



Project Management Fundamentals

Fondamenti di Project Management
2023

PART 6 – METHODOLOGY 3RD – EXECUTION AND MONITORING

Seminar Part 6 Topics

PART 6 – METHODOLOGY 3RD – EXECUTION AND MONITORING

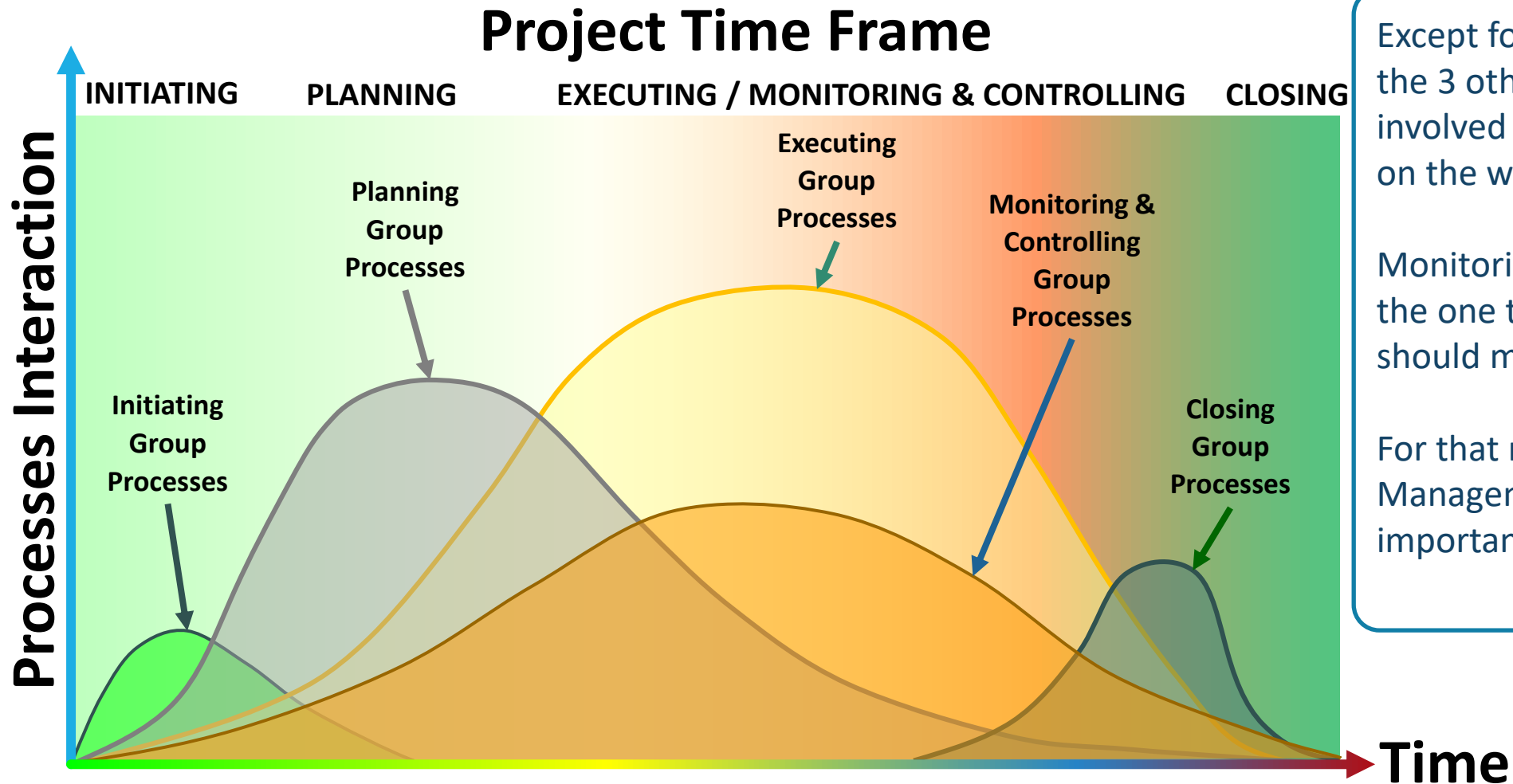
- 1) Project Life-Cycle**
- 2) Project Team**
- 3) Execution**
- 4) WIP**
- 5) Costs**
- 6) Monitoring Project**
- 7) Project Drift**
- 8) Risk response**
- 9) Project Crash**
- 10) Communication Plan**
- 11) Changes**

Predictive Approach – Process Groups and Project Management Processes

Project Management Process Groups				
Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4.1 Develop Project Charter	5.1 Develop Project Management Plan	6.1 Direct and Manage Project Work	7.1 Monitor and Control Project Work	8.1 Close Project or Phase
4.2 Identify Stakeholders	5.2 Plan Scope Management	6.2 Manage Project Knowledge	7.2 Perform Integrated Change Control	
	5.3 Collect Requirements	6.3 Manage Quality	7.3 Validate Scope	
	5.4 Define Scope	6.4 Acquire Resources	7.4 Control Scope	
	5.5 Create WBS	6.5 Develop Team	7.5 Control Schedule	
	5.6 Plan Schedule Management	6.6 Manage Team	7.6 Control Costs	
	5.7 Define Activities	6.7 Manage Communications	7.7 Control Quality	
	5.8 Sequence Activities	6.8 Implement Risk Responses	7.8 Control Resources	
	5.9 Estimate Activity Durations	6.9 Conduct Procurements	7.9 Monitor Communications	
	5.10 Develop Schedule	6.10 Manage Stakeholder Engagement	7.10 Monitor Risks	
	5.11 Plan Cost Management		7.11 Control Procurements	
	5.12 Estimate Costs		7.12 Monitor Stakeholder Engagement	
	5.13 Determine Budget			

Project Management Process Groups				
Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
	5.14 Plan Quality Management			
	5.15 Plan Resource Management			
	5.16 Estimate Activity Resources			
	5.17 Plan Communications Management			
	5.18 Plan Risk Management			
	5.19 Identify Risks			
	5.20 Perform Qualitative Risk Analysis			
	5.21 Perform Quantitative Risk Analysis			
	5.22 Plan Risk Responses			
	5.23 Plan Procurement Management			
	5.24 Plan Stakeholder Engagement			

Project Life-Cycle: Processes involved

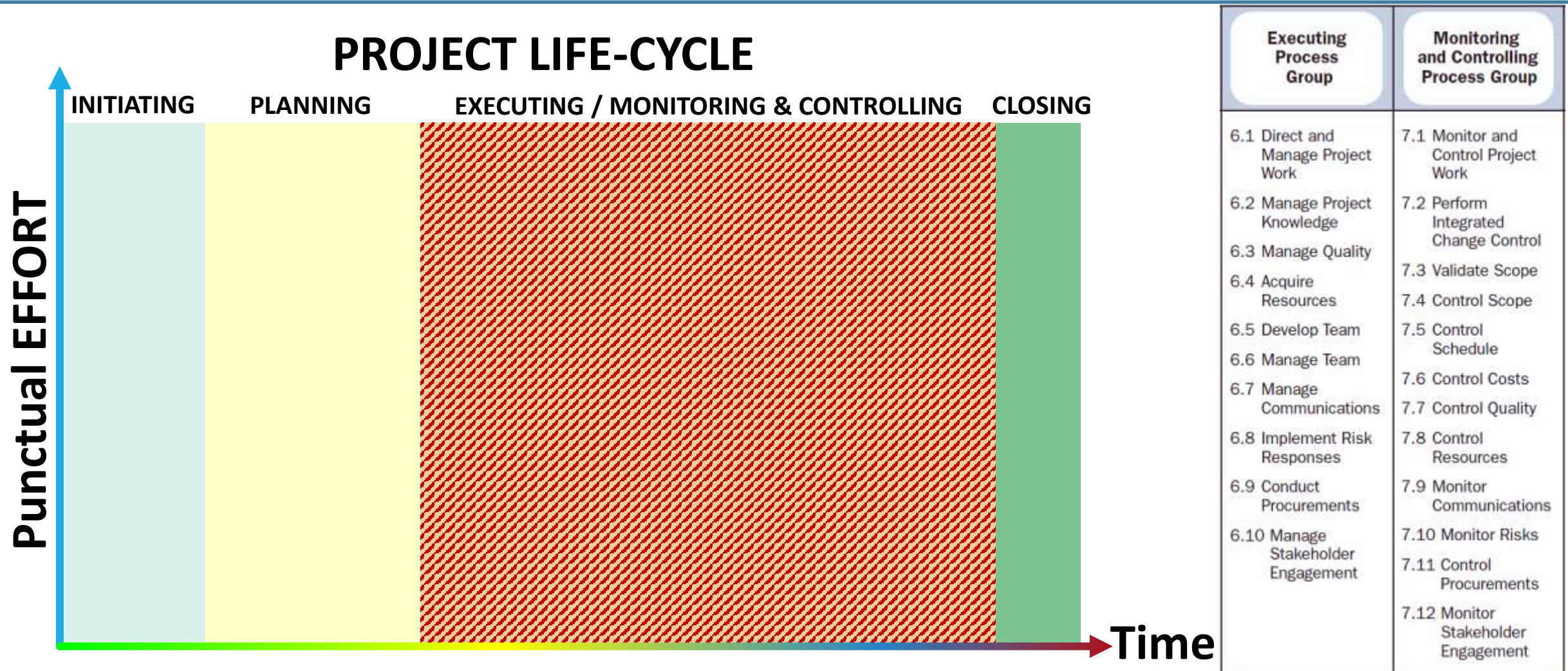


Except for INITIATING and CLOSING the 3 other Process Groups are involved with a different influence on the whole project lifespan.

