



Moti

*The home companion that motivates
you to be active*

Team 8

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Product

Moti is a smart system intended to keep people at the age of 65 until 100 active every single day. Moti suggests motivational activities to do based on the weather, events or other users in the neighborhood. Moti's system for now consists of a pillow, speaker and a website. On the website you can see your progress made, see appendix A for the link. The pillow measures the time someone is sitting on it and has a small interface where you can give input. The suggestions are given after an 1 hour or 2 of sitting, they are only options meaning that the user can say "yes", "no" or "I would like another option". A half hour quote would be something like 'What about having a cup of tea?' and a two hour quote would be more like 'It is nice weather, would you like to go for a stroll?', or a social option like 'It is nice weather, Sasha asks if you would like to go for a stroll together?'. The input can be given with the three button interface on the pillow. The suggestions are audio messages played on the speaker. The input from the user helps Moti (and the personal coaches) to get to know the user better, so they can give better motivational suggestions. There are two subscriptions, one with general motivational options and one personalised where a personal coach selects motivational options based on your interests. The link to our promotion video can be found in appendix B.



Figure 1: The Final product

Moti solves multiple problems. Moving regularly prevents diseases caused by inactivity for a long time, for example, muscle stiffness, elevated blood pressure and high blood sugar [1]. Their forgetfulness is solved by keeping track of their appointments and plans. Moti reminds the user in time of their appointment or plan so they have enough time to also travel to the location. Lastly, it solves some of the loneliness elderly experience by suggesting new social connections.

Target group

Our user base is people from the age of 65 and up - elderly. The elderly who will most likely start using our product will be pensioners. As these are both general terms we made some more specific groups:

1. People around the age of 65 - 67. People that have retired are used to an active life, with many work-related social contacts and a steady routine, which all falls away. That's an important period in which people change their daily lifestyle. We believe that our product could be beneficial for them in exploring a new daily lifestyle. This might lead them to try our system by themselves.
2. People who are already used to their unhealthy lifestyle with harmful habits like sitting for long periods of time. They do not realize it, but after regularly sitting for more than two hours they slowly start to lose muscle mass, develop an elevated blood pressure and more diseases can come up. They need constant motivation and reminders to undertake some simple activity such as getting a cup of water. Their family/relatives will suggest for them to try out our product in order to help and encourage them.

The customer base is thus either the user or their family member, friend or care-taker. The two groups are quite different and will need different advertisements to notice the product.

Market launch

The market launch will be divided in three different stages; pre-launch, launch and after launch. This is done to have the best results. The stages will have different marketing strategies as they have different goals.

The goal of the pre-launch of our company is to create awareness for our home companion Moti. We should start by launching in one specific place, with a tight budget. The place will be considered wisely. The team will opt for the place where the higher number of the potential buyers will be. Advertisements will be placed to see if our launch strategy will work and people can try out our product without cost and we can test out our service, delivery and website. While people are trying out the product they learn how it works and become aware of its benefits. For the website we will use google analytics to see which pages are most visited and read. This will take us about two months, with implementing the feedback given.

The launch will take a month, in the months after we will still have profit from this. Through advertising campaigns on social media, like Facebook, and a try-out-for-free subscription we introduce Moti to the whole of the Netherlands, focused on the family, friends and care-takers as customers. Next to that we will introduce Moti on numerous activities for elderly in cooperation with elderly organisations, these activities will be focused on the elderly themselves as customers. Therefore we first need to get in touch with these events and organisations before launching.

After the launch immediately the focus will be on our first clients and the product service. Therefore the shared cost for the marketing will slightly drop in order to set up the best service for our first clients. There will still be a need to market and enlarge our customer base, so we will continue to advertise on social media as well as do an event occasionally. However our first clients will be a priority. After the value proposition becomes stable and our promises, for example - a community among the users, are established, the company will increase the marketing and try to reach more new clients, even growing outside of the elderly boundary, like in offices or for students. Next to that, we will expand our line of products. Focusing on our clients will take 3-4 months minimum, after that we can start to grow more and focus more on advertising again. It will take us a minimum of a year to establish a community for our users as well as have some profits. After this we can slowly start on expanding both in products and target users, this will take another year before we can start doing this. As we need to have a steady revenue to be able to make that investment.

The expenses for organizing the pre-launch and launch would be mainly gained through investors. This means our product pitch needs to be of the highest standard. To those meetings it is important to have a prototype, which really shows the looks and works of the product. The branding also needs to be on point. The advertisement after the launch will be paid with our revenue.

Validation

At the beginning of this course we had multiple ideas generated to solve problems that elderly are facing. Every group member visualized the ideas by making sketches, see figure 3, or using other materials like cardboard. Of that big pile of ideas, see appendix C, we took the best ones. The ones we taught were feasible, we liked them and we thought they would be interesting for this course. Eventually keeping one idea.

