How do you make sure a project is successful?

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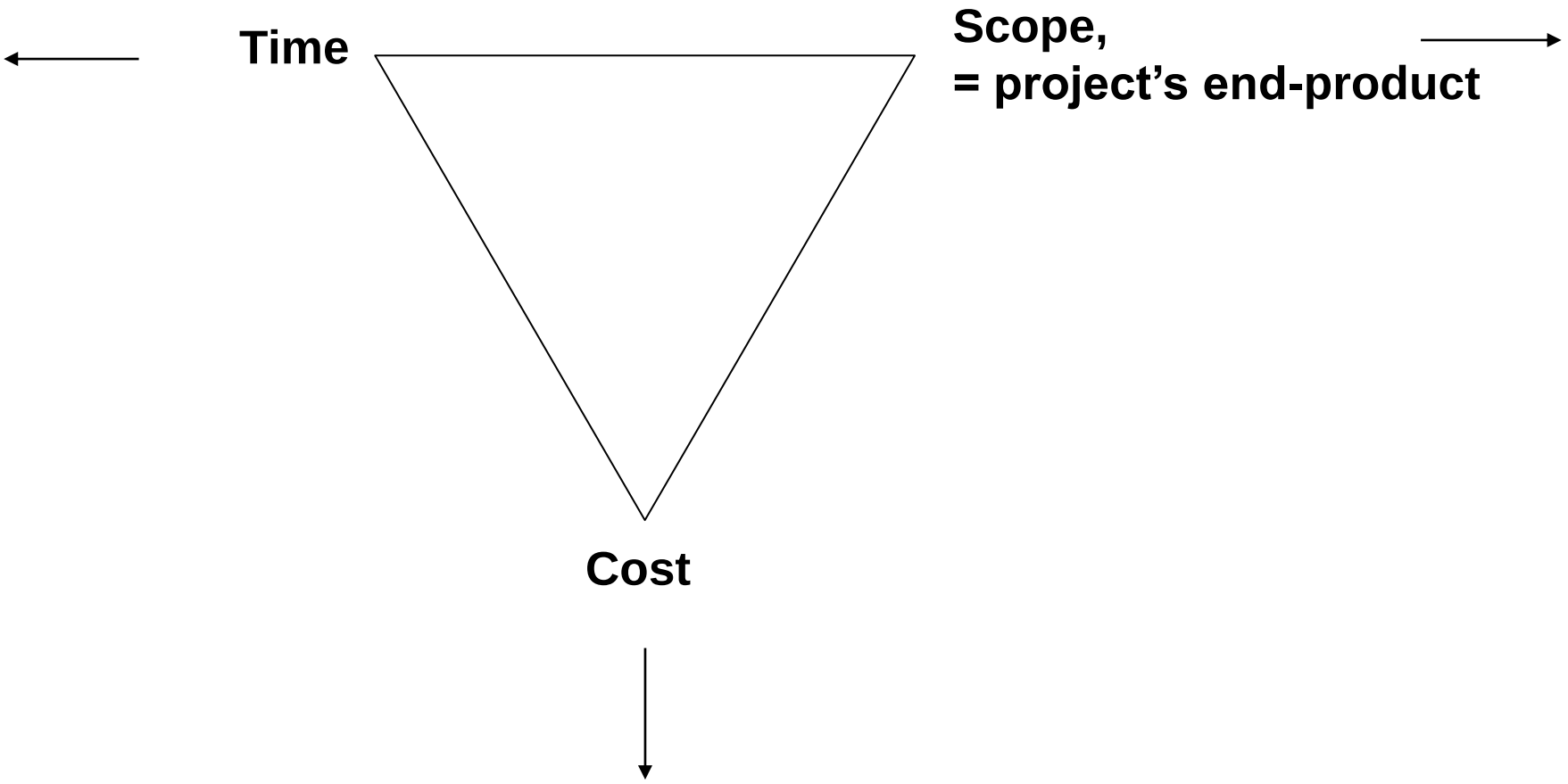
This lecture:
our perspective is on successful execution, through elaborating the following themes:

1. Success
2. Time
3. Project objectives and continuous decision making during the project
4. Looking to the future, and not to the rearview mirror (deviation reporting)
5. Schedule, activities, activity network
6. Resources and cost (S-curve)
7. Work breakdown structure (WBS)
8. Risks and risk management
9. Estimate vs. objective [or: decision about the objective]

Success

When a completed project can be considered having been successful?

