical path

- Analyze the sequence of tasks
- Focus on required time for each task
- Dependencies: *Relationships between tasks*

### Key components

- Nodes (represent project tasks or events)
- Arrows (represent dependencies between tasks)



# Planning tools

## PERT Diagram /Program Evaluation and Review Technique

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How to calculate a PERT estimate (*estimated duration*)

$$\mathbf{PERT\ Estimate} = \frac{\mathbf{O + 4M + P}}{\mathbf{6}}$$

- Optimistic time (O): Best-case scenario
- Pessimistic time (P): Worst-case scenario
- Most likely time (M): Most probable time under normal conditions

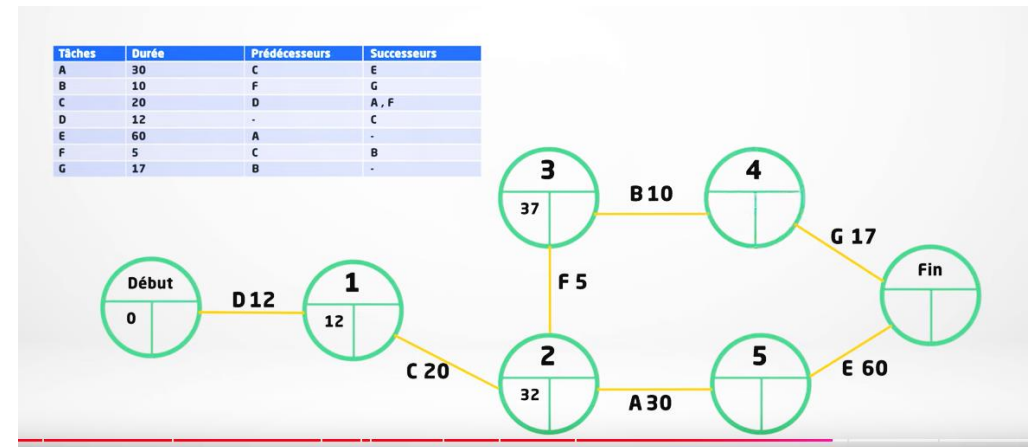
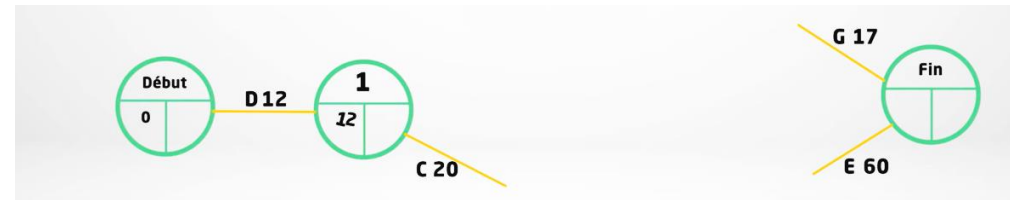
Better allocate resources

Plan for potential delays

# Planning tools

## PERT Diagram /Program Evaluation and Review Technique

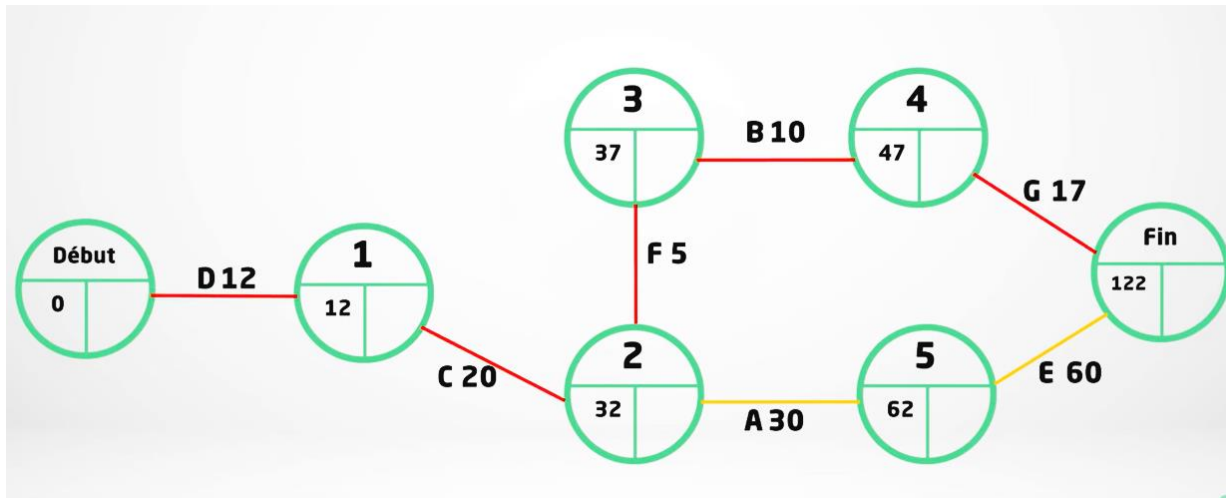
Tâches	Durée	Prédécesseurs	Successeurs
A	30	C	E
B	10	F	G
C	20	D	A, F
D	12	-	C
E	60	A	-
F	5	C	B
G	17	B	-