This final idea was made physical during the second course, see figure 3. Technical components have been used like a weight sensor and a raspberry Pi. Validating the concept by making a business model canvas, calculating the expenses and creating a final MVP for the insights of our product, see appendix D.



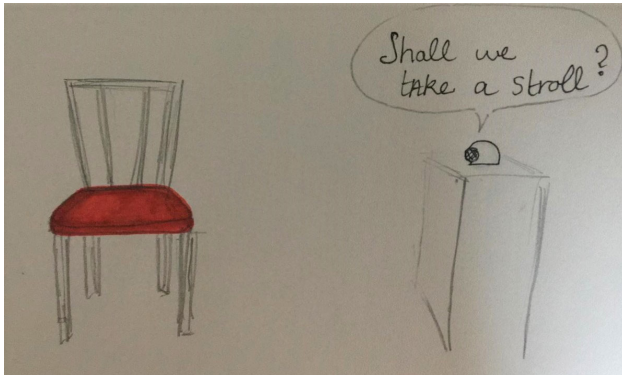


Figure 2: The first idea sketch



Figure 3: The MVP of the product

In this last part of the course we validated our concept by doing an interview, user test and online questionnaire. We interviewed 5 elderly women at an elderly cafe. With this interview we got insights into what they would find interesting in a product like ours, as we didn't show and tell them beforehand how our product looked and worked, this to make sure they weren't biased by the product. With the feedback of the interviews we finalized the prototype. During the user test we showed the participants the prototype and let them interact with it the way they would normally use the product. From this test we got feedback, like if they think the buttons on the side are useful and if they were interested in using it. At the end we made a questionnaire targeted at the customers of the product. With this survey we were able to get knowledge about the place of advertisements and the subscription price.

To eventually make a crowdfunding video as seen in the paragraph about the final product above. Getting the attention of our potential investors to help starting up our business.

Ethics risk assessment

The ethics assessment of Moti brings to the problems with the generated data. In this section, we have identified the following issues: the privacy problem of monitoring people's daily activities and who should be considered as owner of the data. As a risk assessment the group evaluates the data leaking and overheating of the system as the most important ones.

The generated data arises a potential risk of compromising the privacy of a person. Nevertheless, our users will be able any time to find on the website a full explanation of what data and how that is gathered and kept. They would be able to withdraw their consent for giving their data and request their old data to be deleted anytime. This will highly decrease the provided user-experience of the product, but still GDPR requires those regulations. In case someone stops using the product, their data will be immediately deleted from the servers. Next, the system will be tested and special precautions for overheating will be taken so that it functions as intended in normal scenarios. Therefore, overheating could be present if there is some physical issue such as broken isolation or worn-out part. To detect those, the system needs to be checked in each six months. In our product, data leaking is possible only through the account of the person, since as mentioned Microsoft servers will be used which are considered reliable. Moreover, the website checks that the user uses strong and reliable passwords. Finally, the owner of the collected data will always be the user. The owner of the data, if the user has some mental problems, will be the family, this will always be checked by the company.

Technology exploration

Technology was completely explored and explained in the second course of the learning line IoT. Nevertheless in the following section, briefly the important details will be mentioned. Our company will use Microsoft Azure services to host the database and store user's data. The quality of their service is good, there are a lot of possibilities and options. Furthermore it is not expensive especially for start-up companies.

Each pillow unit will have a small microcontroller. For the prototype a raspberry Pi has been used, but it has a lot of additional features which we do not really need that's why instead a smaller device with microcontroller, SD card and some inputs and outputs for connecting the wires could be used to execute the task. This could be especially manufactured for us, which in the beginning would be more costly, but will be definitely beneficial in long term.

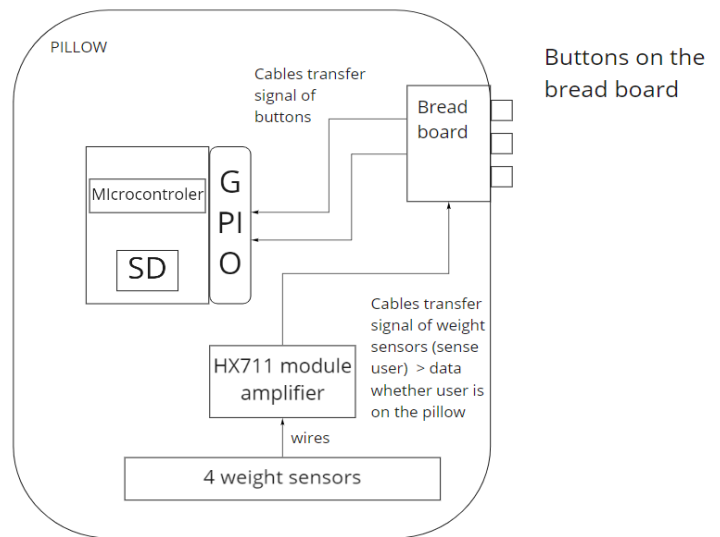


Figure 4: The schematics of the electronics

Furthermore, the electronics include weight sensors to keep track when the user is on and off the pillow and buttons which are used when answering questions from the pillow. Both of these are wirely connected to the microcontroller. Only the buttons are positioned on the surface of the pillow, see figure 4.