Monitoring and controlling group is the one that a Project Manager should majorly directly manage.

For that reason the Project Management activity is an important part of the global effort.

Project Life-Cycle: Step 3



The Project Team

Def. 11: Project Team (PMBok 7th Ed.)

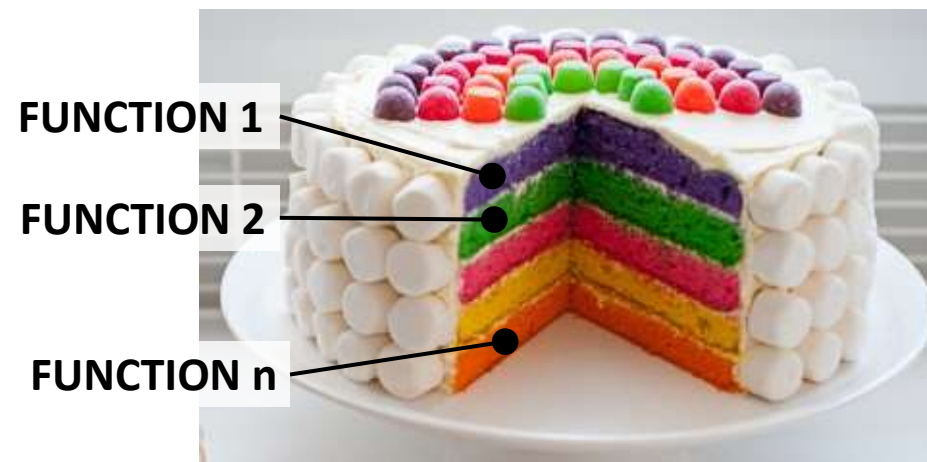
A set of individuals performing the work of the project to achieve its objectives.

Project Teams are made up of individuals who wield diverse skills, knowledge and experience.

Project Teams that work collaboratively can accomplish a shared objective more effectively and efficiently than individuals working on their own.

NOTE: The Project Team should have inside all the required competencies to perform successfully and effectively the project. Teams are formed by people of different functions

ORGANIZATION



Team1

Team2



The Project Team

Def. 12: Project Management Team (PMBOK 7th Ed.)

The members of the project team who are directly involved in project management activities

Def. 13: Knowledge asset (PMBOK 7th Ed.)

Knowledge assets may include tacit knowledge among project team members, subject matter experts, and other employees

Managing a Project Team is not so easy as it could appear at a first glance.

Many variables are involved, the level of engagement on the project and the individual motivations are to be considered and managed to create and steer effective teams.

The project Manager should be able to:

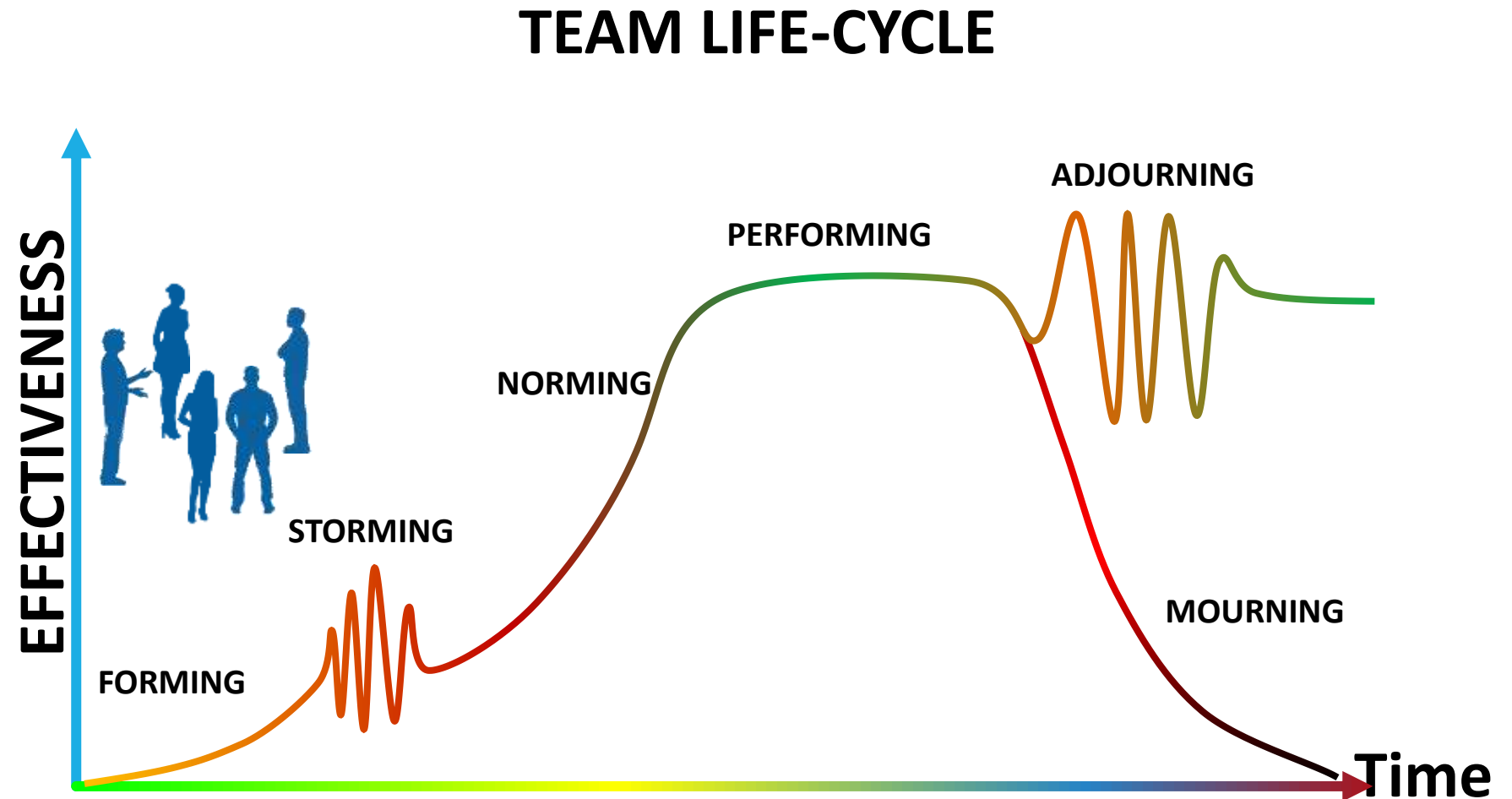
- ▶ understand the situation
- ▶ facilitate the collaboration
- ▶ communicate continuously horizontally and vertically (bottom-up and upside-down)

Team Lifecycle

A team is always temporary and cannot last forever.

The typical life-cycle has 5 stages:

- 1: Forming
- 2: Storming
- 3: Norming
- 4: Performing
- 5a: Adjourning (if the most of the Team still)
- 5b: Mourning (if the Team is disbanded)



