Research Data Management

From a data inventory to a data management plan (DMP)

Before a research project starts, there is planning for what is to be implemented. Nowadays, part of 'good scientific practice' also includes research data management. The so-called Data Management Plan (DMP) has gained a certain level of familiarity. It describes the lifecycle of the data. But where should one start if the IT infrastructure of one's own research group is unclear? Below, the process of moving from a 'data map or inventory' to a DMP is presented in four applicable steps. These steps facilitate the framework conditions for a project when taken care of before its start. Additionally, it is mandatory on the part of research funding to be able to demonstrate how one will sustainably handle their generated research data.

Step 1: Data Inventory



Where to start?

You're at the beginning of your project and have no idea how and where your team stores data? No problem. A good start is always to get an overview and take stock.

Create a task force!

Your team members are always good contacts. Ask questions and try to get an overview of who has what knowledge and who would also be interested in getting an overview of your data and the related infrastructure.

Brainstorming

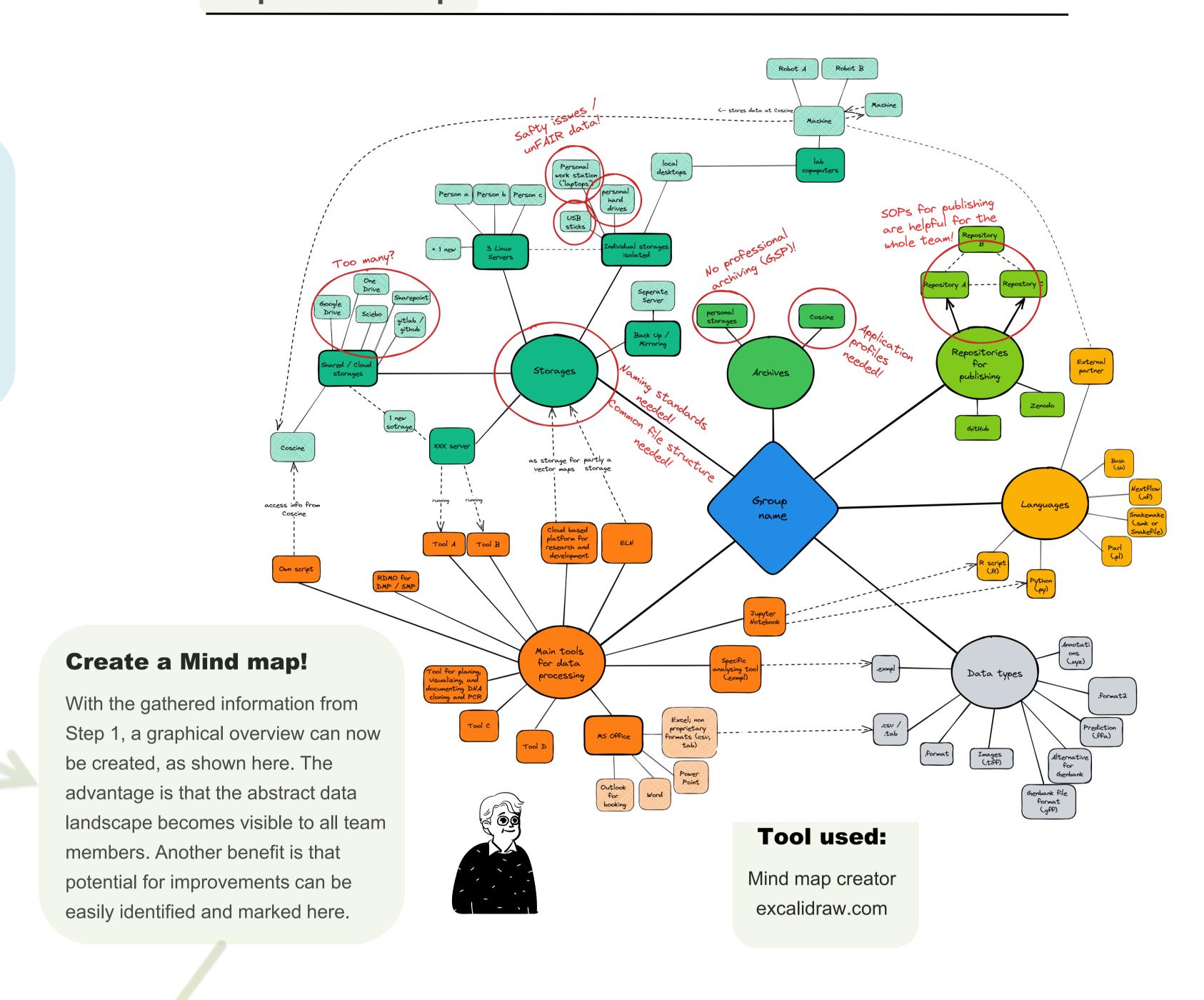
Science is always teamwork!

