

SUBMISSION OF WRITTEN WORK

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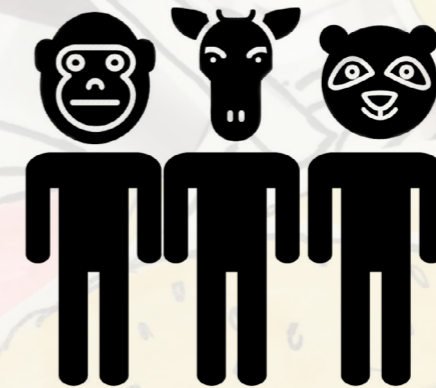
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THE BURGER HUB

UNDERSTANDING THE LINE IN
A CHAOTIC ZOO FULL OF HUNGRY HUMANS

INDEX

M.Sc. in IT, Digital Design and Communication

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Project Title: The Burger Hub

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The presentation video
can be found through this URL:
<http://vimeo.com/112033868>

ABSTRACT

The following paper illustrates the process we have had during the last semester in the course Interaction Design. This paper seeks to investigate how we can optimize the reading of menu cards at fast food restaurants. Through observations and interviews we learned that there was several service points that could be optimize when ordering food in a fast food restaurant. Based on these findings we have been able to create an interactive table prototype, which consist of a screen for each customer and a shared tray in the middle. With this concept we tried to make the experience more intuitive, fun and added a social element when dining at fast food restaurants.

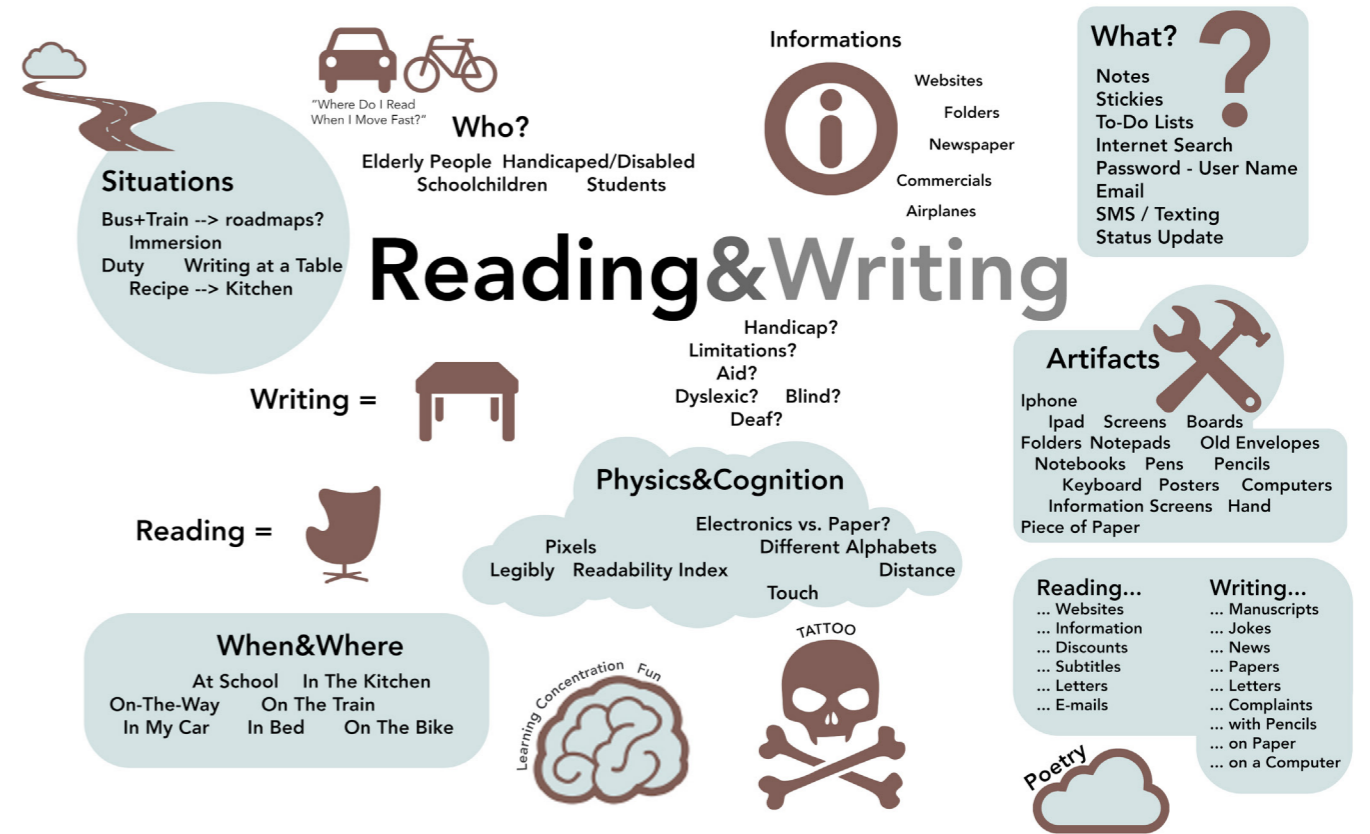


Fig. 1 - Mindmap Overall Brainstorm

MINDMAP

OVERALL BRAINSTORM

INTRODUCTION

This report will reflect upon our design process from the overall topic “reading and writing” to our final concept. The report is descriptive as well as reflective upon our iterative process and the processes of decision-making within our chosen framework. Our design process is a combination of both Bill Buxton and Stuart Pugh’s design process, better known as the design funnel. The overall design process, including the initiating brainstorm, can be illustrated as fig. 2 shows on page 13. Before initiating the design phases we started out with an overall brainstorm as stated above upon the main subject “reading and writing”. Through this brainstorm we created a basic mindmap (see fig. 1).

In this report we have divided our design process into three phases. Within these phases we have used several iterations according to Bill Buxton’s concept of convergence.

Our three phases are furthermore divided according to Stuart Pugh’s the Funnel and Bill Buxton’s design process as follows:

Phase 1: Setting the problem

In this phase the initial amount of ideas will be reduced. In this phase we explore and develop on our chosen ideas according to involve these in the final concept.

Phase 2: Getting the Design Right

In this phase a clarification on our concept and possible new initiatives can be explored.

Phase 3: Getting the Right Design

In this phase we fine-tune our solution (prototype), and the details of our concept concretizes.

