

iExperience

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PROJECT TITLE

iExperience

PROJECT THEME

User experience & ibeacons

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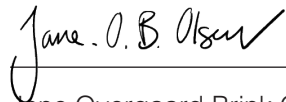
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PROJECT THEME CHOICE

This Master thesis project theme, user experience and ibeacons, was chosen due to several reasons. It was important for us to make the most of our final time at the university. Since it is the final semester it is the last opportunity for professional supervision and guidance, and the last opportunity at the university to dive into unexplored topics and become wiser and expand our portfolio. We are generally two curious young women that enjoy challenges and thrive when given the opportunity to immerse into new topics and learn.

After having followed the poor development of the labor market within our own professional direction recently and over the last years, it was important for us to try to work with a project focus that was relevant for the time.

The request for user experience (UX) designers within the digital world have been spotted frequently when monitoring the job market. As Industrial Designers we work with user experience to some extent within product design, but we had a desire to explore this field further. Beyond that we also had a desire to work with service design.

80 % of today's gross national product in Danish business life, consists of services. Service design often occurs in conjunction with new technology, since new technology sometimes makes it possible to offer some services that were not possible to offer before.
(Video interview with Søren Bechman, www.youtube.com)

In relation to expanding our portfolio, a commercial solution within service design was desired. During the search for an interesting Master thesis topic, the technology ibeacons came to our attention, we found it interesting and thus ended the choice of combining UX with ibeacons to see where this project focus could lead, and explore the possible new service benefits that may arise in this combination.

ABSTRACT

This project deals with a double case structure, with a 3rd case as a method reference. The projects main focus is to explore the iBeacons technology in relation to user experience design, in a specific context.

The main case, whom the solution is researched for, is *Huge Lawn*, an application software company which currently is exploring iBeacons. The context in case 2 is the Danish fast food chain Sunset Boulevard. The project results in 2 concepts.

A review of *Huge Lawns* internal application development process, supplemented with two altered process concepts and a method kit clarifying and suggesting new process activities. Second concept is an application with iBeacon features aimed for Sunset Boulevards customers.

THANK YOU!

HUGE LAWN SOFTWARE

Uffe Koch

Pelle Ravn

Mette Chiristensen

For their transparency, collaboration, indispensable information, and in general for their TREMENDOUS generosity!

AALBORG UNIVERSITY

Christian Tollestrup

For indispensable help, insight, guidance, "pep talks" through the entire process.

Poul Henning Kyvsgård Hansen

For valuable insight and direction guidance.

Jesper Kjeldskov & Mikael Skov

For sharing your time and expertise knowledge with us, and for valuable feedback.

OTHERS

Three anonymous Sunset service employees

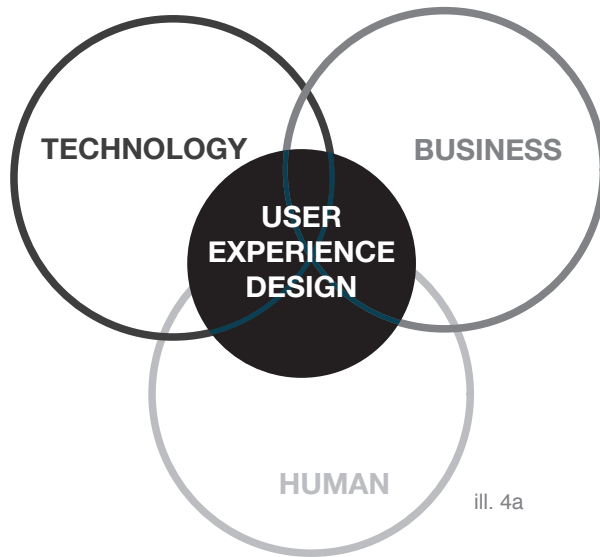
For sharing insight and telling unrestrained during an interview.

Test panel & App testers

For taking time to participate in our tests and for valuable feedback.

INTRODUCTION

Designing user experiences requires an holistic design approach. In this project the core elements are Technology, Human and business. The illustration below, is inspired from IDEOs design thinking/design innovation model, and in the center user experience is placed to show that the core elements must connect in synergy to create a coherent user experience. (Bechmann, 2012,p39)



The projects origins from a wish to make use of the technology iBeacons, this makes the project a technology push project. But the technology is not justified existence if it is not commercially viable and justifiable in relation to human values.

PROJECT OVERVIEW

This illustration provides an overview of the complex project described in this report. The illustration is a result from the overall process and has evolved during the project period.

CASE 1case 1
It contains the technology and business element. (Huge Lawn)

CASE 2case 2
Necessary for incorporating human values into the project. (Sunset Boulevard)

CASE 3case 3
Is used as a second reference point, when reflecting on the design teams own process behind case 2 to be able to design process suggestions to Huge Lawns current development process.

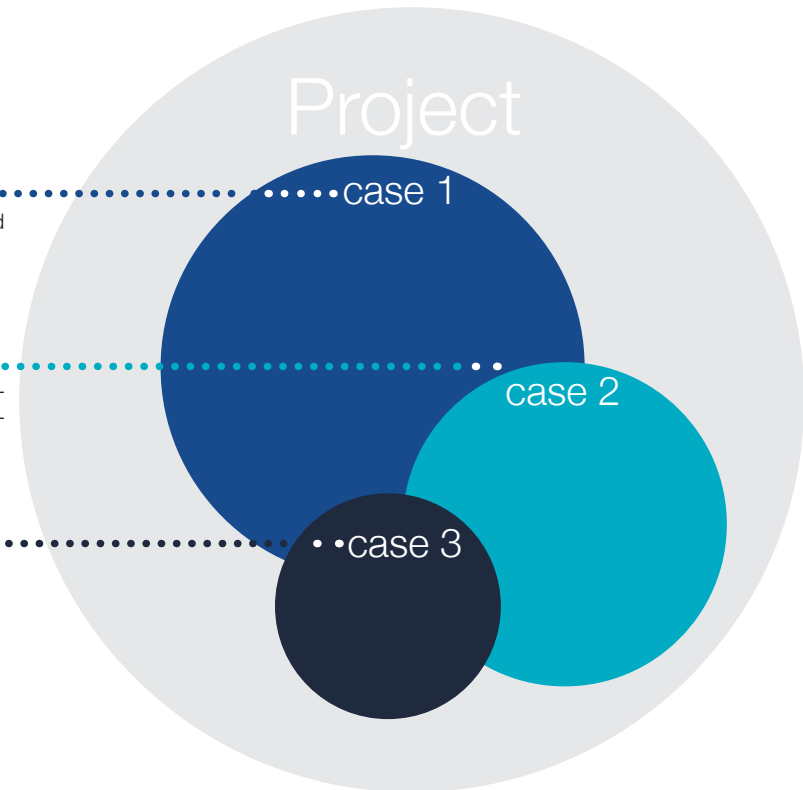


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IBEACON - TECHNOLOGY

The project focus is user experience and iBeacons. But what is an iBeacon?

BEACONS

A beacon is a little computer, a device that transmits a signal which another device can detect. A beacon is like a tiny "lighthouse" that can be placed around, and that send out signals whenever it detects an iPhone or Android device nearby.

It is a new way to use Bluetooth, or more precise Bluetooth Low energy. Beacons are developed to provide information on a very specific location. The beacon does not transmit content, it simply transmits a signal (BLE) that activates specific apps on phones to "fetch" the content that awaits on a server. The content (a coupon, for example) is then delivered to the users app.(Estimote.com)

IBEACONS & BEACONS

"The term iBeacon and beacon are often used interchangeably. iBeacon is a trademarked term by Apple that refers to the protocols, devices and uses of Bluetooth LE to create user experiences. Apple is vague about what they specifically mean by an iBeacon. But a conclusion is that it includes the software protocols inside a user's app, the use cases and user experiences, and the specifications that Apple requires of any beacon that can be called an iBeacon." (ibeekn.net)

BLUETOOTH LOW ENERGY

"Bluetooth is a wireless technology standard for exchanging data over short distances, using short-wavelength UHF radio waves. Bluetooth Low energy, also called Bluetooth smart, is, compared to "Classic" Bluetooth, intended to provide considerably reduced power consumption and lower cost, while maintaining a similar communication range." (wikipedia.org/wiki/Bluetooth_low_energy)



IBEACON VS NFC

NFC(Near field communication) has within the recent years been described as what could potentially enable contact less payment systems, and allow mobile payment to replace or supplement the current credit card system.

To make use of NFC you would need a device that contains an NFC chip. None of Apple's phones contain NFC, nor do several other smartphone providers. And if you had an NFC chip in your phone, stores need to have the proper NFC infrastructure. NFC has not been embraced by businesses, as it is a heavy investment. NFC is intended for payments only, and the tap to pay function requires devices to be within the limited range of, 4 inches away from the point of sale. (passbookready.com)

iBeacon is Apple's solution to NFC. iBeacons only require devices to have BLE in them, which many smartphones already have. Businesses can easily purchase small beacons for a fraction of the costs required to install NFC. iBeacons send signals up to 70 meters, which means that consumers don't need to place their device next to a beacon in order to receive signals. In the future, it will be possible for people to pay for items just by walking out the store. (computerworld.com)

"A "killer" fact about iBeacons is that every iPhone 4S, iPhone 5, iPhone 5c and iPhone 5s already supports iBeacons. Which means that there are approximately 200 million active devices that not only can receive ibeacon signals but also can act as an ibeacon." (computerworld.com)

IBEACON VS GPS

iBeacon is not GPS, but sort of serve the same functionality as GPS. Although, GPS might be great for outdoors, it is not great indoors. Indoor spaces often block cell signals and can make it almost impossible to use GPS indoor. iBeacons solve this issue. It is sort of an indoor GPS mechanism that send signals to devices within a certain range. In the past, retailers and businesses could locate GPS coordinates and send push notifications when users were near their store. But it was not very accurate. With iBeacons, it is now possible to target multiple indoor locations. (youtube.com), (businessinsider.com)

HARDWARE

There are various different beacons and producers of beacons. Some beacons can be stuck to a wall, some are just placed on a table, and some are USB's that can be placed directly into the power outlet, or into a computer. Battery beacons, use either replaceable AA batteries or button cell batteries. Different producers say the batteries can operate for up to 1-2 years.

The different beacons have different casings. Some are cheap plastic covers and some are more advanced cases where the materials are thoroughly chosen, which can make the beacon all-weather proof etc. A beacon transmits BLE signals, but they can also detect humidity, temperature, acceleration, etc.

Usually the beacons come as stand alone hardware that comply with iBeacons standards, and can thereby be programmed to function with an iPhone app. Some producers also provide an SDK kit with their beacons, these SDK kits allow the developer to edit the UUID, minor and major numbers.

An iPhone or an Ipad with a beacon compatible app cannot only receive push messages, but can also be programmed to act as a beacon. The only requirements is that it has BLE and iOS 7. (redbearlab.com), (estimote.com)

HOW IT WORKS

The iBeacon, broadcasts a number of identifiers. For example:

```
{ uuid = "74278BDA-B644-4520-8F0C-720EAF059935"; major = 65504; minor = 65505; }  
(reigndesign.com)
```

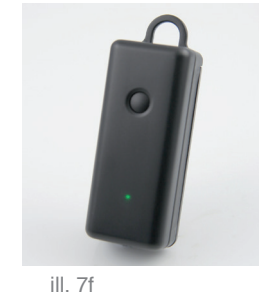
UUID: Universally unique identifier. Defines who the beacon belongs to/sends signals for.

Major: Different zones/rooms can have a different "major zone".

Minor: Defined when there are several beacons in the same major zone/room.

Different iBeacon producers

Estimote Beacon
Redbear
Accent-iBeacon
AIRCable USB Dongle
AIRCable iBeacon
BlueCats iBeacon
Bluesense iBeacon
GeLo iBeacon
Gimbal by Qualcomm
Kontakt iBeacon
Laird iBeacon
Radius iBeacon
sensorberg iBeacon
Sonic Notify



COMPATIBLE DEVICES

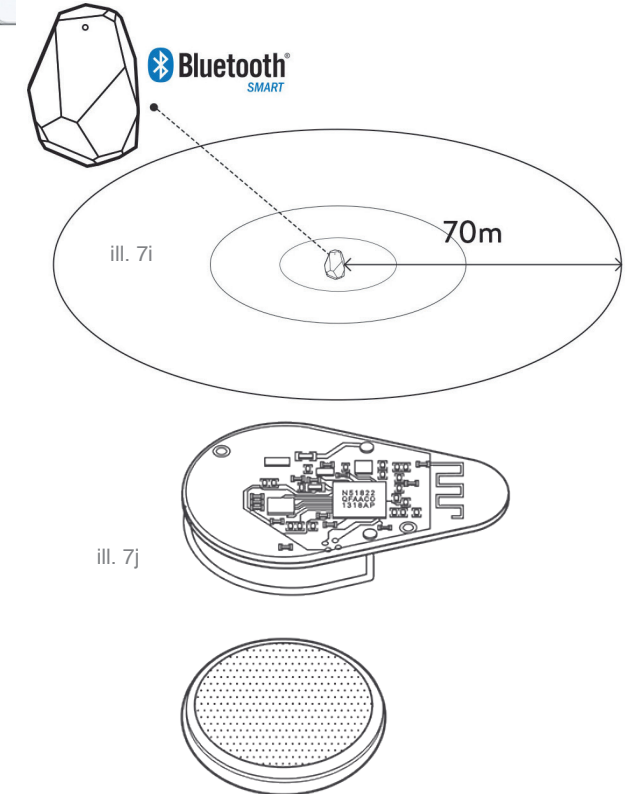
iOS7 devices including the iPhone 4S, 5, 5C and 5S, the iPad 3 and later, iPad Mini, all support iBeacons. Some beacons support android devices but there is not created a well functioning SDK for Android yet. Android versions currently tested drain the smart phones for battery. (reigndesign.com)

HARDWARE CONTENT

A "clean" beacon, without any sensors etc. consists of:

- Logic board with a processor & a memory card.
- Bluetooth Low energy(BLE)
- Battery (not all have a battery, but can be plugged directly into the power outlet.)

(estimote.com)



BEACON FUNCTIONS

When an app is downloaded and accepted, the application is passive until the user interacts with his/hers Phone and open the application. This "activation of application" function can be useful in certain contexts. By screening articles about ibeacons online, a variety of functions were found. These are functions that have been tried out or are tested currently, and some are what people predict it can be used for.



INFORMATION

- Warning
- Reminder.
- Alarm.
- Deals.



DYNAMIC PRIZING

Ex. Reduce the price for a particular good customer on products this customer always purchase.



NAVIGATION

Ex. Help a customer navigate with a map, both indoor and outdoor. Library, hospital, festival etc.



ORDER AND PRE ORDER

Ex. Receive the menu on a cafe on your phone when you enter or sit down. Customer can pre order and when customer is detected the order is delivered.



PAY (DIGITAL WALLET)

- Sell/buy tickets on the spot
- Tip the waiter



UNIQUE ACCESS IN DEFINED LOCATIONS.

Ex. Access popular magazines and newspaper in a cafe.



TRIANGULATION.

Ex.1. Shops can track, locate and monitor customers locations.



END QUEUING (TRACKING)

Ex. Customer can check if there is a queue in specific places.



HELP AID

Ex. Spoken Information in specific contexts for visual impaired.



GAMING

Ex. City games, find different locations and earn points.

Games Ex. City games, first one to all spots. Hide and seek, deals etc



HOME APPLIANCE

Ex. Open garage, door, lock etc.



BODY SENSORS

Ex. Beacons with sensors. Thermometers, heart rate monitor, motion sensor, patient identification.

POTENTIAL IBEACON INDUSTRIES

In relation to screening on iBeacon functions, types of potential iBeacon industries were registered. The industries found were some that people imagined ibeacons could be used in or industries that at the moment actually are testing or implementing ibeacons.

- Retail
- Museums
- Exhibitions
- Theme parks
- Bars
- Coffee shops
- Restaurants
- Hotels
- Conference (rooms)
- College campus schools
- Real estate
- Airport
- Factories (high security)
- Concert/festival
- Hospitals/Healthcare
- Childcare
- Elderly care
- Dating

The unique about ibeacons, and its main function is that it "awakes/activates" your application, when you are within its range. It activates the application for you, at a specific location at the right time. This gives today's applications an extra dimension. This new insight leads to new questions. Where to implement it, and how to find out where to implement it?

CASE SEARCH

The questions “where to implement iBeacons, and how to find out where to implement it?” Clarified that there was a need for a client, a project case and a context. Therefore a research on relevant industries to implement the technology in was conducted. The research was made with the following requirements.

- Must be local, domestic or Scandinavian.
- Ibeacon functions must be relevant for the industry.
- The industry or company must in some extent be interested in a collaboration with the design team.

The research was done based on the industries listed on the previous page, *Potential beacon industries*.



THEME PARKS & MUSEUMS

In Denmark there are 6 Zoo's, several aquariums and 42 museums. A solution within this industry is easily transferred to other theme-parks & museums. A collaboration with several of these could be possible, unfortunately many theme-parks do not open before April/ May, which is too late in relation to this project.



HOTEL & CONFERENCE ROOMS

A quick research showed there are 8 hotels in Aalborg. A requirement for potentially choosing hotel, must be that the hotel must have expandable potential and have assets and time for collaboration.



AIRPORT

Research on airports was almost impossible, instead research on airlines gave more sense. A quick research clarified that there are 7 airlines in Scandinavia.

- Widerøe
- Norwegian
- SAS
- Novair
- Jettime
- Dat (bornholm)
- TUI fly nordic



BAR, RESTAURANTS, COFFEE

There are almost 200 bars, restaurants and coffee shops in Aalborg City, with very different service expectations, demands, price ranges, size and fanciness.



REAL ESTATE

There are several different real estate offices in Aalborg. Some local and some domestic.

- Estate Algren
- EDC Danebo
- Home Aalborg
- Mægler-team
- Nybolig
- Tn mægler
- RobinHus
- Danbolig



RETAIL

This is a very extensive industry, and cover anyone who sell commercial things, there are hundreds of different types of shops. Therefore this industry was hard to do a quick research on, and also hard to briefly categorize. This list only gives some insight into what it could be.

- Supermarket
- Clothes
- Interior
- Furniture
- House-holding equipment
- Equipments



SCHOOLS & CAMPUS

In Aalborg there are over 70 different types of elementary schools, high school, colleges and one university.



FACTORIES

A quick research on this topic resulted in this list of factories in Aalborg.

- Uni-Food Technic A/S
- Ålborg Kemisk Teknisk Fabrikker ApS
- Scheelsminde A/S
- Hagens Fjedre
- Aalborg industries
- Aalborg Chokoladen



DATING

These days many find it a trend to date online, and there are several online dating sites.

- dating dk
- match.com
- be naughty.dk
- scor.dk
- Tinder - This is actually an App.



FITNESS

There are several Fitness centers in Aalborg:

- Træningscenter børn og unge
- Træningscenter børn unge og handicap
- Træningscenter voksne
- Fitness world
- Fresh fitness
- Fitness DK
- Nyt helse center
- DGI huset
- Fitness for kvinder



HOSPITALS/HEALTHCARE

In Aalborg there is Hospital South and Hospital North, there are also several health care & preventive centers etc.



ELDERLY CARE

There are around 13 different Elderly care homes in Aalborg, in addition to the home care program.



CHILD CARE

There are also several local day nurseries, kindergartens and orphanages. Both public and private.

This research clarified that there were many potential project cases locally. The industries needs to be defined more specific, and there must be done an elimination to sift out the most relevant or accessible industries.

HUGE LAWN

The iBeacons research clarified that there are many things to find on the Internet, especially when the technology is so new and there are many speculations and rumors. The design team's supervisor had heard about a software company called Huge Lawn who might know something about iBeacons.

HUGE LAWN



Saving the World,
One App at a Time.

III. 10

ABOUT

Huge Lawn is a software development company located in Aalborg. They develop Applications (App's) for iPhones, iPads and Android phones. Within the last five years they have developed more than 100 App's. Their customers range from small businesses, media companies, industrial enterprises and advertising agencies. They are currently exploring iBeacons. From their network of previous and current clients, they have spotted a possibility for additional sales with the use of iBeacons. (hugelawn.com)

The design team quickly had a meeting arranged with Huge Lawn. Huge Lawn was interested in everything concerning iBeacons, and found it interesting that two students from Industrial Design also were exploring the technology. The design team might have some competencies they don't have in-house, and our thoughts, our approach and outcome was interesting for Huge Lawn. The meeting resulted therefore in an agreement about collaboration. Beyond that, Huge Lawn had several project ideas concerning iBeacons, and they were willing to share everything. They presented all their current ideas and concepts, giving the design team the opportunity to choose to participate and further develop any of the presented. [M1]

EXHIBITION / CONFERENCE



Aalborg municipality was hosting a business event for Northern Jutland businesses, and had by coincidence heard of Huge Lawn's iBeacons explorations. Huge Lawn had an idea for Exhibitions and conferences, where the beacon technology could greet the participants, keep them posted on the conference program etc. Huge Lawn was given the opportunity to test their concept during this event. This was a month ahead, and they still had not found "the brilliant" idea for exactly this event. [M1]

SKALLERUP SEASIDE RESORT



Skallerup Seaside Resort is a family holiday complex. They offer a variety of indoor and outdoor activities. Huge Lawn has previously made an app for them, containing different functions like navigation/map over the running tracks, bike routes, the treasure hunt tracks etc. Previously using (Gps/Geo fencing). Huge Lawn sees great potential in giving this App a new dimension with the iBeacon technology. [M1]

AALBORG CITY ASSOCIATION



Aalborg City association had expressed interest in an App that could give their customers information regarding their shops, navigation etc. Huge Lawn sees iBeacon potential in this case. [M1]

FRIIS SHOPPING CENTER



This is very much alike the above mentioned case, but concentrated inside the shopping center Friis. They had expressed interest in an App that could give their customers information, navigation and a point/loyalty program of some sort. [M1]

SHOPPING CENTER IN VIBORG



Huge Lawn had previously made an App for the shopping center in Viborg, Sct. Mathias Centret, with a map, info about shops and a game where you collect points and participate in a monthly lottery, using geo fencing solution. iBeacons is more accurate than geo fencing, therefore they saw potential in updating the existing app. They also imagine that it will be easy to expand the concept to other shopping centers if they find a good solution. [M1]

AUTISM CENTER



There are two guys employed at Aalborg Autisme center, who use their spare time to develop a system to relieve the employees' work load at the autism center. They had previously managed to persuade the municipality to provide them with money to develop an app. An app that functions as a guide for the patients, that in the end reduced the employees' work load. A guide that tells the patients what to do, when. These guys had heard of iBeacons and think this could be an extension to the app, which could make it more realistic and accurate. Because the beacons can register the patients and trigger personal patients' guides. [M1]

NETWORK BEACON



An iBeacon Networking app, sort of like the website LinkedIn. This is just a loose idea Huge Lawn had thought of. Perhaps in connection with the exhibition/conference case. [M1]

Huge Lawn expressed that they were very interested in a collaboration with the design team, and were willing to share everything. They were in general interested in seeing how the design team would approach this type of project.

ELIMINATION

The meeting with Huge Lawn resulted in several additional, more specific project cases. Nevertheless, before eliminating cases, the design team wanted to further explore the industries listed before the meeting with Huge Lawn.

The design teams list of industries were looked at from the following aspects.

- Where beacons could make the most impact.
- Accessibility and co-operation willingness.

MUSEUMS & THEME-PARKS



Theme-parks are closed at this time of year. Aalborg zoo has open all year round, as well as museums. Good beacons possibilities.

BARS, COFFEE SHOPS, RESTAURANTS



Many potential local collaboration partners, both in types and size.

HOTELS & CONFERENCE



Several potential local collaboration partners.

COLLEGE-CAMPUS-SCHOOLS



Many potential collaboration partners. But previous experience show that it is hard to get public institutions to collaborate, both in regards to time and assets.

REAL ESTATE



Several local potential collaborations partners.

RETAIL



Many potential collaboration partners, both in size and scope.

AIRLINES



It has generally been hard to research and find information within this industry. It is probably important for the airlines to be cautious and have high security, not only at the airport but also in general. This gives the impressions that accessibility is very restricted.

FACTORIES



Low personal interest. Fear of restricted access.

HOSPITALS, CHILDCARE & ELDERLY CARE



Also a very restricted access area, limited time and assets. Sensitive industry.

DATING



Can be a very sensitive area for people, and some prefer it to be private.

The requirement about access and cooperation, turned out to be the requirement that weighted most heavily, because it was difficult to evaluate beacon impact of topics in such a general level. Nevertheless it made it possible to eliminate 5 industries. Leaving the following 5 industries for further exploration:

- Museums & Theme-parks (Aalborg Zoo)
- Bars, Coffee shops, Restaurants
- Hotels Conference (First & Cabinn)
- Real estate
- Retail

Huge lawn presented 7 potential cases. The shopping mall cases are merged into 1 case, resulting in a total of 5 potential project cases from Huge Lawn.

- Fair and conference
- Skallerup seaside Resort
- Shopping (Sct. Mathias, Friis, Aalborg City forening.)
- Autism center
- Network beacons

This results in a total of 10 cases.

- Museums & Theme-parks (Aalborg Zoo)
- Bars, Coffee shops, Restaurants
- Hotels Conference (First & Cabinn)
- Real estate
- Retail
- Fair and conference
- Skallerup seaside Resort
- Shopping (Sct. Mathias, Friis, Aalborg City forening.)
- Autism center
- Network beacons

The result of this elimination process is 5 potential industries, and 5 more specific project cases. A total of

- 10 potential project cases.

FROM 10 TO 2 CASES

The process of narrowing down from 10 to 1 project case, was extensive and very detailed. All the activities and arguments can be found in [A1]. This section will briefly go through the elimination process and the arguments from 10 to 2 project cases.

FROM 10 TO 5 CASES	FROM 5 TO 4 CASES	FROM 4 TO 3 CASES	FROM 3 TO 2 CASES			
ELIMINATION	ELIMINATION	SCENARIOS	RESTAURANT TYPES	CONTACT	OBSERVATIONS	SUPERMARKET TYPES
<p>All 10 cases described on the previous page were explored in further details, looking at:</p> <ul style="list-style-type: none"> • Current case status • Current service • App or no app • Accessibility <p>Evaluating, and writing thoughts and imagine beacon possibilities within each case.</p> <p>The design team were not interested in conflicting with Huge Lawns work within their case proposals therefore all these cases were eliminated. Leaving a total of 5 cases.</p>	<p>Zoo has their own well functioning app, the design team did not want a re-design project. Research showed that there already were ibeacon solutions for museums, so it was a fear this also would be a re-design/copycat project. This leaves a total of 4 potential project cases.</p>	<p>Imagination and knowledge from research and life experience, the cases are further explored. The hotel industry was eliminated due to lack of ibeacon potential and poor accessibility. Bar, coffee shop and restaurant was reduced into restaurant industry. Leaving a total of 3 cases.</p>	<p>Within restaurant there where different types of restaurant types, therefore a restaurant type desktop research was conducted. The expectation for personal service increases from Fast Casual to fine dining, these restaurant types seems to be more sensitive. Focus is set on fast food industry.</p> <p>Remaining only one case within the restaurant industry. Still 3 in total.</p>	<p>To get more insight within the remaining 3 cases, direct contact was tried to establish for further industry insight. Visits, calls and emails were conducted. A meeting with a real estate agent quickly eliminated this case, leaving 2 remaining industries.</p>	<p>Context observation was necessary to gain even more insight. Observations at Sunset Boulevard were easier to accomplish, since the context was smaller, it was possible to sit down and keep an eye on customers, without getting noticed. This session showed that even though Føtex and Salling Super serve customers within the same industry they differ a lot. Therefore different types of supermarkets were researched, as previously done within the restaurant industry.</p>	<p>The observations in Føtex and Salling showed differences in terms of concept, products, offers and customer segments. A supermarket definition scheme clarifies that supermarkets differences. This exercise is done by a comparative analysis that clarify customer segments, touch points, personal service, store offers, website and applications. Føtex and Salling are in the high end quality of supermarkets, and a supermarket like Rema1000 is not. Rema1000 operate with basic groceries and fixed products, unlike Salling and føtex, that customize. Observations in Rema 1000 reveals they operate with a less complex interior structure. Partly based on this, Rema1000 replace both Føtex and Salling.</p>
<ul style="list-style-type: none"> • Museums & Theme parks • Hotels Conference • Real estate • Retail 	<ul style="list-style-type: none"> • Bars,Coffee shops,Restaurants • Hotels Conference • Real estate • Retail 	<ul style="list-style-type: none"> • Real estate • Retail • Restaurant • Drive in (restaurant) • Fast food chains (restaurant) • Café environment (restaurant) 	<ul style="list-style-type: none"> • Real estate • Retail • Fast food chains 	<ul style="list-style-type: none"> • Retail • Fast food chains 	<ul style="list-style-type: none"> • Retail = Salling/føtex. • Fast food chain = Sunset Boulevard 	<ul style="list-style-type: none"> • Retail = Rema 1000 • Fast food chain= Sunset Boulevard

Remaining are two specific cases, within two different industries.

- Rema1000
- Sunset Boulevard

COMPARING CASES

To make a valid decision when choosing case 2, Rema1000 and Sunset Boulevard had to be compared in regards to the same level of insight and overview.

The two cases were aligned by research, experience and observation. The illustrations show the customers journey and touch points, the employee journey and touch points, and the interaction distance between the employee and the customers throughout the service journey, based on the touch points. The complete case comparison can be seen in [A2].

SUNSET BOULEVARD

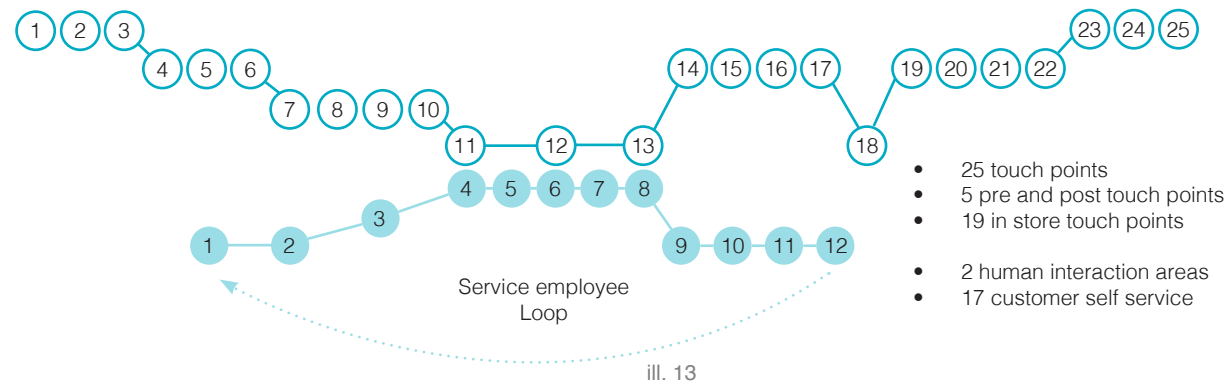
Sunset boulevard is a Danish fast food chain, mainly selling sandwiches and burgers. They have the concept "made to order" which means that they start making the food, when their customer order it. Their main office is in Esbjerg, they have more than 40 restaurants in Denmark, and 4 restaurants in Aalborg.

IBEAON POSSIBILITIES IN SERVICE

- Info and deals pushes can improve information
- Push messages can replace the "order ready" screen.
- A guide navigation function can help customers find a table
- In the waiting time, pushes can provide entertainment
- Deal/coupon pushes can provide extra service.



TOUCH POINT FLOW

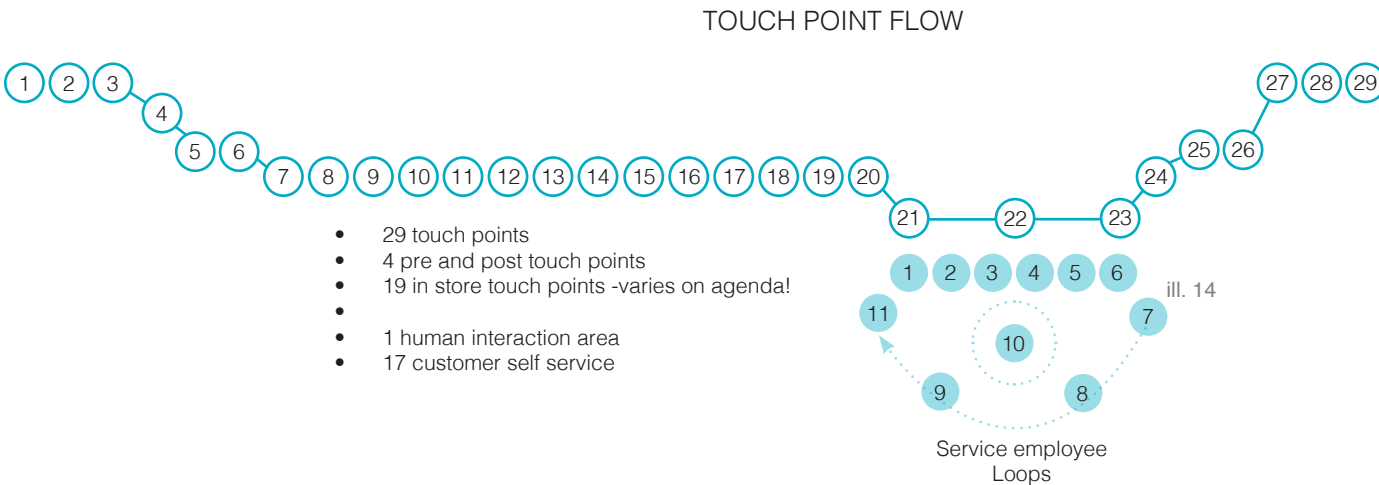


CUSTOMER	SERVICE EMPLOYEE
1 - Tv commercial	
2 - Facebook	
3 - Website	
4 - Store front	1 - See client outside
5 - Street sign 2	2 - Observe client enter
6 - Enter	
7 - Tall floor sign	3 - Observe client decide
8 - Sign above counter	
9 - Menu overview sign	
10 - Queue to counter	
	4 - Meet client at counter
11 - Order	5 - Take order
	6 - Ask questions
12- Pay	7 - Receive payment
	8 - Hand over receipt/cup
13 - Receive no/cup	
	9 - Read order
14 - Tap drinks	10 - Make order
15 - Find table	
16 - Wait	11 - Place order at counter
17 - Observe screen	12 - Register order ready
18 - Pick up food	
19 - Eat	
20 - Clean up	
21 - Exit	
22 - Pass street sign	
23 - Facebook	
24 - Website	
25 - Tv commercial	

REMA 1000

Rema 1000 is a supermarket chain, originally Norwegian, now Danish. Despite being a discount supermarket, they strive to have a wide assortment of products. They want their customers to be able to buy all they need, and avoid shopping in multiple locations.

To describe the customer journey at Rema 1000 a scenario was imagined. Unlike the customer journey in Sunset, where the customers agenda is pretty much the same, rema1000 customers may have various agendas, and the journey is not as straight forward. The scenario was a customer who comes to buy milk and get inspired for dinner. The customer discover that Rema 1000 has lasagna as special offer so the customers must buy cheese and meat and is tempted by the fresh food as well.



IBEACON POSSIBILITIES IN SERVICE

- Info and deals pushes can add location based information
- A guide navigation function can help customers find groceries
- Pushes can work as reminders, when customers are in store
- Deal/coupon pushes can provide extra service.

CUSTOMER

- 1 - Tv commercial
- 2 - Website
- 3 - Facebook
- 4 - Application
- 5 - Street signs
- 6 - Street offers
- 7 - Entrance door
- 8 - Entrance offers zone 1
- 9 - Pick up shopping basket
- 11 - Checks out plants
- 12 - Checks out fruit
- 13- Sees offer - takes it
- 14 - Picks up dairy product
- 15 - Checks out offers zone 2
- 16 - Picks up meat
- 17 - Picks up dairy product 2
- 18 - Walks to payment area
- 19 - Picks queue
- 20 - Waits in queue
- 21 - Place groceries on conveyor belts
- 22 - Pay
- 23 - Puts groceries in bag
- 24 - Walk out the door
- 25- Street signs
- 26- Street offers
- 27 - Facebook
- 28 - Website
- 29 - Tv commercial

SERVICE EMPLOYEE

- 1 - Greet customer
- 2 - scan groceries
- 3 - Inform about price
- 4 - Receive payment
- 5 - Ask/handover receipt
- 6 - Say goodbye
- 7 - Lock cash register
- 8 - Fill up shelves
- 9 - Watch customers
- 10 - Answer question
- 11 - Unlock cash register

The approach for buying groceries differentiates from time to time, and from customer to customer, which means that the illustrated scenario and mentioned touch points between touch point 9 and 20 would be unique from time to time. The touch points in the service journey of Sunset Boulevard, is more likely to be considered consistent.

Looking at both cases, its clear that in both industries the customer-employee interaction is a small part of the service journey. To choose between the two cases, a comparative analysis is necessary.



CHOOSING CASE 2

A comparative analysis conducted to choose between the two cases. Experience, Organization structure, context, critical areas and possible ibeacon features sets the basis for the final decision.

SUNSET BOULEVARD

ORGANIZATION

- Do not have an app
- Medium organization in Denmark
- 45 restaurants
- Sales psychology - there is a possibility spotting the structure ourself
- Smaller system architecture (compared to Rema 1000)
- Primary customer segment (14 to 35 years old)

CONTEXT

- Experience institution - many users, aligned customer approach
- Come once in a while
- Comes because of interest and desire
- Clear user journeys
- Clear defined touch points

CASE ONE - HUGE LAWN

- Business potential - implementation in 45 restaurants
- A platform solution can possibly be scalable within the industry

CRITICAL AREAS

- Are clearly defined

IBEAON POSSIBILITIES

- Info and deals pushes can improve information
- The screen can be replaced with push, showing the order is ready
- A guide navigation function can help customers find a table
- In the waiting time, pushes can provide entertainment
- Deal/coupon pushes can provide extra service.

SOLUTION

- Will be a new solution and a new layer on existing service
- Will possible provide reorganization of employee work flow
- New approach, new concept.
- Improvement and change in user experience
- Improvement, efficiency improvement of work flow
- Change of customer-service relation

REMA 1000

ORGANIZATION

- Already have an app
- Large organization (Denmark,Norway,Poland, Slovakia)
- 2000 Stores
- Sales psychology - there is a need for structure insight
- Large system architecture
- Broad customer segment (everybody need to shop groceries)

CONTEXT

- Routine institution - many users, different approaches
- Come several times a week
- Come because of need/necessity
- Individual user journeys - Various approaches
- Touch point abundance

CASE ONE - HUGE LAWN

- Business potential - implementation in 2000 stores
- A platform solution can possibly be scalable within the industry

CRITICAL AREAS

- Difficult to identify, since they depend on the individual customer.

IBEAON POSSIBILITIES

- Info and deals pushes can add location based information
- A guide navigation function can help customers find groceries
- Pushes can work as reminders, when customers are in store
- Deal/coupon pushes can provide extra service.

SOLUTION

- Will be a new layer on an already existing application
- Will possibly provide reorganization of employee work flow
- New approach, new concept.
- Improvement and change in existing app and user experience
- Efficiency improvement, change of shopping habits
- Change of customer-service relation

SUNSET BOULEVARD VS. REMA 1000

After observing and defining the service in both cases it is clear that a personal employee-customer relation is not the main focus in either services. Therefore a digitalization of their services by implementing ibeacons seems relevant in both cases.

- As mentioned on the previous page, the customers intention for entering a supermarket differentiates in terms of approach from time to time. Customers enters supermarkets because they have to buy food and groceries, where customers enters fast food industry because of interest and desire.
- No direct contact have yet been established in either of the cases. In case of direct contact fails, the service at Sunset is easier mapped, compared to Rema 1000.
- Rema 1000 already have an application, so implementing ibeacon technology in this industry will provide less impact, compared to implementation at Sunset boulevard, since they are not currently present in the application world.
- Critical areas are more likely to be seen consistent in Sunset Boulevard, due to the customers consistent agenda.

Sunset Boulevard is chosen the context and as case 2 in this project.

- **Case 2 = Sunset Boulevard**

SERVICE TOUCH POINTS

To be able to define the general service touch points for Sunset Boulevard, observations in another Sunset restaurant is conducted. This time in Kennedy Arkaden Aalborg, focus is put on the exact same as when visiting the first Sunset.

Observations on service, type of customer, customer touch points line of interactions between customer and employee journeys. For detailed observation results from Kennedy Arkaden see [A3].

This second observation confirms that there are very defined routines within Sunset Boulevards service and touch points within the service. The two context observations makes it possible to extract the general service touch points within Sunset Boulevards service, from the customers point of view. Customer touch points have been translated into icons.



	Tv commercial		Facebook site		Website		Store front
	Street sign		Entrance door		floor sign		Counter sign
	Overview sign		Queue to counter		Ordering		Paying
	Receive no/cup		Tap drinks		Find table		Wait
	Observe screen		Pick up food		Eat		Clean up
	Walk out		Pass street sign				

SUNSET BOULEVARD DIVE

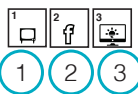
The two context observations made it possible to extract the overall service touch points for Sunset Boulevard's service employees. With both the customers and the service employees touch points defined, it is possible to map these touch points flow and where the customers and the service employees interact within these touch points. An interview with three Service Employees at Sunset Boulevard, confirms these observations. The interview can be found in [A4].

The interview with the 3 service employees confirmed the service employees steps, therefore the illustration looks very similar to the one on page 13. The only change is that a customers order is usually handled by two different employees. One who take the order and another who makes the order.

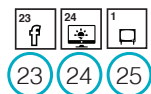
The illustrations show the floor plan of the restaurant at Østerågade in Aalborg. The floor plan vary from restaurant locations, but the touch points are consistent within Sunset Boulevard's service. Therefore the illustration can function as an overall overview. The floor plan show the rooms proportions and facilities but not scale.

The general service touch points and flow is needed to know when in the service the users and the employees interact with each other, how often, and when they interact with the various touch points.

