

Self-reflection: 5UEUA0 From idea to a blueprint

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Industrial Design

Group: 8

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During the course I started gathering 30 ideas with the group. First, every group member made an individual list with ideas, but during the meeting we found it more helpful to discuss these ideas with each other and make a group list of 30 ideas. The vibe during this process was very good and helpful for the ideation and made it easy to give your opinion. I experienced that I found it relatively easy to come up with new ideas compared with my group mates, but that not all my ideas were really about the topic or not really a solution to the problem of the ageing society. Solving this we stated some problems for the topic connected, ageing society. The ideation was more targeted. I found this, stating of possible problems, very helpful, this way you have a little help in which direction you could think. My ideas were for example the interactive playground, which was first called chairs sitting together in the park (See Appendix; a) and the app or device with a game (See Appendix; a). I think the teamwork during this meeting went very well, there was a good vibe which helped in creating new ideas. This easily gathering of new ideas, will help by other course projects in the ideation phase as well as for material choices in the next course of IoT to create the best final product.

Eventually we had to converge the 30 ideas into 10 ideas that were more detailed. By doing this it helped me to think more carefully on how the idea would work in real life, how the interaction with the user would be and if the idea is innovating enough. To make the device with a game (See Appendix; b) more for the intended target group I thought of making the device like game controllers they already know. By discussing the interactive playground with the group I made some extra features for the elderly and children in the playground (See Appendix; b). This way the elderly are able to tease the children from the chair, but the children are also able to do a little back. By detailing the 10 ideas I learned to think more from the perspective of the intended user and if the idea would be feasible to make. With this new knowledge I will be able to make the final product sellable. How? The user will be eager to use the product because it is made from his or her perspective which makes it very attractive for the intended user to buy and use. Why we made the choice to dive into these ten ideas was partially based on the feedback we got from the other students. This was very helpful in deciding which ideas were already a no go because they were unclear or not with the right perspective for the intended user. It also gave us new inspiration on which ideas we could combine or suggestions for ideas we could improve. From this feedback I learned to be more precise and clearer in my writing style. Why? You could only get to know our ideas by reading them. This makes it very important to write the ideas clear on paper so everyone from outside the group could understand them. This knowledge about writing will be helpful during the next course as well as in other courses during my bachelor.

The ten ideas had to be converged even more to five ideas. These five ideas had to consider which market there was for the idea, the relevance of the idea, the technology the idea would use, a block diagram with the system and of course an explanation of the idea. I wrote down my idea of the interactive playground in more depth (See Appendix; c). I never made a block diagram before. Making this was very useful to explain how the interaction between the user and the product would be. I would use it in the next course for our final product during the prototyping phase. By thinking of the technology, you would use in the product you are able to see if the idea is feasible. The five ideas were divided amongst the group members. During the writing of the assignment the group gave feedback on each other's text of the idea. By this feedback I was able to write down the idea in proper English as well as in a clear writing style, which would help in the examination of the assignment. Thinking of the possible market for the idea made clear that the interactive playground would be bought by the government or for the public by a charity. Further in the course we made the decision based on this that it would be hard to make it into a viable business, what was a goal of the course deliverable. Due to the assignment I will be able to help by researching the components we possibly need for the final product and helping in understanding the market of the product.

During a workshop from another course I learned already the basics of making a poster. I used this knowledge to make the poster for the assignment (See Appendix; d). The poster I made was the interactive playground. By making this I developed new skills in use of color and the aesthetic look of a poster by usage of shapes and form. Together with Anna we discussed the results of the interviews. Eventually I wrote down the outcomes of this about the interactive playground in the poster. The interview made clear which improvements there were and what we are already doing well. In the next course I would do an interview again with the prototype this time to get new insights of the intended target group, which is very helpful in the improvement of the final product. The collaboration with Anna went very smooth, which made it time efficient.

Together with Merlijn we wrote down ethics and risk management (See Appendix; e). I learned to use literature to argument your words more. This writing technique will be useful in the next course and in other courses during my bachelor. The collaboration between Merlijn and I went very well and we managed to write in a short amount of time a good text about risk factors based on literature we found, which gave use the right direction for the text. Writing the risk factors made me think of potential dangers in your design. This is very useful to keep in mind by prototyping our final idea, to make it sellable and save at the end.