The Project Manager and the Team

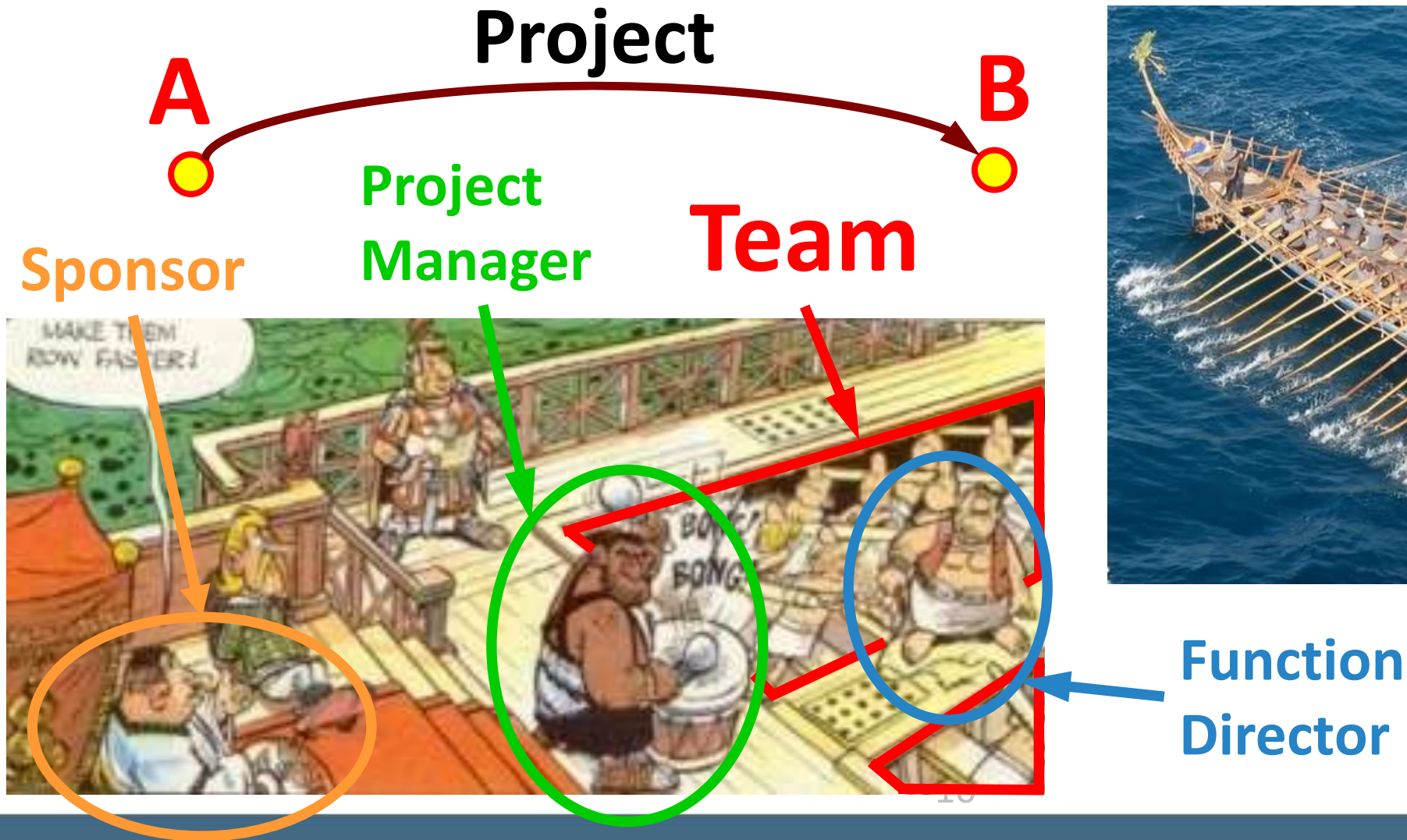
Buffalo Philharmonic Orchestra

Project Team

- ▶ Functional groups are identifiable
- ▶ The aim is shared
- ▶ One leader steers the ship on the set course

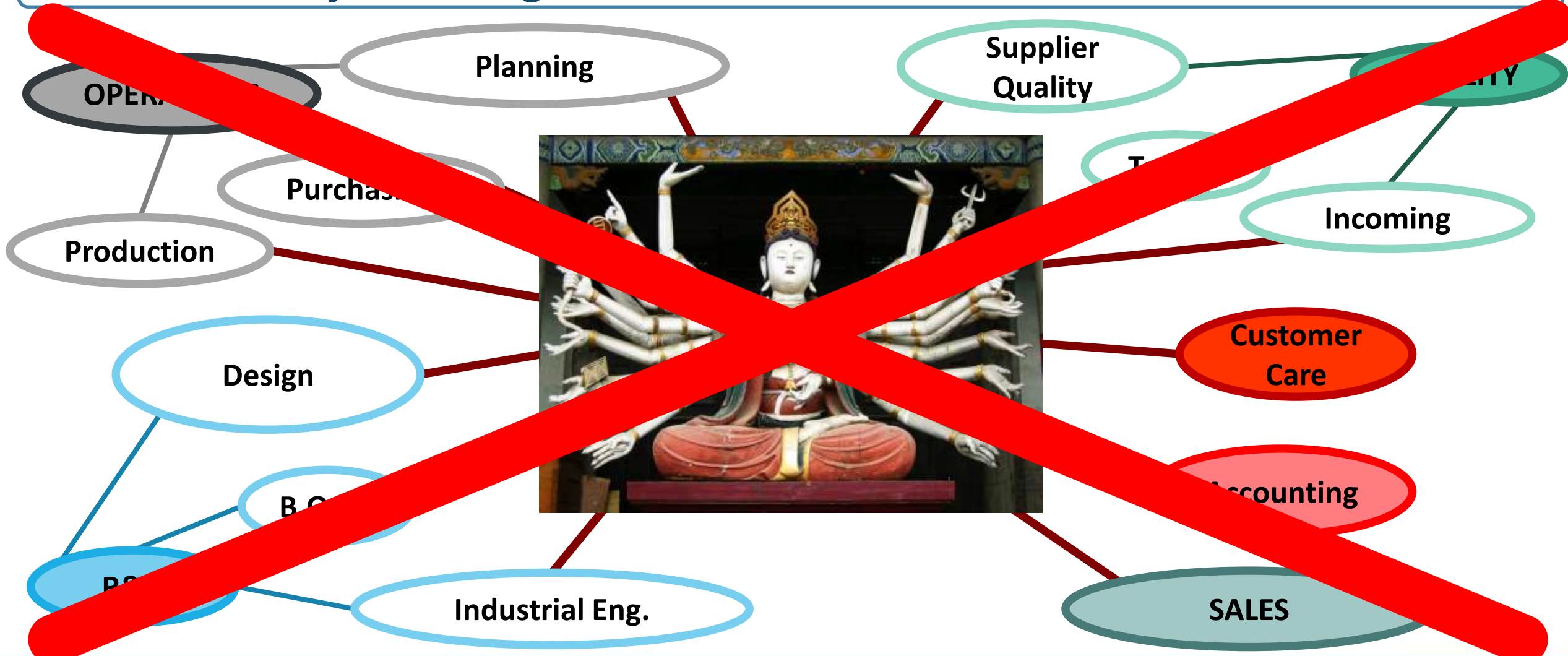
Project Manager

Roles

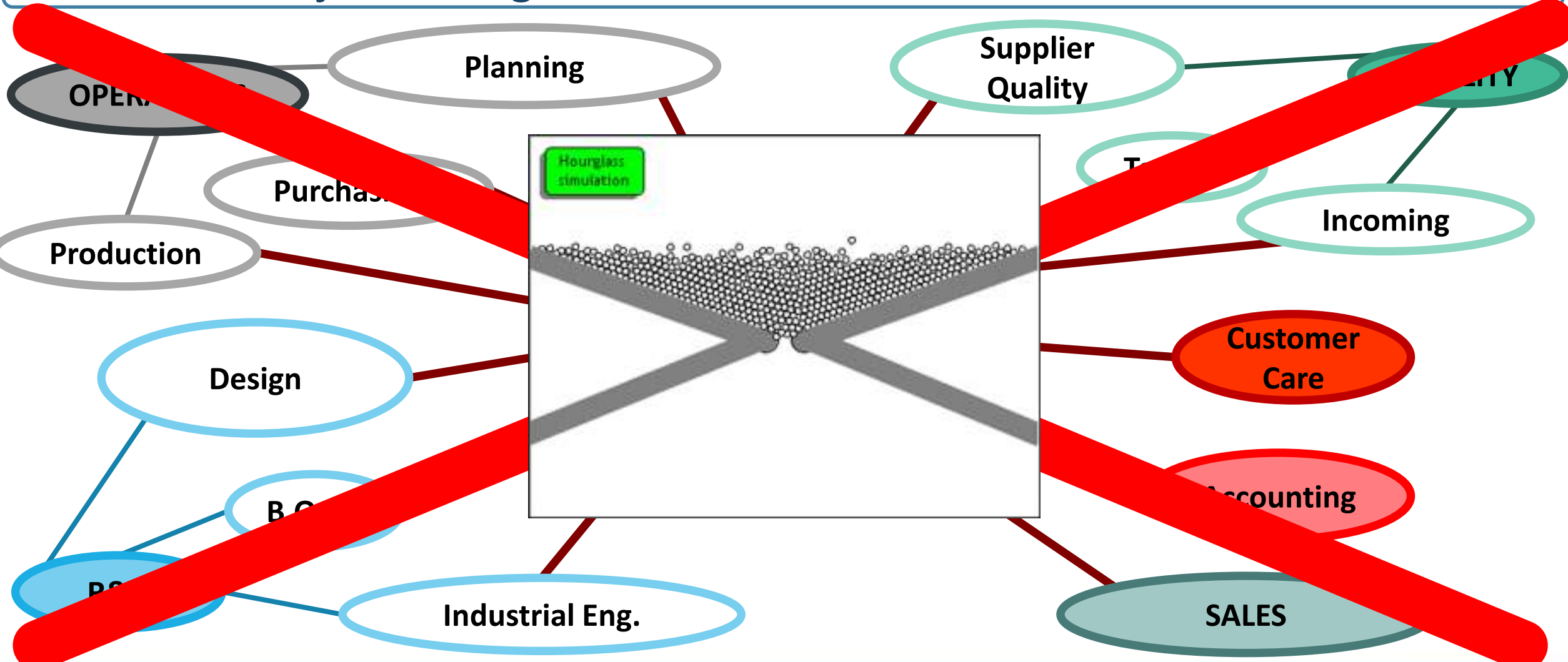


Function Director

Execution – Project Management Role



Execution – Project Management Role



Execution 1

The execution is the most expensive part of the project, since it requires all the resources forecasted to build up/get the result requested in the project charter.

