PROJECT PLANNING 2: WHO/WHAT/WHEN?

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Having defined the topic, it's time to plan the execution: to say how we are going to do it. But "how" is best explained in terms of three other question words: who, what and when. These questions all interact with one another. The important thing now is to put together a plan that incorporates all of them. Once we know the answers to who, what and when, we know how we are going to achieve our goal in the specified time.

IT'S JUST ANOTHER PROJECT

Have you ever wondered why it is that people with advanced academic qualifications can get better jobs? I don't just mean that the senior engineer will be someone who has studied engineering. Let me give you an example. Airports have marketing departments that are responsible for "selling" the airport to airlines. There are lots of airports all over the world, and the airlines only have a limited number of aircraft and a limited number of hours they can fly. So the aviation marketing departments at Musterstadt Flughafen put lots of work into convincing Air Beispiel to open new routes to Musterstadt. (I'm saying Musterstadt and Beispiel, of course, because I have worked with many airports, and I don't want you guessing which one I'm talking about.) Back in the early 1990s, Musterstadt decided it was time to have a proper aviation marketing department. There were lots of people applied for the top two jobs in the new department, including people with tourism and sales experience. Who got the top job? Someone with a doctorate in history. And the second top job in the company went to someone with a doctorate in economics. Neither of them had any real experience in the industry. And it turned out to be a good decision, because both of them had one thing in common: they knew how to look at a major project, break it down into smaller projects, plan things, coordinate themselves and other people, allow for things to go wrong, and keep working at it until it was finished. How did they know this? Because they had completed doctorates – *Doktorarbeiten* – which are, really, very complicated and tiring projects. What this means for you right now is that it's not called *Projektarbeit* for nothing. It is a project, and the academic side of it is a project like any other. If you already know all about project management, then you don't need to read any more here, just make sure you apply project management skills from day one. For the rest of us, here's a summary of project management ideas, with examples of how to apply them to an academic project.

TARGETS AND DEPENDENCY

You already know your final targets for this project. There is whatever your company wants you to achieve – that is one target or set of targets. And there is the academic question you have set yourself, with its criteria for success – this is another set of targets.

Possibly – probably – the academic targets are dependent on the commercial targets being achieved (or at least attempted).

Let's take an example from the previous lesson. We will use the task given there and topic 1. This gives us the following targets:

1. Implement a new intranet-based help desk ticketing system
2. Identify the advantages and disadvantages of the new system

Looking at it this simply, you could say that (2) depends on (1). So does this mean that you have to complete (1) before you can complete (2)? That would be one way to approach this project.

It makes more sense, though to look further. Break each target down into smaller targets:

1. Implement a new intranet-based help desk ticketing system
    a. Finalise the specifications for the new system
    b. Design and implement the back-end
    c. Design and implement a web interface
    d. Design and implement an app interface
    e. Document the system
    f. Train end-users on the new system
    g. Test the system in use
2. Identify the advantages and disadvantages of the new system
    a. Determine what sort of areas you will consider when comparing systems
    b. Identify strengths and weaknesses of the existing system
        i. (in your opinion)
        ii. (as seen by help-desk personnel)
        iii. (as seen by end users)
    c. Identify strengths and weaknesses of the new system
        i. (in your opinion)
        ii. (as seen by help-desk personnel)
        iii. (as seen by end-users)
    d. Compare the strengths and weaknesses of each system, putting the different lists together to create a list of advantages and disadvantages.

In the targets (*Ziele*) – or tasks (*Aufgaben*) – I have not even looked at the software development methodology you will take, which may make things very different.

But looking at the list now, we can see that the dependencies (*Abhängigkeiten*) are quite different. (1a), for example, can use the results of (2b). For (2c-i) you only need (1c and 1d), but for (2c-iii) you need to complete all of (1).

For each task or target, you can break it down until it is really just one task. Common sense has to tell you when to stop.

Once you have your list of tasks and dependencies (*Abhängigkeiten*), you can assign a time that you will need for each task. Have a look at the idea of a Gantt chart as a project management tool. There is free software that can allow you to create a Gantt chart for your project, and you can keep adding tasks as you go. A good introduction to the Gantt chart can be found even on Wikipedia, and you can get a lot more information online. It is an essential tool for project management.

https://de.wikipedia.org/wiki/Gantt-Diagramm

DON'T FORGET THE SCHOLARLY WORK

Now that we've looked at the basic project management concepts, which were possibly not new to you at all, there's something very important. **WE LEFT OUT A MAJOR TARGET!**

That's right. We left out one of the most important targets for your project. I'll add it now, without the breakdown of (1) and (2).