Take your time and start writing down everything that comes to mind regarding the keyword 'data' that concerns your team.

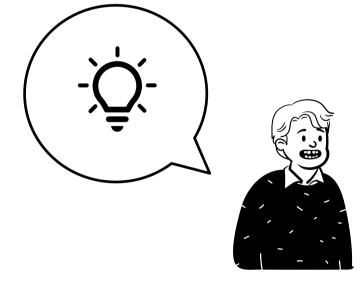
This can include commonly used formats, storage locations, publication repositories, data handling SOPs, controlled vocabulary standards, as well as programs, scripts, and tools.



Step 2: Data Map



Step 3: Data Management Plan



Data?

Start writing a DMP!

Now that you have a good overview of your data handling and your existing infrastructure, you can turn your attention to the so-called Data Management Plan.

But what is it exactly?

A Data Management Plan (DMP) structures the handling of research data in a scientific project. It describes how data will be managed during the project's duration and after its completion.

Necessity and benefits

Many funding agencies (**DFG**, **FWF**, **SNF**, **Horizon Europe**, **Volkswagen Foundation**) expect information about research data management as part of a funding application for certain funding lines. While a formal DMP is rarely required so far, especially by the EU, it is still beneficial for working on a research project. In particular, a DMP allows recording the current status and specifics of the entire research data lifecycle. This makes it helpful for administration and to maintain an overview. [1]

Content

- What types of data will be produced?
- What data and metadata standards will be implemented?
- Who has access to the data?
- Under what conditions can the data be re-used?
- How can data be archived?
- · ... [2]

Step 4: Evaluation

A living document...

With your thorough preparation, you have secured all the funding and your project is running smoothly in the field of research data management. Great job!

Despite exemplary planning, it's impossible to foresee all eventualities during the project's duration. Colleagues might leave and/or new ones might join, responsibilities can shift, and new requirements might be introduced. Therefore, it's important to review and update the DMP at regular intervals. This not only helps you to maintain an overview but also provides valuable information for documenting your entire project, making it more transparent.

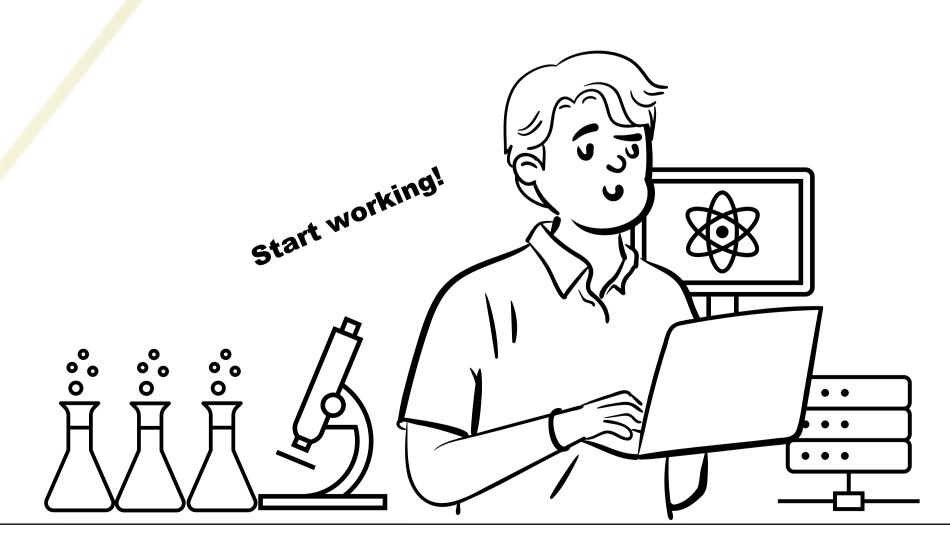
Adapting the DMP document over the course of your project makes it 'alive.' However, the Data Map is also not a static endeavor. As described above, weaknesses in the infrastructure can be uncovered here. In the meantime, your team may have worked on improvements. This can also impact your project, for instance, if a new Electronic Lab Notebook (ELN) or a new interface has been introduced. Updating the data map and the DMP is, therefore, part of good documentation and thus good scientific practice.



You have further questions?

Contact us:

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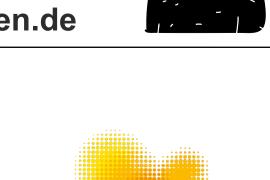
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[1] Forschungsdaten.info: Der Datenmanagementplan, URL: https://forschungsdaten.info/themen/ informieren-und-planen/datenmanagementplan/ (2023-08-28).

[2] University Library RWTH Aachen: Data Management Plan, URL: https://www.ub.rwth-aachen.de/cms/ub/Forschung/WissenschaftlichesPublizieren/Forschungsdaten/Datenmanagement/~iicd/Datenmanagementplan/lidx/1/ (2023-08-28).

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