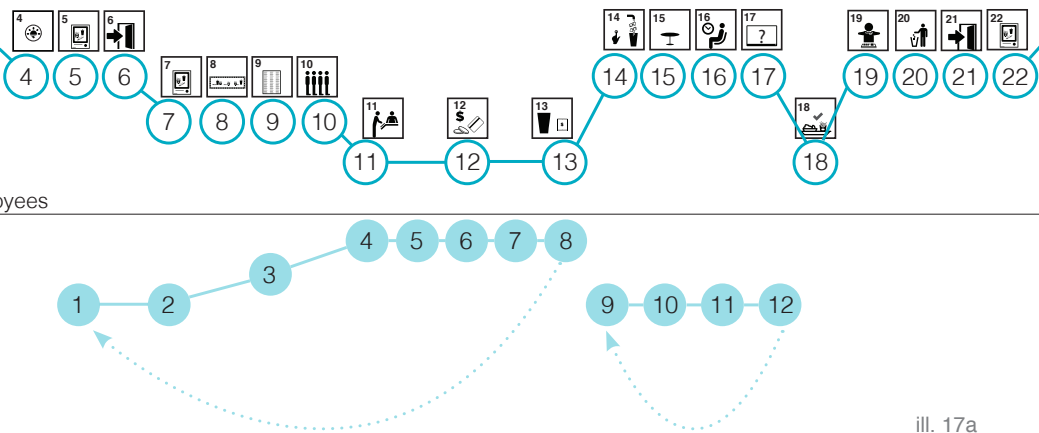
Pre-restaurant visit



Post-restaurant visit

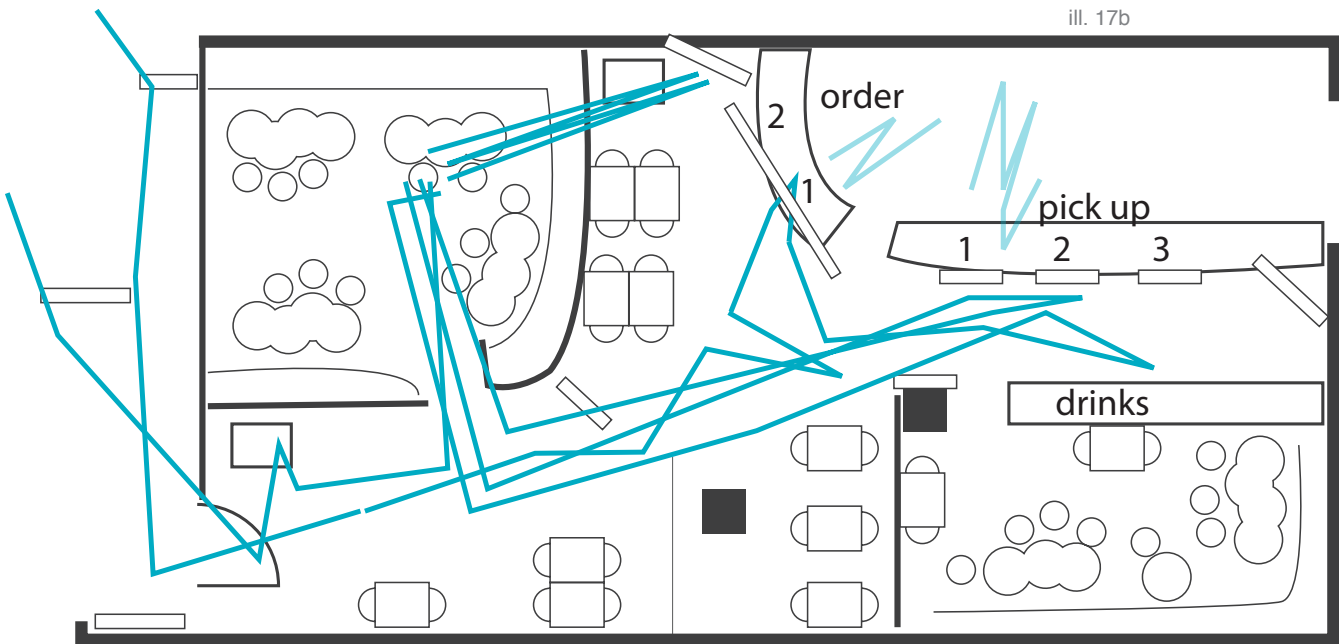


Where service employees
and customer meet



ill. 17a

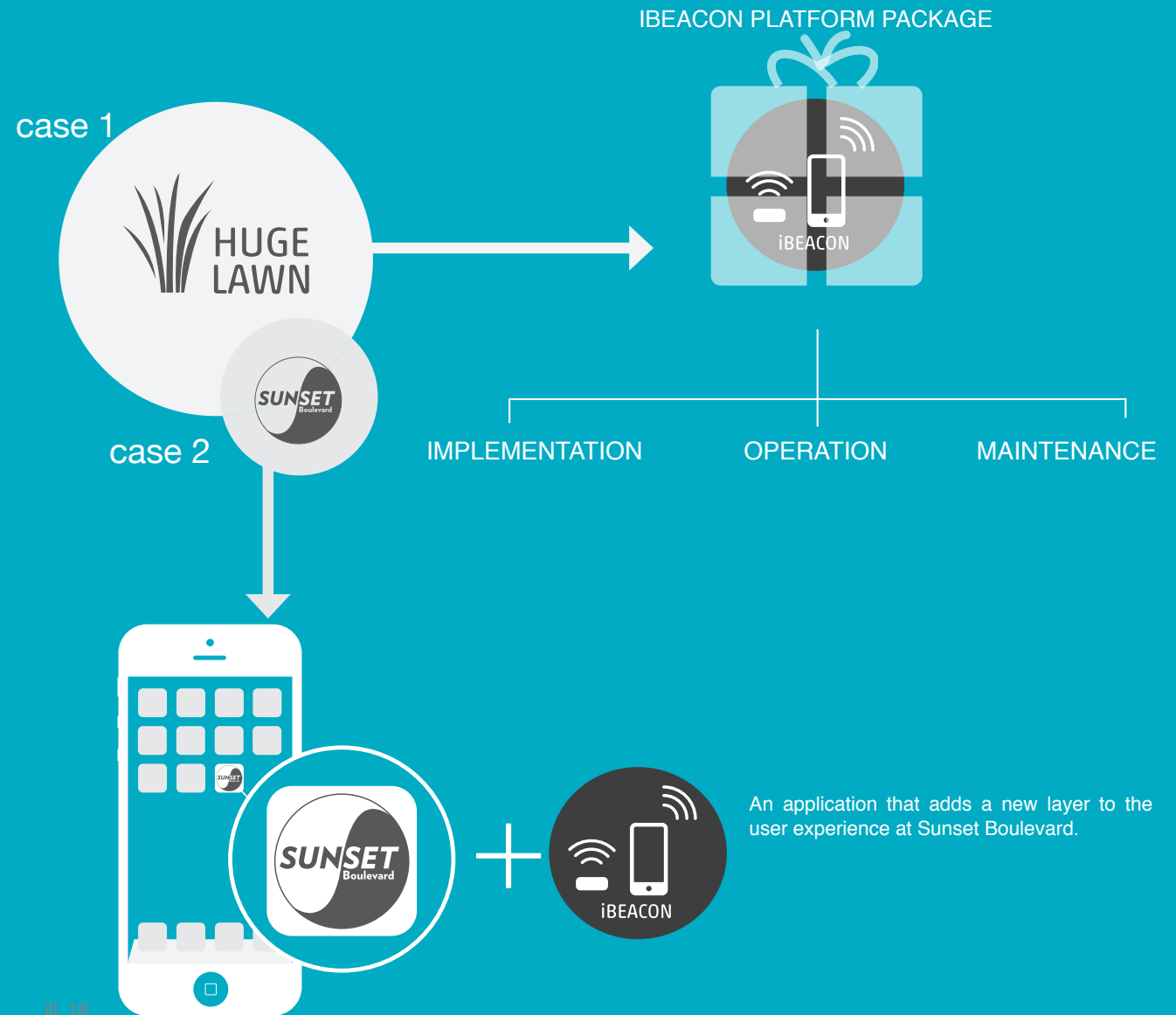
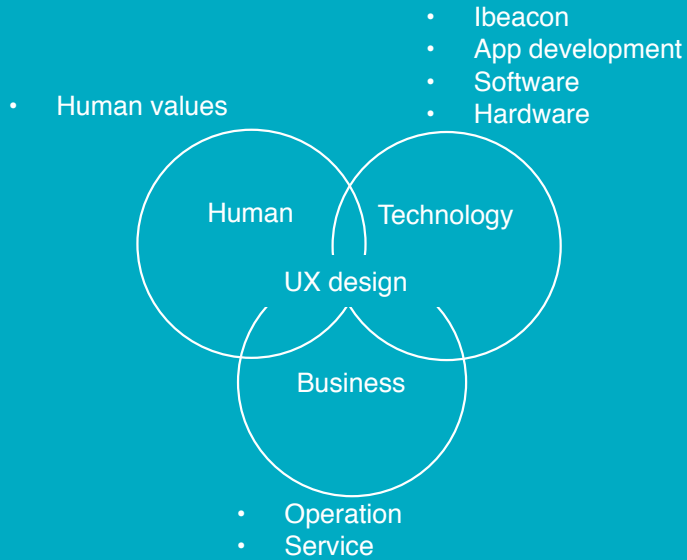
ill. 17b



CONCEPT OBJECTIVE OVERVIEW

An overview over the projects objective. This felt necessary in order to be able to keep an overview and collect all loose ends, and get in control of the process. it is decided to design an application that puts a new layer on the existing service at Sunset Boulevard.

DESIGN THINKING APPROACH

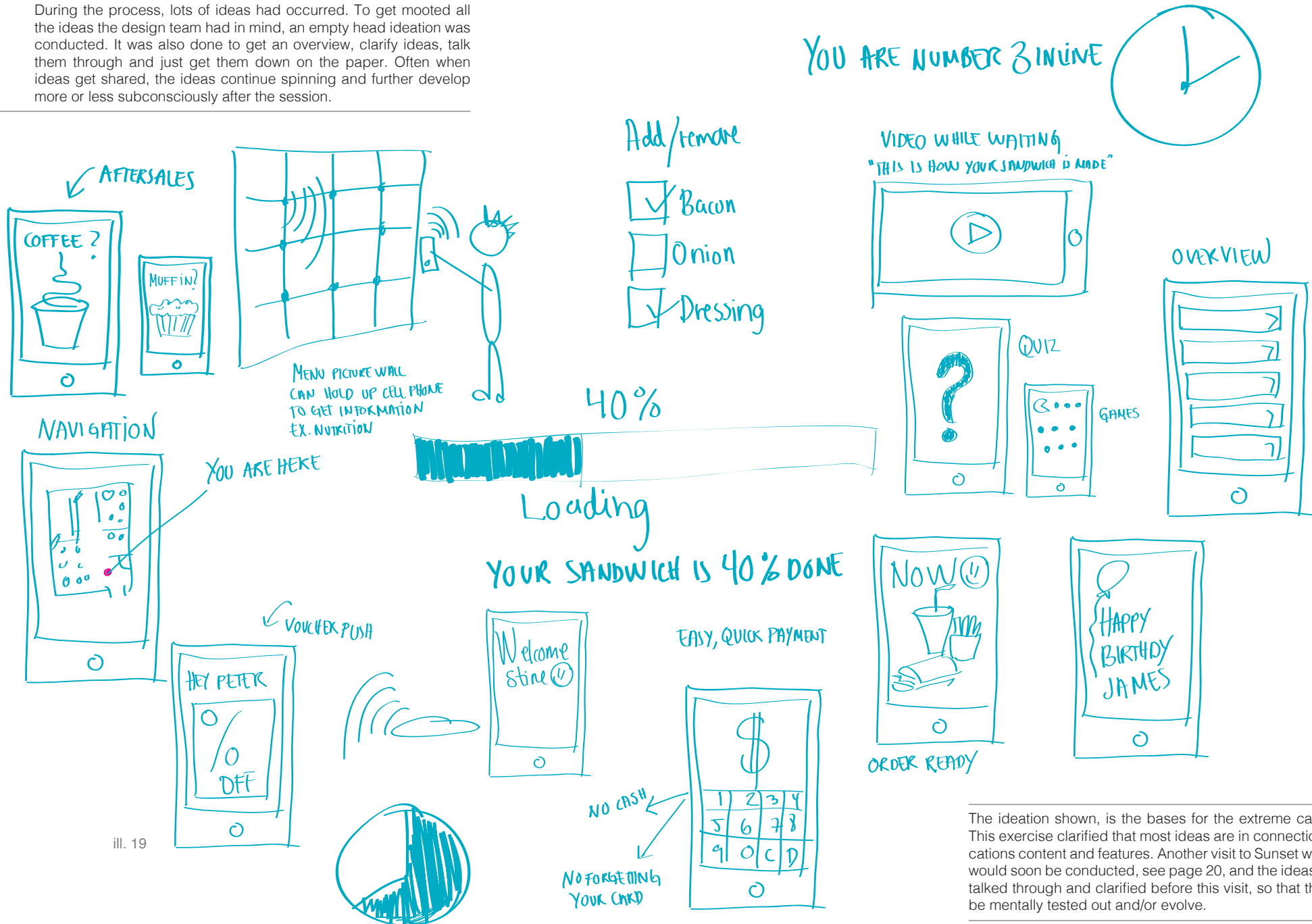


iii-18

This is the start of the design brief. More research is required before the final design brief is in place.

EMPTY HEAD IDEATION

During the process, lots of ideas had occurred. To get mooted all the ideas the design team had in mind, an empty head ideation was conducted. It was also done to get an overview, clarify ideas, talk them through and just get them down on the paper. Often when ideas get shared, the ideas continue spinning and further develop more or less subconsciously after the session.



ill. 19

The ideation shown, is the bases for the extreme case on page x. This exercise clarified that most ideas are in connection to the applications content and features. Another visit to Sunset with a test panel would soon be conducted, see page 20, and the ideas needed to be talked through and clarified before this visit, so that the ideas could be mentally tested out and/or evolve.

TEST PANEL VISIT

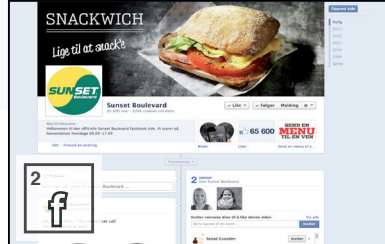
To obtain more specific user insight about the users own experience and their emotions during the touch points a test panel was put together. The test panel was found due to the fact that Sunset Boulevard not yet had made up their mind about collaborating and therefore the design team had not yet been provided with permission to interview customers.

The test panel was an alternative method that did not require disturbing Sunset Boulevards customers. The test panel was invited to have lunch at Sunset and perform the user experience. The design team was present, and observed the panel during their experience. Before the visit, a survey was created and prepared, so the test panel could receive and answer the survey immediately after the visit. See the survey and the creation of the survey in [A5] .

OBSERVATIONS AND TEST PANEL COMMENTS



"I have seen the tv commercial - but I dont really have any thoughts about it"



"I see no reason for using their facebook page"

"Facebook? No it means nothing to me"

"Facebook does not hold the information i need"



"If i should use the website, the reason would be to find the nearest restaurant."

"I do not use the website"

"I did not know they had a website"



It was observed that the storefront was easy readable.



Some participants caught a glimpse of the outdoor sign, but no one stopped to have a closer look.

ill. 20



Entering was not an issue.



"I needed overview, it was a bit hard to get"

...

The indoor floor sign was overlooked by some, others caught a glimpse, no one stopped.



"I was tempted by their double mexican burger"

"It was easy to see which burgers I could choose between"

...

Generally the participants liked the overview pictures. Some had trouble figuring out the price and combination possibilities, which led to frustration.



"I needed overview, because it was my first time in Sunset, and i didn't now what they had."

"I needed this sign, but it was chaotic, when all you want is food"

Few participants stepped out of the line to see the overview sign. Some found it confusing.



"It was a bit confusing when there were many in line"

"There was no queue - it was nice"

The participants did not detect that they were in line. It is assumed that this impression is based on them entering as a group.



"There are many additional cost"
 "I was in doubt about additional cost"
 "The ordering process went fine"

Some were negatively surprised because of additional costs. Some found the process easy. Some were disappointed that the employee didn't suggest alternative, since their offers were sold out.



"It is bad, that you get the final sum here"
 "I was unaware of student discount and refill - so it resulted in extra costs"

Some found it annoying that the price was different from what they had thought. Some paid more, because they were uninformed. Some found it easy to order.



"I was not informed in regards to order number and the screen, which made me unsure about when my food would be ready"
 "The employee showed me how to tap water"

Some were informed about the order number and drinks, others were not which made them confused.



"It was fine to tap soda - then I do not have to discuss the ice/no ice issue"
 "It's a good way to make time pass"
 "This must be impractical for families"

Generally the participants found it convenient to fill drinks them self. Others found it okay, if it helps reduce prize. Some were confused about the refill option.



"It's fine that you can sit and wait"
 "There was not enough chairs, and we couldn't do anything about it, because they were fasten to the floor."

The fixed furnitures were annoying because of the group size. It was nice with daylight. Some discovered dirty tables.



"I waited 10-15 minutes, I think it was too long, because I was very hungry"
 "It was disturbing that you have to keep an eye on the screen"
 I waited 10 min - i think it should be faster."

Found it convenient to wait seated. Stressful to keep an eye on the screen. The waiting time is alright, 5-10 min, for some too long.



"The screen is okay, it quiet. But it was boring and did not match the interior"
 "I did not know to keep an eye on the screen, my friends told me"
 "I think the system is clever, you can follow your order."

The screen system is alright, no noise disturbance. Some did not know that they should keep an eye on the screen. Others, forgot to keep an eye on it, and did not discover their number. A break in chronological ordering let to confusion.



"I assume it's alright to pick up the food yourself - if it makes it cheaper"
 "When thinking at the price, I do not think that its good service"
 "It was alright"

It is fine to pick up the food if it makes it cheaper. Some were inattentive to station number at got confused and had to ask the employee to be sure. Others found it easy, and were surprised by the employee saying enjoy your meal. Was unsure if the number/receipt had to be returned or shown to the employees.



"I was disappointed with my burger - nothing was wrong, it just did not live up to my expectations, it was boring"
 I was very happy with what i ordered. But the food did not live up to my expectations and a bit tasteless"

Most participants were satisfied with the food, others disappointed. Some were ind doubt because it looked different compared to the pictures.



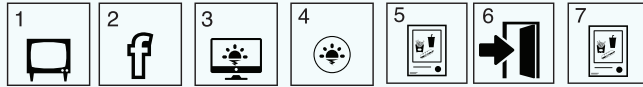
"The bin was naturally placed"
 "I think employees should do this"
 "Its okay if it reduces the price"

They found the placement of the bin natural, and were fine with doing it. Some think that it is the employees job to clean up.

This activity provided a large amount of user insight. Only fragments of the comments are presented here, to see all survey answers see [A6].

TEST PANEL RESULTS

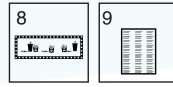
The test panel received a prepared survey right after the visit. The Survey answers and the design teams observations to each touch point is described here. See survey answers in [A6].



- None in the test panel use Sunsets website or facebook. They do *“not care, and do not see the point for using it.”* Although desktop research show that some people use facebook to communicate with Sunset Boulevard.
- Touch point 1, 2, 3, 4, 5 & 7 did according to the test panel, not work as Sunset Boulevards intends. The signs, both the store front, street sign and the tall indoor sign were all overseen by the test panel during the visit.



- The circumstances in the previous touch points sometimes result in disappointed and confused customers with several questions to the front staff.
- If the front staff do not answer as expected, customers can be disappointed but still need to or feel the need to accept the answer and continue the order, due to the line behind them and fear of having to go to the back of the line again. This is both annoying and time consuming, therefore they often choose to accept.
- The questions often relate to the price. They do not match the ones on the sign, and some of the service employees questions resulted in additional costs. This makes some customers feel cheated, and can result in an overall bad experience.
- The question and answering session between customer and service employee, delay the process, stress the service employees, and enlarge the line.



- The menu overview was most relevant for those who visit Sunset seldom.
- Those who eat there often are more familiar with the menu, and sometimes know what they want before hand.



- Again some customers experience lack of information, that trigger confusion.
- Employees, make the make order without customer contact, and the customer is self-served from hereon.
- The human relation between the service and the customer ends here.



- The whole process from finding the correct menu, the menu with only pictures, the full menu, the prizes, the add on alternatives etc. is the reason for all the questions the customers end up with when they finally reach the counter.
- The line makes it difficult to view the menus, without stepping out of the line.
- Some customers feel imposed to decide, when reaching the counter. The situation was for some experienced as stressful, and could result in ordering an undesired meal.



- Customers are fine by doing this themselves, its common and known in the fast food industry.
- Some expect that prices are lower, due to the self service.
- Some find it easier to do this themselves, because it avoids misunderstandings in regard to ordering.



- Customer appreciate to sit down, and choose their own table. The fixed seating makes it hard to adjust table sizes and chair amount if you are a group of people.
- Dirty tables and seats are unattractive.



- Waiting time is expected and accepted.
- Customers are forced to pay attention to a screen which for some results in a stressful waiting time.
- If you are more people you are forced to do multitasking, by focusing both on the screen and paying attention to your fellow customer.
- The screen presents all orders, by their order number. Customers expect the numbers to appear in numerical order. If it doesn't, customers become confused and afraid to lose/miss out on their food, they feel forgotten.
- The screen's graphic is not related to the interior.
- The screen also shows commercials, and forces customers to be even more attentive, it can result in frustration and might elongate the feeling of waiting time.



- The pick-up touch point sometimes creates confusion. Both orders and stations are marked by numbers, and these are sometimes mixed.
- New customers seem to be more confused about the pick-up system, and search for some kind of confirmation about which order is theirs. Packaging makes the orders look the same. This situation makes some customers turn to the employees for confirmation. This is the last time human interaction occurs, otherwise the customers are left to themselves.

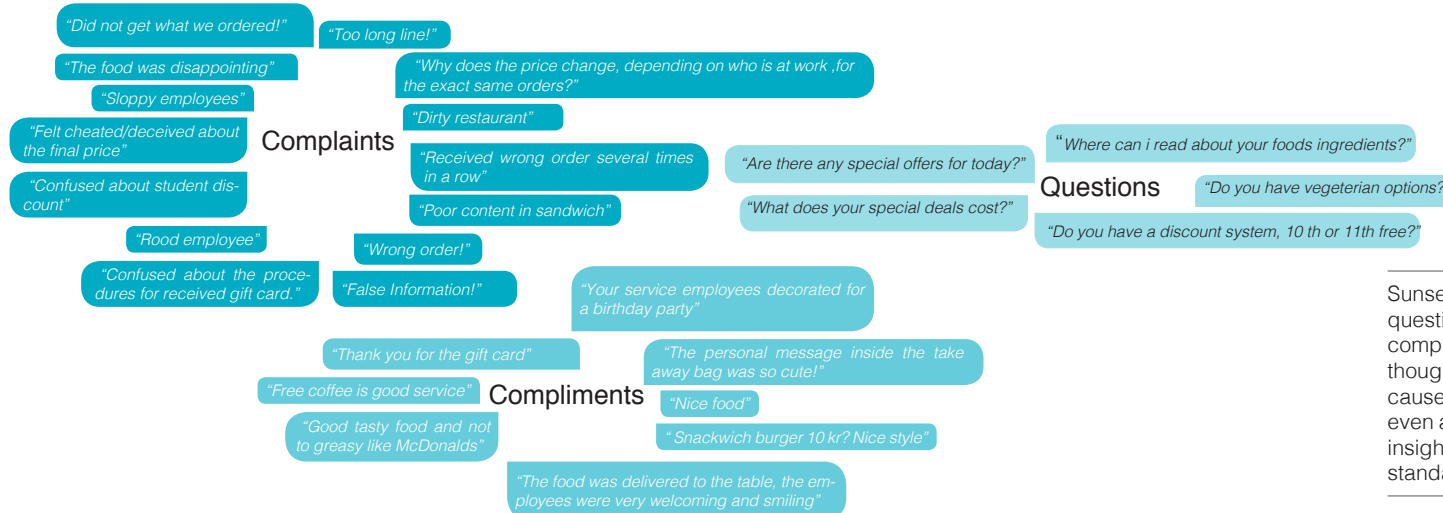


- The food is generally appreciated by the customers, the amount and freshness live up to expectations. It's a matter of personal taste if people have bad experiences. Some appreciate more salad, some prefer more meat, and others dislike the fries.
- The self-cleaning touch point is accepted, if it reduces the prices.

The test panel may have been influenced by the fact that they did not go there by personal desire, but because they were invited by the design team. It also turned out that only a few of the test panel participants were regular customers, most of them very rarely go there, or had not been there before.

FACEBOOK "FAN PAGE"

Since the majority of the test panel were users who rarely visit Sunset Boulevard the Facebook fanpage was scanned for user insight. The scan clarified that comments here originate from regular Sunset Boulevard users. The comments on Facebook were scanned and gathered from a year back in time until now. The comments that are repeated or unique are highlighted here. All comments can be seen in [A7].

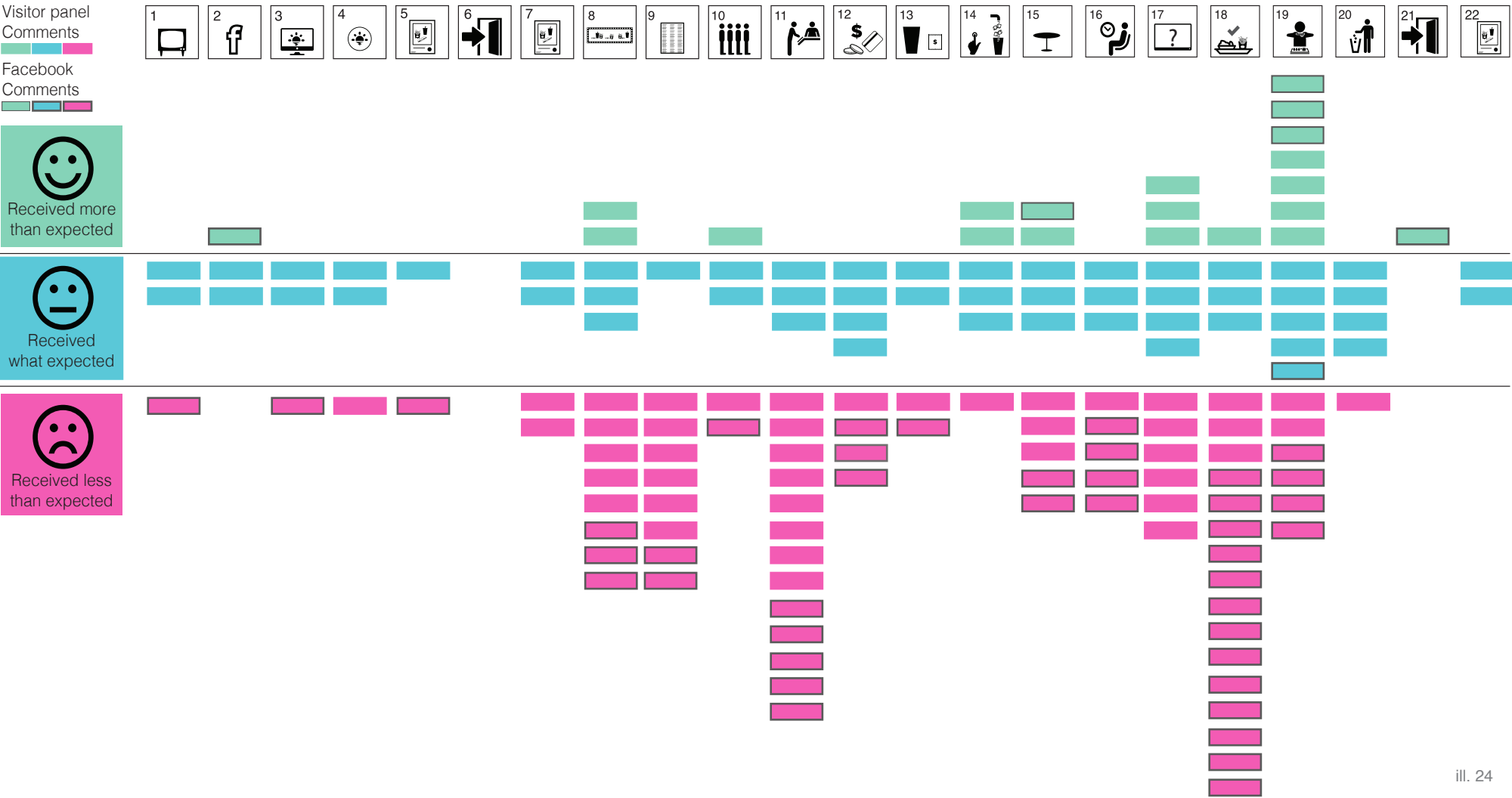


Sunset Boulevard's Facebook fanpage is used by customers to ask questions, give complaints or compliments. Sunset has a complaints/compliments site on their homepage, still people address their thoughts on Facebook instead. Either because it is easier and/or because they are unaware of this feature existing on their web page, or even about the existence of the web page. The comments give more insight about what customers have experienced and about what standards and expectations Sunset Boulevard's customers have.

EMOTION & EXPECTATION MAP

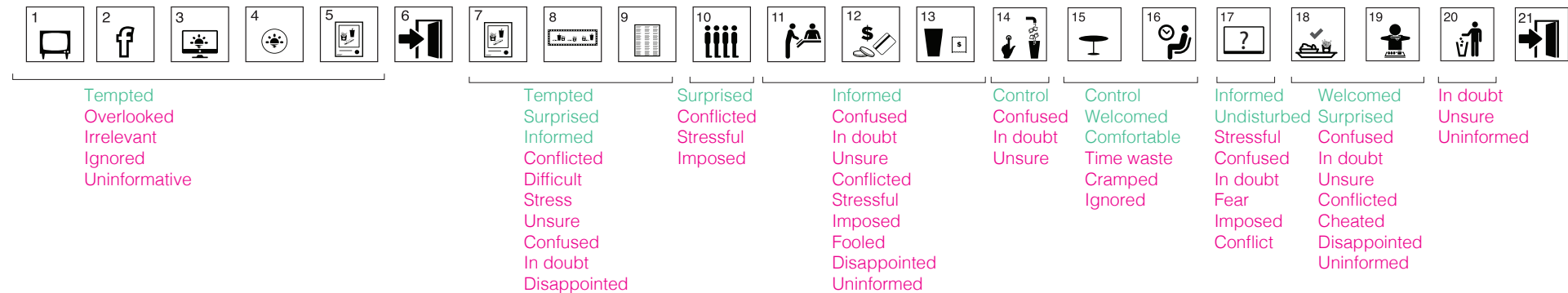
To get an overview of all the user insight so far, in relation to the user experience. All comments emotions and experience is put into a map. The comments have been categorized within the touch point they address to, and divided into 3 emotional categories.

This map gives an overview of which emotions appear at which touch point, and why. A complete map containing all comments, from earlier activities can be seen in [A8].



EMOTION KEYWORDS

Survey answers, facebook comments and the experience and emotion map made it is possible to extract some general positive and negative emotions to each touch point.



AS EXPECTED

From an overall point of view the service at Sunset Boulevard lives up to customer expectations.

MORE THAN EXPECTED

Looking into the situations, where the users experienced more than expected, its clear that it is the small things that provide a good impression with the users experience.

- Tempting pictures
- Nice selection
- No queue
- Individual choices (Ice/No ice in drink)
- Waiting time distraction (when tapping drinks)
- Smart quiet screen
- Service employee greeting or saying "enjoy your meal"
- Food quality (fresh, much, special fries)

LESS THAN EXPECTED

In situations where users experienced less than expected, there are indications of that there are several things that are repeated.

- Unclear overview
- Unclear combination possibilities
- Long waiting time
- Long line
- Stressful decision process (= lack of overview, line)
- Not transparent pricing - Unexpected additional costs
- Unclear discount possibilities
- Lack of engagement from employee
- Confusion about order nr. and pick-up station.
- Unclear circumstances regarding refill
- Dirty tables and restaurant
- Received wrong order

Mapping emotion and experience and the reason behind them as well as clarifying keywords, are important data in relation to the coming development of the additional service concept.

TOUCH POINT CRITERIA

The research results made it possible to define design criteria to the current service touch points, that either need improvements, to be strengthened or a complete review.



- More Attractive
- Easier access to the features they contain through another channel



- Better "Eye Catcher"
- Keep the tempting visuals
- More informative
- Short and clear information
- Updated



- Reduce negative emotions
- Clear, transparent pricing
- Relevant information
- Gathered information
- Overview
- Options



- Reduce negative emotions
- Reduce line
- Reduce time in line



- Reduce negative emotions
- Improve communication
- Reduce misunderstandings
- Reduce customer questions
- Clear communication



- Safe
- Quick
- Performs



- Reduce negative emotions
- Clear guidance



- Keep customer choice
- Clear information



- Reduce negative emotions



- Reduce negative emotions
- Clear information



- Reduce negative emotions
- Clear guidance



Some touch points, have no criteria, these are the faded icons. They are considered out of scope for changes in the service.

The concept will strive to fulfill these criteria.

REJECTION

The design team tried numerous times during the project to establish some sort of collaboration with Sunset Boulevard.

After an elongated communication process, with vague and loose answers, that in the beginning seemed optimistic but during the process turned less enthusiastic, Sunset Boulevard ended up rejecting a collaboration with the design team.

Therefore there will be a shortage in the project regarding everything concerning Sunset Boulevards activities, their point of view, and deeper insight to the current service they provide.

Sunset Boulevards reason for rejecting collaboration, was that after having discussed it with the main office in Esbjerg they had come to the conclusion that they were currently working with something very similar and did not want to accidentally leak confidential information to the design team!?



When it became clear that there would not be established a collaboration with Sunset Boulevard, the design team planned another strategy.

The design team exploited their personal network, and in that way tried to establish direct contact with Sunset employees. This actually resulted in a list with several service employees, two supervisors and one daily operations manager.

A meeting with 3 service employees was quickly arranged. This meeting was so informative, that the design team prioritized the potential other meetings with the other employees as unnecessary. See service employee meeting in Appendix.

Even though there was established and conducted a meeting with 3 Sunset service employees, conducting interviews with the supervisors and the daily operation manager, would not have replaced an actual collaboration with Sunset Boulevard. Therefore the project will still suffer from a lack of insight.

USER SEGMENT

It was necessary to define the users to keep focus on the right segment throughout the process. The test panel visit and survey clarified at least two user types, regulars and non-regulars. The research conducted so far combined with more desktop research made it possible to define a more specific user segment

SUNSETS TARGET GROUP

On their website Sunset Boulevard do not state who their main target group is, but Peter Hartvig who has been Development Manager for Sunset Boulevard since 1996 expressed in an article that "The target audience is primarily the 14-35 year olds with a fresh, sporty and low-fat lifestyle - in other words, a modern lifestyle! "(koda.dk) On their facebook fan page it was possible to clarify the age span of those who have clicked "Like". This reveal an age range between 18-24 year. [A9]

RESTAURANT LOCATIONS

All Sunsets restaurant addresses are available on the website. Going through these addresses revealed that Sunset favor two types of locations for their restaurants.

- 50 % in shopping centers. Many of these are also connected to or very close to a central station. One restaurant is in Billund airport.
- 50 % in city centers or in the cities shopping districts/streets.



This also tells about the type of segment that would drop-by for a snack, for various of reasons.

- Local residents
- Transit-area commuters
- Tourists

SEGMENT OBSERVATIONS

During observations in Sunsets restaurant the following segments have been spotted by the design team.

- Groups(2-6) of young girls and boys. 15-25 years of age.
- Couples (15- 40 years of age)
- Singles. Both men and woman. 30- 50 years of age.
- Adult girl-friends, 25-45 of age, with and without children.
- Families with both infants and teenage kids.
- Grandparents with their grandchildren.

ill. 28



The pictures are taken during a test. The design team have not taken any photos directly of the customers in the restaurant, to show respect for Sunsets customers. The images here show that the camera still caught some of them.

Based on these various observations and desktop research, it is possible to define a primary and secondary user type.

PRIMARY USER

People whom for various reasons have chosen Sunset as a favorite, such as their facebook fans. Typical causes discovered are:

- Especially fond of their food
- Find their food is healthier than others
- Find their food is fresher than others

There are also those who live or work near by, who choose Sunset for various reasons.

- Especially fond of their food
- Find their food is healthier than others
- Find their food is fresher than others
- Find it is convenient
- May not have many other options

SECONDARY USER

Random passers by, for various reasons:

- Shopping break
- Travelers, Tourists
- Commuters (Restaurant in central stations/bus/train)
- Holiday (Parents/Grandparents treating their kids/grandchildren)

As mentioned the solution will be an app concept Sunsets existing service. And because an app must be downloaded and be retrievable on the phone, one can imagine that this would be more relevant to customers who come regularly than casual visitors.

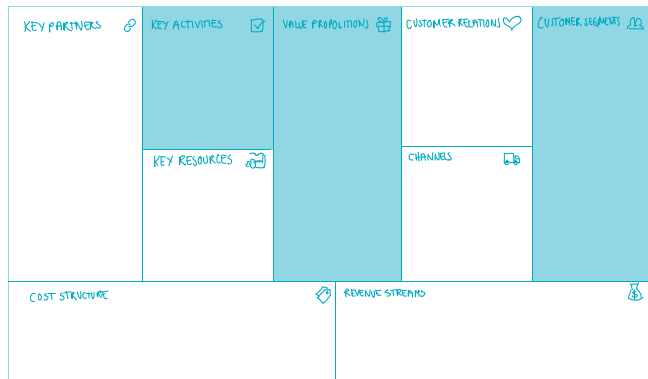
The project will focus on the primary users.

BUSINESS MODEL CANVAS

To get an understanding of Sunset Boulevards and Huge Lawns current business structure, Business Model Canvases were made to clarify the structure, clarify where the design team lack information, clarify opportunities, and weak areas as well as locating or defining success criteria.

The most conspicuous building blocks from each BMC are highlighted here. The complete BMC see [A10].

HUGE LAWN



KEY ACTIVITIES

- Networking
- Developing software platforms
- Running the business

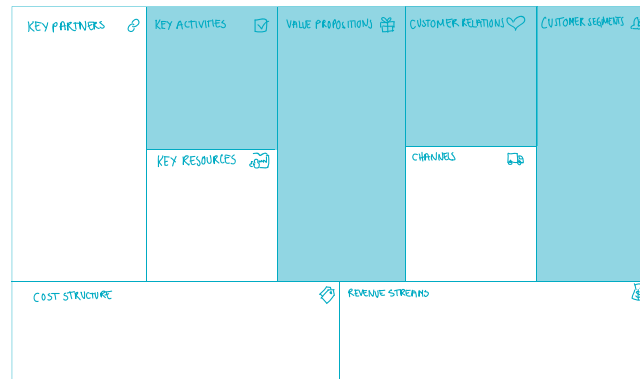
VALUE PROPOSITION

- "Saving the World, One App at a Time"
- "Everything from concept development to graphic expression takes place in collaboration so you get exactly the solution you want."
- Performance - Huge Lawn stands out due to over 5 years experience within app development.
- Newness - iBeacons knowledge is a way to be ahead of others in the industry.

CUSTOMER SEGMENTS

- They create solutions for all types of customer segments and industries. Everyone can join the "App world".
- Note: They have not yet made an app within the restaurant industry.

SUNSET BOULEVARD



ill. 29

KEY ACTIVITIES

- Service customers
- Operate service

VALUE PROPOSITION

- "Satisfy situationally determined needs that people have for fast, delicious, varied and honest food, served in a welcoming environment, which together provide the guest a seamless, positive experience."
- Getting the job done - Fast food.
- Brand status - Delicious, varied and honest food.
- Accessibility - Satisfy situationally determined needs.
- Convenience - Fast food.

CUSTOMER SEGMENTS

- Mass market - Do not distinguish between customer segments, focus on customers with broadly similar needs.

CUSTOMER RELATIONSHIPS

- Self service
- Personal assistance

SUCCESS CRITERIA SUNSET: BOULEVARD

- Must not change Sunset Boulevard's value propositions, their brand and identity, but rather help strengthen/reinforce them. Sunset's brand is what distinguishes them from other fast food chains.
- Will not change their products (food, drinks) or invade/change their current physical service offer. Only add services.
- The solution must not exclude segments types. Although a predetermined condition in this project is that the customer must have a smart phone.
- Personal assistance is not required for the service to function. But there is need for human presence. In cases of questions, unforeseen incidents, atmosphere etc.
- Obs! Personal assistance is required for the current service to function.

SUCCESS CRITERIA: HUGE LAWN

- The restaurant industry is not a current client segment at Hugelawn, this means an opportunity to be at the forefront, if a client within this industry "knocks on the door".
- Hugelawn work with creating platforms, and desire "shelf solutions". A generic and scalable solution within the restaurant industry will therefore be a criteria.
- It will be important with a structure for how to implement beacons.

Conducting the BMC clarified criteria for the concept solutions, for both Case 1 Huge Lawn and Case 2 Sunset Boulevard. These criteria will be part of the final design brief.

Success criteria for Huge Lawn.
Success criteria for Sunset Boulevard.

DESIGN BRIEF

The project deals with a double case structure, with Huge Lawn as Case 1, and Sunset Boulevard as Case 2.

To handle the complexity level of the project, a design thinking approach was required. This approach gave an overview and a strategy of the core elements and how they relate to each other.

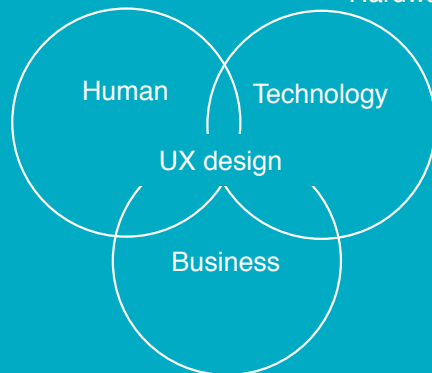
DESIGN THINKING APPROACH

The project deals with exploring the technology iBeacons in relation to user experience. Setting iBeacons as a condition from start makes this a technology push project. But the technology is not justified existence if it is not commercially viable and justifiable in relation to human values.

Therefore the core elements in the design thinking approach is Technology, Business and Human, and these must connect in synergy to create a coherent User Experience.

The results from the research define and specify the core elements even further.

- Experience
- Emotions
- Usability
- Desirability
- Human values
- Ibeacon
- App development
- Software
- Hardware



- Marketing
- Implementation
- Operation
- Platform strategy
- Aftersales
- Service

PROJECT



Huge Lawn software - a medium sized application development company.

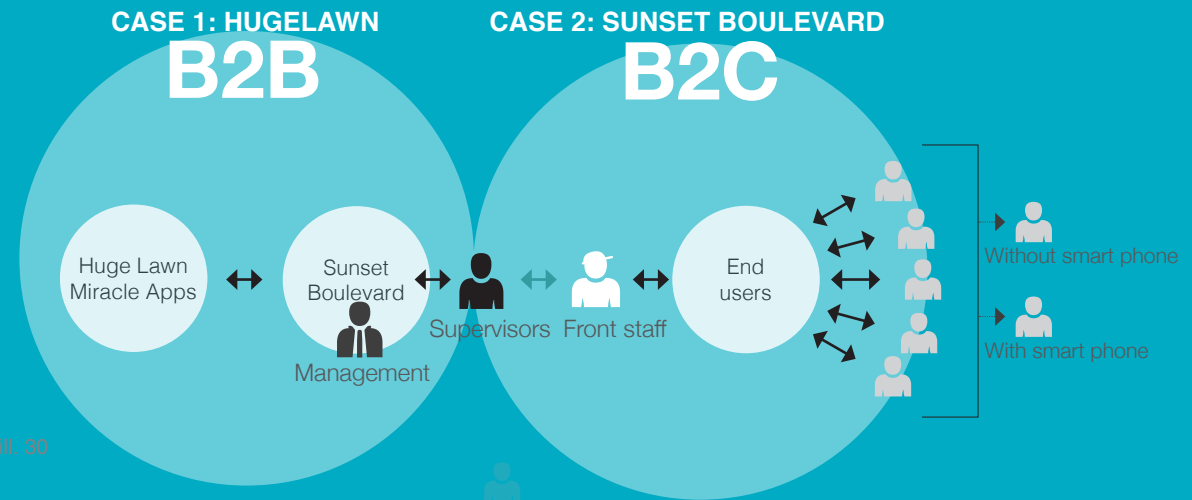
They develop applications to iPhone, iPad and android. They do everything from ideation to implementation and maintenance in collaboration with their clients. Currently exploring ibeacon possibilities.

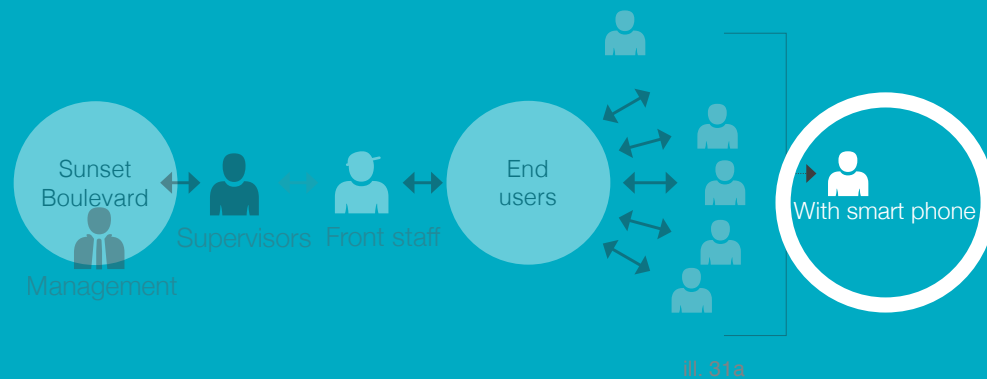
Sunset Boulevard - a Danish fast food chain company.

- Mostly sandwiches and burgers
- Main office in Esbjerg
- 40+ Restaurants in Denmark
- No application
- High amount of self-service

STAKEHOLDERS

A double case structure, results in multiple stakeholders. The illustration gives an overview of the stakeholders. Due to Sunset Boulevards rejection to collaborate, the project will mainly focus on Huge Lawn and an app for Sunset Boulevards customers.





USER SEGMENT

- The solution will be developed for the primary users with smart phones.
- People whom for various reasons have chosen Sunset as a favorite.
 - Those who live or work near by, who choose Sunset for various reasons.

SUCCESS CRITERIA SUNSET: BOULEVARD

- Will not change Sunset Boulevards value propositions, their brand and identity, but rather help strengthen/reinforce them. Sunset's brand is what distinguishes them from other fast food chains.
- Will not change their products (food, drinks) or invade/change their current physical service offer. Only add services.
- The concept must not exclude segments types. Although a predetermined condition in this project is that the customer must have a smart phone.
- Personal assistance is not required for the service to function. But there is need for human presence. In cases of questions, unforeseen incidents, atmosphere etc.
- Obs! Personal assistance is required for the current service to function.

SUCCESS CRITERIA: HUGE LAWN

- The restaurant industry is not a current client segment at Huge Lawn, this means an opportunity to be at the forefront, if a client within this industry "knocks on the door".
- Huge Lawn work with creating platforms, and desire "shelf solutions". A generic and scalable solution within the restaurant industry will therefore be a criteria.
- It will be important with a structure for how to implement beacons.

CONDITIONS

- Sunset Boulevard has declined any form for collaboration, therefore the concept focus will be on the customers. This will also effect the project scope in relation to the activities an extra service in the form of an App will require form Sunset Boulevard.
- Due to lack of competencies within coding software, there will not be developed a fully functioning Application, only a simulation.
- The outcome depends in some extent on the collaboration with Huge Lawn.

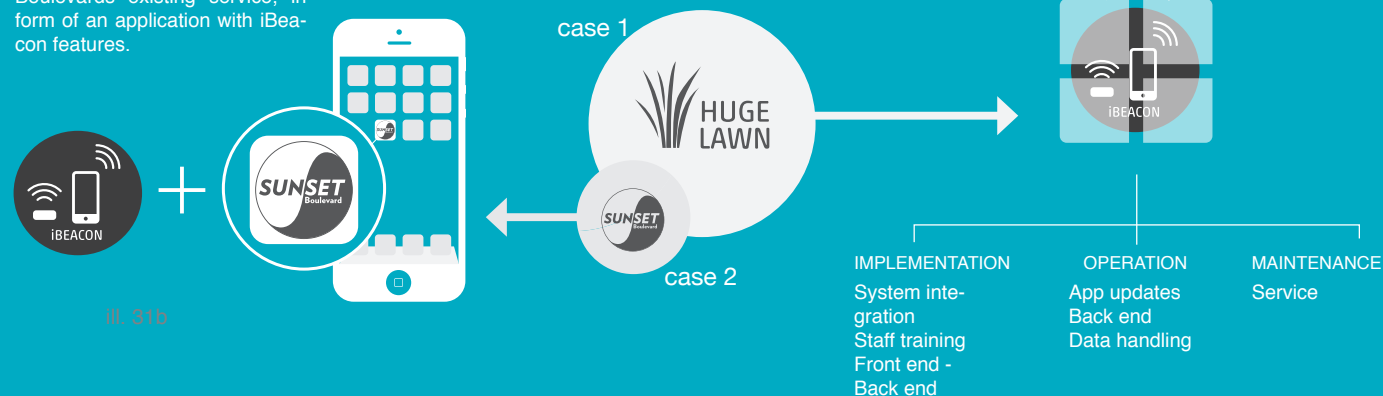
DEMANDS

- Focus on the primary users, user experience.
- Develop an App concept.
- The concept will be an additional service to Sunset Boulevards current existing manual service.
- The additional service will be in form off an application with iBeacon features, for smart phones.
- Focus on reducing the negative emotions and strengthen the positive emotions, described in the Empathy map.