Project objectives

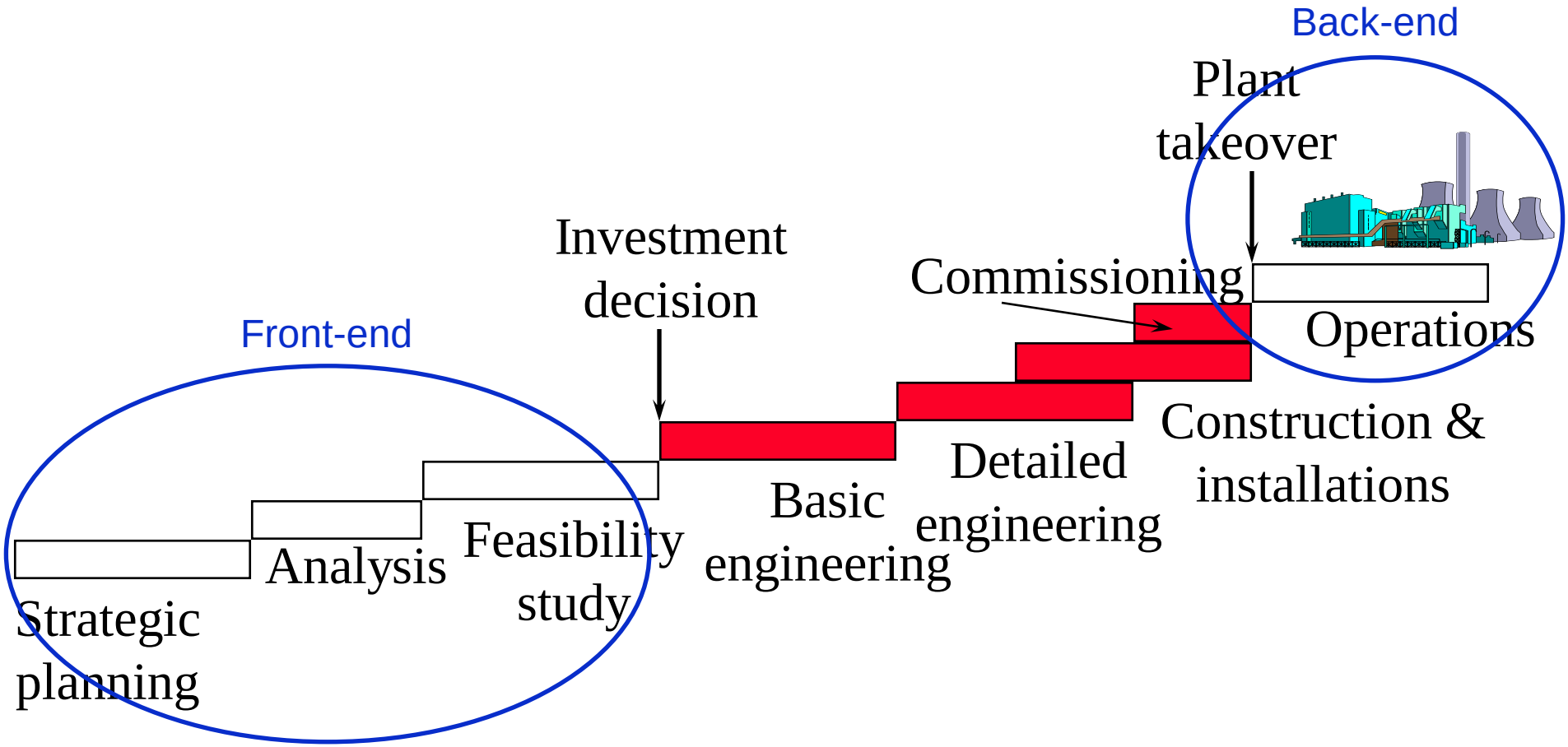


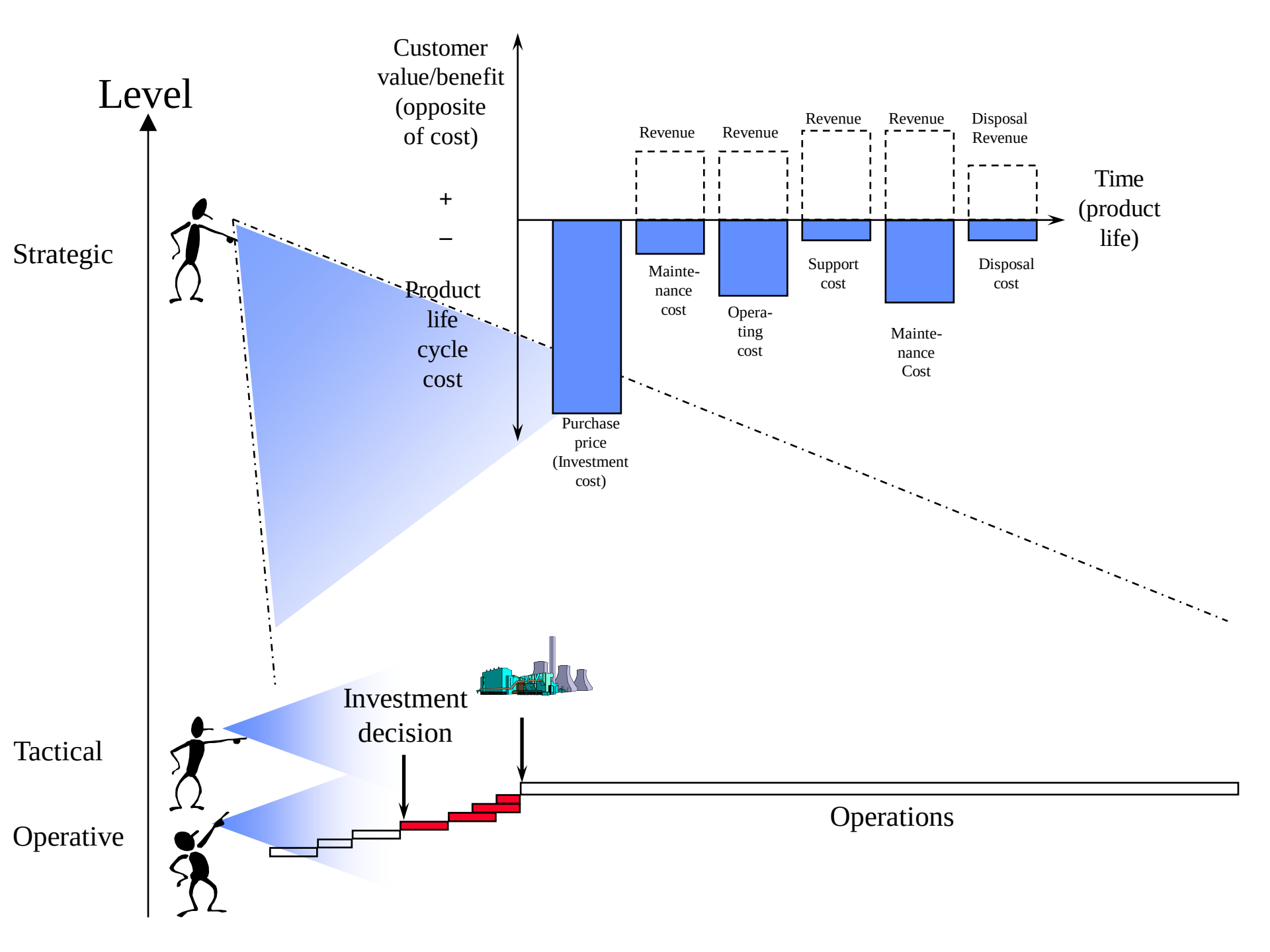
Successful projects?

Time / time-factor

Time / time-factor:

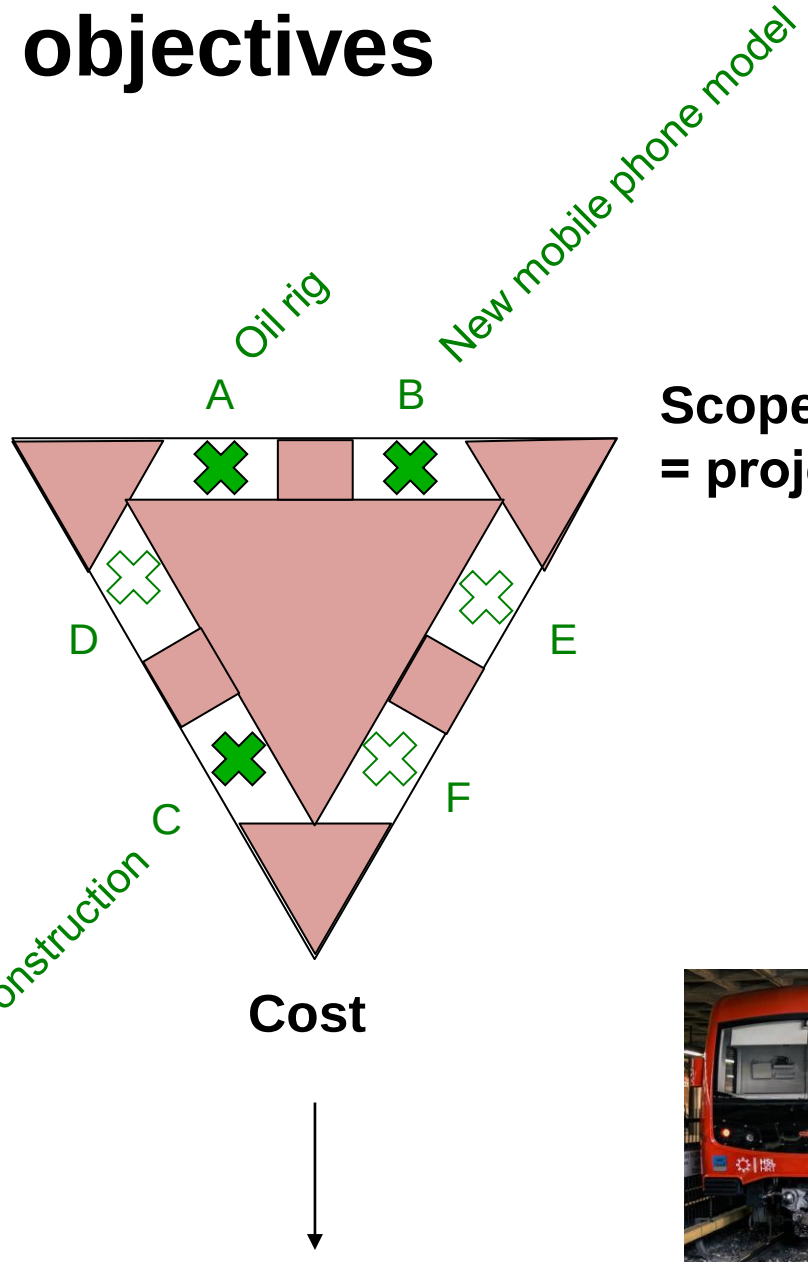
System lifecycle




Level
Customer value/benefit (opposite of cost)
+
–
Time (product life)
Revenue
Revenue
Revenue
Revenue
Disposal Revenue
Strategic
Product life cycle cost
Maintenance cost
Operating cost
Support cost
Maintenance Cost
Disposal cost
Purchase price (Investment cost)
Investment decision
Tactical
Operative
Operations

Decision making in new and surprising situations during the project

Project objectives



Looking to the future, and not to the rearview mirror

(= deviation reporting)

Looking to the future, and not to the rearview mirror: deviation reporting

Objective concerning the targeted status at the project completion (BEING SET AT PROJECT START)

Scope
Cost
Time

↑

Follow-up, reporting NOW:
Compare the objective and estimate at the project completion!

→

Corrective actions conducted well in advance during the execution, to have an impact on the outcomes at the completion of the project

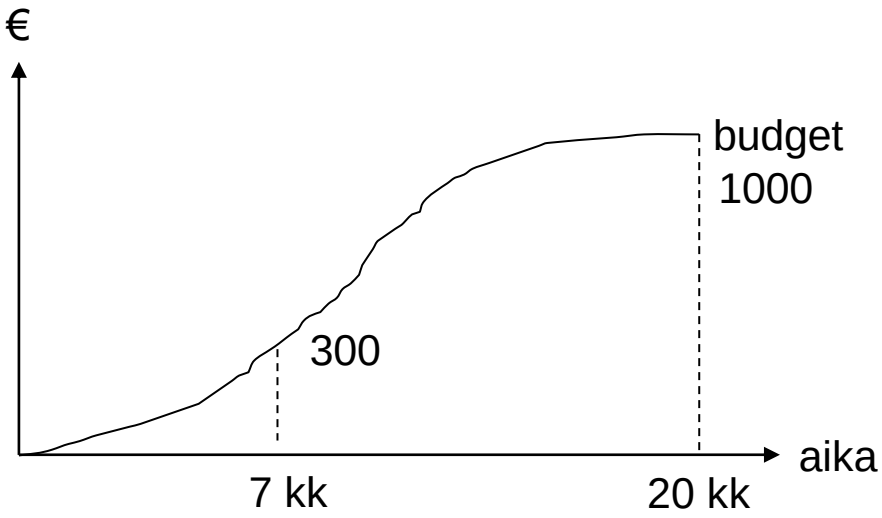
↓

The situation NOW: Estimate (PRODUCED NOW) about the expected status at the project completion

Scope
Cost
Time

Deviation reporting:

- Karlos explains the idea in the previous slide with this picture:



Time NOW:
7 months from inception

Project length
20 month

Cost report at 7 months from inception:

From inception to 7 months (time now)

	Budget	Actual cost
WBS 1	300	250
WBS 2	…	…
WBS 3	…	…

At completion (20 month time point)

Budget	Cost estimate
1000	1500
…	…
…	…

Corrective actions conducted well in advance during the execution, to have an impact on the outcomes at the completion of the project