DESIGN PROCES

OVERALL VISUALIZING

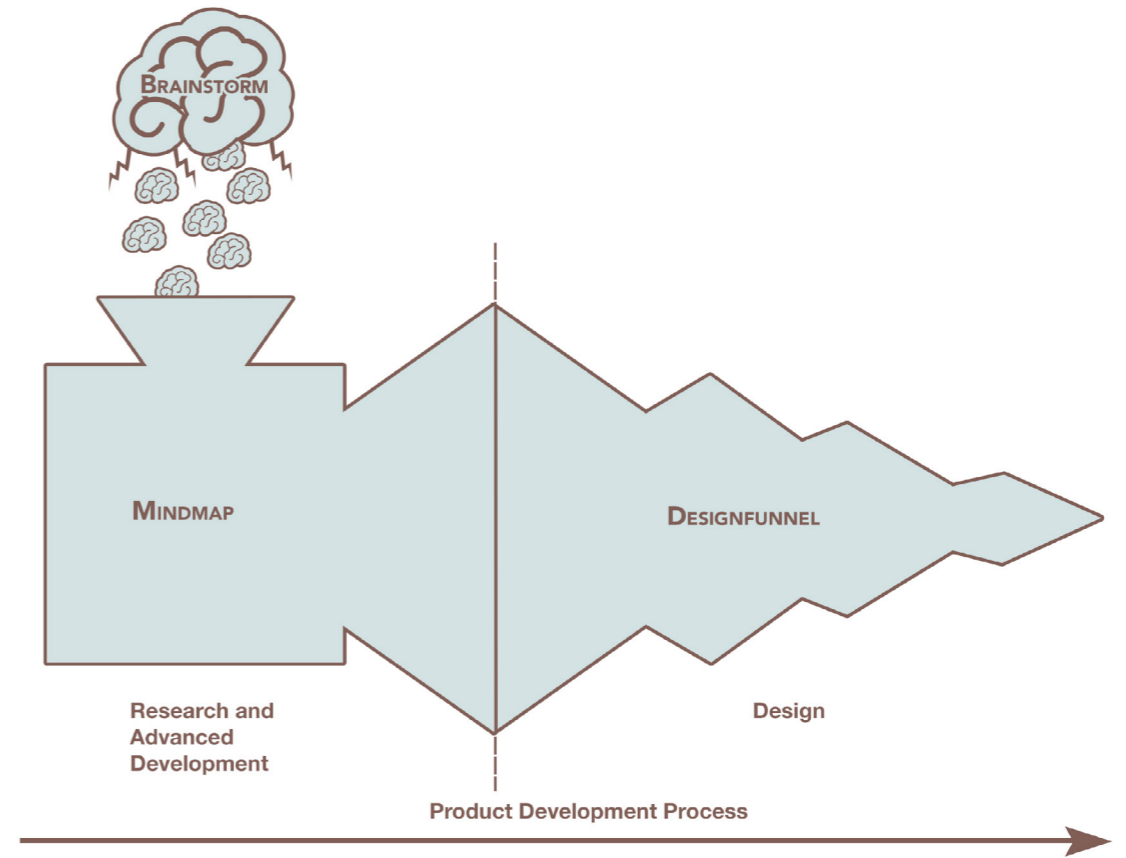


Fig. 2 - The Overall Design Process



SETTING THE PROBLEM
PHASE ONE

SETTING THE PROBLEM

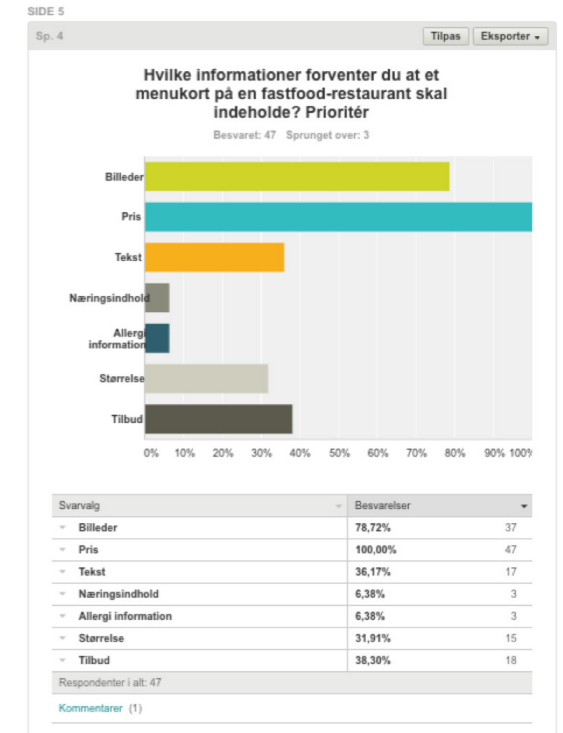
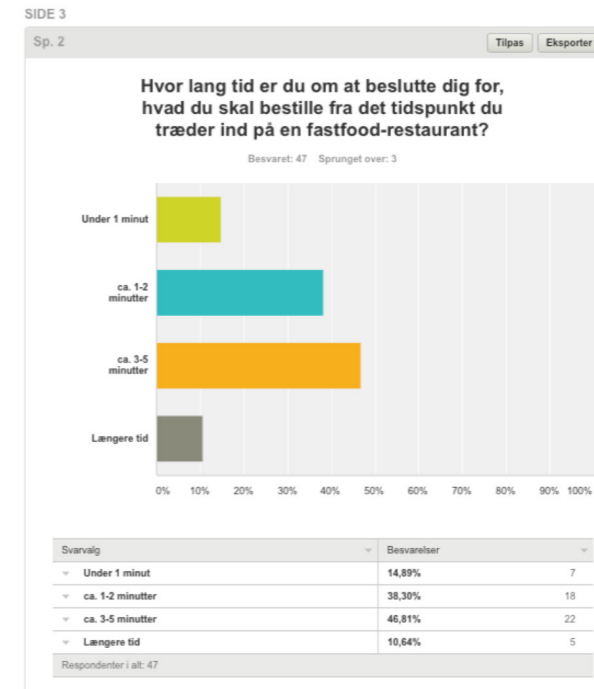
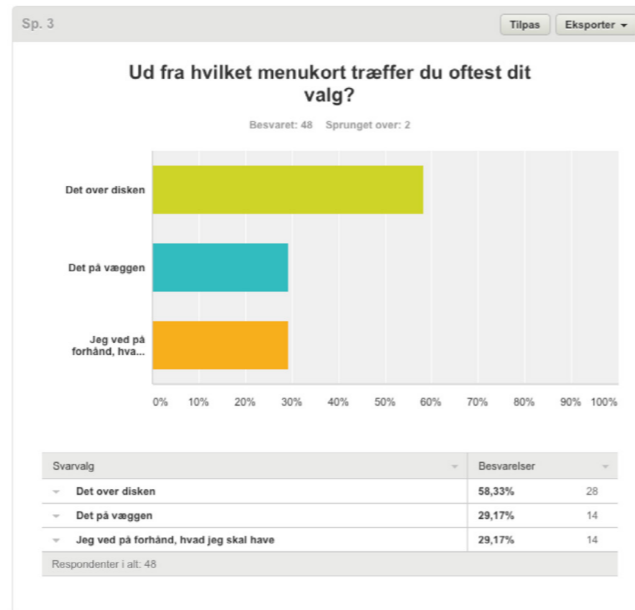
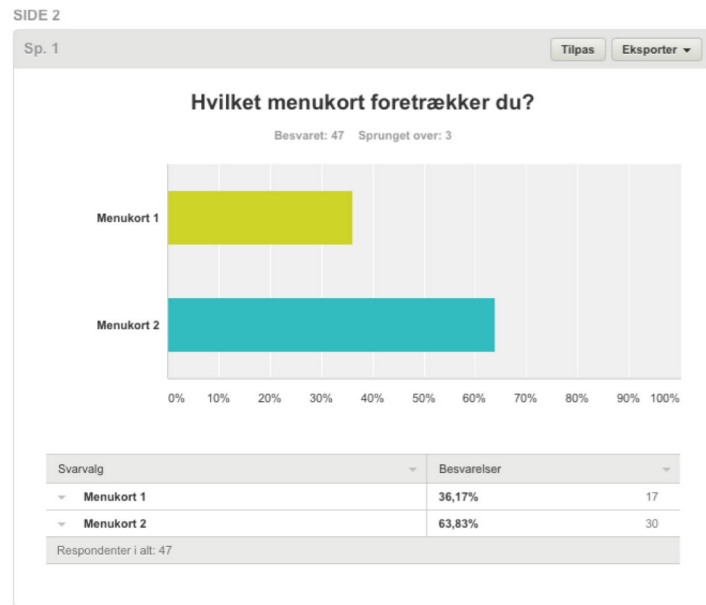
Based on the brainstorms illustrated above we chose to work within the theme of “reading menu cards”. However, menu card comes in many forms, and we wanted to narrow our focus to a more specific kind of menu card. To do so we started an explorative process.

INITIAL FIELD WORK

With the menu card as a starting point, it was time to decide whether we wanted to focus on reading situations in either regular restaurants or in fast food places like Burger King or McDonald. We decided to do observations in both places to see if we could observe any potential customer behaviour patterns. We split up in four - two went to a regular restaurant, while the other two went to observe in fast food restaurants. We made two observations guides to make sure our observations were comparable. However, it was still important to keep it as open as possible to secure an open and curious mind about the field.

When returning from the observation, we did a debrief and discussed in which direction we wanted to head. Consensus were quickly reached to focus on fast food, as there were a several clear issues discovered when observing the customers ordering meals in the Fast Food restaurants. Moreover with this focus it would make everything more pragmatic, tangible and accessible in regards to obtain information on knowledge and studies

The fact that we had choose to focus on fast food restaurants, made it possible to set up a more clear focus. We asked ourselves what our conception of a fast food restaurant was, what we would like to investigate in regards to the menu card and lastly put up some hypotheses which trying to ensure that we had the right focus moving on.



