PROCESS REPORT

Service design in the healthcare context:

Improving the process of implementing the service platform MinMenu

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Master thesis
Process report

Title:
Service design in the healthcare context: Improving the process of implementing the service platform MinMenu

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Collaboration with an Organisation:
Movesca

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ABSTRACT

MinMenu is a new nutritional platform developed by the IT company Movesca to empower elderly medical patients when being hospitalised. The platform was recently implemented at the Hospitals of Herlev and Gentofte. However, Movesca experienced several challenges in the transition from implementing to operating MinMenu. This thesis investigates how the process of implementing MinMenu can be improved through the use of service design, allowing methods from other disciplines and co-designing with actors throughout the design process.

In order to gain insight and understanding into the context of the implementation process, an ethnographic study was conducted including contextual interviews and observations of relevant actors. Additionally, a research on service design frameworks of implementation discovered that designers are inspired by change management. This expanded the framework and provided a broader understanding of important elements to consider in the context of implementation. Based on analysis of the gathered insights four implementation barriers was identified. These barriers were explored and ideated with actors of the hospital, which directed our focus towards two of the barriers.
This thesis presents solution concepts designed to reduce or solve the identified barriers. The concepts are developed and tested in collaboration with healthcare staff and validated with our partner Movesca. In order for Movesca to implement and test the recommended solution concepts a Concept Roadmap report is delivered, introducing description of the recommendations, intended purpose and related actions. Based on the process and following feedback we believe that the concepts will improve the implementation experience of MinMenu.

ACKNOWLEDGEMENTS

In order to accomplish and complete this study we would like to thank some particular people.

Amalia de Götzen, our supervisor at Aaborg University, for advice, feedback and help with shaping this thesis.

Jon, Jess and Mai, collaborating partners from Movesca for giving us the opportunity to study their case with implementation and for sharing their knowledge and experiences.

The people at Herlev and Gentofte hospital who participated in discovering and developing the service solution, for their personal inputs and opinions towards the service and for opening up for their personal experiences.

TERMINOLOGY

Service: This project sees the implementation process of Movesca as a service and is therefore referred to as the service

Patient: Medical elderly

Department: The hospital department where MinMenu is either implemented or being implemented

Kitchen: The kitchen of the hospital

Tablet: A samsung tablet with the MinMenu installed

Application: The MinMenu

Platform: The combination of website and application

'Go-live': When MinMenu goes live at a hospital

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CASE STUDY

Partnership with Movesca

In our pursuit of partnerships we established contact with the IT innovation company, Movesca. Movesca is a small IT company who specializes in IT services concerning nutritional efforts in healthcare. The company is currently directing their company resources in the service MinMenu. Their present collaborator is a medical department at Herlev Hospital while establishing a collaboration with a medical department at Gentofte Hospital. Movesca expects to scale the solution to other danish hospitals in a near future. In this context, they saw a great potential in joining forces with service design students.

The organization of Movesca is a small start-up consisting of three employees. Jon and Jess are the founding partners of Movesca while Mai is an employee. Jon is IT developer who mainly attend to market research, sales material and forms the contract with hospitals. When the contract is signed the process is taken over by Jess and Mai for the implementation. Mai is anthropologist with experience from Herlev Hospital due to her former employment at the hospital. Mai conducts interviews with the affected actors to align MinMenu with the current work processes. More on the alignment in later chapters. Jess is the local IT developer and our company contact for the thesis. Jess is the main carrier of the IT development in close collaboration with Jon. Jess takes part in the process meetings to validate the feasibility of new features into MinMenu.

Background

The concept of MinMenu was developed in close collaboration with a research and innovation project at Herlev Hospital. The collaboration was established as a public-private innovation partnership; also known as an OPI-project (offentlig-privat innovation partnerskab) (OPI-guide, 2017). The representative of the public sector was Tove Lindhardt, Head of research at Herlev Hospital, and the private representative was our partner Movesca.

For Movesca, the OPI-project and collaboration on innovation provided the starting point to take part in a rapidly growing new market that delivers new technology for the healthcare sector, which they hoped would open up for business opportunities on a longer term (Region Hovedstaden, 2014).

OPI project definition

"A public-private innovation partnership - an OPI project - public and private partners go together to explore and develop new innovative solutions for the public sector..."

"...In an OPI project, both partners develop the new solution, whether it is a new product or a new workflow - or a combination of the two. There is an innovative process in which users are often involved as sparring partners. There is no talk of a traditional procurement or procurement process, where it is known in advance what service or product the public demands." (OPI-guide, 2017)

JON
Founder and market researcher

JESS
Founder and local IT developer

MAI
Anthropologist and employee of Movesca

Founders and employee of Movesca

Development of the application

The development of MinMenu went through a series of studies prior to the actual implementation at Herlev Hospital. The figure below provides an overview of the studies.

These studies were motivated by several years of research and preliminary projects which addresses malnourishment and different functional losses of elderly medical patients (Tove, OPI partner at Herlev Hospital, 2017). These patients often consume insufficient portions of food and do not have enough physical exercise while they are hospitalised. Both of these challenges makes it difficult for the elders to recover. MinMenu initially focuses on the nutritional challenge as it is essential for elders to gain the strength to exercise.

In 2013 the project started both as a practical innovation project and a research project (Herlev Hospital, 2017). The practical track developed a prototype of the tablet application targeting the medical elderly patients. The application motivated the patients to an increased dietary intake, ensure registration of dietary intake and support staff performance.
The research track conducted an observation of the current infrastructure of delivering meals in order to detect the material needs of the employees. Additionally, a UI test were conducted to identify the efficiency of elders usage of the application. The test found that elders were able to operate the tablet when encouraged to do so.

At the end of the development phase, the solution had a pilot test as a proof-of-concept. The test formed two groups of elders that were undergoing measurements of their nutritional status while hospitalised and were measured again six and twelve weeks after being discharged from the hospital (Clinical Trials, 2016). The intervention group received the tablet upon the discharge and could order food from the hospital three times a week. The other group was the control that was only measured upon. The intervention group demonstrated acceptability and stable functionality of the technology plus clinical efficacy such as physical endurance and quality of life (Movesca, 2017a).

UI testing with elder

The proof-of-concept enabled Tove to launch an implementation of MinMenu at the elderly medical department of Herlev Hospital in autumn 2016.

"It is not a question if the elders can use the tablet technology. That they can. It is moreover a question of motivation and we would like to investigate what is needed for their motivation" (Tove, 2017)

April 2013	August - November 2013	February - September 2014	Initiated in autumn 2016
Anthropological field study at Herlev Hospital	Design, development and prototyping	Pilot project for feasibility testing	Operational tests with Herlev Hospital

Process of developing MinMenu

MinMenu

The solution of MinMenu today aims to create better nutrition efforts through co-responsibility, overview and increased communication between the department staff, kitchen staff, patients and relatives (Movesca, 2017b).

The MinMenu application provides patients with a direct connection to the kitchen enabling them to order meals from the hospital's daily menu while hospitalised. Relatives are invited to help the patient order the meal when visiting. In addition to the application, Movesca has developed a website targeting the staff of the department. The website supports the nurses to target their efforts and gain an overview of the overall nutritional status of the department. Supplementing the delivery of the platform, Movesca also provides support for the actual implementation of MinMenu, including the initial implementation planning and training of staff. This composition of actors and elements directs the specific systemics of the system (Morelli & Tollestrup, 2007). To illustrate this we arranged our findings in a service architecture map. The arrows of the map direct the material and immaterial flow between the actors. See figure 1.

Late January 2017 Movesca has established a new implementation process at Gentofte Hospital with another medical unit for elders in order to scale the concept.