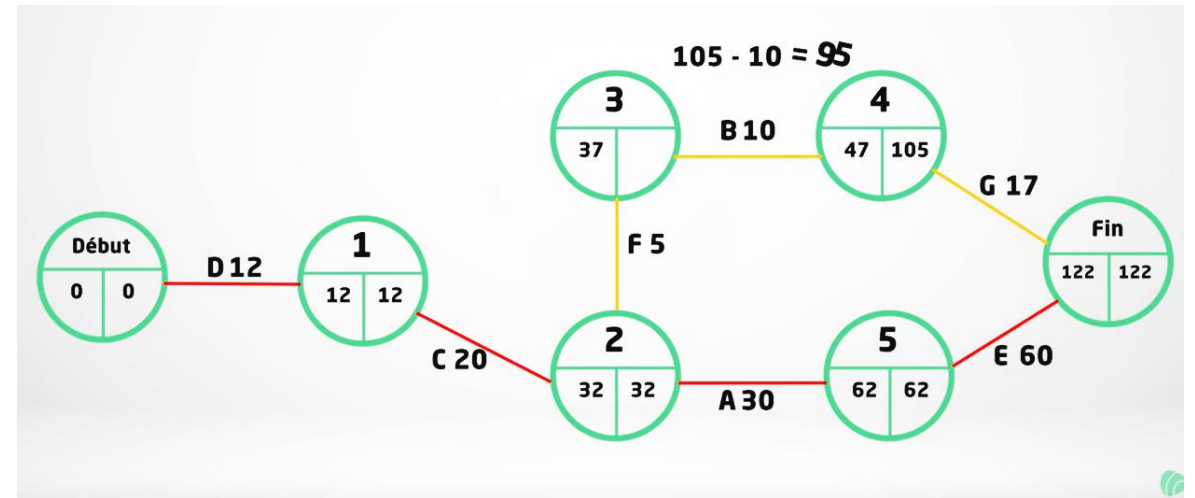
# Planning tools

## PERT Diagram /Program Evaluation and Review Technique

Path 1



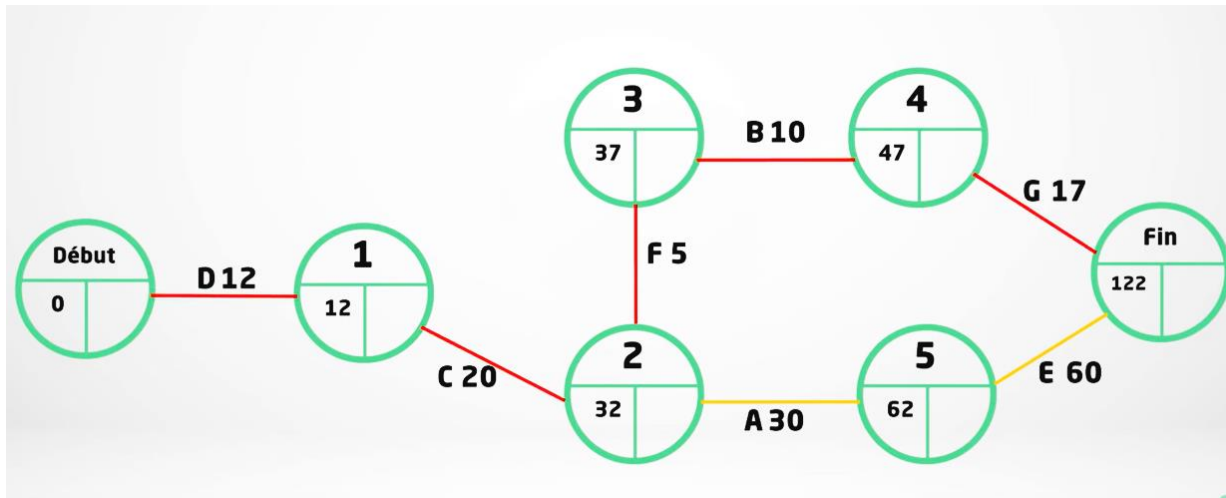
Path 2



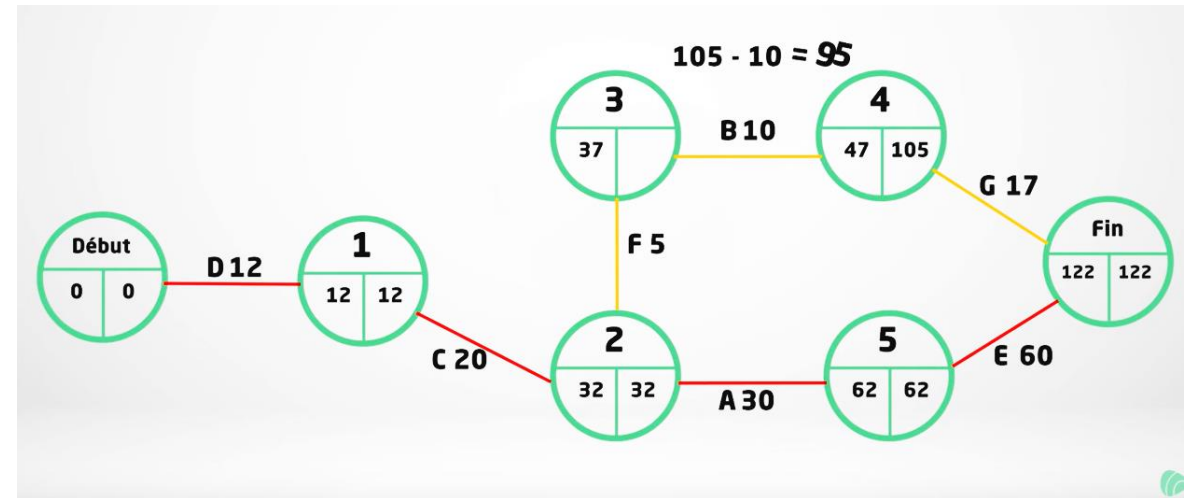
# Planning tools

## PERT Diagram /Program Evaluation and Review Technique

Path 1



Path 2



**Critical path**

# Planning tools

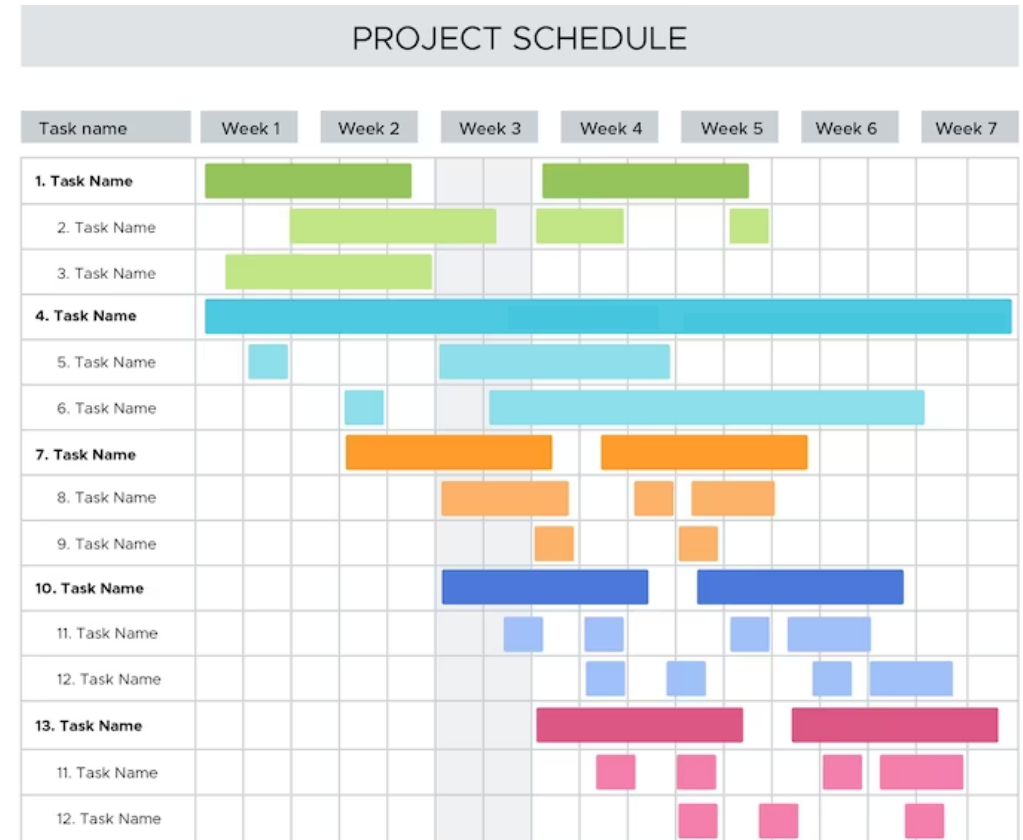
## GANTT Diagram\_Calendar for the realization of a project

### Time management and scheduling

- Estimating time accurately
- Prioritizing tasks (Critical Path Method)
- Buffering for delays

### Key components

- Tasks: Individual activities in the project
- Timeline: Dates when tasks start and finish
- Bars: Visual representation of task duration and sequence





# Planning tools

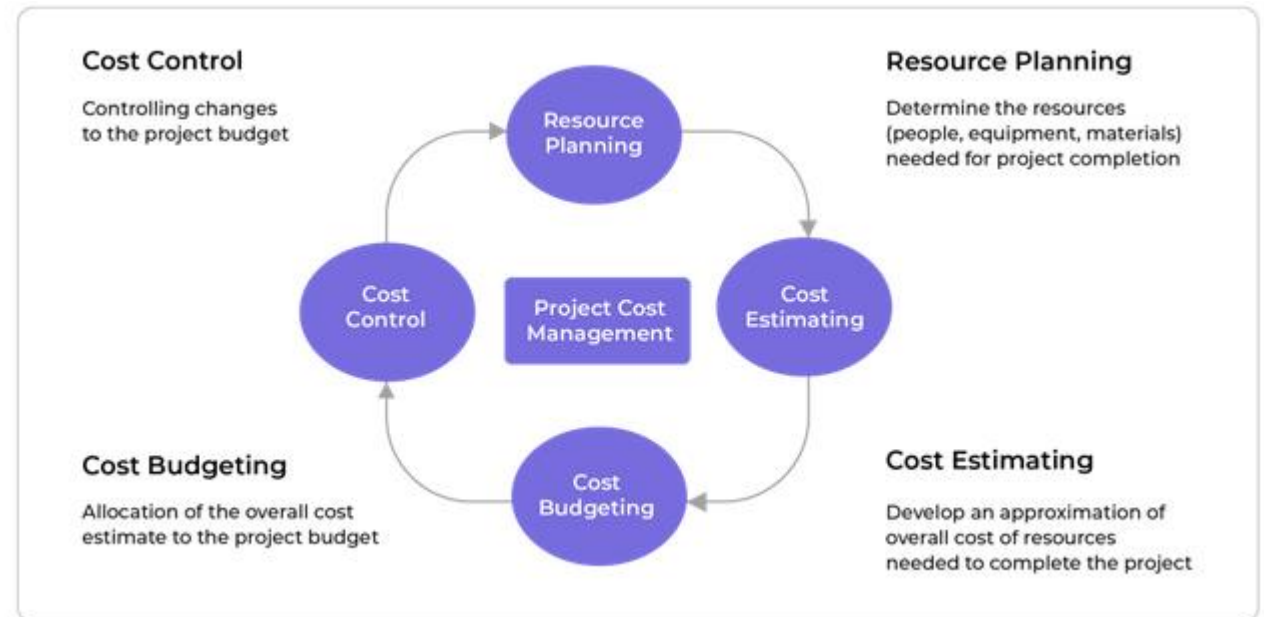
## Budget management

### Key Activities

- Estimating project costs
- Controlling costs during execution.
- Adjusting for scope changes