DELIMITATIONS

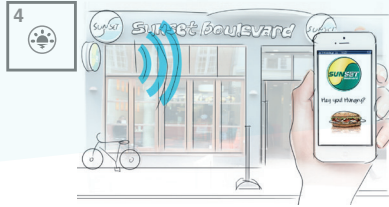
- The focus is not to redesign the current service. The concept will not contain solutions related to the physical current service.
- We cannot program the Application ourselves. Therefore concept testing will executed with Flinto simulations.
- The cost will only be calculated based on Huge Lawn activities in the roll out plan.

An additional service to Sunset Boulevards existing service, in form of an application with iBeacon features.



EXTREME CASE

Until now, the report has been a description of how the project is framed. The design brief is the basis for the concept development. A new ideation was made, continuing the previous Empty head ideation on page 19. The goal was to create ideas to each single touch point, All ideas, both realistic and unrealistic were "allowed". The ideas are illustrated, described and reflected on in the following pages.



- Hey! I am right here
- Hey! Hungry?
- Deals
- Coupons

- A beacon can remind customers that they are close to a restaurant, tempt with offer.
- Pushes are stored in notification center, if not registered at location. Customer can check notification center at anytime.
- Too aggressive push messages can feel like spam.



- Offer
- Deals
- 3 to go - 5th is FREE!
- Help Aid - Sound- Visual impaired



- If customers have a profile in the app - they can receive customized pushes.
- Customers might be frustrated if the pushes are not related to the sign? These pushes could be activated after the customers have been standing near the sign for 3-5 seconds. People that just pass by will therefore not receive the push.



- Beacon register your approach and opens the door for you



- Fun feature, far out idea - though it can be implemented.
- There are already solutions at the marked to open the door if you get near.
- Seems overkill to let beacons do it.
- Might be annoying if the door opens every time someone with the app comes near the door.



- Welcome push
- Offer / deals
- Navigation map

- Multiple possibilities for what a push messages could contain.
- The welcome push can guide the customers in how to use the application.
- Can provide special deals
- Navigation map might be unnecessary - The restaurants are not that big, arrangements is familiar and traditional.



- Beacon zone's
- Menu overview
- Offers/deals
- Menu options
- App functions
- Do it all at the table, while sitting down.

- In stead of walking around to all signs to get information this information can be included in the application.
- The atmosphere inside the restaurant can be more nice and quiet, because customers are not walking around. Employees do not have to spend time on explaining the menu, prices etc.
- Customers are able to find all information in one place.
- Customers can use the time they want, are not forced to make stressful decisions.
- No human interaction, some customers might feel that this is a loss.



- Play games
- No line, you're at the table ordering

- No need to stand in a line with the service the app can provide. (Though there will still be a digital "invisible" line within the orders)
- Customers do not have to leave the line in search of information (to see all signs)
- They will not experience stress in relation to deciding before reaching the counter.
- Customer decides their ordering pace.
- Customer can also customize order in the app.
- The employee can focus on making the orders.
- This can reduce the number of tasks for the employee.
- No line of people fill standing in the restaurant.



- No human interaction, you're ordering on your iPhone
- Additional sales

- This touch points can instead be a function on the application.
- Employees will not have to answer lots of questions
- If customer has questions they might still have to seek an employee.
- No variation in prices.
- Customer question will not expand the ordering time and line.
- Employees can focus on preparing the order.
- There is no direct additional sales, but this can also be incorporated in the app.



- Welcome push, sit down etc.
- Hey I am clean push
- Table beacon can read how far you are in the process
- Ordered
- Waiting
- Received
- Push after needs.

- Beacons placed on every table gives possibilities for extra notifications. The application could have control over where the customers are in the process, and whenever receive signals from a beacon, the app controls what information that pops up.
- Possibility to receive relevant information at relevant time.
- Too many push messages can be disturbing
- Customers might rather want to have the option to find the information, instead of being spammed with push messages.
- This can give Sunset additional sale opportunity.



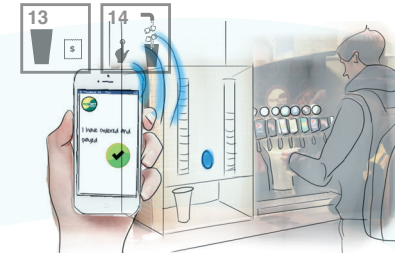
- Pay with phone
- Standard component, Paypal or Paii

- This touch points can instead be a function on the application.
- Customer can have control over the price and additional costs while ordering, and there will not occur price surprises when they pay.
- Customers could automatically get discounts (if they are registered as students)
- They can easily check the complete order before they pay.
- Payment info registered in app
- Customer cannot pay with cash or card.
- The employee does not need to take gloves on and off so many times, because they are not handling money.
- Do not have to hold on to a receipt
- There is no confusion with remembering your order number.
- The order is saved inside the application
- They have the complete same information as the customer
- App ordering is integrated in Sunsets current POS



- Games
- Access to magazines/newspapers
- Sunset info
- Order finished process.
- Note: Keeps focus on phone

- If beacons are placed on the tables, the app could know when a customer is waiting and send notification about games, magazines etc. This also keeps customers focused on their phone while waiting for their "order ready" push. Customers focus at their phones and sees when the order is ready.
- Entertained when waiting
- V.I.P feeling if you get special access to something.
- To many activities can be overkill and disturb the customers when they are waiting.



- This is part of the order, Service employee does it
- Beacon cup vending machine

- This touch point will slightly be changed in relation to when the customers receive their cup.
- They can get their cup by holding their phone near the dispenser beacon.
- They have to bring their phone to tab drinks.
- The employees do not have to hand over cups.
- This idea requires product design which adds an extra cost and implementation.
- An alternative is that customers will have to wait to get their cup until their food is ready.



- Pick up push!

- Customers will not be disturbed paying attention to the shop screen.
- Reduce confusion if the order numbers does not appear chronological on the screen.
- Screen must be there for those who use the service manually.

18



- "X-ray" your order, to make sure it is yours

- The x-ray idea is just to illustrate a possible feature could be some way determining that the order is yours.
- Simply showing the order on the phone to the employees might be enough if they are in doubt of which order is theirs.

19



- Bon Appetite/ Enjoy push
- Rate the food
- Additional sales

- Can be perceived as disturbing for the customer, but if done right it could be perceived as a pleasant greeting or discrete question.
- If there are issues, this gives the customers a quick rating access. Sunset can get more accurate feedback from the customer, because they answer "in action".
- Extra service getting the "Enjoy" push. "Humanising" the technology.(?)

20



- Thank you for helping
- Remember to clean
- Beacon opens the trash can for you

- A reminder and reassurance that yes, that's how it works here. " We hope you will clean up to..." The "help us" push must come before they leave, and after eating, or else they won't see it. Since they are carrying their tray with both hands, and the phone in their pocket.
- More customers might clean up, which reduces cleaning time for employees
- A "clean up" push can be perceived as annoying or irritating.
- Cleaning up process is a two hand activity, therefore if the beacon can open the trash it might be both useful and fun, but like with the cup vending machine and door opener, this can be solved in a simpler way.

ill. 34



- Open door
- Good Bye / Thank you
- Compliments/Complaints?
- Next week deal
- Next time it is FREE

- Beacon opening the door might be a bit too much, unnecessary.
- Sunset should rather exploit the last chance to give the customer a last good impression of the service experience.
- The customer can feel appreciated - unlike today, where the customer leave without any attention from the Service employees.
- This last impression can motivate customers to come back
- A good offer can also motivate return

ADDITIONAL FEATURES - (NOT A PART OF CURRENT TOUCH POINTS)



- Make a Pre-order and take-away order. Beacon can register when you enter the restaurant to get your pre-order.

- Pre-order can bring Sunset closer to their customers. The customers can plan ahead, and pre-order on the phone, if they don't want to wait inside the restaurant, but just order and pick up at a desired time. Or a commuter can pick up a pre-order on the way to the train/bus and in that way save time. There are many imaginary scenarios possible with this feature.

This ideation reveals many opportunities in connection to Sunsets service, ibeacon and user experience. This sets the base for a definition of new service touch points. Describe later.

SUNSET BENEFIT IDEAS

Simultaneously during the ideation on features for the user, there was ideas on how Sunset Boulevard could benefit from the ibeacon app was clarified.

Ibeacons can also receive signals, and thereby the app can report back to Sunset with various information.



- How many receives push



- How many of them enter
- Time of entry



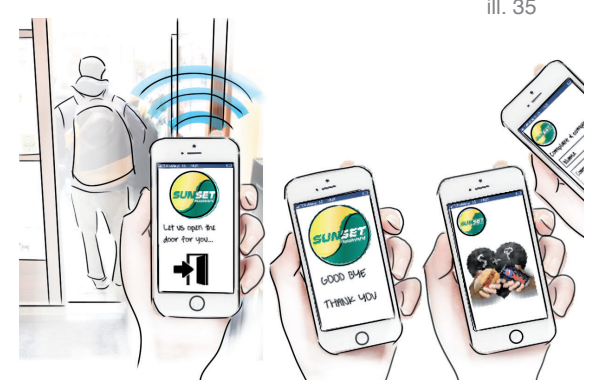
- Register / track customers movements in store



- Register what people choose



- Register when they receive their food, compared with time of entry and order



- Register time of departure and total time of visit

Sunset could use the reported statistics for

- Identify potential for efficiency
- Identify customer wishes, get "closer" to their customers.

If the data is read the right way Sunset could improve their entire service according to the data from their customers.

BEHAVIOR MODEL

To identify which ideas, from the extreme case, to keep and which to eliminate, BJ. Fogg Behavior model is applied. The reflection to the ideas eliminated some, but only based on assumptions. The intentions is that this model can support and give more valid basis for the elimination of ideas.

Fogg behavior model, FBM is intended as a guide for designers so they can identify what stops people from performing behaviors. (B.J. Fogg. A Behavior Model for Persuasive Design.)

B.J.Fogg defined the concept "Captology". Captology is the study of computers as persuasive technologies. It explores the overlapping space between persuasion in general (influence, motivation, behavior change, etc.) and computing technology.
(wikipedia.org/wiki/B._J._Fogg)

"The model is a product of three factors, motivation, ability and triggers, each of which again has subcomponents. For a person to perform a target behavior, he or she must be;

1. Sufficiently motivated,
2. Have the ability to perform the behavior, and
3. be triggered to perform the behavior. These three factors must occur at the same moment, else the behavior will not happen." (B.J. Fogg. A Behavior Model for Persuasive Design.)

MOTIVATION

"The users who have high ability but low motivation need to have motivation increased so they cross the behavior activation threshold.

1: Pleasure / Pain

People respond to what's happening in the moment. Pleasure/pain is a primitive response, and it functions adaptively in hunger, sex, and other activities related to self-preservation and propagation of our genes. Pleasure and pain are powerful motivators. When designers are seeking to boost levels of motivation, they can look at how pleasure and pain can be embodied.

2: Hope / Fear

Hope is the anticipation of something good happening. Fear is the anticipation of something bad, often the anticipation of loss.

3: Social Acceptance / Rejection

This dimension controls much of our social behavior, from the clothes we wear to the language we use. It's clear that people are motivated to do things that win them social acceptance. Perhaps even more dramatically, people are motivated to avoid being socially rejected. Today, with social technologies a reality, the methods for motivating people through social acceptance or social rejection have blossomed." (B.J. Fogg. A Behavior Model for Persuasive Design.)

ABILITY

"Time

If a target behavior requires time and we don't have time available, then the behavior is not simple.

Money

For people with limited financial resources, a target behavior that costs money is not simple.

Physical Effort

Behaviors that require physical effort may not be simple.

Brain Cycles

If performing a target behavior causes us to think hard, that might not be simple.

Social Deviance

Social deviance is going against the norm, breaking the rules of society. If a target behavior requires me to be socially deviant, then that behavior is no longer simple

Non-Routine

People tend to find behaviors simple if they are routine, activities they do over and over again. When people face a behavior that is not routine, then they may not find it simple

Each person has a different simplicity profile. Some people have more time, some people have more money, and some people can invest brain cycles, while others cannot. These factors vary by the individual, but they also vary by the context. " (B.J. Fogg. A Behavior Model for Persuasive Design.)

TRIGGERS AND TIMING

"Without an appropriate trigger, behavior will not occur even if both motivation and ability are high. Also timing, is often the missing element in behavior change. In fact, this element is so important the ancient Greeks had a name for it: kairos – the opportune moment to persuade. In FBM the opportune moment for behavior performance is any time motivation and ability put people above the behavior activation threshold.

Sparks

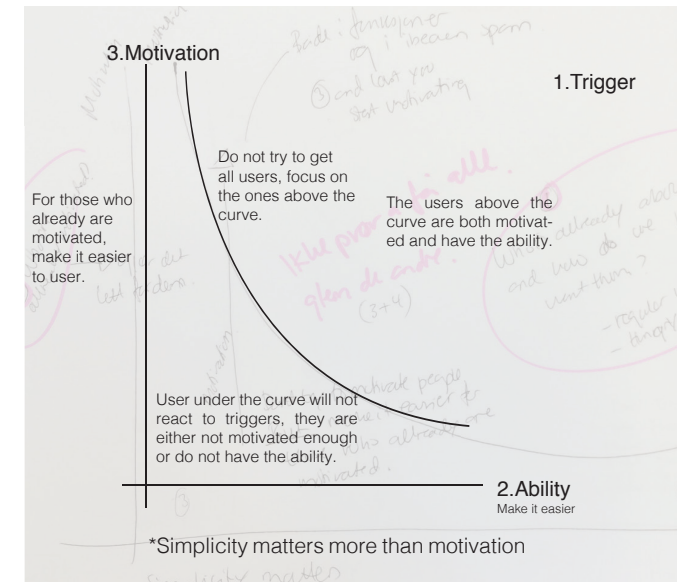
When a person lacks motivation to perform a target behavior, a trigger should be designed in tandem with a motivational element. Examples of sparks can range from text that highlights fear to videos that inspire hope.

Facilitator

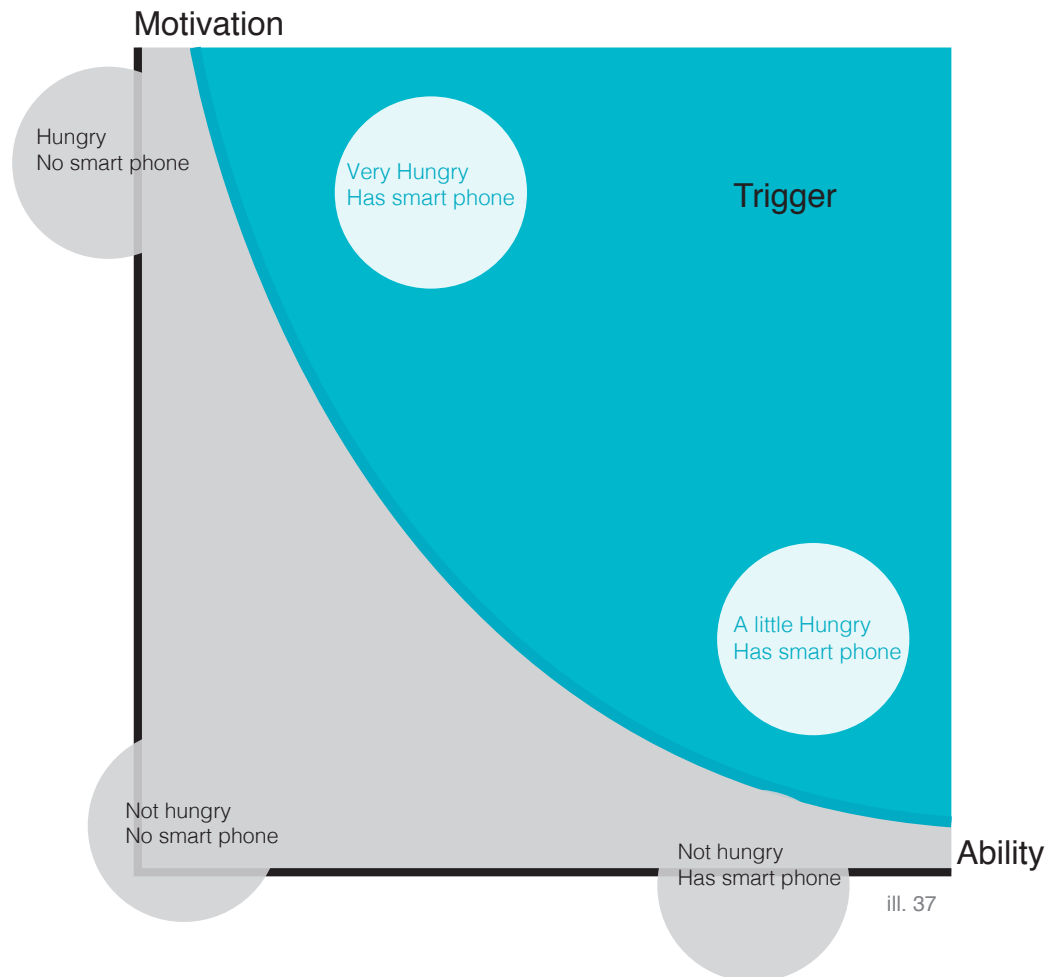
This type of trigger is appropriate for users that have high motivation but lack ability. The goal of a facilitator is to trigger the behavior while also making the behavior easier to do. Like sparks, a facilitator can be embodied in text, video, graphics, and more.

Signal

This trigger type works best when people have both the ability and the motivation to perform the target behavior. The signal doesn't seek to motivate people or simplify the task. It just serves as a reminder." (B.J. Fogg. A Behavior Model for Persuasive Design.)



ill. 36



INESCAPABLE CONDITIONS!

The FBM clarifies some focus areas to keep in mind in the further development of the concept. Where to keep focus, and which elements are not within our control and which are, where and when the solution can exploit the 3 different factors in a behavior. It also clarified some inescapable conditions.

- If a person that is either very hungry or a little hungry, and also has a smart phone with the app from sunset, gets a trigger in form of an ibeacon push message, that person can be triggered to perform the behavior of choosing to have a meal at Sunset Boulevard.
- iBeacons are perfect for Triggers in the form of a spark or signal.
- Peoples ability depends, in this project, solely on the customer having a smartphone

- The FBM also clarified that the concepts most primitive motivation is Hunger.
- Peoples fear of being socially rejected, can be used as arguments from Sunset Boulevard when introducing the app and trying to get people to download it, in addition to all the other benefits the app would provide the customers.
- To avoid that people find the app non-routine, and try to make the app as intuitive as possible, it might be a good idea to take inspiration in the digital shopping context areas that people already are familiar with, when developing the app.

MOTIVATION

• **Pleasure / Pain**

Fast food chains existence is based on peoples primitive urges, in relation to Hunger. Hunger is the strongest motivation in this case.

- **Social Acceptance / Rejection** People are motivated to avoid being socially rejected, therefore this might also be a reason/argument Sunset Boulevard could to use when trying to get people to download and use the app.

TRIGGER

- **Sparks** - In relation to get the app in the first place, TV commercial, marketing on facebook, and physical signs can work as sparks.
- When the app is downloaded, iBeacons function perfekt as sparks.
- **Facilitator**- The users smart phone and app will be the facilitator.
- **Signal** - Hungry people, with the app on their smart phone need a signal = ibeacon!

ABILITY

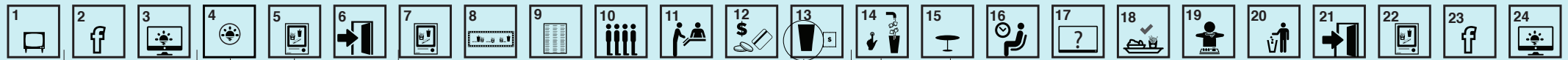
In this project there is not really a discussion of high or low ability, but ability or not. The customers need a smart phone and the app to have the ability.

- **Time:** The customers decides and is more in control of the time/pace with the app than with the current service.
- **Money** = The intention is that the app is free!
- **Physical Effort**- For some, the manual service might seem easier.
- **Brain Cycles**- For some, the manual service might seem easier.
- **Non-Routine**- The app must exploit familiar ordering processes etc. to avoid being perceived as a non-routine. People are becoming familiar with shopping Online, therefore for some people, familiarity from this context might support the process in the app.

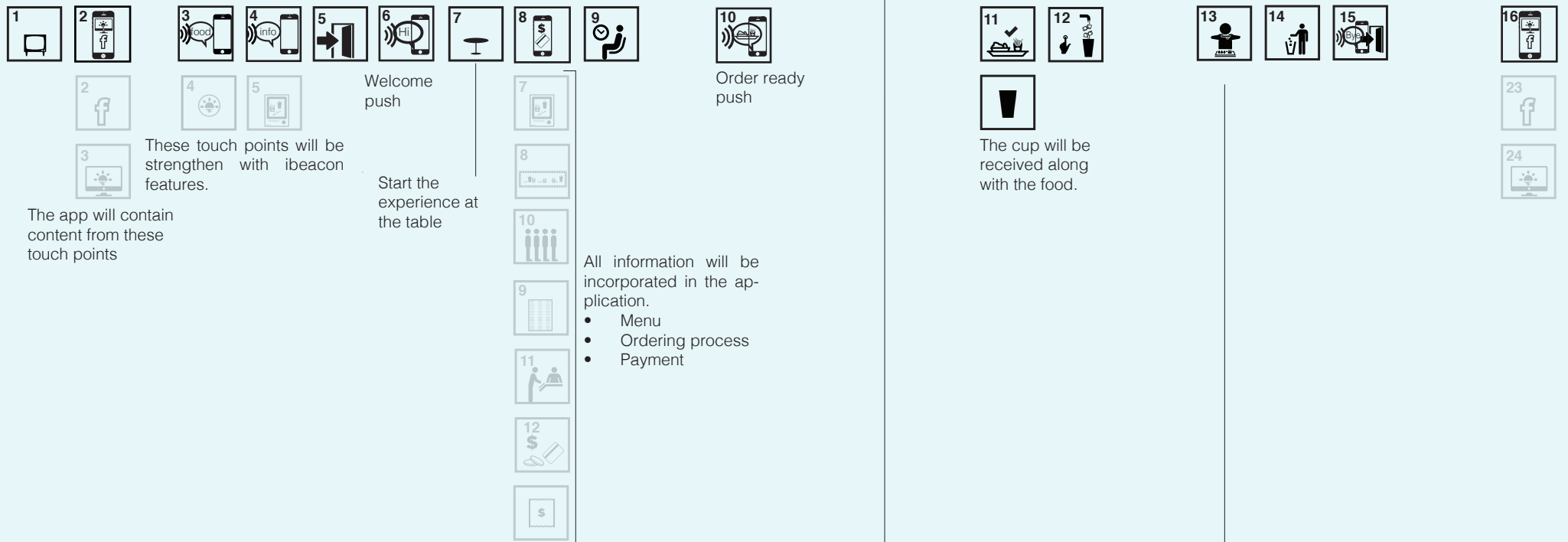
NEW TOUCH POINTS

The FBM helped reduce ideas from the extreme case. Regardless how many fancy features the app may contain, it does not matter if people do not have the ability. Simplicity matters more than motivation, and with this note in mind, the new service touch points were defined. The new touch points consist of the basic features the app must contain to perform the service, and some additional features that will strengthen and improve the existing service, for the targeted segment in this project.

EXISTING SERVICE TOUCH POINTS



NEW SERVICE TOUCH POINTS



JOKERS

Features that could be added in future app updates.



Activity push
Entertainment



Rate food push
Enjoy meal push



Clean up info push

APP ANALYSIS

An analysis on existing apps is made to get an overview of what exists on the market, and to find inspiration for the concept. App's similar to Sunset Boulevard, or industries/companies with a lot of assets who might have spend more money in the development of their app's were interesting to analyze.

The following app's were tested and analysed.

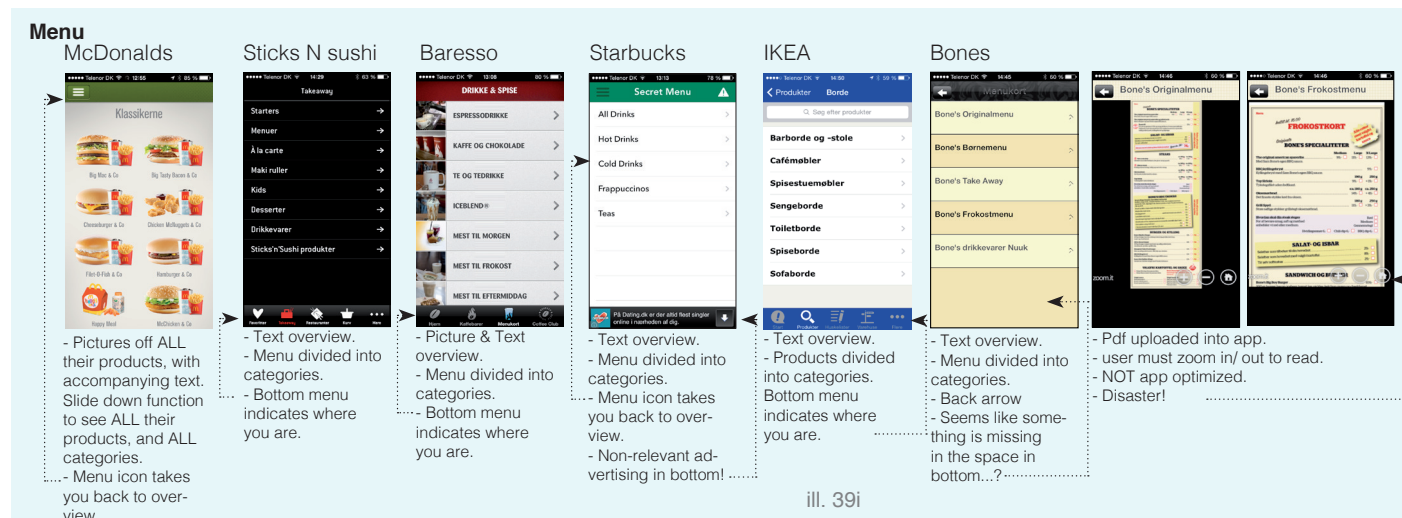
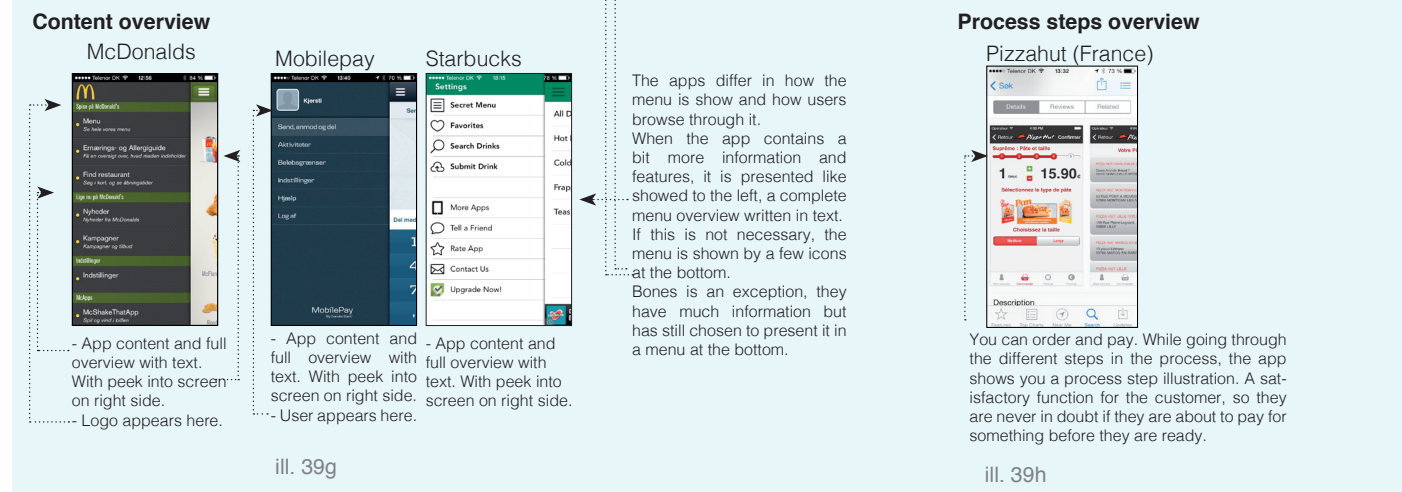
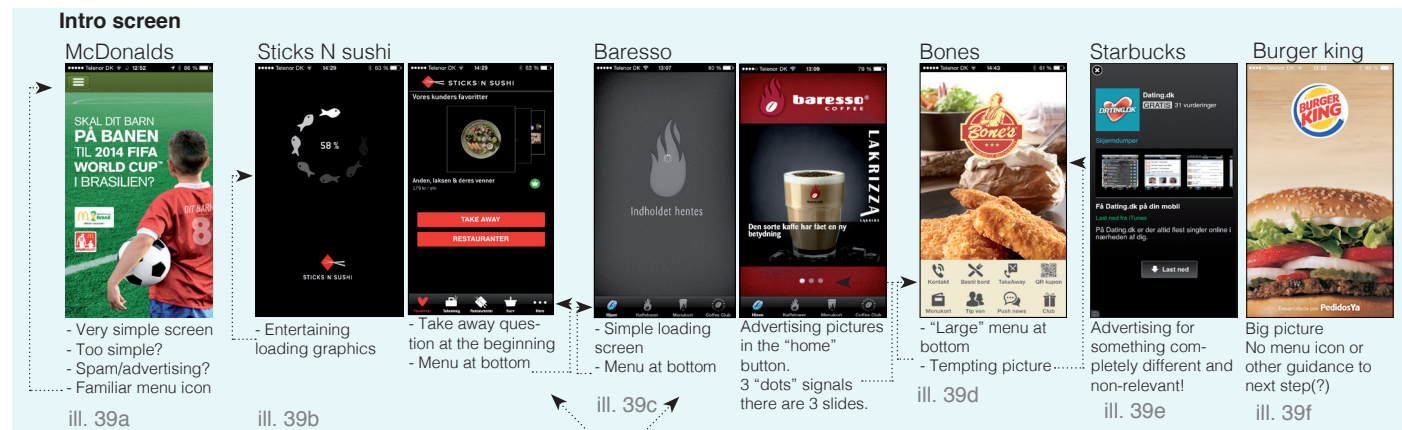
- McDonald's
- Burger King
- Sticks N Sushi
- Bones
- Baresso
- Pizzahut
- Starbucks
- Ikea
- Zerved

Payment app's were also researched and tested, since this feature will be part of the concept.

- Mobilepay
- Pail
- Paypal

The basis for the analysis was to find inspiration, and test what works and what does not. The following topics were analysed in each app.

- Use flow
- Flow structure
- Graphic elements
- Arrangement of functions
- Special functions
- Screen information load
- Smart features
- Annoying features
- Information subdivision
- Information prioritising



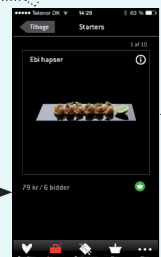
Menu details McDonalds



- Same picture as in menu with very informative tekst.
- No price

ill. 40a

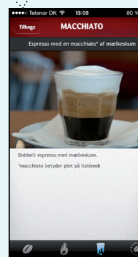
Sticks N sushi



- First picture of their product, minimal text.
- Price information.
- Basket opportunity.

ill. 40b

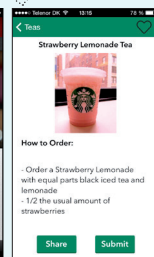
Baresso



- Picture of product, with text.
- No price.

ill. 40c

Starbucks

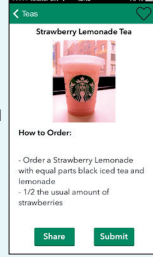


- First picture of product, with text/recipe.
- No price.

ill. 40d

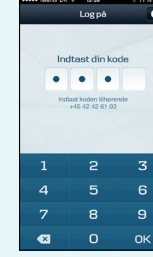
All apps have a "back" arrow, when user is "far into" the app and the content.

Favorite Starbucks



Touch the little heart, and this product will be saved in the favorite section in the app content overview. So that the user does not need to remember the different tempting products. The heart goes from being a line, to a "filled" heart.

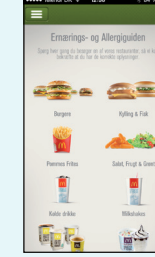
Payment & code Mobilepay



Mobilepay have a very easy and simple interface. Once you have registered and created your personal 4 digit code, thats all you will ever need to remember and use every time you log in to the app.

ill. 40e

Nutrition & Allergens McDonalds

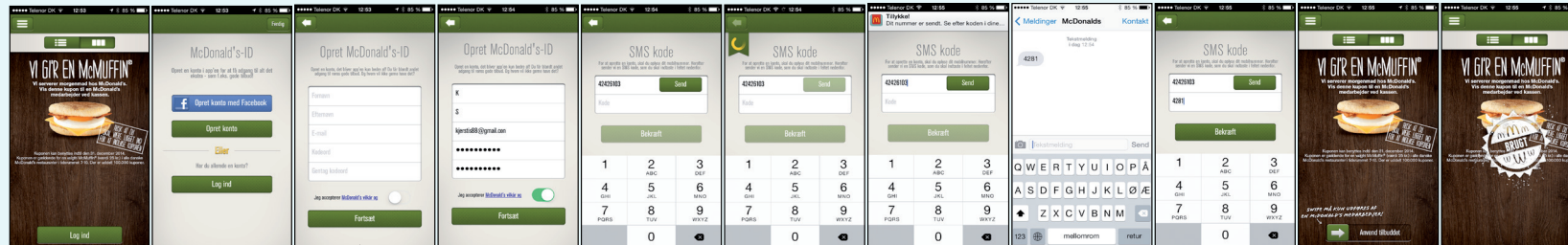


McDonalds have an impressive Nutrition and Allergens overview for ALL their products.

ill. 40f

Offer/ coupon & loyalty/ club registration

McDonalds



McDonalds have a smart function where they give a free McMuffin, all you need to do is log in og register and create a Mc-ID. When you have, you get a "coupon" that a service employee needs to swipe, and then it gets "stamped" with a "this coupon is used"! Both fun, and a create way to get people to register.

The registration "sheets" are also cleverly illustrated, with the text inside the box. It gives the impression there is not a lot the user needs to fill out, because it "fill" so little on the phone screen.

Bones ill. 40f



Bones registration "sheet" is the complete opposite, and as a user you do not even want to start filling everything out!

User guide

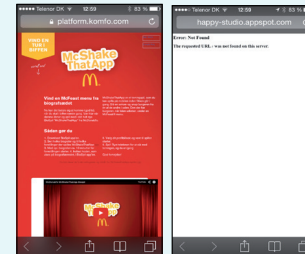
Paii ill. 40g



The payment apps usually have a users guide, this is paii's user guide. Paypal and Mobilepay also give you a quick instruction, demonstrating how "easy" it is.

McApps / www.

McDonalds



McDonalds have a feature called McApps, which does not come with further explanation. But when you click them your safari opens, and starts loading a website. It was irritating, to be involuntary "thrown" out the app and into safari.

The apps functions are often the same but are communicated and visualized differently.

Many of the analyzed apps have:

- Intro screen(s),
- Content overview
- Some have a menu and menu details.

- They differentiate themselves, with features like:
- Favorite marker
- Steps overview
- Nutrition and Allergens overview
- User guides
- Offer/coupons, club registration
- Application information
- Application in application links

The analysis will be used as inspiration for the concept.

WIRE FRAME SKETCHING

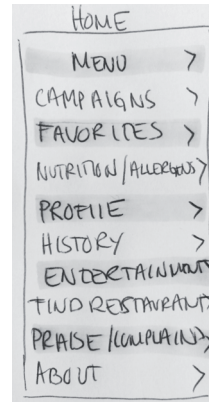
The application features and main elements are determined based on the new touch points and the app analysis. To figure out more specifics and investigate the structure and features flow, wire frames were sketched by hand and placed beside each other in the flow they were intended.

The app analysis (picX) was actively used for inspiration both for user interaction, and solutions to issues discovered by drawing the wire-frames.

Picture (picX) show the app's main content. All the screens deriving from this content overview were sketched screen by screen in their intended flow.

When all the screens to each feature was sketched, they were photographed, cropped and placed one by one in Flinto, a rapid prototyping tool for iOS applications. (picX) By placing screen images, and linking them together in Flinto's editor, you'll be able to create an interactive prototype that can be installed on an actual iPhone, and then tested as if it was an actual app. (picX)

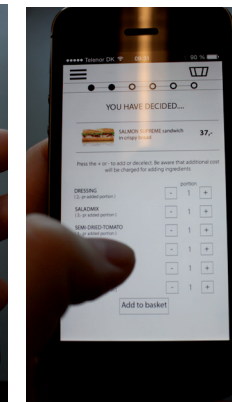
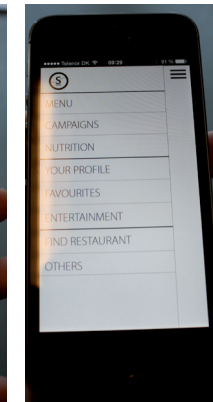
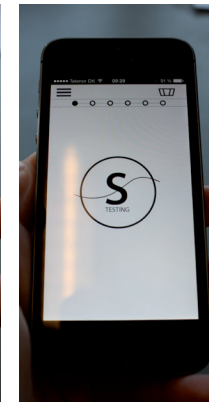
When all features were sketched, and tested in Flinto, it came became necessary to make the screens digital in able to be more detailed. Some of the features screens were created in Illustrator as basic feature screens without any graphics. (picX-X)



ill. 41a



ill. 41b



ill. 41c



ill. 41d



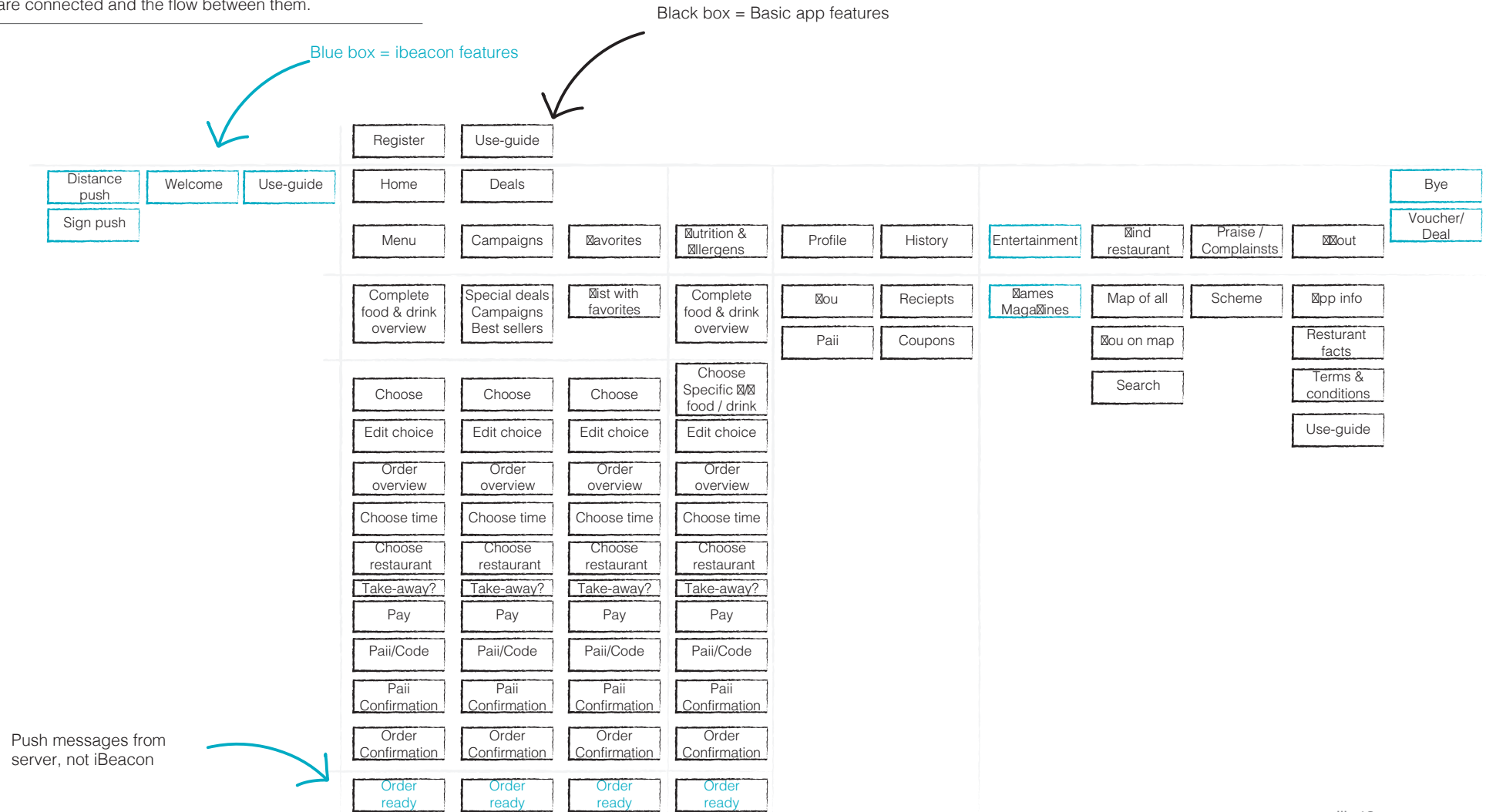
ill. 41e

Flinto speed up the process, and after some testing the final concept with the main features, main flows, and ideas to the graphical layout had started to sprout.

The wire-frame hand drawings combined with Flinto created a good basis for the further development. Going directly into digital development would probably resulted in a number of duplication of work.

INFORMATION ARCHITECTURE OVERVIEW

The result from the wire frame sketching process was a complete set of elements, features and flow. The illustration of the Information architecture show which elements the app consists of, how the main elements are connected and the flow between them.



ill. 42

SUNSET'S IDENTITY

So far, the graphical expression had not been part of the development. The app analysis, see page 39, provided the design team with graphical inspiration, but it is also important that the graphics reflect Sunsets identity.

The design team had observed various identity styles, both in colors, and general expression. A collage gathering the observations is made to try to summarize the variation in graphical elements.

The "Lime" green color is perceived by the design team as the most consistent and repetitive color.



Sunsets logo change both in graphical richness and colors, but the iconic logo is retained.

The interior in the restaurants are consistent with in the different restaurants the design team has visited. Although the graphics and the visuals in the restaurants introduce yet another set of identities. There is a huge variety in the use of colors, from the "lime" green, to strong red, signs with a "macho" black expression, also seen in their campaigns, wall graphics in pink and dark green, and pictures of grapes and fruit on the wall that they don't sell.

ill. 43c

ill. 43b



ill. 43d

ill. 43e

ill. 43f

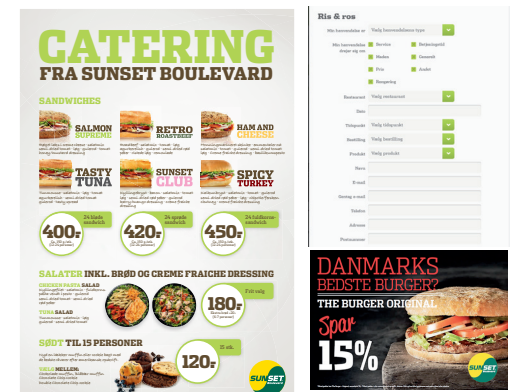
The packaging differentiates them selves both from the campaigns, their logo in their variety of playful almost child-ish colors and "dots".



The campaigns have a "macho" black graphical style.

On their website the graphic style is very consistent to the "lime" green color, and the "macho" black campaign style.

ill. 43g



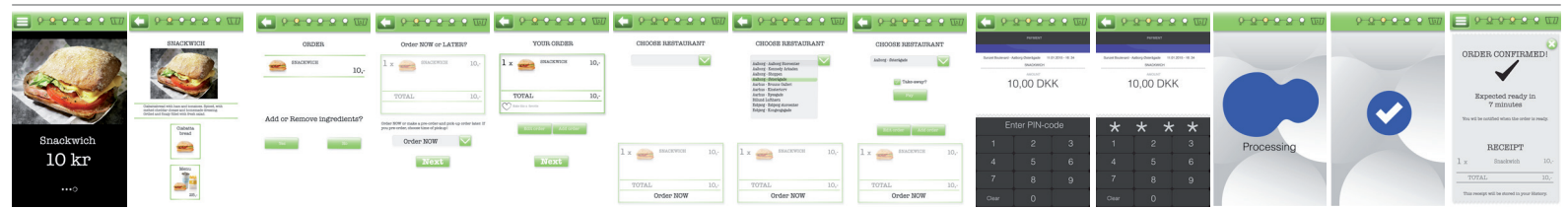
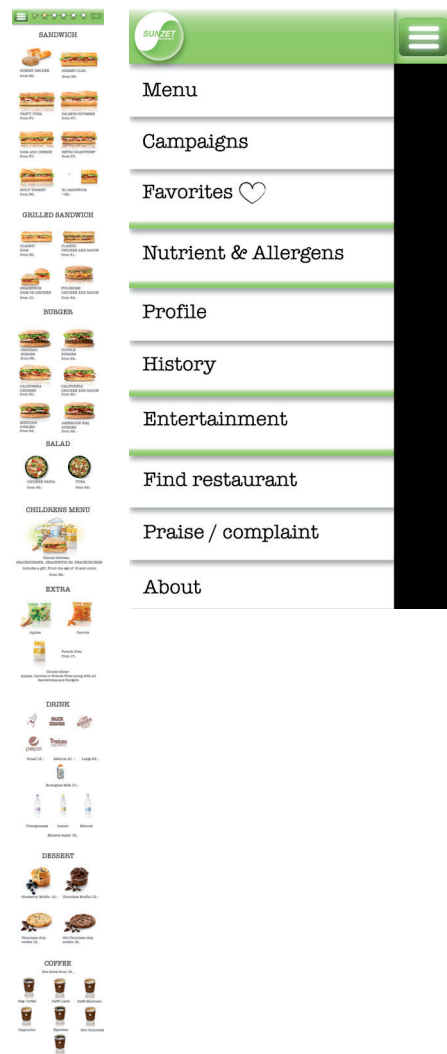
Inspired from Sunsets current identity, elements are chosen to set the basic for the applications graphical expression:

- Circle shapes - "dots"
- Font
- Basis colour

STYLING

All elements, features and flow are decided, and the identity analysis gives insight into which elements to forward into the app's graphical layout and expression. The lime green color, the font and the "dots" are graphical elements forwarded to the app's graphical layout.