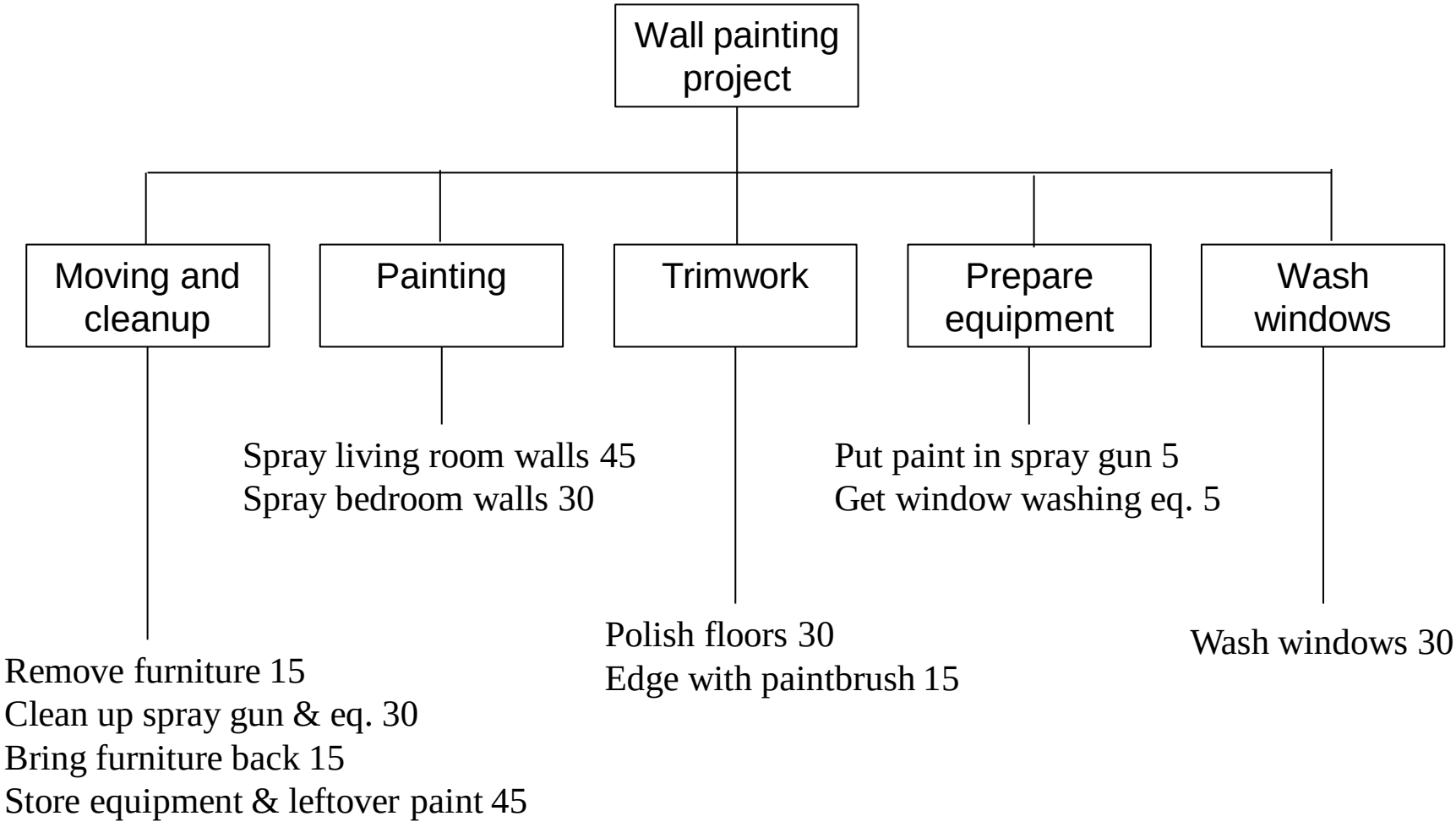
- cumulative budget curve:
- Either budget of the whole project, or budget of its Work Breakdown Structure element WBS1

Schedule, activities, activity network

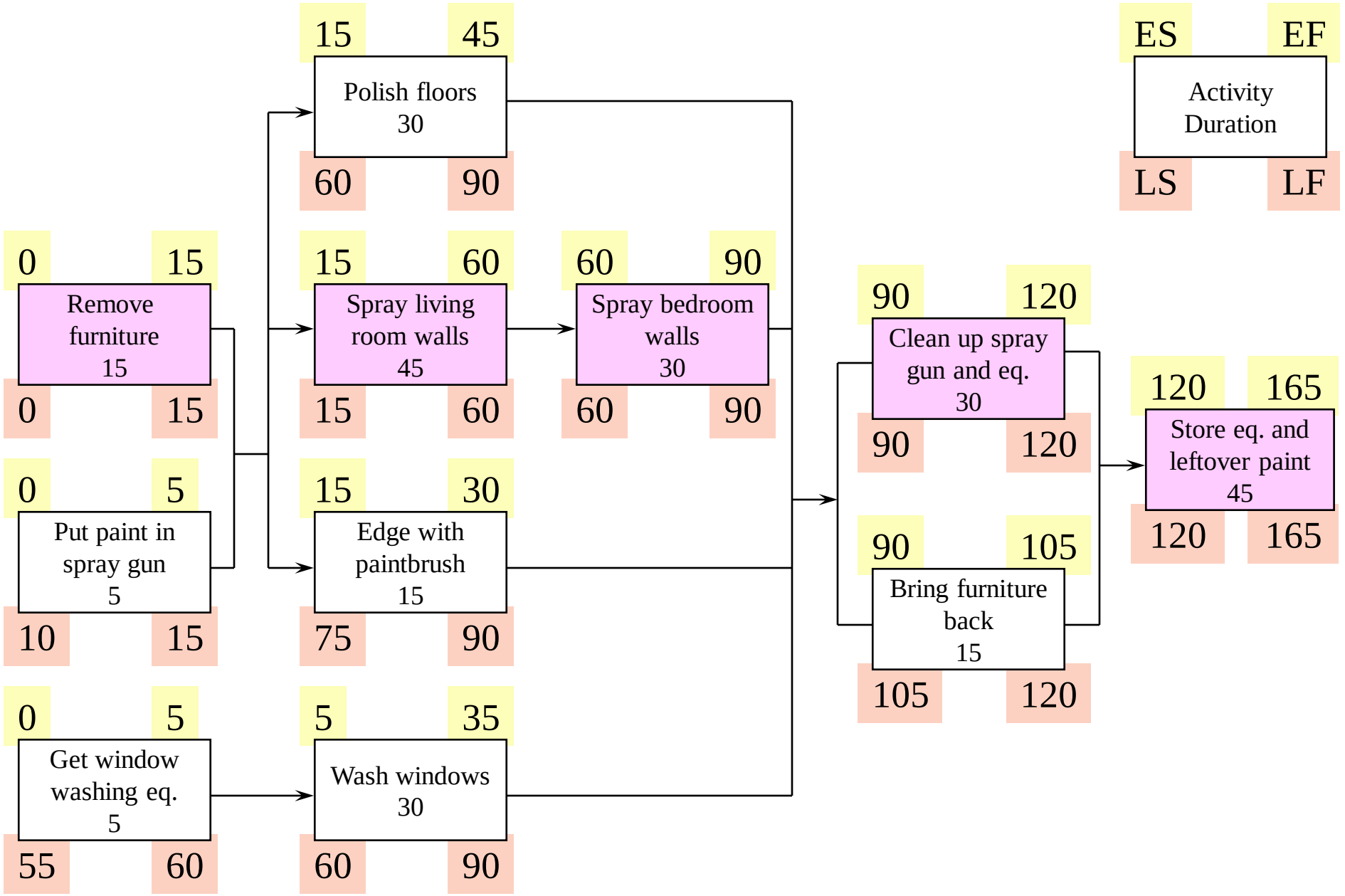
Project definition

- A project is a unique entity formed of complex and interrelated activities, having a predefined goal that must be completed by a specific time, within budget, and according to specification.

