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FACHHOCHSCHULE KÄRNTEN

PROJECT MANAGEMENT (ILV)

WORK BREAKDOWN STRUCTURE, GANTT CHART, MILESTONE PLAN

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Questions of Today...

- What are the basic project types?
- What distinguishes an R&D project from an investment project?
- What is the difference between an R&D project and an investment project?
- Give examples of organizational projects

- What is the difference between P-main tasks and P-accompanying tasks?
- What are the main P tasks / accompanying P measures?
- Why is risk management ONLY a P-accompanying measure?

- What roles do project staff play according to Belbin's model?
- How does Maslow differentiate between project staff?
- What phases does a project team go through at the start of a project? What measures do you take as a PM?

- What is the difference between the Requirment Plan and the Statement-of-Work? Who creates what?
- What do you need a project/cooperation contract for? What should be regulated in it, among other things?

Phases of project management

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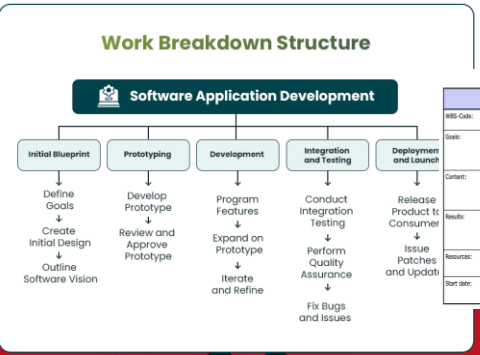

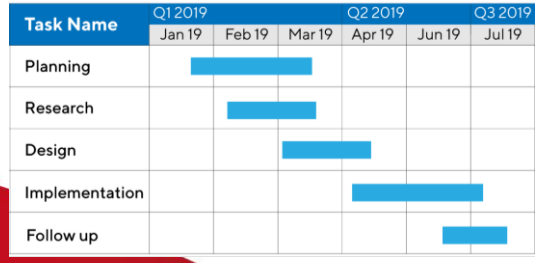

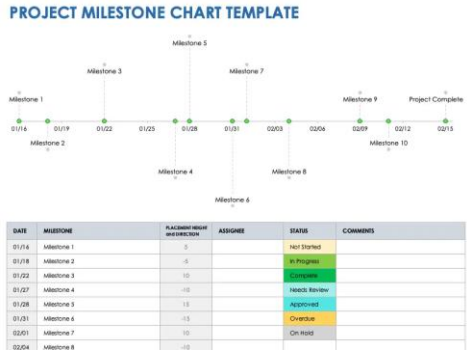

Work Breakdown Structure WBS

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WORK BREAKDOWN STRUCTURE WBS
the project is subdivided into **project phases** (PP)/sub-projects and each of these project phases/sub-projects is broken down into **tasks/work packages** (WP) →tree structure

WORK PACKAGES (WP) are self-contained tasks that are processed by a small team

Top-Down Approach

Begin by defining the project phases and work down to the work packages.

…makes sense if you are already familiar with the aspects of the project.

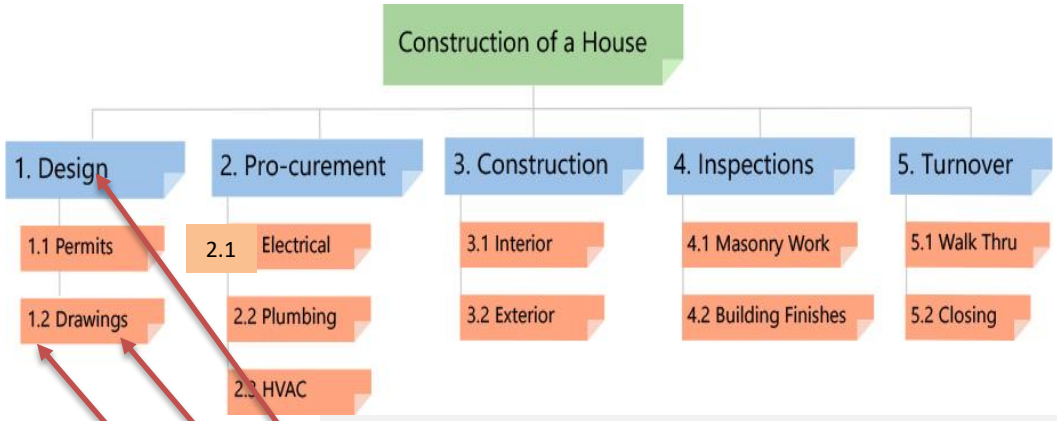
Bottom-Up Approach

Begin by defining WPs. Then find out about relationships between the WPs and group them in project subphases (PP).