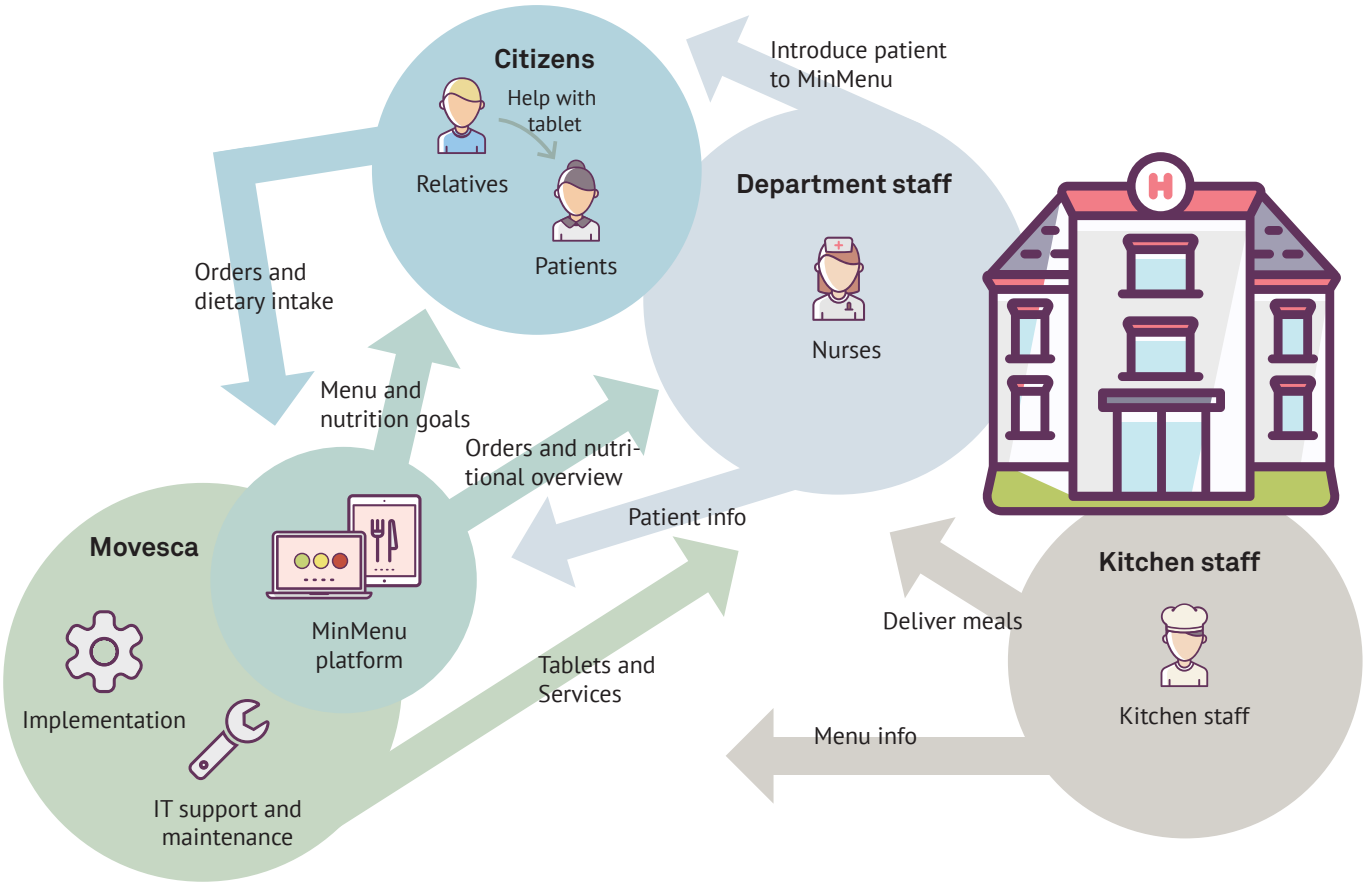


Figure 1: Service system of MinMenu

PRE-PROJECT PHASE

In the pre-project phase, we arranged two meetings with the founders of Movesca in order to clarify expectations of the collaboration. These meetings directed a problem area, problem statement and constraints surrounding the thesis.

Problem area

Initiating the partnership Movesca had stated their wish to scale the concept of MinMenu. At the meeting we discussed their goals for scaling and the problems that prevented them from reaching these goals.

We discovered that the elderly users are merely a starting point for Movesca. They strive to expand the platform to other departments and hospitals whereas data improves patients' dietary consumption. The business vision is to expand the platform across Denmark within a five-year period. Movesca elaborated on an immense problem for them to scale. The implementation at the department at Herlev experienced several challenges which have now forced them to review the process and start over the implementation. Movesca recognised this to be their main problem area. They acknowledge a need for assistance in discovering opportunities that can optimize the implementation at hospitals.

Initial direction

From the insight provided by Movesca, we suggested a direction for the thesis. Based on their wish to scale, we uncovered a necessity to explore the current implementation in order to improve and optimize the experience. The suggestion was met and agreed by

Movesca, who stated that the focus could contribute valuable knowledge for future implementation processes.

Movesa informed that they were about to start an implementation at Gentofte Hospital, which enabled us to follow the implementation process chronologically. Finding that Movesca had just conducted the first meeting, we requested to observe the upcoming implementation activities with Gentofte hospital.

Problem statement

Apart from the above guidance, we were not given a more specific project direction, leaving us with a somewhat broad scope in which to begin problem finding.

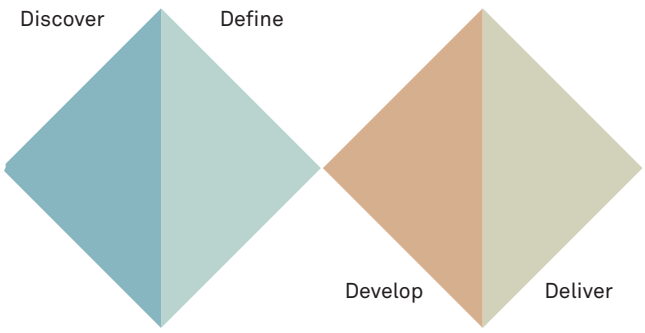
Our initial problem statement is focused on improving the service of implementing MinMenu at hospitals. We want to investigate the current process and interactions between Movesca and actors of the hospital through an exploratory design process. We expect the process to result in recommendations for future implementations of MinMenu.

How can insights of the current implementation of MinMenu and co-design help us to design recommendations for Movesca, to improve the implementation process with hospitals in future collaborations?

METHODOLOGY

Framing the design process

The design process of this thesis is inspired by the design methodology, design thinking. Design thinking is a mindset that frame problems and opportunities from a human-centred perspective, use visual methods to explore and generate ideas, and engage potential users and stakeholders (Brown, T., 2008, Stickdorn, M., Schneider, J., 2011, Bechmann, S., 2010). Design thinking offers a problem solving method, which is particular useful when problems are open-ended or ill defined. To structure the design process of an improved service, the double diamond process model will be applied. The model is developed by the Design Council in 2005 and allows for two different thinking patterns; divergent thinking and convergent thinking. The divergent is represented in the phases of Discover and Development while convergent is represented in Defining and Deliver (Design Council, 2007). One important note is that even though this diagram appears linear, the design process is highly iterative (Stickdorn, M., Schneider, J., 2011), which aligns with the creative process of service design thinking. The double diamond model will help structure the process and allow the group to continuously reflecting upon the process and service.



Double diamond model

Service design

This is a service design thesis. The process and methodological approach of the thesis is grounded with the dominant principles of the service design discipline. This section will briefly discuss concepts of service design to align the reader and clarify the process.

Service design is a growing field, and as such there are a variety of definitions to describe the discipline. However, some common threads can be drawn. First, we categorise and understand service design as a holistic understanding of a service system (Stickdorn, M., Schneider, J., 2011). The discipline activates interdisciplinary methods and tools to view specific details of the user experience, while understanding that these individual sequences is part of a larger and holistic ecology (Polaine et al., 2013).
Interdisciplinarity is an important characteristic in service design. In order to understand and innovate service systems, relevant methods and tools are borrowed from a wide range of external disciplines (anthropology, software engineering, etc.). The characteristic also refers to the collaborative nature of service design, where service designers actively engage in dialogue with experts, users and stakeholders in order to successfully work within the network surrounding a service offering (Stickdorn, M., Schneider, J., 2011).
Finally, service design literature agrees that a service design approach is user-centered (Stickdorn, M., Schneider, J., 2011). Meaning that the service context should be experienced in the eyes of the user. Through ethnographic research techniques, service designers can gain deep understanding of users. Data on their everyday life and experiences, allows for thoughtful design and inspiration throughout the design processes (Djik, G., 2011).

These principles have shaped this thesis. Though, in order to design an improved service the process need to move from a user-centered approach to a co-designing approach. The principle and practice of co-design should support the process of involving users throughout the design process. The co-design approach gives the users an active role in the design process, where they not only inform the designer, but also collaborate with the designer (Jørgensen, U., Lindegaard, H., Rosenqvist, T., 2011).

DISCOVERY

In this chapter...

In this chapter we will present what we did to explore and understand the context of the problem statement. We started out our inquiry very wide because of the open-ended brief. Due to the explorative nature of our research, we mainly focused on qualitative research which could clarify the project direction and help us uncover opportunities for improvements.

THREE RESEARCH AREAS

In order to understand MinMenu as a service, we identified three research areas: Business, Platform and Implementation (figure 2). The business insights will guide the considerations about Movesca's resources while the service experience of MinMenu provides us with the main idea of the touchpoints that goes into operating the platform. The research about the implementation is divided into two subparts; a desktop research on the service design approach to the implementation processes and an explorative study of the current process executed by Movesca. The desktop research on service design in healthcare will inspire our development while the study will uncover pain points in the current experience.