REVISITING THE FIELD

To understand how the patterns and behaviours of the customers were in the act of ordering, it was decided to do a second and more specific observation study at a fast food restaurant. Burger King at Strøget was chosen as the scene. We decided on this method of studying the customers, as we wanted to see how they interacted with the environment without having to interfere their process. In correlation to Jeanette Bloomberg's take on how to perform ethnographic fieldwork, we took the roles of being both the "Fly on the wall" but also act as an "observer participant". Throughout the whole observation period, we only took notes of the actions in a descriptive way, and held our self from being prescriptive.

To support our observations, we also conducted several semi-structured interviews with customers who had just been eating at Burger King. We conducted the interviews to get the customers own words on their experience and to see what the general perspective on Burger King's menu card were.

Additionally, we made a survey which was intended to support and confirm the findings we got from the observational study and from the interviews at Burger King.

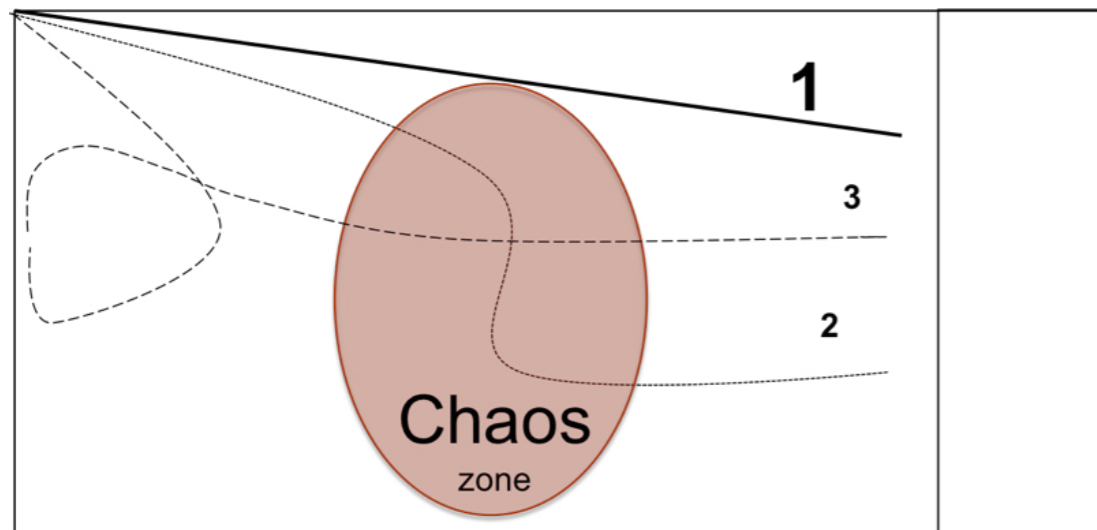


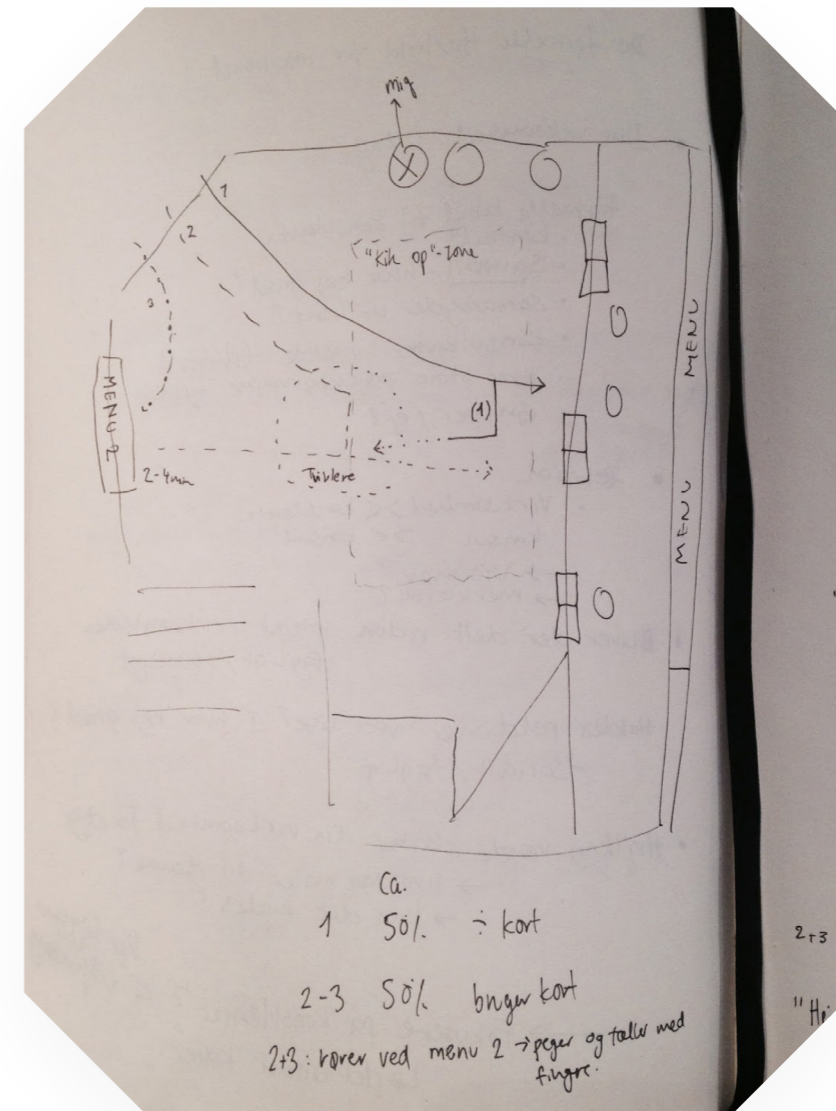
Fig. 3 - The Chaos Zone

INSIGHTS

Through the research we gained lots of knowledge about the customers behaviour and interaction with the menu card at the fast food restaurants.

One of the key insights we got through observing the customers in the fast food restaurants, and why we choose to focus on the fast food business, was the discovery of what we call "The Chaos Zone" (fig. 3). This zone consists of three different customer types and is represented equal.

- **Customer 1:** Who approach the ordering counter right away, without any decision time in the restaurant. They know what they want to order.
- **Customer 2:** Enters the Fast Food restaurant and place themselves in the middle of the ordering area, trying to figure out what they want to order. When they have decided they move one step forward to enter the queue.
- **Customer 3:** Enters and right away approaches the detailed menu card in the back of the Fast Food restaurant.



First Draft - The Chaos Zone



The Lightbox Menu - Burger King, 2014

One of the issues with the "Chaos Zone", is that there is often a very blurred structure of queue between Customer 1 and Customer 2, which can lead to people being in doubt whether or not they are in the right queue or in a queue at all.

Another interesting insight was that a young group of people ordered together, but it was one person who did all the talking with the employee and paid for the whole group, even if it was clear from the observations that all the other group members would transfer the money they owed him through Mobile Pay.

What our survey showed us was that it actually took longer time to order in the Fast Food restaurant than expected. From the 47 replies we got from the survey, 46,8% replied that it took them 3-5 minutes from they enter the fast food restaurant before deciding on what to order. As a last note to the survey, it also showed that the respondents preferred the expanded menu card that is often found in the back of the restaurants over the light box menu above the ordering desk.



The Expanded Menu - Burger King, 2014



REFLECTIONS

Between the initial fieldwork and the second time we went to the field we found out that we might have been too fast in the decision making, almost ready to rush into the design process.

Until this point we have been focusing a lot on the situational behaviours inside the restaurant and less on the actual reading situation. This made us revisit the field once more

The insights from the fieldwork let us to the following opportunity statement:

“Reading menu cards is about decision-making and that applies for fast food restaurants as well. The fast food industry tries to serve food in a quick and convenient manner. What we found out is that the decision-making part for the customer is not as convenient and fast after all. They feel stressed and lack more information about the menus. It makes us ask how we can make decision more easy, fun and intuitive for fast food customers with considerations for different needs and behaviours.”



