How to motivate local companies towards climate protection?

GXC challenge with the City of Munich, Department of Labor and Economic Development

Overview

The challenge for this project was proposed by the City of Munich, specifically the Department of Labor and Economic Development. This department deals with fundamental economic and employment policy issues, handles economic development projects and manages local government investments in the corporate sector. Their challenge in the GXC program is based on the City of Munich's climate goals: They aim to be climate neutral by 2035. To reach this goal, contribution across all societal layers including the corporate sector is needed. The City of Munich has already developed and implemented different programs (e.g. ÖKOPROFIT/ECOPROFIT or Munich Business Climate Pact) in order to support companies looking to contribute to the city's climate goals.

Problem

To achieve the climate goal, a boost in decarbonization through digital technology is needed. Especially during times of crises like the Covid-19 pandemic, many companies are struggling with budget restrictions and economic problems, causing issues like CO2-reducing measures to be deprioritized. Therefore, the City of Munich is seeking practical and user-friendly digital solutions to motivate companies of all sizes to be ecologically responsible and move toward climate protection. The cost-efficient solution should take a human-centric approach that results in a measurable decrease in CO2 emissions. In addition, there should be a focus on collaboration between companies and the city government since the city has a big role of facilitating communication and providing resources for companies.

The challenge for the student teams was therefore: **How can municipalities, through digital solutions, motivate local companies towards climate protection, in times of crisis?**

Approach

Video lectures and weekly live sessions for content input as well as individual team coaching sessions with experts accompanied the students during their project work for nine weeks. The four student teams followed an innovation process applied in the action-learning course format "Real Projects" from HM's entrepreneurship center SCE, starting by understanding the problem through general research about climate change in general, environmentally friendly businesses and possible ways to reduce carbon emissions. During a first meeting with the representative of the Department of Labor and Economic Development, the students were able to discuss the challenge in person and ask questions. Interviewing stakeholders also helped to better define the problem and collect rough ideas.

In the third week, with the support of Amazon Web Services and HM's Digital Transformation Lab, a two-part intensive workshop enabled the students to concretize first approaches of their problem solutions. A brainstorming exercise, the "Crazy Eight Ideation" method, helped them to come up with different kinds of initial ideas, which they then tried to structure. To apply a customer-centric focus the teams used the Amazon way of innovating, a method called "Working Backwards" during the workshop, which took into account the needs and wishes of the potential end-users as well as those of the City of Munich. Using these techniques, the teams were able to decide on one final solution idea each. During the following six weeks, these ideas were then elaborated with the help of storyboards, fictional press releases, empathy maps, FAQs (Frequently Asked Questions), business model canvases and, ultimately, digital prototypes. To get an idea of how to prototype using digital technologies, the students were provided with detailed information about three different tools during one of the weekly live sessions: Figma, Bubble and Glide.

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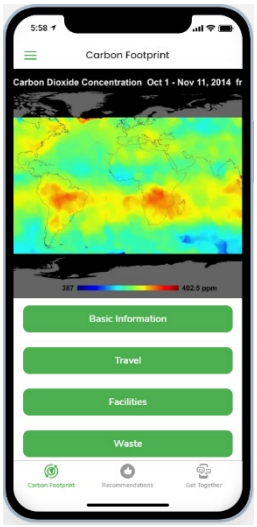
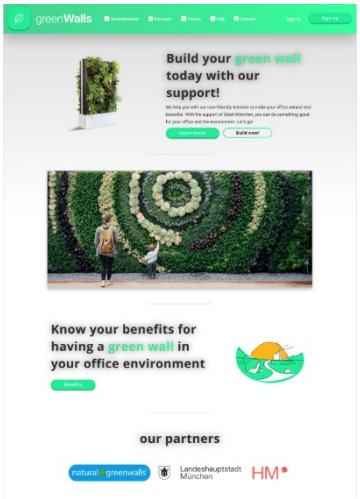
In an online exchange with the challenge giver, the ideas and drafts of the prototypes were presented to the City of Munich for the first time. Valuable feedback helped the teams to further develop the prototypes and finalize them for the final presentation.

Prototypes

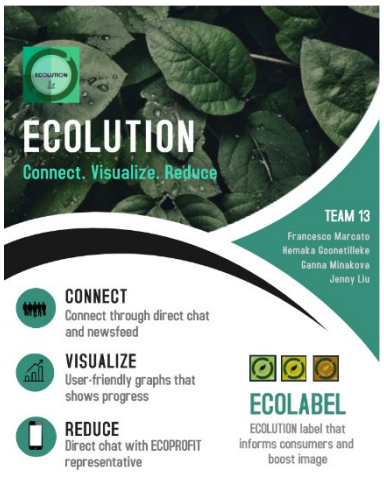
The first team used Glide to develop a prototype solution called *M-Visual* as an extension of the City of Munich's ECOPROFIT program. *M-Visual* is a user-friendly mobile and desktop carbon footprint calculator that allows companies to easily visualize their CO2 consumption, compare their CO2 consumption with other companies of their size and sector, and receive recommendations for how to reduce their CO2 emissions. By entering data about energy usage, water consumption, employee transportation and a variety of other inputs, *M-Visual* produces a general overview of the company's CO2 usage. This also includes a clean visualization of the data, personalized examples for how the company could reduce its consumption, consumption comparisons to other ECOPROFIT companies as well as a chat feature that allows companies to share ideas for reducing CO2 usage. In times of crisis, large institutional and infrastructural changes are hard to make within a company. *M-Visual* is easy to use and does not require any commitment, so a company can implement whichever recommendations are most appropriate for the company at any given time.