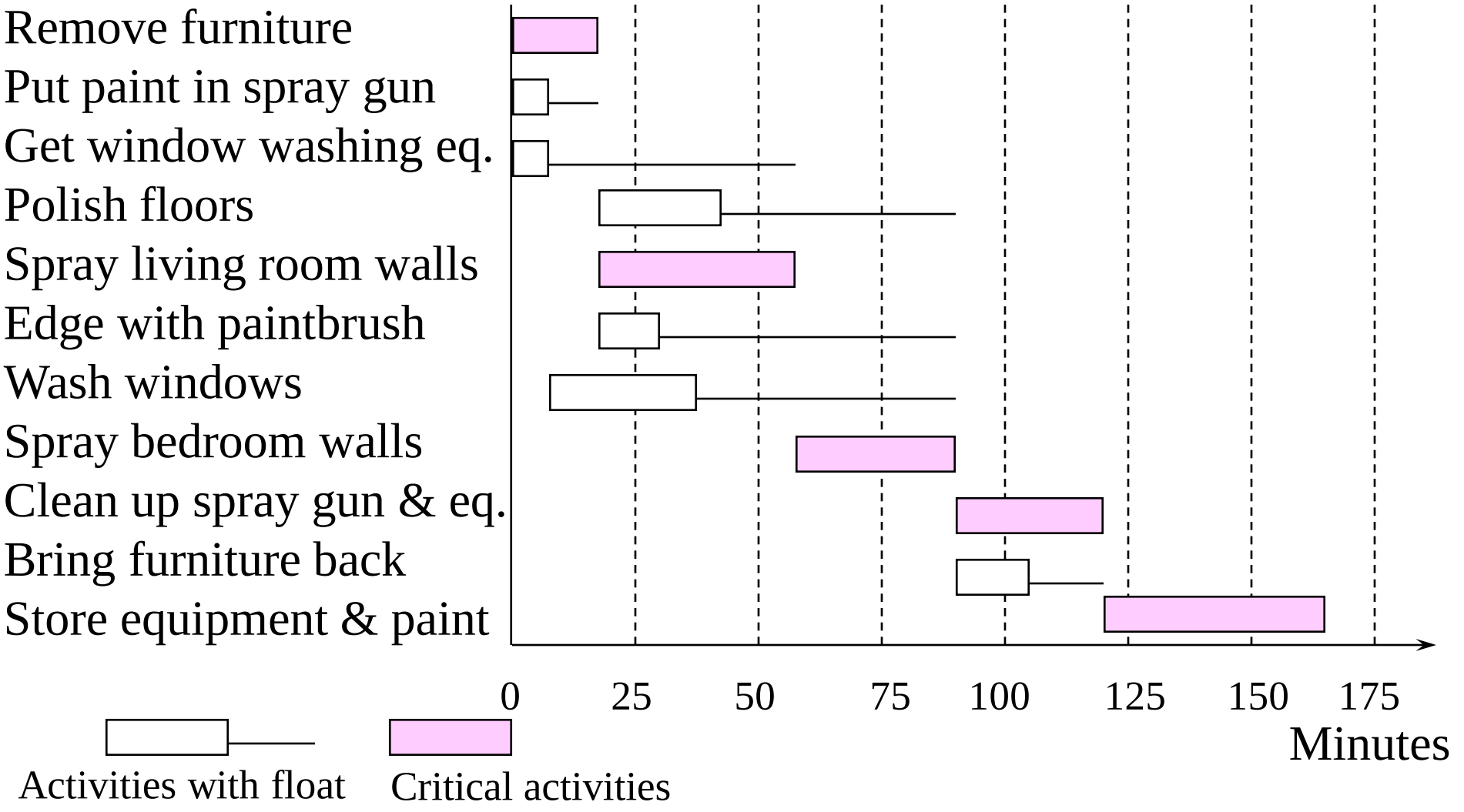
Work Breakdown Structure (WBS) for the wall painting project



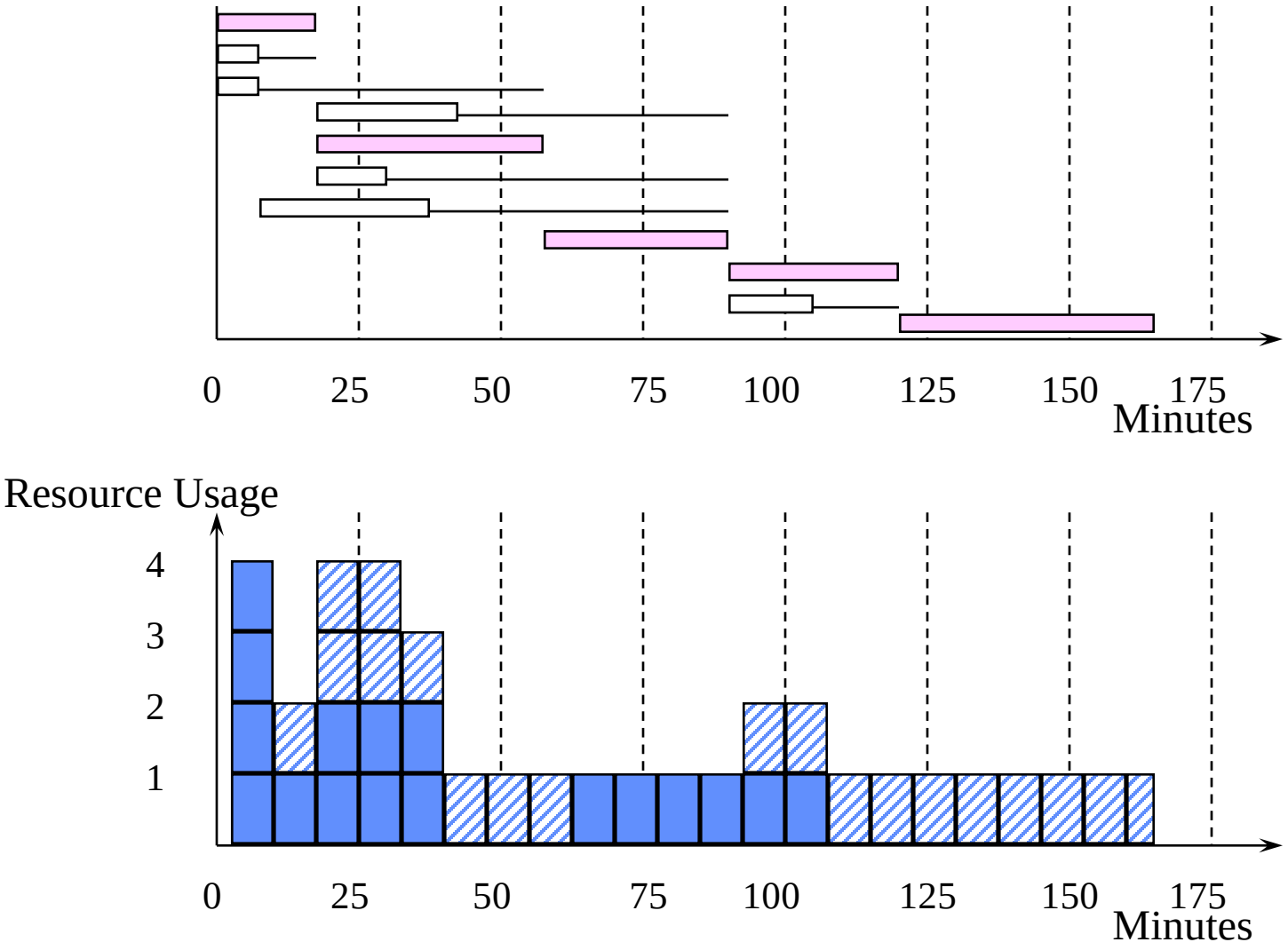
Activity network, critical path, floats (or: slack), and timing the activities in the time axis (Gantt chart)