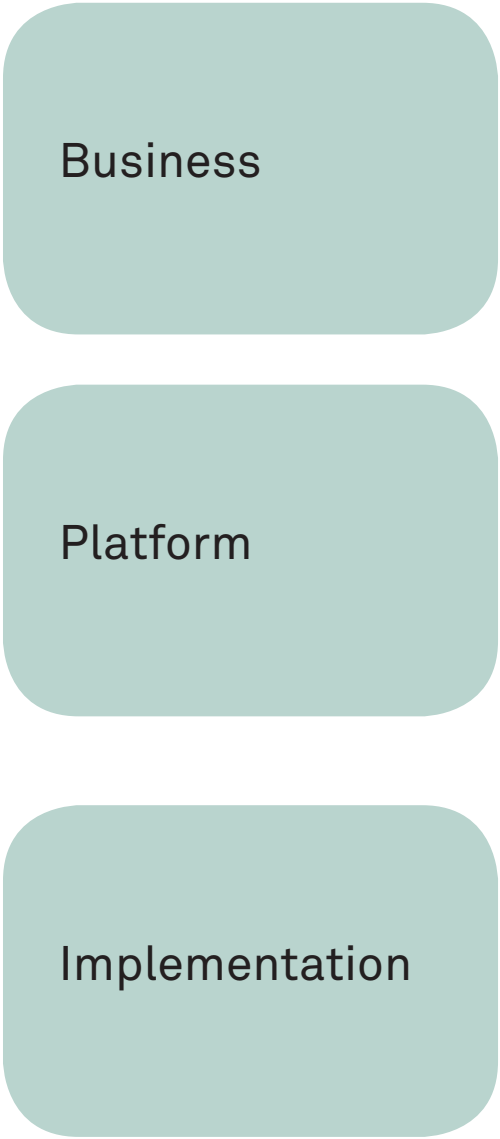


Figure. 2, Discovery Phase - Overview of the Research Areas

INITIATING THE RESEARCH

To understand MinMenu, we wanted to explore the broader context of the service experience. We created a service model canvas to pinpoint what we knew and which topics that needed further exploration. The canvas is based on the Business Model Canvas and differs in its focus on accommodating the complexity of a service (Turner, 2015). It captures both the usage of the service from users' and actors' perspective. This deconstruction of the service model aids us to detect considerations for the redesign of the implementation. Though, it is important to keep in mind that the model is not supposed to identify every detail. The canvas was used as a tool for discussion about the service and later as guidance to fill in the gaps, when conducting interviews with Movesca.

USERS	SERVICE PROPOSITION	CHANNELS	KEY ACTIVITIES	CHALLENGES
Primary users: Elders struggling with malnutrition when hospitalized Secondary users: Relatives, caretakers and kitchen staff	Empowering patients to be co-responsible and relieve the caretakers Focusing correct nurturing and overview of the patients' food intake Quick overview of the departments status on nutritional needs	How do hospitals know of MinMenu? Can patients interact with the platform any sooner or later? How do the caretakers connect to the application?	Achieving nutritional data and menu descriptions from the kitchen IT maintenance. Is the technology developed any further? What is the implementation activities of today?	Hard to scale because of the challenges with implementing MinMenu efficiently Different work processes at the hospitals The elders might not be motivated for MinMenu What is the plan 5 years from now?
ACTORS Movesca The research unit (Tove) Hospital staff Are there any distinct actors among the staff? Relatives	**USAGE** Daily interactions with ordering and registration of food consumption. How many orders can they make? Does the kitchen staff check up on orders? The caretaker checks the patient status. How do they do that? What kind of feedback will the patient get?	**COMPETITION** Who is the competitors?	**KEY RESOURCES** The tablets that operate the application The hospital staff IT developers Is there anyone else than the founders? Anthropologist, Mai (Movesca staff member)	**COST** Salary for the founders and Mai. How do Movesca host the application? Maintenance of IT equipment

ROI	KPIS
What is the payment model within the hospital?	Nutritional status. Can this status be established before and after the hospitalizing? Individual nutritional goals of the patients, monitored through the registration of food consumption.

Figure 3. Service model of what we knew and needed to find out

BUSINESS INSIGHTS

In order to obtain a better understanding of the resources that are needed to manage MinMenu we interviewed Movesca to discuss the service proposition, actors, channels, challenges, competition, key activities, key resources, cost and the return of investment (ROI) from the pre-created service model (figure 3).

The purpose of the business insights is to detect and discuss the considerations taken by Movesca with reference to their resources and their future goals of scaling MinMenu. This helps us to reflect on their vision and resources for the future implementation process.

Preparation and execution

We prepared a semi-structured in-depth interview to uncover the questions that we captured within the categories of the service model. The structure allows us to include additional questions (Bjørner, 2015) that we did not capture with the service model. The interview was conducted with the founders of Movesca as key-informants (Bjørner, 2015) which permitted to go in-depth with the business insights as they are closest to the revenue stream and the strategy of scaling of MinMenu in the future.

Findings

Service proposition

The value that hospitals buy into is the co-responsibility between the nurses and the patients for better nutritional efforts of the patient. The platform helps both the patients and nurses to focus on correct nutrition and gives an indication of how much food the patient needs to consume during the day. The platform empowers the patients to take responsibility for their own nutritional needs and ultimately relieves the caretakers of the task.

Movesca deliberated that at present this proposition is focused on the elderly because of their established partnership. The future scaling of MinMenu will be targeting both elders and additional patient groups that have difficulties in reaching an efficient consumption of food when hospitalised.

Channels

The OPI partnership with Tove provided the opportunity of collaborating with the elderly medical department at Herlev hospital. Herlev and Gentofte hospital have recently been merged which gave the potential of co-operating with Gentofte. Movesca has not been reliant on marketing themselves but the vision for scaling MinMenu has boosted the market research. Jon is therefore occupied with networking at healthcare events and contacting hospitals.

Learning from the experience of partnering with the research unit of Herlev, Movesca is additionally in progress of establishing a collaboration with actors that is attached to these units. Public Intelligence is one of the actors that Movesca is trying to partner with. Public Intelligence is located in Odense and specialises in consulting welfare technology and rehabilitation for the public and private sector (Public Intelligence, 2017). An established partnership will give Public Intelligence a new service to their client portfolio, while Movesca will gain an added marketing channel.

A disadvantage of cooperating with hospitals is that Movesca is restricted from advertising MinMenu to the patients. The founders elaborated that according to market laws the hospital must not be associated with any promotion of health services. Movesca can therefore not risk this association by doing any commer-

cial actions directly to the patients. The patients' first touchpoint with MinMenu is through an installation of the tablet on their bed when hospitalised.
Strict laws also apply to retargeting patients after their hospitalising as the hospital can not expose any private information about the patients to Movesca. The conclusion is that MinMenu is only available to the patient when hospitalised nor beforehand or afterwards.

Challenges

The current challenge is recognised as the transition from implementing to operating MinMenu. The hospital staff lack motivation for operating MinMenu and are fast to turn to old routines. This is an immense problem if the patients then do not know of the existence of MinMenu.

Key activities

The main goal of Movesca is to develop the backend data of special diets. This is developed from data received of the hospital menus and requirements of the patients. They then enter the input of each meal into the system and structure which menus the individual patient are to be presented with. I.e. if a patient has allergies, the patient's tablet will hide certain meals due to the structure of the database. Accompanying the data focus the founders proclaimed that they are not front-end developers and were open to the opportunity of collaborating with front-end developers outside of their company – as long as Movesca would remain as the core backend developers and owners of the data.

One key activity of the implementation process is to meet with representative actors of the kitchen and nurses of the department, whom Movesca refer to as key persons. These meetings are separated to find specific considerations and technical proposals about MinMenu of each group. Based on these inputs, Movesca presents the key persons with a renewed version of MinMenu that is adjusted to the proposals. Hereafter the training of staff takes place.

Cost and key resources

Movesca collaborates with a Ukrainian IT company who aids the development of the backend of MinMenu. The founders have a long list of potential alterations of MinMenu which demanded supplementary IT developers. A new addition to this collaboration is a frontend designer who is redesigning the visual identity - starting with the website that is operated by the nurses.

Movesca have their own local server that hosts the data of MinMenu. Each tablet is connected to the server via a native application installation.

ROI

The department purchases a one-year licence agreement for MinMenu while Movesca agrees to initiate the implementation, train staff and maintain the tablets. The department manager is the decision maker about implementing MinMenu. The manager is provided with a fixed budget for a four-year period. To stay relevant to the client the price of MinMenu has to tap into that budget.

Movesca is investing in the technical customization of MinMenu to accommodate the requirements of the key persons. The founders predict that new requirements will decrease over time which will downsize the need for customizations. These investments will be returned when scaling.

Competition

Master Cater is the dominant system within the hospital setting, when comparing to an order system. Master Cater's system allows the kitchen to order bulks of food for the hospital and are not interested in the orders and consumption of an individual patient, like MinMenu. Movesca is therefore not considering Master Cater a potential tread at the moment.
Another more prominent tread to MinMenu is Sundhedsplatformen (SP) which is a recent and massive investment of Region Hovedstaden and Region Sjælland for creating a collective IT system for their hospitals. Herlev and Gentofte were the first hospitals to go live with the system in May 2016. The nurses are obligated to screen patients to identify the treatment - one of the elements is to weigh the patient. By entering the weight, SP calculates the protein and calorie needs of the patient. These data are copied manually from SP to MinMenu, in order for MinMenu to calculate patient's nutritional needs. The nurses are also requested to register the patients' food consumption into SP, but the nurses experience the registration as inadequate. SP does

not have the integration with the orders which influences the registration. The nurses will take the patient's tray of food and register the percentage that the patient has consumed. I.e. one patient's tray could portray a big plate of oatmeal completed with a glass of juice, while another tray would only hold a protein-bar. The registered percentage does not take these circumstances into account which frustrates the nurses.

Movesca attempted to partner with SP in order to integrate MinMenu with their platform. This integration has a distant prospect as the developers behind SP are actively implementing at other hospitals. SP proposed a first meeting in 2018. From there Movesca expects minimum a year before entering any agreements on integration. Therefore, Movesca concentrates their resources on expanding MinMenu on their own and will consider if the integration is a priority in 2018.