GETTING THE RIGHT DESIGN
PHASE TWO

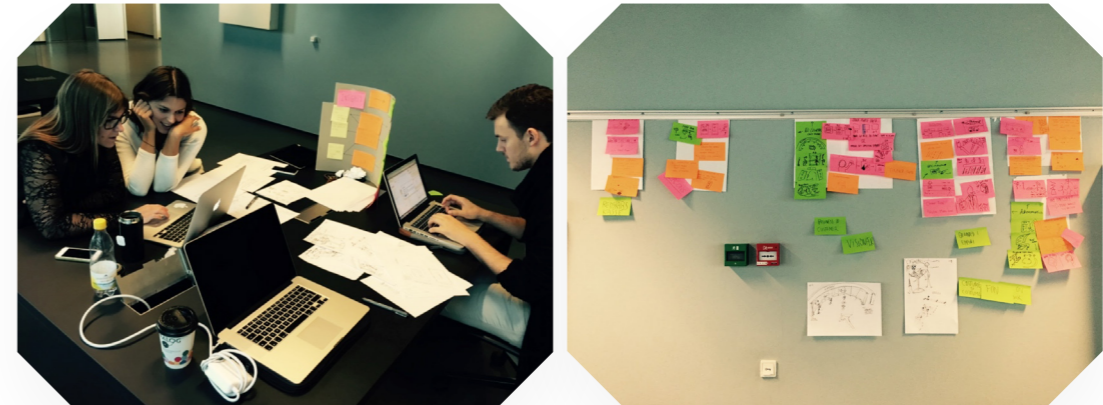
GETTING THE RIGHT DESIGN

A SHIFT IN PARADIGM

We are now moving towards the ideation phase of the process which means that we will begin to sketch and develop a design for menu cards on Burger King.

From the last crit session in the problem finding phase we were encouraged to work with the 'layers' of reading menu cards. Based on our research findings and opportunity statement we tried to describe some themes that could be interesting to explore in our design. Those were:

- The room
- Specific artefacts
- Interactions

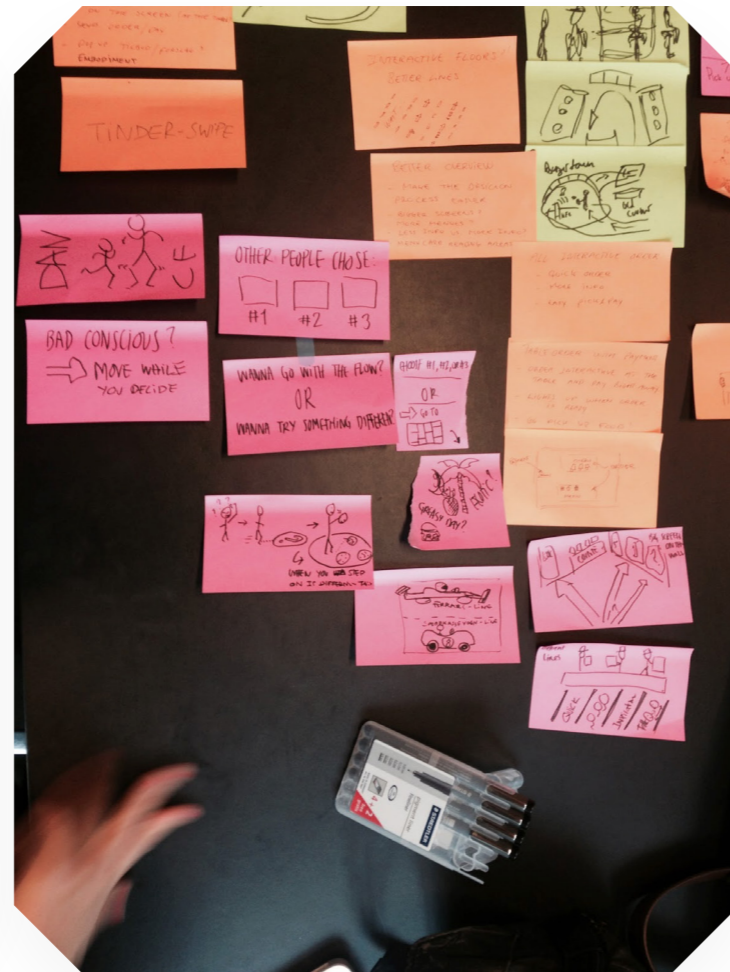
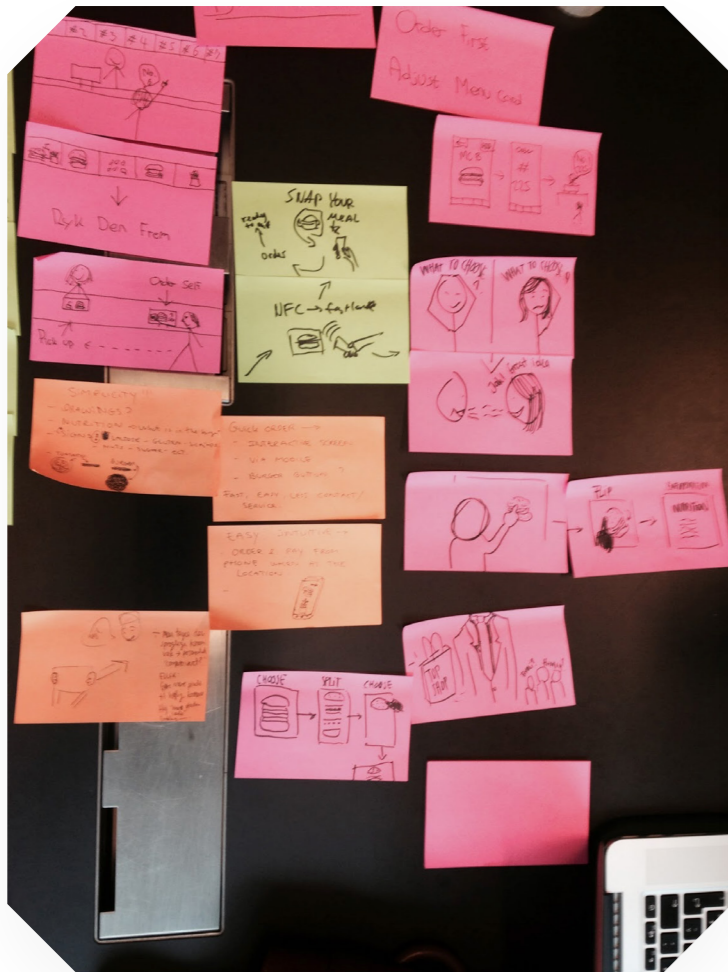


To begin the sketching process we made a 30 minutes individual sketching brainstorm session. This session created a lot of different ideas and concepts which we tried to categorize. Most of the ideas ended up in the categories mentioned above, but a new category was developed; the fun category.

