

Shifting mobility needs due to corona, a study of the mix-use of e-bikes project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 21 - 09 - 2020 05 - 03 - 2020 end date

**INTRODUCTION \*\***

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

STAKEHOLDER:

Bayck is the stakeholder company of this project. The company is a start-up erected by Jorrit Schoonhoven. Jorrit is an industrial designer graduated from TU-delft and specialized in bicycles. Bayck recently launched their first e-bike, which comes in 4 main configurations. The e-bike is produced in China. It is available in 4 main configurations: with or without front and rear racks and with or without mud-guards. The plastic covers on the battery are color-customizable. The down-tube of the frame is made from an aluminium extrusion profile welded to the connecting tubes (see figure 1). The slogan of Bayck is: "A Bayck for everyone"; this is because you can customize it, but also because the e-bike starts at a budget price (999.-). This first e-bike is the first step in a longer mobility road-map, therefore this graduation project aims at a portfolio extension for Bayck. Bayck is aiming at distributing their e-bikes through Europe, as they signed with Decathlon BE a few weeks ago.

CONTEXT:

Since the Corona outbreak, employees have been working at home; even though guidelines are set-up for companies to welcome their employees safely at the office again, this has mostly been profitable to SME's. Most large companies have not been able to open their doors again and ask their employees to work from home because the guidelines are not achieve-able. Interestingly, CEO's as well as their employees have indicated that they wish to maintain home-working even after the crisis (intermediar.nl, 2020). This means that the daily home-work-home commute is disappearing for many employees and their daily travel distances are reducing. This also means that large companies are withdrawing (car-)lease subscription, since the employee is not attending office anymore. Bayck has identified a window of opportunity: research these shifting mobility needs within the target group and propose an adequate solution.

OPPORTUNITIES AND LIMITATIONS:

Even though the recent relevance and popularity of the topic, available qualitative research about the topic is thin. On the other hand, the lack of existing data gives the opportunity to collect new valuable data for this design project. Bayck is a start-up, which experienced severe delay in production and distribution due to the factory deficiency in China. This set back puts the company under pressure, meaning the available budget and assistance from Bayck could be minimized. Bayck identifies Europe as their market. Because of the time restrictions of the project, the study will be focused on the Dutch market nonetheless.

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introduction (continued): space for images



image / figure 1: Bayck e-bike.

image / figure 2:



**PROBLEM DEFINITION \*\***

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

**SCOPE DEFINITION/LIMITATION**

The focus of the project stays within the domain of (e-)bikes to fit the expertise and portfolio of the company.  
 The research is focused around the emerging mixed usage of e-bike for daily activities.  
 The research group consists of professional adults residential in the Netherlands who are not required to join offices on a daily basis, shifting to e-bike use instead of car or public transports. Even though the client identifies Europe as their target market, the study will be performed in the Netherlands in order to deal with time limitations.

**SOLUTION SPACE**

The envisioned result is a physical solution, included in a product-service system or not, depending on the results of the research.  
 The solution will be presented conceptually, with a detailed description. The deliverable will include sufficient visual material (digital model, drawings, renders) to explain the concept clearly.  
 The client mentions in his brief that popular electrified cargo-bike, better known as "bakfiets" is not the kind of solution they are after. The cargo-bike only solves the issue of carrying kids but hampers further biking freedom. Their envisioned solution covers a broader spectrum of the "mixed-usage".

**ASSIGNMENT \*\***

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... . In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

The project will include a research of emerging e-bike needs and wishes through emotion mapping and co-design. These findings will be translated into a design brief. The envisioned result is a physical solution that responds to the needs and wishes of the target group.

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 The solution will be presented conceptually, with a detailed description. The deliverable will include sufficient visual material (digital model, drawings, renders) to explain the concept clearly.

