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Master-Studiengang Big Data & Business Analytics

5. Semester

Development of a solution to detect skin lymphoma and to prevent development of metastasis and recidives

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1 Abstract

This scientific article focusses on the development of a chatbot and the analysis of blood pressure measurements. The main purpose of this scientific article is to develop... This can lead to... What is more, ... The first business case is that... Second,. Furthermore, ... Third,... Fourth,... Last, ...

2 Introduction

2.1 Problem statement

According to.... Another problem are All of these use cases can be automated and implemented by an application....

2.2 Aim and scope of this work

The first aim of this scientific work is to develop a solution ... What is important, the developed model is only a reference model....

3 Fundamentals

3.1 Related Work

3.2 Current algorithms, solutions to predict metastasis

3.3 Overview: Apps to predict metastasis

There already exist some applications to predict certain types of cancer worldwide, such as [1]. These solutions provide several information about the tumors by showing them within many different types of charts. They do not specify on a certain patient (which would also cause problems with data privacy and protection) but explain them in general.
[2]

[1] *Cancer tomorrow* 2020
[2] Mallawaarachchi 2020

4 Image Recognition and App Development

Here all used algorithms and patterns shall be explained

4.1 Image Recognition

4.2 Hybride App Development

5 Analysis and Development

5.1 Design Thinking Methods

In the following sections there are explained various kinds of design strategies to find out the real needs for the application being developed. These are adopted to two basic frameworks, the IBM Enterprise Design Thinking framework [1] as well as the Design Kit, proposed by IDEO.ORG [2]. Some of the strategies are modified a little bit and were implemented by a single person which can affect the objectivity and diversity of the methods. Nevertheless, they generated a highly usable product and many ideas for future development cycles.

5.1.1 Vertical latter

In the given figure, a vertical letter shows the initially planned goals and features of the app. The X-Axis shows the time steps whereas the Y-Axis explains the complexity of tasks. The higher on task is mentioned, the more complex it is to realize.