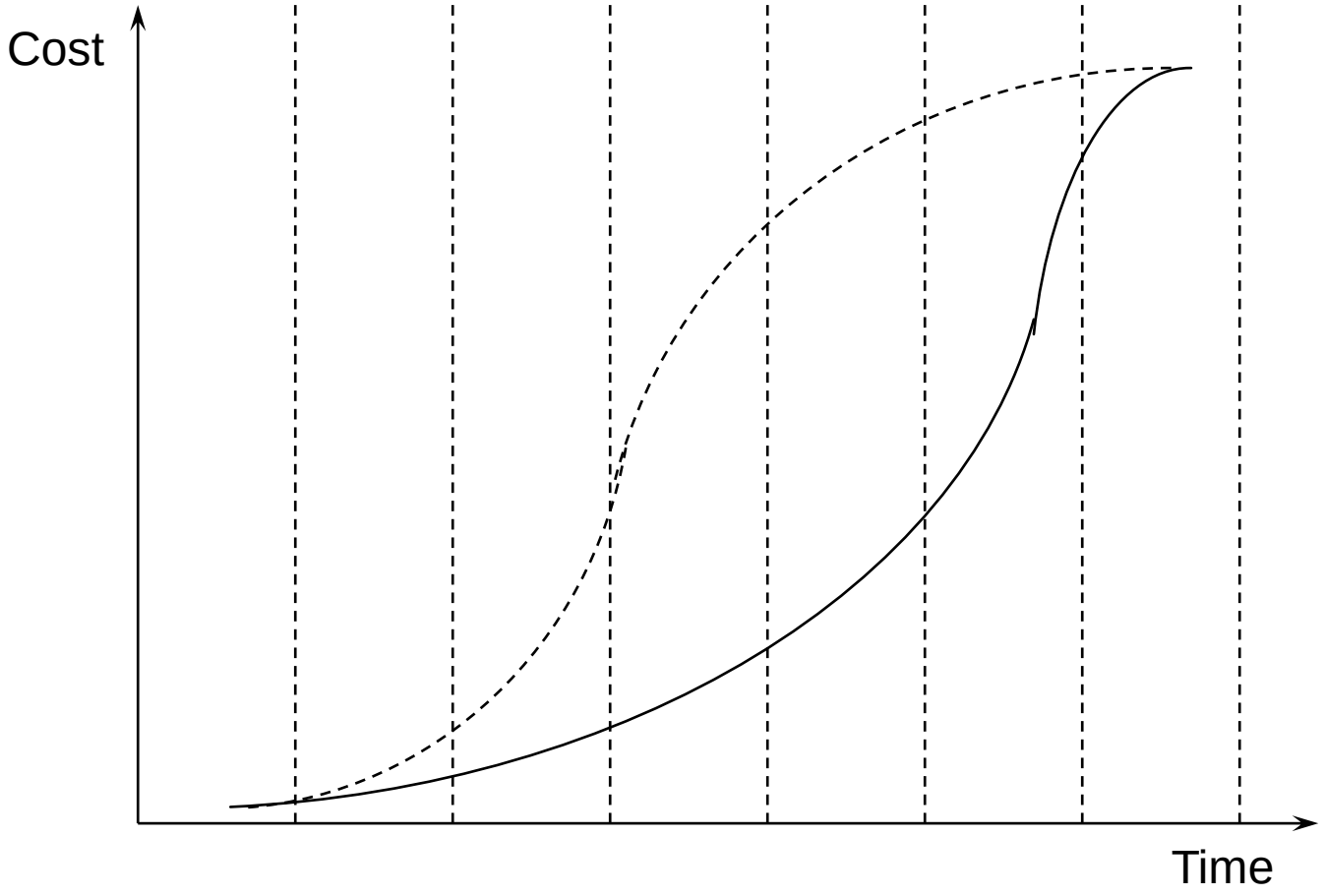
Gantt Chart (or bar chart) for the wall painting project



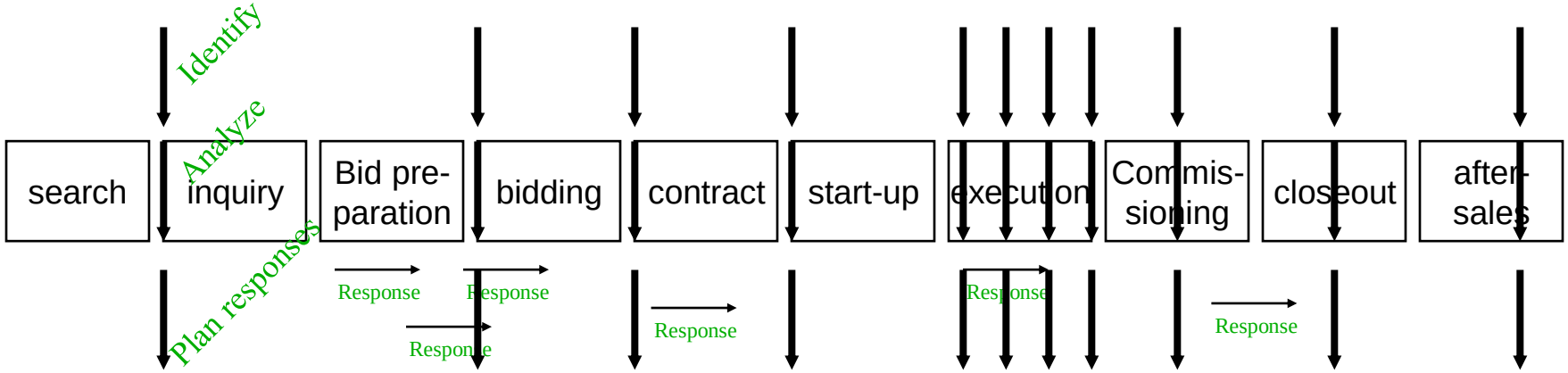
Resource histogram of the wall painting project