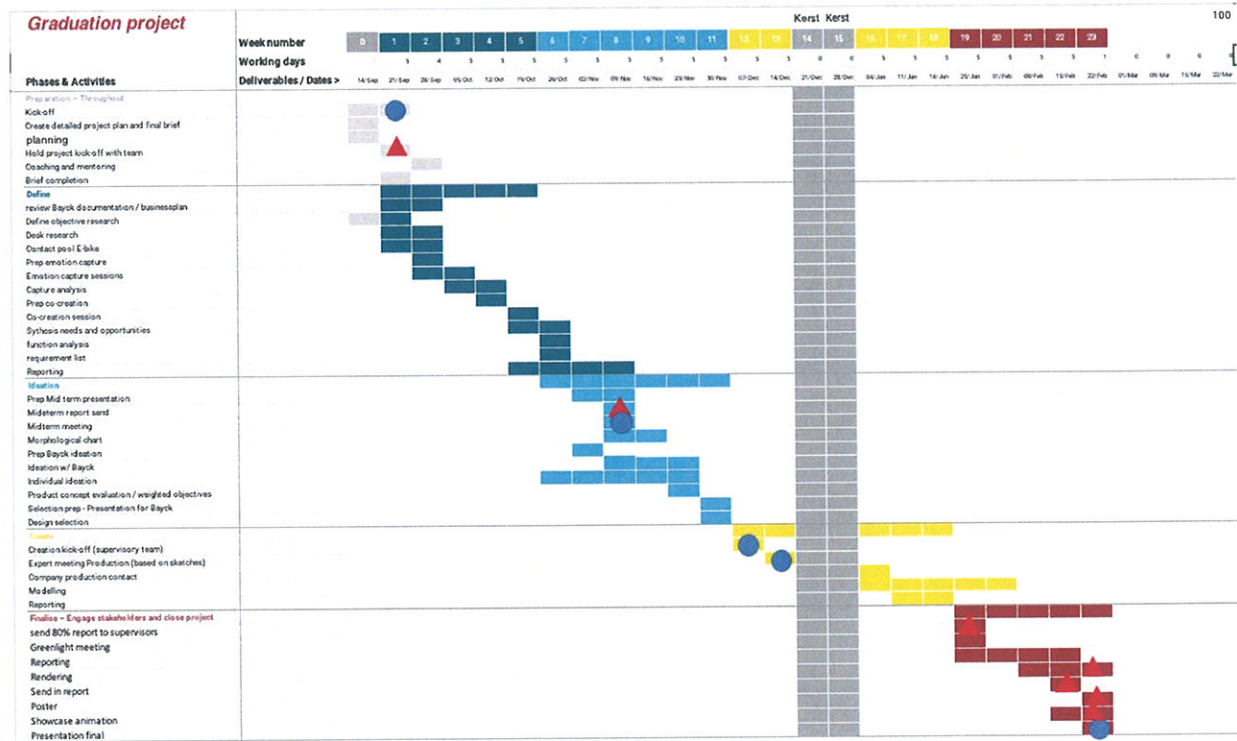
**PLANNING AND APPROACH \*\***

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 21 - 9 - 2020

5 - 3 - 2020

end date



The project will start in the last week of September with a kick-off meeting (21- 09 - 2020 13.30) .

The midterm report will include:

- The introduction of the project presenting the scope and context and research question.
- literature research, relevant trends and news articles referring to the research question.
- Emotion maps, clusters and design dilemmas.
- Co-design set-up, performance and synthesis.
- Resulting answers to the research question, identified design direction, requirements and design brief for second phase.

The final report will include:

- A recap of the midterm report.
- A morphological chart
- A synthesis of the individual ideation as well as the ideation sessions performed with Bayck.
- A description of the multiple concepts
- A transcript and take-aways of the different expert meetings.
- The selection of a concept to be elaborated further.
- A detailed description concept
- Renders.
- Reflection and recommendations.

Weekly contact hours are to be scheduled with Jorrit Schoonhoven mostly digitally because of the Corona guidelines Individual work will be performed in the home.



**MOTIVATION AND PERSONAL AMBITIONS**

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... . Stick to no more than five ambitions.

During bachelors and MSc elective JMP, I had the opportunity to work on mobility related projects and concluded that it is the topic that grabs my attention most. Therefore, I was hoping to graduate in the field of (future) mobility.

I have been working as a freelancer for the client for a while now, we have explosive and interesting ideation sessions which are stimulating and educative to me. Our collaboration is fruitful and I look forward to start this project together.

After completing the block-course Design for Emotion, I was inspired by the design methods of Pieter Desmet that we utilized during the course.

I was wondering if I could implement these DFI methods in my IPD thesis to reach a more expanded goal.

Therefore, I wish to incorporate emotion mapping, in combination with extensive user interviews and co-design to map the needs and wishes of the target group and form an interesting design brief to execute.

Conceptualization is my favorite part of the design phase; unfortunately, at the same time I am not very effective in making plannings.

This results in two focus points: I want to spend the necessary amount of time to build a consequent planning which I can stick to, to reserve more time for ideation and design drawing.

My sketching visualization skills are yet to be developed further and I wish to take enough time during this project to improve.

Finally, I feel comfortable with my modeling and rendering skills; This project will serve as a demonstration of what I am capable of. The outcome of the project should be interesting material for my design portfolio.

**FINAL COMMENTS**

In case your project brief needs final comments, please add any information you think is relevant.

What is "mixed-use"? In the client's opinion, the era of different bikes for different purposes is over (recreational vs commodity vs holiday vs ...). With the embarked power supply of the battery and the pedal assistance, multiple purposes can be achieved with the same bike.