Actors

Through the interview we recognised a wide range of actors in different groups surrounding MinMenu and how they interplay with each other. To gain an overview of the actors we categorise these groups in an actors map (figure 4). An actors map is a representation of the involved staff, customers and partners of a service (Stickdorn, M., Schneider, J., 2011).

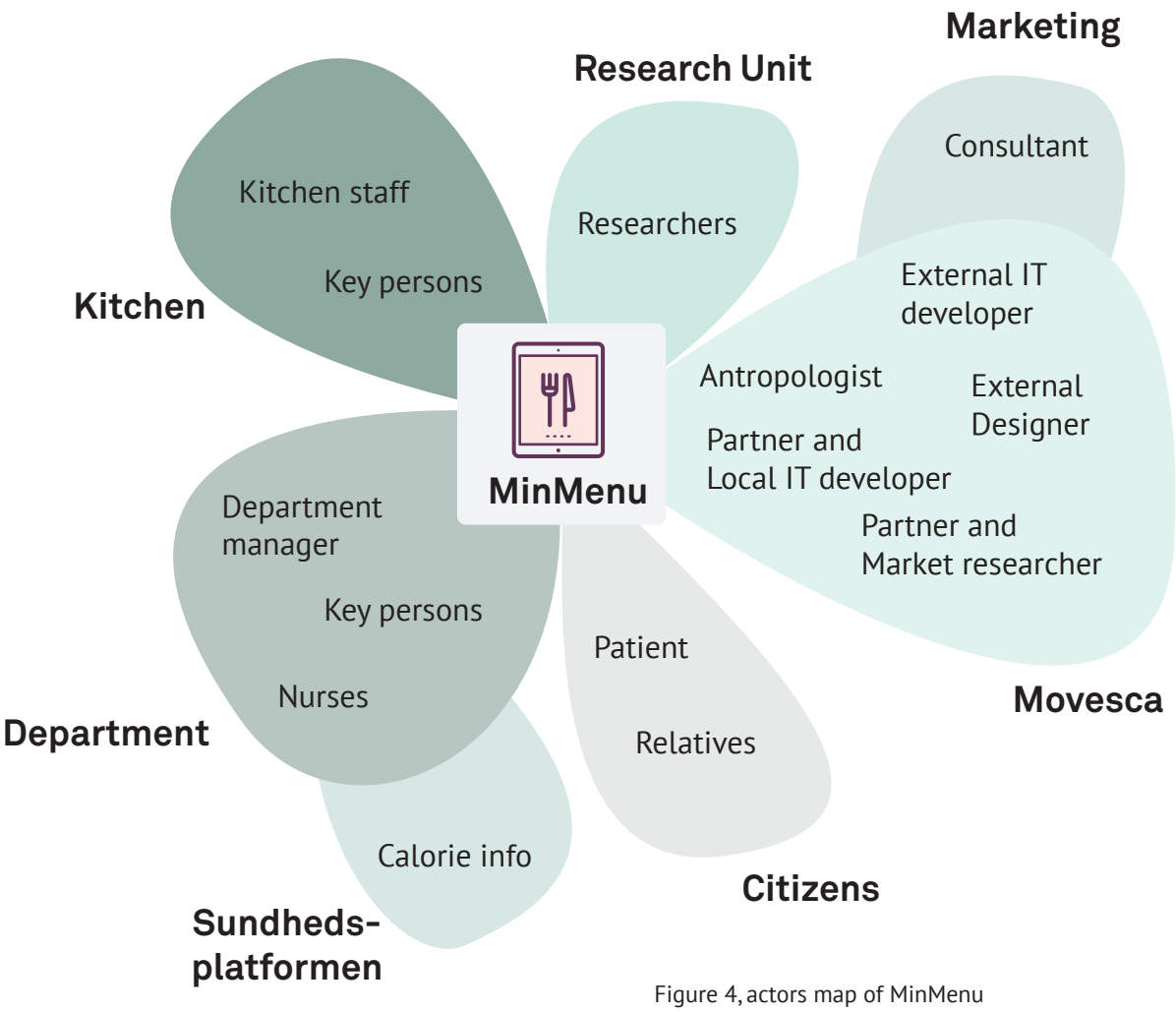


Figure 4, actors map of MinMenu

Reflection

The deeper business aspect of MinMenu did not provide us with a profound understanding of the key activities that goes into the service of implementing MinMenu. We find that this is due to the fact that the implementation at Gentofte is only the second attempt of the process.

The challenge of the transformation from implementation to operation and the lacking motivation of the hospital staff caught our attention. Their important role in introducing the patients to MinMenu intensified our understanding of their significance. This will effect our observations and draw our attention to the staff's experiences through the implementation.

We recognise that being a small external partner in the OPI project, Movesca has a limited access to the hospital budget in comparison to a corporation like, Sundhedsplatformen. This means that MinMenu has to prove itself to get a chance of being purchased for another one-year licence which puts an additional pressure on Movesca. Consequently, we will be aware of how this affects the implementation process of MinMenu.

MINMENU PLATFORM

This section will uncover the users, usage and KPIs of the service model (figure 3). These insights will help us discover the main idea of the touchpoints that is necessary for managing MinMenu, while revealing the parameters on which the nurses can measure the performance of MinMenu. The insights were gained by a walkthrough of both the tablet and the website of MinMenu.

The purpose of the walkthrough is to gain an understanding of the journey that the nurses and patients have operating MinMenu. This provides us with the knowledge of which tasks the users of MinMenu have and the experience of these.

Preparation and execution

Prior to the walkthrough we did not know exactly what to expect, which made the interview unstructured. We identified some topics that we knew about from our former interviews with Movesca; patient info, orders, dietary intake and nutritional overview. The structure encouraged the interviewer to engage in a free-flowing conversation (Bjørner, T., 2015) which let Mai and Jess take the lead on the sequence of the topics.

Findings

Users

The primary end-user of MinMenu at Herlev and Gentofte medical units are the elders. The elders are treated for a range of illnesses such as infections, lung disease, poisoning and withdrawal symptoms. The elders can be signed up for hospitalisation or received ambulant. When elders are discharged they are transported to their respective homes.

The frontline interaction is handled by the nurses. They introduce, train and help the patients in the usage of MinMenu. In addition, they manage the backstage website of MinMenu and have a backstage tablet which let them order on the patient's behalf i.e. if the patient suffer from dementia.

Each user group is presented with a manual which showcases how to operate the functions of MinMenu.

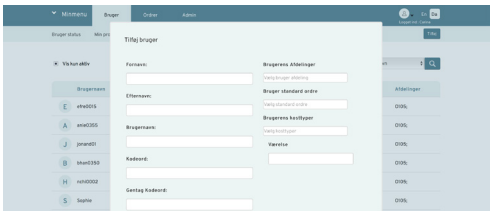
Elderly patients

Nurses

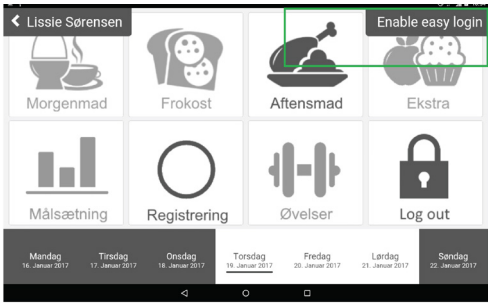
Patient profile

From backstage the nurses creates the patient profile in order to customize the content that the patient is presented with

- The name and surname of the patient
- The patients are assigned to a room of the department which aids the nurses to locate the patient
- Type of diet i.e. gluten free or vegan
- A username allows the nurses to log-on the tablet for the patient
- The password is the same for all patients. The patients are not able to log-off the tablet themselves because of the "easy login" that lock the tablet to the profile.



Website, create profile



Patient tablet, easy login

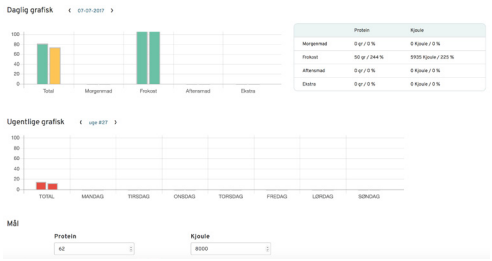
Settings of the profile

The patients are screened by the nurse for their weight which the nurses enter into Sundhedsplatformen (SP). SP calculates the protein and calorie needs of the patient that the nurses will enter into the patient's settings.

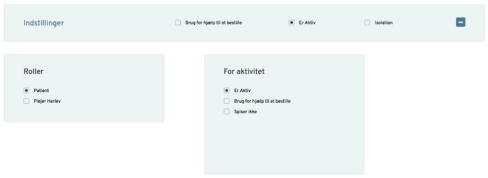
The numbers reference the pictures below

- 1: Enter protein and calorie needs for the patient. MinMenu then calculates the nutritional needs for the main courses.
- When patients register their dietary intake the profile will showcase a graph of the intake.
- Colors indicate if the patient had an efficient percentage of protein and calories needed during the day.
- 2: The patient's profile have a standard setting that indicate that they are able to operate the tablet themselves. If not, the nurse will enter another setting.
- I.e. patients with dementia are considered unable and marked with "need assistance for orders". The nurses then order and register on behalf of the patient with the nurses tablet (3). In some cases relatives are invited to operate the patient's tablet as they are most familiar with the patient's nutritional preferences.
- Lastly, by clicking the "er aktiv" (trans. "active") the mark will be erased which will deactivate the patient profile and delete the profile from the system when saving the settings. This means that the nurses have to enter a new profile for the patients if they are hospitalised again.

