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Projectplan: Museum Scavenger-Hunt:

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Pre-project phase (Vorprojektphase)

Corporate philosophy (Unternehmensleitbild):

What do we stand for? (Wofür stehen wir?):

We are a group of 5 friends, who after graduating from university decided to create a small IT firm. We have already worked on countless smaller projects, gathering tons of experience, this however is the biggest project our company has faced yet.
Even though each of our employees is a developer, everybody has a specialization. We have a project manager, database expert, UI designer and 2 backend programmers.

Was wollen wir erreichen? (Mission/Ziel)

Making museum exhibits / public attractions / etc. more interactive especially for young people. A lot of children find museums tedious. We are trying to offer a solution, which makes exhibits more interactive using modern technology.

Wie wollen wir es erreichen? (Grundprinzipien/Strategie)

To attract young people to visit the museum more often, we want to build an app where people can take part in scavenger hunts and explore the museum in a more interactive way. Through the wonders of modern technology we can make history come to life!

IS-SHOULD Analysis (IST/SOLL Analyse):

User Stories:

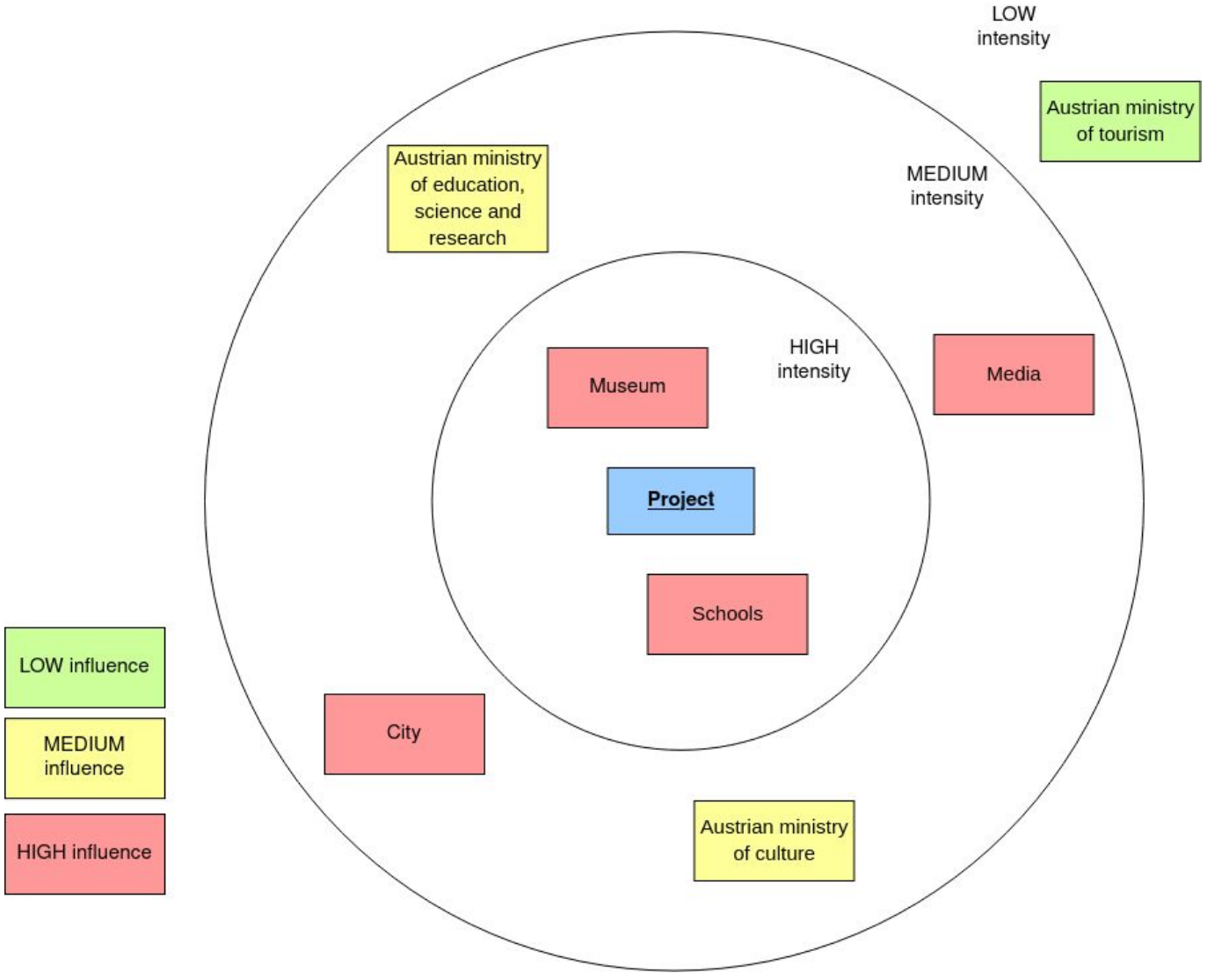
We organized a school trip to a museum. After the school trip we interviewed the children, the teachers, and the museum workers. In our opinion, these are the major points that were brought up:

- “As a visitor of the museum I want to interact more so that learn more and am not bored to death right”
- “As a school teacher I want museums to be more attractive to children so that they gain an appreciation for learning and are more eager to learn.”
- “As a museum director I want to make the museum more engaging to attract more visitors, increasing the museum’s reputation and earnings.”

IS	**Should**
Children often find it **very boring**	Museum visit should be **fun and informative**
Children **don't learn as much** as they could	Museum visit should be **more engaging**
Children **don't tend to read texts**	Museum visit should be **more interactive**
Museum visits often **don't take advantage of modern technology**	Museum visit **should take advantage of modern technologies**

Stakeholder Analysis:

Based on our research, we created diagram [1], showing the stakeholder situation:



[1] - Figure 1; Stakeholder Analysis

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Project Scope (Projekt Abgrenzung)

Mobile App (Android)

The mobile app should provide the following functionality:

- Multiple languages (German, English)
- QR-Scanner
- Displaying of Text, Images, Videos
- Download option for offline use
- FAQ

Web Management Interface

- User Statistics
- Hunt Creator (A simple tool for creating new a scavenger hunt)
- QR-Code Generator

Database

- Database Setup
- Backend

Staff training

- Guide Book (manual)
- Training: App, Web Management Interface, Hunt Creation
- Contact Person
- Creating the first scavenger hunt together

Documentation (Guide Book)

- Source Code Documentation
- App Guide Book
- Web Management Manual
- Hunt Creator Manual

Minimum viable product (MVP)

The MVP should be an Application that allows you to start the scavenger hunt and receive the first clue. After that you will be able to explore the museum and look for QR-Codes to scan. After scanning a QR-Code the user will receive information about the exhibit (text, image, video). Scanning a QR-Code will also provide the user with the next clue and the scavenger hunt continues.

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Hypotheses and key figures (Hypothesen und Kennzahlen)

In the year 2018 Austrian Museums had a total of 19.394.100 visitors according to Statistik Austria (Statistik Austria)
Based on the data in the document above, we have decided to aim for a 2% increase in visitors. Furthermore we have defined metrics that will help measure how successful our app is:

1. Visitors **using the app compared to** visitors visiting **without using the app**
2. **Downloads**: After entering the museum there is an ad for our app. How many people will download it?
3. **Scanned** QR-Codes: How many QR-Codes have been scanned in total. Which QR-Codes have not been found. Are some sections of the scavenger hunt too difficult? Do the users finish the scavenger hunt?
4. **Quiz after the scavenger hunt**: Send 2 groups of children, one with our app, one with a guide. Which one will have a better test result?
5. **User-Feedback**: Did the users think the app experience was fun?
6. **Returning customers**: How many users have used our app again?