S-curve



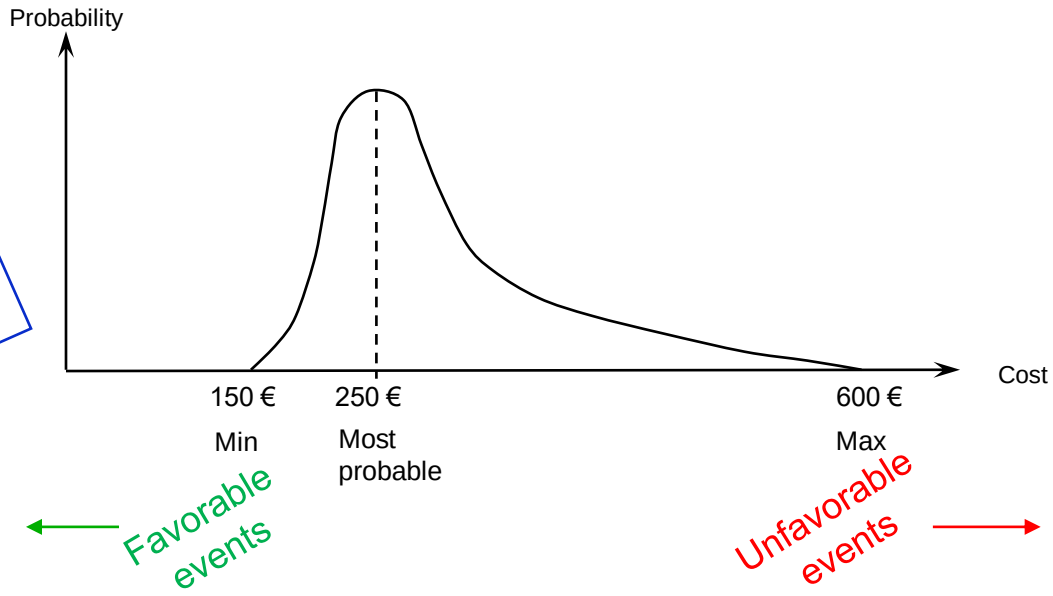
Risks and risk management


Identify
Analyze
Plan responses
search
inquiry
Bid pre-paration
bidding
contract
start-up
execution
Commis-sioning
closeout
after-sales
Response
Response
Response
Response
Response
Response

Risk

”In the context of project management, a *risk* is an *event* with a certain *probability* of realization that may affect the project schedule, cost, or scope.”

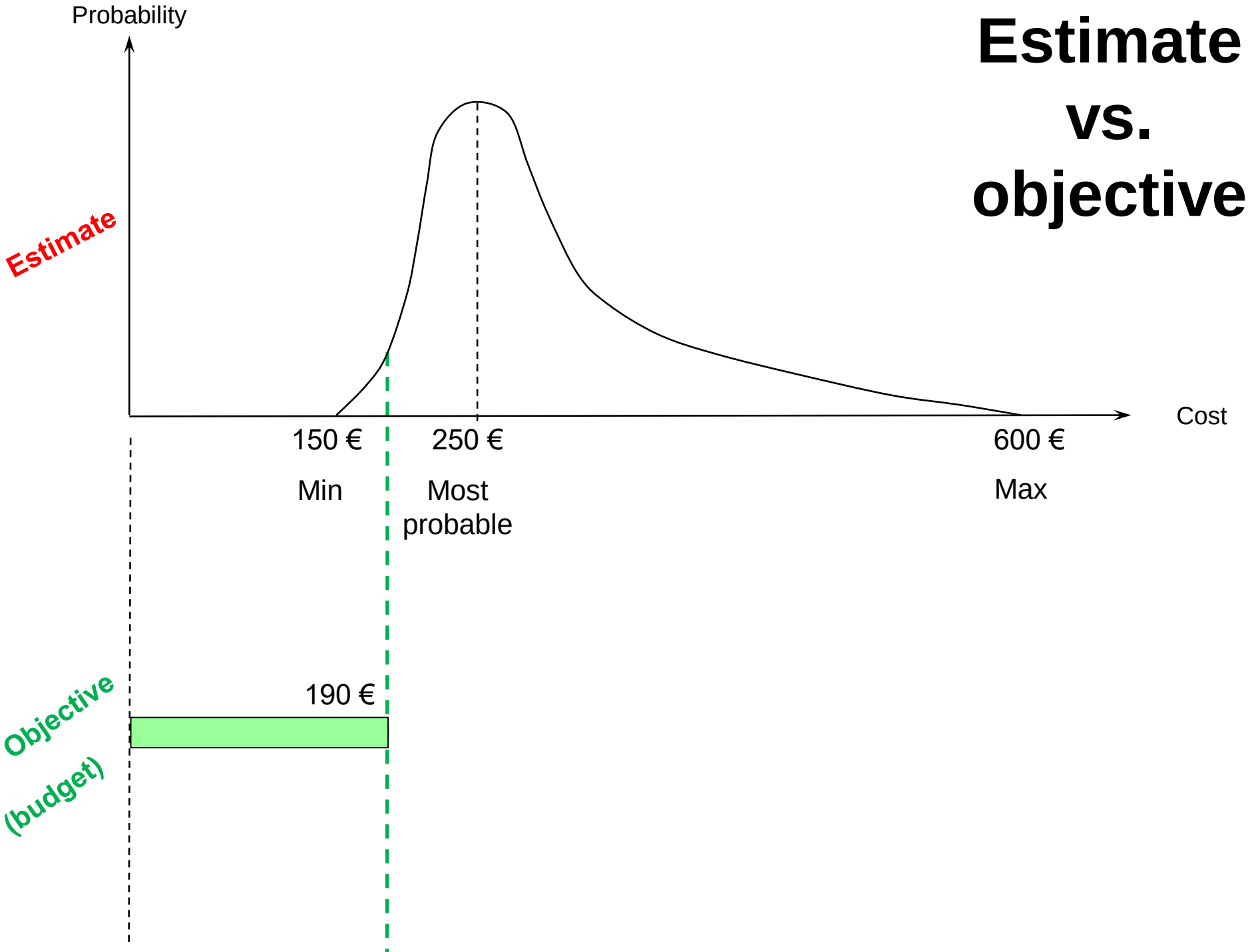
This risk definition does not assume that risk would be unfavorable or favorable → therefore, risk can be also favorable (opportunity)