The project Manager is responsible for :

- ▶ Coordination of the project Team and drive the situation to obtain the desired output/outcome

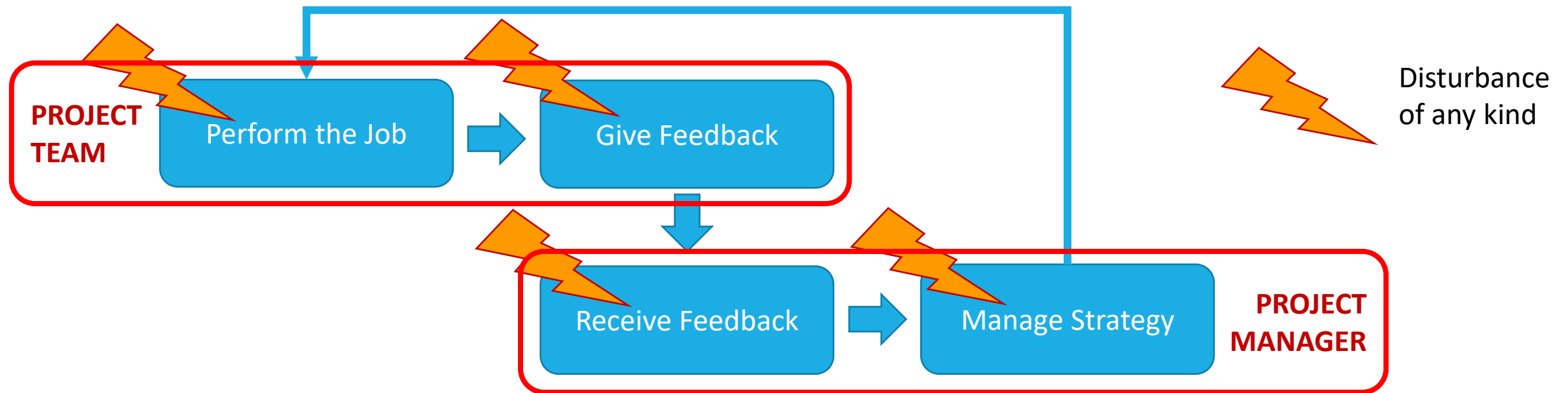
The Project Team is responsible for:

- ▶ The correct execution of the work-packages / Tasks
- ▶ The Work is performed by the team assigned to the project.
- ▶ The Project Management Work should be part of the WBS but the deliverables production is responsibility of operational Team or Teams.
- ▶ Specialized resources should do what they do best



Execution 2

A project is like a Functional Organization that operates temporarily with a specific goal. That means repeating processes and operations, but with continuous feedback and retroactions that allow to correct the aim, and move towards expected results. Since project is a unique endeavour, an elevate uncertainty is expected, also a lot of preventive actions should have been put in place trying to prevent odds.



Execution – From military doctrine

Strategy: Long term objectives → Project Management (Business goals)

Tactics: Short term actions → Operations (deliverables)

STRATEGY

- Planning
- Large Scale (Big Picture)
- Answers to “Why?”
- Difficult to copy
- Log Time Frame
- Cool blood
- Monitoring

VS

TACTICS

- Doing
- Smaller Scale (Day by Day)
- Answers to “How?”
- Easy to copy
- Short time frame
- Motivation / Enthusiasm
- Execution



Meetings 1

During the project execution the entire project team or a identified part of it (depending on the project's peculiarities) should find time to share status and problems.

Project Meetings:

are “ceremonies” in which the plan is compared to reality.

In this meetings at various level and involvement of the project team are discussed principally:

- Progress
- Issues

N.B.: Projects meetings are not the place in which issues are solved, but only where problems should be bring to the surface

In Italy is usually used the acronym: “S.A.P. = Stato Avanzamento Lavori”, just like the Gantt chart is often called “Cronoprogramma”, both come from constructions.

Meetings 2

► **Project Meetings:** Describe and analyse the project Status
N.B. Meetings cannot replace in time and effort the project execution, are fundamentals but are only a little component of the project work

- **Technical Meetings:** Have a specified reason, could involve the Project Manager and could be steered by him but:
- Have a specified technical / operational reason
 - Should cope with a specific issue or problem, foresighted or not
 - Needs technicians and experts to be accomplished
 - Can affect the whole project or a singular deliverable /work-package → Feedback to the Project Manager
 - Should be evaluated for its **urgency** – and managed through the risk responses planned



Project Costs

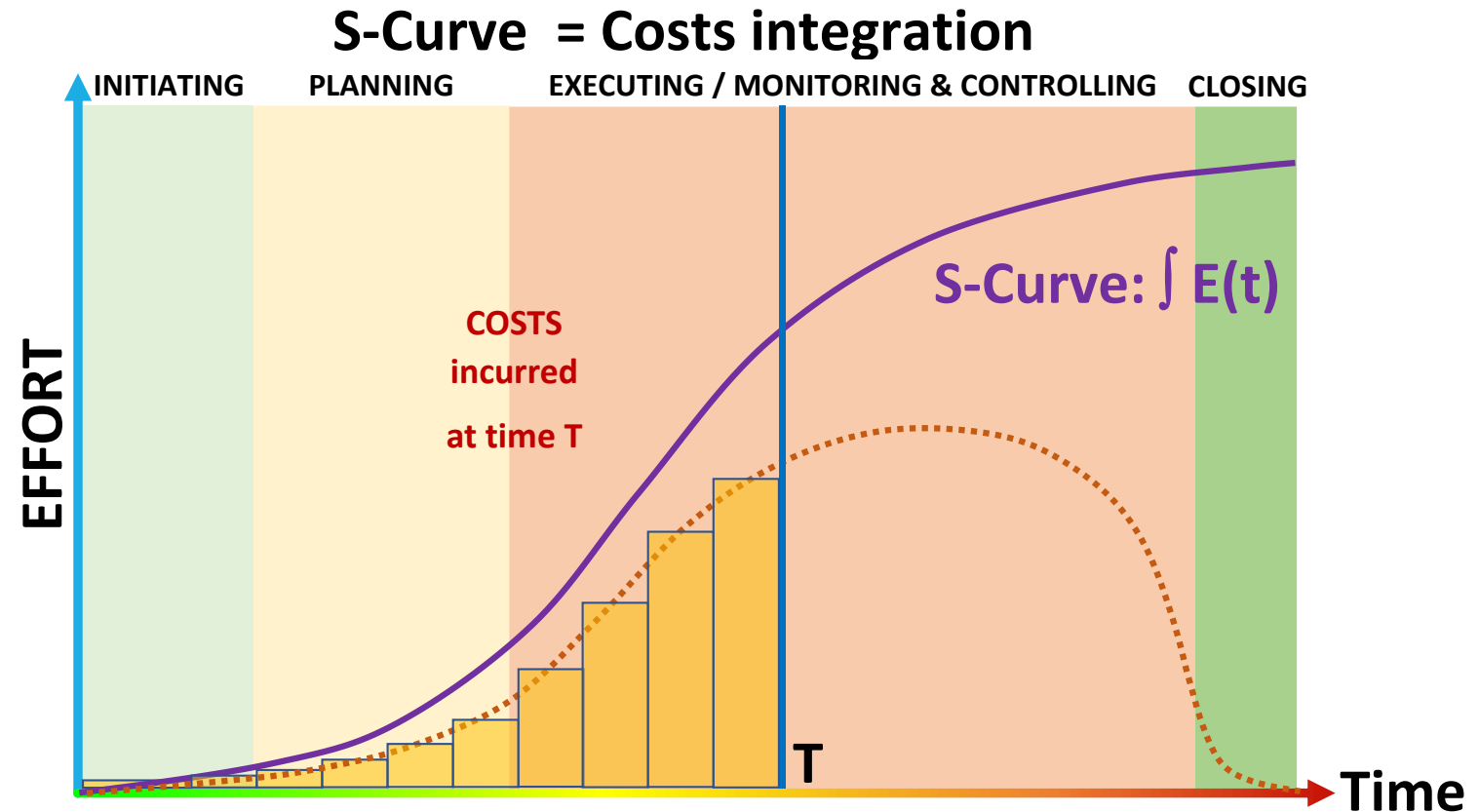
As we have seen costs are an integral part of the Project

The project is a business activity so it has to be evaluated on its ability to produce more income than the costs it needs to be performed.

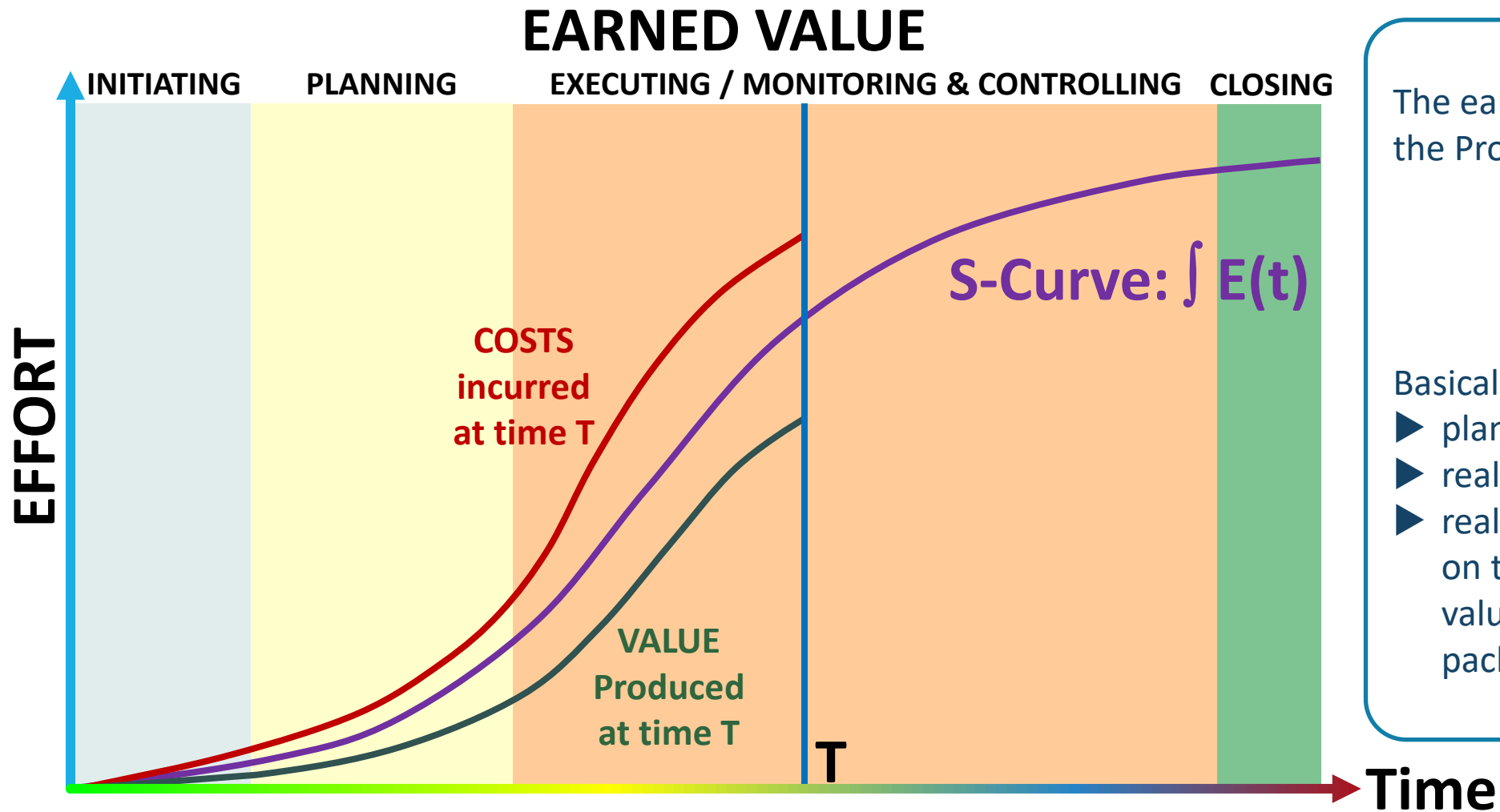
With a WBS well dimensioned, also the single work-package/task cost should be evaluated and quantified for its costs and for its revenue.