We, Merlijn, Anna and I wrote down the MVP (See Appendix; f) after the feedback we got from the pitch and the feedback of our coach Lorna. The feedback made clear that the MVP exist of the basics from your idea. I hadn't written down an MVP before. The lesson of the course and the feedback taught me what an MVP is. It is the core of your idea. I will use this knowledge in the next course to think what the essence is of our idea and what should be really in the prototype and work technically. This to be able to do a user test with the right goal, getting to know if the intended user likes our MVP. The collaboration went well, and we were able to write the text.

After the feedback of our coach Lorna about what the essence is of our idea and which value, we deliver with this to our intended user, I made a business model canvas (See Appendix; g). In another course I already made ones a business model canvas, but I wanted to make this again for this course to maintain my knowledge and expand it. By writing this model I was able to see what the value is the product brings to the user and especially what things we should research further, like how much would the eventual product cost and is this a price the user is willing to pay for. In the next course I will be able to improve the business model canvas due to the knowledge of the components we will use in the final product. By this I can estimate the eventual price of the product.

At the end of this course there was the report left. I added the MVP part and wrote down the convergence part (See Appendix; h) after rereading the feedback we got on the ideas. Every team member had his or her own part to write in the report, but it was very helpful to see in the drive document wat everyone already did so you could give feedback on that and also get feedback on your own work to improve. I like to use this technique in the next course report because I think this worked very efficient.

During the course process I made clear after our meetings what everyone's task was. This to ensure nobody forget his or her task before the deadline. In the next course I will keep doing this because I think it worked well and the group worked efficient by this.

With our coach Lorna we made an user journey. This gave us insights in the journey of the potential user while using our product. A very useful technique of getting to know your intended user and I will keep using this technique in the next course for the prototype as well as for other bachelor projects.

Appendix

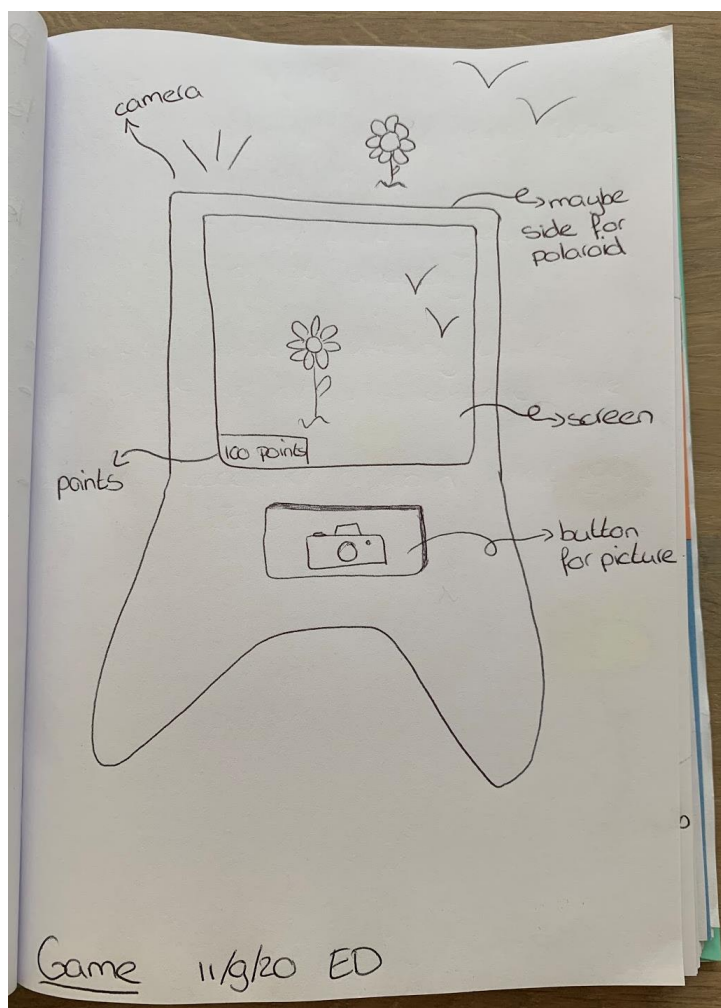
a) 30 ideas – Team 8

18. An app or device that has a game for the elderly. The elderly can watch out their window and take pictures of birds or other objects to win points. A game to play against another elderly sitting in their room.

19. A couple of chairs sitting together in the park, where the elderly can play with children and children with the elderly. On the chairs, there are buttons to light up a place or get a waterfall out of a spot.