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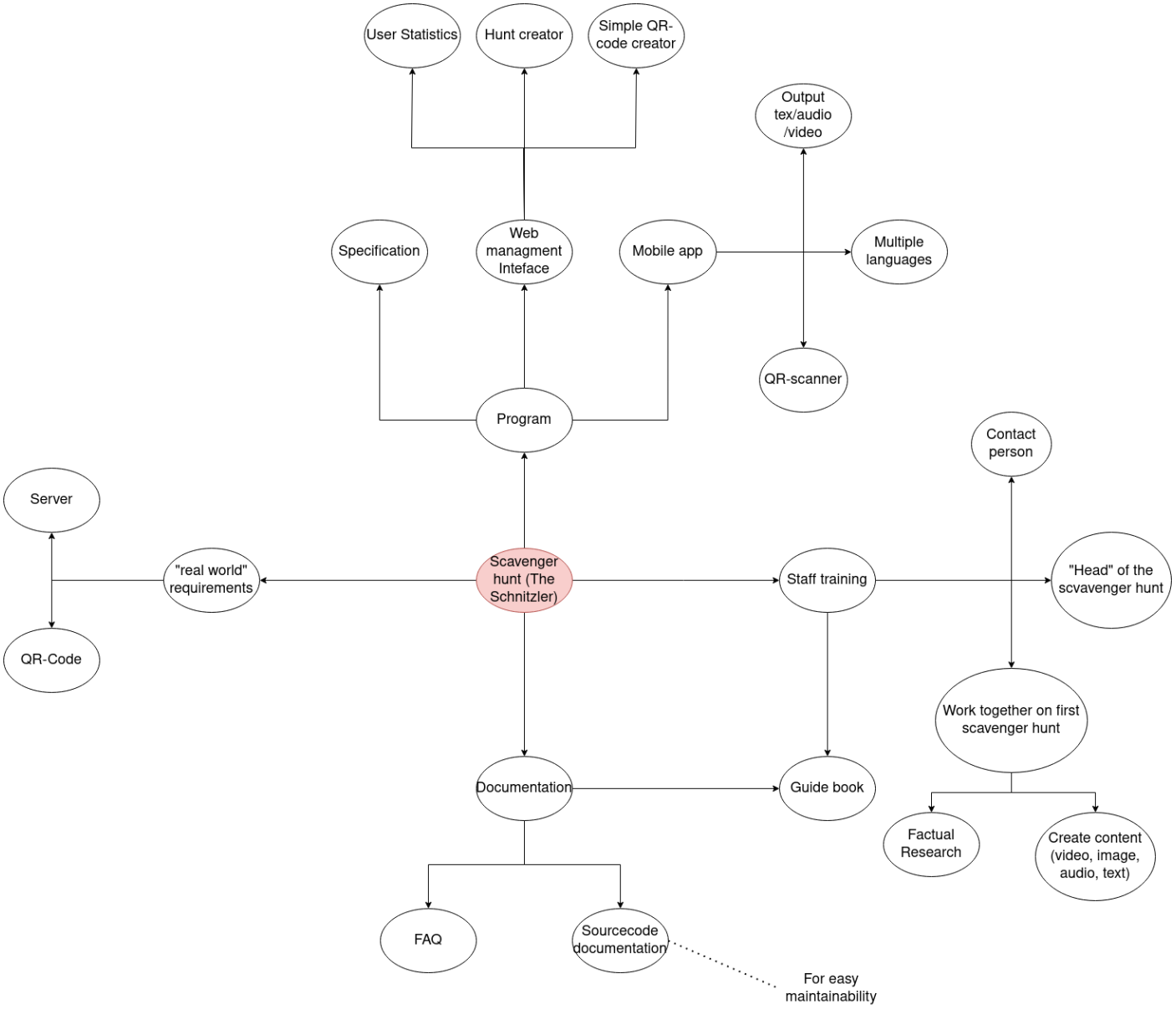
Achievement planning (Leistungsplanung)

Results Planning (Ergebnisplanung)



[2] - Figure 2; Results Planning

Staff Training:

The Staff-training will be held before the final launch day and will cover all the important information for a successful launch. The training will start with an example scavenger hunt for the staff to make them familiar with the app and the concept of the hunt.

When everyone has finished the hunt we will ask the staff to give us their feedback on how the experience was and what can be improved. This feedback will then be used to polish the app before the actual launch.

Then we will go over the guide book which is like a manual for all aspects of the project and finally we will show them how to create a hunt from scratch using the Hunt Creator.

Another part of the training will be an introduction to the statistics web interface and certain troubleshooting practices.

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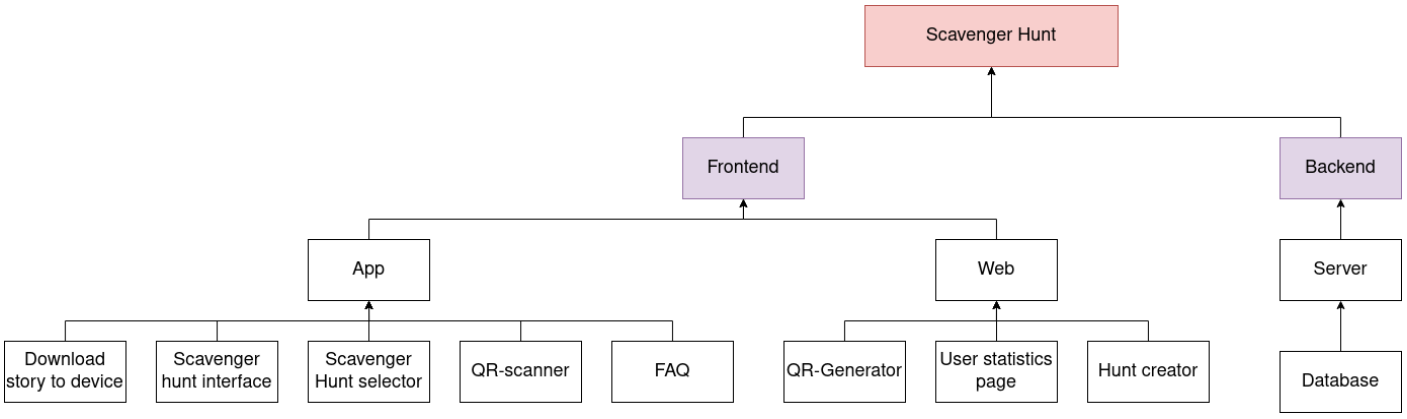
Documentation:
The Documentation (digital only) will be made up of the Guide Book, Source Code Documentation and a FAQ for the most basic questions.