The difference between this 2 different values is the Value added by the single activity.

Integrating that for the whole project lifespan give the opportunity to control the project business effectiveness



Project Costs: Earned Value



The earned value is a way to control the Project progress with the ratio:

$$\frac{\text{costs incurred}}{\text{value produced}}$$

Basically is a comparison among:

- ▶ planned cost & value production,
- ▶ real costs incurred
- ▶ real value production (estimated on the base of WBS and the value evaluated for every work-package)

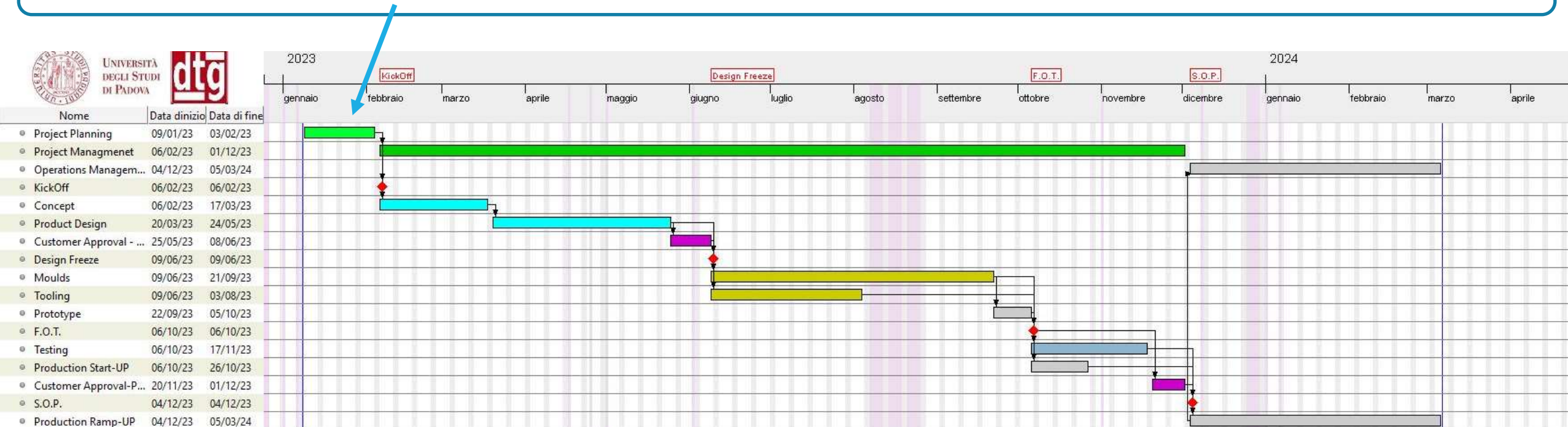
Monitoring Project - Planning

This is an example of project planning.

The study-case is based on a classic Product development Project of middle-dimension.

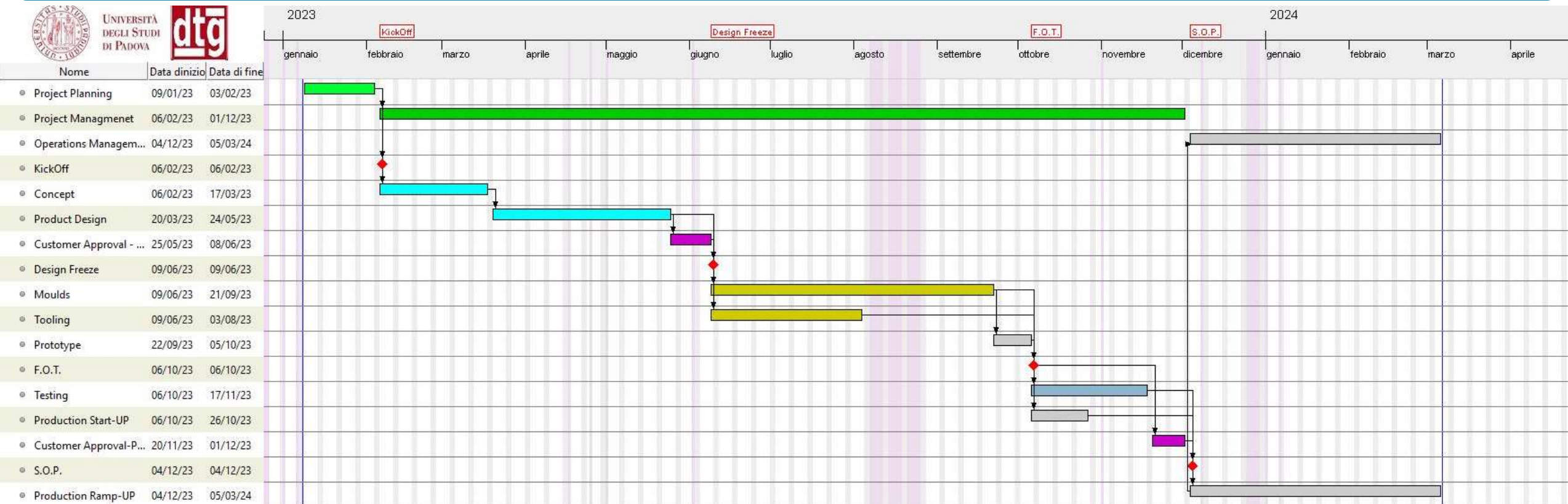
The Gantt chart is based on 1st level WBS elements and logically organised, may be very often a deepest level of detail is required

The project Definition is the WorkPackage in which the project is defined.



Monitoring Project - Baseline

Once decided the plan is fixed by a baseline, a picture of the project in a certain moment in time.
(N.B.) with Ganttproject the baseline is showed only if there are changes on the project path, here you can see that every task have a line with an increased thickness.



Monitoring Project - Completion

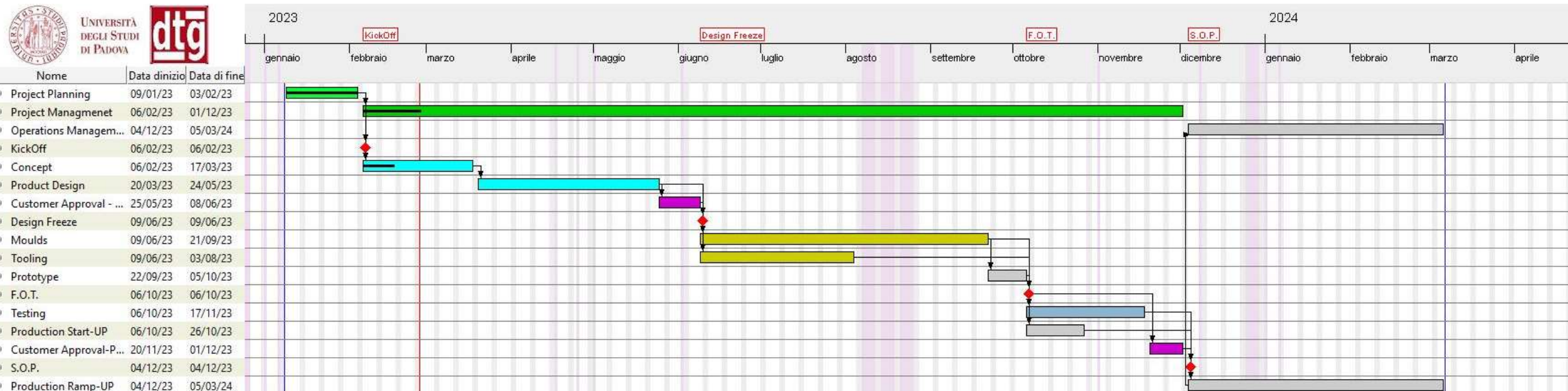
During the execution the single task stage could be followed with the complexion line.

This indicates the percentage of completion.

The vertical red line indicates the present day.

