



Climategotchi

Your virtual globe

Marianne Lyssand,
Joachim W. Eide,
Anette Larsen,
Kornelija Kojelyte &
Maj-Inga Holmsen

Scary Weather



A guided tour through Climategotchi's prototype

The course of events in the Climategotchi app takes place over time, which means that it cannot be shown in full from start to finish, much like many other prototypes. We have therefore included meta screens that clarify how the experience will be for the user. Read these carefully when they appear.

Link to the prototype:

<https://xd.adobe.com/view/efce03f7-45f6-42cf-7726-ce5ab91ff9a6-99ff/?fbclid=IwAR015JYSMLgV9beobbScdZB51P4mTF4tDDIt9snFn9yFtO9n9qv2ALmGVFM&fullscreen&hints=off>

- Read "Klimagotchi Prototype" and select «Start intro and registration»
- Open the app.
- Read through the intro screens and select «registrere ny bruker».
- Read «meta skjerm: Hjem» and select «Start Klimagotchi Prototype»
- Take a walk through the various pages of the app by tapping the icons in the menu at the bottom of the screen.
- Return to the home screen, the small globe in the menu.
- Read through the challenges by clicking on the virtual globe illustrations. Initially, you can select the «lukke» option. Use the right and left arrow keys to find the challenges that are located in other parts of the world.
- Choose 3 challenges you want to accomplish, make sure the third one you choose is the factory illustration, this one is in Asia.
- Read «meta skjerm: Widget, tema og varsler» and select "Apple Watch og Widget"
- Click on the small globe to see what it will look like if the condition is not good.
- Click through push notifications and widget.
- Read «Meta skjerm: Tilstandsendringer» and select «Se tilstander»
- Click on the virtual globe to see the different states it may be in.

Link to walkthrough-video of the prototype:

https://vimeo.com/423796118?fbclid=IwAR0v2X7QCMHgX0JjU_r25dHnBXMHB9d1O4FVPDeQqhwZE96039B9EQHMFE

This specification was written as an exam assignment at MIX202 Design for Media Use in the spring of 2020. The course is part of the Bachelor's program Media and Interaction Design at the Department of Information and Media Science at the University of Bergen. The course leader was Professor Lars Nyre. Subject teachers were Professor Andy Opel (Florida State University), senior engineer Zulfikar Fahmy, PhD fellow Fredrik Håland Jensen, PhD fellow Oda Elise Nordberg and master's student Jonathan Lindø Meling. The specification is translated into English by Kristin Eidsheim.

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This is Climategotchi

"Time is running out", "we must do something before it is too late". Much of today's climate dissemination can seem gloomy and overwhelming. This can result in poor conscience and guilt where many get a distant relationship with climate. Climategotchi is an app that tries to solve this problem with a positive angle on climate dissemination through an interactive user interface, scoring system and gamification¹ of your everyday life.



Figure 1: In the app you will find a larger globe which we refer to as your virtual globe. You should take care of this by carrying out climate-friendly challenges.

¹ Gamification is about exploiting the potential of motivation that exists in games, using gaming elements in non-gaming contexts (Deterdig et al., 2011, p.9-11).

Those who have owned the virtual pet "Tamagotchi" know the sense of responsibility that came with it and how happy they were in it. In Climategotchi, we want to achieve the same sense of responsibility and commitment, but with a virtual globe. A globe you want to take care of and protect from the dangers that man-made climate change brings. Each week, choose 3 of 6 challenges, such as cycling to work or not buying meat for a week. If the chosen challenges are conducted, Climategotchi will be satisfied and the CO₂, sea level and temperature will decrease on the virtual globe, this is visualized inside the app.



Figure 2: The Climategotchi avatar clearly shows the state of the earth with its facial expressions.

Climategotchi cheers you on and praises you when you make climate-friendly choices, while also announcing climate change without being instructive. We have used anthropomorphism² to reinforce the feeling that the Climategotchi avatar is a pet you want to look after.