The last part of the system is the speaker which we won't produce by ourselves, but probably buy from some OEM (Original equipment manufacturer). It will be connected and controlled by the microcontroller through a Bluetooth connection, since it is more reliable in short distances. On the other side, the pillow (the microcontroller) is connected externally through WiFi connection with the servers.

User interface

Our final prototype/product made use of two interfaces. A website interface, see appendix A for the website link. On the website the user can find information about the product, service and the subscription. See figure 5 for the beginning interface of the website.

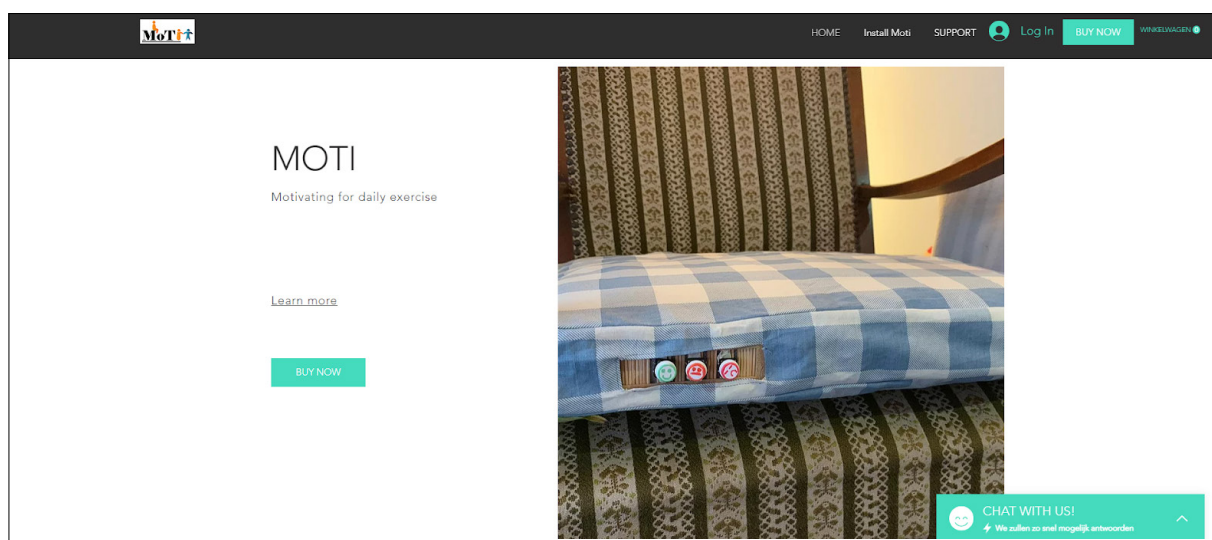


Figure 5: The start point of the website

The interface on the product exists out of three buttons to keep it as simple as possible for the user. One button to respond to the quote with ‘I like this motivational option’, the green smiling button. One button to respond ‘I don’t know if I like this, maybe suggest something else’, the orange neutral button. And one last button to respond ‘I don’t like this idea and want to go further with the thing I am doing at the moment’, the red angry button. We have chosen those specific colors as they are universal in this society. Regarding the smiley’s we now know that it would be clearer to do a check, cross and reload icon, see figure 6. With the information the user gives with this interface to the product, Moti can become smarter in the interest of his/her user and give better quotes next time. The position of the buttons is on the front side of the pillow. This is because it is an easy spot to reach for the user when sitting, as this would be harder when it is placed on the speaker or on a seperate remote, the latter can be lost.



Figure 6: The button interface

References



[1] Laskowski, E. R. (2020, August 21). Sitting risks: How harmful is too much sitting? Mayo Clinic. Retrieved from: <https://www.mayoclinic.org/healthy-lifestyle/adult-health/expert-answers/sitting/faq-20058005>

Appendix



Appendix A

<https://lisannedejonge.wixsite.com/mijnsite>

Appendix B

<https://youtu.be/uIWkdNR0zNc>

Appendix C

<https://docs.google.com/document/d/18e54WOUQdT56CLMFDblyrQWDp5TxX6eCzkR7hrMjzM/edit?usp=sharing>

Appendix D

https://docs.google.com/document/d/13X0EWCqiXrRc3Dv8EhdrcvwCJqXR_yEFJYrB1oBAuAE/edit?usp=sharing