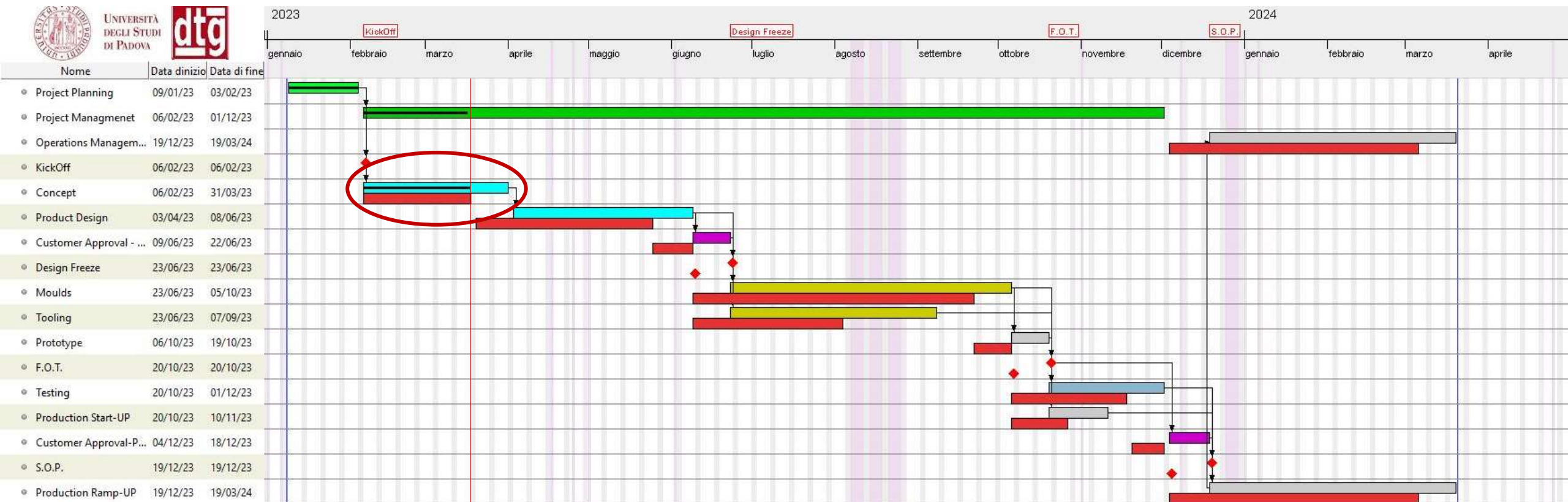
This could immediately give an idea of the project progress, and the speed of completion.

If the percentage of completion is not at the same level of the present day check line this could mean having a delay (being behind schedule).



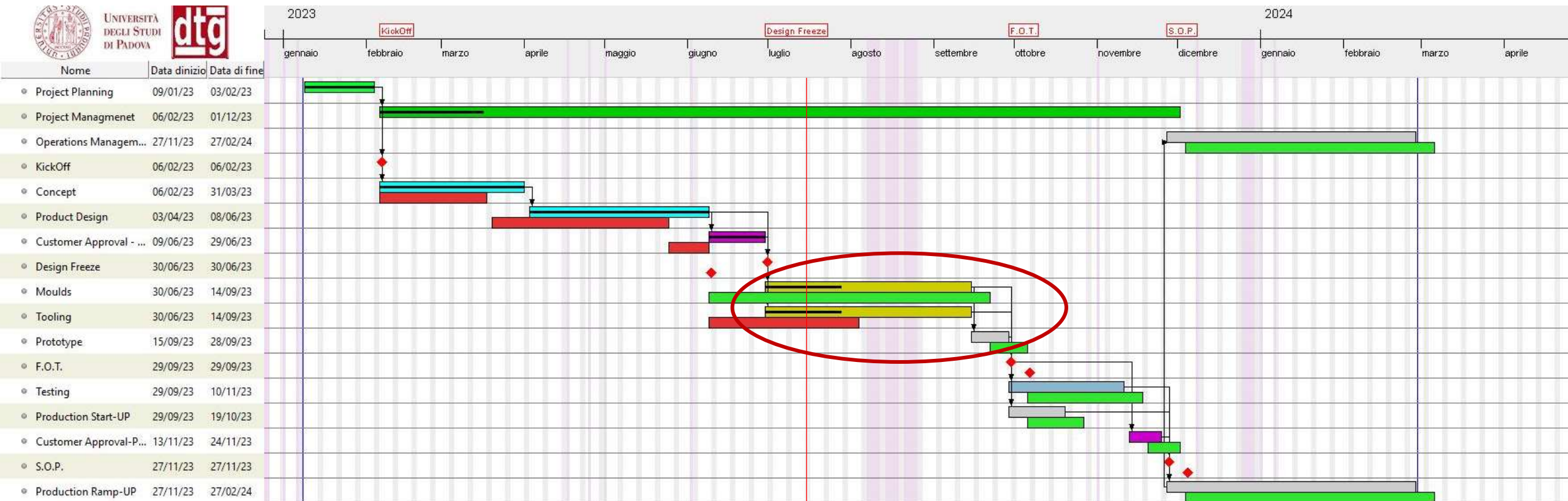
Monitoring Project - Delay

When something slows down the project execution, the single stage will increase in magnitude and length, so the comparison with the baseline with the modified plan will appear in red where the critical path is not respected.



Monitoring Project - Recover

When is possible to recover time, or to parallelize activities and tasks (project crash), the critical path will be reduced and so the overall project duration.
Here the time for mould has been shortened, due to a new hypothetical supplier with a faster production line.



Iron triangle / Iron tetrahedron

Historically the Iron triangle was described as: Scope, Time and Cost. Many environment in which Scope was already defined and clear used Quality instead.

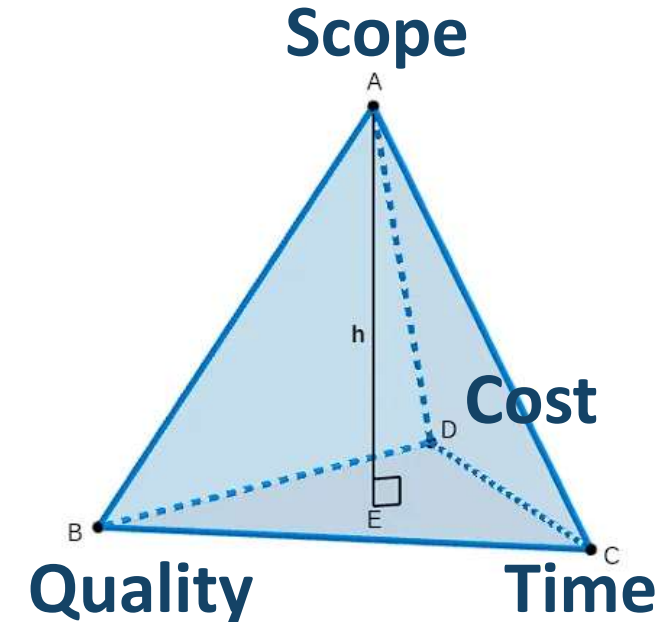
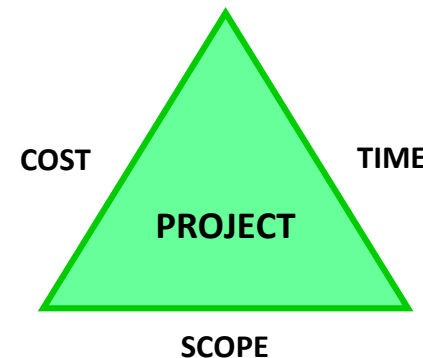
So the theory evolved the triangle into a tetrahedron.

The triangle allowed to measure the sides of the triangle as the reference measure, the tetrahedron should use the high from the opposite face as the control measure.

Simplifying the picture we still consider the first version of the triangle to make some easy assumptions.

In this representation the single sides are proportional to the value estimated of a generic project.

IRON TRIANGLE



Project Drifts

When you change scope is quite possible that this will effect the other variables.
At least you can use the backup reserves to get there without a massive project change but that reduce the capacity for managing variations (risks)

When you have a change in cost, time or both without a change in scope: That is a problem! (cost increase without counterpart on scope)
This is principally due to evaluation and planning errors, unknown things, technical debt or other issue, that can make the project fail.

IRON TRIANGLE – Physiological variations



IRON TRIANGLE – Pathological variations



Monitoring Project Drift

When you change scope is quite possible that this will effect the other variables.

At least you can use the backup reserves to get there without a massive project change but this would reduce the capacity of managing variations (risks)

When you have a change in cost, time or both without a change in scope means is a problem. This is principally due to evaluation and planning errors, unknown things, technical debt or other issue, that can make the project fail.



Definitions



← **Emergency:** unexpected situation involving danger in which immediate action is necessary [Macmillan Dictionary]

emergènza s. f. [der. di emergere].

1. L'atto dell'emergere; in senso concreto, ciò che emerge.
2. Circostanza imprevista, accidente.[Dizionario Treccani]

Urgency: the need to deal with something quickly ➔
[Macmillan Dictionary]

Urgènza s. f. [dal lat. tardo urgentia, der. di urgens -entis «urgente»].
1. Il fatto, la condizione di essere urgente; situazione che richiede interventi immediati e rapidi. [Dizionario Treccani]



Houston! We have a problem!



When something that can jeopardize the project happens its time to take out of the cylinder your Risk Response Plan.

As you know there are 4 strategies that can be put in place for Threats and Opportunities.