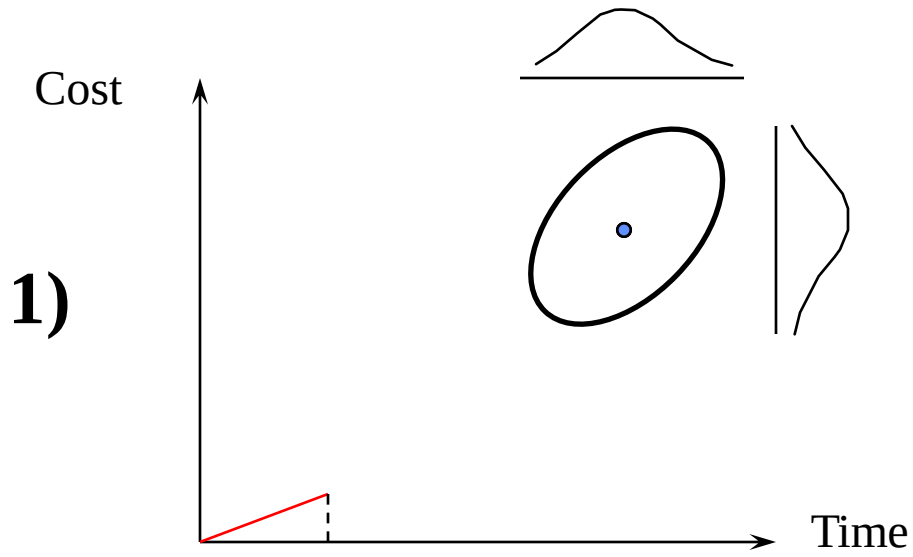
Estimate and objective [or: decision about the objective] are different things,

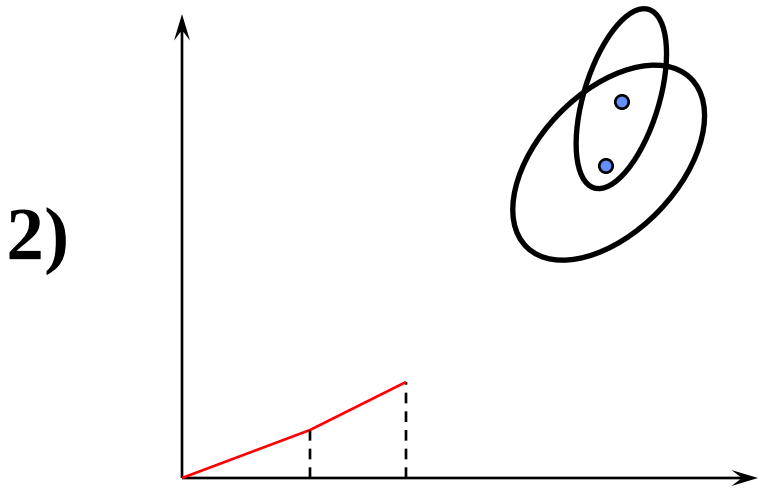
we must make the distinction between these two !

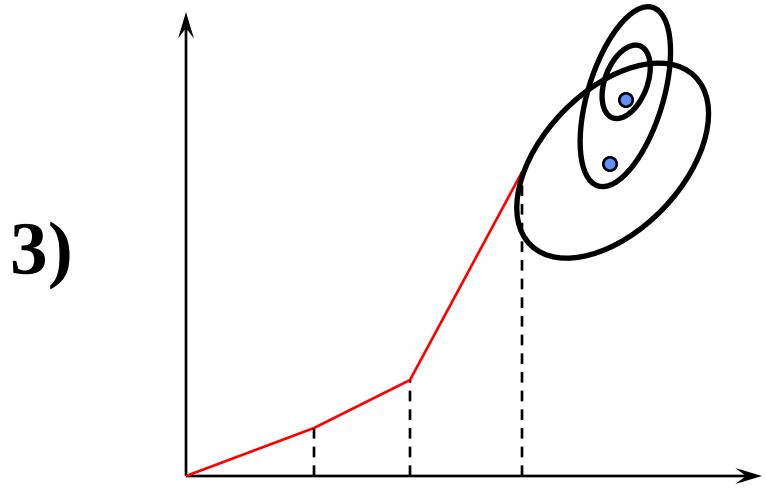
Estimate vs. objective

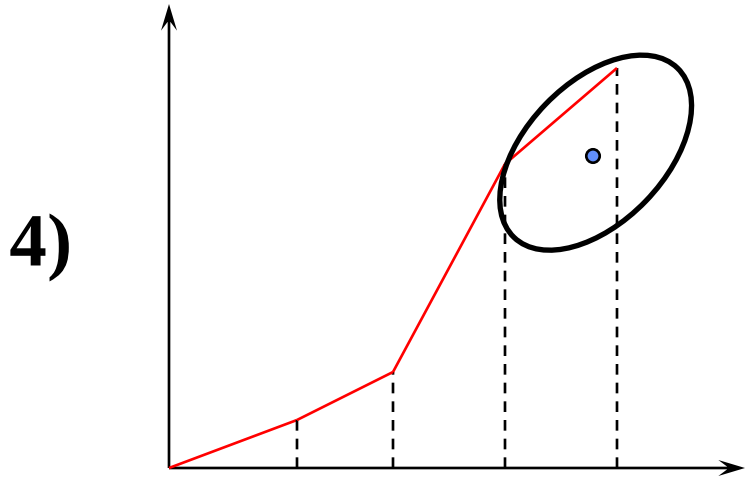


Producing estimates (= about the future) and related decision making, are to be conducted continuously


Cost
1)
Time


2)


3)


4)

Project plan

Project plan [sample content]

1. Background and benefits
2. Goal and objectives
3. Risks and risk management
4. Project organization and responsibilities
5. Scope and scope management
6. Work Breakdown Structure
7. Schedule and schedule management
8. Resources and resource management
9. Budget and cost management
10. Procurement management
11. Reporting and communication
12. Supplementary sections and appendices

What did we learn?

1. Looking to the future, and not to the rearview mirror (deviation reporting)
   - Keep your eye on the estimated outcome of the project, deviation reporting about the expected situation at the project completion
   - Risks and risk management

2. The project and especially its end-product produce benefits and value for the customer/end-user over a long period of time after the completion of the project

3. Decision-making (trade-offs) about project objective dimensions continuously
   - Unexpected events and surprises take place continuously, and the project manager must be capable of making decisions and leading the project organization, to ensure that the project progresses with good momentum and rhythm in any circumstances

4. Breaking down the product and inherent work
   - Work breakdown structure (WBS)
   - Systematically splitting the project into work items (or activities) that can be managed in terms of time, resources, and cost.

5. Activity network, dependencies between activities, critical activities, using float/slack with non-critical activities for optimal resourcing of the project

6. Connection between time and resources/cost (S-curve)