### Tools

- Cost estimation sheets
- Financial reports



# Execution

## Delivering the Work

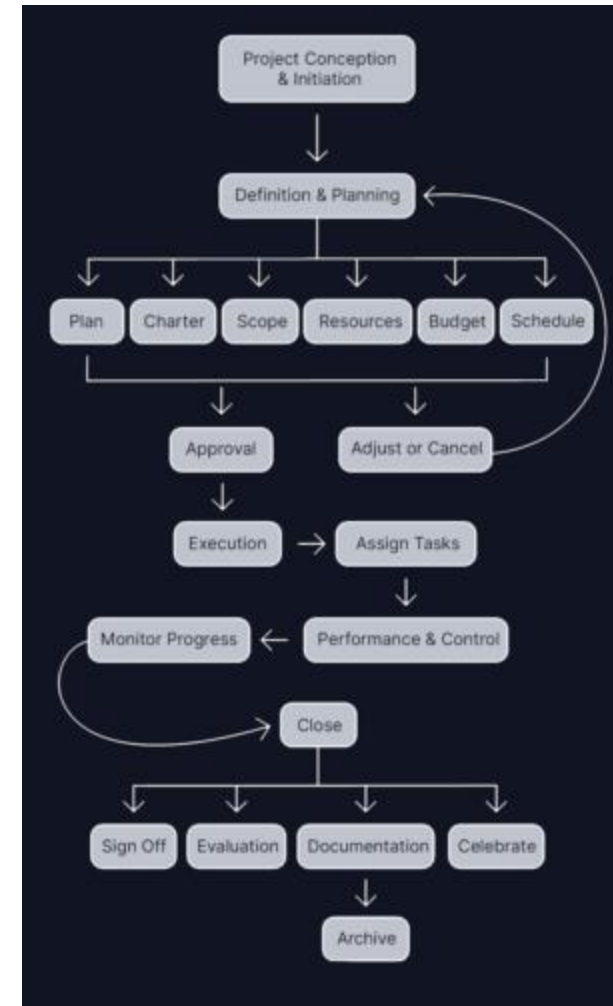


### Key Activities

- Coordinating people and resources
- Managing stakeholder communication
- Tracking project performance

### Challenges

- Managing team dynamics
- Time management



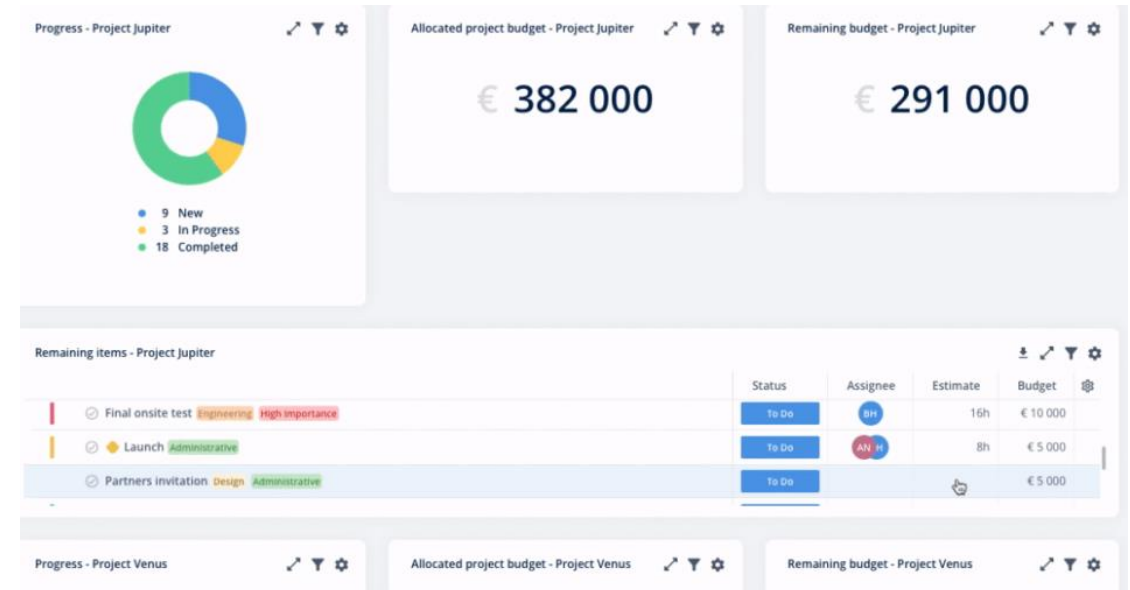
# Monitoring & Controlling

## Ensuring Project Success



### Key Activities

- Track project progress (KPIs)
- Measure performance (against budget, schedule)
- Manage changes and risks
- Regular status reports



# Project Closure

## Wrapping Up



### Key Activities

- Final deliverables
- Lessons learned
- Project report
- Release resources
- acknowledge the team's efforts

### Deliverables

- Final project report
- Client acceptance

Project closure steps	Project closure activities	Status	Documents, deliverables, or tools required	Complete?
Tie up loose ends	Review the original project plan and create a wrap-up plan with any closing tasks as needed	Completed	Project plan	<input type="checkbox"/>
	Review and assign outstanding tasks	Closing	Project scope	<input type="checkbox"/>
	Let your team know about any final meetings	Incomplete	Project forecasting reports	<input type="checkbox"/>
			Wrap up plan	<input type="checkbox"/>
Wrap up admin tasks	Review and update project documentation, contracts, and assets		Resource scheduler	<input type="checkbox"/>
	Close out external contracts and pay outstanding invoices		Project closure communication email (internal)	<input type="checkbox"/>
	Finalize project finances		Project closure documents (contracts, assets.)	<input type="checkbox"/>
	Transfer over deliverables to stakeholders		All project closure deliverables	<input type="checkbox"/>
Close the loop with stakeholders	Book a closing meeting with stakeholders		Closing project budget	<input type="checkbox"/>
	Get all stakeholders to agree on project completion (try to get this in writing too!)		Project closure communication email (external)	<input type="checkbox"/>
	Send your final report to stakeholders and gather feedback via a survey or questionnaire		Meeting room booking system	<input type="checkbox"/>
			Written agreement of project completion	<input type="checkbox"/>
Provide the next steps to your project team	Confirm that the project is closing and release final payments		Final project report	<input type="checkbox"/>
	Share the date of the project retro, evaluation meeting, or post-mortem meeting if the project was a failure, alongside any preset questions you'd like your team to answer		Feedback questionnaire (stakeholders)	<input type="checkbox"/>
	Release project resources, including team members, external contractors, or other partners		Project closure email (internal)	<input type="checkbox"/>
Hold a project evaluation meeting (or post-mortem)	Let everyone know there are no wrong answers or stupid questions		Feedback questionnaire (team)	<input type="checkbox"/>
	Reintroduce the project plan with the entire timeline		Resource management software	<input type="checkbox"/>
	Give every team member a chance to provide feedback and		Project scope	<input type="checkbox"/>



# Risk management

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## Key Activities

- Identify all potential risks
- Critical analysis
- Set up mitigation plan

## Goals

- Wrong objectives are a fatal error

## Resources

- Men, Material, Money, Time = 3M+T

## Threats

- Management, people, skills
- Material, machines, facilities, environment
- Money & Financing
- Time & planning