The basis for this project is based on insights gained through an evaluation of The Globe Room, a museum installation by Scary Weather, at the University Museum in Bergen. Climategotchi also takes inspiration from Scary Weather's motto "If you want to inform, you must first get involved". By capturing the interest of young adults through gamification, the app provides users with an incentive to learn about climate through action, increasing learning outcomes.

² Attributing objects to human traits such as face, emotions and etc. is called anthropomorphism, and allows people to develop empathy and compassion for non-living objects (Preece et al., 2015, p.152).

Insight from The Globe Room

In the development of Climategotchi, we have made design choices based on findings from the report "How do you adapt a museum installation in order to enlighten and engage youth" (Lyssand et al., 2020). The report examined whether The Globe Room at the University Museum in Bergen was suitable as an arena for communication of weather and climate information aimed at 18-19 year olds, and whether the visual tools used were suitable for disseminating the content.

The main insights:

- Clarifying the topic can strengthen the ability to communicate.
- Emphasis on design principles hints and visibility³, makes the design more self-explanatory.
- Emphasizing the design principle consistent design⁴, makes it obvious how the user should interact with similar elements.
- Visual tools work well with a young target group, but should be distributed in a balanced way so as not to detract from the learning outcome.
- More interaction between the user and the content can create more engagement.

³ Emphasis on fundamental design principles creates good interaction design and user experiences. Visibility is about making the functionality of the system easily visible to the user. By hints, it is meant that the functions should be self-explanatory (Nordbø, 2017, pp. 37-45).

⁴ Consistent design regards that almost identical functionalities should have the same behavior (Nordbø, 2017, p.43).

Who is Climategotchi intended for?

The target audience for Climategotchi is young adults aged 18-25. These are the ones that will experience the greatest consequences of climate change, so it is important to create interest and commitment to this theme. However, we also acknowledge that the concept may be interesting for other age groups as well.

To reach the target audience, it may be appropriate for Scary Weather to make use of its existing partners. One of the partners, Elevkanalen, has customers in upper secondary schools and adult education. This customer group forms a large part of society and Climategotchi can provide them with a new and exciting form of climate dissemination. In addition, the globe room at the University Museum in Bergen and Fløibanen can act as marketing channels by encouraging visitors to download Climategotchi. In the longer run, it may be relevant to establish a collaboration with the Ministry of Climate and Environment, where the app can be a tool to encourage young adults to achieve a more climate friendly lifestyle.

The prototype

Using methods from Google's design Sprint⁵ and storyboarding⁶, we have taken the idea of Climategotchi from concept to functional prototype in Adobe XD, which we will now present. After that, we will elaborate on our design choices.

⁵ Google design sprint is a method developed by Jake Knapp and is a framework for developing a prototype, from idea to concept within tight timeframes (Knapp, 2016, p. 9).

⁶ A storyboard consists of a series of sketches showing how to use the solution being developed. This gives designers and stakeholders the opportunity to interact with the product step by step (Preece et al., 2015, p. 389)

Would you allow Climategotchi to help?

Even before opening the app, you are introduced to the Climategotchi avatar, the little globe with a face (Figure 3).



Figure 3: The Climategotchi icon on the home screen takes you to the introductory screens.

The first time you open Climategotchi, the avatar guides you through an introduction that explains the game, step by step. We have let the Climategotchi avatar speak to you directly, which gives it more personality and strengthens the use of anthropomorphism. This will create a stronger connection between you and the globe, which in turn can engage and motivate you to good actions in real life.



Figure 4: The registration screens, where the user registers and selects the desired focus areas.

In order for Climategotchi to work optimally in your everyday life, the registration process is essential. This may seem like a barrier to using the app, but is a crucial factor for Climategotchi to help you become more climate friendly. When you accept tracking of your purchase history and GPS, the app will retrieve data so you don't have to manually register your climate action. We take privacy seriously and all private information is stored locally on each individual's phone and is not used anywhere else. Furthermore, the next step is to select focus areas so that the challenges of the game are adapted to your interests (Figure 4).