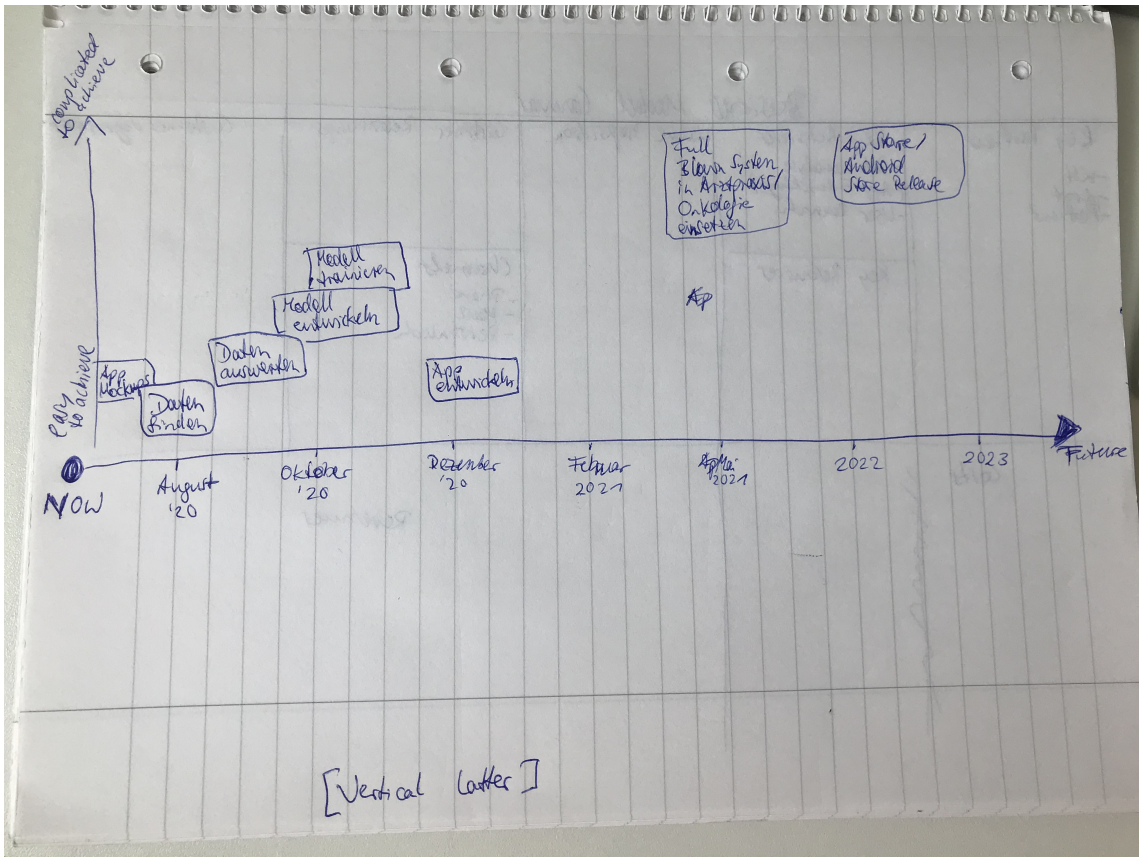

Figure 5.1: Vertical latter which defines the development goals over time

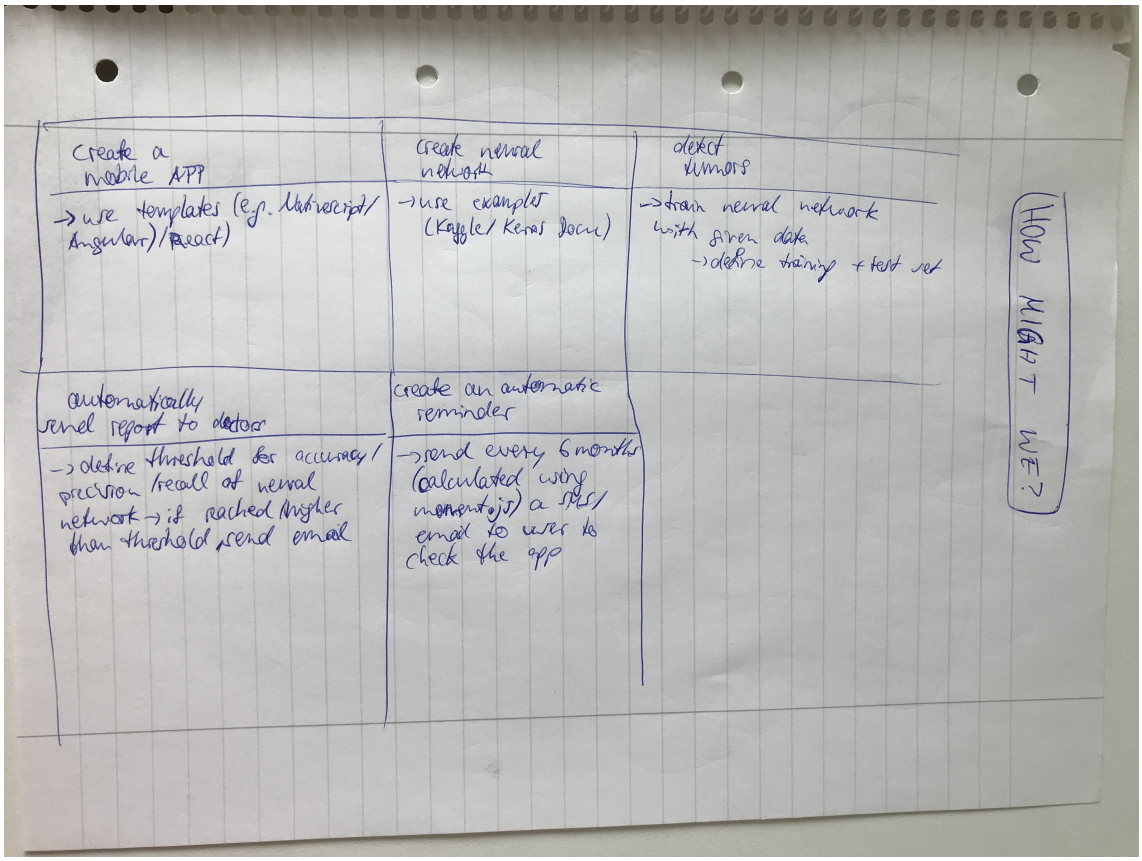

Figure 5.2: ”How might we?” - table to define the process of development

5.1.2 How might we?

5.1.3 Stakeholder Map

5.1.4 Empathy Map

5.1.5 Hills

5.1.6 User Journey