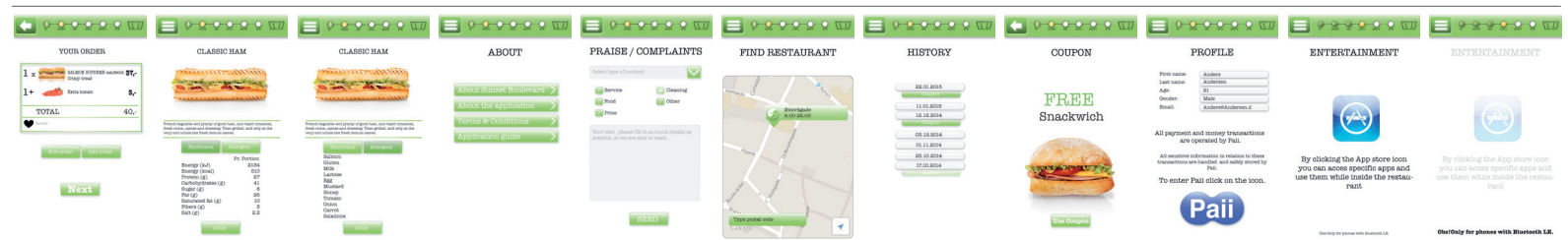
ill. 44



The green color and the font is what dominates the layout, the elements, features and flow controls each screens content and how the graphical layout is utilized. The graphics are rich in details, also called rich design. The graphic elements have characteristics that make them appear as though they are lifted of the screen, with reflections, drop shadows and gradients, to make elements feel more tactile and resemble physical buttons. (thenextweb.com)

All the screens are created in Illustrator, gathered in Flinto and then connected. The app consists of almost 100 screens, but only a few of them are shown on this page. To see all screens see [A11]. Flinto only works with iPhone, but the simulation can also be viewed on a computer. To view the app simulation do the following.

iPhone: Text an sms to: +45 42426103, with your phone nr. and the letters RD.
Other: Send an email to: jane.kjersti.aau@gmail.com, with your email and the letters RD.



During the development and when testing the simulations internal, the design team became aware of critical areas and desired alterations in both features and graphical layout. Before making any changes, the app simulation was to be tested on customers and presented to Huge Lawn, since this could result in even more changes, or inspiration to the desired alterations.

APP TESTING

Since the design team had not gotten permission to directly approach the customers in Sunsets restaurants, testing was done on two people from the design teams personal network.

One of the test persons was a regular customer which will be categorized as a primary user, and one that was not a regular which will be categorized as a secondary user. In addition to testing on users, the design team presented the app to Huge Lawn and got their expert review on the app simulation. Too see the complete test results see [A12].

A story and a route was planned before the test, so the user could imagine the scenario.

1. Download app from app store (seen commercial in TV etc.)
2. Registration process first time you open the app.
3. Receive the push messages outside.
4. Welcome + guide, first time at the restaurant with the App .
5. Possible ordering routes.
 - Menu- Salmon supreme
 - Nutrition/allergens- classic ham
 - Campaigns –snackwich 10 kr.
 - Coupon/history – Free Snackwich
6. Order ready/ pick-up push
7. Bye/Thank you push

ill. 45



Primary user

Register: "When it says " get the most out of" I will choose not to create a profile. Anytime I can avoid creating a profile i will. Because I am to impatient and eager to get to the real functions."

Primary user

Push: "Should be additional info, not on signs. Would like it to be personal, otherwise i would consider it spam."

Primary user

"Perhaps not necessary with guide, the ordering process is so familiar anyway? "

Secondary user

Bye: "Only "fun" the first 5 times if the content is the same every-time. After that I would stop reading the good bye's... Perhaps variation in info."

Primary user

"Nice the pick-up message comes on the phone."

Secondary user

"Take away button and pay button are too close to each other"

Primary user

"The X button on several screens make me wonder if I will terminate something? Better if I could just touch the screen anywhere"

Secondary user

"More info regarding Paii, that Paii is really necessary. And thereby also give customer a chance to make a paii account at home before the first visit since this must be done on a computer. "

Primary user

"Pre-order very nice feature. No waiting in line and that stuff!"

Primary user

"3D graphic- old fashioned?"

Secondary user

"Would be nice if you could zoom."

HugeLawn expert

Entertainment: "Delete! Not usually incorporated in first edition App's, a very extensive/complex feature. Better for next edition. Aftersales."

HugeLawn expert

"Choosing restaurant steps does not have to be manual for iPhones without iBeacon functions, all phones can have this features due to wifi/gps."

HugeLawn expert

"Nutrition allergens could be incorporated in the regular menu to make it simpler"

HugeLawn expert

"History could contain only receipt, and create a new option for coupons and punch card"

The test panel were told to comment on anything, and just share any thought they might have throughout the test. The design team was aware of that the test is not optimal when the test is done out of context, with a simulation combined with storytelling.

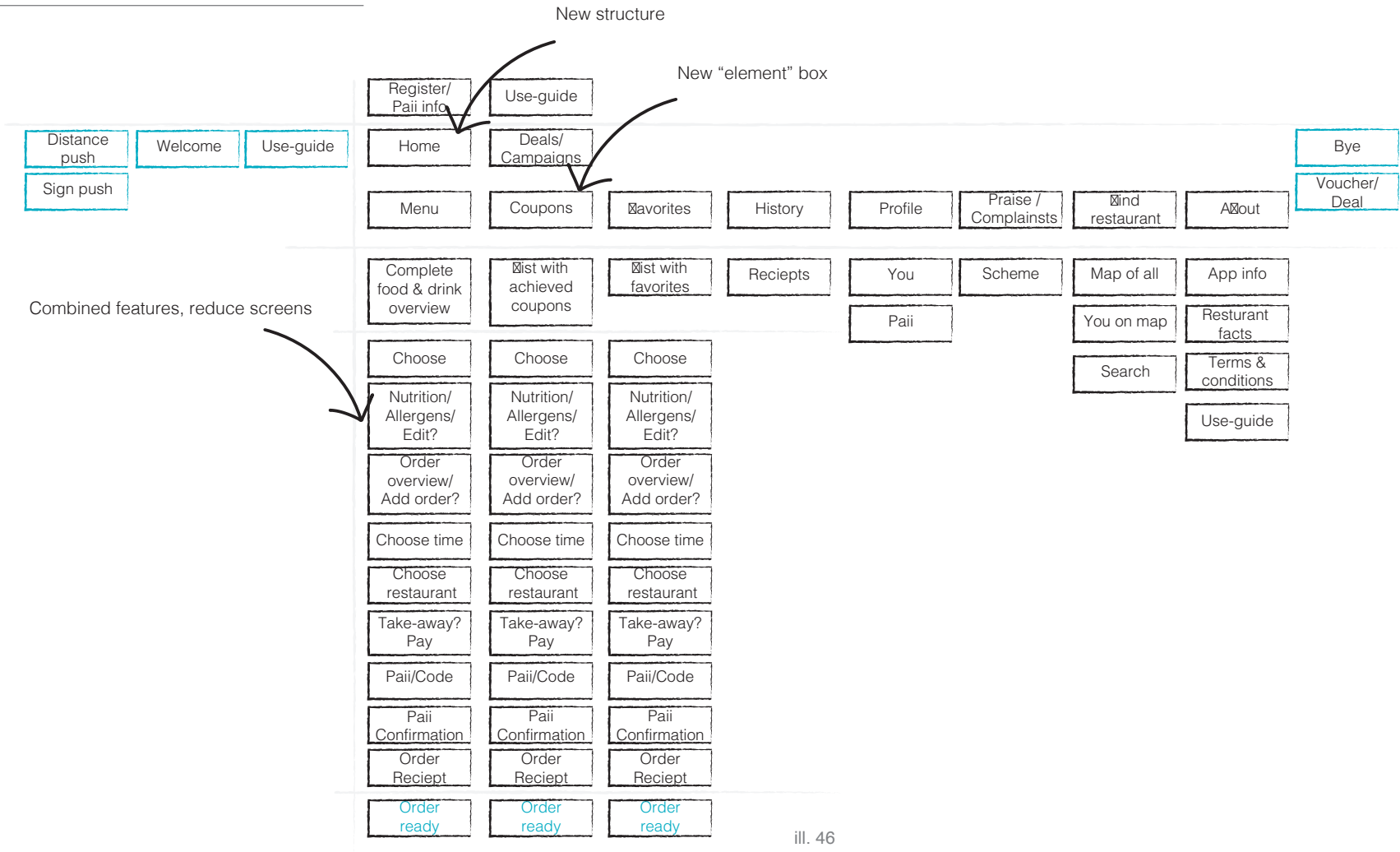
Still the tests resulted in many useful comments and ideas, the design team did not tell the test panel about their own desired changes, only informed them that this was not the final concept and that there was room for improvements. During the test with Huge Lawn, there came more detailed and specific pointers.

The most crucial pointers from the tests are listed here. These are also the pointers the design team intends to improve.

- To much text
- Edit formulations in text
- Larger text
- The Basket button should be interactive
- There needs to be a Home button
- Either a swipe or a Back button?
- No (X) button, click on screen would be better.
- Zoom feature (not possible in Flinto)
- Take away button and pay button are too close.
- Another hierarchy in the content overview
- Delete campaigns (this is double up)
- Nutrition / allergens incorporated in regular menu
- History- contain only receipts
- A Coupons option with coupons, punch card and other offers
- Variate Bye message information
- Update graphical layout

NEW INFORMATION ARCHITECTURE

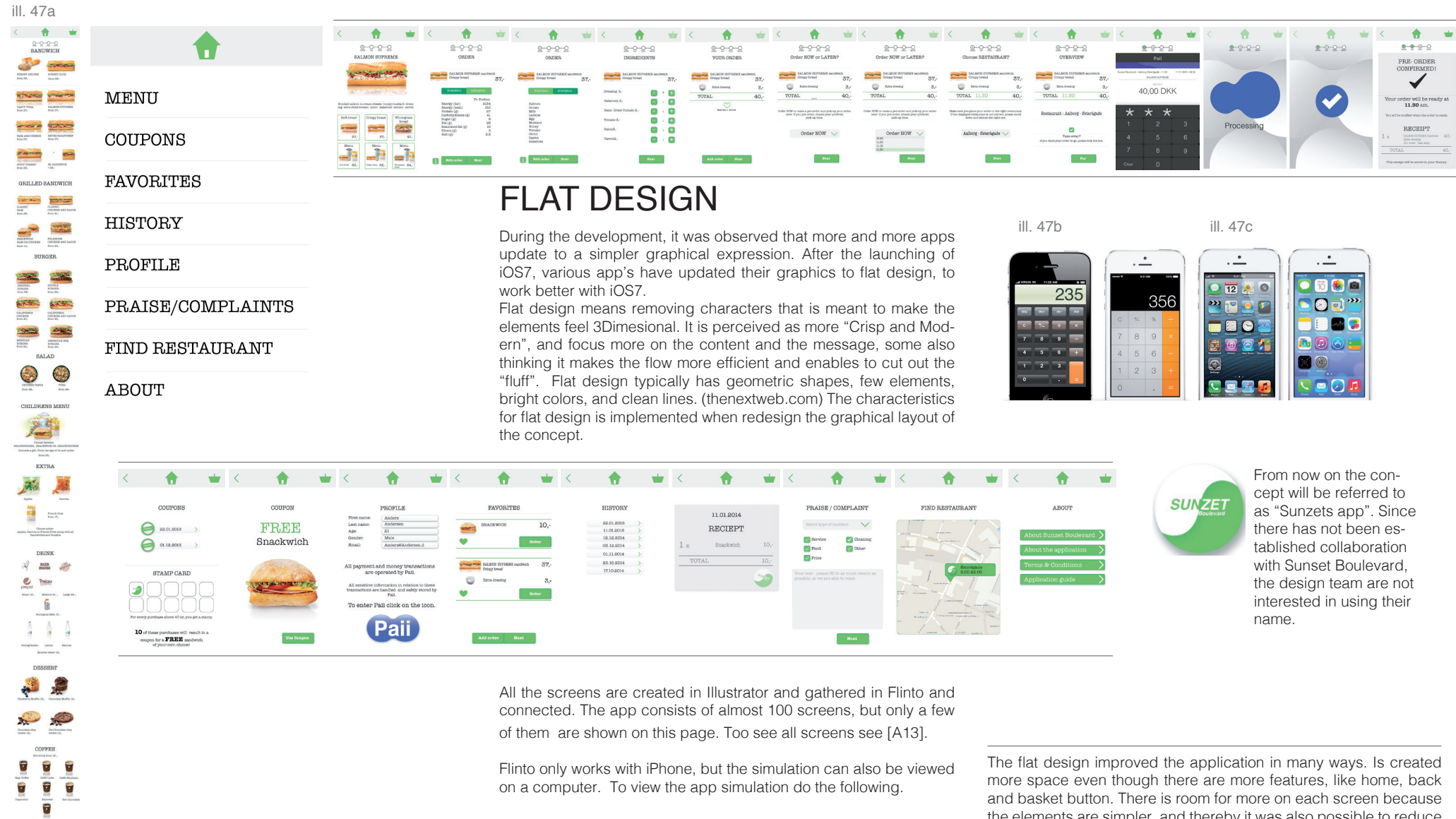
The tests resulted in several changes, which also resulted in a slightly different information architecture. Some features were completely discarded, and a new elements have been introduced in the content overview. The flow has also been changed, and the number of screens tried to be reduced. The information architecture is now more compact.



This is the final information architecture. This was edited before the visual and graphics, since this is the basic structure of the app.

FINAL CONCEPT

There were several pointers regarding the graphical expression, both placement of buttons, text, and missing buttons or options etc. All these pointers were taken into consideration and many implemented in the final concept shown here.



FLAT DESIGN

During the development, it was observed that more and more apps update to a simpler graphical expression. After the launching of iOS7, various app's have updated their graphics to flat design, to work better with iOS7. Flat design means removing characters that is meant to make the elements feel 3Dimesional. It is perceived as more "Crisp and Modern", and focus more on the content and the message, some also thinking it makes the flow more efficient and enables to cut out the "fluff". Flat design typically has geometric shapes, few elements, bright colors, and clean lines. (thenextweb.com) The characteristics for flat design is implemented when redesigning the graphical layout of the concept.

ill. 47b

ill. 47c



From now on the concept will be referred to as "Sunzets app". Since there has not been established collaboration with Sunset Boulevard, the design team are not interested in using their name.

All the screens are created in Illustrator and gathered in Flint to and connected. The app consists of almost 100 screens, but only a few of them are shown on this page. To see all screens see [A13].

Flinto only works with iPhone, but the simulation can also be viewed on a computer. To view the app simulation do the following.

iPhone: Text an sms to: +45 42426103, with your phone nr. and the letters FD.
Other: Send an email to: jane.kjersti.aau@gmail.com, with your email and the letters FD.

The flat design improved the application in many ways. Is created more space even though there are more features, like home, back and basket button. There is room for more on each screen because the elements are simpler, and thereby it was also possible to reduce some user steps and number of screens. The product report presents the complete concept.

FLOWS

The app concept results in an additional service to sunsets current service, this will also result in multiple different customer flows. All possible different flows are shown in the illustration. The pre and post-touch points are not included in these flows, since these do not change.

- The pre-order feature switch around the regular touch point order.
- Choosing take-away will also switch around the touch points, the order will be served in a take-away bag, and the food will not be enjoyed in the restaurant.
- The flows also show the difference between the features with or without a phone with BLE.
- Ordering with the app only requires the customer to leave the table once, the amount of customer indoor motion/moving around is reduced.

Current service.



REGULAR RESTAURANT VISIT

Phone with Bluetooth Low energy.



Phone without Bluetooth Low Energy.



PRE-ORDER, EAT IN RESTAURANT

Phone with Bluetooth Low energy.



Phone without Bluetooth Low Energy.



PRE-ORDER & TAKE - AWAY

Phone with Bluetooth Low energy.

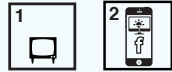


Phone without Bluetooth Low Energy.



CONCEPT EVALUATION

The final concept is hold up against the emotion keywords and the experience and emotion map findings on page 24 & 25. Each touch point in the new additional service concept is evaluated in relation to the current service touch points.



This does not change. But TV commercials could be used to promote the app, show how it works and how easy it is.



The customer can get personalized information, and thereby more relevant information. Extra offers, better offers, more relevant offers or tips. For Sunset Boulevard this is a marketing tool.

- Personalized
- More relevant
- Better info



You are greeted, in contrast to current service. Customer can be greeted very personally, the beacon can simulate the feeling of "personal assistance". Sunset can give the customer a feeling that they are "special!"

- Greeting
- "Unique/special" feeling



The customer gets to sit immediately. No waiting in line with your big coat and handbag etc. Customer settle down before going through the menu and ordering.

- Seated immediately
- No stress
- No line

Complete menu gathered one place, organized after the current service. With additional features. And additional information, like price, Nutrition/allergens etc.

- Better overview
- Pure intentions
- Guided all the way
- No confusion



Customer does not need to find cash/card in pocket/bag. Just type in 4 digit code. Customer is always aware of the price.

- Convenient
- Easy
- NO price surprise



Customer does not need to spend the waiting time on finding a table, getting soda etc. But rather spend the time with the people they are with. If alone, customer can spend time reading/playing or other personal things.

- More social
- More relaxing
- More calm/peaceful



No more "crick in the neck", looking up and down at the screen. No more confusion about the order nr. order. No more "fright" of forgetting your order. Your phone will personally let you know when your order is ready. Customers can again focus more on being social etc.

- Reduces confusion
- Reduce stress
- More social



Customer only needs to leave their seat once. To pick up order and to get soda. If customer wants to get soda before the order, just show the receipt to the service employee and they will hand over a cup before the order is ready.

- Only 1 seat leave necessary
- More peaceful experience



Customer gets a personal thank you and good bye, in contrary to nothing in the current service. Customer gets "reward".

- More personal
- "Appreciated/valued" feeling
- App organize your coupons/ rewards/stamps.

The final concept has reduced several of the reasons behind the negative emotions occurring during the current service. The beacon feature increase the "more than expected" positive emotions, with the welcome and good bye message.

DIVE1: PAYMENT FEATURE

The payment feature in the app is an important part of the application. There have been several thoughts and solutions to this feature, due to the safety required when handling customer card data.

The original thought was to have an inbuilt payment feature in the app. And that the user filled in their payment information when they created their profile, and thereby the users card data was stored in the app.

Huge Lawn informed the design team that this was not possible unless they got a PCI certificate. The process of getting a PCI certificate is very extensive, and there are other, less extensive ways to resolve this issue. [M7]

PCI CERTIFICATE

In Denmark there are very high demands to the companies that are approved for online sale.

PCI stands for, Payment Card Industry Data Security Standard. It was created in 2005 by Visa and MasterCard. The goal was to raise the level of security for card payments online and establishing common safety requirements for all within the payment card industry. PCI standard defines a wide range of demands on how those providing payment solutions, handle, store and transmit customer card data. It requires that more than 200 security requirements are met. (epay.dk)

In Denmark there are currently a few apps that handle payment.

MOBILEPAY & SWIPP

MobilePay is an application for credit card payment via smartphone developed by Danske Bank. In 2012, several Danish banks worked

together to develop a common solution. Danske Bank elected in late 2012 to discontinue cooperation. May 7, 2013 Danske bank launched MobilePay. The cooperation of the other banks was baptized Swipp and launched 13. June 2013. Originally, Danske Bank intended only to offer MobilePay for free until January 1, 2013, but chose to extend this until 1 January 2016. In the future it is going to cost money. (wikipedia.org/wiki/MobilePay)

PAII

Paii is owned by the four largest telecommunications companies in Denmark, TDC, Telenor, Telia and 3. Together, they have developed a common payment system for the benefit of all Danes. Paii is an independent company that has an e-money license from "Finanstilsynet". Paii is free to use. (paii.dk)

In order to use Paii you must create a Paii account. To create a Paii account, you must register. To register, use NemID, and all your account information is stored on a secure server after the same standards as your bank. There is no sensitive data stored on your phone. NemID on mobile phones is unfortunately not supported by Nets, and therefore the registration must be conducted on a computer. Once you have registered a Paii account. With the associated debit card, Paii recommends the "automatic tanking". The amount you must pay will be drawn directly from your debit card, so you do not need to have funds on your paii account.

EXPERT REVIEW

The following payment feature options were discussed with Huge Lawn:

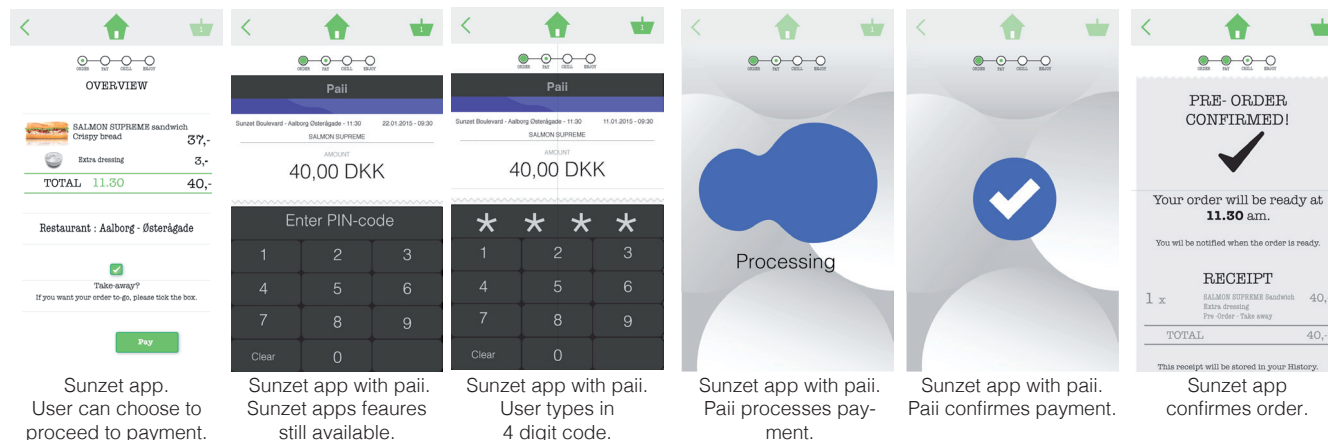
1. Create a regular payment agreement on credit cards online, it could be a subscription or recurring payments agreement. This is easy to set up, and the users would be sent into a website to fill in their card data for each purchase.

2. Integrate the app with Mobilepay or Paii. This would require a more extensive system integration than the above mentioned.

The app Zerved is a case where paii and Zerved have collaborated and created an app that has an integrated payment feature.

In practice, when you are ready to pay in Zerved, you are asked if you want to pay with credit card or with Paii, if you choose Paii, the apps "jump" between each other. Paii will open, you will be inside Paii and not Zerved, and "jump" back to Zerved when you have conducted the payment. [M7]

Huge Lawn think and/or hope, that in the future it might be possible to fully integrate Paii with apps. So that in the future, the customer does not need to "jump" between apps. [M7]



PAII SEMI- INTEGRATED

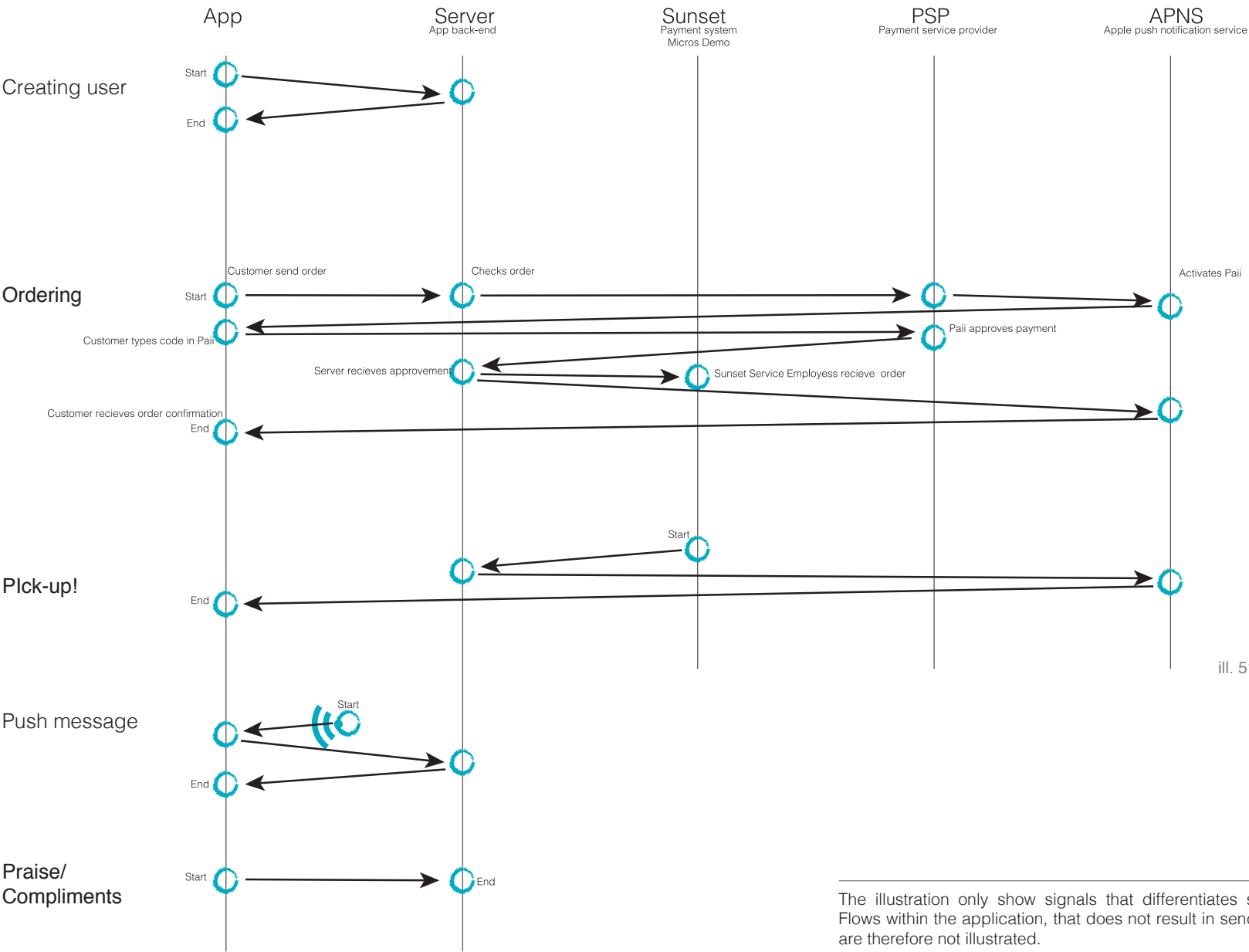
The design team choose the "future" solution due to Huge Lawns assumptions, and because this is the most user friendly solution. It is also advantageous that all payments via mobile phone is done through only one payment app. So if, in the future, you have several different apps you can shop with, they are all integrated with the same payment app. This means that customers do not need to provide credit card data to every single app. This will also feel more secure, to only have card data in one location. It is also just one place to look for information about previous transactions.

The application screen pictures illustrates the paii integration in the Sunzet concept solution. When the user chooses to pay, Paii will smoothly appear but the user will still be in the original app. The user will still see the back, home and basket button in the top.

- Semi-integrated paii solution.

DIVE2: SIGNAL FLOW

The illustration show how the signals are sent. The signals may have different start and end points depending on the feature. It also shows the different servers and touch points that must be present for the signals to reach its aimed target and for the app to perform.

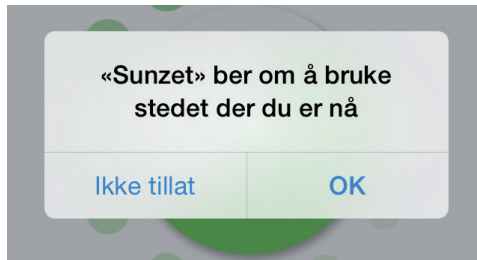


The illustration only show signals that differentiates signal wise. Flows within the application, that does not result in sending signals are therefore not illustrated.

DIVE3: IBEACON CODING

In collaboration with Huge Lawn two beacons were coded and calibrated. The two beacons simulate the two beacons placed outside, sending push messages before entering the restaurant, functioning as triggers. The push messages, the beacon coding and calibration is described here.

First time you open the app, you will be asked if "you would like to use your current location". It is important to click OK, since this is necessary for the beacons to work. Also, Bluetooth must be turned on.

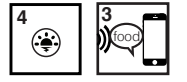


APP CLOSED

If the app is closed and not running in the background, and you enter a beacon zone, your phone will still register the signals from the beacon. But you will not receive anything while still in the zone. Within seconds after leaving the zone you will receive a notification on your phone.



AREA BEACON



ill. 52

SIGN BEACON



APP OPEN

If a customer has the app open, and pass a Sunset restaurant from a distance of maximum 20 meters, they will receive a graphical push.

APP OPEN IN THE BACKGROUND

If a customer has the app open but running in the background, and pass a Sunset restaurant from a distance of maximum 20 meters, they will receive a notification push with text. The notification will be saved in the notification center if the customer does not register receiving it when on location. If they open the notification, the graphical push message will be displayed.



APP OPEN

If a customer has the app open, and pass Sunset sign within 1 meter, they will receive a graphical push.

APP OPEN IN THE BACKGROUND

If a customer has the app open but running in the background, and pass Sunset sign within 1 meter, they will receive a notification push with text. The notification will be saved in the notification center if the customer does not register receiving it when on location. If they open the notification, the graphical push message will be displayed.



ill. 53a

Pelle, developer at Huge Lawn coding. Too see full beacon code, see [A14]

As mentioned at the very beginning of this report, in the section about beacons and how it works, beacons broadcasts a number of identifiers. An UUID, major & minor.

- UUID: Universally unique identifier. Defines who the beacon belongs to/sends signals for.
- Major: Different zones/rooms can have a different "major zone".
- Minor: Defined when there are several beacons in the same major zone/room.

The following code is an excerpt to show the UUID, major and minor for both the area and sign beacon shown.

AREA BEACON

```
// Register the large area if close to sunset
self.beaconArea = [[CLBeaconRegion alloc] initWithProximityUUID:[NSUUID alloc] initWithUUIDString:@"163EE159-1613-4CC2-884D-DA6EFEEC5657"] identifier:@"Sunset"];
```

SIGN BEACON

```
// Register the small area around the sign
self.beaconSign = [[CLBeaconRegion alloc] initWithProximityUUID:[NSUUID alloc] initWithUUIDString:@"163EE159-1613-4CC2-884D-DA6EFEEC5657"] major:1 minor:2 identifier:@"Skilt"];
```

The Sign beacon is the only beacon with a major and minor number, this due to the fact that there only is two beacons who transmits signals in this example, and the major & minor is defined to distinguish the sign beacon from the area beacon.

SIGNAL TOUCH AREA

The illustration show the number of beacons, where they are placed in the context in relation to the Final concept. It also shows the beacons range in diameter that is defined to ensure that the desired signal touch area within the context is covered.

- 4 beacons are mounted inside. These beacon transmit signals within a range of 3 m. Covering the relevant areas within the context.
- 2 beacons are mounted outside. These are the two beacons described in detail in the previous section.
- One signal beacon with a very low signal range of only 1 meter.
- One area beacon, with a very high signal range of up to 20 meters.

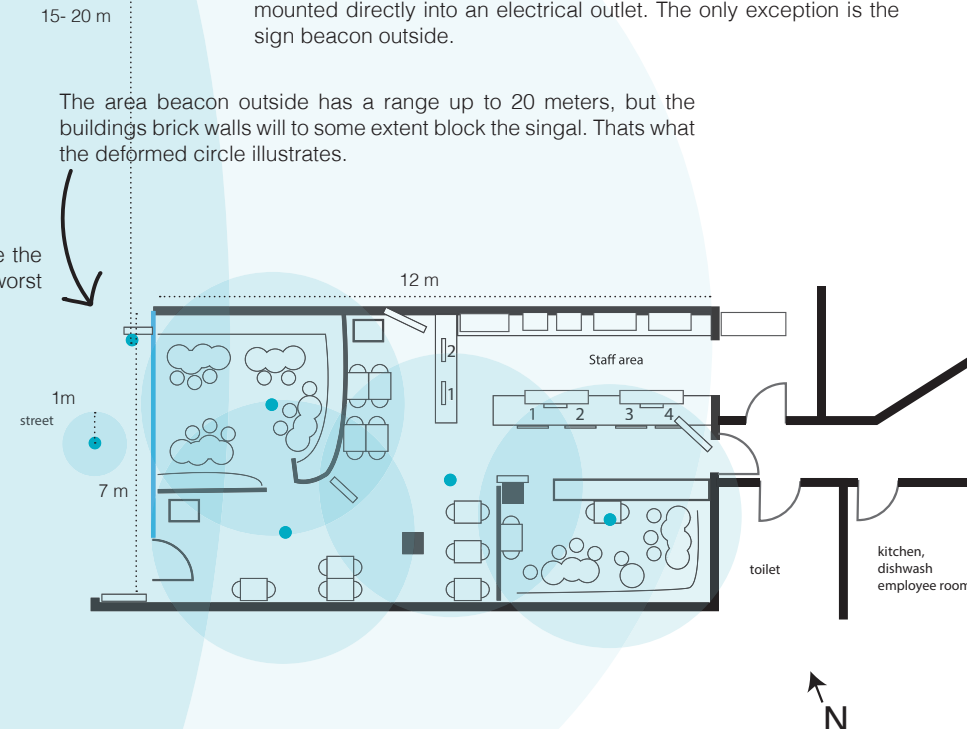
This means mounting 6 beacons in total. All beacons broadcast 4 times per second, so they react fast.

• Beacons are preferably placed at least 2 meter above ground, to ensure that people do not block the signals. A height of 2 meters ensures that there will always be some signals that pass above peoples heads.

• The idea is to not to use battery driven beacons, but beacons mounted directly into an electrical outlet. The only exception is the sign beacon outside.

ill. 53b

Wall, people, interior etc. can reduce the beacons signal strengths, and in worst case block them.



ROLL OUT PLAN 1.0- PILOT PROJECT

The roll out plan describes activities for implementing the concept in the context.
It is reasonable to start with one restaurant and test it over in a period of time before implementing the solution in the remaining restaurants. Therefore this roll out plan is described as a Pilot project, in relation to this project and “What if Sunset decided to purchase the concept?”

DEVELOPMENT OF THE APPLICATION
(DESIGN TEAM)

- Defining the context and client.
- Defining needs and values.
- Designing the Application. (Features, flow, graphics etc
- Testing the app in Flinto
- Finalizing the app in Flinto.

IMPLEMENTATION & DEVELOPMENT
(HUGELAWN)

When the application is finalized by the design team the application and all relevant work is handed over to Huge Lawn. If Sunset were to purchase and implement the solution there remains several tasks to get this “Up and running”.

Sunset would go through the application/solution and confirm or edit it. Both in relation to features, flow, graphics and content.

The design team has developed the application in the simulator Flinto, so the app must be developed in a SDK.

Huge Lawns task would be:

- Programming the application.
- System integration. The application must be integrated with both the payment application (Paii) and the Sunsets current POS system(Micros Demo).
- Ordering hardware/beacons
- Calibrating the ibeacons.
- Back-end

To calibrate the beacons, the beacons must be mounted and calibrated in the context in relation to:

- Each other.
- The beacons mission.
- External influences.
- Possible signal interference.

This is done to ensure that the beacons signals cover the desired signal touch area within the context.

In the Pilot project Huge Lawn would be in charge of all these tasks, both mounting and calibrating in context.

Final testing: Sunset would get one week to test the application in context for possible errors.

- Finalization: Huge Lawn fix or edit errors discovered during testing.
- Hand over back-end

This process is iterative and cannot be fully described “step by step” in text as done here. Therefore the illustration on the next page explain the dynamics in the process.

IMPLEMENTATION & DEVELOPMENT (SUNSET)

Development and implementation of the application is only one part of getting the additional service up and running. Sunset must prepare to launch the new/additional service.

Due to the fact that Sunset Boulevard rejected co-operation with the design team, there is no insight into which activities they typically do or would do in this case. The activities necessary are here elaborated based on qualified guesses. The design team consider the guesses qualified due to the amount of insight obtained in connection to Sunsets business throughout the project.

Sunset contributes during the development phase, in relation to meetings, back-end content, conducting testing and feedback. Simultaneously with and/or partly after the app is finalized but not yet launched the existing physical service must be prepared.

The customers must be made aware of the existence of the new additional service (the app). Sunset currently use the following channels for marketing, therefore these channels will also be used in this case.

- Signs in store/restaurant
- Internet (facebook/website)
- Tv commercials

The marketing channels can in countless ways be used to provide information on:

- The new/additional service existence to their customers
- BLE, explain that it needs to be turned on.
- ibeacons features (why some user do not experience this)
- User guide“how easy it is/ how to use it”.

Promoting the additional/new service is one thing, preparing the staff and merging the digital service with the manual service is another. Employees need to be educated within the app, its features and limitations since they also will interact with the additional service.

The new/additional service will also require a merging between the manual and the digital service. Sunset Boulevard already practice training and guidance to their employees with reference books describing the procedures step by step.[M5]

- New reference books/guidelines
- New routines- Managing both manual and digital orders.
- Application back-end training IT team

There are likely more tasks than those mentioned here, this is only an outline of what it could be. One could imagine that there especially will be new responsibilities within the management and daily operations.

OPERATION

The daily operation of the service/application is Sunsets task. Sunset is in control of the exact content, and can update/edit within the back-end as they please.

In the backdrop of the daily operations both Sunset and Huge Lawn monitor their individual servers for errors / Bug reports. (Hosting)

MAINTENANCE / SERVICE

There can be maintenance in relation to

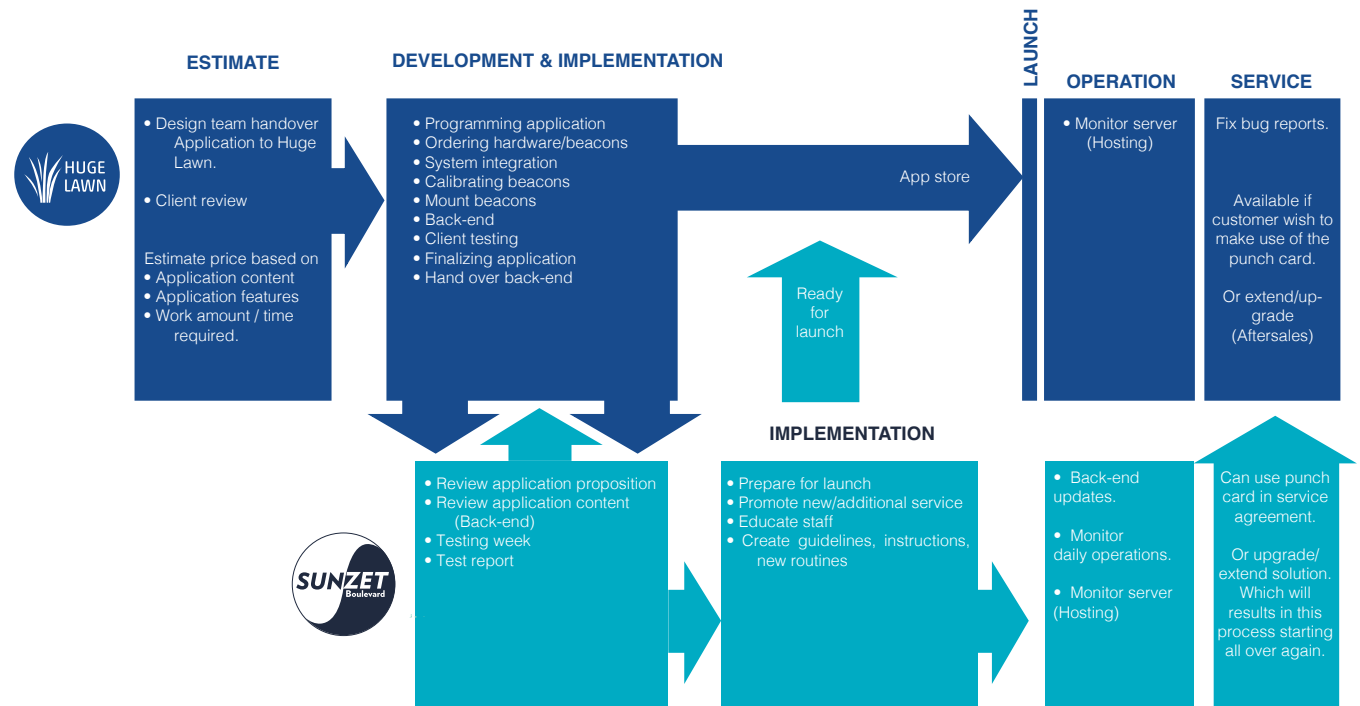
- Application
- Huge Lawns server
- Sunsets Server
- Mounted Beacons

Huge Lawn provides services if there occurs errors within:

- Application
- Server
- Beacons (in the pilot project)

Sunset is responsible for their own server.

With the application, Sunset can buy a service agreement "A pre-paid voucher" with 14, 20 or 40 hours of service. These hours can be spend on Hosting or request services related to the application. These services must be minor services that does not exceed the number of voucher hours bought. If the request exceeds, Huge Lawn considers it a new Job, and a new offer+sale is specified and estimated. [M8]



ill. 55

ROLL OUT PLAN 1.1

When the Pilot Project period is over and Sunset wants to implement the solution in their remaining restaurants the process will be slightly different. The changes will mainly be within the practical tasks of implementing the beacons in context.

IMPLEMENTATION & DEVELOPMENT

It is primarily the mounting and calibrating of the beacons in the individual restaurants that is required from Huge Lawn. When Huge Lawn has calibrated beacons a couple of times in different Sunset restaurants the actual mounting can be done by

hired installers. As long as Huge Lawn is provided with floor plans for the individual restaurants they can calculate the number of beacons needed to cover the signal touch area and calibrate the beacons from their office, based on experience from the previous installations. Maintenance on the physical beacons will also be conducted by hired installers.

- Sunset must prepare to launch the new additional service in the rest of the restaurants.
- Educate staff in all the restaurant based on experience from the pilot project.

COSTS

All possible imagined costs associated within the Roll out plan 1.0, will be described and discussed in this section to provide an overview of the costs and what costs are greater. The costs will be discussed under each element from the roll out plan. There will only be figures to the costs from Huge Lawns part of the roll out plan.

ANALYSIS & SPECIFICATIONS

In this project, the analysis and specifications are conducted by the design team. In an actual case this phase is normally not paid for separately, but included by Huge Lawn when estimating the costs for the solution in the estimation phase. The costs for this phase in this project will not be accounted for.

ESTIMATE

This is the phase where Huge Lawn estimates the projects costs. In this project the costs will be estimated based on the analysis and specifications from the design teams app concept.

The costs are estimated based on the features and interactions within the application, and the amount of hours/ workload required by minimum 2 developers and a project manager. Se picture XX.

[A15]

DEVELOPMENT/IMPLEMENTATION (HUGE LAWN)

The costs estimated for the concept is based on the workload during this phase.

HARDWARE

Huge Lawn has not yet found a satisfactory hardware on the market. There is a producer who in the course of a few months has announced a beacon that on paper seems satisfactory, but it remains to be seen. Huge Lawn has also considered whether they should find a partner, a producer of ibeacons, that can produce hardware fulfilling their requirements. [M9]

An approximate cost for the hardware is calculated on the basis of the price of a Gelo beacon. This is the beacon Huge Lawn is anxious to purchase and try, due to its claimed qualities.

DEVELOPMENT/IMPLEMENTATION (SUNSET)

Due to the fact that Sunset Boulevard rejected collaboration with the design team, there is no insight into either what activities they typically do, or expenses of the activities. The activities necessary were elaborated based on qualified guesses.

The activity expenses will not be guessed upon, precisely because it would be too hypothetical and will not make sense.

DAILY OPERATION /SERVICE

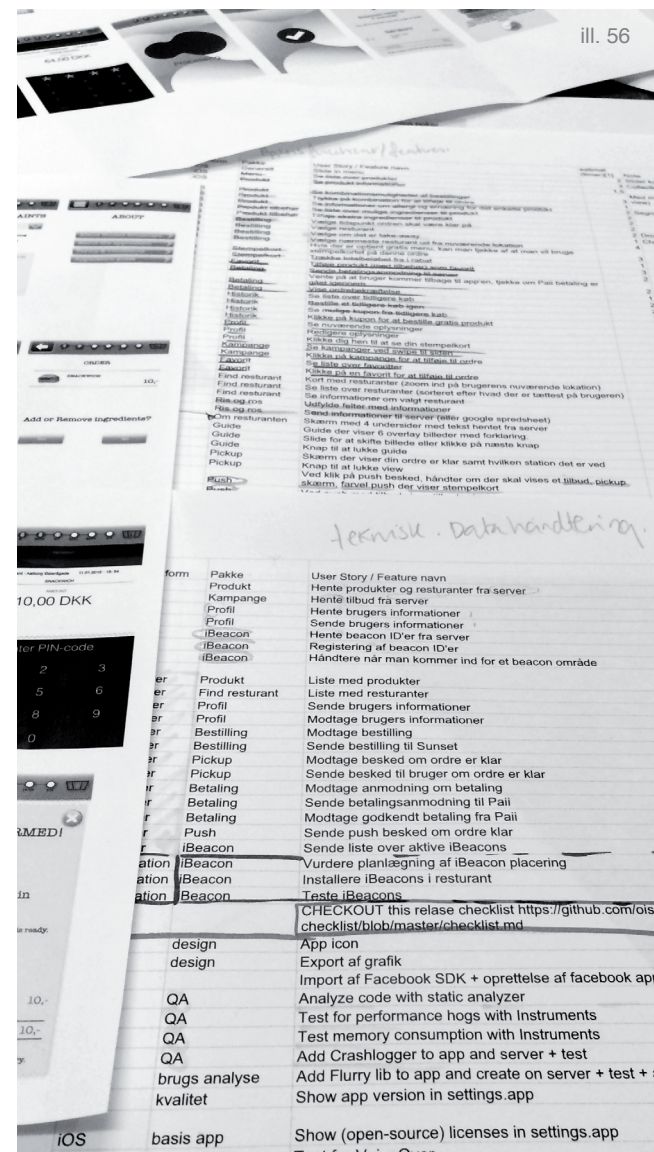
In the backdrop of the daily operations both Sunset and Huge Lawn monitor their individual servers for errors and bug reports.(Hosting)

Clients usually purchase a voucher card. The voucher card can be used on a long time hosting or on minor fixes to the application.