# Monitoring & Controlling

## Risk Management\_what?

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# Monitoring & Controlling

## Risk Management\_what?

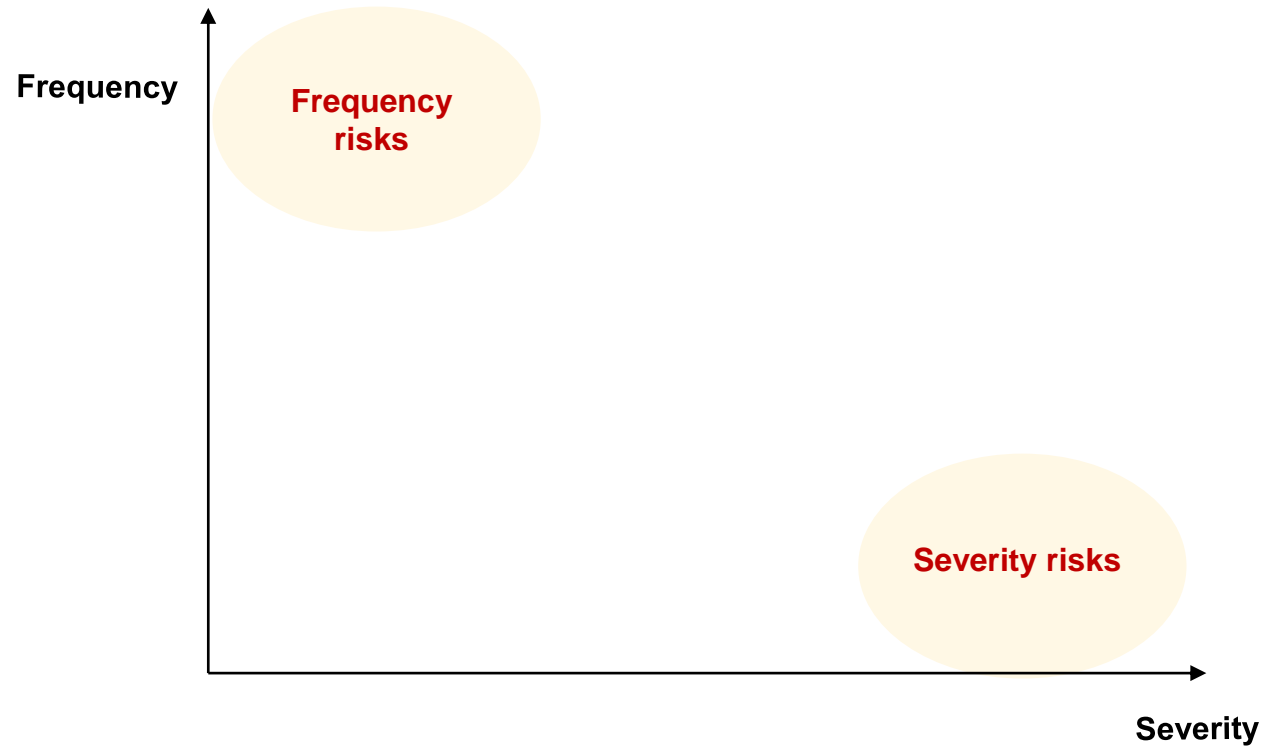
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# Monitoring & Controlling

## Risk Management\_what?

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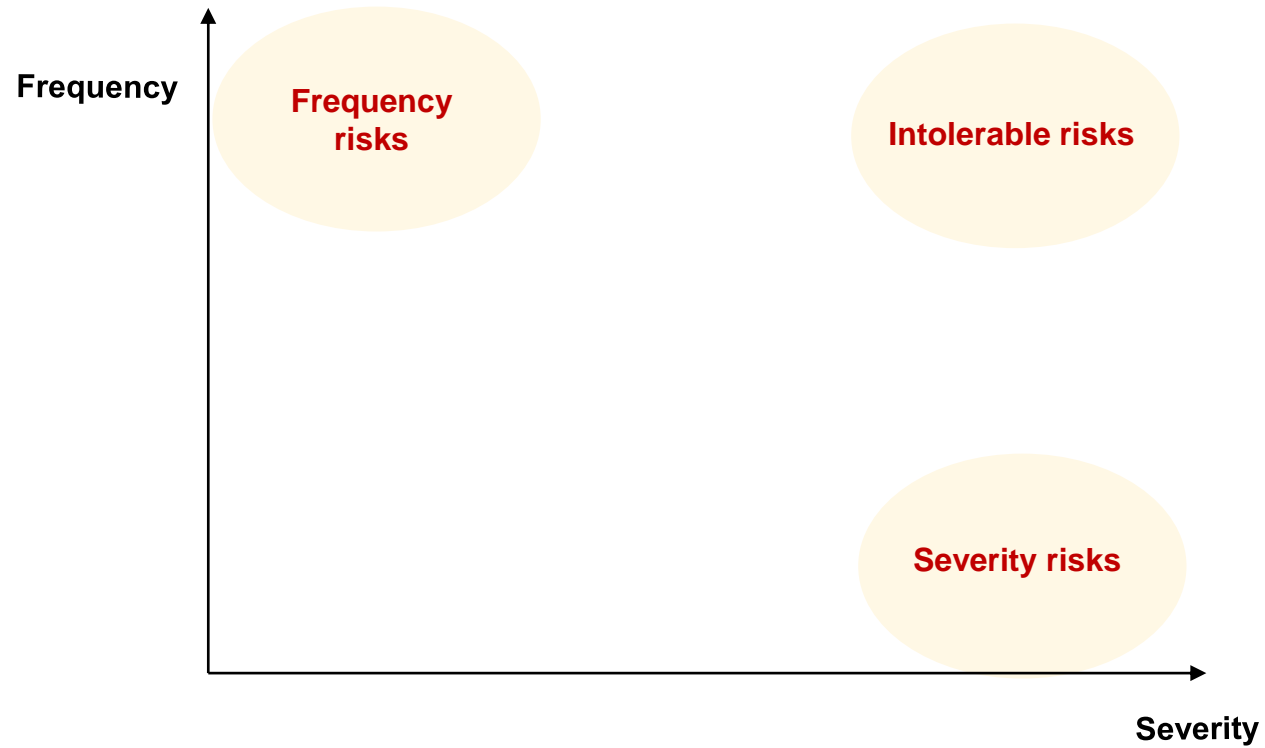




# Monitoring & Controlling

## Risk Management\_what?

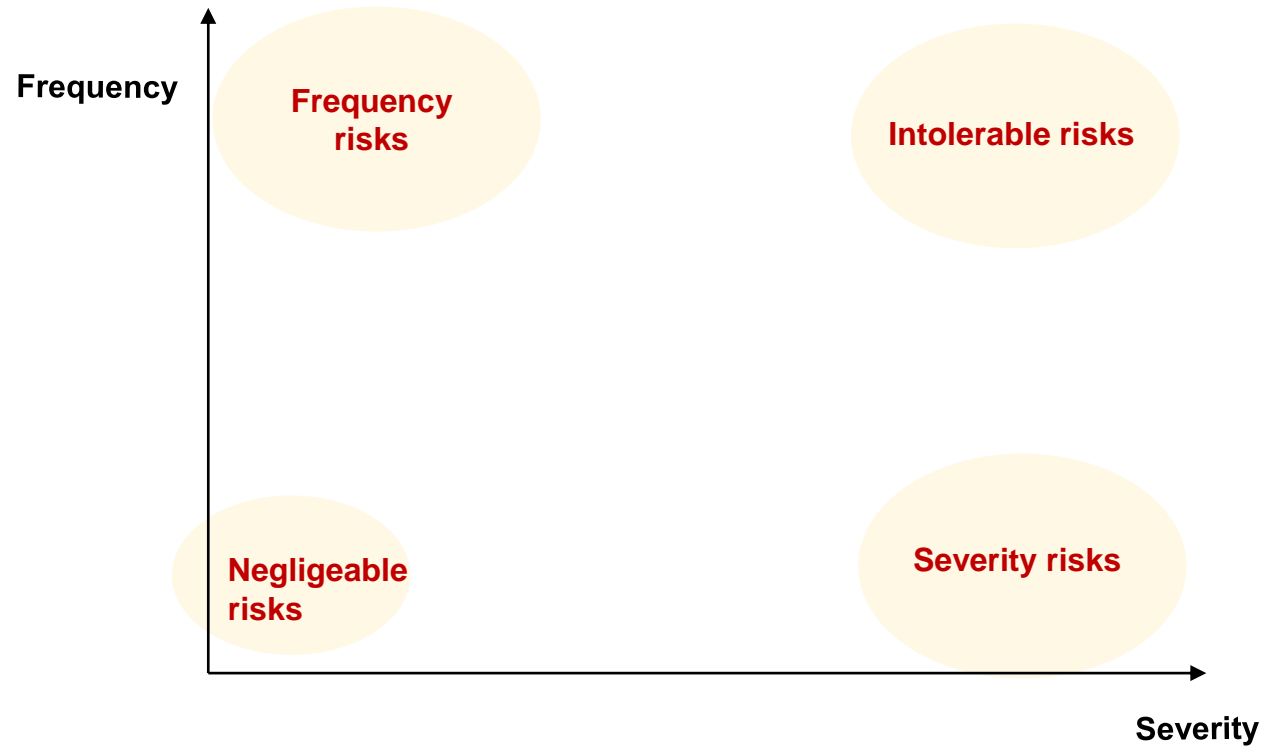
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# Monitoring & Controlling