5.2 User Research

5.2.1 User interviews

5.2.2 What is important? - Relevant features

5.2.3 How can processes be improved?

5.3 Development of system to predict metastasis and recidives

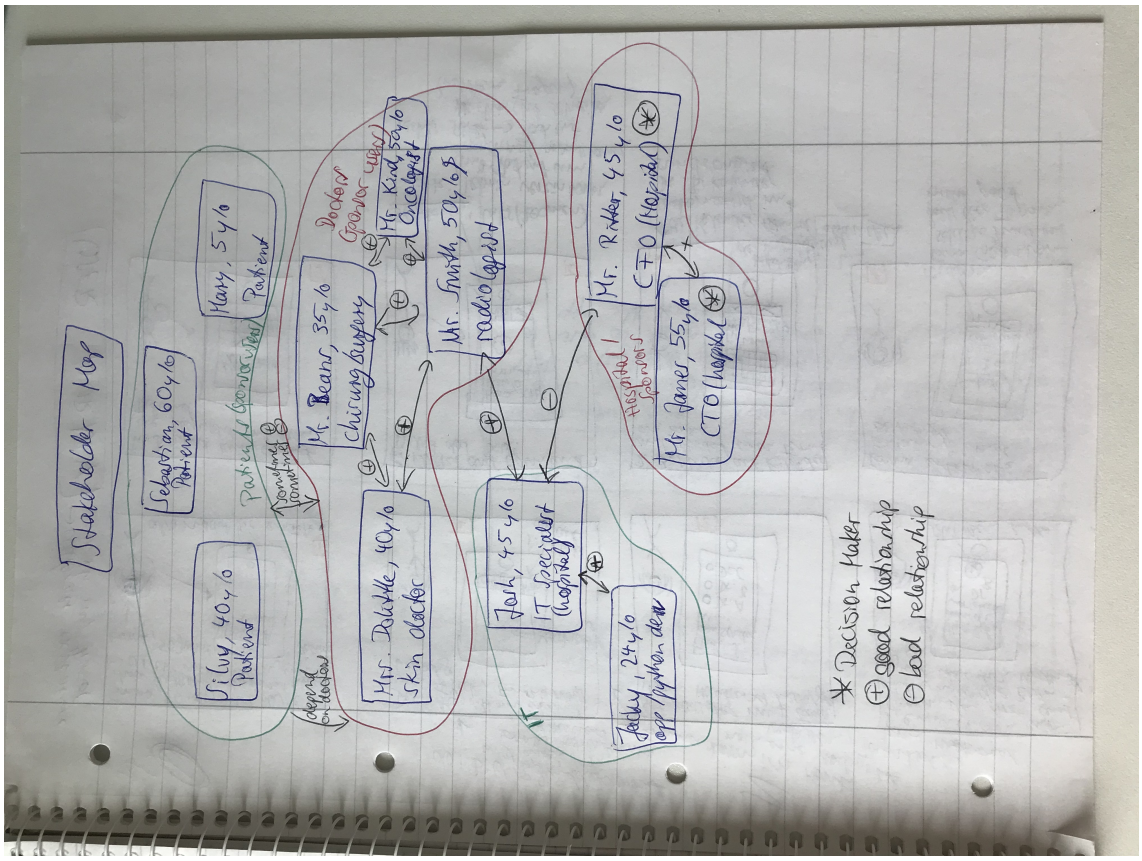

Figure 5.3: Stakeholder Map which shows all groups of stakeholders as well as their relationships