Another strategies is to have backup and reserves, this principally to

Opportunities	Threats
► Exploit: make it definitely happen	► Avoid: eliminate the risk from the project
► Enhance: try to increase the effect	► Transfer: put the risk in someone else hands (e.g. insurance)
► Share: involve other party in managing the risk to enhance the effect/probability	► Reduce: try to minimize the effect suffered
► Accept: let it happen	► Accept: accept consequences

Black Swan

But when something is really unexpected?

The only strategy is to have some back-up and reserves to cope with the unexpected!

Exceeding time in WBS element, hypnotizing some possible extra costs to have a preventive budget, or linking performances on some external business indicators (like Euribor) are possible.



The real issue is that everything in real business life is expensive.

Every cost added to face risks is paid by the customer and this could make the difference between winning a bidding or losing a job.

Some extra budget could represent a extra gain at the end of the tale if is a smooth trail, or could annoy the customer.

How to choose?

More or less: 30% competence, 30% experience, 40% luck.

Good, but not enough!

Very often the expectations on projects are very hard to come by.

(Very often the expectations on projects are unrealistic, but also quite challenging to convey this fact!!!!)



“

**No matter how great
the talent or efforts,
some things take time.
You can't produce a baby
in one month by getting
nine women pregnant.”**

Warren Buffett

BUSINESS INSIDER

Anyway the need to speed up a project is usually a matter of fact.

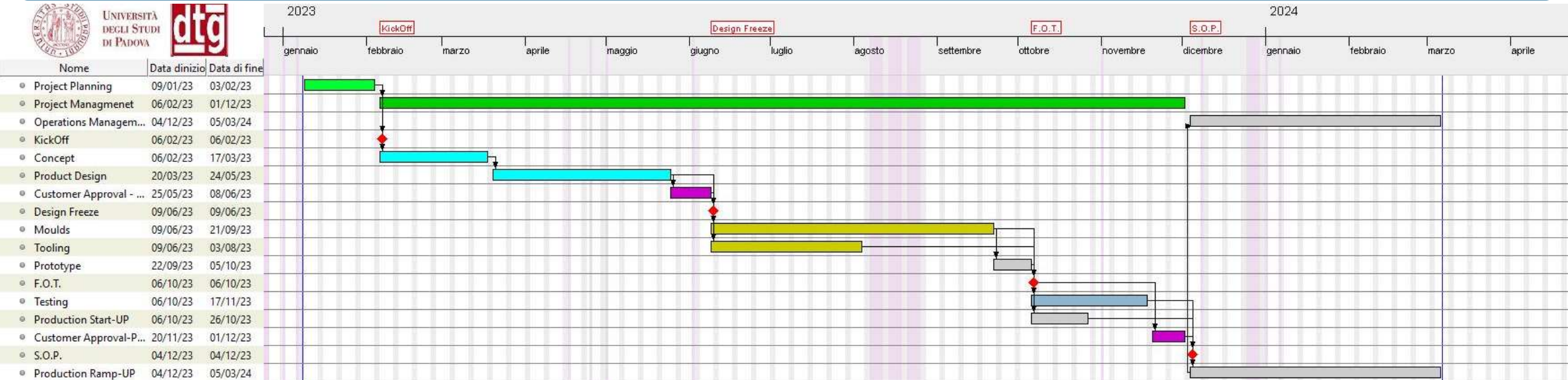
The try to get the project results in less time is called Project Crash.

And despite what affirmed by Warren Buffett, is something that every project manager have to deal with, daily.

Usually expectations are on the time to deliver the project results .

6.9 Project Crash

Example



Example - Design a new group for a top level race bicycle, composed by:

- ▶ Gear Shift
- ▶ Derailleur
- ▶ Handlebar controls
- ▶ Crank
- ▶ Wheels



What to do then?

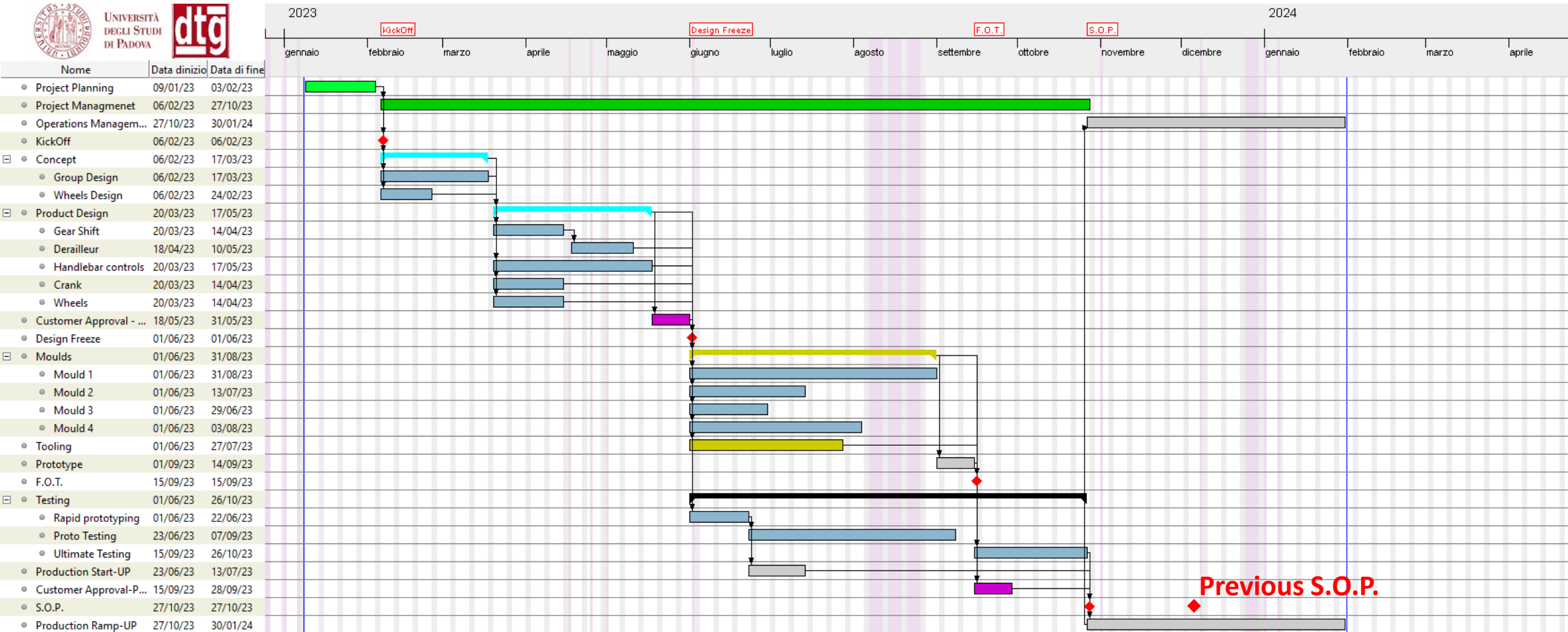
To Crash a Project you have a few options:

- ▶ Use more resources ➡ cost increasing
- ▶ Increase working time ➡ Reduce holidays, working on weekend, overtime
- ▶ Parallelize activities ➡ need the possibility to split up the work-package and more than a single resource that can get the work done
- ▶ Move part of the project away ➡ Involve other organizations by sharing the vantage of the project (and the risks)
- ▶ Or reject the project.
It is better to loose a too risky opportunity, than getting involved in something that can make you drowning!



6.9 Project Crash

Example: project Crash



Communication

Communication is an activity that can have a massive impact on projects.

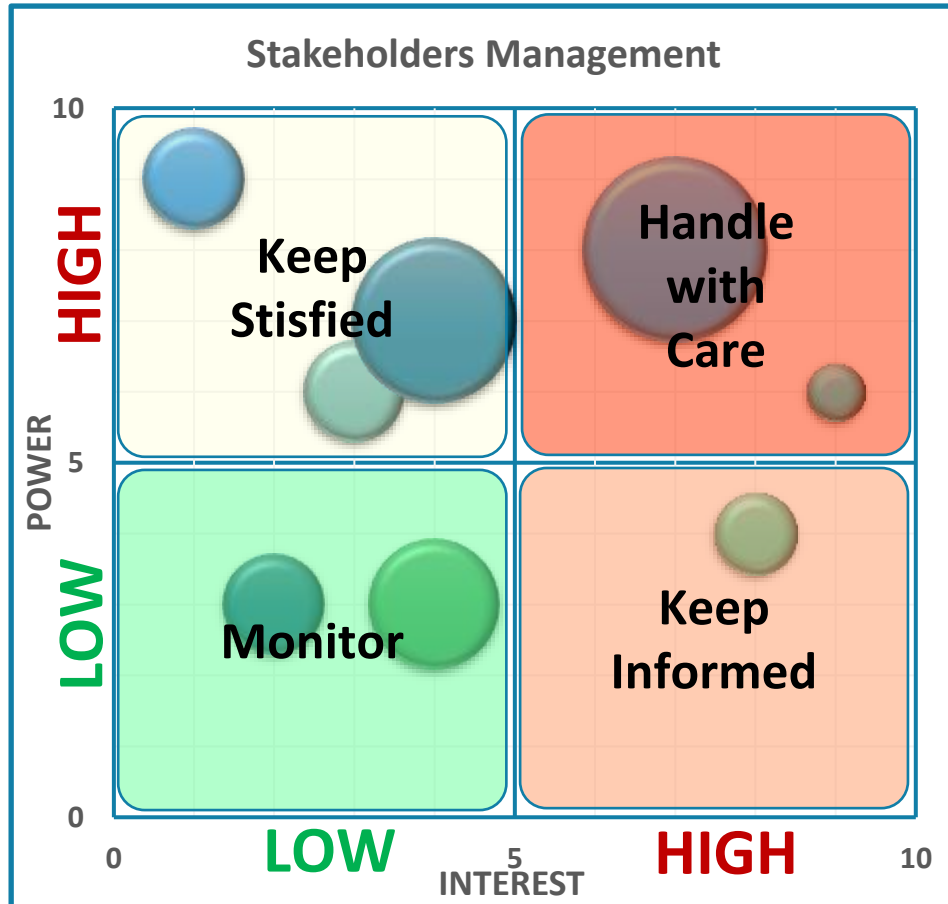
The project management is a process that for its intrinsically characteristics should connects people and functions all along the project.