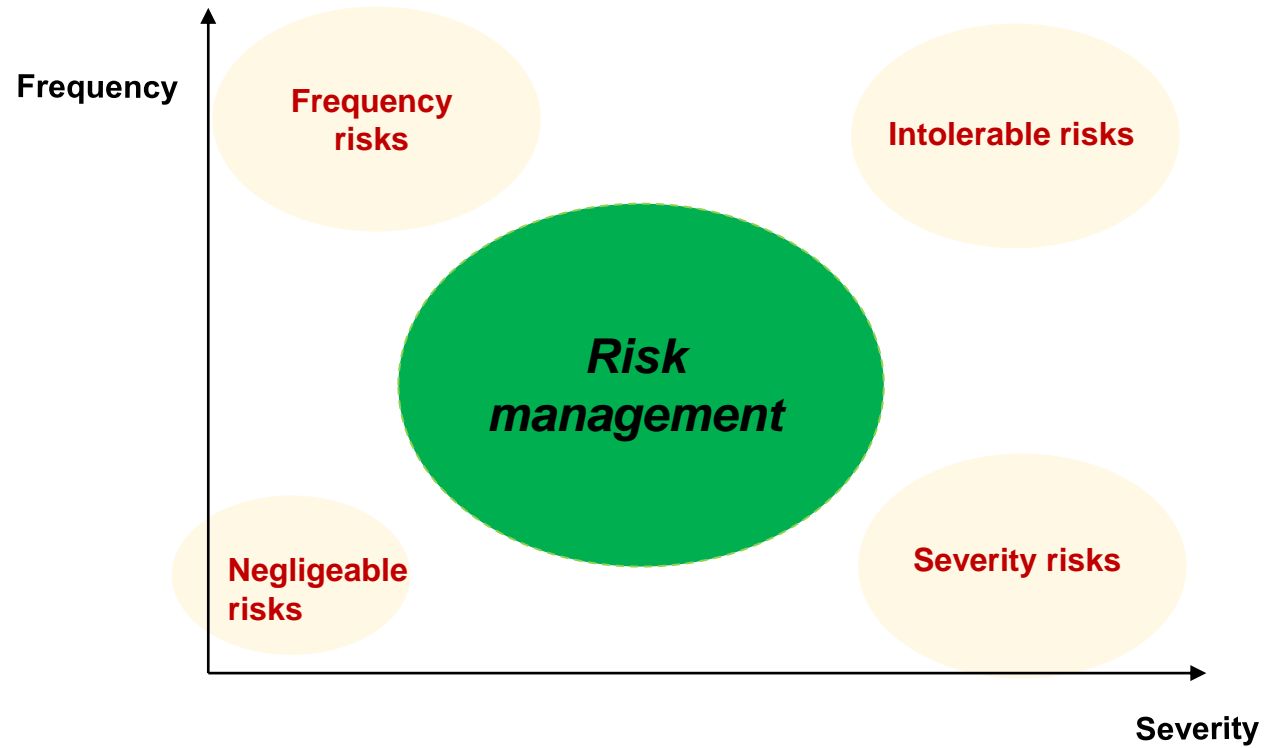
## Risk Management\_what?

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# Monitoring & Controlling

## Risk Management\_what?



# Monitoring & Controlling

## Risk Management\_Prioritize

### Critical risks

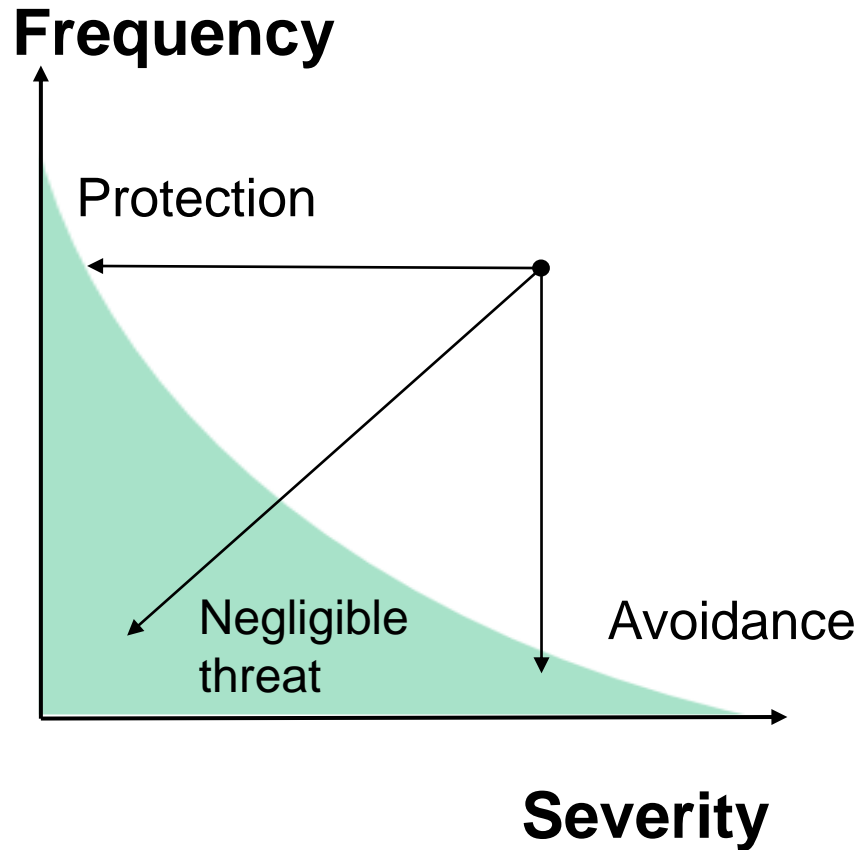
- Threaten resources
  - Vulnerable: high frequency
  - Strategic: high impact

Impact	Probability				
	A	B	C	D	E
5	Yellow	Yellow	Red	Red	Red
4	Green	Yellow	Yellow	Red	Red
3	Green	Green	Yellow	Yellow	Red
2	Green	Green	Green	Yellow	Yellow
1	Green	Green	Green	Green	Yellow