Server:
The Server has to be provided by the museum itself, but well will do the setup of the database and backend.

Product structure plan (Produktstrukturplan)



[3] - Figure 3; Product Structure Planning

The scavenger hunt project will be split up in a Frontend and Backend.
The Frontend is further split up in an app for the visitors and a web interface for the museum staff.

App:
The app will provide the user with a tool to take part in the scavenger hunt. The app will provide the users with the following features:

- A simple QR-Scanner which is used to interact with an exhibit. An example would be an exhibit about a saber tooth tiger which has a QR-Code somewhere and if the user scans the QR-Code it will play a video of a saber tooth tiger in its natural habitat on the visitors phone.
- Scavenger Hunt Interface/Selector:
  Should provide an easy way to choose from multiple hunts which are available. The visitor should be provided with a description of where the hunt will take him and which parts of the exhibit will be covered.
- Download (Offline Use):
  This option should allow the user to download a hunt (preloading: text, images, videos, etc) and take part in the hunt without being connected to the internet. This enables users without mobile data to download the hunt in the museums lobby using the public wifi.
- FAQ - Frequently Asked Questions:
  This should answer the basic questions about the hunt and application.

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Web:

- QR-Generator:
  Simple tool to create QR-Codes which are linked to certain actions. An action could be a text, an image or a simple video. If the QR-Code is scanned the action will be displayed in the app when the user scans the code.
- Hunt Creator:
  In the Hunt Creator new “hunts” can be created. This tool provides a way to structure different paths in the hunt and manage the QR-Codes which are part of the hunt. There can also be dependencies between the QR-Codes, this can be useful for locking certain parts of a scavenger hunt until a certain QR-Code is scanned.
- User Statistics: The user statistics interface provides the museum staff with key metrics of the scavenger hunt. Some of the key metrics would be:
  - Currently active users (per hunt and in total)
  - QR-Codes which have never been scanned (to evaluated if part of a hunt is to difficult)
  - Visitors using the app compared to visitors visiting without using the app
  - …

Backend:

The Backend will provide the backbone to our web interface and app. It will store all the text elements, images and videos which are displayed during the hunt. Furthermore it will store the user statistics and other key metrics. The database and backend setup will be done by us but the actual hardware should be provided by the museum.