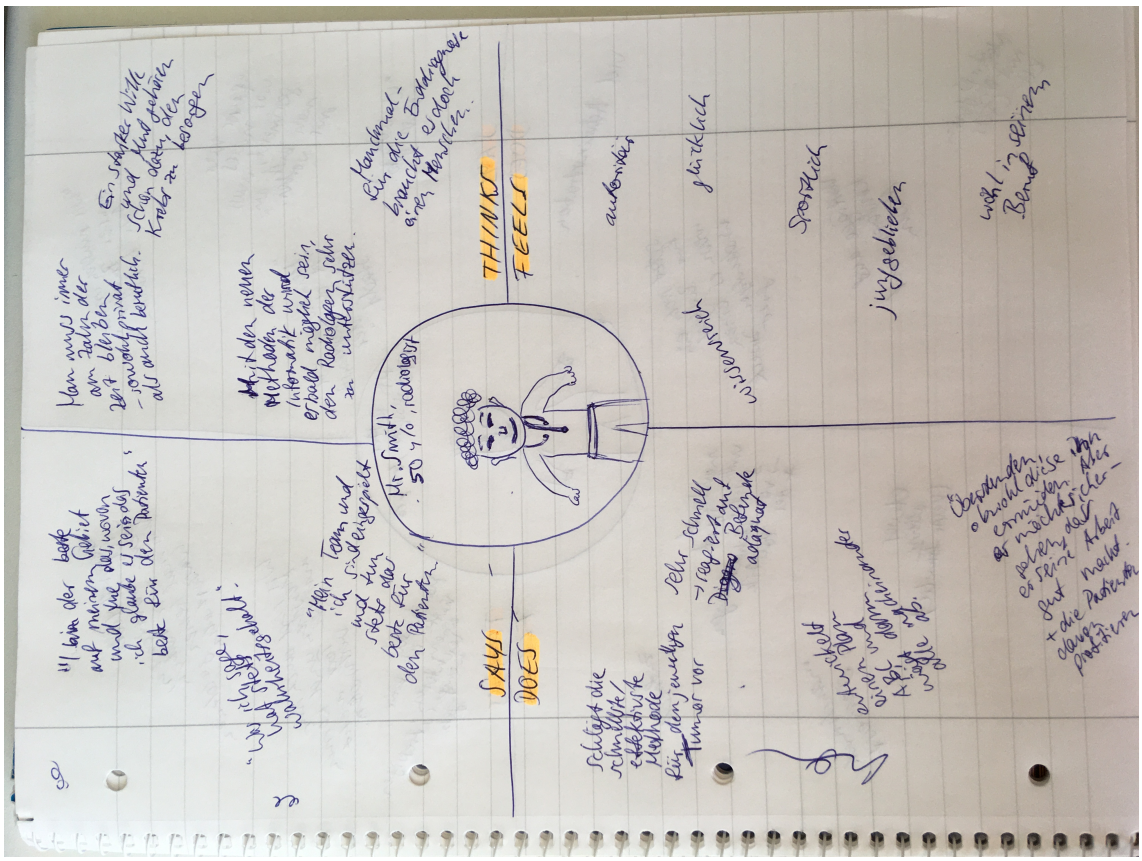

Figure 5.4: ”How might we?” - table to define the process of development

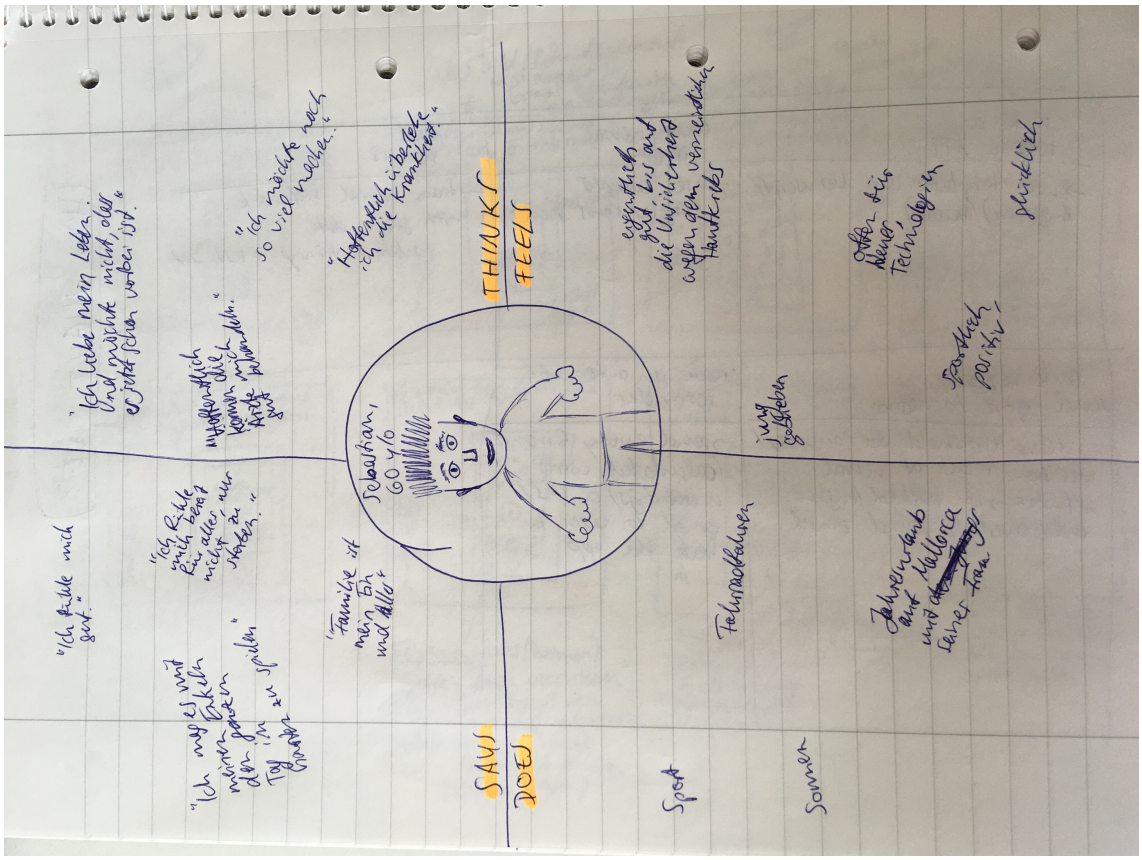

Figure 5.5: Empathy Map of patient