**Criticality = severity \* frequency**

# Project tools

## Risk Management\_reduction strategies



### Reduce severity

- Protection

### Reduce frequency

- Avoidance

### A-CAT

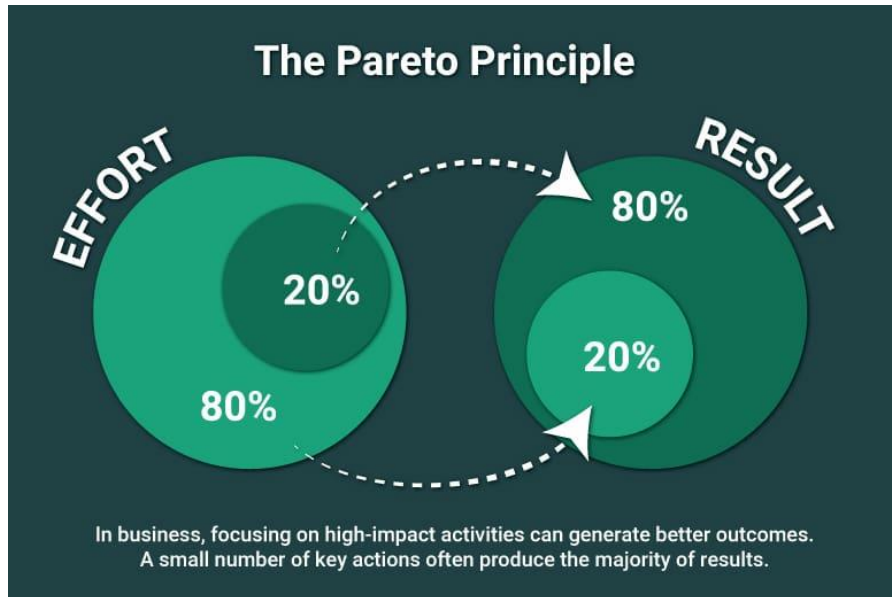
- Avoid
- Control
- Accept
- Transfer

# Project tools

## Risk Management\_prioritize\_Pareto principle

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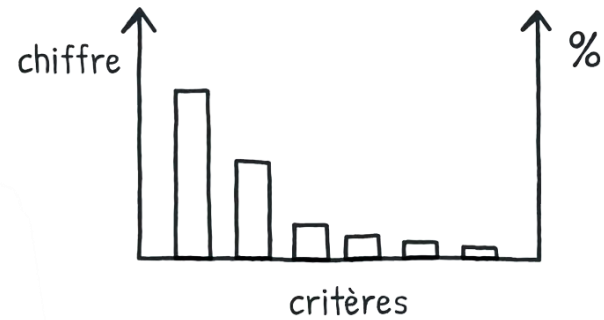
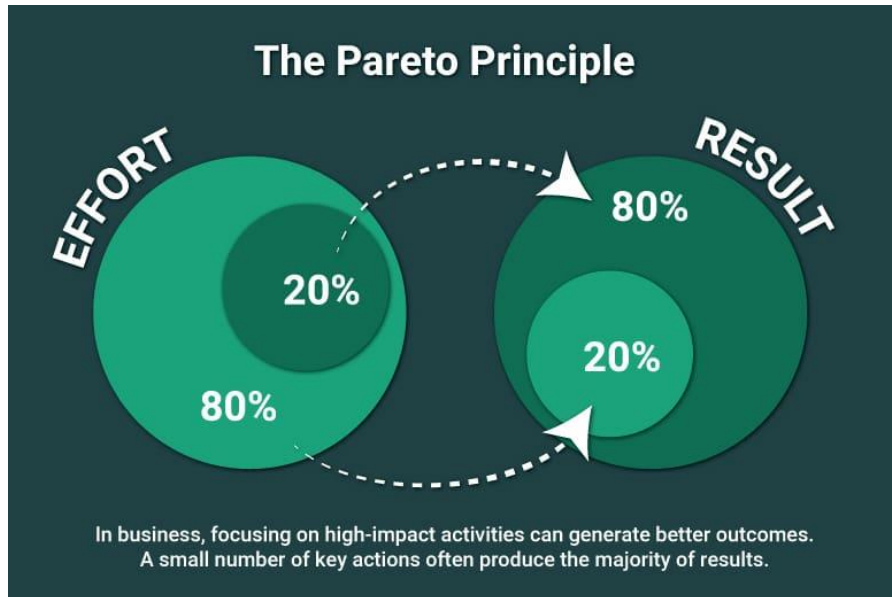
### Pareto Law



# Project tools

## Risk Management\_prioritize\_Pareto principle

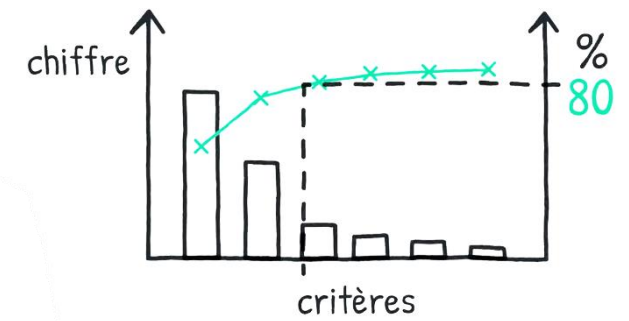
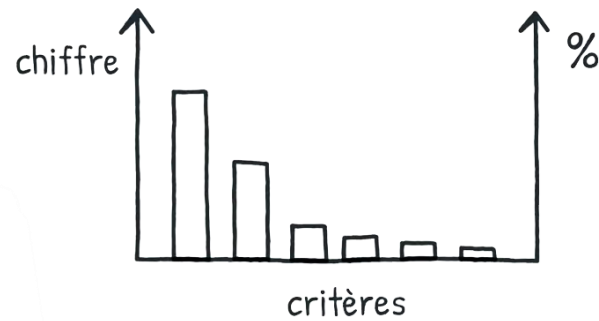
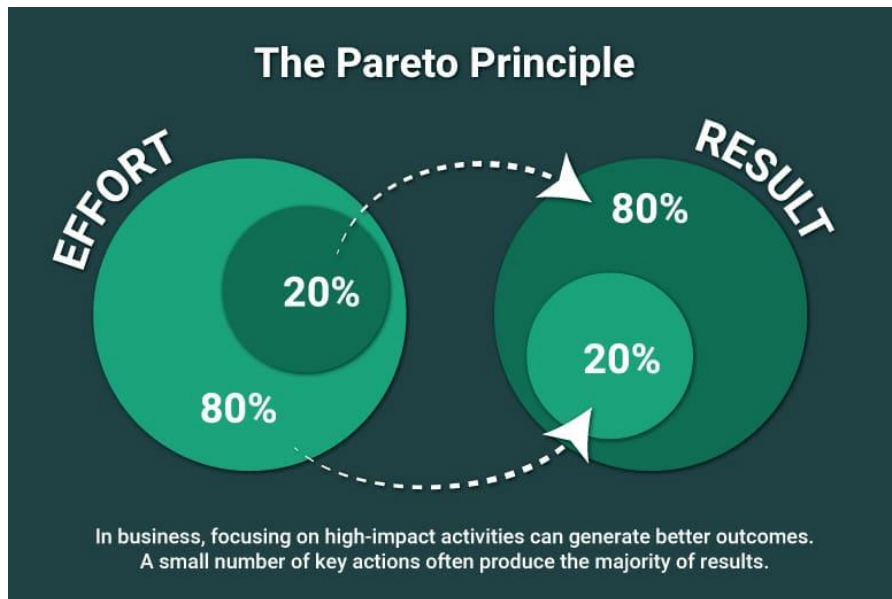
### Pareto Law