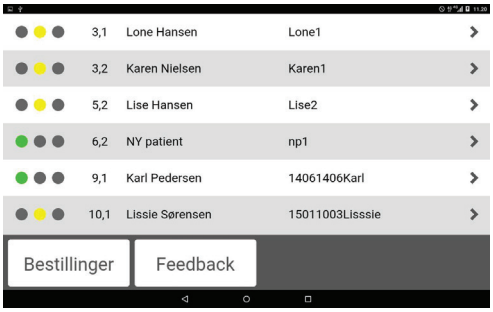
Disclaimer: The patients are often not screened even though the nurses are required to do so. Movesca claimed that this was due to a very busy daily schedule of the nurses.



1: Website, nutritional overview



2: Website, settings



3: Nurses tablet, list of every patient's profiles that the nurse can overtake

Ordering

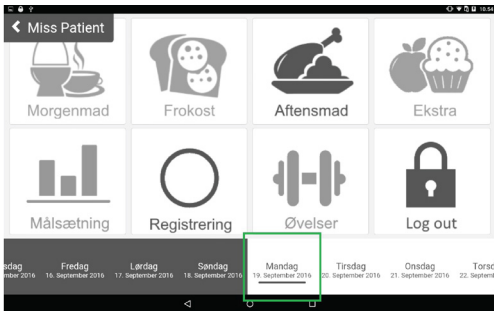
The nurses introduce the patient to MinMenu when they visit the patient to log them on the tablet installed at the patient's bed. Together they go through the process of ordering a meal.

The numbers reference the pictures below

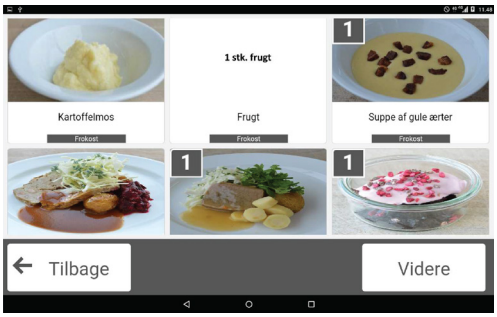
- 1: The patients can order for the day and days in advance. For every day the patient can order for the main courses and snacks as extras.
- 2: The menu for the course is presented in pictures to stimulate the patient's appetite. Clicking the picture will send them to an order page like picture 3 below. If the patient is satisfied with the order s/he click "videre" (trans. forward) to enter the page of placing the order like picture 4 below
- 3: The patient gets more information about the preparation of the meal and the amount of protein and calories.
- 4: When the patient places the order an infobox appears to notify the patient if s/he has reached the goal of the course. The patient can chose to order anyway or go back to order more.

Disclaimers: In the reality of Herlev the patients were not interested in ordering for the days ahead because the elder did not know if they would be likely to go for the meal the upcoming days. I.e. a soup might be interesting for the day but the day after a steak might sound better.

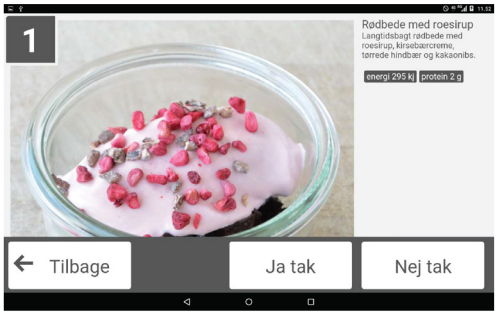
Movesca experienced for the UI test that elders were tending to chose salads and vegetables because these meals are considered the healthy choice in magazines and TV. Mai explained that often an ice cream could benefit the patient better due to the high content of proteins which aids the patient's recovery. Based on this the elders need to have an introduction about their nutritional needs in order to be empowered for the co-responsibility with the nurses.



1: Patient tablet, chose a day and course



2: Patient tablet, overview of the course and orders



3: Patient tablet, order or cancel the order

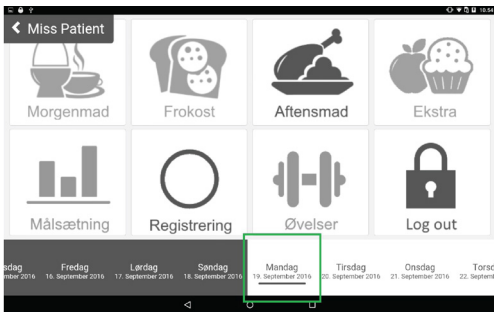
4: Patient tablet, place order

Dietary intake

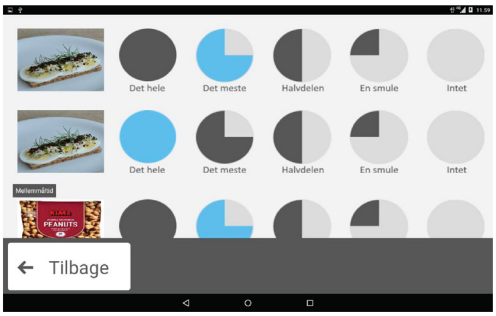
The nurses collect the patient's tray of leftovers when the course is over. In doing so they will train or remind the patient of registering their intake.

The numbers reference the pictures below

- 1: The patient click the "registrering" to enter the list of meals to register for the day
- 2: Every meal is represented with a range of circles to chose from in order to indicate how much the patient have consumed of the meal. The categories are: All of it, most of it, half, a bit of it or nothing. The circle will turn blue to reveal the choice of the patient



Patient tablet, registrering



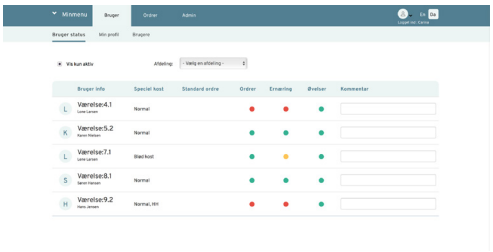
Patient tablet, list of meals to register for the course

Print orders & order overview

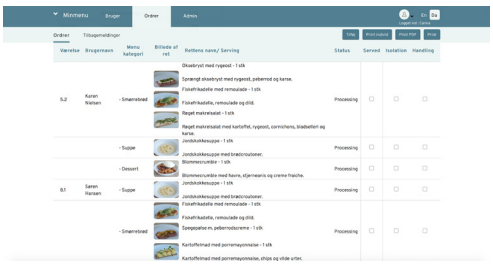
At Herlev and Gentofte the departments are fortunate to have a “meal host” arrangement. This means that a host visit the department for the course and prepare the patient’s tray according to the individuals order. Before MinMenu these orders consisted of a printed version of the menu whereas patients would check off the meal that they wanted. Now, with MinMenu, the nurses print every individual order for the course and hand it over to the meal host. This effects that patients have a deadline of placing the order 30 min. before the meal host arrives. The nurses will check if the patients have ordered their meal by going to a status overview on the website.

The numbers reference the pictures below

- 1: The overview presents a list of the patients with the room number and name in order to locate them. The “orders” column represents the patient’s order status by color. Green means that the patient have ordered within the deadline, yellow means that the patient still has time to order whilst red is overdue.
- Ideally, the department will have no red colors as nurses are expected to check the orders in advance to help the patients marked with a yellow color. This assistance is preferably done by visiting the patient.
- 2: Past the deadline of the order the nurses will go to the orders tap to print



1: Website, status overview



2: Website, print orders

KPIs

Movesca has not been focused on tracking any performance of MinMenu as the platform has not had a successful operation to measure on.

SERVICE EXPERIENCE

After the walkthrough we created a combined user journey of the three actor groups that operate MinMenu: patients, department staff and kitchen staff. A user journey constructs a visualisation of the service experience, presenting the touchpoints that the user interacts with through their storyline (Stickdorn, M., Schneider, J., 2011). By combining the three groups in a best case scenario, we achieved a rough understanding of how the actors interrelate in the context. The stages of the journey is demonstrated from the patient's point of view. This helped us map when interactions with the patient would start and end (figure 5).

Analysing the journey clarified the interactions between the patient and the hospital staff. Especially the nurses' tasks surrounding the patient became clear with the journey. Once the patient has a profile, the nurses have four recurring tasks for each meal in order to operate MinMenu. Additional task will recur if the nurse will have to assist the patient to order and register. This opened our eyes to the underlying complexity of MinMenu.