Huge Lawn sell to different voucher cards.
Voucher for 10 -12 hours = 950 DKK per hour.
Voucher for 20 - 40 hours = 900 DKK per hour.

Daily operation is mainly Sunset Boulevards task, and the design team has no detailed insight into what this might require of labor, and will therefore neither guess on the costs, as these would also be too hypothetical.

This listing of costs shows the amount of workload. Unfortunately the design team have not got access/insight into all parts of the costs. Therefore the costs for rolling out the pilot project will not be final.



Pic. XX. Picture off the application cost estimation process. All app features and interactions therein. The estimation was done in collaboration with Huge Lawn, by going through the application and noting all features, flows etc.

Details within the cost and the numbers the design team do have, will be elaborated here. The illustration shows an overview of the estimates. All figures are rough, for complete estimation see [A15]. The estimates are divided into:

- Basic application
- iBeacon part of application
- iBeacon installation
- Hardware
- Service agreement

The basic app, and ibeacon estimations were done in collaboration with Huge lawn based on the design teams app concept. [M9]

BASIC APPLICATION		
	Features	Hours
Minimum 2 developers and a project manager. All features, flows, interaction and graphics. The list to the right show which features from the application that are accounted for in the estimations.	Basic app	5,25
	Menu	3
	Product	15,5
	Product extras	4
	Ordering	22
	Payment	13
	Campaigns	5
	Use analyse	1
	Design	8
	Favorite	6
	Find restaurant	11
	General	2
	Guide	4,5
	History	7
	Quality	0,5
	About	4
	Pickup	8,5
	Profile	16
	QA(Quality assurance)	11,25
	Praise/complaints	4
	Punch card	6
	Upsell	2
		167,5 H

IBEACON PART OF APPLICATION	
Features	
Get ibeacon ID's from server Registration of ibeacon ID's Handle entering an area Handle display of correct information Deals show deals view	
	10,5 H

IBEACON INSTALLATION	
Features	
Plan placing and mounting of ibeacons in context. Mount ibeacons in context Test ibeacons in context	
	7 H

VOUCHER CARD	
Sunset can whatever size of voucher card they feel is necessary. It is calculated with a 20 hour Vouchercard in this case. If not used for anything else, the voucher could pay for 20 months of hosting. (1 hour charged p/month)	
	20 H

HARDWARE	
1 GELO beacon = 35 dollars Currency rate = 5,5 1 GELO beacon = 192,5 Dkk Purchase of GELO beacons with current price. (Link)	
	6 GELO

TOTAL	
Total amount of hours = 185 h*1000 DKK	185 000 DKK
Voucher Card = 20 h*900 DKK	18 000 DKK
6 GELO Beacons = 6*192,5 DKK	1155 DKK
TOTAL EX. VAT	204 155 DKK

The development of the basic application is the overall largest expence. Within the basis application, some features are more complex and therefore require more hours.

- Ordering - system integration with micros demo POS - 22h.
- Payment - system integration with paii - 13 h
- Product - options scope - 15,5 h.

The iBeacon part of the application is here described separately, but is an integrated part of the basic application programming. It is described separately to highlight what the beacon part requires. Overall the iBeacons require a total of 17,5 Hours (10,5 + 7), this makes this feature the second most time consuming feature, right after Ordering-system integration with Micros Demo with a total of 22 Hours.

BENEFITS FOR SUNSET

The app is a concept for an additional service at Sunset Boulevard. The concept is presented and must be seen as an opportunity for Sunset Boulevard. Opportunities within the service, brand, marketing and customers statistics. The opportunities explained in this section are purely guesses to what might be beneficial.

SERVICE - CUSTOMER

- The app gives their customers an **alternative service**, both in the regular way off ordering but the pre-order service lays a whole **new layer** to the current service, and expands the service.
- The app gives their customers **another flow**, a flow that makes the customer more in charge, and can do it in their pace and with **all information gathered**. The app gives the customers **better overview** over the menu and they have all the relevant information, **on hand**, on their phone, and **to themselves**.
- The app is developed based on the analysis on the current service, and strives **not forward the critical things** spotted in the current service.
- The current service revealed that customers sometimes do not get what they ordered, the app reduces the vocal communication between the customers and the employees. The customer types in and send the order themselves, this **can help reduce the human errors**, and thereby reduce the number of wrong orders. Although the order is made by service employees so there is still a chance for human error.
- The current service is mainly a self service and customers are neither greeted or noticed when they enter or when they leave. The iBeacon app can **increase the personal service**, by simulating personal service through the app.

SERVICE EMPLOYEE

- The new additional service can perhaps **reduce touch points/ labor steps** for their employees. This depends on how many that uses the app. If a significant amount of customers use the app to make orders, Sunsets service employees will not spend time on communicating and typing the customers order, but rather making the orders that come in from the app system.

BRAND - MARKETING

Sunset can use the app to attract attention in general, but also to strengthen their brand and their values as a modern fast food chain.

Their current mission and vision:

- "Satisfy the situationally determined needs that people have for **fast**, delicious, varied and honest food, served in a welcoming environment, which together provide the guest a **complete, positive experience**." (sunset-boulevard.dk)
- "Give people the option of a lifestyle in **harmony** with their **individual emotional and rational needs**."(link)
- Sunset boulevard is known for their less greasy, fresh and healthier alternative to ex. McDonalds. With the app they can also brand themselves as being a modern, effective fast food chain, **now even more tailored to their customers individual emotional and rational needs**.
- In addition to this, they can brand themselves on being a **restaurant with a new and exiting extra service**, and thereby perhaps **attract new customers** and secondary users due to curiosity. This can again, for a period, **increase sales**, and in the long run this could result in **new and more regular customers**
- The app will also **fit their aimed segment**, who they say are those between 14-35 years of age and who facebook indicate are between 18-24. The app can contribute to **strengthen this strategy** even more, and attract even more customers within especially this segment.
- The app and the beacons can also be used to **personalize campaigns and offers**, and/or also lead people in certain directions, more than they already do with their physical signs.

UNIQUE SELLING POINTS

- All information gathered in one place, on hand.
- Customers control their own pace and can specify their order.
- Cut the line - pre-order!
- The app will be a "personal assistant" thorough the entire service.

STATISTICS

The app and the iBeacons can also be used to retrieve information about their customers. And if the customers create a profile, the information level can be even more specific. The iBeacons and the app can register:

- How many receive the push messages/notifications.
- And how many of them who enter the restaurant.
- Time of entry.
- Register / track customers movements instore.
- Register when they receive their food, compared with time of entry and order.
- Register what people choose, and if they add/remove ingredients.
- Register time of departure and total time of visit.

Sunset probably get similar statistics from their current POS system, but by far this detailed. They probably have statistics on what is ordered and when the order is registered as done. On their Facebook fanpage, Sunset often ask their fans questions and incurring the fans to vote between choices etc. The app and the statistics could help them with this.

Sunset could use the reported statistics to:

- Identify potential for efficiency within the service.
- Identify customer wishes, get "closer" to their customers.

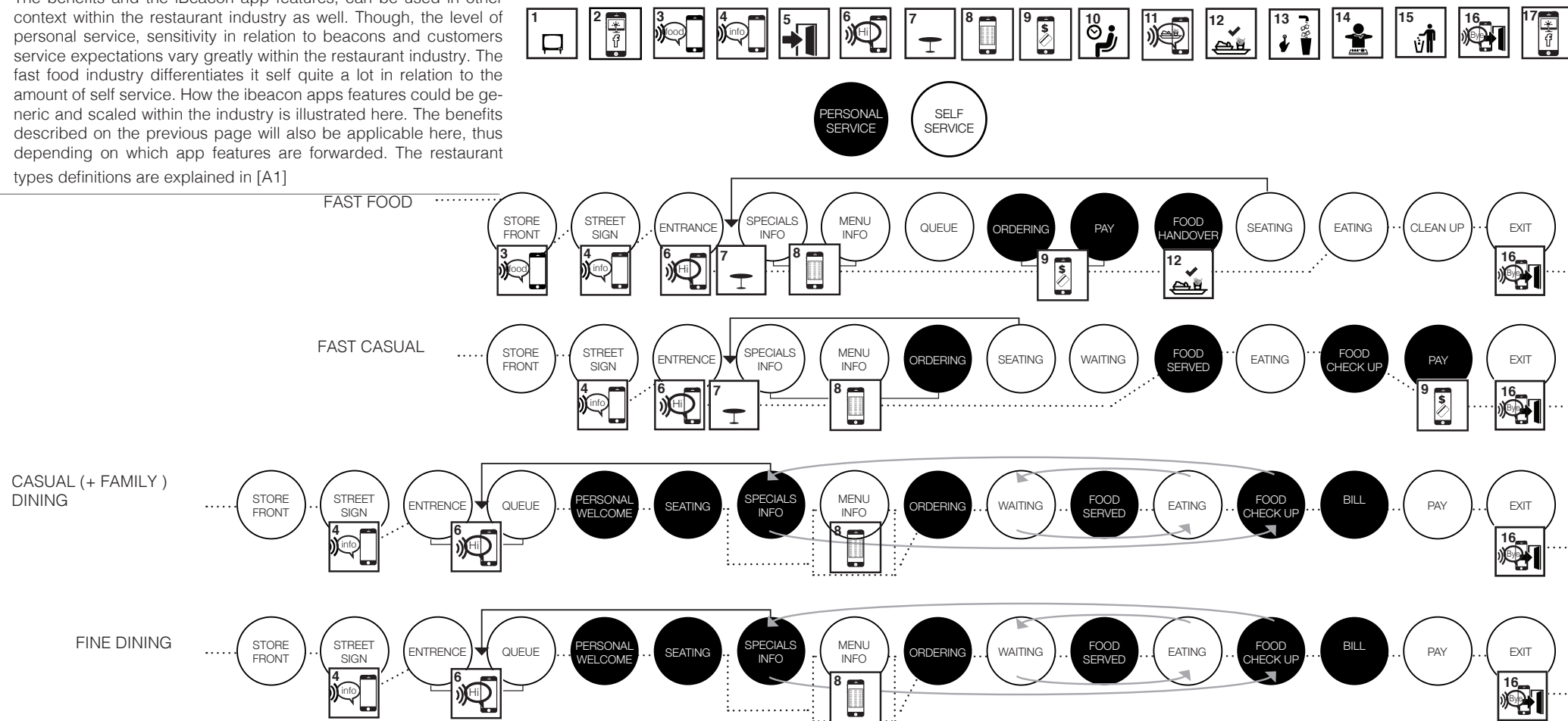
If the data is read the right way Sunset could improve their entire service according to the data from their customers.

The opportunities explained are guesses to what might be of benefit to Sunset Boulevard, especially since there has been no collaboration with Sunset. None of these guesses can be confirmed before having tested them.

SCALABILITY

The benefits and the iBeacon app features, can be used in other context within the restaurant industry as well. Though, the level of personal service, sensitivity in relation to beacons and customers service expectations vary greatly within the restaurant industry. The fast food industry differentiates it self quite a lot in relation to the amount of self service. How the ibeacon apps features could be generic and scaled within the industry is illustrated here. The benefits described on the previous page will also be applicable here, thus depending on which app features are forwarded. The restaurant types definitions are explained in [A1]

NEW SERVICE TOUCH POINTS



ill. 59

- Fast food is the least sensitive type, and have the lowest amount of personal service, therefore many features from this case will add positive values to the user experience in this type of context.
- In the fast casual dining, additional info with the weekends or next weeks "special deal", could be relevant. Welcome and goodbye pushes are also relevant, the guests will "feel welcome and taken care of" through out their stay, this could also be personalized if the customer has a profile in the app. The menu is also relevant to be able to view on the customers smartphone. A previous idea with entertainment, or unique access to ex. magazines or newspapers could also be a relevant feature in this context.

- In the casual+family dining context many of the same features as in the fast casual would be relevant. In addition perhaps a coupon or stamp card feature, to entice families to return.
- The fine dining context is the most sensitive, and has the highest degree of personal service. Still, we live in the digital age, and being greeted and wished farewell, with special greeting from the chef on the phone would perhaps be appreciated, same goes for being able to view the menu. Personal or customized information would also be a relevant feature in this context.

Regardless, for customers to take advantage of the service it is a condition that they have a smart phone with the app provided by the restaurant. This means perhaps, that the primary app user will be regulars or at least returning customers, but necessarily.

The illustration is only to give a brief overview of how the app's features can be generic and scalable within the industry. When the main features are coded, it can be reused, only with minor changes like back end info, graphical layout etc.

MARKET SCREENING

Throughout the project period there has constantly and in some periods weekly appeared new ibeacon articles online in news. Here is an overview of what the design team has been made aware of during the project period in connection to ibeacon and related market initiatives.

RESTAURANT WITHOUT WAITERS

"Victors Madhus on the waterfront in Nørresundby, Aalborg, opened their doors to guest the 13 of February 2014. Apparently it's an ordinary restaurant, but at a closer look there is something missing - the waiters.

According to the owners it is the first restaurant in Denmark without waiters and serving. Instead of submitting your order to a waiter, you order and pay to a machine, and when the food is ready, you pick up your food by the open kitchen.

The reason behind is that they would like to spend money on good ingredients in the food, and while we would like to keep prices down and make it a place where there is room for everyone. You can only pay with card, no cash.

A couple of weeks after the opening, they came with an announcement that "the opening has gone beyond all expectations. We are overwhelmed that we have so many visitors (...) because we only have one booking machine. We are working on a solution so that I will be able to order food via your smartphone."

(facebook.com/pages/Victors-Madhus), (tv2nord.dk)

SWIPP FOR BUSINESSES

"Swipp gets tailwind from Danske Banks popular app, Mobilepay. Businesses are now beginning to take on payment through Swipp. Cafe Ib Rehne Cairo in Sønderborg is the first and has already started.

There will soon be a solution for businesses customers. Danske Bank has already began to allow operators such as hot dog stands and coffee shops the opportunity to accept payment from customers via Mobilepay. Preliminary Swipp can be used at Cafe Ib Rehne Cairo in Sønderborg, but it will become possible to swipp many other places.

"There are many who demand a professional solution. "There are several small businesses who are using the solution today because they operate in banks as private customers. We can provide a solution to the iPad, so they may notably align their payment when they go home. "

(politiken.dk)

MCDONALD'S ORDERING APP

"McDonald's is testing a mobile ordering app that would allow customers to order and pay from their phones. The app would allow customers to order and pay online. The customer could pick up their food curbside, at the drive-thru window, or in the store, reports Leslie Patton at Bloomberg News. The app is being tested in Salt Lake City, Utah, and Austin, Texas, Patton reports.

McDonald's sees its new app as groundbreaking in the fast food industry. "

(businessinsider.com)

NO MORE CASH

"Two years ago, a restaurant in Copenhagen, Oyster & Grill, which is part of Cofoco chain, decided that it should be No more cash. - We have had very good experiences with it. We save a lot of administrative hours on it because we do not have to count the cash or go to the bank with a bag of money, says Torben Klitbo, owner of Cofoco chain.

- Our industry is well known for dirty money. It can be dispelled or decrease. It's a little hard to make black money when the money goes into the ATM, he said.

Safety is increased

- Security has been much better for the staff. It will be the less attractive to thieves when there is no cash. Security has also been improved internally with staff who no longer have to worry about whether the Treasury votes at closing. - If you are missing 500 dollars in the box, so are all the staff in any way suspect. "

(dr.dk)

ZERVED

"Zerved is a new Danish concept which in brief is to reduce waiting times in bars, restaurants, etc. Via the mobile GPS app find out your location, and then show you such as restaurants or bars.

You can then go to the menu and order and pay via your smartphone, and then either get served at the table or a message when the order can be picked up at the bar. You can avoid the sometimes long wait in the queue. "

(appsandroid.dk)

IS 2014 THE YEAR OF IBEACONS?

"iBeacons have the potential to change our shopping experience forever. So watch this space - 2014 promises to be the year of the iBeacon."

By Martin Shellaker, director at SMP."
(theguardian.com)

VIRGIN ATLANTIC

"Virgin Atlantic has announced that they will be using Apple's iBeacon technology to deliver updates to their passengers passing through Heathrow airport in the UK."

The company said its initial ideas for implementation are only scratching the surface, but that it will be used to inform passengers using Passbook of information and offers, like zero percent commission on money exchange as they pass by the booth. It could also be used to notify Upper Class passengers of appointments in the Clubhouse Spa, for example

The airline is no stranger to testing out new technology, earlier this year it trialled giving Google Glass to its staff in order to provide passengers with a more personalized experience."

(thenextweb.com)

IBEACONS IN GERMAN MCDONALDS

*"iBeacon Test Run in German McDonald's
In first restaurants in the burger chain small Bluetooth transmitter are used. The technique is intended to alert interested local customers to new offers."*
(heise.de)

NEW YORK BARS AND RESTAURANTS

"New York bars, restaurants leverage iBeacon to scale mobile payments. New York bar The Royal is one of several restaurants that are testing a new mobile payment application that drives consumers into venues through location-based offers."

(mobilecommercedaily.com)

PHILIPS

"Philips takes on Apple's iBeacon with lights that send deals to your smartphone"

Philips is already one of the biggest names in smart light bulbs, and now it's beginning to test a new unit that could be even smarter. At a retailer in Düsseldorf, Philips is piloting a lighting unit that includes a built-in beacon that can relay location and product information to smartphones. By opening a companion app, shoppers can see a map of the store they're in, including their exact location as determined by the beacons' communication with their phone. From there, a shopper might search for a product they're looking for, while the beacons track their movement and provide directions to the right aisle."

(theverge.com)

ANTWERPEN MUSEUM IN THE NETHERLANDS

"The digital agency Prophets has created an iBeacon-powered mobile app for Rubens House in Antwerp. Meant to be as tool for visitors of the respectable museum, this prototype demonstrates how cutting-edge technology can enhance the overall art experience."

(psfk.com)

MACY'S

"Macy's begins pilot test of Apple's iBeacon in flagship New York, San Francisco stores."

One of America's oldest retailers is among the first to deploy Apple's iBeacons as Macy's has begun a pilot program with the state-of-the-art Bluetooth-based microlocation system."

The 155-year-old department store chain has partnered with Redwood City and their "shopkick" technology. Shopkick's technology will allow Macy's to track shoppers' movements throughout the stores, serving up different offers based on the floor or department the customer is in."

(appleinsider.com)

APPLE'S SHOPS

"Apple themselves are also finding ways to use to offer targeted information to passing users via app notifications or in-app content. Recently, Apple introduced physical iBeacons at its retail stores. Beacons are placed throughout the store and as a customer walks around, the beacons trigger messages to the customer's iPhone. A customer can scan an item they want and pay for it from their phone using the Apple Store app; the app too uses beacon technology."

(macrumors.com)

MAJOR LEAGUE BASEBALL

"Major League Baseball (MLB) is the major league professional baseball organization in the US."

The league is looking to have twenty parks outfitted with roughly 100 iBeacons each by Opening Day at the end of March. Boston, Milwaukee, San Diego, LA Dodgers, and San Francisco are among the teams that will have iBeacons installed."

The iBeacon deployment is one of the largest rollouts in the world, aside from Apple Retail's 254-store effort."

Functionality will vary by ballpark, with individual teams having significant input and control over what users will see. There are a number of potential use cases including point of interest information, concessions, loyalty and rewards programs, shopping, and more. Specific scenarios have yet to be determined for each ballpark and teams will share more information as it gets closer to Opening Day."

Separately, the NFL is rolling out a limited number of iBeacons at MetLife Stadium, the Super Bowl venue for this year, and in Times Square. The beacons will mostly be used to help users get to entry gates and to find Super Bowl-related tourist attractions in the area."

(reigndesign.com)

This market screening gives an overview of all the different industries that are currently exploring beacons and its potential. And within the restaurant industry there is seen a movement and curiosity for app's, payment with app's and also iBeacons. Some of the concept resembles this projects concept, therefore it is important to mention that many of these articles have come to the design teams awareness regularly concurrently during the project.

CASE 2 - CONCEPT REFLECTION

The objective for case 2 was to design a new additional service for Sunset Boulevard in form of an app with ibeacon features, to improve customers user experience.

The concepts features resembles the current service, the touch points are very much the same. We could have gone way out there in a completely new user experience within the restaurant industry, but this might not have resulted in a generic and scalable solution. One of the success criteria for Huge Lawn in the design brief, was that they desired a “shelf” solution, and without being generic and scalable within the industry, it would not be a “shelf” solution. This criteria effected the concepts development, and contributed to keep the concepts features relevant for the context.

Compared to Sunset Boulevards current service, the app concept provides their customers with more opportunities, especially in relation to the pre-order feature.

The main objective for an app in this context is not to increase sales, though it could be an effect of it. Therefore the discussion of return of investment was not mentioned in the costs section. Neither do we have the figures in relation to Sunset Boulevards activities in the roll out plan. The app concept is an opportunity for Sunset, a marketing tool. And a service tool for their customers.

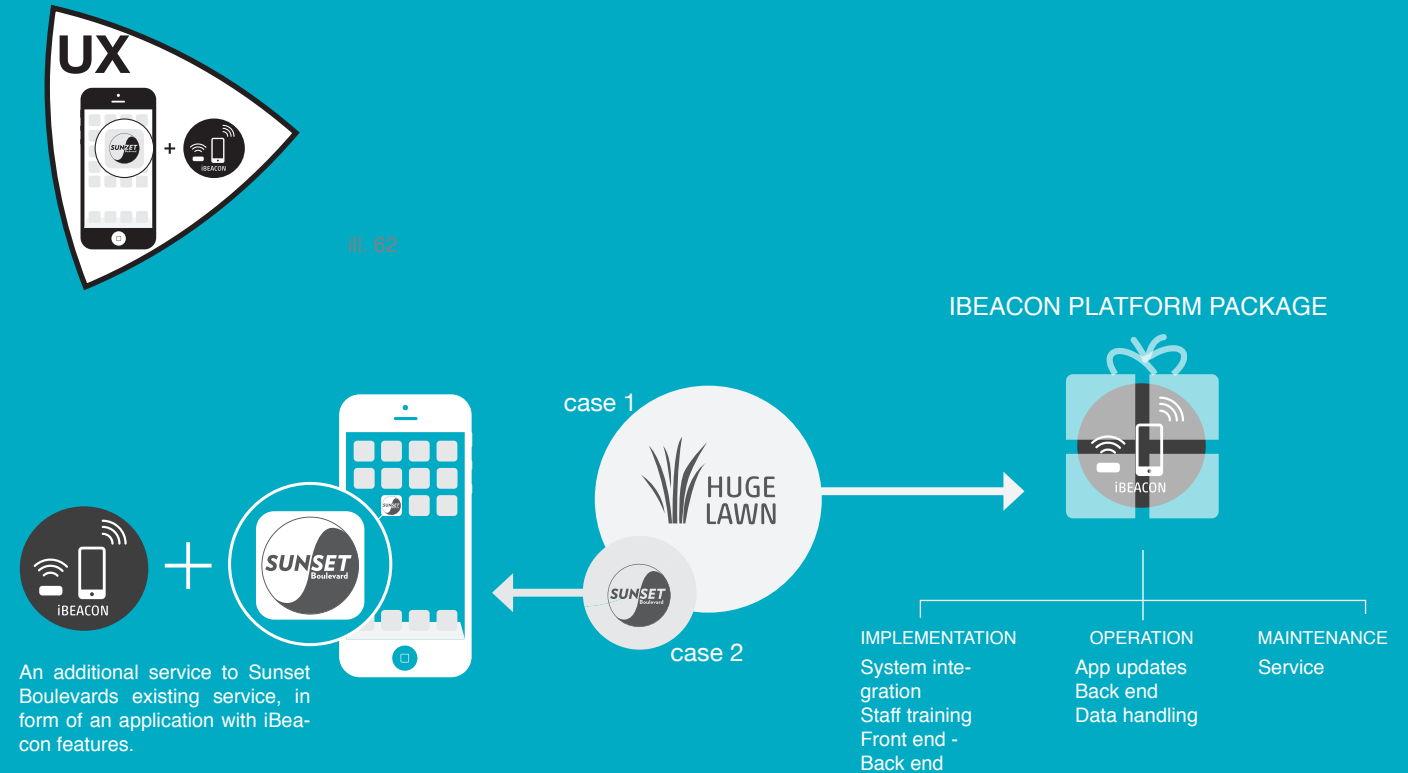
The final app concept presented is mainly developed for the customer, “customer experience design”. Sunsets service employees, among others, are also users of the concept service, but are not taken into account for in this project due to Sunset Boulevards rejection of collaboration.

If Sunset Boulevard had rejected a collaboration earlier in the process, we might have chosen another context were they were willing to collaborate.

During the project our understanding of the ibeacon technology became clearer, the list of iBeacon functions on page 8, are really all “information on location”. Becoming aware of, that we perhaps misunderstood the actual core iBeacon feature, made us questions whether the choice of Sunset Boulevard and the restaurant industry was right.

The market screening confirmed, that even though we have had our doubts regarding the choice of context in relation to ibeacons, it shows that ibeacons are being used everywhere, and that there is a small movement within the restaurant industry in relation to payment, smart phones and app's going on, at the time of writing.

“Everybody can participate - that's what's so exciting with app's!”
Lise, Head of contact, Huge Lawn



...SO WHAT DID WE REALLY PROVIDE HUGE LAWN WITH?

LOOKING BACK..

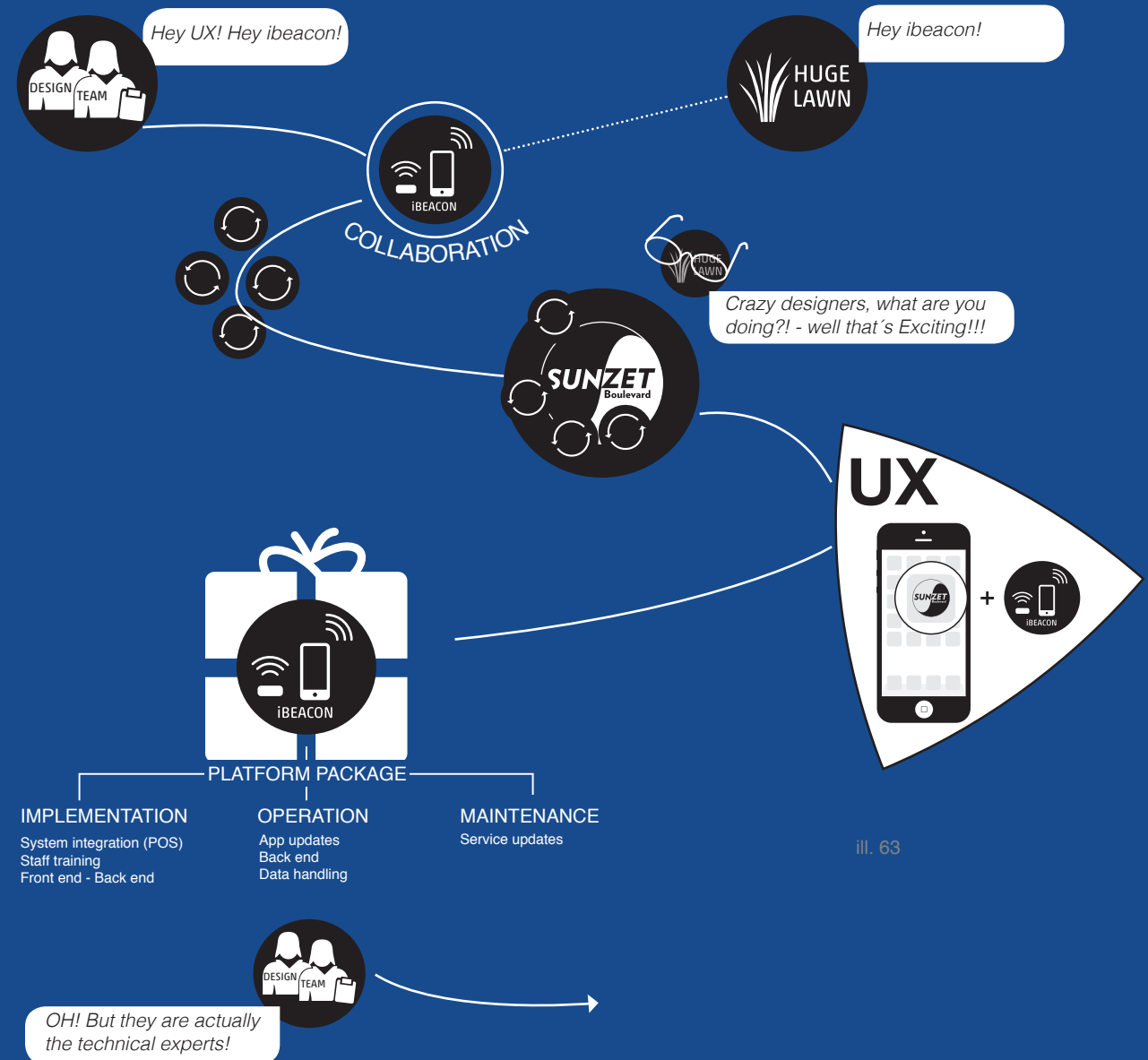
The project started with a desire for designing user experience in combination with the technology ibeacons. Almost from the beginning a collaboration with Huge Lawns was established due to the common interest in ibeacons. Based on several design team iterations, it was decided that Sunset would be the representative for the restaurant industry. An industry that was not yet a part of Huge Lawns application portfolio.

The Sunset case function as representative for designing an ibeacon platform and due to the great collaboration with Huge Lawn, they receive a shelf solution suggestion for implementing ibeacons within in the restaurant industry. The detailed analysis can be used as inspiration for other business with in the same industry. Test results provides insight and can work as guidelines for new applications. Customer experience and clarified user values can be helpful when designing customer experience in other restaurant types.

The more technical part of case 2 is Huge Lawns area of expertise, and they have the qualifications to construct the technical part of an ibeacon platform package. They are also the experts in developing applications, so what did we really provide them with, that they couldn't have done themselves?!

During the collaboration, Huge Lawn expressed several times that our approach was different than their approach, and that they found it very interesting to follow how the design team approached the project and the development of the Sunset case.

This interest for our approach led the design team to view our own process, and thus came the idea to clarify the differences, between Huge Lawn and the design teams, approaches within app development.



CASE 2 - PROCESS REFLECTION

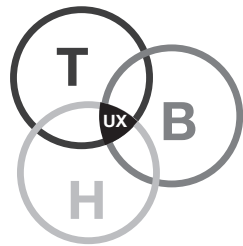
To reflect on the process conducted in case 2 an illustration is made clarifying process phases and activities. The Design approach elements, Technology(T), Human(H) and Business(B), are placed on the activities to underline activity focuses.

ACTIVITY REFLECTION

The process conducted in case 2 consists of five overall phases and 58 activities from project startup until the finished application. To reflect on each action conducted a scheme was made, clarifying each activity, why it was executed, what output it provided, clarification of missing info, competencies discussion and a reflection. This scheme can be seen in [A16]

PROCESS AND APPROACH

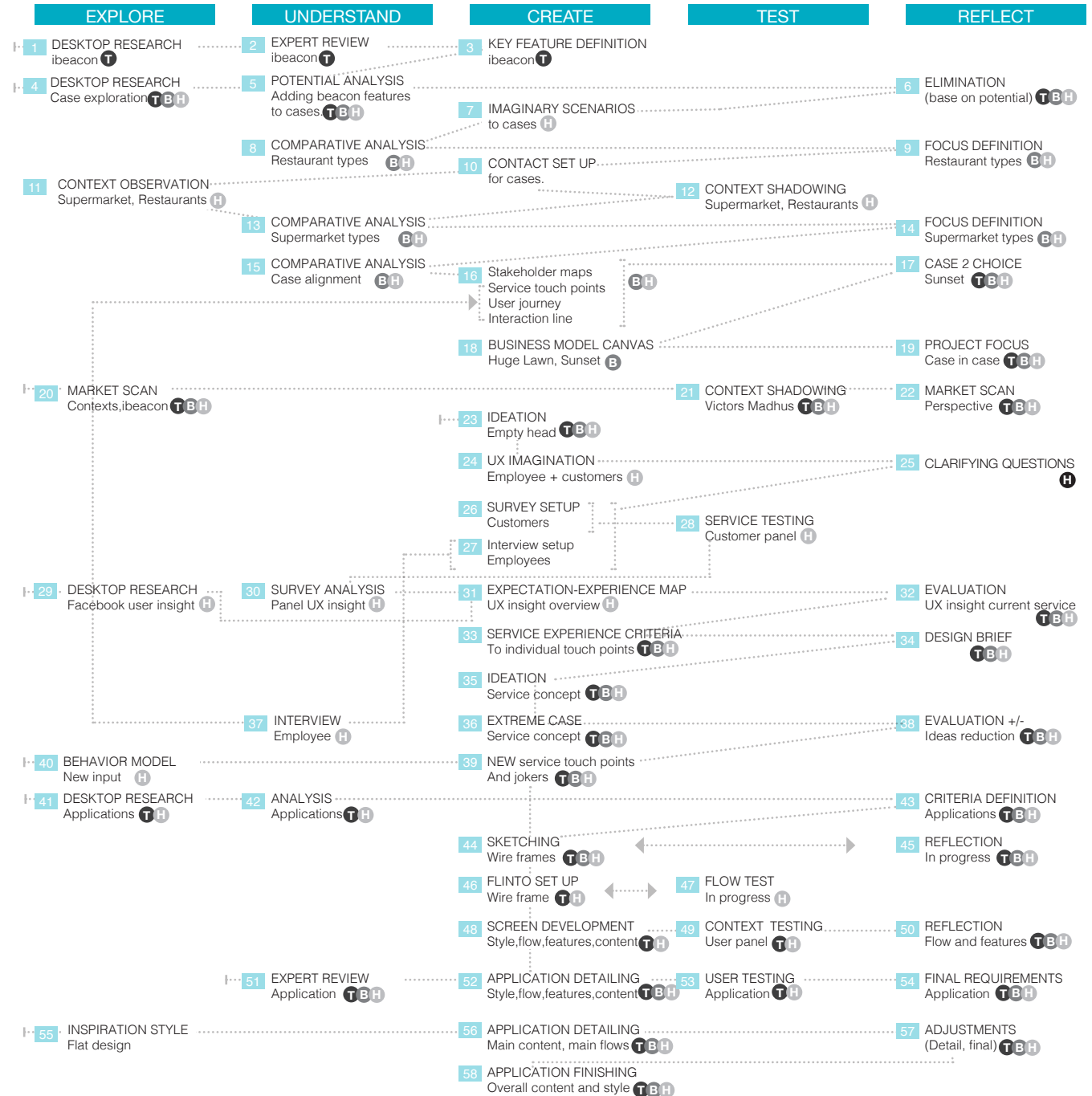
Looking at the overall process conducted in case 2, it is clear that it consists of many iterations between phases. Each activity have different focuses in relation to the projects design thinking approach.



ill. 64a

The starting point of case 2 was to understand the technology(1-3), and then find a context where it would be relevant for all elements; technology, Human and Business. (4-17) Working with a specific context (17-34) put focus on the human element. During this development some inputs and focus shifts to business and technology were made (18, 20-22, 51-53). Most elimination and focus specification activities as well as the final development focused on the synergy between all three elements.

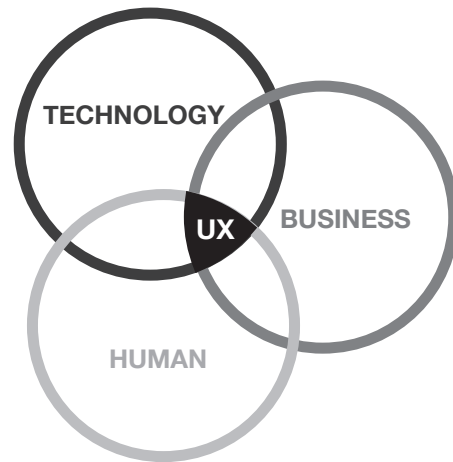
The process illustration to the right, indicate that the activities and the order of activities conducted in case 2 are very related to the case and context. The focus on the design thinking approach elements shift between the activities, and the shift between activities are affected by the results in the previously conducted activity.



ill. 64b

PROJECT APPROACH DIFFERENCES

The design thinking approach applied, for designing user experience will be used to clarify approach differences. All thoughts, reflections and statements on this page is from the design teams point of view. It was constructed from meeting outputs, knowledge and logical assumptions. To validate it, it was presented for Huge Lawn, their comments are illustrated in the speech bubbles.



ill. 65a

DESIGN TEAM

As mentioned in the introduction designing user experience requires a holistic approach. As designers the main task is to make all core elements above connect in synergy to design a coherent user experience.

When reflecting at the process behind case 2 (see previous page, Process reflection), all elements are in interplay, even though the project started in the technical element, understanding the technology. The process is clearly user driven which reveals that our key competences are within the human element. When conducting research all inputs are questioned and explored deeper, and answers are not accepted at face value.

Understanding and working with the two remaining elements is a part of our competences as well, but access to experts is crucial for gaining the key knowledge. This enables us to constantly re-frame a project to make the core elements connect in synergy in the end.

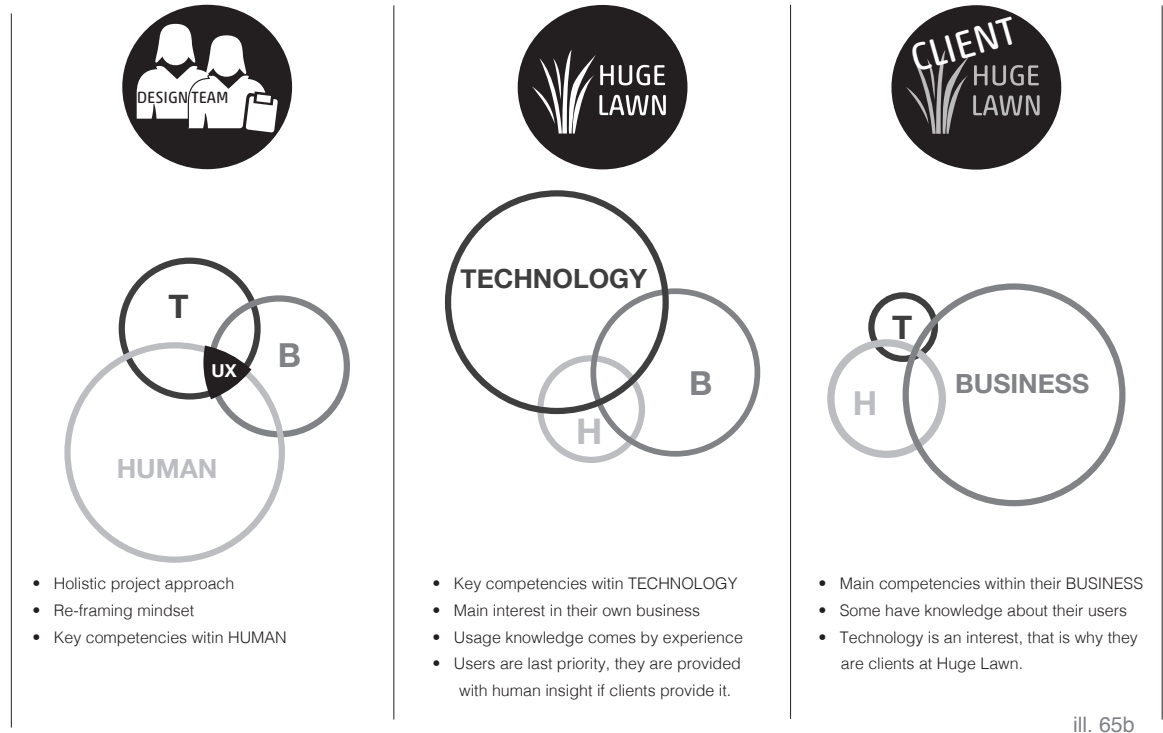
HUGE LAWN

Huge Lawns key competencies are within technology, as they are an app development consultancy, and they are affected by their clients demands.

Working within a business to business industry, the focus on human values ends up being last priority. Business is important in relation to themselves and their liquidity. Sometimes customers provide end user knowledge, otherwise knowledge in terms of application use is experience based. [M8]

HUGE LAWN CLIENTS

Huge Lawns clients sometimes have statistics and direct customer feedback. How much this information is used in collaboration projects with Huge Lawn would be guessing, but based on Huge Lawns comments on end user insight during development, it implies it is not used enough. [M8]



ill. 65b

"Our human element is based on experience and Client requirements, the end user is probably the lowest priority, unfortunately. Sometimes we tell what works well or not, but this is not backed up by research."

- Uffe, CEO Huge Lawn 29.4.14

"You're absolutely right, we are bigger on technology than human, this is probably a mistake, hmm.."

- Uffe, CEO Huge Lawn 29.4.14

"We are not thinking about client business in the projects, only in terms of what information they express."

- Uffe, CEO Huge Lawn 29.4.14

When the overview of the different approaches, in relation to the design teams design thinking approach model, was presented for Huge Lawn, they confirmed that the main approach differences is this: The design teams focus is user driven where Huge Lawn are technology driven.

RESEARCH QUESTION AND ANOTHER CASE

After mapping project approach differences it is clear that we do different things in our process than Huge Lawn. Which they confirmed. With this knowledge in place pondering about how we can add value to them, other than providing them with the ibeacon package solution, started.

Thoughts in connection to merging the approaches, occurred and mixed with curiosity, a research question was formulated, see illustration.

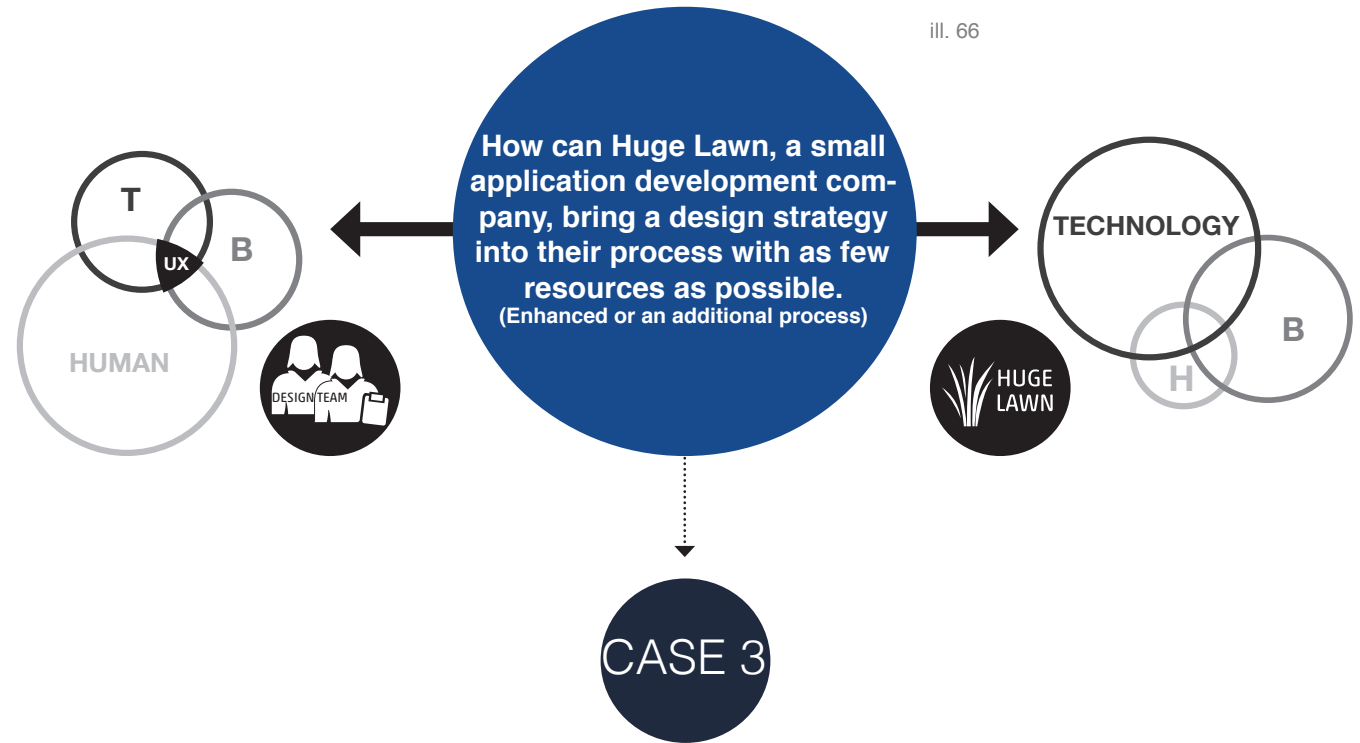
Diving into and understanding Huge Lawns process, is necessary to answer the research question. But understanding the perspective in our own process is crucial as well.