# Project tools

## Risk Management\_prioritize\_Pareto principle

### Pareto Law

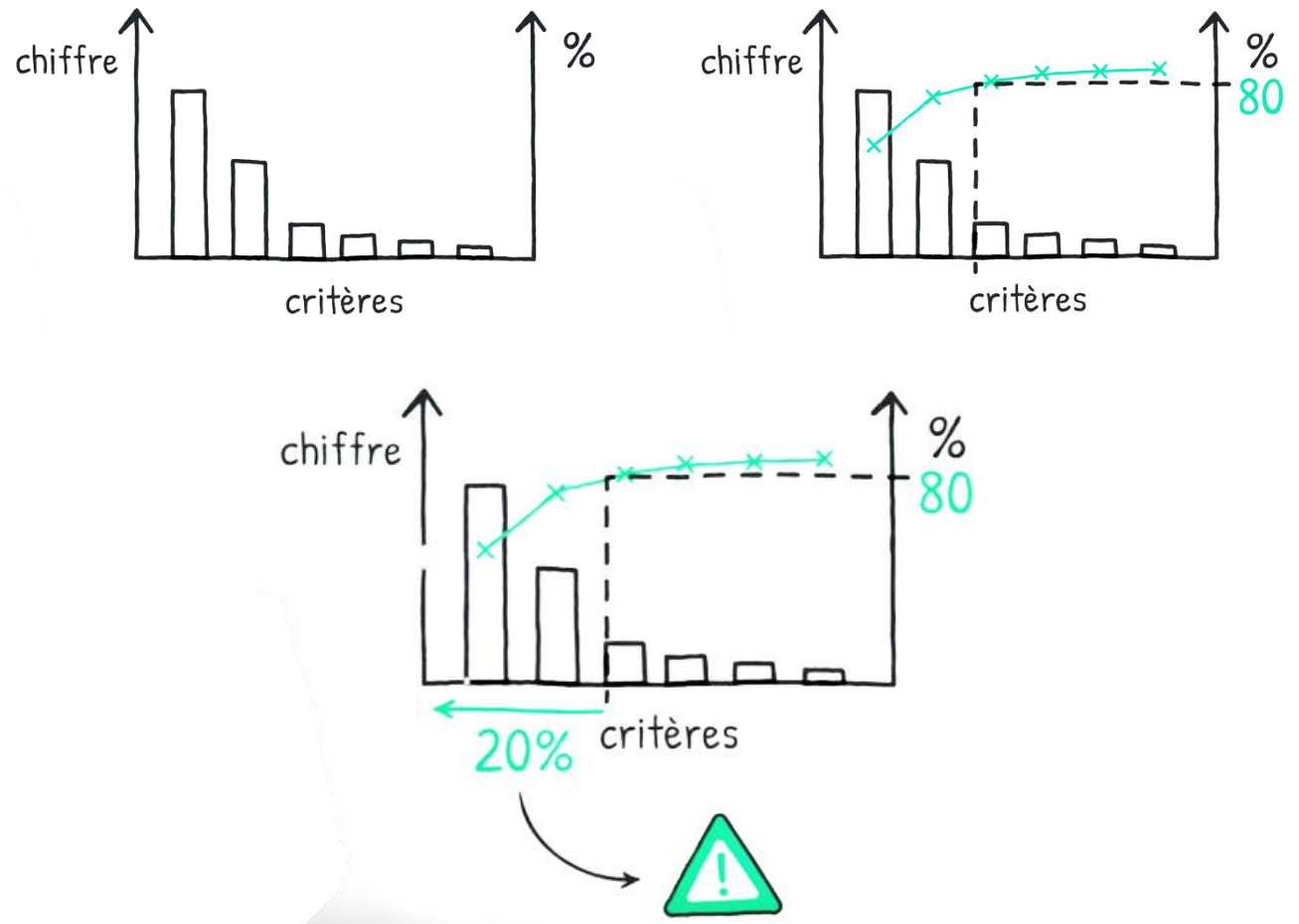
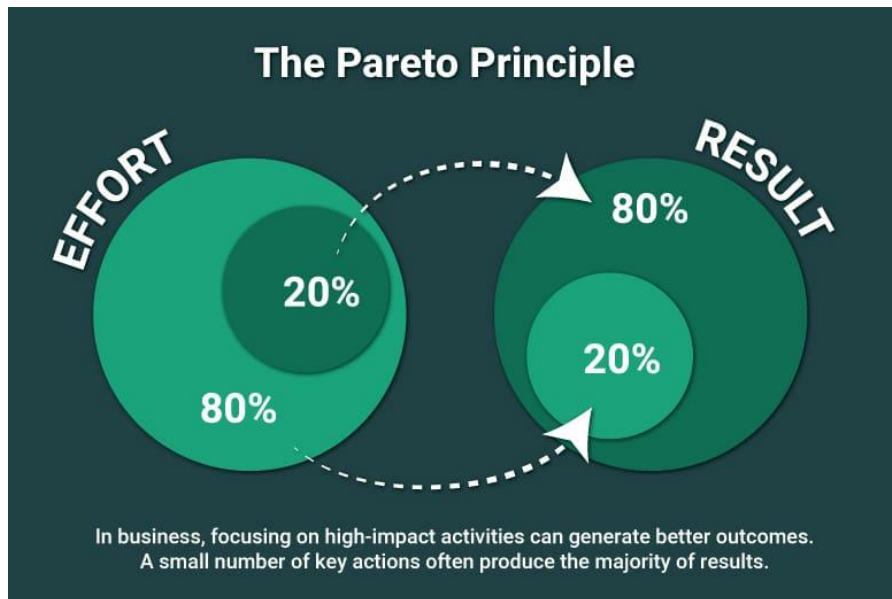




# Project tools

## Risk Management\_prioritize\_Pareto principle

### Pareto Law



# Project tools

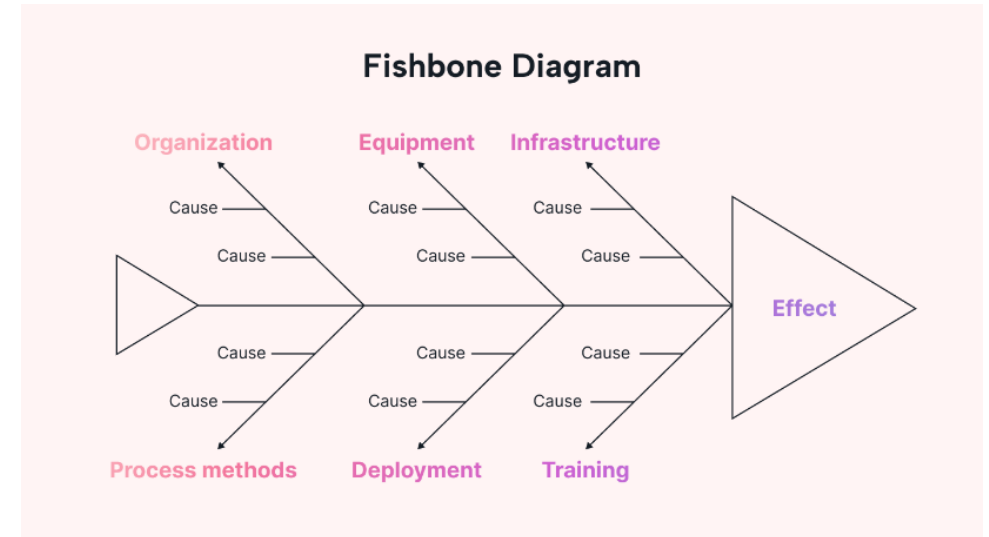
## Risk Management\_Analyze

### Cause-Effect Diagram (Fishbone Diagram)

- Visual tool to identify, organize, and display possible causes of a problem or risk

### 5 Whys Technique

- systematically uncover the root cause by asking 'Why?' five times



# Project tools

## Risk Management\_Analyze

### 5 Whys Technique



# Project tools

## Risk Management

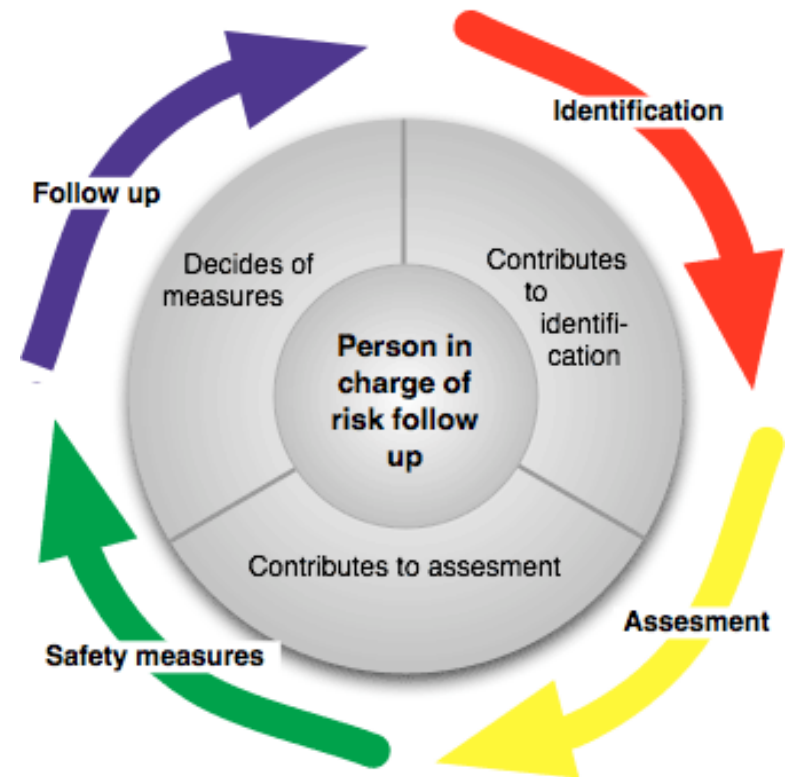
### Monitor the risk

- Prioritize
- Well identify risks
- Identify a risk responsible
- Update the risk plan

### Attention to flawed actions

*“we will finish this task before scheduled date”*

*“we will work hard”, “we will be serious”*



# Project tools

## Risk Management\_delay management

### The Brooks' law

"Adding manpower to a late task makes it later."