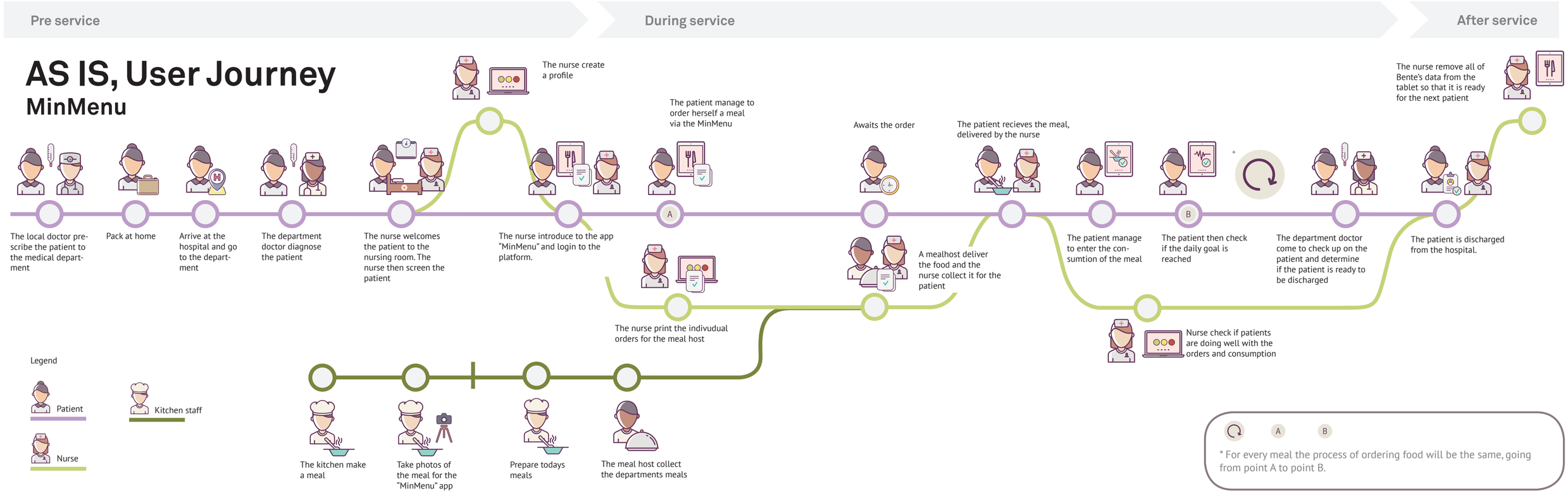


Figure 5, User journey from a patient point of view

IMPLEMENTATION

This section has two subparts; implementation research and a study of the current implementation. The research provides an understanding of theoretical frameworks concerning implementation within service design. This research aids us in comprehending what aspects to look for in the current implementation and inspires our development of an improved implementation process of MinMenu. Additionally, we generated a synthesis of researched service design use cases in healthcare which directs methods for best practises within the setting. The study part of the section firstly uncover the network of actors who participate in the current implementation. Secondly, it explores and observes the current implementation approach of Movesca to unveil opportunities for improvement.

IMPLEMENTATION RESEARCH

Implementation framework of service design

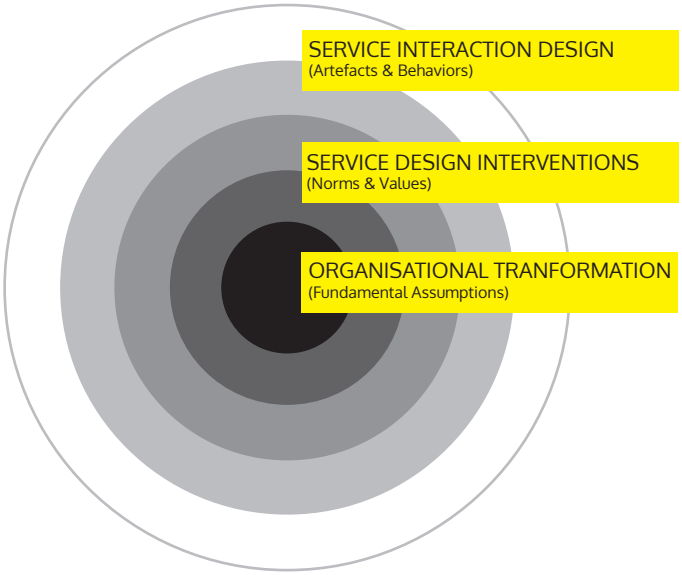
In service design, implementation is represented in the transition of a service idea into daily operations of the employees. Exactly this transition often proves to be the biggest obstacle (Bechmann S., 2010). Service design companies merely deal partially with the practical issues of the implementation. They formulate a specification documentation and often train a few staff members who will carry out the next training sessions. The design company, Designit, express to support the transition by integrating a profound understanding of; what is about to happen when it is happening, who is responsible etc. (Bechmann S., 2010). Bechmann (2010), is backing the importance of decision-makers' involvement both centralized and decentralized when implementing. Moreover, he points out the importance of employees emphasizing the concept and their roles in it. In relation to the employees, Stickdorn (2011) expresses that it is essential that employees are motivated and engaged. He recommends that they are a contributing party in prototyping a curtain service moment in order to acquire a clear vision of the concept. He also opinions the importance of a committed management which is essential when employees meet problems. The management must supplement the employees during the implementation process and solve problems swiftly and creatively (Stickdorn, M., Schneider, J., 2011). A conclusion of the above is put by Stickdorn (2011) accordingly: "The implementation of new service concepts by necessity demands a process of change". Based on Cameron and Green, he forms three basic guidelines for managing change; planning change, implementing change and reviewing change.

The notion about change management formulated a research on the term. Cameron and Green (2009) articulate three dimensions of change management; individual, team and organisational. For this thesis we concentrate on the organisational change which addresses the changes of the hospital staff to implement MinMenu.

Service designers about organisational change

Junginger and Sangiorgi (2009) build a bridge between organisational change and service design. They argue that service designers preserve insights to three levels of the collaborating organisation (figure 6). The first level describes the traditional (re) design of a service interaction which concerns artefacts and general behaviours of the employees. This level can quickly place itself in the periphery of the organisation as these services only add to their appearance but does not generate genuine changes within the organisation. The second level designs a service intervention that affects small or larger changes in the organisation. Designers re-think the value and norms by creating a new service experience that incorporate engagement of the organisation. The norms differentiate from general behaviours by not only addressing new actions but also direct a sense of responsibility. Finally, the third level service concepts require a long-term collaboration to produce an organisational transformation. The level challenges designers to unveil the deeper assumptions within the organisation to initiate fundamental changes.

Figure 6, insight levels and design areas



We argue that implementing MinMenu requires both behavioural changes and smaller organizational changes affecting values and norms. Before MinMenu, caretakers were given full responsibility of introducing and suggesting the meals to the patients, making sure that their patients nutritional needs are covered when being hospitalized. When introducing MinMenu, a shift in current norms and values is required, focusing on empowering the patient to take responsibility of his or her own nutritional needs. It is no longer only the caretaker's responsibility - but a cooperation with the patient. This new system leads to a number of changes in the caretakers' normal routines and workflows around nutrition and meal ordering. New roles are introduced, which requires new understanding of values and norms. Re-thinking the nutritional experience the designers need to engage the organisation to change the organisational elements. Based on this, it is important to acknowledge that the process of implementing MinMenu needs to consider not only the first level but also second level design - the service intervention - which impacts an organizational change within the hospital when delivering MinMenu.

The pursue of engaging a healthcare organisation for a service intervention can be challenging. Robert and Macdonald (2017) identify that service designers are confronted with the history of objective scientific methods of inquiry in healthcare. They categorize two key challenges with service interventions that rally critics. One is to form a successful development and local implementation of services and secondly the evaluation of these. From the British Medical Research Council (MRC) framework for guiding these categories, the designers derive that service interventions should formulate iterative phases that lead an evaluation through a randomized controlled trial (RCT) in order to accommodate the confrontations. In a Danish context we found that Sundhedsstyrelsen depicts similar factors for best practises of local implementation and evaluation of research projects. Two researchers, Rønnov and Marckmann (2010) from Sundhedsstyrelsen, point out that the healthcare sector familiarises with evidence-based projects which are formed by RCT-studies. The researchers acknowledge that the controlled conditions of RCTs are difficult to reproduce in local contexts.

Robert and Macdonald (2017) is backing the need for alternating the intervention to consider the local stakeholders' knowledge. They stress that co-designing with the stakeholders enable in-depth understanding of their meaning-making and produce valuable change interventions as stakeholders address practical concerns of the context.

The previous chapter about Movesca found that the development of MinMenu was undergoing a pilot test which has close resemblance to an RCT, as it divided the elderly into a test group and a control group to evaluate effects. The test demonstrated acceptability of the technology and clinical efficacy amongst the test group. As the research suggests, we urge for the background of MinMenu to be shared with the hospital staff in order to tear down any emerging barriers about the evidence behind MinMenu.

Movesca's customisation of MinMenu points out an acknowledgment of differentiated local context for Herlev. In relation to further engagement of the hospital, we question if the adaptations are solely about the platform and not accounting for the local knowledge of the hospital staff. Movesca must involve the stakeholders to find the practical concerns of the staff that direct the local service intervention.

Leading change

Aiming the service intervention at re-designing values and norms influence future directions which obligate a balance between vision and pragmatism (Cameron and Green, 2009). Professor of leadership at Harvard Business School, John P. Kotter, supports the balance with his eight step model for leading change successfully (figure 7). Kotter (1995) emphasises to establish a sense of urgency to motivate and drive employees out of their comfort zone. The urgency assembles a guiding coalition with the power to lead the change effort. The coalition builds a vision from the urgency that clarifies the future direction and communicates it to capture the hearts and mind of the staff. Cameron and Green (2009) stress to plan the communication to distribute clear information to the right people, at the right time, through the right medium. The plan ensures that the employees do not receive an information overload nor the opposite. Kotter continue to the pragmatics efforts. He states to eradicate immense obstacles for the change and plan for short-term wins (Kotter, 1995). These wins plan for visible improvements and reward the staff which provide momentum and keep the urgency level up.