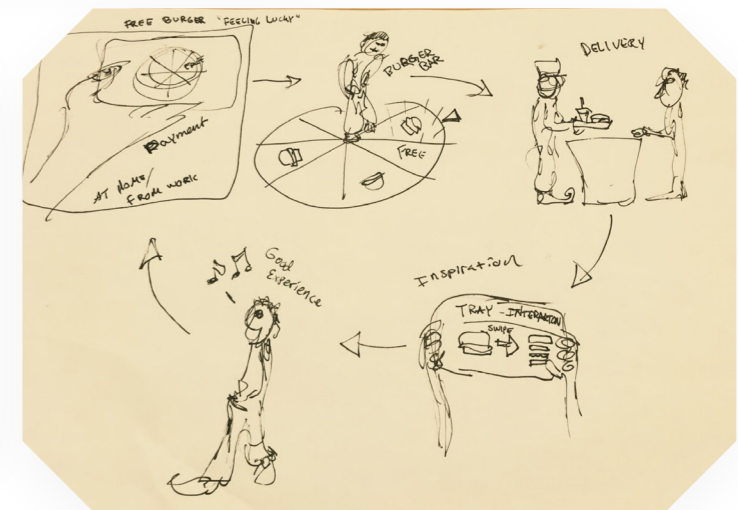
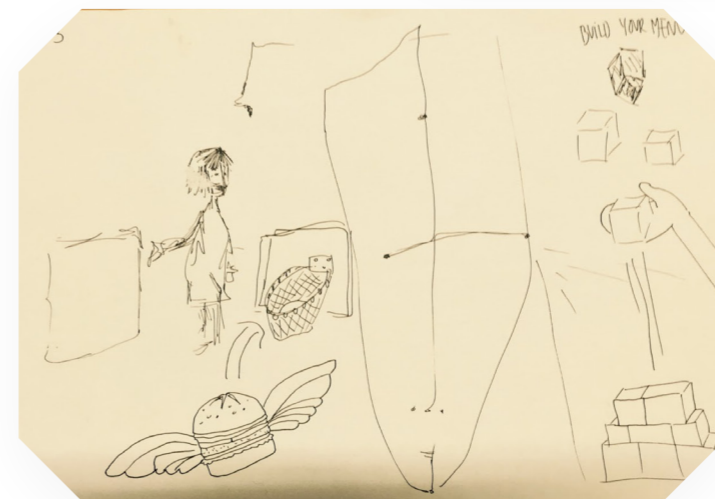
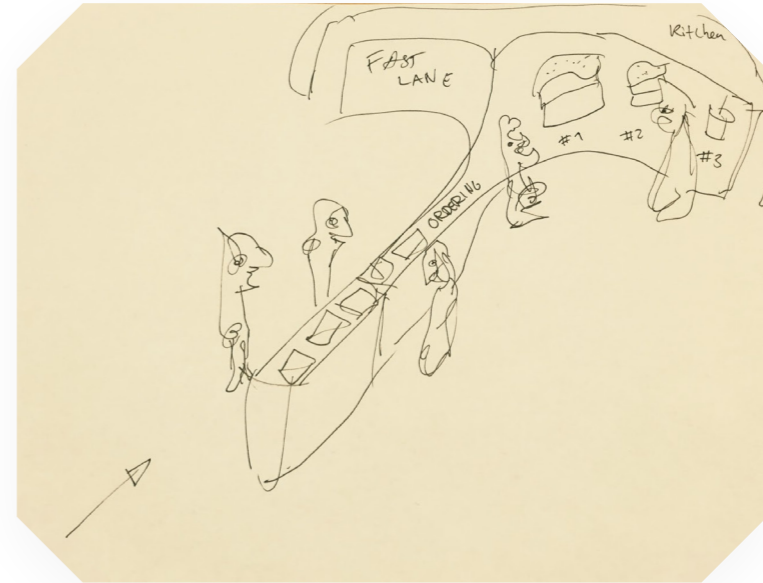
It was not possible to put all ideas into one single category, so a lot of them ended up overlapping different categories. And in the end we ended up with some ideas out of category, but still useful to our further development of the concept. These ended up in our "toolbox" for later use.

Even though we had categorized all of the ideas, we were dealing with a lot of versatile concepts or ideas. We needed to narrow the amount of our ideas down to 3 concepts. We ended up putting all ideas up on the wall to get a different perspective on things. By discussing the variety of ideas within the categories, we ended up with three possibilities to explore further;

- 1) Managing the lines to fit different behaviours,
- 2) Recreation of the space and
- 3) Fun.



The Initial 30 Minutes Sketching Phase. Before Hanging Up On The Wall In Categories



A REVISED OPPORTUNITY STATEMENT

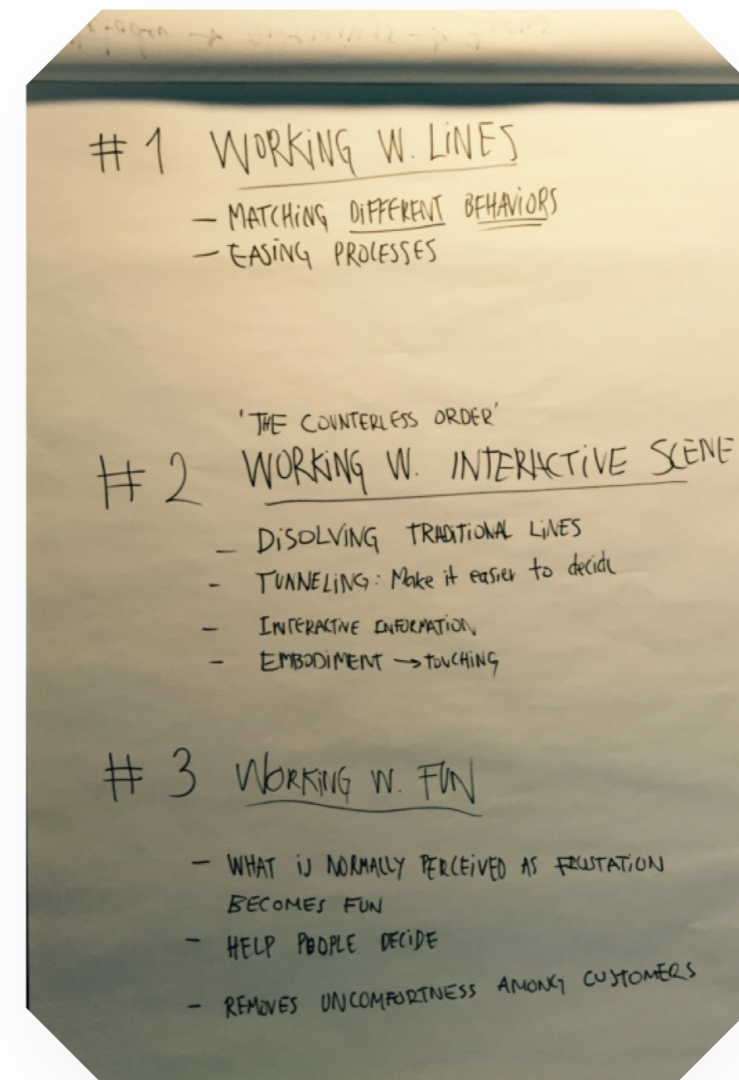
The first sketching session made us revise our opportunity statement a bit; *'Reading menu cards is about decision making and that applies for fast food restaurants as well. The fast food industry tries to serve food in a quick and convenient manner. What we found out is that the decision-making part for the customer is not as convenient and fast after all. They feel stressed and lack more information about the menus. It makes us ask how we can make decision more easy, fun and intuitive for fast food customers with considerations for different needs and behaviours.'*

However, we found out that it was still necessary to be more concrete especially in order to come up with 3 concepts. Especially the 'fun'-concept was hard for us to fully visualize. Therefore we agreed on another sketching brainstorm to explore the fun-theme further and try to develop it into a real concept. It was quite a success so we decided to do the same thing with the rest of the themes which gave us 3 more developed concepts:

#Working With Lines

#Working With Interactive Scene

#Working With Fun





EXPLORING THE 3 CONCEPTS

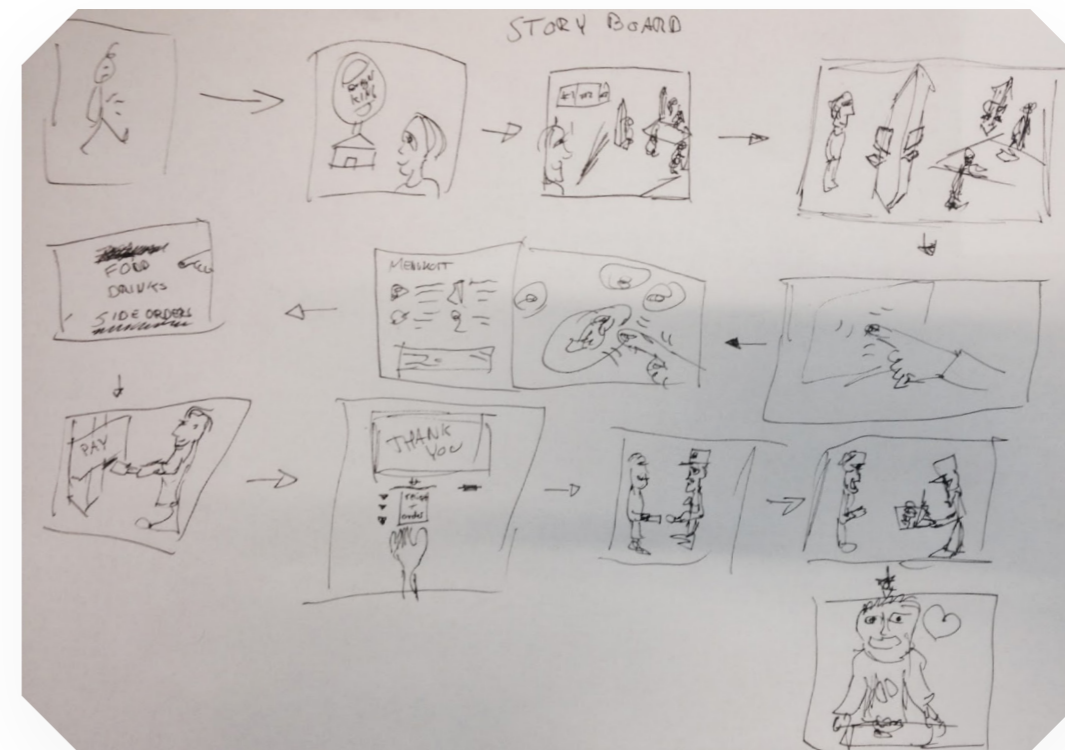
The most challenging thing for us at the time, was to keep an open mind and not get too focused on one or two ideas, but to keep in mind that we needed to challenge our own ideas and keep questioning and work with them.

After receiving feedback from the mid-crit from our 3 concepts, we struggled to keep our concepts within the brief. Once again we had started to move away from the actual reading situation.

We tried to merge concept 1 and 2, connecting the reading situation with the surrounding space and the digital interaction. Having established the surroundings of our concept, we started digging deeper into the actual interaction of the reading situation.

We started to sketch again and play with small paper installations.

With this we created a new concept:



To visualise the concept we created a storyboard that illustrates the process of the customer journey. With the story board it was possible for us to visualise how the customer experience would be. It was created with a mixture of insights and sketches.

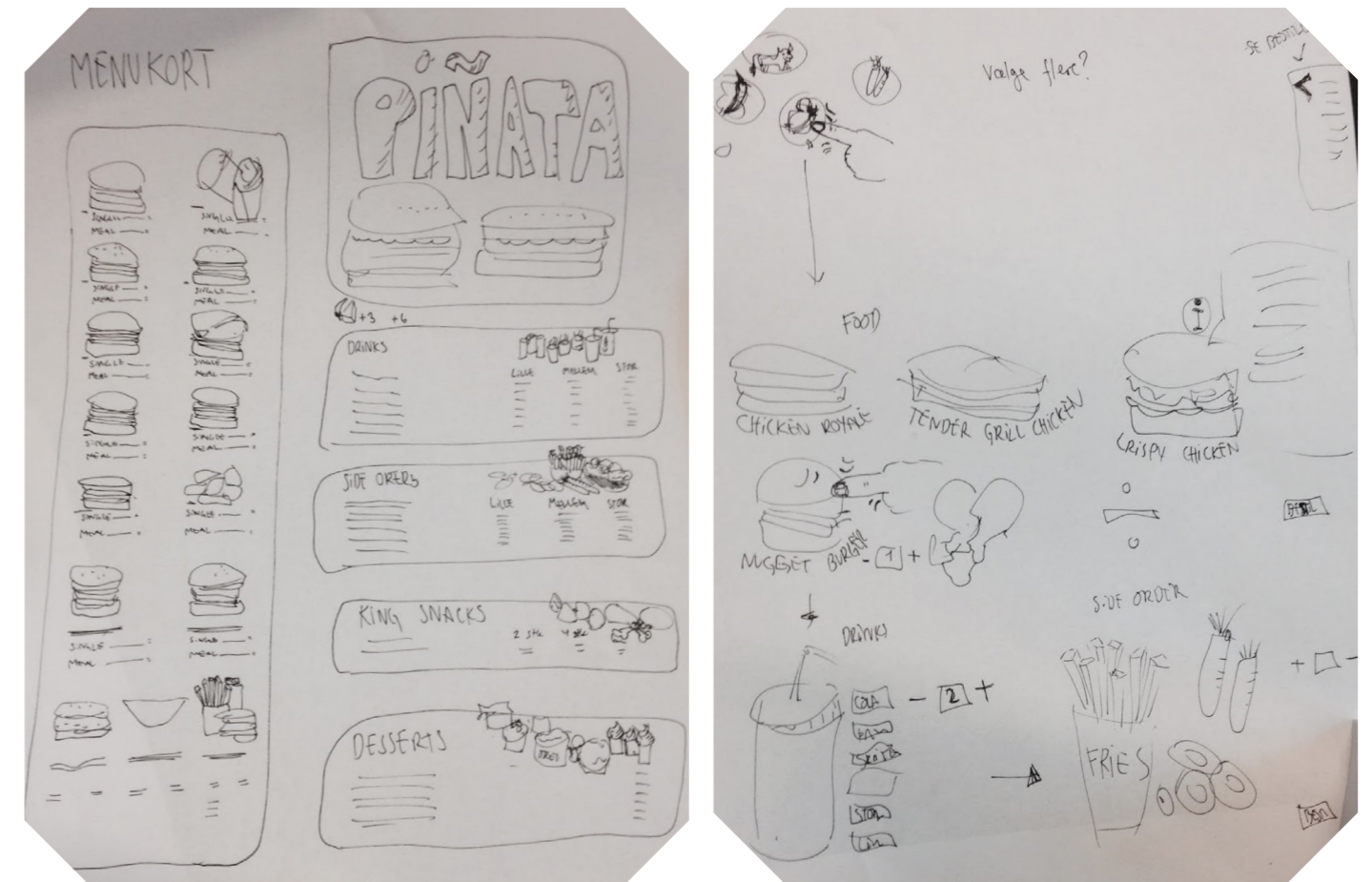
When entering a fast food restaurant, you'll be able to order the food via several triangle columns, placed in the middle of the "chaos zone". At these columns, it's possible to specifically pick out what you want to order in a user friendly and visual menu card. It's also possible to get inspired by the menu card, if you don't know what you want. If you crave for something spicy and cheese, the screen will give you options that corresponds to your needs. When you have decided what you want, it's time to place the order, and receive the receipt and get your order at the pick-up point.

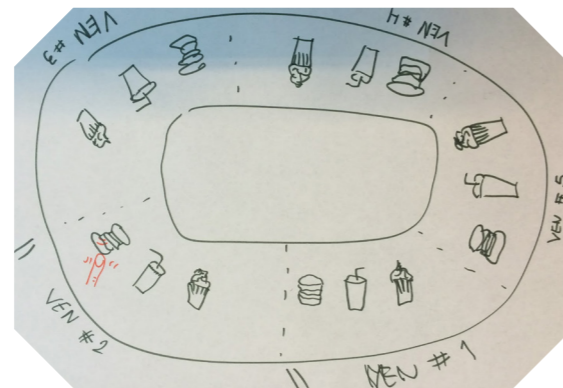
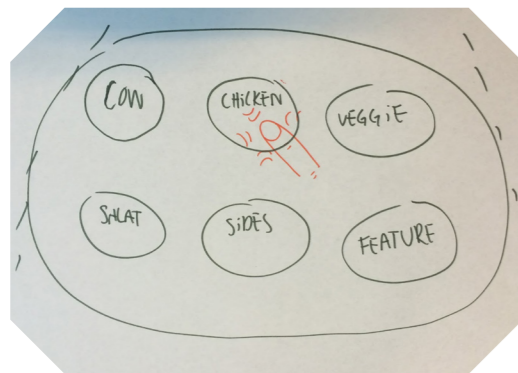
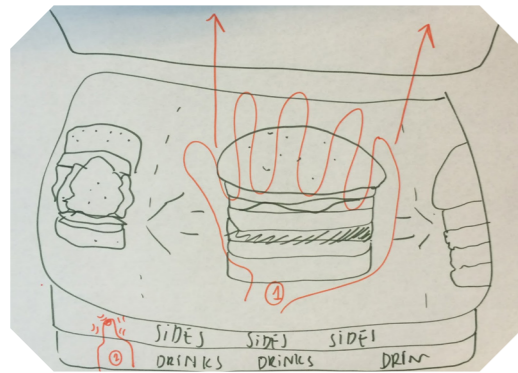
DEVELOPING A USER INTERFACE