…suitable for projects in which "the path emerges while walking"

Yo-Yo Approach

"Jump" back and forth between top-down and bottom-up



Naming / description of ...

PPs: Objects/Organizational units (Nouns)

WPs: Activities (Verbs)

Hierachical Numbering for quick reference

→ WBS provides clear information for the P-Team & Shareholders on ONE page
→ WBS does NOT show the chronological sequence of the WPs

Work Breakdown Structure WBS

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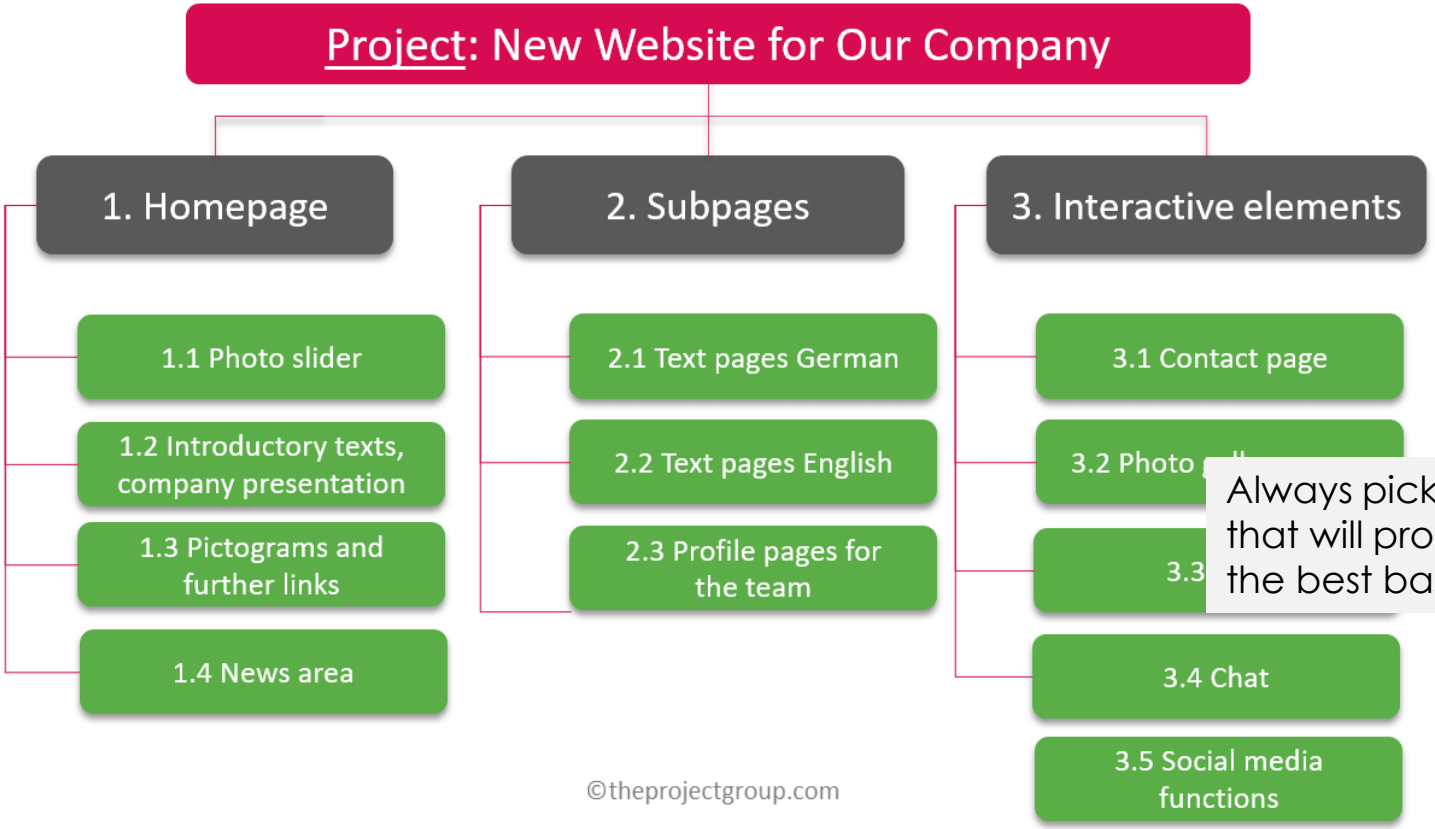
The WBS can be designed on 3 basic concepts:

1. **Object- / Target- / Deliverable-oriented**
2. Activity- / Time- / Process-oriented
3. Organization- / Function-oriented

+ R&D projects, product developments
- Attention to complexity and integration



Always pick the type of the WBS that will provide **you** the best basis for planning

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Work Breakdown Structure WBS

The WBS can be designed on 3 basic concepts:

1. Object- / Target- / Deliverable-oriented
2. **Activity- / Time- / Project Phase-oriented**
3. Organization- / Function-oriented

+ time-critical projects
+ for sequential projects

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Work Breakdown Structure WBS

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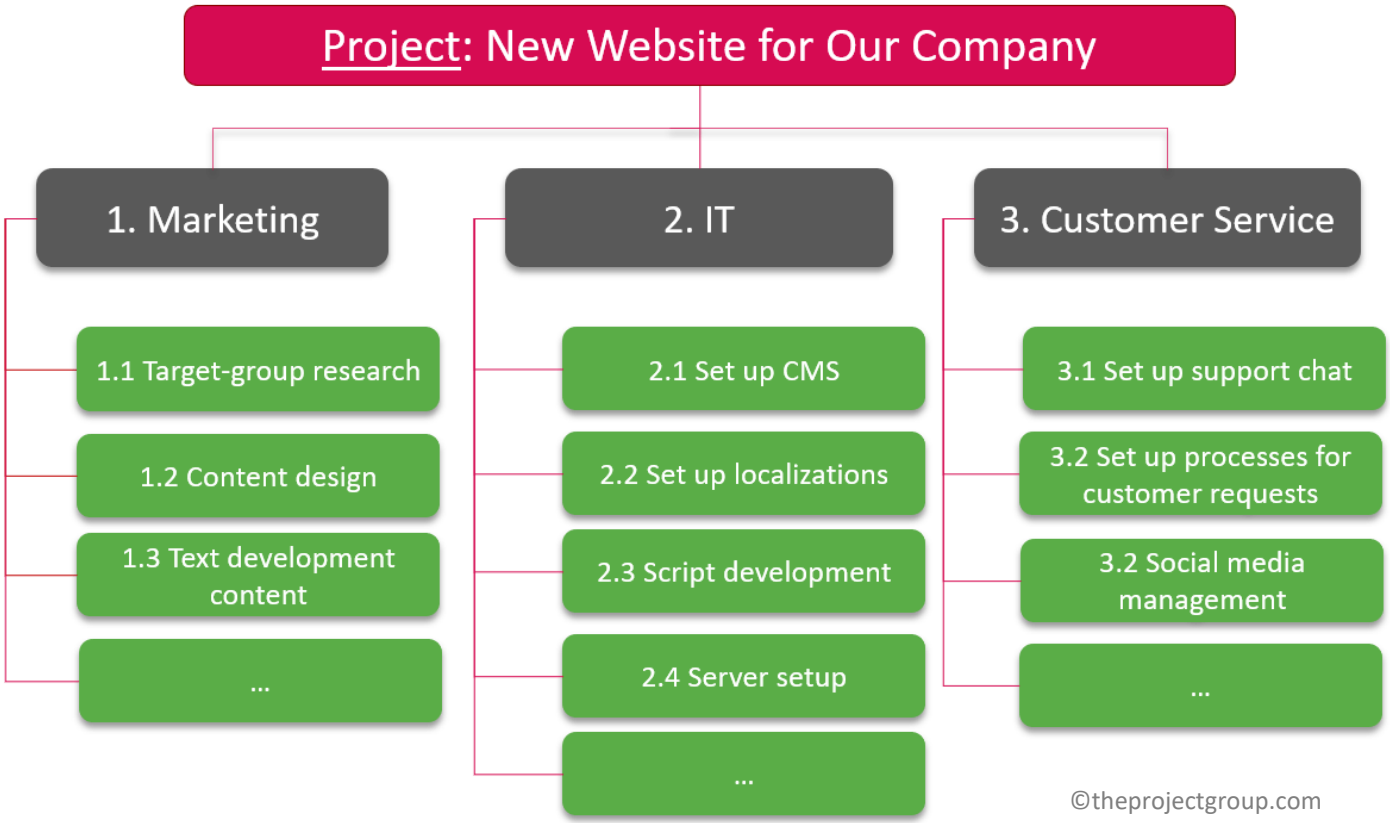
The WBS can be designed on 3 basic concepts:

1. Object- / Target- / Deliverable-oriented
2. Activity- / Time- / Project Phase-oriented
3. **Organization- / Function-oriented**

+ many PTMs from different departments
- integrative projects
- Highly dynamic projects



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Process planning...
Timeline / GANTT Chart

Critical path

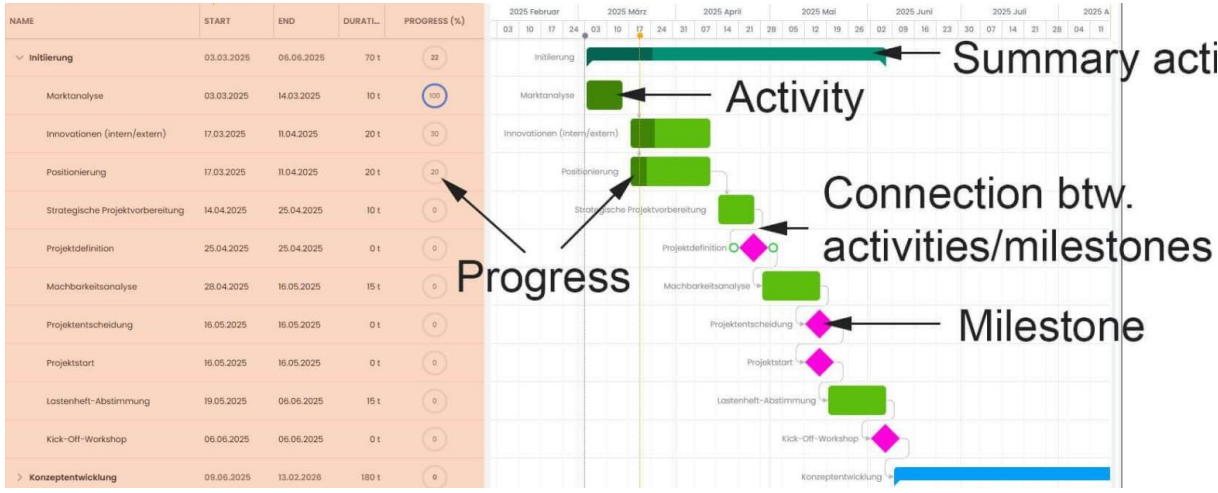
...if a task on the critical path is delayed, the entire project duration is delayed.

The PM must pay particular attention to compliance with the critical path. The critical path is also used to determine where time savings shorten the overall project duration.

TIMELINE PLANS / GANTT CHARTS are determining...

- the end or start of the project
- the start and end of each WP
- the scheduling of milestones
- buffer times & the critical path

→ **...is as a communication tool for P-Team & Shareholders**



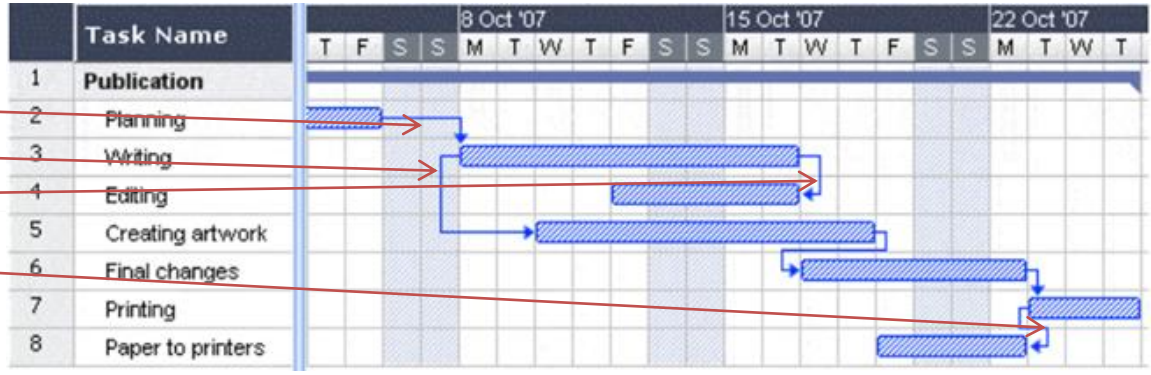
Gantt charts show ...