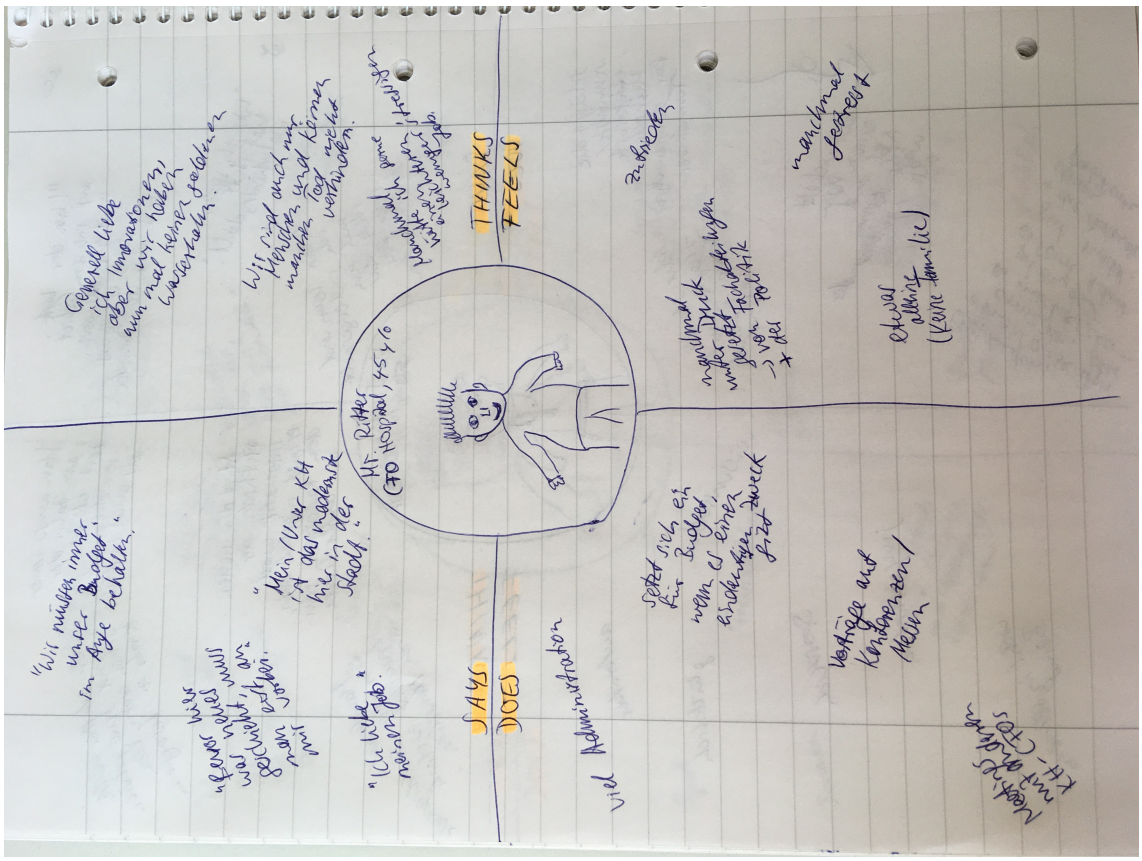

Figure 5.6: Empathy Map of CFO of hospital

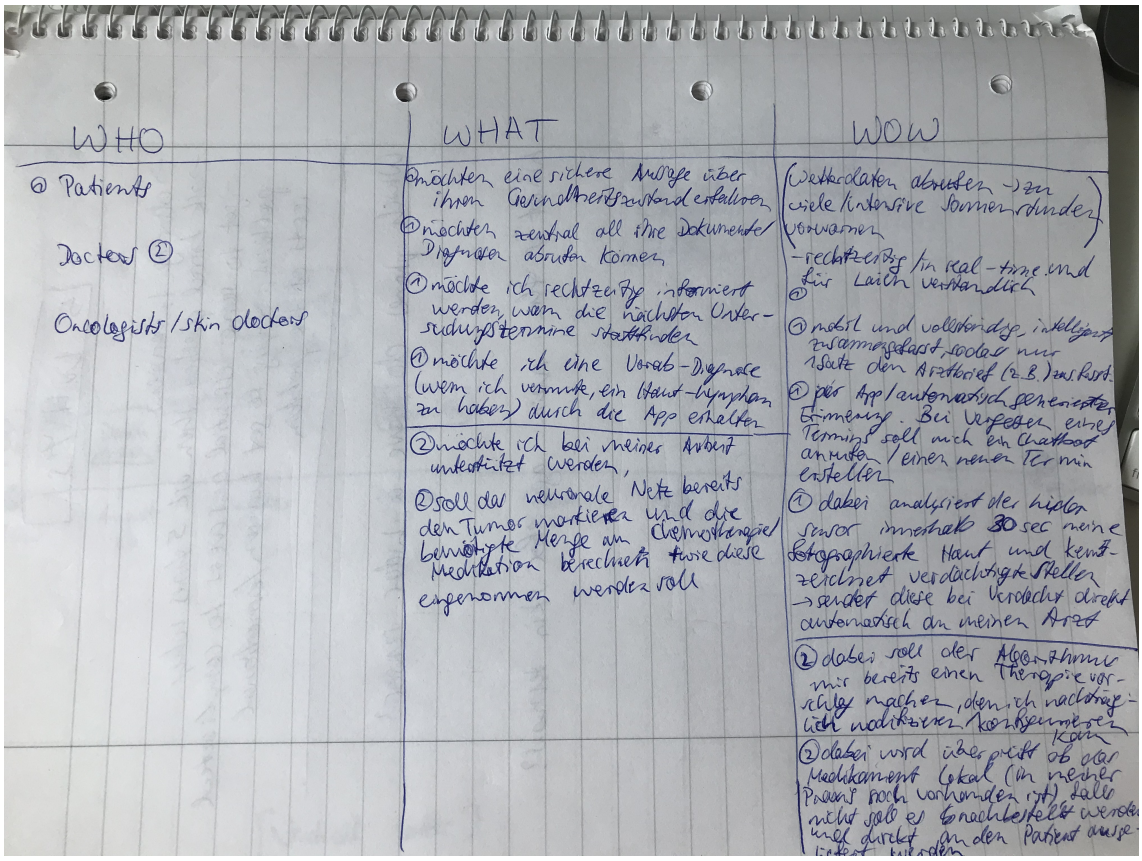

Figure 5.7: ”How might we?” - table to define the process of development

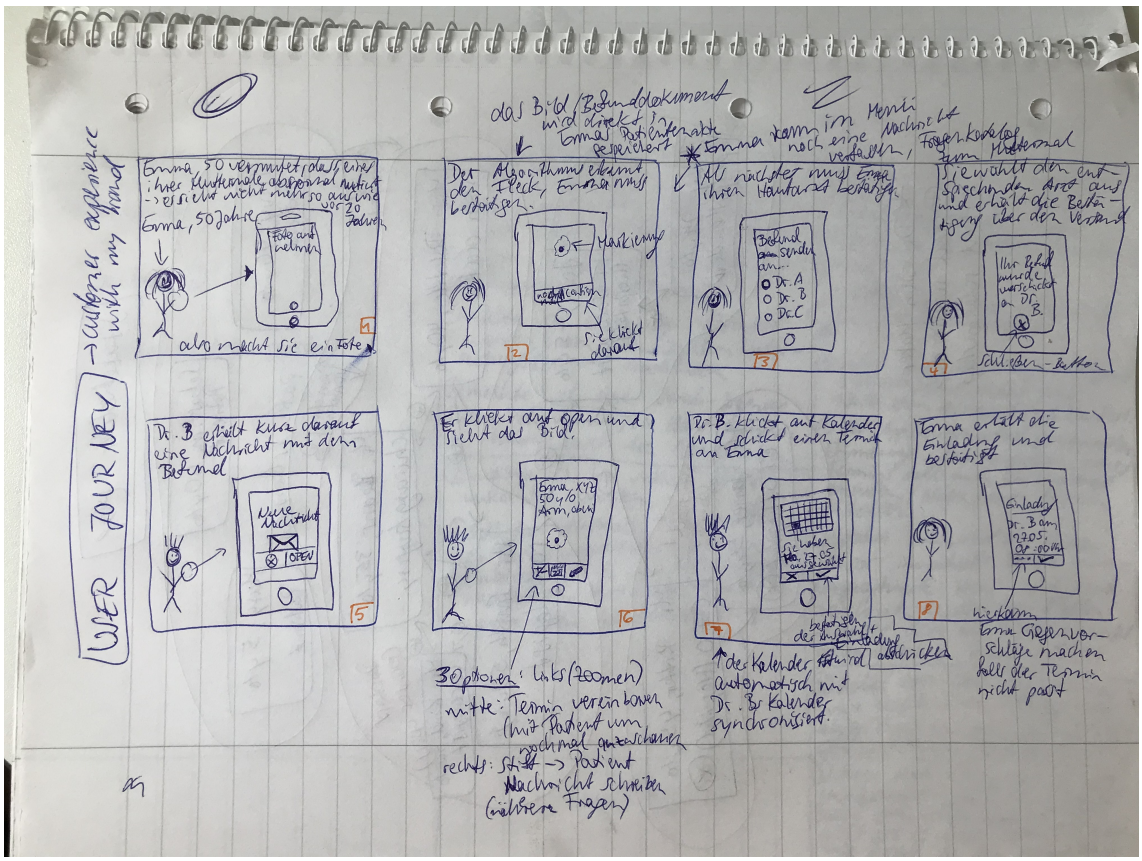

Figure 5.8: ”How might we?” - table to define the process of development

6 Results

6.1 Validation of results

6.2 Limitation in the development process

7 Conclusion and Outlook

7.1 Conclusion

7.2 Outlook

8 Abbreviations

CFO Chief Financial Officer

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9 Appendix A

Ehrenwörtliche Erklärung

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10 Appendix B