This storyboard was our first step to start sketching tangible artifacts, but questions still remained:

What happens on the screens, how do people actually order their food? We tried to focus on how the interface should look like and how it should work (BILLEDE 5). Developing our menu card, we looked at the existing one at Burger King and the answers from our survey of people's expectations. We wanted to dig into the interface and play with it, giving the customer several options for personalising the order and giving them further information about the food. We created 3 ways of ordering, discussing pros and cons trying to imagine how the situation would play out at Burger King and ended up with one where we ordered the items into categories such as what we found on the expanded menu (main dishes, sides, snacks, etc.)

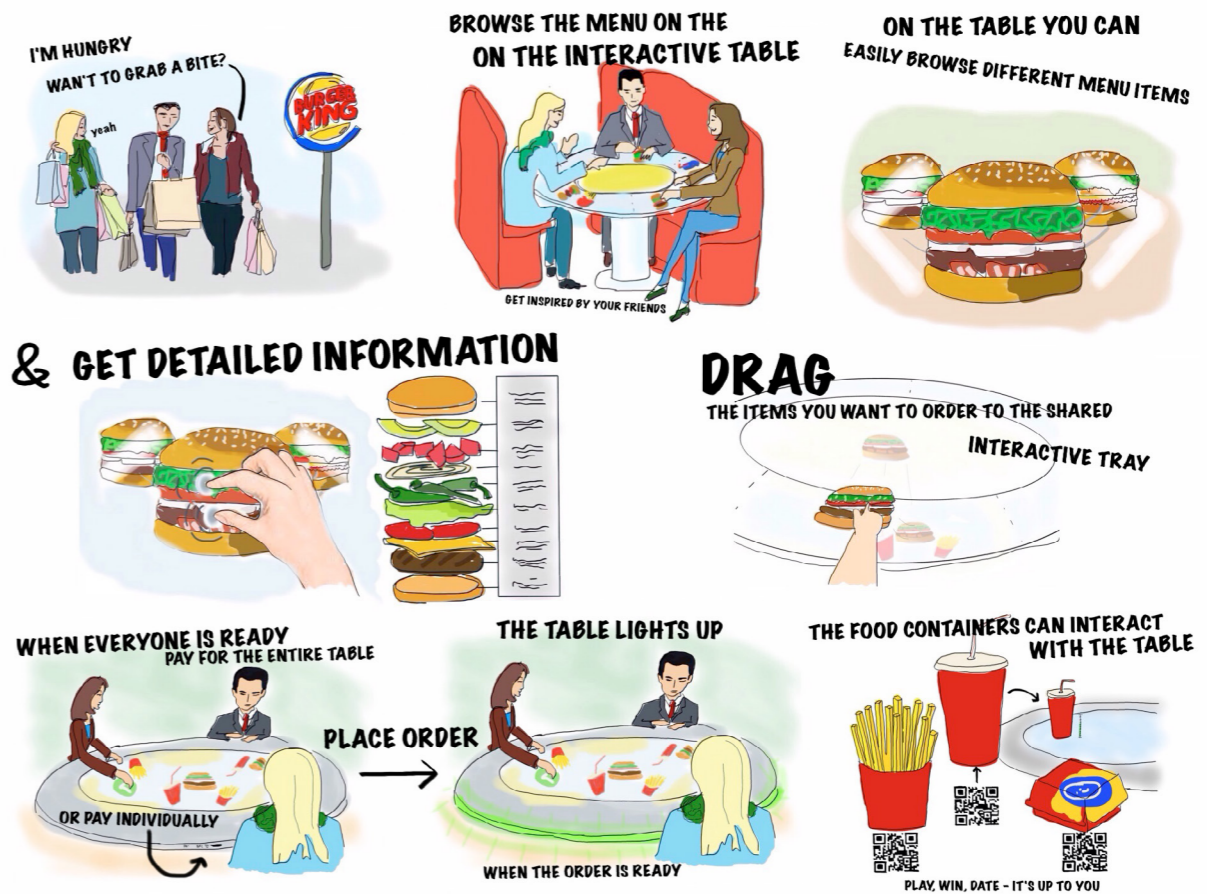
At a crit session we were challenged to thinking about how combining our menu card design with the space would work. We started focusing on how people should enter the restaurant and how people might have to wait in line to go to the triangles. If that was the case, we haven't solved the problems of the crowded lines. Where we in fact contributing to more chaos? This was kind of a breaking point in our design, because we suddenly started to question whether the way we was heading was the right way. We thought that maybe we should focus our attention to people who were dining at the restaurant, and moving the menu card into the dining area instead.





BODY STORMING

With that idea in mind we cleared the table, and began an improvised body storming. We acted as a family and tried to imagine how we could use the surface of the table as a menu card. The table ordering situation had to be: more social - more interactive - more fun - more convenient. But with the table ordering, it was already less stressful and dissolved the chaos line. This felt like the breakthrough that we needed since we started coming up with a lot of ideas. We decided to take this concept further, and based on our new sketches and discussion we made a new storyboard.



STORYBOARD 2.0

To make our concept of the ordering table understandable we made a new storyboard showing a visit a Burger King. Even though we know that not all customers eat at Burger King, we believe that this solution would indeed clear up some of the stress for people who comes in groups.

GETTING THE DESIGN RIGHT

Moving into the final phase it was time to draw our attention away from the ideation phase and begin to focus, refine and challenge our concept extensively.

QUESTIONING OUR CONCEPT

After the crit session where we introduced the table for the first time, we were challenged to consider why it was a table, or at least try to think of tables in untraditional ways. Maybe even thinking of other artifacts instead of a table, a mobile phone, etc. It was a bit rough at first because we felt that we finally had come up with a potentially good design, and now we had to question it again. However, the discussions ended up enforcing our original idea. The main arguments for sticking with the table was an already existing artifact for guest who are staying at Burger King to eat, making it a natural artifact to incorporate. It also has a big surface which we found inspiring to work with. Besides, when customers enter the restaurant they can go directly to a table, thus help to clear up the fuzz at the entrance.



CONCEPT PRESENTATION - THE BURGER HUB

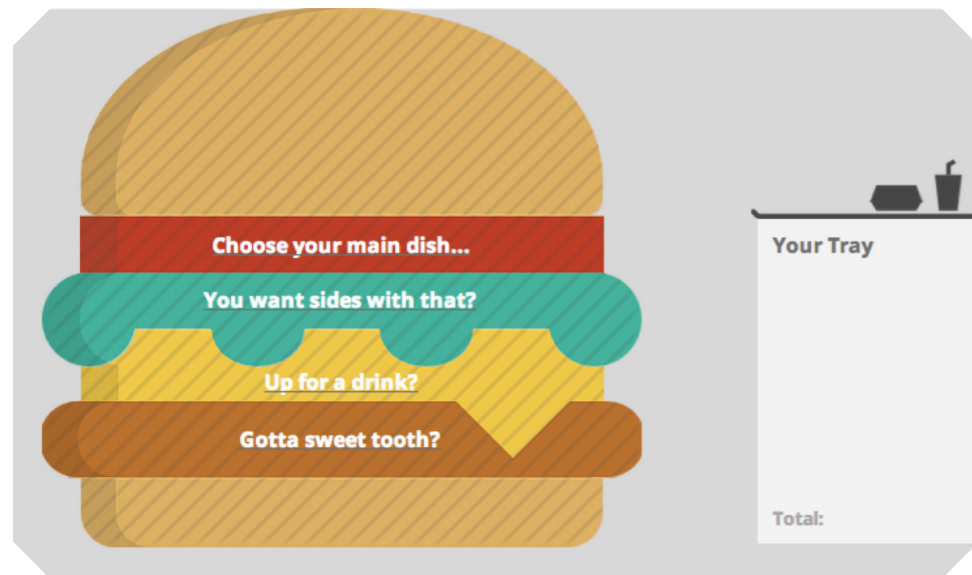
Our concept is an interactive table that can be implemented in the dining areas of Burger King. The solution aims to removed all stress related to standing in line for the people who have not decided what to get prior to entering the restaurant and wants to stay and dine. At the Burger Hub the customers can sit comfortably and order their meal, and have the possibility of interacting with the menu cards in ways that was not possible before. The table is one big screen, but it is visually divided into two spaces; a shared "tray" in the middle, and an outer space where a menu is displayed in front of every person.