- Work packages (vertical axis)
- Time sequence (horizontal axis)
- Parallel activities
- Dependencies (arrows)
- Milestones (black diamond)
- Critical path (in red)
- Buffer times (in blue)

The flow/bar chart is attributed to the management consultant Henry L. Gantt (1861-1919).

Work Package dependencies

- End-Start („Normal“)
- Start-Start
- End-End
- Start-End („Jump“)

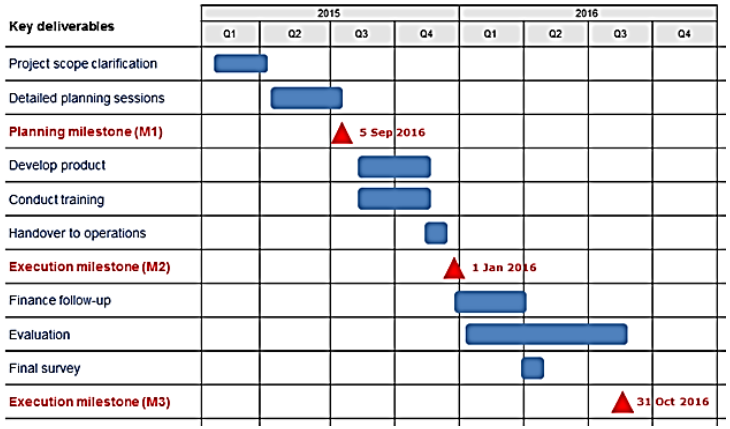


Milestone plan & Milestone Trend Analysis

WBS-Code	Milestone	Scheduled Deadline	Adapted Deadline	Actual Deadline
1.1.1	Project launched	03.12.2020	-	03.12.2020
1.2.5	As-is analysis completed	04.01.2021	15.01.2021	17.01.2021
1.3.5	Rough concept created	31.01.2021	29.02.2021	
1.4.5	Detailed concept created	20.03.2021	31.03.2021	
1.5.7	Technical implementation done	15.05.2021		
1.6.9	All tests completed	15.06.2021		
1.7.5	Operational start-up done	30.6.2021		
1.8.5	Project completed	15.07.2021		

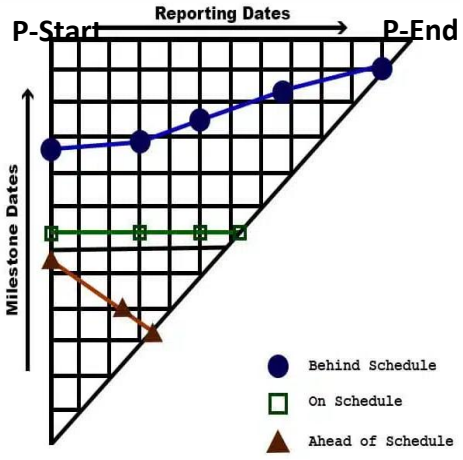
MILESTONE PLANS provides a **quick** overview of performance progress and time-critical events. Milestones should be defined at **regular intervals** adapted to the project.