As mentioned in the process reflection in case 2, the activities conducted were very case specific. The concept reflection on case 2, page 62, mention that the design team wondered if the choice of Sunset Boulevard and the restaurant industry was right, and if another context would have been more obvious for implementing beacons, and thereby made a larger user experience impact.

From the design teams experience it can be stated that every project process has its own activities, and the combination of activities are structured and tailored to every project. Therefore it is decided to conduct a 3rd case to confirm or dis-confirm use of activities within this type of project.

Testing push sensibility had been on the agenda for case 2, but the context did not allow it, therefore this will be relevant to try to incorporate in the next case.

The 3rd case will be conducted rapidly, to clarify process activities. To ensure a real process output, it is focused on to both reflect in action and on action during the conduction of Case 3. This should provide understanding of the process as well as choice of activities in a given context.



To understand the perceptive in our own process a 3rd case will be started. Focusing on clarifying choice of activities and conducting a push sensibility test. Reflection on actions as well as in action should help clarifying the process composition.

CASE 3 - CONDITIONS

Conducting a "quick and dirty" case 3, focusing on the process sets some different conditions, which will be clarified here.

MAIN OBJECTIVE

- **Obtain deeper insight to our own process**

PRE - CONDITIONS

- Quick and dirty conduction
- The case will be planned and conducted within three days.
- The case will function as base for reflection in action.
- There is a risk for limited or no access to real users and stakeholders.
- More knowledge as well as experience from case 2 will have an effect.

CASE 3 REQUIREMENTS

- The context has to be nearby location
- There must be easy access
- The location should be push test sensibility relevant.
- A contexts where the users seek information
- A context where users have a need for "information on location"
- A context with greater potential for implementing a larger amount of beacons

CASE 3 CONCEPT OBJECTIVE

The objective is to clarify which activities are necessary to obtain user and context insight, not to design an application, but to achieve an amount of information that can set the basis for an initial solution ideation and wire frame sketching.

CASE PUSH THROUGH

To ensure reaching the main objective it is important to push through an effective process. To do this planning is crucial, as well as continuously reflecting in and on action.

The case 2 process illustration (page 64) sets the basis for planning and conducting case 3.

PLANNING SESSION 1

To push through a quick case 3, activities conducted in case 2 are used for inspiration when planning. Activities are chosen, prioritized and executed. All numbers refers to numbers on the process illustration for case 2 on page 64.

INPUT

5 POTENTIAL ANALYSIS
Adding beacon features to cases.

6 ELIMINATION
Base on potential

4 DESKTOP RESEARCH
Case exploration

29 DESKTOP RESEARCH
Facebook user insight

11 CONTEXT OBSERVATION
Supermarket, Restaurants

12 CONTEXT SHADOWING
Supermarket, Restaurants

USE

Looking back on earlier case potentials, determined the bases for brainstorming on a context for case 3.

After the brainstorm a context was chosen. Inspiration taken from the previous elimination. The context was chosen based on potentials and case 3 requirements.

After choosing context, a quick desktop research was done to gain initial context insight for planning the further process.

Searching on social media was very informative in case 2 in connection to user insight, therefore this was conducted again.

Conducting context observation is essential to gain context understanding.

Context shadowing is essential to both context and user experience understanding.

ACTION PLAN

1 BRAINSTORM
Case context

2 ELIMINATION
Based on requirements

3 DESKTOP RESEARCH
Case context

4 DESKTOP RESEARCH
Social Media - User insight

5 CONTEXT OBSERVATION

6 CONTEXT SHADOWING

At this point, information was missing and to plan further activities and detail the plan, depended on which context to be chosen. The observation and shadowing session could not be planned before the context was known. Therefore action was taken on the first four steps.

CONTEXT CHOICE

Activity:

1 BRAINSTORM
Case context

2 ELIMINATION
Based on requirements

Objective: Choosing a context

Execution: Looking back on earlier context ideas, brainstorm based on current knowledge, noting possibilities on paper. Sorting in ideas by grouping and comparative analysis. Choose a final context based on analysis and (interest).

Output objective: A specific case context.

Pre-conditions: See requirements on case 3 conditions

Dragging in case potentials from previous context ideas makes the brainstorm more efficient. The access condition eliminates the first context areas (see bullet points struck out under Earlier ideas).

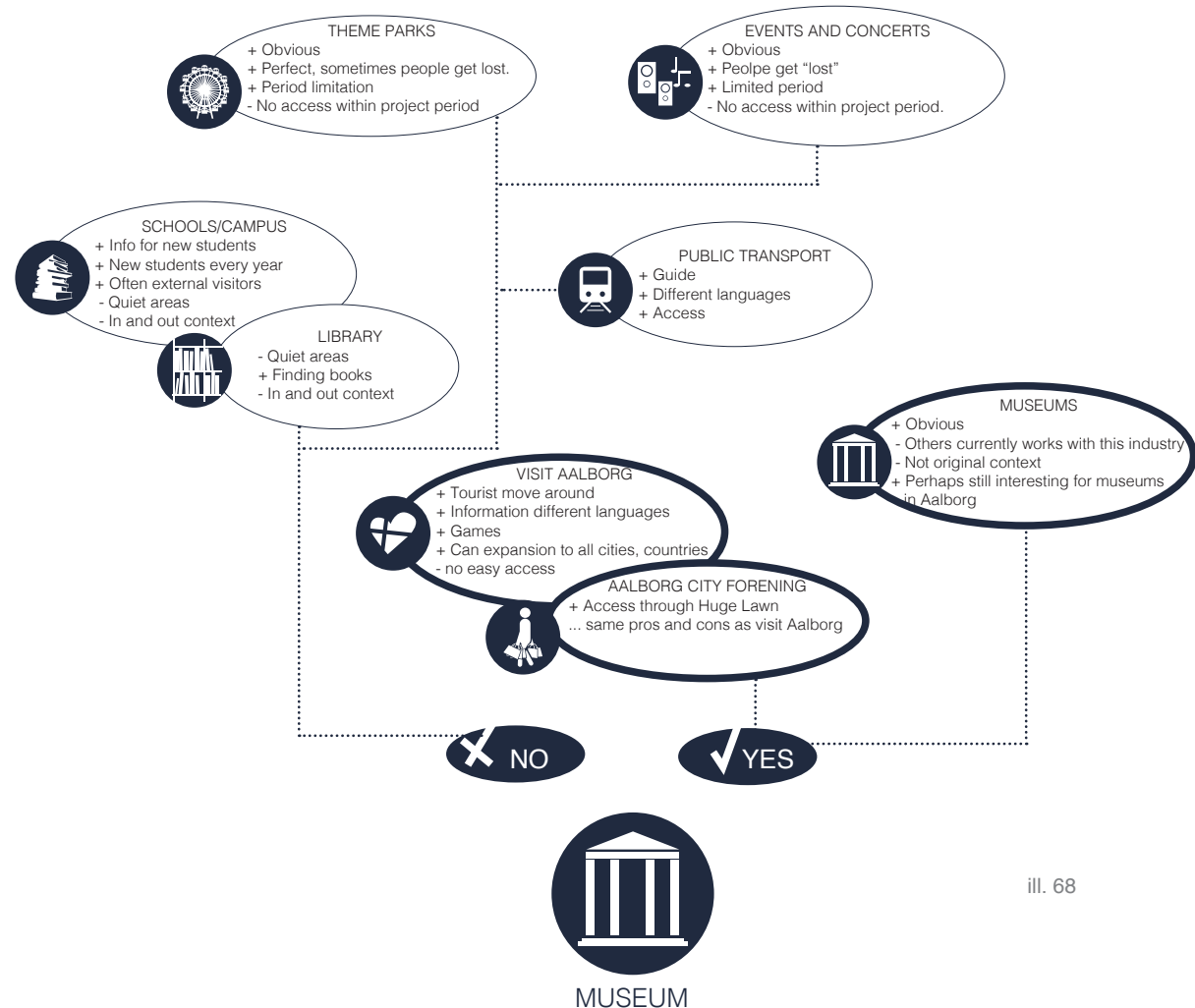
EARLIER IDEAS

- Theme parks and museums
- Hotel and Conference rooms
- Airport
- Bar, coffee shops
- Real Estate
- Retail
- Schools, campus
- Factories
- Dating
- Fitness
- Hospital/Health care
- Elderly Care Child Care

NEW IDEAS

New ideas are noted and pros and cons are added based on immediate potential thoughts. Idea focus relate to case requirements.

- Events and concerts
- Visit Aalborg
- Aalborg City Forening
- Library
- Public transport



ill. 68

Visit Aalborg and Aalborg City forening is grouped based on similarity in connection to context type and users need for information. The same is in the event for Library and Schools Campus.

Quick decision based on near by access and interest is putting two contexts in focus. Museum and the group Visit Aalborg, Aalborg city forening. The first one can be a concrete context, where the group represents organizations, the context is areas based and not as specific. It is important to have a specific context, to ensure progress in the Case 3 conduction. Museum is chosen because it meets the requirements.

Output archived:

Context choise: **MUSEUM CONTEXT**

Reflection on action:

It is quite efficient for this activity to drag in case potentials from earlier. The case 3 conditions and requirements play a big role in deciding the new context as well as interest and potential. Even though this was rapidly conducted, more iterations alternates between the exploring and reflection phases.

DESKTOP RESEARCH

3 DESKTOP RESEARCH
Case context

4 DESKTOP RESEARCH
Social Media - User insight

Activity:

Objective: Initial context location, information and user insight.

Execution: Using the internet to find museum web pages and social media to find visitor information.

Output objective: Gaining basic context and user oriented knowledge for a specific museums context.

Pre-conditions:

- Near by location
- Access for observation

MUSEUMS IN AALBORG

Aalborg city center has 10 museums. The three placed nearest to the design team is investigated closer. They are a part of an umbrella organization called Nordjyllands Historiske Museum, which consist of 12 museums. One of the three museums only open for pre booked guided tours. This leads to research further on Aalborg Historiske museum and Gråbrødrekloster Museum, focusing on gathering context facts. (google.dk)

MUSEUMS FACTS

The facts can be useful for planning observations. In itself the facts only provide initial context knowledge, not a real understanding of the context. This can only be achieved by visiting. Though the desktop research clarifies that museums are placed very close to each other and display different types of exhibitions. (nordmus.dk)

USERS AND ONLINE VISIBILITY

The research continues focusing on gathering user insight. It is quickly clarified that neither of the museums have their own facebook page, but the organisation have. This reveals that visitors that "likes" the organisations is age ranged within 35-54 years. (facebook.dk)

It is discovered that facebook automatically generate sites based on user interest. So, more insight to the two specific museums is gathered. The site of Aalborg Historiske Museum, have most activity, Gråbrødrekloster have close to none, but neither of them are as active as for example the Sunset Facebook site. This information is important in connection to business; Facebook is not used to attract visitors. (facebook.dk)




AALBORG HISTORISKE MUSEUM

About
Aalborg Historiske Museum tells the history of the city and its surroundings through the latest 1000 years. Throughout the year you will see different special exhibitions, primarily including items from our own store-rooms. (www.nordmus.dk)

Exhibits
Currently eight different exhibitions

Contact: Open 10-16
Algade 48, 9000 Aalborg

ill. 69a



GRÅBRØDREKLOSTER MUSEET

About
The "Gråbrødrekloster Museet" is an underground museum 3 m below one of the busiest pedestrian streets, Algade in Aalborg. In the museum, the history of the Franciscan monastery is told. (www.nordmus.dk)

Exhibits
It one permanent ruin exhibition.

Contact: Open 10-16
Algade 19, 9000 Aalborg

ill. 69b

51 likes
460 check ins
27 reviews;
●●●●●



ill. 69c

NORDJYLLANDS HISTORISKE MUSEUM

656 likes
23 talks about it
35-54 is the most popular age range

0 likes
29 check ins
0 reviews;
○○○○○

"... a pleasant experience and not very expensive"

- Camilla S, Sorø, DK

"It is a **really cool**, underground museum...DON'T be alarmed if the lights goes out. This happened to my friend and I, and we **got so scared!**...we were standing there alone looking at skeletons...But after...we figured that it was an automatic light which turns off when there isn't any movement :-)"

- AnnemDK, Aalborg, DK

"**Most interesting museum (self service!)**... A great overview of the monastic movement in Aalborg, and Denmark in general..."

- Helge59 Kristiansand, NO

"...I spotted a **Museum flag** waving in the middle of one of the shopping streets in Aalborg... All we could see was a lift... a notice on a board asking us to insert 40DK ...The limit ...was 250kg for any amount of people. We were **amused** by this...The museum was **very interesting**....This little museum is well worth a visit."

- Wilma S, Lystrup, DK

"...**incredibly friendly and helpful staff**, but the exhibition is a little boring...**fine photos** of the old Aalborg...**Unfortunately**, everything is...**described in Danish**, so it is **difficult** to manage oneself...as a foreigner...it is **certainly a shame** as the Aalborg has an **interesting story** to tell, but the museum are not capable of bring in it properly to life. **Too bad! Admission fee is though affordable**..."

- Winnie B, Svenstrup, DK

"...Today the museum was **free entry which was very good**...displays of artwork which were very good pictures of Aalborg...This museum is **worth a visit**. There is a lift for convenience."

- Wilma S, Lystrup, DK

Output archived:

- Visibility at Online media in connection to business
- Specific context facts
- User experience
 - Keywords:
 - Aalborg historiske; Disappointment, satisfaction.
 - Gråbrødre kloster; Pleasant, interesting, scared.
 - Visitors appreciate the low entrance fee
- Helpful and friendly employees at Aalborg Historiske
- Self service at Aalborg Historiske
- Information provided:
 - Aalborg historiske; Mainly Danish, few translations
 - Gråbrødre kloster; Danish, German, and English

Reflection on action:

This desktop research provided initial insight to both context and users. It is an efficient activity to gain overall insight without using too much time. It can be used to set the base for construction questions and plan other activities.

PLANNING SESSION 2

The first four activities are executed and provided information for entering the next planning session. As planned earlier the next steps was to observe and shadow. Based on the knowledge at this point, more activities seem relevant to apply to the process.

INPUT

11 CONTEXT OBSERVATION
Supermarket, Restaurants

12 CONTEXT SHADOWING
Supermarket, Restaurants

26 SURVEY SETUP
Customers

27 INTERVIEW SETUP
Employees

USE

Because of the earlier mentioned time condition within this case, it is decided to conduct both observation and shadowing at the same visit. The observing and shadowing activity will be followed by a focus based observation.

To get as much information as possible during the museum visits, employee and visitor questions are formulated beforehand.

ACTION PLAN

5 OBSERVING AND SHADOWING

This session will be done as unobtrusive as possible to gain the best insight output. Notes and pictures will be taken to everything observed for documentation.

6 FOCUS OBSERVING

This session will be conducted as described above. The goal is to gain context and user insight. Inspired from case 2, focus subjects are formulated:

7 INTERVIEW QUESTIONS
Employee and visitors.

The questions can naturally not be formulated based on observing at this point they are based on the design team experience from visiting museums. All possible questions that can provide user and context insight is noted and later put under theme headlines to structure the questioning. During the development of questions another occurred: Can users give feedback on the idea to implement ibeacons in a museums context? The project idea pitch conducted for potential collaborative partners clarified that an initial idea is hard to explain to externals. To avoid misunderstandings, a new activity applied to the process to eschew explaining the technology and mention beacons. The activity is called "What if" technique.

8 WHAT IF QUESTIONS
Employee and visitors.

This technique is an alternative way to gain feedback in relation to pitching the project idea. The goal is to gain feedback that relates to the idea of implementing ibeacons in a museums context.

ACTION MATERIAL EXTRACT:

FOCUS SUBJECTS

- Ground plan, exhibition areas, other zones
- Exhibit types (analogue, digital, still, moving, active, inactive)
- Information types (analogue, digital, still, moving, active, inactive)
- Users - Guests - Employees
- Routes/journeys
- Touch points (How do users interact with exhibits?)
- Guided tours

INTERVIEW QUESTIONS - Employee, examples for all questions see [A17]

Exhibits

- Are some always present? Do they change and how often?
- Period exhibitions - For how long?
- Are some areas closed when setting up new exhibitions?

Visitors

- How many visitors in a year, month pr. day?
- Who are the visitors typically? (gender, age)
- Any groups? (schools, institutions, companies?)

.... other headlines Employee - staf tasks, Tours, Business, Experience, Information, Events, Awareness

INTERVIEW QUESTIONS - Visitor, examples

About

- Why did you visit this museum?
- How long did you stay here?
- What did you find interesting?

Information

- What do you think about the information provided? Did you miss any?
- How did you receive the information? How was it?
- Was the information clear/unclear annoying, great?

Experience

- What was your best experience and why?
- Did you experience disappointment?
- Which feelings do you have after a visit like this?

WHAT IF QUESTIONS (employee and visitors) for all questions see [A17]

- What would happen if every visitor wanted to use their mobile to get information in stead of reading all text signs?
- What would happen if the different information only occurred on your mobile when you were standing right in front of different exhibit elements?

The planning session was at this point conducted and material for observing was made. The next step was to take action. Gråbrøderkloster museet would be visited first, then Aalborg Historiske Museum.

CONTEXT VISIT

5 OBSERVING AND SHADOWING

Activity:

Objective: To attain real context and user insight.

Execution: First visit was at Gråbrødrekloster museet, then Aalborg Historiske museum. Shadowing and observing was conducted first, focusing on acting as visitors and note findings such as observations, thoughts, questions.

Output objective: Context journey understanding, visit experience and user insight.

Pre - Conditions

Having beacons and ux in mind.

Visit date Thursday May 1st 2014.

GRÅBRØDREKLOSTER MUSEET

EXPERIENCE AND JOURNEY

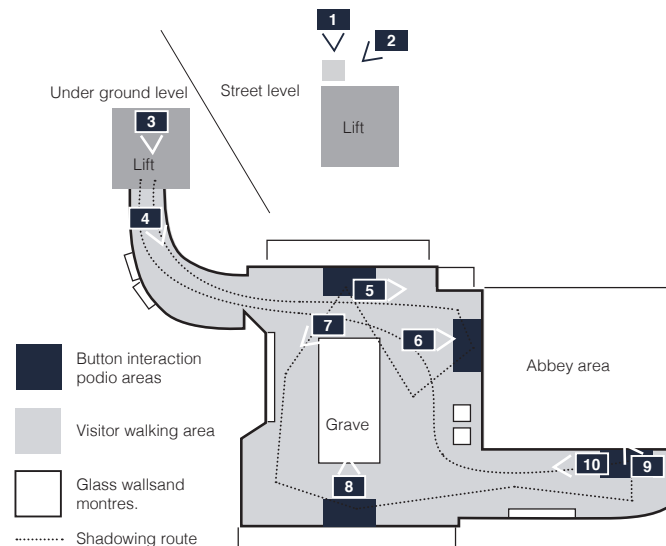
We found the lift (1) placed in the middle of the pedestrian street in Aalborg. Text and picture signs placed on glass walls surrounded the lift. To the right of the door a payment machine (2) was placed.

The lift literally send us into the dark underground (3). We were meet by a dark blue walls, spot light in the sealing that turned on when we stepped out of the elevator (3) into a turning corridor(4). There wasn't anything to see to begin with. Walking through the corridor, display windows build into the wall showed old building material.

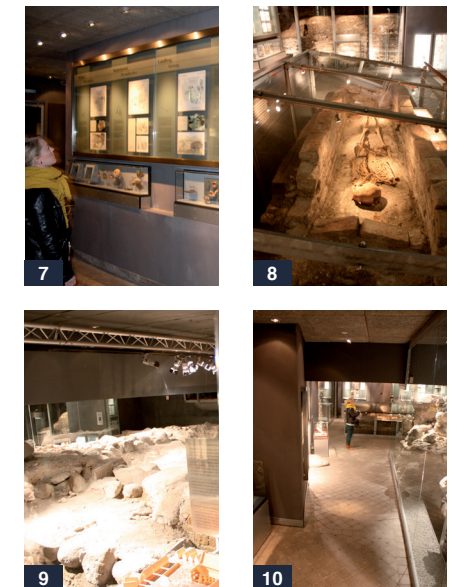
In the end of the corridor the opening to the exhibition room were found as well as information folders. The room had glass walls (8,10) all around and small platforms (6) where you could stand and push buttons, pushing these, lamps turned on (9) showing what the text in front of the buttons told about. Before discovering this it felt like seeing into the dark and it was hard to imagine how far you could look. This wasn't clear before pushing the buttons, it revealed that the museum was rather small.

There was no employee present and the complete visit was self service. We walked around, looked and saw dimly some of the text. At some point it got a bit scary down there. We heard footsteps and sounds from the (we assume) ventilation system. Later we discovered that it must be from Salling. When thinking about walking inside a burial site, it became uncomfortable. We both felt trapped, a bit scared, and wanted to go back up. Reading all the text signs present seemed to require an effort that neither of us were interested in accomplishing.

ill. 71a



ill. 71b



CONTEXT MAP

The context map is an illustration and has no scale. It is sketched to illustrate overall context elements mentioned in the journey is a part of the illustration. Numbers and areas are placed to clarify journey picture camera angle. Gråbrødrekloster is a small museum, allows 50 visitors at the same time.

OBSERVATION NOTES

- Lots of text
- Unclear sign reading order
- Disturbing and scary sounds
- Information in Danish and English
- Information as classic test signs
- Light reflections made some signs unreadable
- Clever, exiting interaction with light button feature

QUESTIONS

- Do they offer guided tours here?
- How many visitors does event recognize this museum?

IDEAS

- An audio guide explaining the story when walking around could have been nice.
- Visual beacons could be another way to interact with the objects Exhibited.

EXPERIENCE AND JOURNEY

Walking outside the museum (1), two street signs (1) indicate that it is open, but the building front is rather closed in its expression. The signs were showing some books in the top of the sign the text "Aalborg Historiske museum" clarified that this was a museum. The open wooden entrance door centred in the building front are guiding us to take few steps up and enter via a glass rotation door (2).

You step directly into the museum shop, where the front reception is placed. We were welcomed by the kind employee, she told us quickly where exhibitions were placed and how we could get there. Also that we could relax and take a free cup of coffee in the "cafe" if we would fill out a questionnaire - after our tour. The first exhibition room displayed "Aalborg in the world" (3) There were many things to see, and relate to - in terms of recognisable items. Kind of a nostalgic feeling - send thoughts back on good old memories.

We took the stairs to the next floor, the staircase was very dark (4), entering the floor confusing arose, we wasn't sure if we were meant to go to right or left. We chose right because our attention was attracted by a big yellow sign (5), we entered the gable house exhibition (6) an got confused by al the signs. On this floor six exhibitions were placed in addition to the Gable house; Renaissance in North of Jutland (7), Aalborg in war (9), Aalborg room 1602, Aalborg Photos and paintings (9), Have a cigar(10).

There was so much info that the concentration failed half way through. After finishing first floor. Not much energy was left to explore the second floor so a quick run through was made, but we didn't really pay that much attention to the exhibition areas here. Maybe because of lack of interest in the glass and silver exhibits here.

CONTEXT MAP

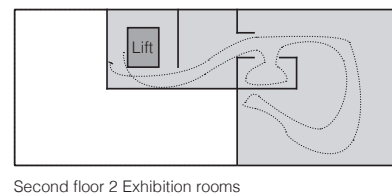
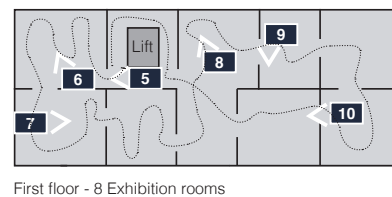
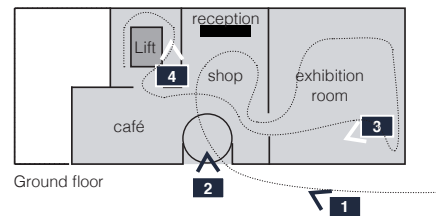
The context map is an illustration and has no scale. It is sketched to illustrate overall context elements mentioned in the journey is a part of the illustration. Numbers and areas are placed to clarify journey picture camera angle. Aalborg Historiske museum is a big museum, with three levels, showing very different exhibitions.

OBSERVATION NOTES

- Many changes in information layout
- No visual structure, no clear identity
- The door openings guides the route
- Very different exhibitions
- Its hard to stay focused because of info boom.

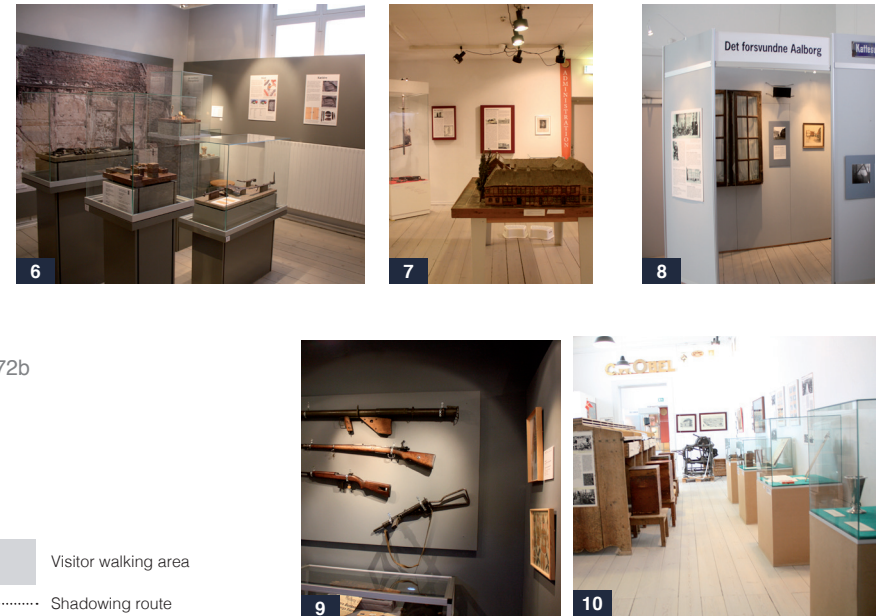
IDEAS

- If beacons are installed different languages can be incorporated
- Beacons can attract attention outside the museum



ill. 72b

Visitor walking area
..... Shadowing route



It is clear that no matter how unobtrusive we are, user experience and beacons is still on our minds during the visit. No visitors was present which let to a thought - How many visitors do they even have?!

The two museums have very different contexts. Aalborg Historiske is very museum classical. Gråbrødrekloster Museet is special in it self, because its hidden beneath a busy pedestrian zone.

Post conditions:

Gråbrødrekloster; Visit time 10.20-10.40, No visitors present, no employee present.
Aalborg Historiske; Visit time 10.50-11.40, No visitors present when observing and shadowing.

Output archived:

Experience and Journey understanding.
Context clarification
Ibeacon ideas
Observation notes

Reflection on action:

This activity was a great way to experience the context, and gain insight. Some of the output elements would not have been discovered if this activity was not done. For example context details as sign and information differences. It would have been preferable to do the observation when more visitors were present, because even though the design team acted as visitors, it is hard not to be affected by the pre-conditions.

Activity:

Objective: To clarify circumstances in connection to focus subjects.

Execution: This activity is conducted after shadowing and observation, focusing on gathering information in connection to the earlier mentioned focus subjects.

Output objective: Specific information in connection to focus subjects. Ability to clarify findings for use later in the process.

Pre - conditions:

Focus observing with user experience an beacon in mind.

We will be affected by initial context and user experience from earlier activities.

FOCUS SUBJECTS

- 1 Ground plan, exhibition areas, other zones
- 2 Exhibit types (analogue, digital, still, moving, active, inactive)
- 3 Information types (analogue, digital, still, moving, active, inactive)
- 4 Users - Guests - Employees
- 5 Rutes/journeys
- 6 Touch points (How do users interact with exhibits?)
- 7 Guided tours

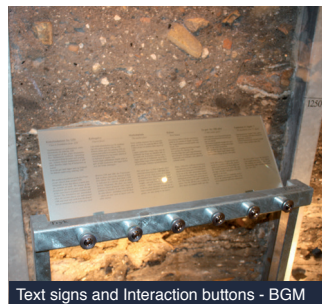
ill. 73



Pictures and text signs - BGM



Pictures and text signs - BGM



Text signs and Interaction buttons - BGM



Buttons control light beams - BGM



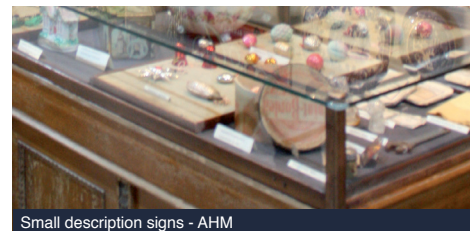
English translation signs - AHM



Pictures and text signs



Interaction invitation text signs



Small description signs - AHM

GRÅBRØDREKLOSTER MUSEET

- 1 See sketch from previous activity, used to clarify user journey.
- 2 One exhibition still and inactive with few physical interaction, in buttons activating lighthbeams.
- 3 Still analogue text signs, written in Danish and English. Buttons enhance interaction, light beams highlights content and guide view focus. See picture examples marked GBM
- 4 No users present during the visit.
- 5 The Shadowing journey is illustrated to clarify output from previous activities
- 6 There many touch points and journeys will look different from person to person.
- 7 No info in connection to this

AALBORG HISTORISKE MUSEUM

- 1 See sketch from previous activity, used to clarify user journey.
- 2 Very different exhibition rooms mostly still and inactive elements, some are freely to touch and feel.
- 3 Friendly staff instructions. Mostly a huge amount of different types of text signs but also video and sound.
- 4 No users present during the visit.
- 5 The Shadowing journey is illustrated to clarify output from previous activities
- 6 There are a boom of touch points in this context, which relate to the context size and different exhibits.
- 7 No info in connection to this

It is very hard to locate everything on a detailed level both because of the time condition and the overwhelming amount of information in both contexts. Concentration is lost after a while in both contexts especially at Aalborg Historiske Museum because the exhibitions change so much.

Post conditions:

No visitors present, no employee present at Gråbrødrekloster museum.

Output archived:

Concrete context findings.

Reflection on action:

This activity was a great follow up after observing and shadowing, because it put focus on specific information that would provide a deeper context understanding. Though one should be attentive to, that there is a risk for losing concentration to execute this activity if conducted in continuation of observing and shadowing.

Activity: Employee and visitors. and Employee and visitors.

Objective: To be provided with information that cannot be observed.

Execution: Ask questions, and ask in relation to answers. The the prepared questions work as focus guidelines.

Output objective: To obtain additional understanding for the context.

Pre - conditions: Risk of busy staff with no time for an interview. No employees at Gråbrødrekloster Museet.

In the end of the visit at Aalborg Historiske Museum, we got the chance to ask the front staff employee questions, this provides additional information in connection to the headlines earlier mentioned.

Asking back in connection to answers is working very well and it feels like having a conversation and not an interview. Suddenly two visitors entered and the phone rang. It is a bit disturbing to the conversation and sometimes this entails lost focus.

"Most exhibitions are permanent, if not they are changed every 1,5-2 years"

- Ulla, receptionist at AHM

Exhibitions

"Entrance fee is a very small part of covering the costs, so we are dependent on municipality subsidy and funding."

- Ulla, receptionist at AHM

Financing

"Complex structure, this is the head of-fice for the umbrella organization. In summer periods they are 100+ staff members. Different boards and associations are affiliated"

- Ulla, receptionist at AHM

"20 employees at this museum, positions like; archaeologist, graphic designer, nature supervisor, book keeper, receptionist"

- Ulla, receptionist at AHM

Organisation

"12 instructors have responsibilities for either different departments, historical periods, magazines, systems etc."

- Ulla, receptionist at AHM

"I can give you the number of visitors from 2013;
- 18300 visitors
- 1684 institutions (schools, day care centers)
- 1600 adults full price
- 672 adults discount (retired and students)
- 11481 free (annual pass or members)
- 321 monthly asses card owners."

- Ulla, receptionist at AHM

"Foreign visitors comes on everyday basis, on all the amount is low."

- Ulla, receptionist at AHM

"Typical visitor is a 40+ years old, interested in local history."

- Ulla, receptionist at AHM

Visitors

"Visitors respond that they think the museum is "Hyggelig" - and has a good atmosphere."

- Ulla, receptionist at AHM

"We often get comments in connection to the missing English information"

- Ulla, receptionist at AHM

"In special seasons - individual guided tours."

- Ulla, receptionist at AHM

"We do guided tours for groups, they are structured based on our visitors requirements and have to be booked in advance."

- Ulla, receptionist at AHM

Guided tours

"We use facebook, have brochures, and if we set up a stand in the city as soon as opportunities occur, for example in Nordkraft."

- Ulla, receptionist at AHM

Awareness

"The building front is too closed, many passing-byes are not even aware that this is a museum."

- Ulla, receptionist at AHM

"This building was build for museum purpose, so the windows are placed high, to preserve exhibits. This causes in dark rooms and low amount of daylight."

- Ulla, receptionist at AHM

Your opinion

"I think the place needs a boost"

- Ulla, receptionist at AHM

What if...

"It would be great if visitors could have information on their mobile, it could attract younger visitors"

- Ulla, receptionist at AHM

Post conditions:

Only one staff member was interviewed, she works daily as front staff in the reception. Two visitors entered during staff interview (1 retired and 2 student) and the phone rang which interfered the interview.

Output archived:

- Complex organisation
- Many different stakeholders
- Subsidy dependent
- "Permanent" exhibitions
- Typical visitor 40+
- Many schools and institution
- "Hyggelig" atmosphere
- Dark environment, because of building
- Information on mobile - Great

Reflection on action:

Prepaid questions worked well to clarify focus areas for questionings, but using intuition was a better way to build questions in action. Trying to make the interview work as a conversation was valuable for establishing a connection, if the interviewee feels comfortable in the situation, more information could be obtained and increases the output.

PLANNING SESSION 03

At this point all context and user insight possible to obtain in connection to the conditions is obtained, and the next step is to plan and conduct a push test. No activities can be directly applied from case 2, but some can function as inspiration for planning the test steps.

Based on experience from developing case two, it is clear that sensibility exists when sending push messages. Visitors in the museums industry is attentive and investigative to towards information, though the balance between which pushes gives value and which dose not is essential to test.

Sensibility revolves around factors such as information type, personal interest, references, mood ect. Therefore a test is set up, to be able to define this delicate balance. After all information prior to this planning session, it seems most relevant to test at Aalborg Historiske Museum because Gråbrødrekloster Museum is not a classical museum, not said that beacons would not fit in here. But at Aalborg Historiske Museum, the exhibitions areas differed more as well as elements within the areas. Elements means conditions like exhibits, information types, interaction and touch points.

One exhibition area is chosen "Aalborg i Verden". It is unrealistic to use the complete museum in terms of time limit and this room represent the above mentioned elements.

INPUT

3 KEY FEATURE DEFINITION
Ibeacon

36 EXTREME CASE
Service concept

USE

Ibeacon key features clarified in connection to case 2 and our experience is reflected on to get inspiration to specify context relevant push varieties to be tested, these are:

- Push with sound and vibration
- Push with vibration
- Visible interaction pushes

To keep the test as simple as possible, it is decided only to construct text pushes.

ACTION PLAN

9 PUSH VARIETIES
Context relevant pushes

CASE SPECIFIC ACTIVITIES

10 PUSH TEXT PREPARATION

Conducting the prior activities clarified that relying on meeting visitors in the context is not realistic. Expecting strangers to be interested in accomplishing a test would be unrealistic as well. Therefore it is decided to invite an external acquaintance to help accomplishing the test, inspired from application testing in case 2.

The amount of pushes within a distance is another essential factor for being able to detect the value balance within the context. Therefore a map of the "Aalborg i Verden" room is drawn to add push spots. Zones are marked to clarify the different focuses. See [illustration XX](#) on next page for map and explanation.

It is important to construct context relevant messages, because of the relation between sensibility and information type. It is constructed by experience from earlier activities, combined with information from an exhibition folder. Each beacon spot number have a relevant text. See text message examples on next page. For full text see [A18]

11 CONDITION CLARIFICATION Push sensibility test

At the moment these condition are prior to the test;

- There might be other visitors present when testing
- It is not possible to use beacons. Therefore pushes will be simulated by sending sms from a phone, to a phone.
- Pushes will consist of text.
- Only one test person will conduct the test.
- It is a risk that the test person is not able to understand the simulation.
- The design team will be present. One observing and function as a person to turn to in case of test person questions. The other responsible for sending defined messages to specific spots.
- The test person will have no other information than;
 - Route direction before entering the room.
 - Different text messages will be send to the phone, at one point during the test, a design team member will turn on sound.
 - Enjoy the tour and report to the design team person in case of questions.

12 PUSH SENSIBILITY TEST EXECUTION

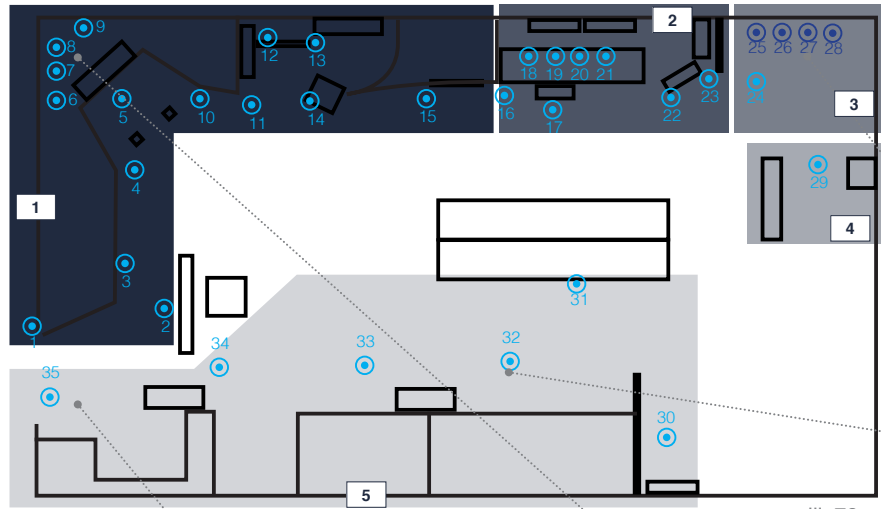
This test will be conducted based on this plan.

13 EVALUATING
Test user experience

14 CRITERIA DEFINITION
Applications

After testing information will be visualized to evaluate the outcome. Visuals will consist of pictures and user comments. Overall criteria will be defined for developing an application for case 3.

TEST CONTEXT MAP



ill. 76a

Area 1 (fashion shop+bakery)

We tested many pushes within a short distance, without sound, but with vibrations.

Area 2 (hardware dealer)

Both sound and vibration was turned on. These "settings" were continued throughout the test. Special for this area was also many pushes within a short distance.

Area 3 (paintings)

Beacon interaction was in focus - so here visual "beacons representations" were set up.

Area 4: (aalborg video)

Relaxing and viewing video was in focus.

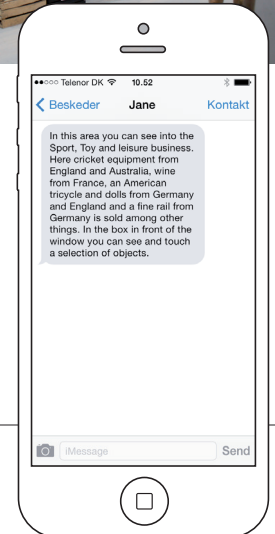
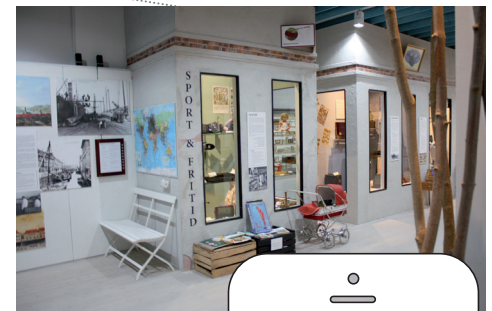
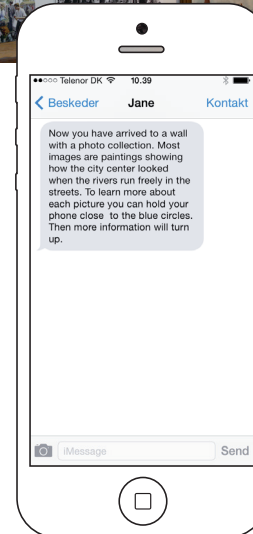
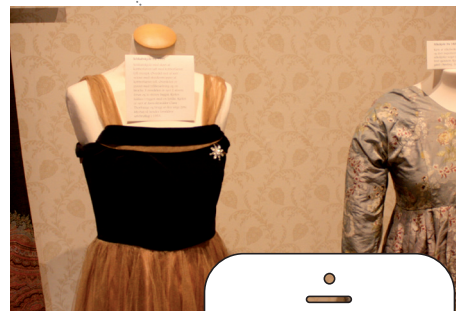
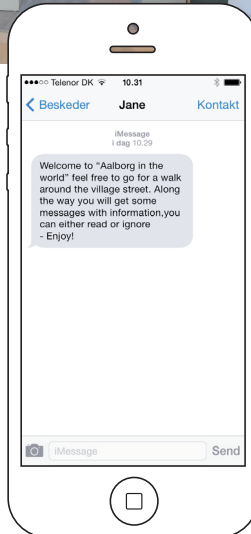
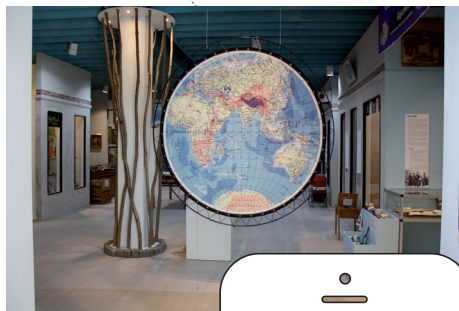
Area 5 (world map to travel agency)

Only area description pushes were sent. Focus was few but overall pushes. The test ended with a "Thank you for the visit" push.

ill. 76b

PUSH TEXT EXAMPLES

See appendix [A18] for all text examples



Since this plan was made in progress, the action plan is:

- Run push sensibility test
- Visualize out put, evaluate user experience
- Define criteria for application development.

Activity:

Objective: Test push sensibility to clarify an impression of the balance in amount of pushes and user value .

Execution: Described in planning session 03. Furthermore Imesage and wifi will be used at the museum to avoid a delay from sending to receiving the messages.

Output objective: To reach the objective and clarify user experience.

Pre - conditions: Described in planning session 03 +

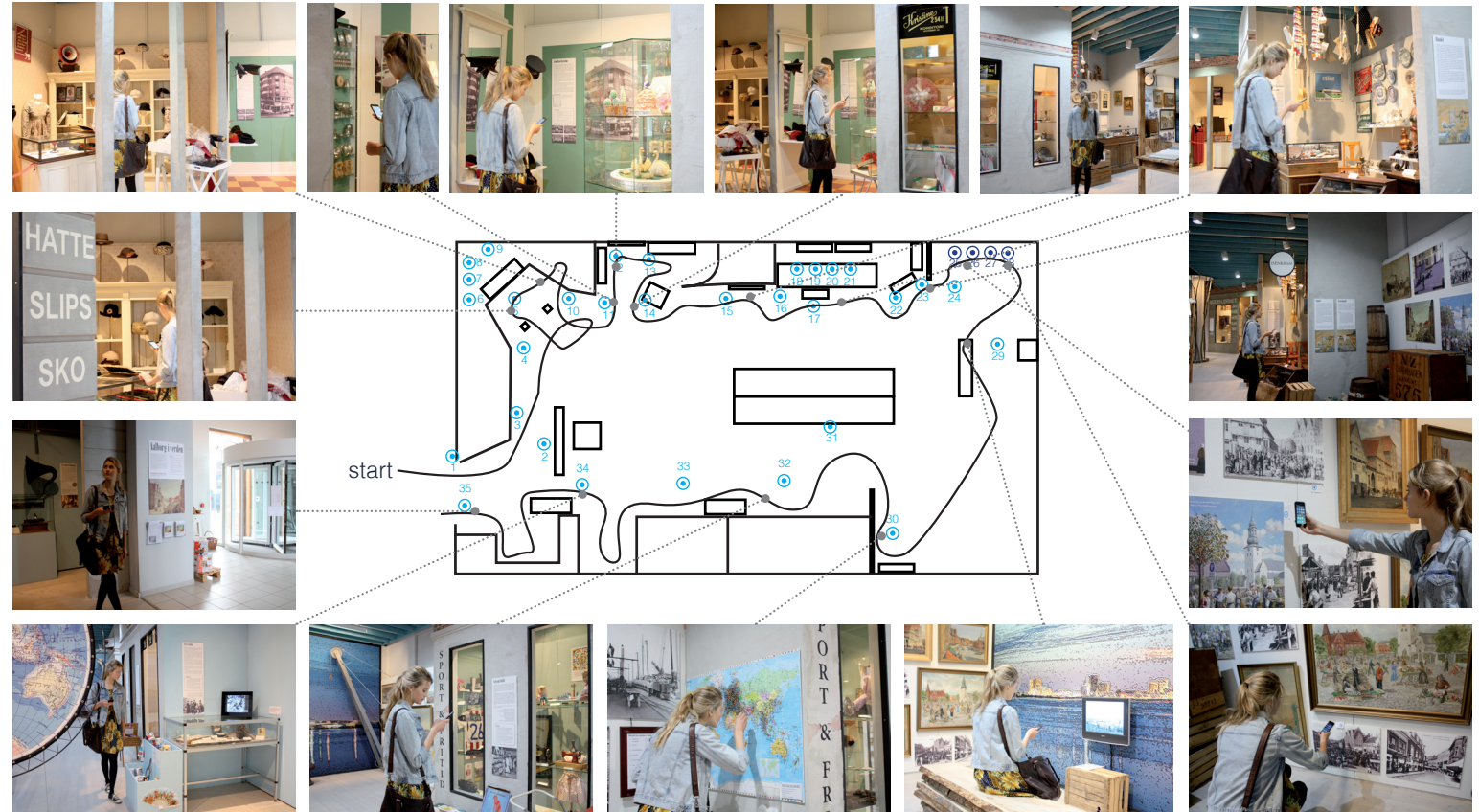
Action time and date: Friday may 2nd 13.00 to 13.45.