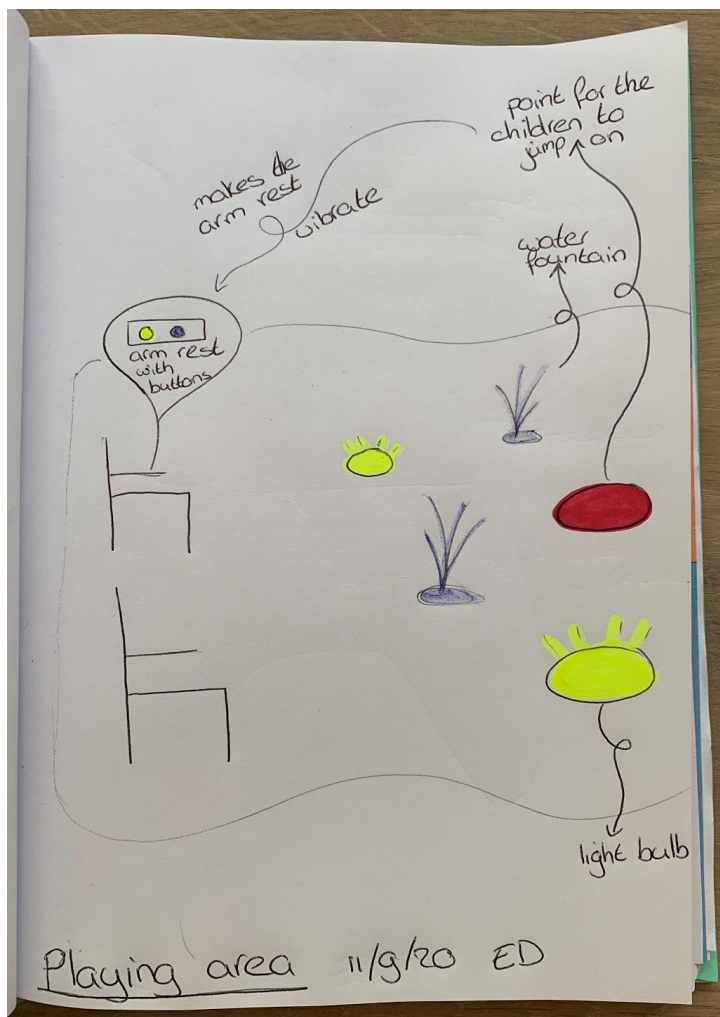
b) 10 Ideas group 8

18) The elderly are often watching out of the window. With an old-fashioned game controller, they can take pictures of the things outside; cars, flowers, and for example birds. By taking these pictures they can earn points. They can play it against other elderly to connect them. When they have enough points they get a reward, like a polaroid picture to start a collage on their wall.



19) Chairs will be placed in the park. They will have buttons on the armrests. With those buttons, the elderly sitting on the chair can light up a spot in the playing area or a fountain. In the playing area,

children can play and react to the lights and water by playing as well as by jumping on the red spots which give a vibration in the armrest of the chair.



c) 5 ideas 2.0

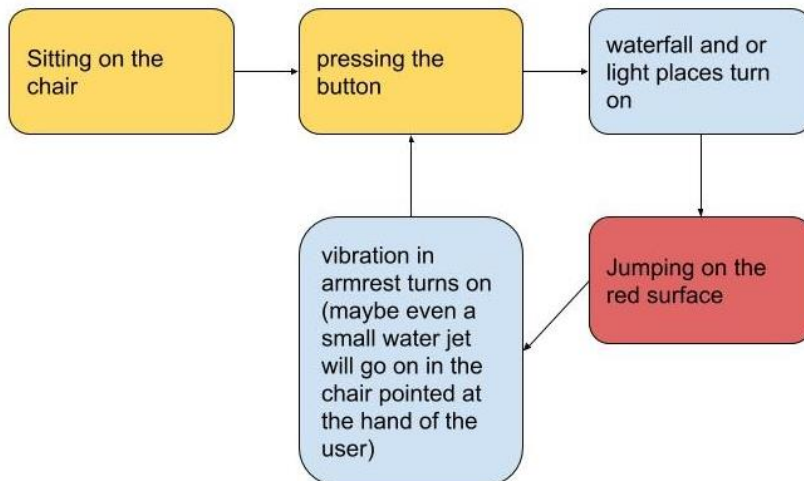
Idea 4: Interactive playground

Description and details:

The Interactive playground uses the public spaces that are already there on a new way to connect different age groups with each other. By putting the equipment like sensors, chairs, waterfalls and lights in there.