The intention with a shared tray, is to make the whole experience a lot more social, by connecting all the people around the table to the tray. The aim with the shared tray is not only to urge the customers to get inspired by each other and to start conversations across the table, but also make it possible to quickly duplicate what the other ones have chosen if you want the same item.

REFINING FUNCTIONALITIES

Browsing the menu

Sensors in the table are built in to automatically notice when someone sits down, and a menu will appear on the screen right in front of that person. Each person at the table can start browsing the menu individually. The menu is shaped as an expandable burger, where each layer represents a category e.g. main dishes, sides, drinks, and desserts. Dividing the menu into categories relates to our finding that the expanded menu is easier to decode, than the light box menu. We use gestures known from other touch screens such as the iPad. Gestures we use includes: tapping, zooming, swiping, and dragging.



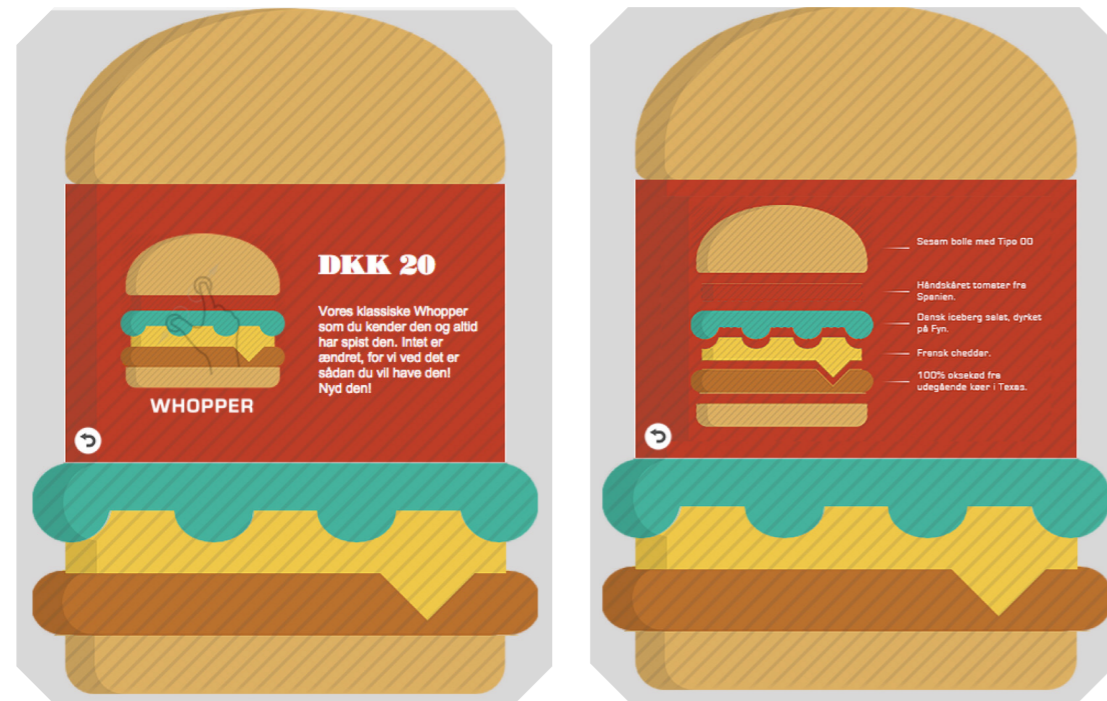
Filters

When the customer choose to browse main dishes, he or she will have the option to use a filter based on ingredient preferences which narrows the amount of items to browse through.

Choose, expand, explore!

Tapping an item of the menu will give you a written description of the item, and if you use the zoom in gesture with two finger moving away from each other, the item will expand giving you a detailed information about ingredients, nutrition, and allergy alerts.



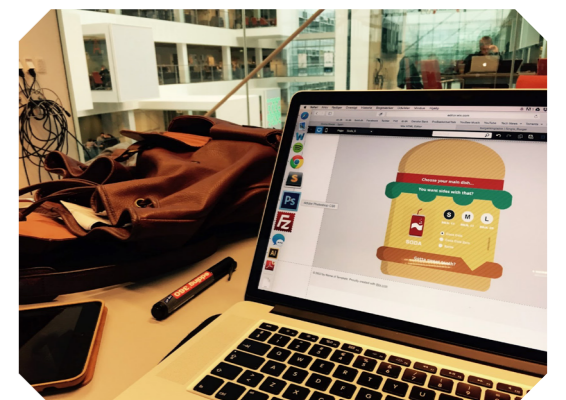


Swipe to remove ingredients

During the development we realized that we had not thought about people who are allergic to certain ingredients and are use to make individual orders. We solved this by including a gesture where the customers can swipe out ingredients in the expanded mode.

Drag to order

When you have found an item you would like to order, we use the dragging gesture to drag the item from the menu card onto the shared tray in the middle. Once an item is put on the tray it knows its root, but it can be moved around on the tray.



PROTOTYPING

Our final prototype was developed as a fusion between a high functional menu that was coded as a website and showed on an ipad, and a low fidelity table made of cardboard. To create the sensation of dragging items onto the shared tray in the middle, we made drawings on paper that illustrates all the items.

The interactive menu card can be found through this URL:
<http://silleclaranielsen.wix.com/burgerkingtable>



TEST / EXHIBITION

Prior to the exhibition we had made an initial test on some of our friends about the navigation in the interactive menu. The test led to some changes before the exhibition, such as the possibility of removing ingredients from the burger, but users found the navigation quite intuitive. We planned to carry out another user test on the exhibition day. The test was designed so that 3 people at a time could try the table. It was important to us that people came in groups since we wanted this test to be about how the users interacted with each other. These are the questions that we were curious about:

- Will the customers interact with each other?
- Will the concept be intuitive to the target group?
- Do the customers feel inspired when choosing menu?
- Do they feel more informed or confused when using this kind of menu card?



The feedback

The users responded very positively to the Burger Hub. In general, they thought the concept was coherent, well executed and intuitive. Everyone was fond of the idea about ordering at the table, and being able to see what their friends ordered.

Our observations

We observed that the users quickly found out how to navigate in the interactive menu. However, we needed to instruct people on how to use the shared tray. The different materials (ipad / cardboard) might have been an issue on that matter. However, once instructed what to do, the users accepted this action. We did expect to see that the users would interact more with each other than they did. They seemed very focused on the menus on the iPads, which was a different effect than what we thought it would be. By making the menu look more refined than the rest of the table the users paid more attention to the iPad than the rest of the table.

CONCLUSION

By using Bill Buxton and Stuart Pugh's design processes, we have created a combination of digital and analog prototype. We have gone through the three phases in the design process which have each contributed to developing and refining our design. We spent a lot of time in the field trying to find a problem to solve. Rather quickly we decided on exploring the concept of menu cards. However, we did struggle to frame our design within the brief. We might have taken some detours, but in the end it all contributed to our final prototype.

FURTHER IDEAS

From our user test we have discussed areas in which our design could be improved in the future. We need to explore better ways of making the interaction on the shared tray more intuitive to the users. It was not entirely clear to the users how they could interact with each other. We find that this is important since we want to create a social ordering experience.