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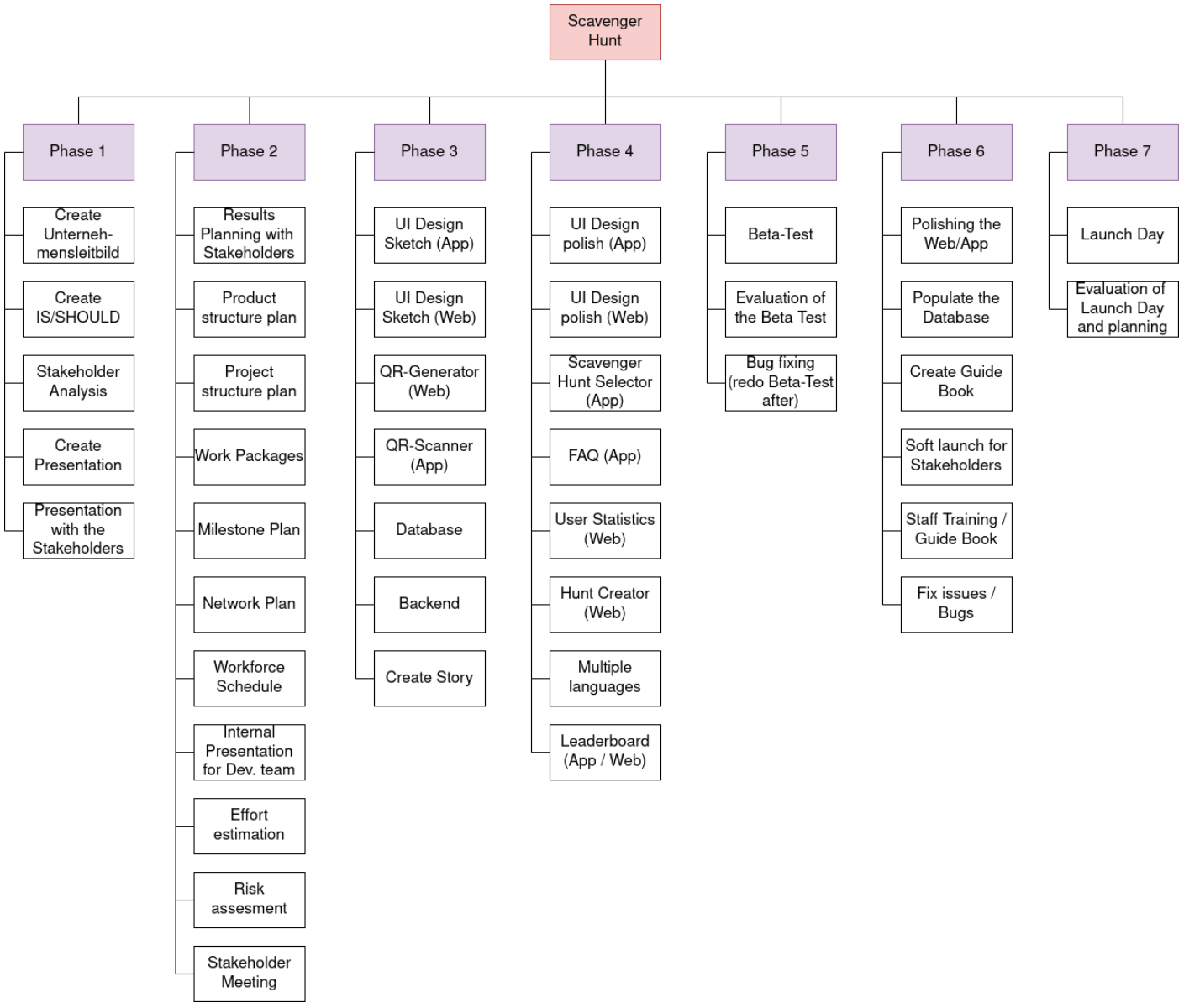
Project Structure Plan (Projektstrukturplan)



[4] - Figure 4; Project Structure Plan

Work Packages (Arbeitspaketbeschreibung)

	Working Package-specification
UI-Design (App)	Contents: ● Sketch UI ● Create UI elements ● Test UI ● “Glue” UI together
	Not-Contents: ● Adding functionality to UI elements
	Result: ● UI that is: ○ Appealing ○ Intuitive ○ Efficient
	Progress Measurement: ● Finished UI elements ● Test feedback

	Working Package-specification
Beta-Test	Contents: ● Design AB-test ● Feedback evaluation ● Fix bug reports ● Gather user analytics
	Not-Contents: ● Evaluating the story/factual elements ● Evaluating App-Aesthetics
	Result: ● Close-to-polished version of App ● List of issues
	Progress Measurement: ● Version iteration (how many version we created in the beta) ● Time spent in beta

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Deadline and Resource planning (Termin- und Ressourcenplanung)

Milestone Plan (Meilensteinplan)

The table below lists our milestone structure and their deadlines

Milestone	**Date**
Milestone 1 - Project got approved	12/9/20, 5:00 PM
Milestone 2 - Planning phase done; Kick off development	12/21/20, 5:00 PM
Milestone 3 - MVP created; Test MVP	1/15/21, 5:00 PM
Milestone 4 - Beta version created	3/15/21, 5:00 PM
Milestone 5 - Beta-Version passed	4/20/21, 5:00 PM
Milestone 6 - Project ready for launch	5/19/21, 5:00 PM
Milestone 7 - Project finished	5/25/21, 5:00 PM

Network Plan (Netzplan)

Please reference the file *NetworkPlan.pdf*

Can be also found on our github:

Scavanger-Hunt/NetworkPlan.pdf at master · IMerlin1009I/Scavanger-Hunt (github.com)

Workforce Schedule (Personaleinsatzplan)

Effort Estimation / Cost planning (Aufwandsschätzung / Kostenplanung)

Risk Assessment (Risikoanalyse)

Bibliography

Statistik Austria. “Ergebnisse im Überblick: Museumsstatistik 2018.” *Ergebnisse im Überblick: Museumsstatistik 2018*, 2018, https://www.statistik.at/wcm/idc/idcplg?IdcService=GET_PDF_FILE&RevisionSelectionMethod=LatestReleased&dDocName=021257. Accessed 04 12 2020.