System:

It is an interactive playground. With buttons on the chair, it ensures that the elderly can connect with children. By pushing the button equipment in the playground will react by light and water, where children can react on back by jumping on the red surface, which causes a vibration in the armrest of the chair.



Relevance:

The interactive playground makes the public parks more interactive for the community around it. Elderly will come to the playground as well as families, which gives an opportunity to connect with each other.

Technology research:

In the interactive playground there are a couple of sensors to make it working. There will be a button in each chair that is placed[3]. A vibration sensor[18] for the reaction of the children to the elderly. A jumping part for the children that will be connected to the chair with wires. The jumping part will react with a weight sensor[7](that is strong enough for any weight). A waterfall that spills when the button is pressed[11](I could not find an example, only with a heater, for further steps it would be good to have a better look into this). Finally a light that switches on while pressing the button[2].

Market:

Our target group is families from children until the elderly. Based on some research we found out that children like playgrounds and so do many elderly. When there is equipment on the playground where you have to exercise, most of the elderly won't use it[4]. That's why we chose for elderly the chairs and for children the more active equipment.

The interactive playground connects the elderly, who are often in public parks[8] with the children. Families are going often to the public park to be outside some time with the children. There is also connectivity between the interactive parts in the playground, which ensure that they react to each other.

The customer of the playground will be the municipality because it is something which will be in a public park.

d) Homework week 4

Interactive playground – USE – poster

Link to see the poster: https://drive.google.com/file/d/1mGAjibhJE_s-5IT5tLjKwogGdk10AhKY/view?usp=sharing

e) Ethics and risk management

Risk factors

We identified two risks using the “acid test” (Bissonette,2016) concerning the connected pillow. The risks are; overheating of the system in the pillow and data that can be hacked. The risks of our product can be lessened by doing a risk analysis during the idea process. For our risk analysis, we use the first three steps of the risk analysis (Burton,2020), these can also be seen in figure 1.

When using any sort of data there is always a risk of the data being hacked. In our case this data means when and where someone is sitting in their house or if they are at home at all. This data tracks the habits of the individual using this product and can be used against the owner of the product. For example, this data can help burglars know when no one is home and make it easier for them to break in (Prince William County police department, n.d.). This risk can be reduced by setting up extra firewalls and/or encrypting the data, however, there will always be a risk of the data being hacked.

The product is used to sit on, after a while, the pillow will be getting warmer by the body warmth of the user. Which causes overheating of the sensors and makes a short circuit. The product will then be unusable anymore. To prevent the sensors from overheating we should incorporate a small fan which will cool it down when a certain temperature is reached.

f) Homework assignment week 6 MVP

MVP

An MVP is the minimum version of the product which provides a complete solution to our customers' problem. The problem which we have chosen to work on motivating them to move more often. This motivation will lead to establishing a new healthier lifestyle of moving more frequently. Our first idea for the MVP was to have the pillow with all its features and technology - the microcontroller, pressure sensors, timer and batteries, all explained in more detail below in the technology section, but to limit the connections. In the feedback of Pitch 2, it became clear that this was not the minimum viable product for our concept.

Our main value in this project is to motivate people to move. Motivation for only the long term benefits will not be enough to motivate the elderly to stand up. Therefore we try to motivate people to stand up with short term benefits. These benefits are giving elderly options regarding places of interest, good weather, events in the neighbourhood, as well as learning the interests and habits of the user. This gives the user good reasons to stand up and go out.

There are different ways to do a MVP (Burton, V. C. A. P. B. R. (2020, 2 March)). We choose to do a concierge MVP because it best suited our product and goal. Our MVP would exist of a pillow and a person from our service who will call them every two hours. The call will be motivated by saying; 'Hey do you want to go for a walk? I see it is nice weather at the moment outside, I am going. Talk to you afterwards.' The person who is calling will be “connected” to weather information, other users in the area as well as festival data of the area via the internet.

The user will subscribe to our service by signing up on our site with the information; name, address, interests/hobbies/religion and phone number. The site will also include some questions regarding their lifestyle for example sleeping rhythm and weekly plans/appointments. In the morning the caller will ask you if you've slept well and what your plans for the day are. The motivation and calls for the rest of the day are going to be decided on this information. The motivation consists of events, social activities, taking a walk and weekly plans.