Bringing nature into offices was the idea of the second team. Using the tool Figma, the team developed a website that provides businesses with information about green walls in office spaces. A green wall is a structure filled with plants that is placed on the outside or inside wall of a building. When placed outside of the building, green walls provide insulation, which will lead to reduced energy bills for the company, and in doing so will be an investment that saves money over time. When placed inside, it improves air quality and aides in stress relief for employees. Therefore, green walls contribute positively to creating an aesthetically pleasing workplace while also reducing carbon dioxide levels. The website provides information about the general concept of green walls, a questionnaire to help figure out the right type, tutorials on how to build a green wall and also offers a picture gallery for inspiration. This way, the City of Munich could be helping businesses to invest in the environment by supporting the idea of green walls in office spaces.

Ecolution, an online platform developed by the third team using the tool bubble, is an online network for businesses that facilitates collaboration and strengthens information sharing to retain participating businesses in the program. The app also helps to simplify the process of reducing CO2 by providing a user-friendly carbon tracker that generates graphs of the business' progress in CO2 reductions. Based on their progress to carbon neutrality, businesses will be assigned an "Ecolabel", which is publicly available through the Department of Labor and Economic Development's website and social media to promote more consumer support for environmentally responsible businesses. Businesses can create a profile on *Ecolution* and see implemented measures and CO2 reductions of other businesses. They can also message to connect with other businesses to share more detailed information about their CO2 reduction strategies and connect with representatives from ECOPROFIT for additional support.



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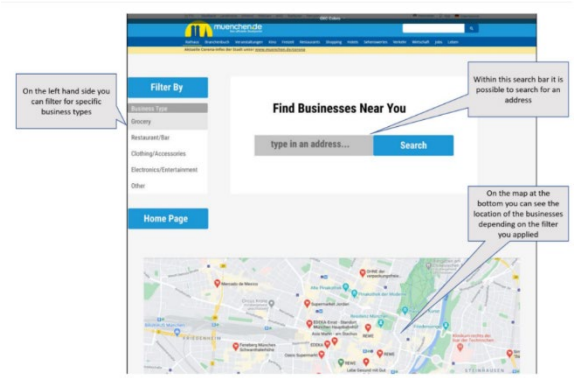

The fourth team used Figma to develop a ranking system that can be implemented on the City of Munich's website. This system ranks small businesses according to their reduction of CO2 emissions, giving consumers a way to shop at businesses that are working to be more eco-friendly. It will allow businesses to be sorted based on how much they decrease their CO2 emissions each year. After submitting their self-reported emissions data, their numbers will be compared to values from previous years. If they decrease, then their business will automatically be added to the list published on the City of Munich's website. Consumers can see this list and find businesses they prefer to shop at based on their efforts to help the environment.

Next Steps

The final presentation to the City of Munich, Department of Labor and Economic Development took place on December 8th, 2020. Following the presentation, the student teams shared their presentations as well as a link to their prototypes with the challenge giver, who will use the ideas as input for future strategic planning activities. In particular, the *M-Visual* prototype could be a good addition to the City's current ECOPROFIT tool and possible further development and implementation within the work frame will be discussed.

Documents

The final documentation and prototypes developed by the four teams are available open access:

- M-Visual Carbon Footprint Calculator
- Green Walls
- Ecolution online platform
- Ranking system

About GXC

This project was one of three challenges of the **GXC International Virtual Innovation Challenge**. This is a special edition of the Real Projects course format, which was offered for the first time in the winter semester 2020/21 as part of the "GlobalXChanges/Challenges (GXC)" project. In this virtual online course, public governmental and non-governmental organizations propose innovation challenges that can be solved through digital technologies. Next, students from HM Hochschule München University of Applied Sciences (HM) and its four strategic partner institutions dive into an international virtual action-learning course. The students are divided into international interdisciplinary teams and follow an innovation process to tackle the proposed challenges and prototype solutions. The course includes video lectures and dynamic weekly live sessions with a professor for content input and additional tutoring and team coaching sessions with industry experts to advise on prototyping and mentor students in the challenges of remote international teamwork.

The GlobalXChanges/Challenges project is funded by the German Academic Exchange Service (DAAD) from funds of the Federal Ministry of Education and Research (BMBF). For more information on the GXC measures and the International Virtual Innovation Challenge visit hm.edu/gxc.