Climategotchi, your private globe

The next thing you meet is the home screen, this is where the actual Climategotchi experience begins.



Figure 5: Climategotchi home screen, with virtual globe, CO₂ graph, sea level and temperature and Climategotchi avatar in the menu.

Here is your virtual globe that you should take care of and protect against the dangers that climate change brings (Figure 5). The globe should be explored by navigating between the different continents. The graph shows the state of the earth through CO₂, sea level and temperature. In addition, you can monitor changes in temperature in the orange barometer and how climate friendly you are in the green barometer.

Do you accept the challenge?

It is through climate-friendly challenges in Climategotchi that you have the chance to influence the state of the globe. The challenges appear on the virtual globe in the form of illustrations representing the problems on the earth (forest fire, CO₂ emissions etc.), with associated icons indicating the category of the challenge (transport, eat less meat etc.) (Figure 16). Each week, choose 3 out of 6 challenges, which can be performed on any day of the week.



Figure 6: The options when you click on a challenge (middle screen), if you accept the challenge and choose the environmentally friendly option (left screen) and if you choose to buy a climate quota instead (right screen).

When you click on one of the challenges, a description of the problem comes up, followed by 3 choices. You can choose to make an environmentally friendly choice, such as cycling to work and making virtual money, buying climate quotas as a “resort” if one week you don't have to take three challenges or close the challenge (Figure 6).



Figure 7: Here, users can compare themselves with friends and others users of Climategotchi, ranking is based on score/virtual money earned through challenges.

If you choose to buy a climate quota, the score will decrease and the person will receive a lower ranking on the highscore list (Figure 7). To increase the motivation to carry out the challenges, we have introduced a virtual money scoring system⁷, where some of the challenges reward more than others. However, if the user takes the challenge and clicks on the eco-friendly option, the next step is to add a selected time for when it can be completed. In this way, we give the user the flexibility to carry out the challenge when appropriate. It is then added to the app's goal-page (Figure 8).

⁷ Elements such as a pointsystem from gaming theory help increase the user's activity and commitment to the solution (Deterding et al., 2011, p.9-11).



Figure 8: Climategotchi praises you for choosing 3 out of 6 goals rather than buying a climate quota (left screen). You can see these goals at the goal-page in the menu (middle screen) as well as in the widget on the phone (right screen).

The goal-page gives you an overview of your chosen goals and you can monitor your progress so far. For a goal to be considered complete, the challenge must be performed at the chosen time. You can also check out your progression in the widget on your phone.

Climategotchi becomes part of your everyday life

By giving the app access to GPS and purchase history, it will record whether the goals are being achieved. This way, you do not have to manually register actions, while at the same time ensuring that the challenges are actually completed.



Figure 9: User takes the "bike to work" challenge and looks at the widget that motivates the Climagotchi avatar to accomplish this goal.



Figure 10: Push notifications for phone and smart watch.

Climategotchi also reminds you of the challenges chosen and motivates you to complete them with push notifications on your phone and smart watch (Figure 10). Instead of generic alerts, the Climategotchi avatar speaks directly to you through the reminders to tell you about their needs and what you need to do to help.

If you can't stand the heat, you and climategotchi have to get out of the kitchen

Climategotchi not only rewards good choices but also shows the consequences of poor choices. In order for you to see the connection between your actions and their consequences, the globe will communicate how it feels with distinct facial expressions and color changes.



Figure 11: User chooses to defy the "bike to work" challenge, and receives feedback from his smart watch that the avatar is doing poorly and that the temperature is rising.



Figure 12: You can clearly see how the globe is doing through the avatar's facial expressions and changes in temperature and goal-bars on the smart watch.