We recognise that Movesca and Tove developed MinMenu from the sense of urgency about malnutrition amongst elderly while hospitalised. It is important to pass on the urgency to the hospital staff to motivate them for the change. The pre-defined vision of empowering the elderly with MinMenu through different changes of the caretakers' current workflow provide the guiding coalition with the groundwork. The coalition is relevant for directing the change in connection to the local resources and remind the staff about why the department chose to implement MinMenu. As the research proposes, Movesa needs to plan the communication about the vision and provide relevant information at the right time. This indicates that different changes must be separated into a sequence of conversations to balance the load of information. A part of the plan should also be to locate obstacles of the staff and address the pragmatic short-term wins. The business insights did not uncover any KPIs which indicates that Movesca has not articulated short-term wins. We find that short-term wins are important elements to not only provide momentum but also document the effects of implementing MinMenu.

Harvard Business School professor of business, Rosabeth Moss Kanter emphasises that difficulties emerge after the start of an organizational change (Kanter, 1999). She endorses Kotter's guiding coalition and supplement a transfer of ownership to the staff. The transfer is a broad outline that allows employees to conduct small experiments that exert ownership. Roberto and Levesque (2005) recognise the experimentation to foster collective ownership in their research of conditions for embedded organizational change. They urge managers to enable employees to take ownership of the new procedures and apply the key principles of the intervention to their day-to-day work.

This imply that the staff should not only be involved for their local knowledge but also apply ownership within the staff in order to embed the re-design of values and norms. The background of developing MinMenu framed a clinical trial approach and UI feedback which suggests that Movecsa is not familiarised with experimentation for ownership. We acknowledge the importance of experimentation revolving around implementing the new workflow for the staff to take ownership and integrate MinMenu in their day-to-day processes at the hospital. Our observations must discover opportunities for these experiments in the implementation process.

Figure 7, Kotter's 8 steps

SERVICE DESIGN USE-CASES

To understand how service design is practised in the healthcare setting, we conducted a desktop research on relevant cases. Two case studies were selected which demonstrates successful developments of service concepts in health care relating to frontline staff. The cases provided an overview of methods that designers have tested in practice. A synthesis of these displays best practise approaches. This supports our direction for observations and inspire approaches for the development of a future implementation process between Movesca and the hospital staff.

One of the cases is a service innovation revolving around mobilizing Community Health Workers (CHW) as the primary care delivers which draw on holistic research from India, Kenya and Brazil (Sengupta and Khanna, 2016). The second one is an in-house case of implementing an add-on to an existing service concept, NKE (Nurse Knowledge Exchange) which focuses on improving the process of information exchange between nurses (Lin et. al., 2011). The NKE case differentiates by integrating change management to the design. In spite of this, the cases have similarities to the methods of the designers. Both cases have been operating an overall human-centred approach to acknowledge multi-disciplinary perspectives to the concept. The approach guides the cases' design on a resembling path for researching, analysing insights and developing the concept.

Field research

The designers constructed hours of field research with actors to gather insights to opportunity areas. For both cases the research were conducted through observations, shadowing and interviews with the stakeholders about their current workflow. These activities immersed the designers into the context and let them accumulate everyday experiences about the day-to-day workflow of the frontline staff.

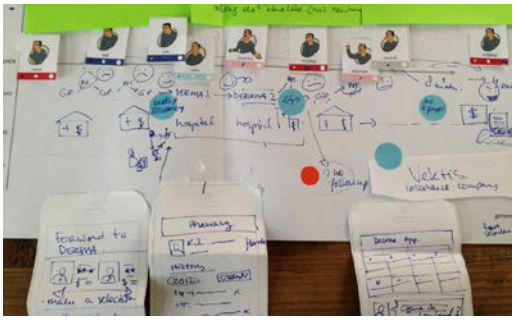
Visualisation of experiences

From the research the cases construct a visualisation of the gathered experiences. The CHW case combined a customer journey with an experience flow which aided to uncover needs and challenges across clinical phases of the primary care system.

The NKE case did not make a traditional customer journey, but drew a journey from strategic phases. The local context enabled the designers to connect the journey with concrete feedback from the staff. The designers found that the staff did not believe in the need for change and directed a redesign of the phases. These new phases were based on a change management model for communication. The model constructed four stages of conversations in the communication; relatedness, possibilities, action and acknowledgement. The NKE designers fabricated another journey with more satisfying feedback as a prove of concept.

	Conversations of Relatedness	***Conversations of Possibilities***	***Conversations of Action***	***Conversations of Acknowledgement***
Strategy/Approach	• Establish a "listening" environment • Engage & surprise • Immerse the staff in the issues • Build cohesion	• Put change in front of the staff so they can participate • Share what is being tried • Focus on learning • Engage & surprise	• Clearly communicate who is doing what • Have fun, engaging ways to 'test' the staff	• Celebrate the change • Involve a variety of ways to measure the success
Tone of Execution	"What's most frustrating to you about shift change?" "Tell us a story.."	"What are you trying? What is working? What isn't?"	"Here's how your unit has customized NKEplu to make it work here."	"What has been going well with NKE*plus*? What can we keep working on?"
Tools Designed to Support Process	• Interview cards • Observation boards	• The 'Think Tank'- a space to be creative • Hallway of Dialogue	• Quiz cards • Badge cards • Posters	• Patient Appreciation Card • Metrics dashboards
Tone of Staff Feedback	Initial hesitancy and surprise that we asked for their opinions, then open honesty and excitement about making things better	Curiosity about other staff's opinions and how to do things differently; increased sense of team and connectedness	Confidence in a new way of doing things; excitement to get everybody onboard	Increased sense of ownership, "We made it ours"; pride, and celebration

Experience jorney for NKE case



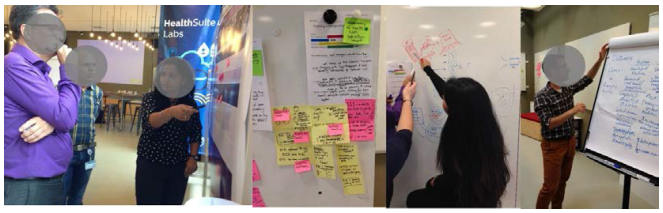
Experience jorney for CHW case

Co-creation

The cases developed their services differently but both recognise a need for co-creation with stakeholders. The CHW case orchestrated a three-day workshop that would gather more data into the challenges of the journey, ideate and select solutions with the participants and devise a business model. The designers afterwards generated a blueprint to determine which of the co-created ideas to incorporate for a finalised business model.

The NKE case took another approach to co-creation. First they tested an implementation process that was divided in two parts: Staff training and Go live. This process presented the staff with the why, when and how aspects that the designers had learned from collaborating with another hospital. Their test found a need for engaging the staff as employees stated "well, we do things

differently here" and "we're doing it, because we have to". Based on this the designers developed a process to co-create a new NKE solution for every local context. To support the process, the designers produced a range of visual tools that coordinate with the aforementioned stages of conversations. At stage one, the staff would co-create local insights by using interview cards and put the insights on a dedicated board. The next phase let the staff enter a creative space featuring two posters. One poster illustrated the customizations of NKE with the title "making it ours" while the other poster invited the staff to put statements about their preferences and ideas. In the third stage, designers produced a "we made it ours" poster which showcases the effect that the staff had on the solution. This poster was accompanied by a daily countdown for the "go-live" day. The countdown created a sense of anticipation with the goal of involving as many people as possible. This made the staff want to clear obstacles leading up to the "go-live" day. The final stage celebrated the progress by marking the effects before and after NKE went live on a board. At these celebrations the staff would also discuss about what is going well and what needs improvement to keep the co-creation alive.



Co-creative session for CHW case

Co-creative session for NKE case

Take outs

The NKE case has many similarities to MinMenu and is an example of operating service design together with change management. This makes the best practises of the NKE case a superior to the CHW case in our context. In spite of that, the resemblances between the traditional service design of the CHW case and the NKE case were a surprise. This indicates that the toolbox of service designers is capable of working together with change management. Both cases support our ethnological approach for field research with the staff and encourage us to use interviews, observations and shadowing as methods. Their analytical method of combining a journey and an experience flow have proved useful for defining practical challenges of the frontline staff. This stimulates us to operate the same method for the define phase. With MinMenu we will also be connected to an implementation process for a local context like the NKE case. We are therefore inspired to define Movesca's strategic phases to outline possible challenges of the process in connection to concrete feedback of the staff. The NKE case moreover give inspiration for a way to include experimentation for ownership. We recognise that Movesca could benefit from taking heavy inspiration from the NKE case. One important notion to this is that the NKE case was very fortunate about their resources. The designers acknowledge that the staff and themselves had to put a great amount of time and effort into the implementation. Movesca's ROI proves that they do not have that kind of resources which requires a more humble approach. For our service development we will therefore be inspired by aspects of the NKE case that could be convenient for Movesca to apply in their implementation process of MinMenu.

ACTORS NETWORK

To get a deeper understanding of the network between the actors, we had a interview with Mai about their roles. The interview led to a discovery of two groups that are formed for the implementation process. An executive group and a work group.