→ Milestones should be also visible in
  → Work Breakdown Plan
  → Gantt Chart

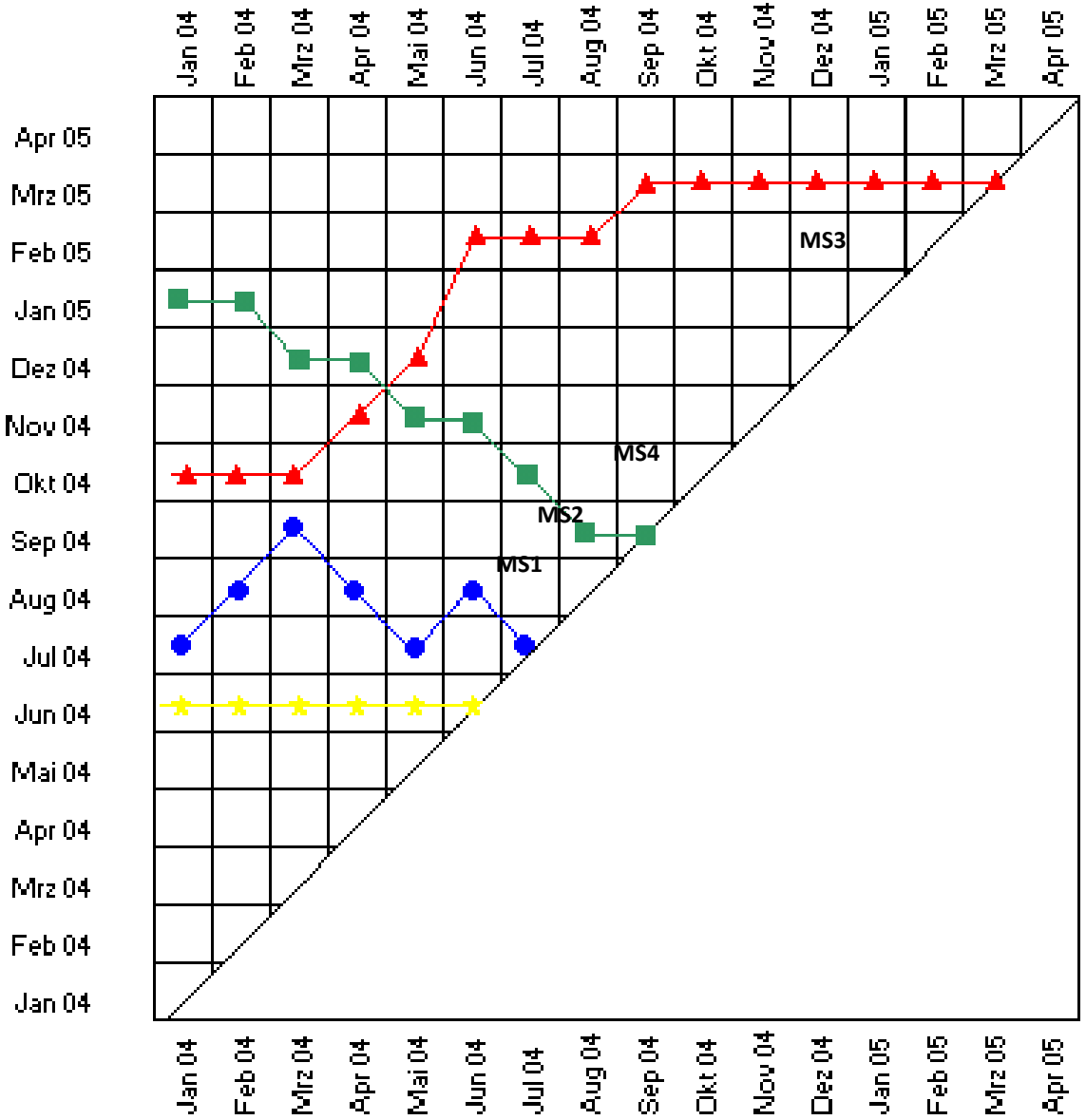


MILESTONE TREND ANALYSIS (**MTA**) helps
- monitor project progress with little effort
- recognize delays and their effects at an early stage
- communicate/adapt the progress within the team

Progress should be measured periodically:
- Which tasks have already been completed?
- What difficulties have arisen since the last meeting?
- What work still needs to be done before the MS is reached?
- Are additional measures necessary?
- Is there a postponement of the MS?



Milestone plan & trend analysis



What would you do at the project meeting in…

-February?

-March?

-April?

Is the project a success?

Milestone Trend analysis

The following milestones and reporting dates were defined in one project:

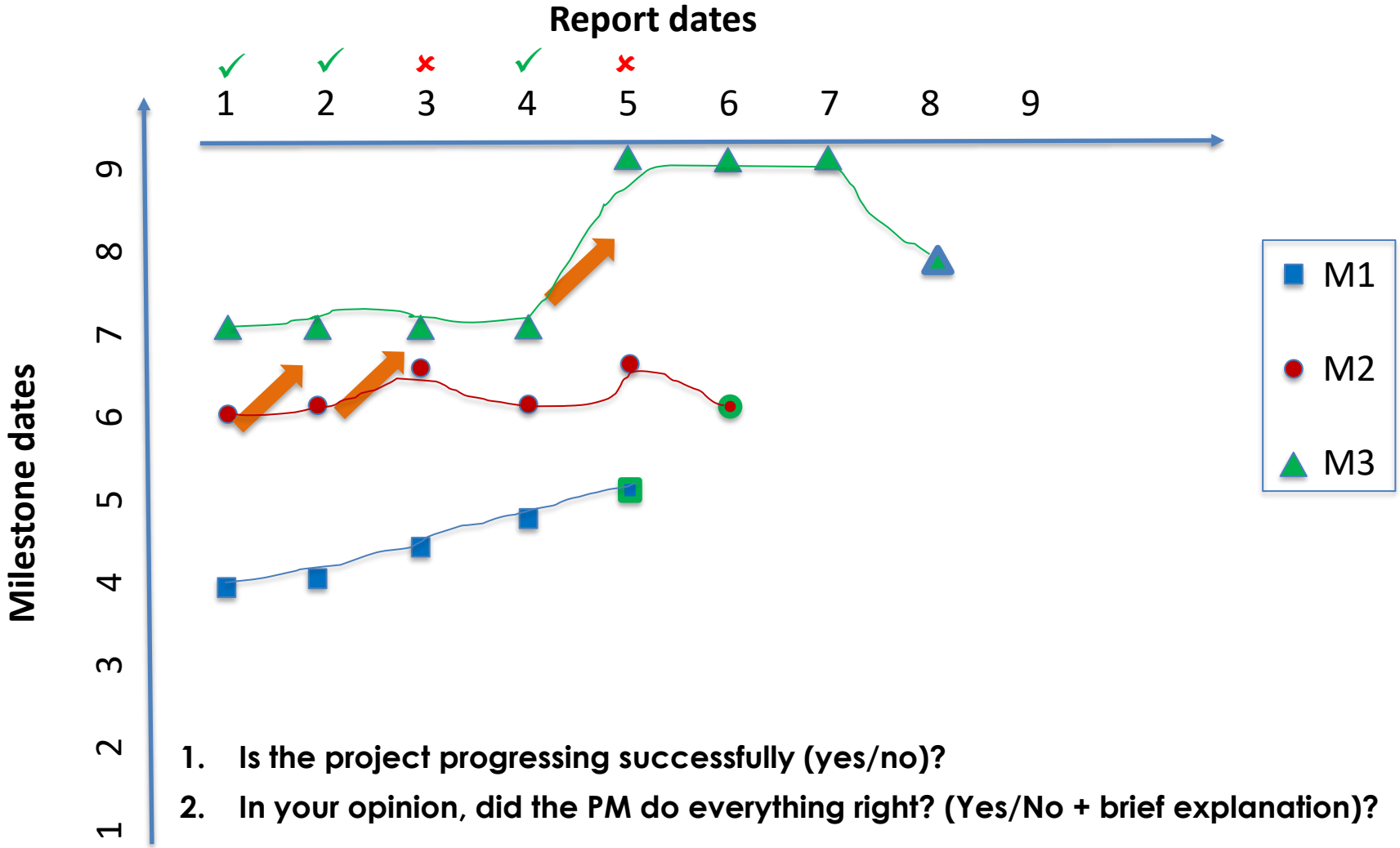
- M1: Design completed M2: Prototype tested M3: Production transition completed

Over the course of the project, the estimates by the MS managers developed as follows:

Reporting date	Estimated milestone dates		
1.1.	**M1: 1.4.**	**M2: 1.6.**	**M3: 1.7.**
1.2.	M1: 7.4.	M2: 5.6.	M3: 1.7.
1.3.	M1: 15.4.	M2: 21.6.	M3: 1.7.
1.4.	M1: 27.4.	M2: 5.6.	M3: 1.7.
1.5.	M1: 1.5. ✓	M2: 15.6.	M3: 1.9.
1.6.		M2: 5.6. ✓	M3: 1.9.
1.7.			M3: 1.9.
1.8.			M3: 1.8. ✓

1. **Create a milestone trend analysis**
   (PowerPoint / paper, 5 min; submit your draft (photo, snapshot) via chat)
2. **Is the project progressing successfully (yes/no)?**
3. **In your opinion, did the PM do everything right? (Yes/No + brief explanation)?**

Task Milestone Trend analysis



1. Is the project progressing successfully (yes/no)?
2. In your opinion, did the PM do everything right? (Yes/No + brief explanation)?

Thank you for your attention...

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The biggest risk is not taking any risk...
In a world that changing really quickly,
the only strategy that is guaranteed to fail
is not taking risks.

~ Mark Zuckerberg