Figure 13: Here's how the virtual globe and graph in the app will deteriorate if you do not complete your goals.

The consequences are shown visually by the globe going from green and lush to becoming yellow and dehydrated as the sea rises (Figures 12 and 13). If a user completes their goals, the climate on the globe will be positively affected by becoming green and CO₂, sea level and temperature returns to a normal level. The condition of the

Climategotchi is reflected by the user's actions, and you can look back on the events of the week with an overview of past goals in history (Figure 14).



Figure 14: At the history page of the app, you will get an overview of all completed and not completed goals.

The design choices that shaped Climategotchi

In order for Climategotchi to become an attractive and user-friendly app, we have made many critical design choices. First, we developed a graphic profile consisting of typography, colors and icons that set the standard for Climategotchi's visual expression.



Figure 15: San Francisco Pro font in selected sizes and thickness (left), color palette (right).

Based on the findings of color-related challenges on the virtual earths in The Globe Room (Lyssand et al., 2020, p.20), we have chosen to use sharp contrasting colors on the earth against a dark background to ensure that all elements are clearly visible. The colors also show positive and negative elements of the prototype, such as red signaling danger and green signaling what is good.



Figure 16: Menu icons (Top), icons used for challenges (bottom left), points / money symbol (bottom right) and illustrations of challenges at the bottom.

In order to catch the interest of the target audience, we have mainly used universal icons for the challenges, which are more self-explanatory than text alone. Research shows that if icons are used correctly, usability improves and users remember the app better (Johnson, 2015). We have taken inspiration from the gaming industry in designing the icons, where the focal point has been to create a simple and playful design. We also emphasized the design principles of visibility, hints and consistent design, so that it is easy to spot the challenges and communicate that all of them should be interacted with in the same type of way.

As Corner et al (2015, p.5) points out, classic images of familiar themes such as exhaust, melting ice and forest fire can be an effective way of communicating that this is about climate change. When we have designed illustrations of the problems that appear on the globe, we have adopted familiar themes that are associated with climate change (Figure 16).



Figure 17: Menu-wheel.

With inspiration from the navigation globes in The Globe Room (Lyssand et al., 2020, p.20), we designed the menu as a wheel. Since we have a circular globe that you navigate around, we wanted to implement a similar effect in the menu as well. We want Climategotchi to always be perceived as something new and exciting, and the round menu-wheel will support this, rather than using a traditional menu.

The way forward

The prototype Climategotchi is intended as a framework Scary Weather can build upon and adapt as they wish. The goal of the prototype is to show the user interface functionality and simulate parts of the app. All elements of the prototype are made as vector graphics⁸. The elements are imported and added functionality and simple

⁸ Vector graphics are graphics based on mathematical formulas that mean that what is being designed is resolution independent and can therefore be scaled to most sizes (Wood, 2016).

animations in Adobe XD. As the software has its limitations, there are some features of the prototype that do not work as intended, but this can be solved through programming.

The first thing that should be done if the prototype is to be further developed is to test it on the target group and implement any improvements. In the next step, it should be mapped out what possibilities exist regarding access to data on purchase history and what restrictions this has in relation to privacy. Potential business partners for retrieving data can be Trumf and various banks.

Regarding privacy and data collection, we are aware that Climategotchi can be perceived as invading, but this data already exists today and is used for less useful purposes than climate dissemination. Therefore, we must emphasize the importance of complying with all privacy policies and only store data from users that is absolutely necessary for further development of the app.

Climategotchi is a whole new way of communicating climate information. It is a radical solution, but as we see it, it is a necessary solution for the future climate. Sitting at home on the couch is no longer enough to get information about climate served through online newspapers. The next level in climate journalism is to get people to actually make climate-friendly measures in real life, often called climate dissemination 2.0. We hope that Scary Weather can benefit from both the concept as a whole and gamification as a dissemination method in climate journalism.

Sources

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