The main idea of designing the MVP is to see whether the product is worth making since MVP is just a demo version for our product. If it is worth making, the MVP can also indicate if certain aspects of our product will work as expected or have to change. The first aspect we want to have user feedback on is the interface between product and user. For example, if placing three buttons on the front of the pillow would be enough or that there should be a way to give intricate answers. The other aspect is if the connection between users is useful. We want to test whether a connection between the users will encourage and motivate them to follow more willingly the advice and suggestions which the system gives.

g) Homework week 7 Form and user interface

Form and user interface

Link to see the business model canvas:

<https://drive.google.com/file/d/1TDIuffQTGnGliiONiHOfwAd0pHJrvAMP/view?usp=sharing>

h) Final report

Convergence

After making a list of 30 ideas, our group received feedback from 4 students on the ideas. Our team gave individual feedback as well to other teams. This feedback was for example about the technology, the looks, the creativity, the eventual price, if it was clear for the reader what was meant with our idea, suggestions to combine ideas, about the target group and if it would be useful for the target group. Reading of the feedback was divided, each member of the team read the feedback of 1 student. This feedback gave us new insights about how to approach our ideas. By this, the group learned that some ideas weren't very innovative, while other ideas would not be useful for the intended target group. In the next meeting, the feedback and preference of every team member were discussed. Eventually, the 30 ideas had to be convergence to five. To select the top five ideas the group began with marking down our choices and the feedback. Afterwards, there were six ideas left. The process of picking the final 5 continued with a discussion of which idea was better by giving arguments to each other why one thought one idea was better than the other one. Finally, these were the five ideas left; the connected pillow, the message system, the mobile cafe, the interactive playground and the board game.

These five ideas were written down in a five-page long document, this way there was one page to explain every idea in more detail. From one of the course teachers Renee Noortman the group got some new feedback about those five ideas. She noted down some positive aspects like that our concepts are versatile and tackle different, relevant issues. As well as some improvements like to strengthen the concepts by bundling our strengths. The 30 ideas were divided overall team members and in the way all

team members wrote down ideas differently she could see that our group didn't discuss them with each other while writing. After this feedback our teamwork was improved by reading each other's work before submitting, to look over each other's work and discuss the assignment together. Next to her feedback, there was feedback from others; our ideas could improve by implementing societal relevance more and some of our ideas involved multiple target groups, which requires an understanding of all of them. To improve the feedback on the societal relevance and target group, there was made a business model canvas and a user journey with Lorna, our coach. But this was more at the end of the project when there was figured out which one idea would be proceeded with. By making the journey and business model there were gathered more insights into what the value is the group wants to deliver to our target group and how they are going to use it during the day. Which made us think of possible improvements to the idea, as the user interface.

After presenting a pitch with our two best ideas; Connected pillow and Interactive playground. The group received feedback from the course lecturer Mathias Funk. One of the things he asked was who the customer on the interactive playground would be. Especially, if it could be turned into a business. His feedback on the connected pillow was to think of other ideas on how you could motivate the elderly to move more. As well as that next time it would be a good idea to use storytelling in the pitch the next time.

The questions about the interactive playground triggered us to think about how the idea can be turned into a business instead of a charity. Since moulding the idea into a business would have a big impact on our original idea there was decided to go as the final idea for our connected pillow. By implementing the feedback on the pillow by creating more ideas for motivational words from our speaker, which is connected to the pillow. The group came up with motivations like the weather, other users that you can meet, you could randomly bump into a neighbour when you go outside and have a nice chat with them or concerts and festivals that day. For implementing the storytelling in the final pitch, a user journey was used and made with help from Lorna. This way the audience during the pitch could get a better view on how the idea works.

MVP

After pitching our MVP (pitch two) we received feedback, together with the feedback that was given on the homework assignment of week 7 we rewrote the MVP as follows;

An MVP is the minimum version of the product which provides a complete solution to our customers' problem. The problem which we have chosen to work on is motivating the elderly to move more often. This motivation will lead to establishing a new healthier lifestyle of moving more frequently. Our first idea for the MVP was to have the pillow with all its features and technology - the microcontroller, pressure sensors, timer and batteries. But this was not the minimum viable product for our concept.

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