1. Implement a new intranet-based help desk ticketing system
2. Identify the advantages and disadvantages of the new system
3. Write the project to submit to the university

Now, again, it would be easy to think that first you do (1), then you do (2), then you do (3). We've seen that it's not that simple for (1) and (2) once they are broken down. Well, we also have to look at what is involved in (3) as well.

1. Implement a new intranet-based help desk ticketing system
2. Identify the advantages and disadvantages of the new system
3. Write the project "report" to submit to the university
    a. Outline the report structure
    b. Draft an introduction
    c. Write the methodology
    d. Write the literature review
        i. Research the topic
            1. Online research
            2. Library research
            3. Obtain articles and books
            4. Read articles and books
        ii. Prepare a basic draft of an annotated bibliography
        iii. Use that draft to make a literature review
    e. Write the report on each stage of the work
    f. Write a summary with conclusions
    g. Finalise the introduction
    h. Write the abstract

There are a couple of important points here.

- (2a) – deciding what you will compare – may depend on (3d)
- (3c) often depends on (3d-ii)
- Nowhere in that list do I have *Lektorat* and *Korrektur*. They are important, unbelievably important, but they can be put in as separate tasks for each part of (3). And then once again at the end. So you have something like this:

1. Implement a new intranet-based help desk ticketing system
2. Identify the advantages and disadvantages of the new system
3. Write the project "report" to submit to the university
    a. Outline the report structure
    b. Draft an introduction
    c. Write the methodology
        i. Write
        ii. *Lektorat*
        iii. *Korrektur*
    d. Write the literature review
        i. Research the topic
            1. Online research
            2. Library research
            3. Obtain articles and books
            4. Read articles and books
        ii. Prepare a basic draft of an annotated bibliography
        iii. Use that draft to make a literature review
        iv. *Lektorat*
        v. *Korrektur*
    e. Write the report on each stage of the work
        i. Stage 1

1. Write
2. *Lektorat*
3. *Korrektur*

ii. Stage 2

1. Write
2. Lektorat
3. Korrektur

f. Write a summary with conclusions
   i. *Lektorat*
   ii. *Korrektur*
g. Finalise the introduction
   i. *Lektorat*
   ii. *Korrektur*
h. Write the abstract
   i. *Lektorat*
   ii. *Korrektur*

Now, with all that correction work going on, you will need to allow a lot of time – especially because you will probably have someone else helping with it. And writing everything at once is not easy. So you should be writing the reports for the different stages as early as you can in the project. Add these to your Gantt Chart.

It's very important to note that the exact planning for (3) will depend on the outline of your report. And just how to outline your report is the subject of the final lesson for this semester, so you can't complete your plan just yet.

ALLOWING PLENTY OF TIME

Wherever you can in your project planning, put in extra time. This applies especially where you are programming – meaning things could go wrong – and where you are depending on other people, for example *Lektorat*.

Don't forget to plan for weekends, holidays, other work duties, and leave room in case you get ill.

If you find reading theoretical work difficult, plan plenty of time for it at the beginning, and spread it out a bit too. The better you plan, the less stressful it will be.

Don't ever plan to use every available minute and only be finished on the deadline. If everything goes according to plan, you should be finished 3 weeks early. If you plan like that for a project of this scale, you might just be lucky enough to finish on time, with only 3 or 4 all-nighters.

THAT'S *WHAT* AND *WHEN*. AND WHO?

You might be thinking that your project only involves you and, at the most, someone to help by reading the report for mistakes.

Throughout the plan, you will have other people involved.

You have meetings with your supervisors. You will send emails and wait much longer than 5 minutes for an answer – perhaps days or weeks.

You will have users and managers who have to give feedback or provide specifications.

All of these things involve other people, and for those people, you are not a high priority. You need to allow them time, and inform them in advance of what you need them to do. Managing those people, informing them that "in 2 weeks I will need xyz from you" is very important. It takes time, and it should be included in your project

plan, in your Gantt chart, as tasks to do on specific days. Getting information from someone is dependent on having asked them, and asking is dependent on having warned them.

When you put all of these things together, even a *Projektarbeit* becomes a complex project that needs to be planned. But make the effort. Make a plan, revise it as you go, and follow the plan. Check in with the plan every day. This is an important key to having your project succeed. And this is why people who have written a *Doktorarbeit*, for example, get good management jobs: they have proven they can manage a complex project and bring it to completion! Now's your chance to start practising this important skill.

HOMEWORK

Your homework for this lesson is optional. You don't have to send it in. But you really should do it!

Prepare a simple Gantt chart for your project, with dependencies and timings, and listing who is involved. Send it to me for feedback.