Why? Additional team members increase complexity rather than speed.



# Project tools

## Risk Management\_delay management

### The Brooks' law

"Adding manpower to a late task makes it later."

Why? Additional team members increase complexity rather than speed.



### Eisenhower box

	URGENT	NOT URGENT
IMPORTANT	<b>DO</b> <i>Do it now.</i> Write article for today.	<b>DECIDE</b> <i>Schedule a time to do it.</i> Exercising. Calling family and friends. Researching articles. Long-term biz strategy.
NOT IMPORTANT	<b>DELEGATE</b> <i>Who can do it for you?</i> Scheduling interviews. Booking flights. Approving comments. Answering certain emails. Sharing articles.	<b>DELETE</b> <i>Eliminate it.</i> Watching television. Checking social media. Sorting through junk mail.

# Project tools

## Risk Management\_delay management

### The Brooks' law

"Adding manpower to a late task makes it later."

Why? Additional team members increase complexity rather than speed.



### Eisenhower box

# Risk = opportunity

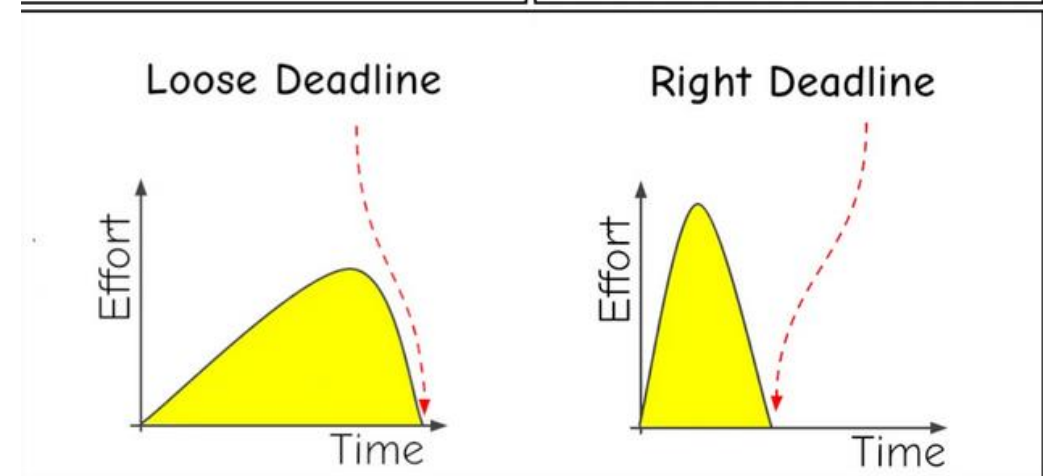
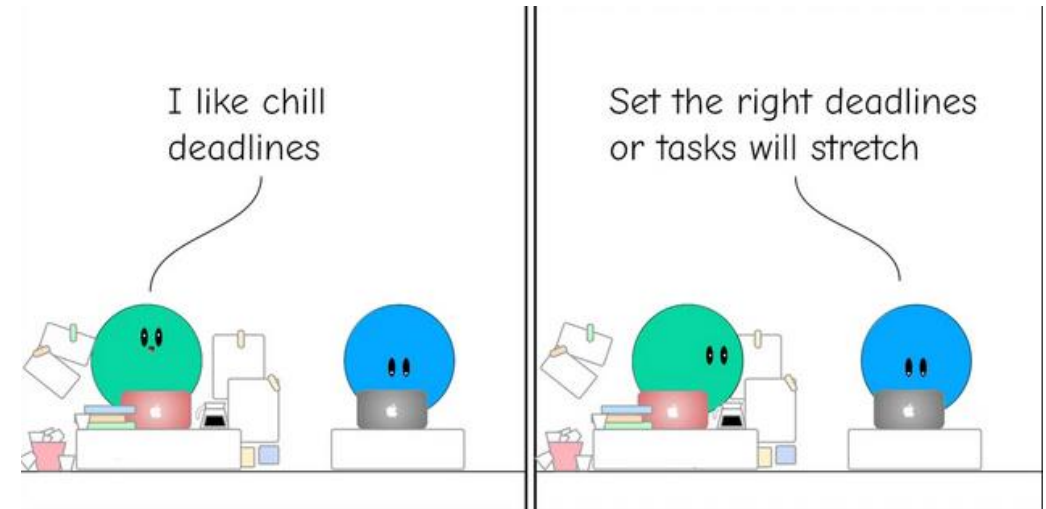
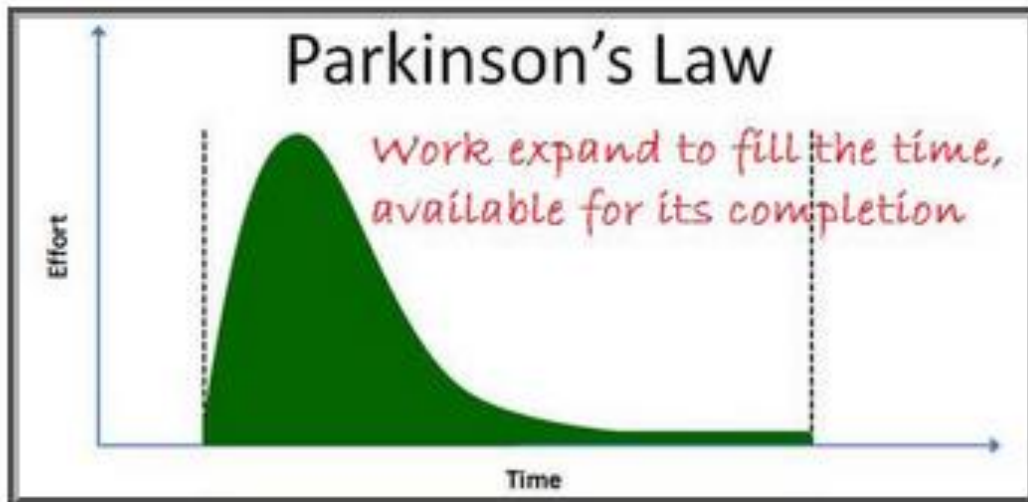
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# Project tools

## Risk Management\_delay management

### The Parkinson' law





# Project tools

## Communication

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### Stakeholder Communication Plan

Everyone involved in the project must know what's happening and what's expected of them

- **Who** needs to receive information
- **What** information needs to be shared
- **When** updates or reports should be provided
- **How** the information will be delivered, whether through emails, reports, or meetings

key to project success

alignment on objectives

aware of progress

# Key Skills for Project Managers

Be a manager

## Leadership

- Guiding the team

## Communication

- Effective collaboration

## Problem Solving

- Addressing issues

## Time Management

- Prioritizing tasks

## Negotiation

- Managing conflicts and resources



# Project Management

## Key takeaways

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Projects are temporary and unique

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The project lifecycle has 5 phases

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Effective planning, risk management, and communication are key

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Project management tools are essential for tracking progress

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**Q&A**