An activity to perform during Execution and Monitoring is coordinating the information:

- ▶ Internally: inside the Project Team and various sub-Teams
 - ▶ Managerial (and psychological) communication
 - ▶ to manage the Project Team,
 - ▶ to motivate and stimulate the singular / team productivity.
 - ▶ to manage issues and conflicts
- ▶ Externally: towards different group of stakeholders
 - ▶ Strategy of communication to manage in a proper way the stakeholders reactions
 - ▶ Prevent damages and problems due to a wrong communications



Communicate to Stakeholders



Any stakeholder, internal or external should be identified, as a person, a group or an organization.

Should be classified on 3 different scale:

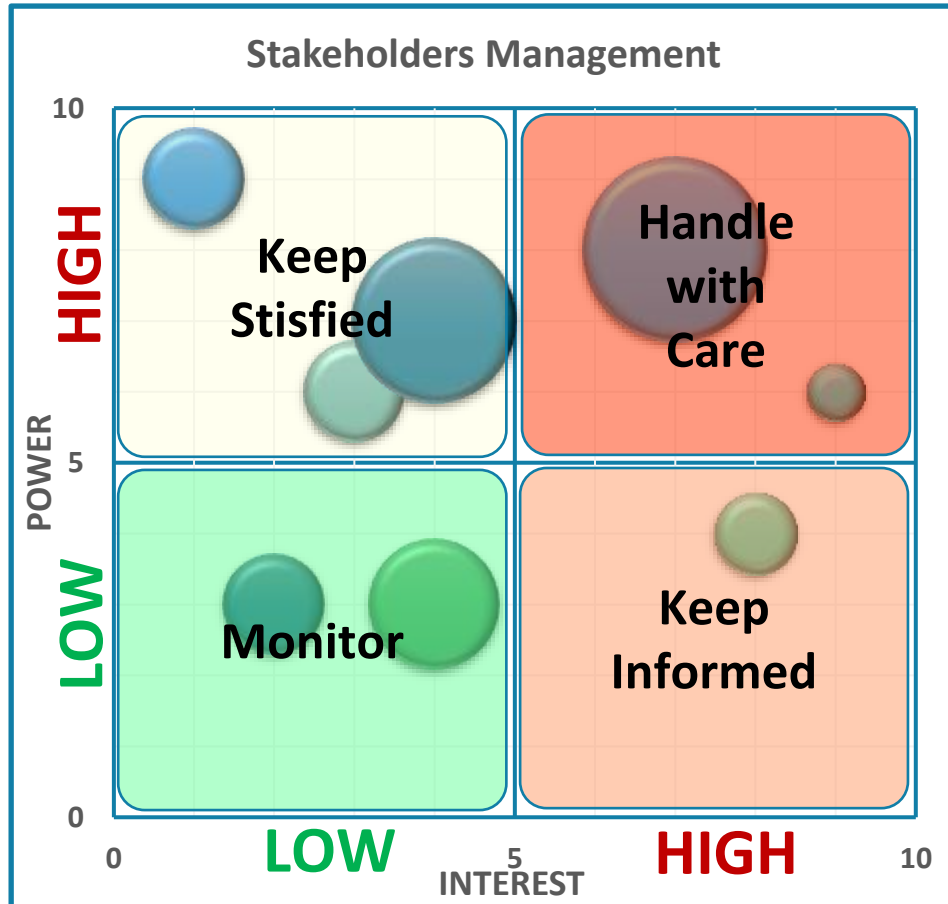
- ▶ Interest
- ▶ Power
- ▶ Impact

Once the singular stakeholder is positioned on the table, the Project Management Team can calibrate a different information strategy to stay in touch in the proper way.

Basically the 3 kind of stakeholder that have at least one key indicator with a high level.

The Stakeholders lying in the low-low quadrant should be only considered to understand if they move from their present position to a more impacting one.

Strategy to communicate to Stakeholders



2: Keep Informed

With high interest and low power, they are eager to have information, also if they do not have a great power to interact.
Eg. Investors in a mutual fund

3: Keep Satisfied

With high power they can influence directly a project, but they are not interested, so the ideal is to keep them in this quadrant.
Eg. The major stockholder of the organization performing the project

4: Handle with Care

They have great power and a special focus on the project. It is important to work strictly with them to get them on board and happy.
Eg. The Sponsor or the Customer of a specific project

Communication - How

The communication plan should properly accommodate some fundamental detail on the communication strategy:

- ▶ **What to communicate** – it is no one fits all communication, not everybody should know everything, in the same way, with same level of detail
- ▶ **When to communicate** – again the time is not trivial, some moments in time are delicate and the same information communicate uncarefully could create an incident or the loss of opportunity
- ▶ **To Whom** – investors should know some thing that project workers shouldn't, sharing technical details with investor is useless and annoying
- ▶ **In Which Way** – TikTok videos are not the proper manner to distribute financial data, shouting on the beach is not focused on a specific target. Many information are delicate and the way is fundamental to convey the right thing to the right target.



Always follow the plan... when possible

Funny urban legend joke:

This is the transcript of a radio conversation of a US naval ship with Canadian authorities off the coast of Newfoundland in October, 1995. Radio conversation released by the Chief of Naval Operations 10-10-95.

Americans: Please divert your course 15 degrees to the North to avoid a collision.

Canadians: Recommend you divert YOUR course 15 degrees to the South to avoid a collision.

Americans: This is the Captain of a US Navy ship. I say again, divert YOUR course.

Canadians: No. I say again, you divert YOUR course.

Americans: This is the aircraft carrier USS Lincoln, the second largest ship in the United States' Atlantic fleet. We are accompanied by three destroyers, three cruisers and numerous support vessels. I demand that YOU change your course 15 degrees north, that's one five degrees north, or countermeasures will be undertaken to ensure the safety of this ship.

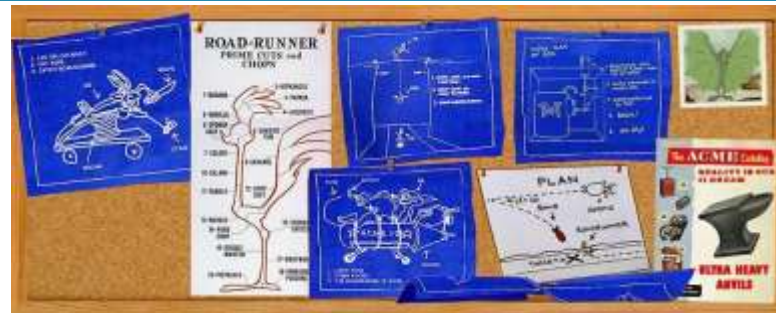
Canadians: This is a lighthouse. Your call.



Sometimes changes happen

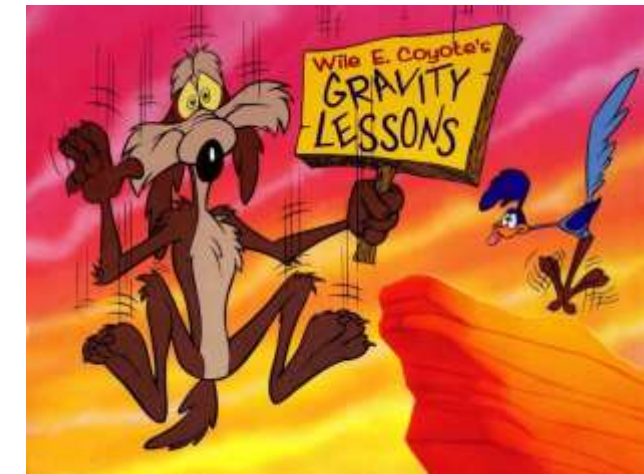
As you remember the golden rule is:

- ▶ What is inside the WBS is in the project
- ▶ What is non inside WBS is NOT in the project



But since the project is unique, and is not a simple repetition of something already done, could be that:

- ▶ Some necessary work-packages or activities weren't considered in the WBS
- ▶ Some risks happen and have influence on the scope
- ▶ The customer/market change his mind/requests for any possible reason and that will impact the project scope.



So what to do?

Basically should be done a revaluation of the project, choosing if

1. Incoming changes could be considered natural fluctuations of the project (are ingrained with the project context, with the business, or due to a risk already assessed).
2. Changes are so important that the project should be completely revised.

Case 1:

The project should be reassessed considering changes requested, redefined e replanned.

The evaluation should cover the resources needed to settle the entire project, redefining all the KPI involved and a change on the agreement with Sponsor/ customer / stakeholders should be signed again including changes.

Case 2:

The project need to be closed and a new one will be open, redefining completely the Project Scope and all the resources required, may be including all the results and deliverables that the previous project has already produced.



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Thank you for your attention