Test person: 18 year old Emma, first time visitor at Aalborg Historiske Museum. Visits museums a couple of times every year.



ill. 77a

Even though a detailed plan was made, we experienced minor problems. There is no wifi connection available at the museum, which results in a small delay in receiving the messages. Therefore we had to tell Emma to walk a few steps back, right after start up. It is clear that us being present have an impact on the test. The experience would have been more real if it was recorded by a hidden camera and a demo application was made and real beacons set up. Emma is good at imagining the simulation and results will indicate the balance in connection to push amount and sensibility.



Post conditions: The museum had no wifi so there was a small delay in receiving the messages.

Output achieved:

Knowledge in connection to push sensibility within a specific context. Test person comments

Reflection on action:

Testing was a good activity to clarify how users act with a product/service. This test showed that making a simulation of a future reality is very efficient to spot initial findings for use during development.

ill. 77b

Activity: and

Objective: Gather test results to clarify emotion and the balance in amount of pushes and user value.

Execution: Use the context map illustration to visualize user experience and emotions.

Output objective: To be able to define criteria in connection to the test results.

Pre - conditions:

The design team was affected by experience from case 2 in connection to illustrate output, and make sum-up.

After conducting the push test, a conversation with Emma was part of the evaluation, see a selection of comments in the speech bobbles. This conversation combined with design team observation during the test clarified that;

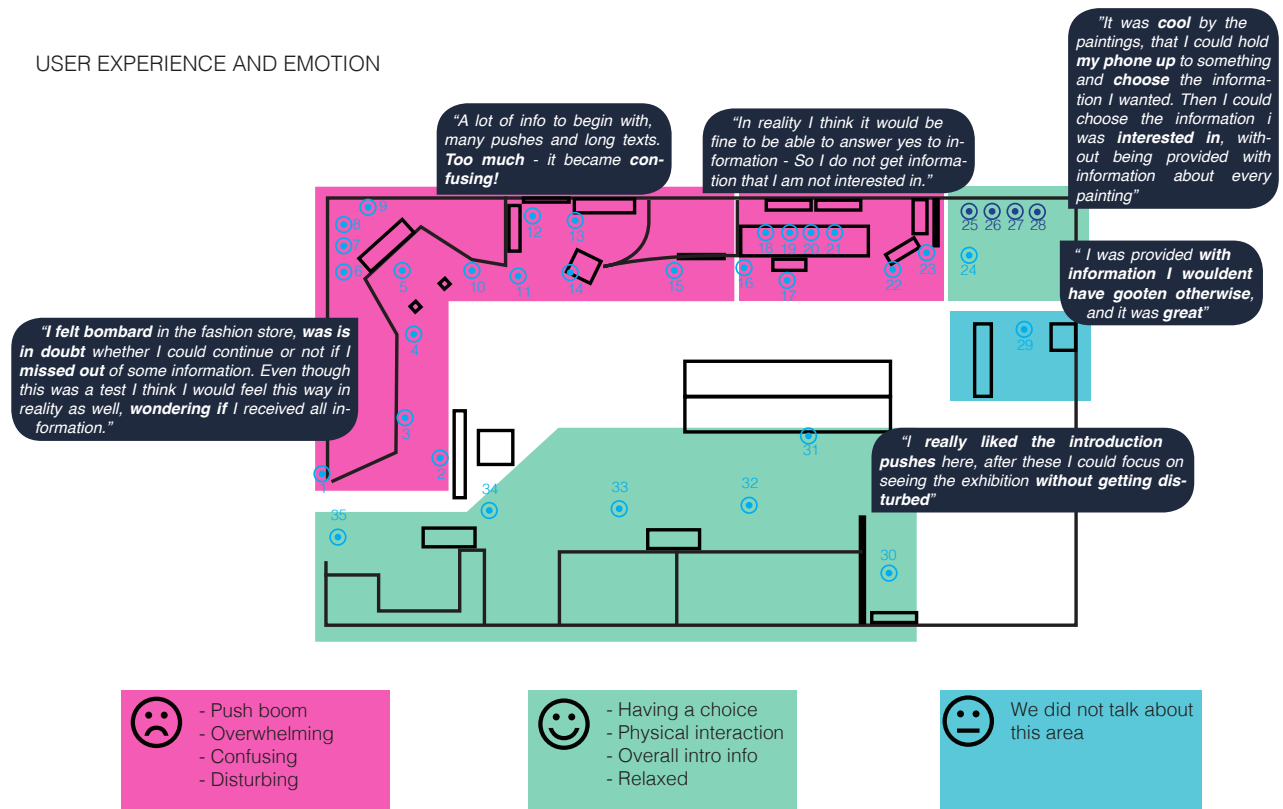
- Having a choice is crucial - we knew that this was important, but in a context that provides the visitor with so much information it is even more important.
- Visual beacons will work very well in activating the user, it gives them control and ability to manage their information stream. That feature was awarded.
- Saving information for later - Would be a feature that can prolong the experience, maybe also entail in more visitors - Mouth to mouth publicity.

The test confirmed that beacons cannot replace service touch points only duplicate them. They have to add information to improve experience. These insights sets the basis for user value criteria construction.

USER VALUE CRITERIA

- To have a choice
- To be able to control information by interest.
- To have a clear overview.
- To be provided with additional information
- Additional service

USER EXPERIENCE AND EMOTION



ill. 78

Output achieved:

- Emotion and experience map
- Push sensibility insight
- User value criteria

Reflection on action:

When conducting the elimination and specification activities it was often helpful to visual output. This helped putting focus on important exploration material and provided overview.

DESIGN BRIEF

Activity: Design brief

Objective: To get an overview of all insight previous activities provided.

Execution: Look back on earlier activities and gather information that revolved around user and context understanding.

Output objective: An initial design brief to specify focus for ideation.

Pre - conditions: Prioritising in information to communicate a clear overview, would naturally leave some information out.
Case 3 conditions, requirements and focus.

OVERALL EXPLORATION OUTPUT

DESKTOP RESEARCH

- Limited visibility at Online media
- Context facts Aalborg Historiske Museum
- User experience
 - Disappointment and satisfaction
 - Low entrance fee appreciation
 - Friendly employees
- Information language mainly Danish

OBSERVATION NOTES

- Changes in information layout
- No visual structure, no clear identity
- The context arrangement guides journey
- Very different exhibitions
- Information boom

FOCUS OBSERVATION

- Journeys differs in terms of user
- Mostly still and inactive exhibit elements, some touchable items.
- Touch point boom!

EMPLOYEE INTERVIEW

- Complex organization
- Many different stakeholders
- Subsidy dependent
- "Permanent" exhibitions
- Typical visitor 40+
- Many schools and institution
- "Hyggelig" atmosphere
- Dark environment, because of building
- Information on mobile - Great

USER VALUE CRITERIA

- To have a choice
- To be able to control information by interest.
- To have a clear overview.
- To be provided with additional information
- Additional service



INITIAL DESIGN BRIEF CONTENT

USER VALUE CRITERIA

- To have a choice
- To be able to control information by interest.
- To have a clear overview.
- To be provided with additional information
- Reduction of negative experiences

CONTEXT INFO CRITERIA

- Multiple languages
- Journey guide
- Overall area introduction
- Visual beacon areas
- Choice in information provided
- Attention/awareness improvement

DELIMITATION

- No change of physical context
- No adjustments to existing information
- No change in personal service
- No suggestions to financial structure
- No suggestions to exhibit material
- No change in journey
- No consideration to organization structure
- No change in context

The design brief is constructed focusing on setting up requirements in connection to Aalborg Historiske museum. This museum provided most information and is therefore chosen. The quick and dirty focus for this case as well as all conditions mentioned so far, sets focus on only clarifying user context and delimitation criteria.

This is not a fully brief and should therefore only clarify the basis for an ideation and wire frame sketching.

Output archived:

Initial design brief focusing on gathering information for ideation.

- Design brief

Reflection on action:

Design brief content always differ from project to project, and is a great tool for setting up focus areas, criteria and important knowledge etc. for further project development. This material enabled the design team to control the further development and focus on most important circumstances

IDEATION AND WIRE FRAME SKETCHING

Objective: To briefly communicate case 3 ideas and clarify initial solution ideas in wire frames.

Execution: Look at earlier ideas, do a combination of noting ideas and sketching immediate solution ideas in wire frames.

Output objective: Show initial wire frame possibilities.

Pre - conditions:

Affected by experience from case 2 in connection to illustrate wire frames. Ideas will be very conceptual.

EARLIER IDEAS

- 1 An audio guide explaining the story when walking.
- 2 Visual beacons could be another way to interact with the objects Exhibited.
- 3 If beacons are installed different languages can be incorporated
- 4 Beacons can attract attention outside the museum

ADDITIONAL IDEAS

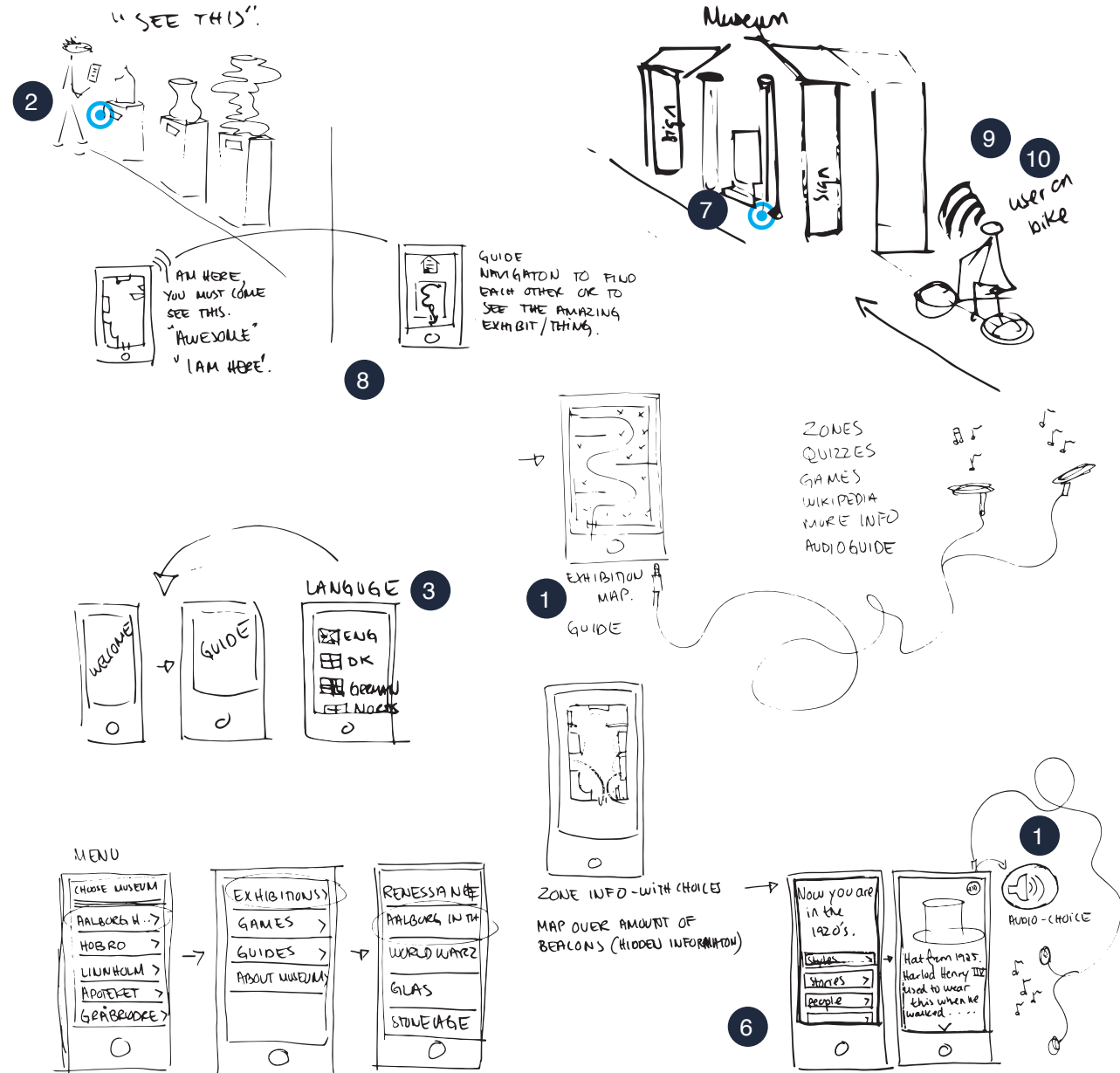
- 5 Visual physical beacons at the different signs / areas can give visitors a choice.
- 6 A push messages with "click next option" can provide a story getting told in the right order by help of ibeacon guide.
- 7 Sign at the entrance with an explanation about the application. A download zone.
- 8 Schools can perhaps download the app before arrival. Special school routes could be constructed - games - treasure hunt?!
- 9 The beacon can attract more users out of curiosity - More attractive for young users if the can use their phone.
- 10 The museum can reach visitors with outdoor push messages.

Output achieved:

- 10 initial ideas and wire frame sketches.

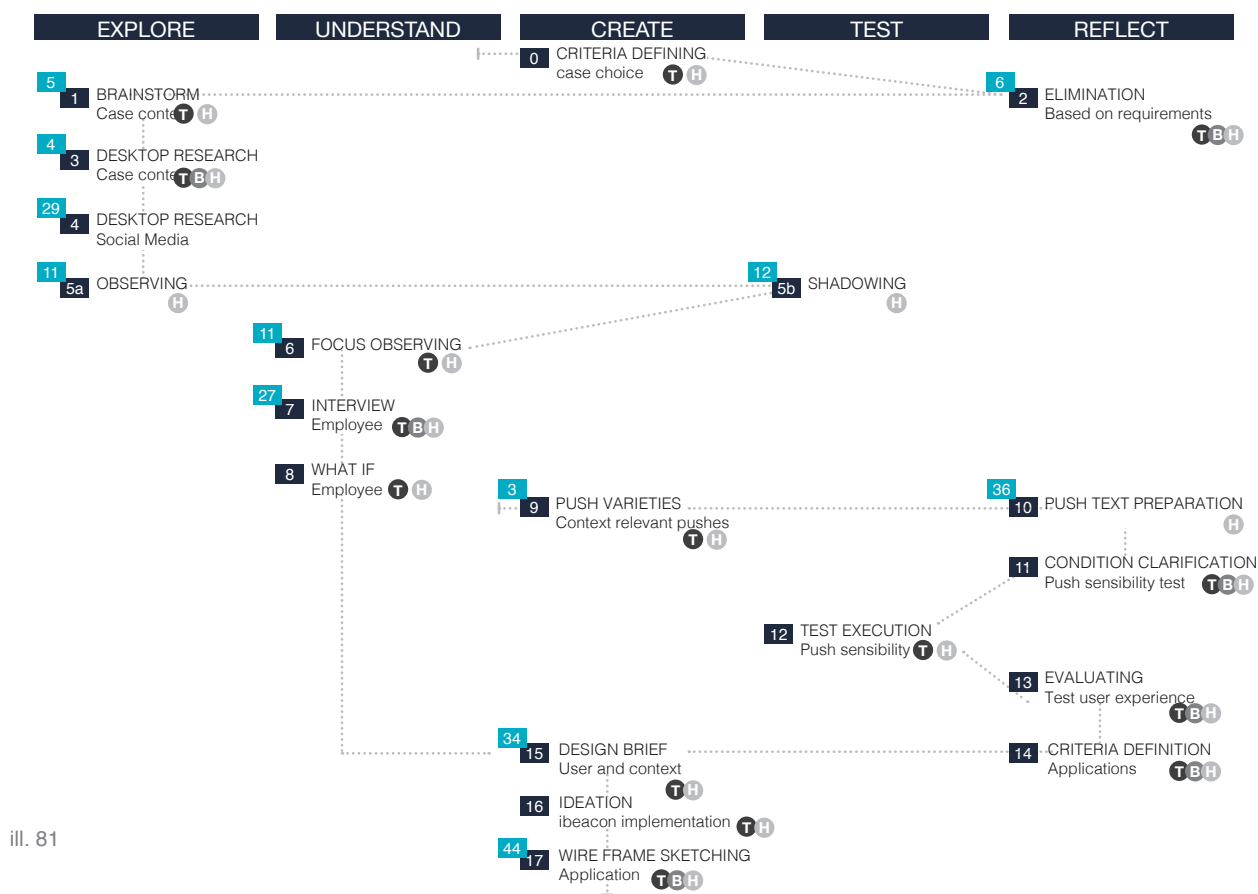
Reflection on action:

Again ideation and wire frame sketching was a great tool for visualizing ideas and clarify possibilities in connection. Conceptual hand sketches provided a "quick and dirty" overview



CASE 3 PROCESS OVERVIEW

After conducting a “quick and dirty” case 3, process activities could be gathered in an overall process illustration, for comparison with the process behind case 2.



ill. 81

Reflection on the process it is clear that choice of activities reflects the case focus and conditions. Many activities revolving around user and context understanding were reused with a few adjustments.

As illustrated the order of activities conducted differs because this case had a different starting points and was build based on experience from case 2. More knowledge was in play, which entailed delimitation of some and adding of new activities.

The design thinking process approach added to activities clarified that the overlap between human and technology played a bigger role than the overlap between business and technology as well as business and human.

All activities conducted in this case were very case specific, it reveals that new activities had to be added because of the different context and focus. The illustration will be used when reflecting on the processes.

- Case 3 process overview.

CASE 3 CLOSURE

Case 3 is conducted . It illustrates how “quick and dirty “ a case can be established and most importantly it clarified reuse of activities, added activities as well as delimited some activities. This information will combined with the process information from case 2, and used as basis for further development of case 1.

OUTPUT MATERIAL

All output material from case 3 is illustrated with the purpose to communicate it to readers of this report. To see the actual internal working material from the quick and dirty execution of case 3 [A19]

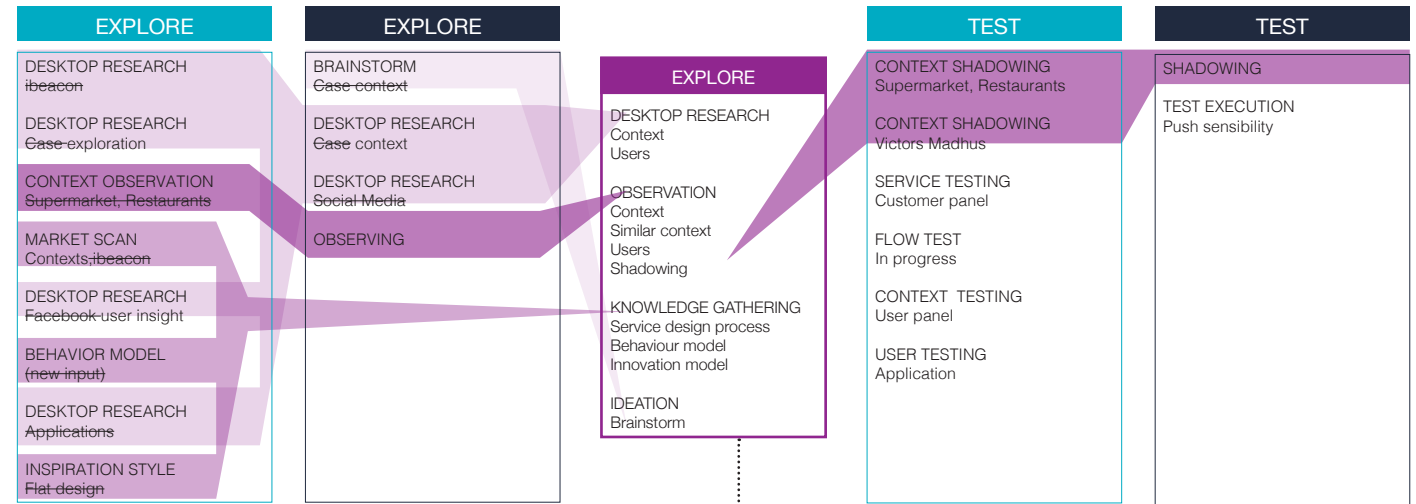
DESIGN TEAM PROCESS COMPOSITION

After conducting the “quick and dirty” case 3 another process reflection was conducted within this type of project. The processes behind case 2 and 2 was basis for mapping an overall design team process, consisting of elements and activities. The activities within the cases are mentioned earlier quite case specific. The mapping goal is to assemble activities and reformulating them in connection to activity focus, and not to the case specific focuses.

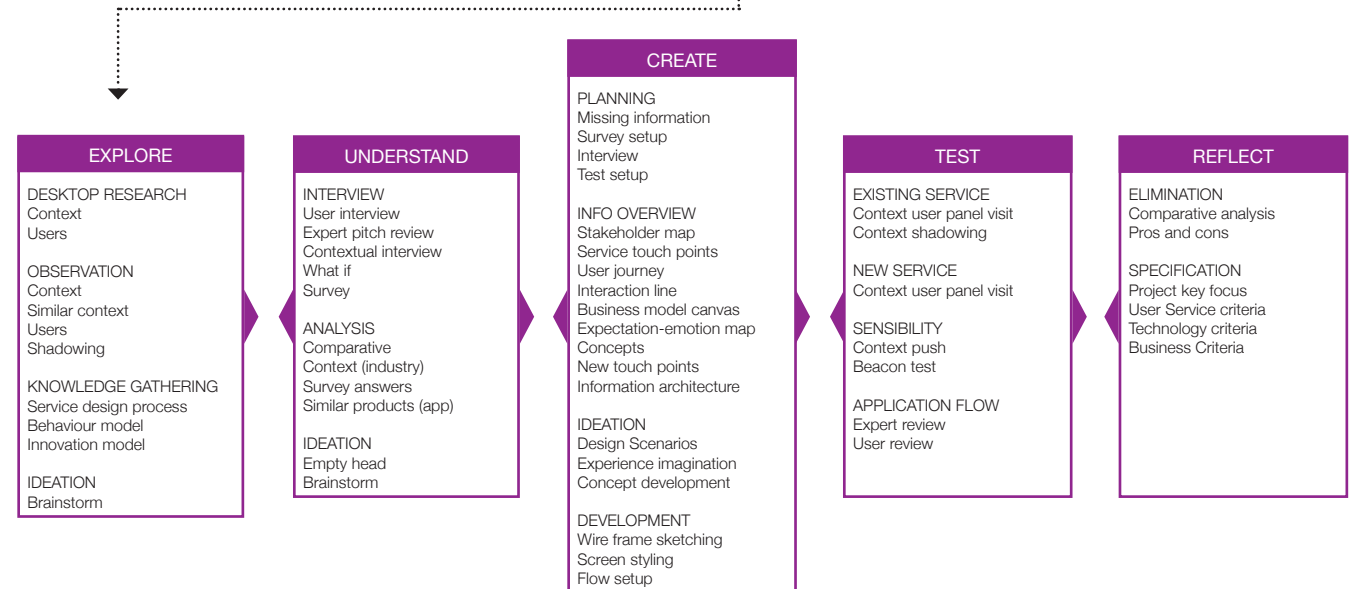
The two processes were held up against each other and case specific formulations were deleted before the activities were grouped in terms of similarity. See illustration.

Shadowing was an observation activity, in case 2 and 3 used for testing existing or similar services. In the event of grouping activities it was decided to place shadowing in the exploration phase. Because this activity was mainly used for exploration.

Going through all activities and phases made it possible to assemble an overall design team process illustration. (See illustration X). The arrows between phase boxes illustrates iterations between phases.



DESIGN TEAM PROCESS



The assembled design team process overview for this type of project will be used for later comparison of the Design team process and Hugu Lawns process.

HUGE LAWN PROCESS PHASES

To figure out what the design team could provide Huge Lawn with, it was necessary to understand their current process. Several meetings with Huge Lawns made it possible to construct a process draft. This was presented to Huge Lawn, for feedback and mapping their process in collaboration.

COLLABORATIVE PROCESS MAPPING

The process draft illustrated was made by the design team and was presented to Huge Lawn as a tool to clarify Huge Lawns process. In collaboration with Uffe Koch, CEO at Huge Lawn the overall process phases were clarified. Overall activities within the phases were discussed and defined, see ill XX page 85. [m8]

During a conversation with Head of contact, Lise Nordklitgaard different client types were discussed, which made the design team able to categorize type of inquiries. [M9]

INQUIRY TYPES

Huge Lawn - Miracle Apps have recently had their fifth anniversary, and during their five years existence build a great network and a good reputation. Due to this most clients make inquiries by themselves. Inquiries happens by phone or by email and as a fairly new attempt canvassing is being implemented as well. Typically inquiries have different focuses that can be divided into four categories. [M9]

1. Completely new idea

This category is recognized by being completely new, nothing like the idea exists and it often requires analysis and co-creation within the development process.

2. Analysis based idea

The client have made analysis in advance. For example they have specified their users, desirable app features, functions and aesthetic. They typically have a clear idea of how the application should be, based on knowledge from their analysis.

3. Further development solution

In this category inquiries typically comes from existing customers. They need further development of an existing application and have specific features and functionalities they want to have incorporated.

4. Canvassing

By networking Huge Lawn are expanding their client database which gives them a possibility to both make canvassing but also take better care of their existing customers by offering them new solutions.

PROCESS DRAFT

SALES	SPECIFICATION	DEVELOPMENT	IMPLEMENTATION	SERVICE
The client comes to you with a task. You find the client	Requirements, specifications, needs. References (Does clients come with this to show what they like - or do you come with examples) Negotiation Preparation of contract / cooperation Agreement on who brings what?	Ideation (How this is done, by who - explain) Pencil Sketching - Wire frames? Flow simulation in Fiinto? Graphic layout of Photoshop screens (own or customer graphics) Client meetings? (clarification of graphics and flow - possibly simulation in Fiinto? Cutting out screens Programming System integration? (Developments in making the systems integrate?) Development of back-end? (Does the client insert content before it goes online?)	Delivery of back-end Teaching of back-end? Service agreement? System integration? (final set up and activation) Connecting to the app store?	Software update? Feature and function up-dates? ibeacon development? After sale? (android - windows) Aftersale strategy?

HUGE LAWN PROCESS PHASES



KICK OFF DOCUMENT

Within the first two categories potential clients are often asked to fill in a kick off document. This provides Huge Lawn with following information;

- Company profile and vision
- Project idea; goal, target audience, competitors.
- Project realization; content and setup, deadline, budget
- Others.

This document describe client needs in beforehand and Huge Lawn are thereby able to clarify connection between requests, budget and realization, if so the process continues. The kick off document, tend to function as a filter in connection to clarify project reality and prevents in some extent lost hours that will not be financed. [M9] [A20]

The meeting at Huge Lawn provided these informations. For fully phases and activity overview see illustration on page 85

- Huge Lawn process elements
- Huge Lawn client types
- Kick off Document
- Huge Lawn process activities

HUGE LAWN DEVELOPMENT PROCESS

After several meetings overall typical process phases could be described. This mapping was constructed in collaboration between the design team and Huge lawn, originated from the process draft made by the design team presented on the previous page.

HUGE LAWN PROCESS PHASE ELABORATION



CONTACT

A project is triggered by four different types of inquiries, either by clients or based on pro-active sales. Elaborated on previous page. [M9]

ANALYSIS AND SPECIFICATION

As starting point for this phase a client meeting is often arranged to clarify the project content and client requests. This meeting gives a deeper project understanding. [M9]

After the meeting an internal ideation is established, here requests are broken down into overall technical solutions, features and flow discussed and wire frame sketches are made. [M9]

Wire frames sketching often happens collectively and are sketched on a white board. Quite quickly an app strategy is chosen based on experience. Then tasks are handed out, and specification of functions and features happens parallel with API analysis and Flinto screen development. [M9]

All this sets the basic for the project price estimation. [M9]

ESTIMATION

Here an estimation is made based on specifications. Sales sheets are finished and a basic flow simulation is built in the program Flinto for presentation purpose. [M9]

SALES

When possible a tradition meeting with the clients is held, negotiation happens and a contract is created. If not, the offer is e-mailed to the client accompanied with a description-document describing the offer. [M9]

Sometimes the collaboration process ends here and a sale is not established, if the negotiation does not end with an agreement. [M9]

In the contract, a service agreement is formulated, here Huge Lawn sell a prepaid voucher, consisting of hours the client can freely use for minor changes after the application launch. [M9]

DEVELOPMENT AND TESTING

This phase begins after the contract is formulated. Different activities are present and used differently based on project. Overall work tasks often include graphical setup, programming, system integration back end development API development. [M9]

The amount of co-creation with clients is very different, some clients are interested and others are not. Email communication is sometimes used to clarify missing information, getting feedback ect. [M9]

The need for a back-end depends on the project. Clients get trained (approx. one hour) and are thereby a part of the development process. Their task is to fill in the exact application context. This can run parallel with the development. [M9]

Testing is run internal at Huge Lawn. The software developer test single application flows during the programming. Sometimes internal software testers - tests the application flow on different devices. [M9]

Testing is more or less integrated in the development and is done quickly, and is not a phase in it self. [M9]

APPROVAL

At this point the applications is finished by Huge Lawn and delivered to the client for final testing. [M9]

The client will get one to two weeks to test and detect errors. The errors are reported to Huge Lawn, and corrected. [M9]

If the client discover or desire minor changes, they can use their prepaid voucher. New additional features are often expensive and time consuming, and cannot be covered by the prepaid voucher, therefore the application will be finished and launched based on the initial contract. [M9]

If the client has minor changes, and there was no service agreement in the initial contract, vouchers are sometimes sold here/offered to the customers. [M9]

In this phase the client have to fill in a scheme, containing material for app-store upload. And decide on a release date. [M9]

DELIVERY

Huge Lawn upload the application to app store and inform about release date. [M9]

The client receives the final material as agreed upon. [M9]

Huge Lawn stores the application source code for their clients. [M9]

SERVICE

This phase can be seen as a stand by phase. Huge Lawn monitor the servers (hosting) and if bugs errors occur they fix them. This will be covered by the clients prepaid vouchers. [M9]

HUGE LAWN PROCESS ACTIVITIES

This illustration sum up the process elaboration and clarify activities within each phase.



PRISING

The hourly rate is more or less the same, but can be adjusted for different customers. Some get a lower price because previous collaboration had a lower price, sometimes the price is lower if the customer does not have sufficient funds. [M9]

- Discounts are made if the projects provides material that can be resold.
- Sometimes they reduce the hourly rate for graphical work.
- The first three phases are "free" because they are charged for if a sales contract is signed.
- Programming is the most expensive and hour consuming task it takes up about 75% the project.
- Design takes about 5-20%.
- System integration and back-end development differ, they can be heavy hour burdens or have a minimal impact.
- They do not sell less than 10 hours or more than 40 hours prepaid vouchers. When a prepaid voucher is used, they sometimes sell new, these are the voucher types;
 - 10-12 hours - 950kr per hour
 - 20-40 hours - 900 kr per hour

The overall circumstances in Huge Lawns development process was clarified. The results are relevant for the further development.

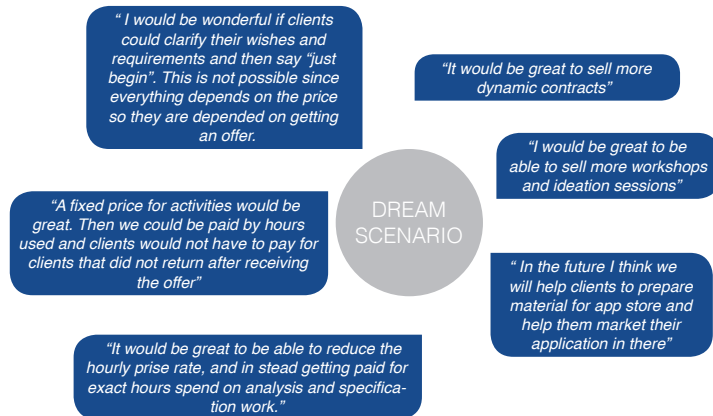
- They do internal testing
- They sell prepaid vouchers
- Discounts if they can resell elements
- Programming is 75% of a project
- Design is 5-20%
- System integration and back end can be heavy burdens.

PROCESS CHALLENGES AND DREAMS

It was important to have a deeper insight to Huge Lawns business and process to clarify where the design team could contribute. This was done by conducting a meeting and ask questions. Feedback from Huge Lawns point of view is presented on this page.

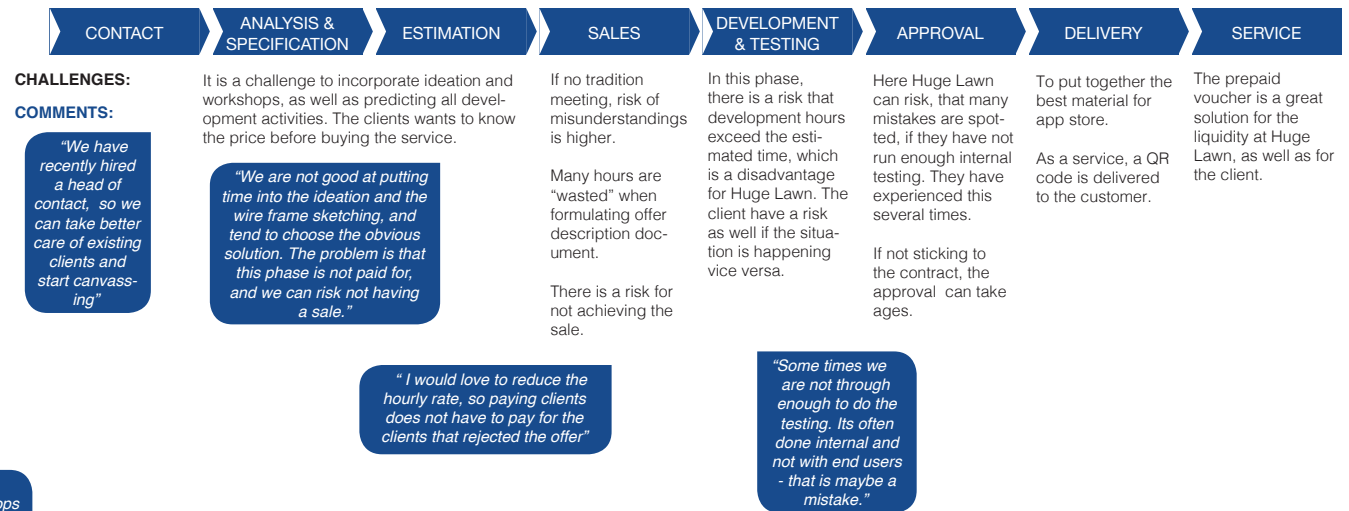
The meeting revealed different type of information. The illustration highlights challenges and comments. Looking at these, it was clear that Huge Lawn are aware of their own challenges and they are working on accomplishing them. The challenges are not easily solved because of different factors and relations between them. [M8] [M9]

Comments clarifying future and dream scenarios were also discovered during the meeting;



The meeting also revealed that Huge Lawn has a process description they sometimes send out to customers. The process description is not yet implemented in the company. [M8] [M9]

PHASES:



The process meeting was very informative an following circumstances will be considered during the further process:

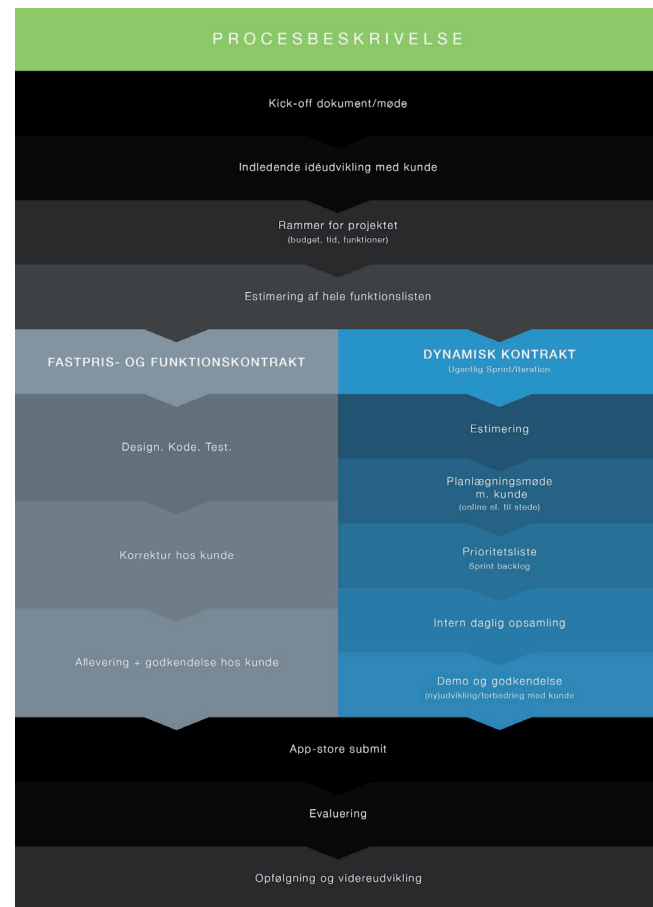
- It is challenging to sell workshops
- They can improve ideation by putting more hours into it
- It's a recent initiative to hire a head of contact.
- There is a risk of loosing income if contracts are not signed
- It is hard to estimate development hours
- Lack of testing can result in overseen errors
- Prepaid vouchers improves liquidity
- Change in payment structure is preferable
- It would be great if clients was not offer dependent.
- They do have their own process description

THE PROCESS BEHIND A GREAT APPLICATION

A quick review on Huge Lawns own process description was done to specify their project approach and clarify relation to the process structure that was formulated earlier during collaboration.

HUGE LAWN PROCESS DESCRIPTION

The process description is called “the process behind a great application” and is sometimes handed to clients. It reveals how they see their own process, the description is still under development and is not yet implemented in the company. The illustration below is a part of the five pages process description. [A20]



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FIXED PRICE FUNCTION BASED CONTRACT

Clients get a fixed and controlled development procedure. Every aspect of the project is formulated in the contract to begin with, and one milestone is incorporated for making corrections and commenting on the application. More milestones can be established for additional costs.

- + The customer knows the price in advance.
- ÷ A fixed agreement does not allow changes and improvements.
- ÷ Customers risk for paying for more hours will actually be use.
- ÷ Huge Lawn risks to use more hours than they are getting paid for.

DYNAMIC CONTRACT

Clients have greater possibility to take part of the development process. More milestones are incorporated and application demos for response and correction is developed each week.

- + The clients have more control of the development process.
- + They are able to add, comment and make changes during the process.
- + They pay exactly for what they get.
- ÷ The final price is not defined to begin with

PROCESS STRATEGY AND CONTRACTS

At Huge Lawn - Miracle Apps their work with a scrum based process. This provides their customers with a transparent, quick and result oriented development process. [A20]

The scrum principle is used for planning during the process, and is one of the methods incorporated in agile software development. Agile software development is based on a time boxed and iterative approach where, requirements and solutions evolves as a result from co-operation. (wikipedia.org)

They have two types of contracts they offer customers. A fixed price function based contract and a dynamic contract. At the moment they assume that 90% of their clients choose the fixed price contract. [A20]

DESIGN TEAM REVIEW

The process document gives an overview of their processes and the differences between them, some things springs to mind;

- From a client point of view it seems like the fixed price function based contract would be most effective and secure way to go. The process steps seems fewer and the collaboration need is low.

- Looking at the section describing differences within the contracts. The dynamic process seems more attractive. As a result from the way the document is structured, the fixed price function based contract still seems obvious and most secure to choose.

The earlier illustrated Huge Lawn process map process is perceived as being their actual process. It is of course generalized and will look different from client to client, still the ground phases and activities relate to their process description. Therefore the earlier constructed process map will be used for later process comparing. Knowledge output:

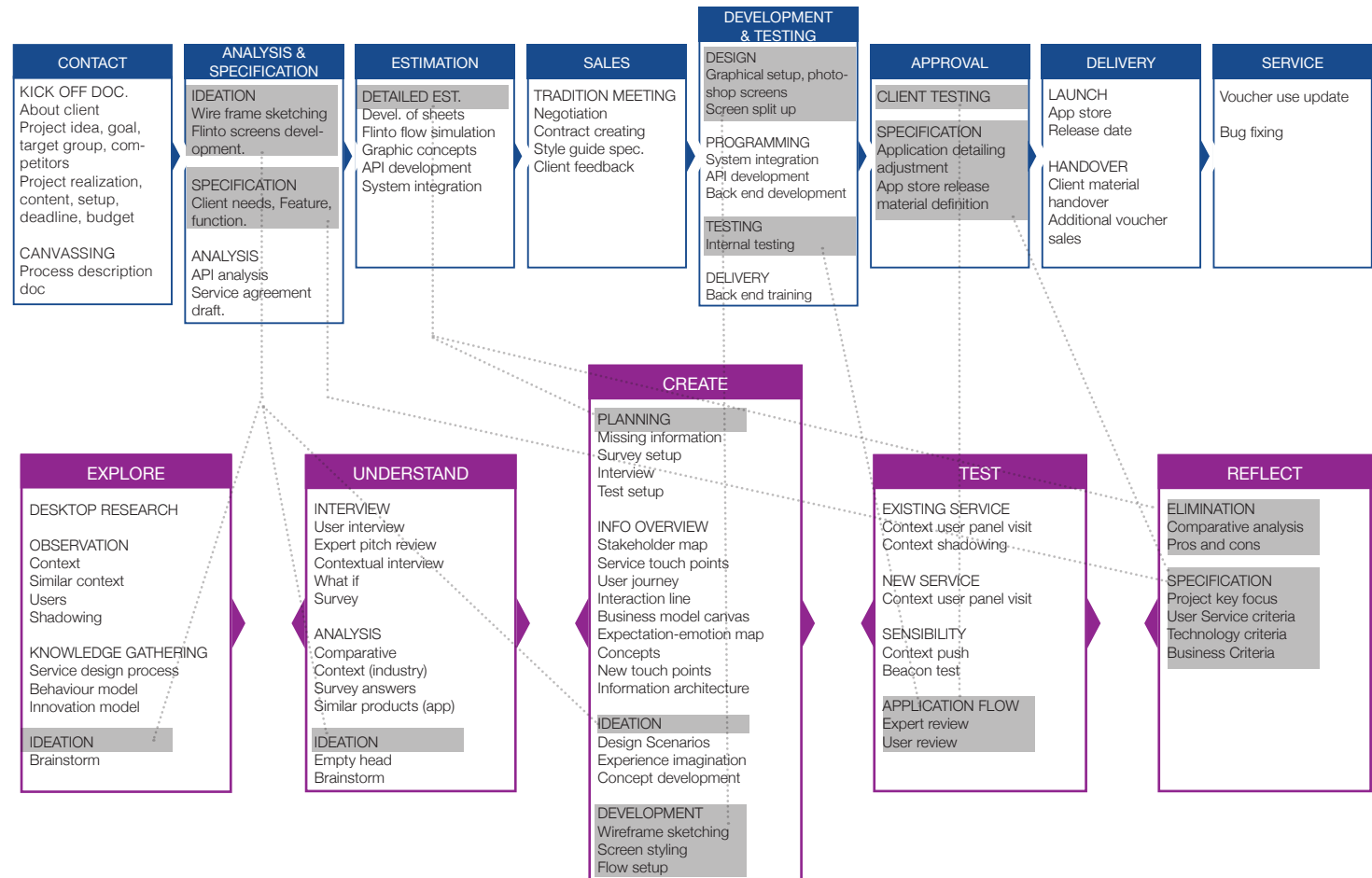
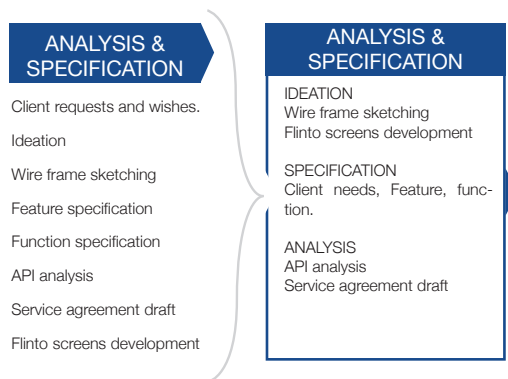
- Possible review of the document
- Need for canvassing material?

COMPARATIVE PROCESS ANALYSIS

Processes vary from project to project. The activities in Huge Lawns process are grouped by the design team to be able to compare overall activity groups from both the design teams process and Huge Lawns process. The processes are compared to locate similarities and differences.

ACTIVITY GROUPING

The focus for grouping was to gather similar activities. For example, from a meeting it was clarified that the activity ideation at Huge Lawn consists of sketching wire-frames and develop flinto screens. Therefore flinto screens and wire frame sketching is grouped under the headline IDEATION. See illustration below. This was done for all the activities within all phases in the Huge Lawn process as well as in the Design teams process.



COMPARATIVE ANALYSIS

When looking at the processes they reflect the different approaches earlier described.

Huge Lawn process seems more fixed compared to ours, iterations happen inside the phases, the design teams process have iterations between phases.

In the design teams process many of the iterations focus on exploring context and users, compared to Huge Lawn where focus is put on combining technical solutions with client demands. This entail in fewer iterations, because the client demands are not challenged or questioned.

The design teams iterations revolves around a search for information, where Huge Lawn have actual clients that provide them with information.

The gray areas in the illustration highlights similarities within the processes. Though they must not be perceived too concrete, because the way they are conducted in the different processes are different.

The grey areas indicate where it could be most relevant to contribute with activity suggestions to following phases at Huge Lawn;

- Contact
- Analysis and specification
- Development and testing
- Approval

These assumptions will be explored in an ideation.

IDEATION WORKSHOP

After comparing the processes an ideation workshop was conducted. The goal was to design process concepts focusing on where to add design team activities for increasing the human approach in Huge Lawns process.

IDEATION WORKSHOP

Knowledge from previous activities was gathered and transformed into design criteria. The research question defined the objective and the design criteria worked as focus guidelines during the ideation. The design team was well aware of that a contribution to following phases were immediately most realistic.

- Contact
- Analysis and specification
- Development and testing
- Approval

The ideation workshop was conducted by sketching possibilities to apply activities to Huge Lawns process keeping all criteria in mind.



HUGE LAWN PROCESS ANALYSIS

DESIGN CRITERIA

- Huge Lawn process elements
- Huge Lawn client types
- Kick off Document
- Huge Lawn process activities
- They do internal testing
- They sell prepaid vouchers
- Discounts if they can resell elements
- Programming is 75% of a project
- Design is 5-20%
- System integration and back end can be heavy burdens.
- It is challenging to sell workshops
- They can improve ideation by putting more hours into it
- Its a recent initiative to hire a head of contact.
- There is a risk of loosing income if contracts are not signed
- It is hard to estimate development hours
- Lack of testing can carry later mistakes and errors
- Prepaid vouchers improves liquidity
- Change in payment structure is preferable
- I would be great if clients was not offer dependent
- Possible review of the document
- Need for canvassing material?

DEMANDS

- Add user and context oriented activities to their process
- Make suggestions for canvassing material
- Make suggestions for workshops
- Make suggestions for ideation activities
- Make suggestions for implementing more testing
- Increase the amount of design related activities

WISHES

- Suggestions for canvassing material
- Suggestions for change of payment structure

DELIMITATION

- Huge Lawn process elements
- Keeping prepaid voucher

ill. 89b



The ideation entailed in three concepts ranging from small additions to a completely restructured process. See following pages.

PROCESS CONCEPTS

Process concepts created during the ideation workshop clarified the potential for merging the processes and revealed three overall process concepts.

The overview illustrations highlights potential for where design team activities can be incorporated. Concept 1 focus on adding as few activities as possible, concept 2 is a further development with more activities and a suggestion for a new payment structure. The last concept focuses on a complete merging combining activities from both processes inside new overall phases.

The earlier mentioned inquire focus categories;

1. Completely new idea
2. Analysis based idea
3. Further development solution
4. Canvassing

is related to the process concepts in some extend. Here it is discussed how the three concepts can relate to Huge Lawns clients.

Concept 1-small, is closely related to Huge Lawns current process. It suggest few activities that can explore and investigate category 3 inquiries. These inquires are most challenging because clients are very specific in their requirements and there is often not space for doing anything else than "getting the job done". Therefore this concept only suggest few activities, that potentially can add more value to this type of project.

Concept 2, medium, had potential for providing inspiration for category 2 inquiries. Clients sometimes provide analysis results here, but activities in this category revolves around investigate the results and experience circumstances in context. Doing some of the activities will often contribute with deeper user and context oriented insight.

Concept 3, Large, will provide inspiration to build a process for category 1 inquiries. In this category project ideas often start from scratch and therefore Huge Lawn can take advantage and tailor a process that are more end user and context oriented compared to their current process.

CONCEPT 1 - SMALL



CONCEPT 2 - MEDIUM



CONCEPT 3 - LARGE



ill. 90

All three concepts should be seen as inspiration for Huge Lawn. Processes have to be tailored to different clients and project ideas. All concepts will be elaborated on the next pages.

PROCESS CONCEPTS ELABORATION

To add value to Huge Lawn, it is important to make the concepts explicit, therefore they will be elaborated in this section, by specifying which exact activities will be added where.

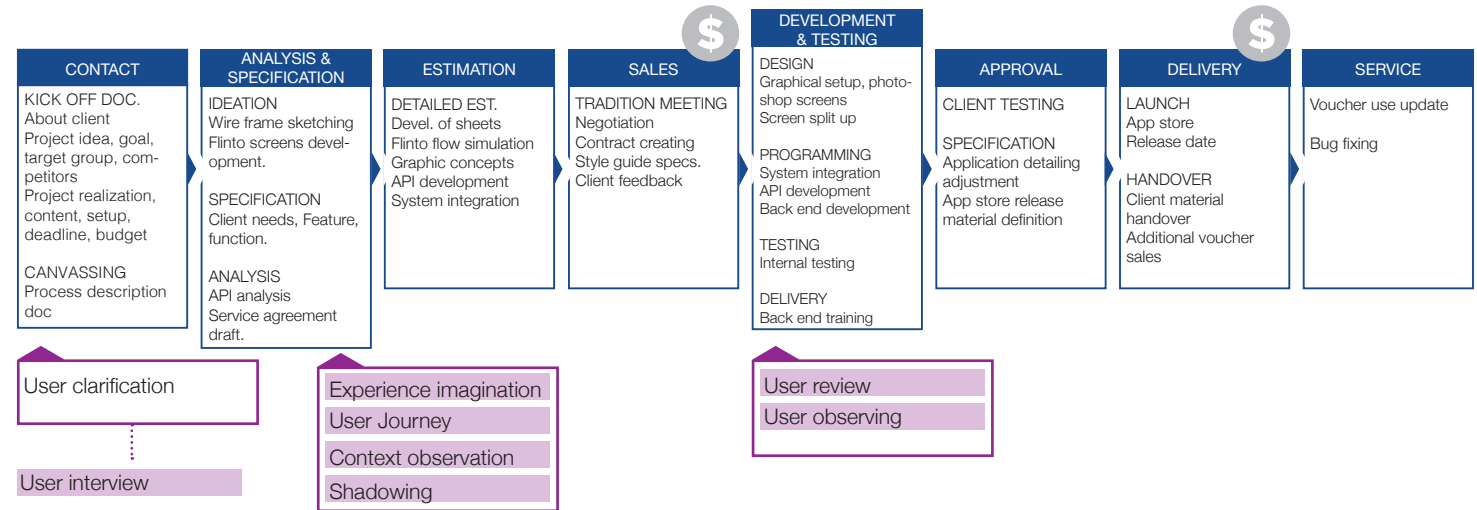
PROCESS CONCEPT 1 - SMALL

This concept focuses on applying as few activities as possible, to provide Huge Lawn with suggestion on how to apply a context and user focus in their existing process.

Contact phase: Here Huge Lawn could add questions to their kick off document, to clarify end user circumstances. They can take inspiration from prepared User interview questions.

Analysis and specification phase: At the first client meeting, Huge Lawn could ask their clients to describe their users journey, how they imagine that their idea will change their service. They could ask the client for permission to do observations.

Development and testing phase: In stead of testing internally, they could set up a contact with an external person to test the application, and observe the person meanwhile.



PROCESS CONCEPT 2 - MEDIUM

This concept was a further development of concept 1. Focus was on applying more activities, as well as suggesting a way on how to change the current payment structure.

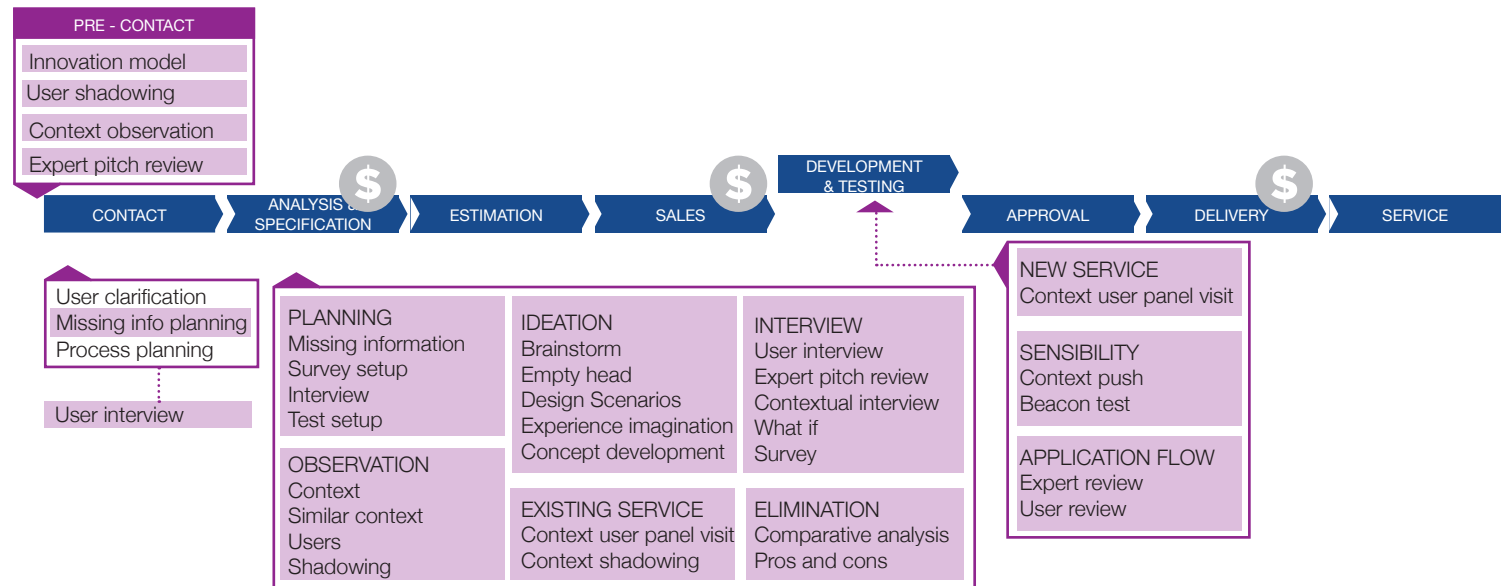
Pre-contact phase: This is build into the process, suggesting activities that can be conducted to achieve arguments for canvassing.

Contact phase: Same as above + Questions added to the kick off document to clarify possible client style guide.

Huge Lawn could also make a strategy for the initial meeting, clarify missing information and prepare arguments for implementing more activities in the next phase. Prepare a process propose for the collaboration based on knowledge from the new kickoff document. At the meeting they could use the arguments for proposing activities for next (see activity suggestion added to next phase)

Analysis and specification phase: Activities added have potential to be used in this phase. Choice of activity depends on project. If the arguments are strong, the idea was that initial payment can be established here.

Development and testing phase: Activities added have potential to be used in this phase. The intention was to "sell" these activities within the first client meeting. Based on the kick off document, Huge Lawn could plan which activities they find relevant to the specific client, and then establish arguments for conducting these tests.



ill. 91

PROCESS CONCEPT 3 - LARGE

This concept was a further development of concept 2, medium. Focus was on gathering a complete new process structure that merged both, Huge Lawn and the design teams process, and suggest a new process combination. Suggestions on new payment structure was applied as well. Elements from the current Huge Lawn process is marked blue and elements from the design team process is marked purple. The process is divided into five phases, and the intention was that each phase expect phase zero is paid for in advance.

CONSIDERATIONS

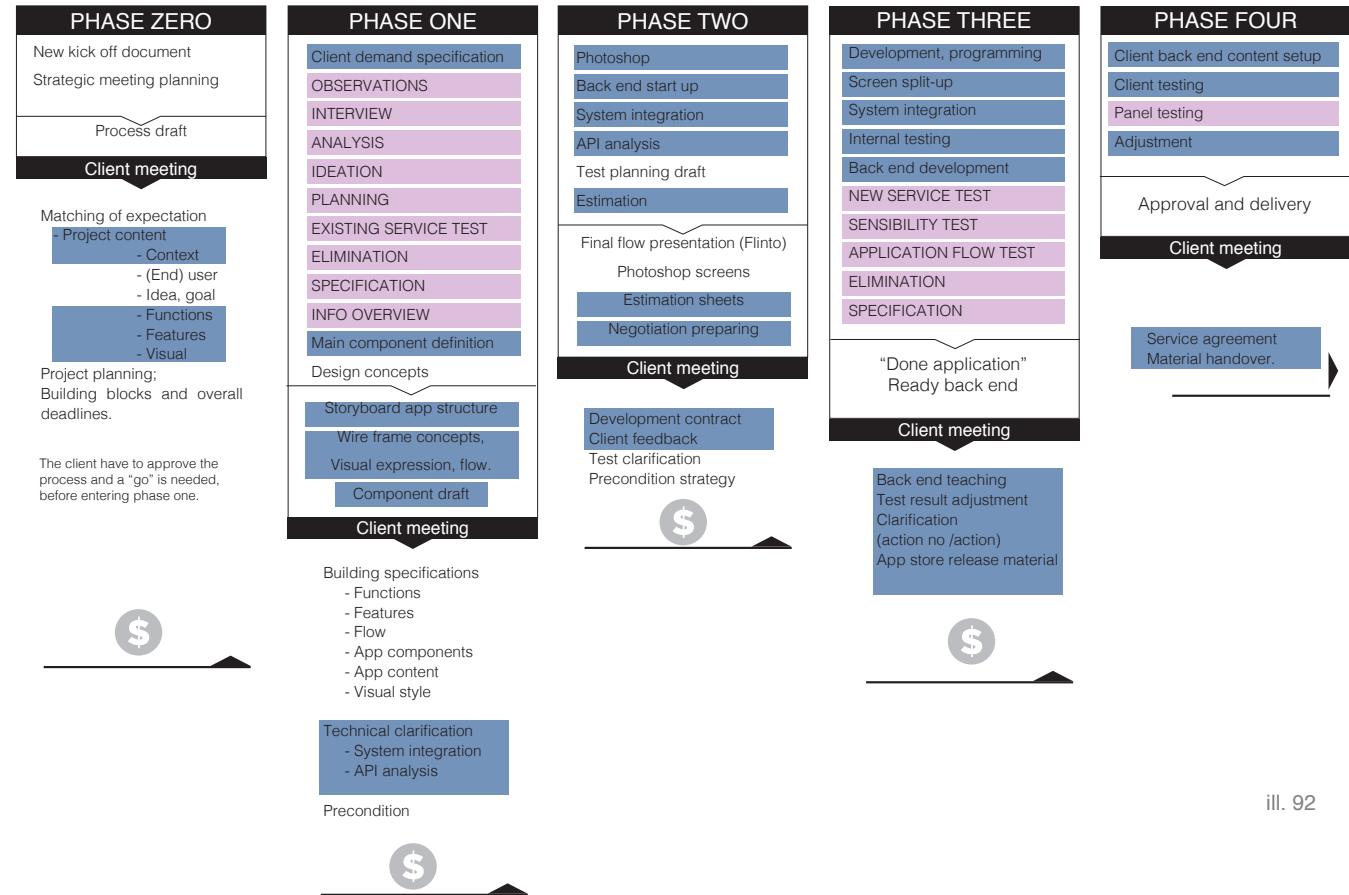
The advantage from a business perspective is that the client can split up their payment to Huge Lawn in smaller amounts. Huge Lawn will be able to charge by hours spend and the risk for not getting paid will be eliminated. From a design perspective the advantages is that applications will be developed with the end user in focus, and not as last priority. By splitting the process up Huge Lawn will be able to plan their development process step by step and have a better basic for doing estimations.

In this area activities are described

In this area describes output material, that will set the basic for the client meeting.

This text describes output, that is expected from the client meeting.

The next phase dose not start before the client have paid in advance.



ill. 92

All three concepts are now elaborated in terms of additional activities. At this point another dive into each specific activity is necessary. But before an expert review was conducted.

EXPERT REVIEW

Professional discussion and competent feedback was an effective way to practice communication during the development process as well as gain valuable insight on the project from external parties. Therefore the concepts were first presented at a meeting with Huge Lawn and afterwards for two external professionals at a discussion workshop.

HUGE LAWN MEETING

A meeting with, the CEO at Huge Lawn Uffe Koch, was conducted. He saw the final process mapping illustration (page 85) and the comparative process analysis (Page 88) before he was presented the three concepts. In the end of the presentation the design team explained that the intention was to assemble a method kit for explaining the methods. He was very enthusiastic about this- see speech bubbles.

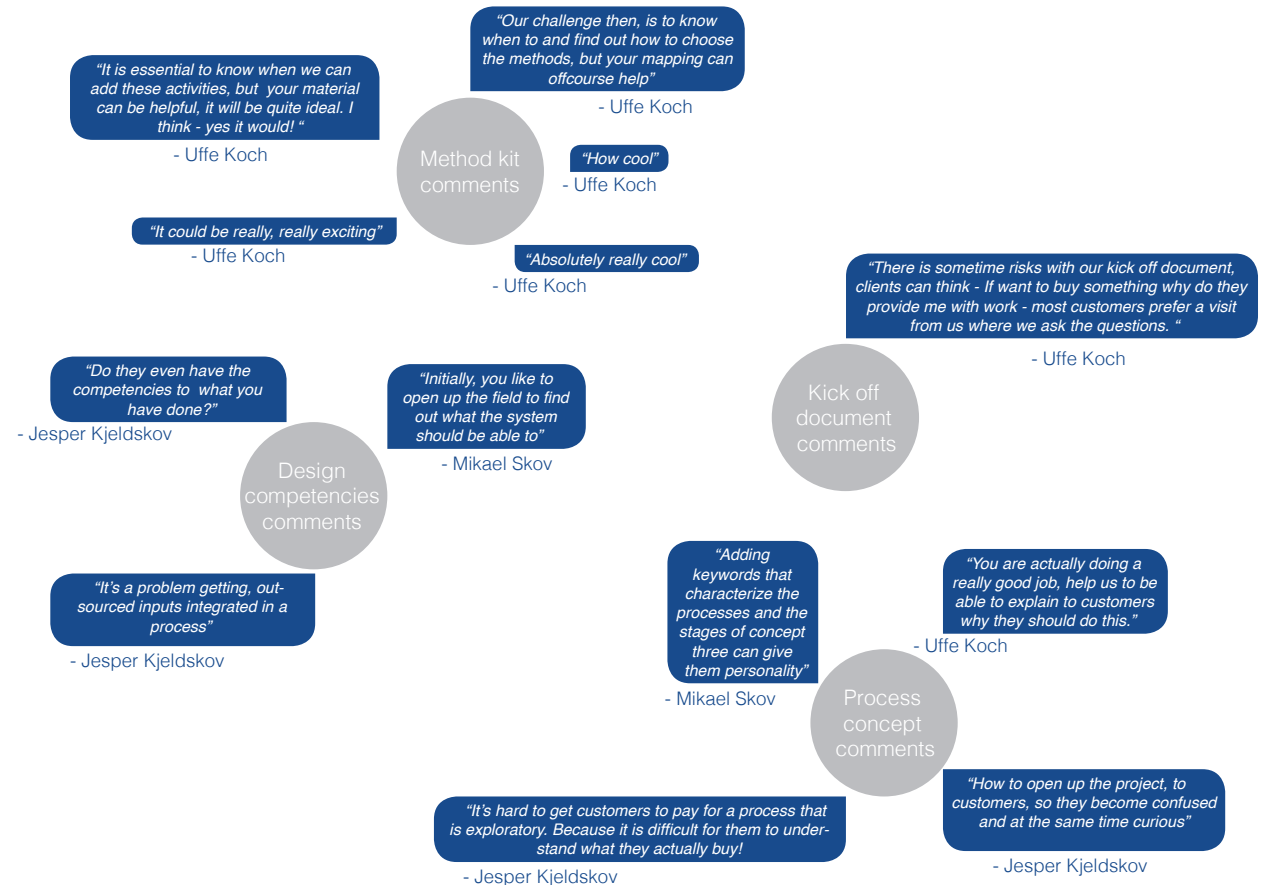
Presenting the concepts for Uffe, indicated that the intention, providing them with a method kit was appealing to him. There was no time for specific process concept comments. But in connection to applying the methods he expressed that it might be hard for them to find out when and how to apply them. [M11]

The kickoff document have some downsides and are mostly used for private customers. They do not have any canvassing material, besides some folders and the process description. [M11]

DISCUSSION WORKSHOP

Present at the discussion workshop was; Christian Tollestrup, project supervisor and associate professor at industrial design, Jesper Kjeldskov professor at computer science institute, Mikael Skov associate professor at computer science institute and the design team. [M11]

It was a profitable meeting, revolving around competencies discussion, process concept illustrations and the app concept from case 2. It was very exciting to review project issues as well as gaining inspiration on how to do process concept dives. [M11]



The expert review provided inspiration for adjusting and specifying the concepts. Personalize them by giving them names in terms of use, and dive into the activities and explain the use. Presenting for Uffe also provided information relevant during the concept process elaboration. Therefore the process concepts are further elaborated.

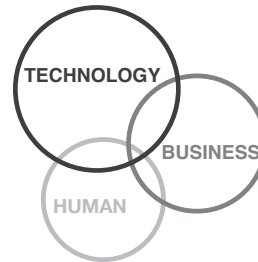
- Personalize concepts
- Elaborate concept use
- Be aware of different competencies

PROCESS CONCEPT ELABORATION

Based on the expert reviews, each concepts are elaborated and illustrated, as a starting point for the "Method kit" development.

CONCEPT 1 - SPECIFICATION DRIVEN PROCESS

As a starting point this concept focused on applying as few activities as possible, for adding end-user focus to the existing process. This is still the main objective. This illustration elaborates the overall composition. Each activity that relates to design team processes, will be elaborated in the method kit.



ACTION AND EFFORT

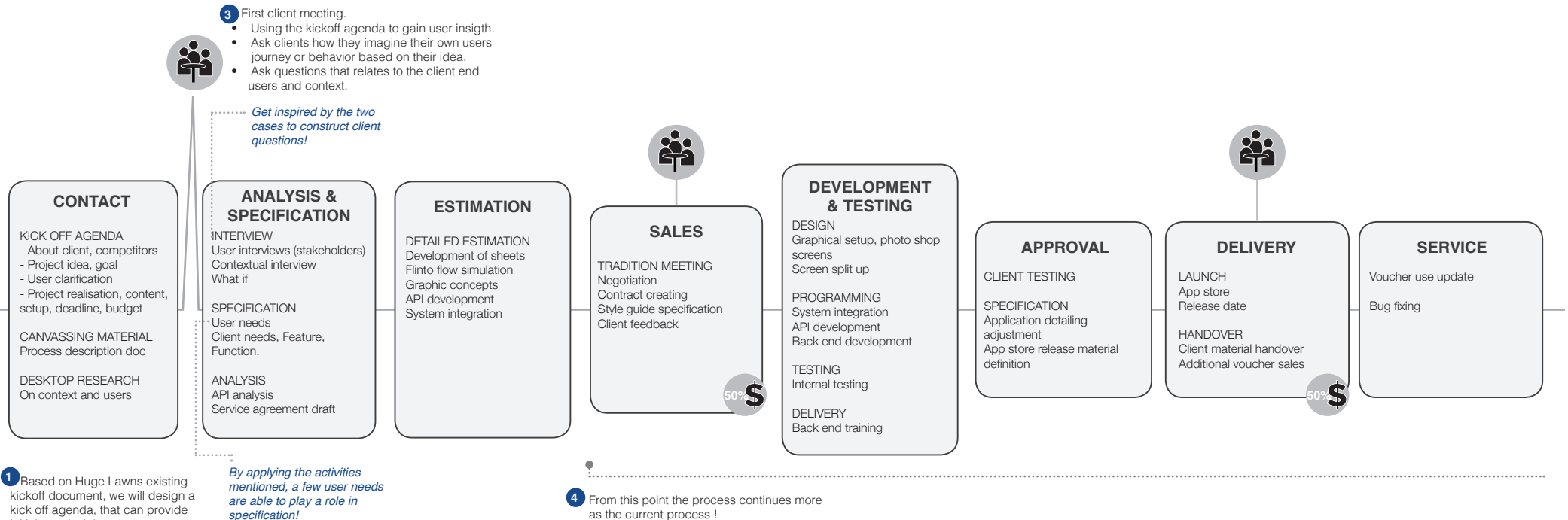
- Implementing the kickoff agenda to clarify user perspective, target an behavior
- Quick desktop research on client context and customers.
- Interviews at meetings focusing on additional user perspective, target group, behavior and context understanding
- Definition of user needs.

RESULT

- Accomplishing the effort will add user needs as a part of the specification.

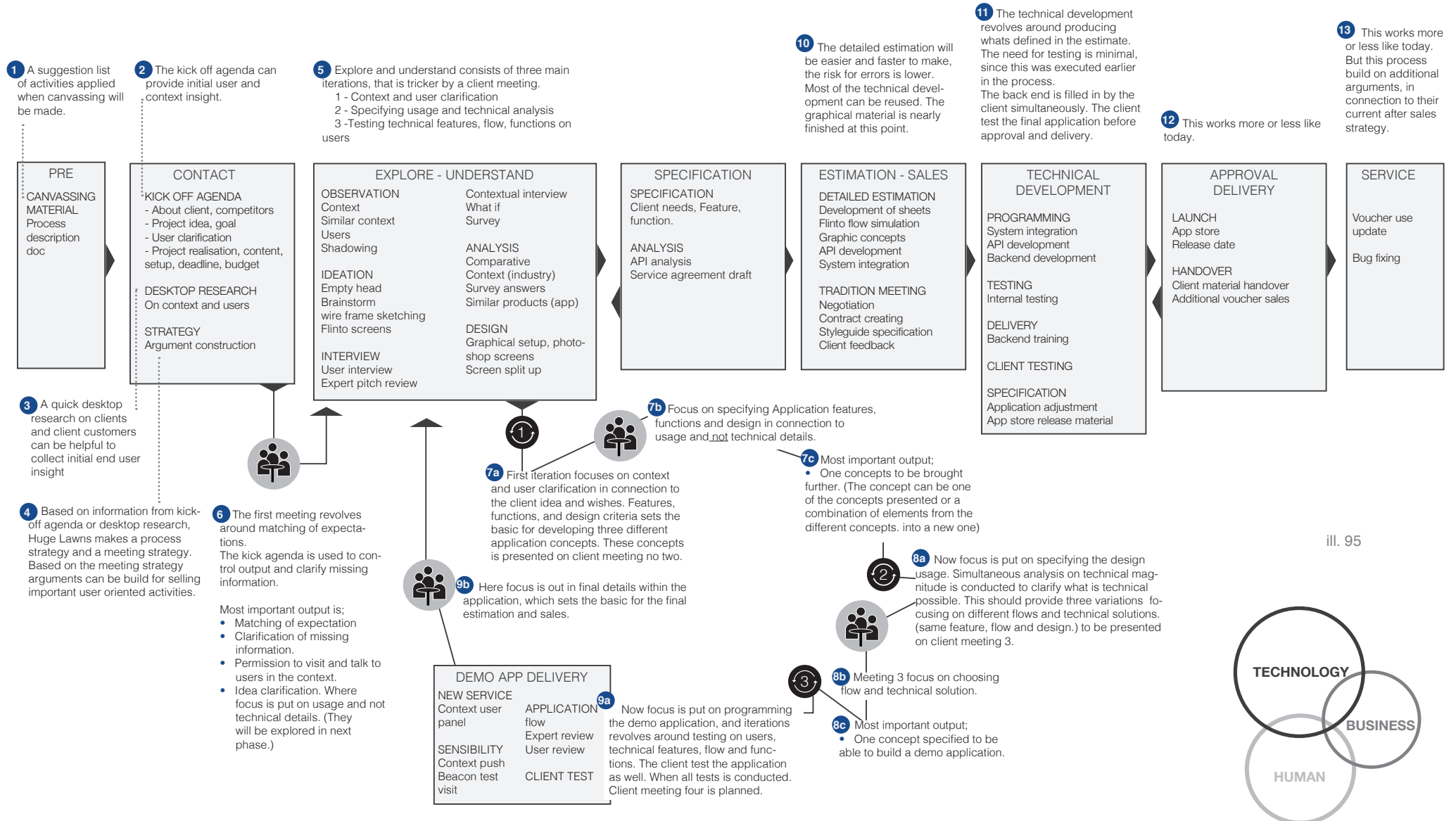
DILEMMA

- It is very project dependent how much this low amount of efforts will provide value.



CONCEPT 2 - USER DRIVEN PROCESS

This concept focus on making the user an equal priority with client demands and technical solutions. The payment structure is changed and suggestion on constructing strategic arguments are incorporated. The illustration elaborates the overall composition. Each activity that relates to design team processes, will be elaborated in the method kit.



ill. 95

CONCEPT 3 - ?!?!

ACTION AND EFFORT

These also apply for this process:

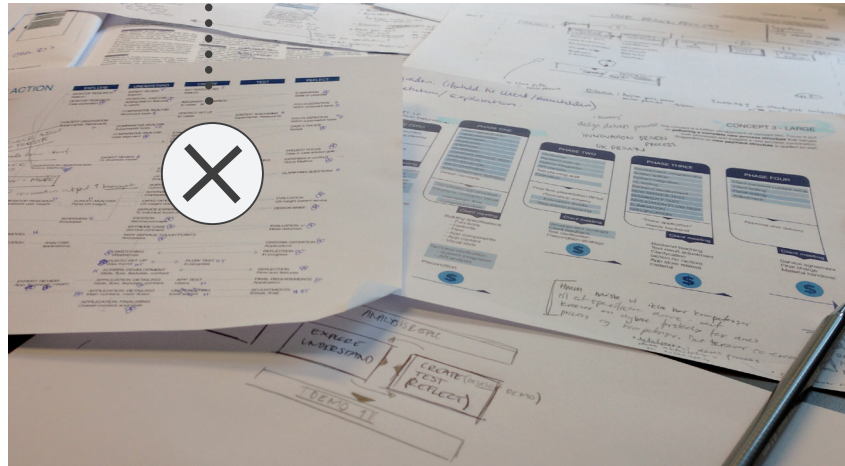
- Implementing the kickoff agenda to clarify user perspective, target and behavior
- Quick desktop research on client context and customers.
- Interviews at meetings focusing on additional user perspective, target group, behavior and context understanding
- Definition of user needs.

These are additional for this process:

- Pre building strategic arguments from first client meeting.
- More strategy and planning incorporation
- Strategy implementation in the company

The EXPLORE AND UNDERSTAND" phase requires an effort in relation to acquire competences these are the possibilities.

- Internal training of employees, in method kit use.
- Outsource assignment to collaborations within the network
- Hire an industrial designer.



ill. 96

It the event of elaborating concept three, problems occurred. The first phase focuses on user and context exploration. When trying to specify, it revealed that it was closely related to the user driven process. Diving into the other phases, it was clear that to be able to specify them it would require a deeper understanding of Huge Lawns activities, than present at the moment.

This process should be developed in detail by co-creation, where participants representing both the design process and the software development process are present. Otherwise the designer needs access to concrete projects over a longer period, and professional feedback for developing a complete new process.

RESULT

- User driven development
- More co-creation with customers
- Security in payment structure
- Satisfied clients
- Transparent process
- Ability to tailor processed based on clients

DILEMMA

- More expensive applications so there is a risk for losing clients.
- A challenge in selling exploration activities.

Elaborating process concepts resulted in two process suggestions for Huge Lawn.

- Specification driven process
- User driven process

It also clarified competencies as well as lack of competencies for both the design team and Huge Lawn.

PROCESS SUCCESS AND COMPETENCIES

Implementation and conduction of the new processes requires time and effort, as well as different competencies. This will be discussed on this page.

The specification driven process could enable small adjustments that connects to the current process at Huge Lawn. By providing them with a method kit and examples on how activities can be conducted the intention is that they would be able to practice and incorporate additional activities, focusing more on the human part of the approach elements. The same will be in even more evidence for the user driven process. Though one must not forget that a process is not a process in it self, generic and directly able to be applied, it requires experience.

Designers and software developers are educated differently and will therefore enter projects from different perspectives. This means that the activities are not that easily adaptable. Changing roles will entail a risk of loss of important information that can be crucial for the entire project.

The illustration on this page is a not yet published draft version paper developed by Linda Nhu Laursen describing the taxonomy for design thinking. The paper focuses on identifying core topics from key literature of design thinking and collecting them in a taxonomy. The taxonomy has three levels of design thinking; Methods, principles and the paradigm.

Reflecting on the processes behind this project, clear relations to the taxonomy can be clarified.

Several of the methods mentioned in the illustration under, "Methods of design thinking" have either been conducted or consider conducted during this project.

The "Principles of design thinking" revolves around how the methods are conducted. As described on [page 65. \(Project approach differences\)](#) "When conduction research all inputs are questioned and explored deeper and answers are not accepted at face value....Constantly re-framing a project for making the core elements connect in synergy in the end". This relates distinctly in relation to the principles in the taxonomy, and the process overviews illustrated, highlights the iterative project approach. In general this process report reveals the visual language used to communicate. Incorporating expert review, interviews etc. into the project multiple times attest to the holistic mindset also mentioned on [page 65.](#)

The attentive reader have noticed "logical assumptions,qualified guesses, immediate thoughts and statements" as arguments in intros and sum ups as well as a constantly reflection in action. This relates to the design thinking paradigm and is a part of a designers consciousness. It is the key to mastering design thinking and is a result of the design teams education as Industrial designers.

In connection to successful implementation of the method kit it is realized that multiple competences is a need for the Method kit to be conducted successfully.

Paradigm of Design Thinking

1. Way of Posing Problems

Wicked Problems

Complex, indeterminate and ill-defined problems characterised by incomplete, changing, contradicting and interdependent information. (Rittel and Webber 1973, Buchanan 1992)

2. Logic

Abductive Reasoning

Propositions which serves for empirical tests subsequently. Reasoning between analytical and intuitive thinking. (Lawson 2006, Cross 2006, Dorst 2010)

3. Way of Solving Problems

Reflective Practise

Reflection in action (while doing) and reflection on action (process reflection). Practitioners demonstrate knowing-in-practice, which is tacit. (Schön 1983)

4. Value

Contextual Meaning Making

Evaluating a design upon if it makes sense in the context (users, situation), for which it was intended. Creation of meaning - intention. (Krippendorff 2006, Verganti 2009)

Principles of Design Thinking

1. Process

Iterative Learning

Since knowledge is indeterminate and never complete, design becomes a learning process of understanding problem and solution. (Brown 2008, Kelley 2001)

2. Information collection

Input Probing

Searching for understanding (qualitative), instead of looking for specifications (quantitative). Gain deeper information of the design space. (Krippendorff 2006)

3. Move

Reframing

Challenging the solution and the problem through rephrasing it, going beyond the obvious. Defining a solution space. (Buchanan 1992, Schön 1983,)

4. Language

Modelling Synthesis

Visual language drives the process on more levels and between people. Center: captures information and core for evaluation. (Schön 1983)

5. Perspectives

User, System and Multi Perspective Integration

Collaborative approach of integrative thinking, taking users, system and multi perspectives to develop contextual holistic design. (Dunne and Martin 2006)

Methods of Design Thinking

E.g.

Focus groups, Shadowing, Five Whys?, Mock-ups, Usability Testing, Prototyping, Card Sort, Cultural Probes, Storytelling, Draw the Experience, Card sort, Brainstorming, Extreme User interviews, Bodys-torming, Guided Tours, Scenarios, Mind maps, Clustering etc.

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The Taxonomy for design thinking clarifies that if the process suggestions and methods shall succeed, actors conducting projects based on the process suggestions should preferably be both designers, software developers and clients.

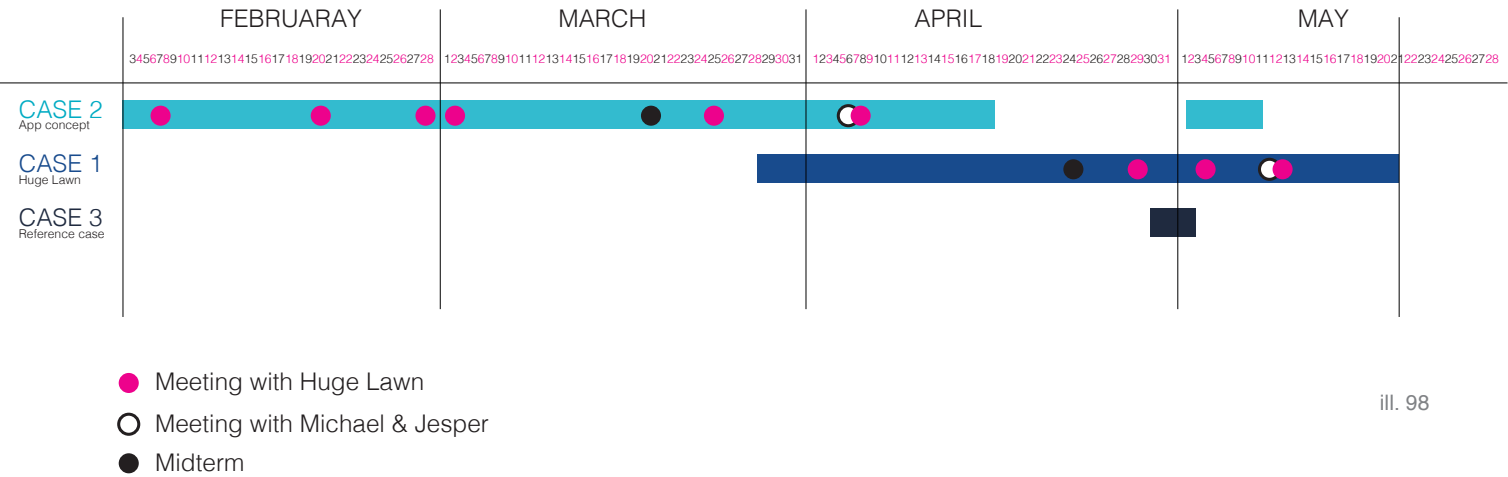
CONCLUSION

iExperience is a project developed with initial focus on ibeacons in relation to user experience, and during the project also became a project focusing on user experience in relation to Huge Lawns application development process.

The app concept is an ibeacon app for the fast food chain Sunset Boulevard, with scalable and generic features in relation to other contexts within the restaurant industry.

The method kit contain process concepts and methods with suggestions to how Huge Lawn could implement a more design thinking approach to their current application development process.

Sunset Boulevards rejection to collaboration resulted in a deficient ibeacon app user experience concept. Despite that it also resulted in a project focus shift, perhaps for the better. The final projects scope exceeds far beyond the original intentions.



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REFLECTION

LEARNING BY DOING

This project is our first service design project, therefore there has been a lot of learning by doing, and constantly reflecting on actions and re-framing, to try to figure out how to approach the project. Which resulted in that we used unexpected extra time on some activities, especially within planning and re-framing.

APP CONCEPT -CASE 2

The final app concept is an additional service to the current service Sunset provides today. The app concept is also very similar to the existing service touch points. The ideation phases were perhaps to focused on the current service and could have been more radical, and thereby we could have come up with some more innovative app features. This was a result of two things. Huge Lawn had mentioned they wanted a “shelf” solution, which made us focus on that the app should be scalable within the restaurant industry, and therefore we stuck to the touch points we knew were consistent in the industry. In hindsight this focus was not really done consciously. Due to the shift of focus during the project, time was also a factor in relation to how much time was spent on the ideation.

The constant confusion and search for “how to do this” is seen in the first part of case 2. An example of this is seen in the elimination of ideas that resulted in the new touch points, where the behavior model, was suddenly drawn into the process, as a tool for elimination. When the new touch points were determined, it felt easier to move on, and the development of the app was more straight forward.

IBEAONS UNDERSTANDING

A confusion also existed due to understanding of the iBeacon technology, which was an issue during this project. Realizing that the ibeacons core features was about “information on location”, made us question some of the conclusions drawn at the beginning of the project. This is a consequence of exploring an area on the border of our core competencies as industrial designers. And in the after light the only thing the design team feel they could have done differently in regards to understanding the technology, was to spend more time on research, without any certainty that this would have helped.

COLLABORATION WITH SUNSET BOULEVARD

Sunsets rejection came too late in the project for us to choose another case. We could perhaps have been more prepared and explored both the iBeacons technology and found a collaboration partner before starting the Master thesis. In relation to conducting a master thesis for an external partner where the projects framing is determined from start, we had a lot of extra research to do before the project was clearly framed. But on the other hand we did not know at the time that a collaboration partner was necessary. We are still puzzled by the rejection of collaboration. It would have been interesting to know what Sunset Boulevard is working on, too find out if this project actually is similar or relevant to their project.

COLLABORATION WITH HUGE LAWN

The project focus shifted to Huge Lawn, an external partner that was willing to collaborate. And instead of “just” using them as a technical supervisor, they became the projects focus. The focus had always been to develop an ibeacon app, package solution for Huge Lawn and sharing our insights and approach with them and vice versa. But the shift made the project focus on providing Huge Lawn with even more valuable output of this collaboration.

PROJECT FOCUS SHIFT

The project focus shift, leading to a project also exploring Huge Lawns current app development process, happened passed mid-ways into the project. This turn of events resulted in consequences for our intentions and time planned for the app development in case 2. The development of the app concept was accelerated, in order to be able to manage the additional focus in the project.

PROCESS SUGGESTIONS AND METHOD KIT

The additional focus of reviewing Huge Lawns current process was not a straight forward activity. It required an initial meeting to confirm if they were willing to share information about their business strategy with us as well, and several additional meetings to get insight and their feedback to our concepts. Simultaneously reflecting on our own process in case 2, and rapidly perform a 3rd case as a method reference case. The 3rd case felt necessary to conduct, to be able to extract the most relevant methods to be implemented in a more design thinking approach process. During the process concept development, the questions of Huge Lawns ability to adapt the methods and get the same output as designers do, came to mind. The design thinking taxonomy clarified that they could probably conduct the methods, but most likely not get the same output. The reason for this is that we do not have competencies within the same scientific discipline, and taught within different paradigms.

COMMUNICATING THE PROJECT

Communicating the project process when writing this report has been a challenge. Due to both the complexity level, in relation to multiple cases and that the shifts between them do not always happen in the order, 1,2,3 as the cases are called. Another reason was due to the fact that we had never worked with service design before, and the projects process in the beginning was affected by the search for “how to”.

APPENDIX

- [A1] From 10 to 2 cases.
- [A2] Comparing cases
- [A3] Kennedy Arkaden observation
- [A4] Service employee interview
- [A5] Creation of the Survey and survey
- [A6] Survey + survey answers
- [A7] Facebook comments
- [A8] Emotion and expectation map
- [A9] Facebook statistics age
- [A10] Business model Canvas
- [A11] Styling rich design- all screens
- [A12] App testing answers, results
- [A13] Styling final concept- all screens
- [A14] Code
- [A15] Cost estimation
- [A16] Activity reflection case 2
- [A17] Case three planning
- [A18] Push test planning
- [A19] Case 3 internal working material
- [A20] Kick off document and process description

MEETINGS LIST

[M1] MEETING 1 - FEBRUARY 7TH 2014

At; Huge Lawn.

Participants; Design team, Uffe Koch, Pelle Ravn and Mette Christensen.

Meeting subjects: Ibeacon technology, Ibeacon testing and Huge Lawn Cases

[M2] MEETING 2 - FEBRUARY 20TH 2014

At; Huge Lawn.

Participants; Design team, Uffe Koch, Pelle Ravn and Mette Christensen.

Meeting subjects: Present case Sunset and Case Rema. Discuss possibilities. Technology findings (Phillips lamp ect)

[MOH] OPEN HOUSE VISIT - FEBRUARY 28TH 2014

We visited Huge Lawn at their open house event. They had their five years anniversary and had designed an anniversary application a put up beacons. Here we tested the different beacons with our own mobile.

[M3] MEETING 3 - MARCH 3RD, 2014

At; Huge Lawn.

Participants; Design team, Pelle Ravn and Mette Christensen.

Meeting subjects: Presenting project update - Sunset dive. Discuss beacon experience and challenges from their open house event. Present and discuss business model canvas, made by design team. Go trough Huge Lawn branding material (anniversary folders)

[MT1] MIDTERM 1 - MARCH 20TH, 2014

At; Uni, Project midterm

Participants; Design team, Uni project teams, Supervisors and Mette Christensen from Huge Lawn.

Mette participated in our midterm presentation, and made us aware of the BJ Fogg behaviour model.

[M4] MEETING 4 - MARCH 25TH, 2014

At; Huge Lawn.

Participants; Design team, Uffe Koch

Meeting subjects: Project update. Discuss business model canvas. Talk value for Huge Lawn in connection to ibeacons. Clarifying questions to the technology

[M5] MEETING 5 - MARCH 27TH 2014

At; Mc Donalds

Participants; Design team and three anonymous Sunset Boulevard service employees.

Meeting subjects: Ask questions to be able to understand their work tasks.

[M6] MEETING 6 - APRIL 1ST, 2014

At; AAU

Participants; Christian Tollestrup, project supervisor and associate professor at industrial design, Jesper Kjeldskov professor at computer science institute, Mikael Skov as- sociate professor at computer science institute and the design team.

Meeting subjects: Present project so far (undtil wire frame hand sketches) Get a project review by discuss project and interaction design.

[M7] MEETING 7 - APRIL 7TH 2014

At; Huge Lawn.

Participants; Design team and Pelle Ravn

Meeting subjects: Present application, discuss reality of ibeacon features and ideas. Understand signal touch flow. Discuss payment integration.

[M8] MEETING 8 - APRIL 29TH 2014

At; Huge Lawn.

Participants; Design team, Uffe Koch and Pelle Ravn

Meeting subjects: Project presentation. Roll put plan Sunset case, discussion. Clarification of process, activities and competencies. Discussion of beacon setup plan

[M9] MEETING 9 - MAY 5TH 2014

At; Huge Lawn. The design team spend a complete workday at Huge Lawn to be able to interview and ask clarifying questions.

Participants; Design team, Uffe Koch, Lise Nordklitgaard, Pelle Ravn and Mette Christensen.

Meeting subjects: Each participant was interviewed individually.

And this was the different interview focuses;

Pelle Rawn - Cost estimate, ibeacon setup planning

Uffe koch - Process and activity specification

Lise Nordklitgaard: Company, clients, process, workshops.

[M10] MEETING 10 - MAY12TH 2014

At; Huge Lawn.

Participants; Design team, Uffe Koch

Meeting subjects: Process concept presentation.

[M11] MEETING 11 - MAY12TH 2014

At; AAU

Participants; Christian Tollestrup, project supervisor and associate professor at industrial design, Jesper Kjeldskov professor at computer science institute, Mikael Skov as- sociate professor at computer science institute and the design team.

Meeting subjects: Application layout, Process concepts, competencies.

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