Executive group

Consists of: Movesca, the department manager and the kitchen manager. The group may also involve a key person of the research unit or development team within the hospital.

The executive group sets the visions for the project at the hospital, discusses the pros and cons of the implementation and provides means for the work group to execute solutions.

Work group

Consists of: Movesca, key persons and super-users. Super-users are trained by Movesca to operate MinMenu. These super-users then train the rest of the staff. The key persons might also become super-users.

The work group takes the platform from vision to implementation and operation. They will report the current situation of the implementation and inform the executive group of the successes and issues experienced by themselves or informed by their colleagues.

Actors network map

After the interview we illustrated the network in an actors network map (figure 8). The map focuses on roles, groupings and relations to organize the actors by their functions in the network (Morelli, N. & Tollestrup, C., 2007). Morelli & Tollestrup (2007) states that different points of view generate different maps. For our map Movesca embodies the point of view to emphasise the main interactions related to their implementation activities.

Analysing the map we recognise that the nurses' and kitchen staff's main connection to the vision would be through the super-user. Another important notion is that the super-users are carriers of the frustrations that happen amongst their colleagues. This acknowledges that the super-users must be able to handle the frustrations and stay committed to the implementation of MinMenu.

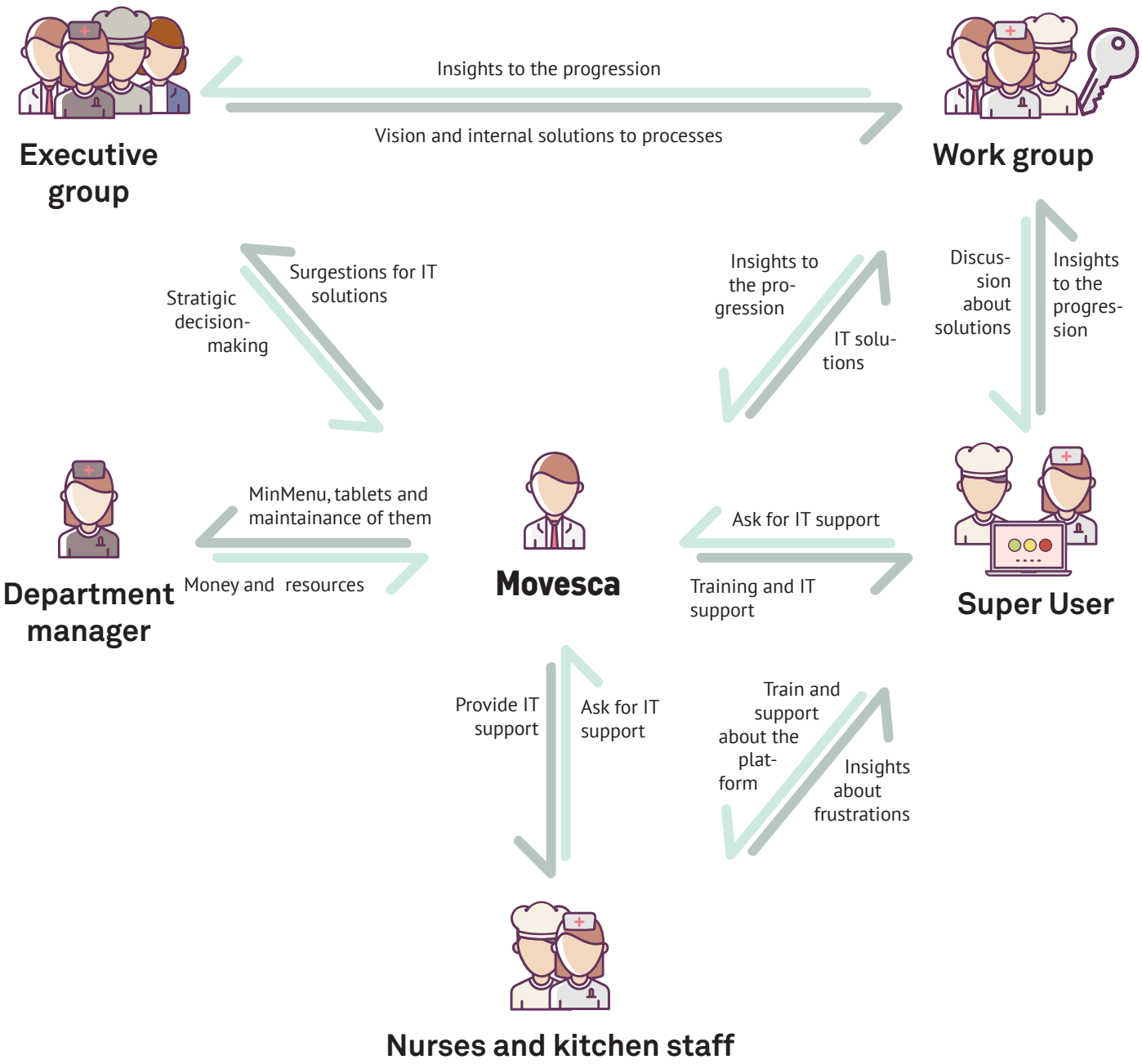


Figure 8, Actors network map

OBSERVING IMPLEMENTATION ACTIVITIES

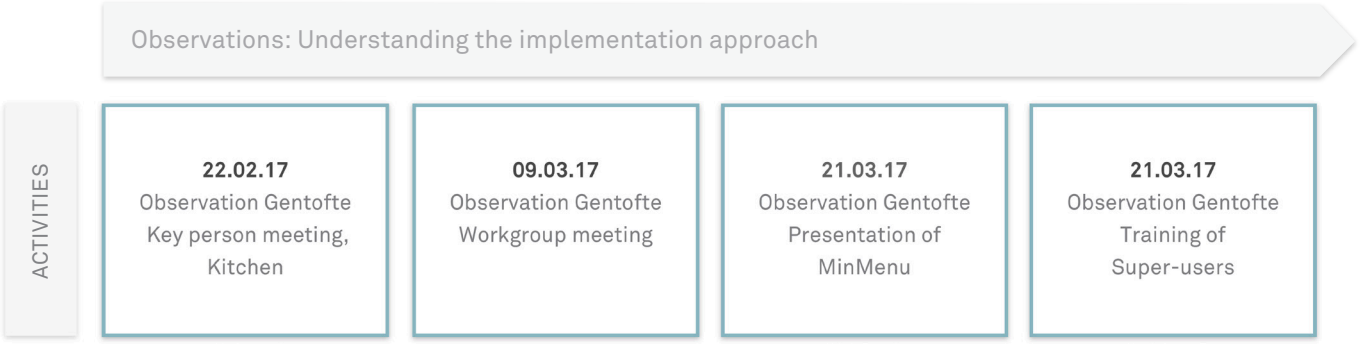


Figure 9, list of observations

During the discover phase, we found it important to spend time with Movesca in their daily activities, interactions and events with the implementation. This next section will present four observations that were conducted during our involvement in different implementation activities and meetings at Gentofte hospital (figure 9). The strength of observation is that it helps to capture and understand the gap between what people do and what they say they do (Belk et al., 2013; Herbert, 2000). This data can help to provide inspiration and ideas for opportunities of improvement.

The purpose of the observations was to gain insight into the current structures and procedures to understand how Movesca is approaching the implementation today. This helps us to better understand the context that we are designing for. The observations were additionally used to understand the people and context to learn how the involved actors are experiencing the service.

Preparation and execution

The following four observations were approached with the method Participant Observation, taking the role Observer-as-Participant. This role allowed short interactions with the participants (Gold, 1958). Given that the participants would encounter us with Movesca, they were made aware of our research intentions. The fact that the method involved us to actively intervene, can have an impact on the participants' behaviour and interactions (Bjørner, T., 2015), which is why we were engaged in a series of observations. This gave the participants a chance to feel comfortable about our intervention.

Participant Observation involves studying participants in their natural setting, aiming to gain insight into the relations, behaviours and activities. Empathy is central in participant observation (Bjørner, T., 2015), in order to gain a deep understanding of needs, values and behaviours. Being able to observe the behaviour as they occur, also allowed us to understand gaps between what Movesca states and what happened in reality.

Before each meeting, we conducted a brief preparatory interview with Mai to understand the context and their goals for the meeting. This provided us with themes to guide our observations. The advantage of this approach instead of a detailed guide, is that the process is shaped by mood of the situation and the flow of the participants' activities or interactions (Bjørner, T., 2015). The approach also allowed us to observe the meetings in an explorative manner, providing rich contextual knowledge and a more holistic understanding of the implementation experience. The observations were supported with pictures and handwritten notes to remember key findings and sometimes finished with a short follow-up meeting with Mai if we needed to clarify some questions.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KEY PERSON MEETING

Participants: Mai - consultant at Movesca, Sidsel - MinMenu key person and nutritional communicator, Kristian - kitchen manager, and Daniella - office assistant
Location: Office room at Gentofte Hospital main kitchen
Method: Participant observation,
in the role Observer-as-participant
Themes: Understand kitchen processes, understand platform requirement, meeting format, Movesca's usage of an interview guide

Stated procedure

The 'Key person' meeting is engaged and facilitated by Movesca whose goal with the meeting is to understand the work processes of the hospital. To gain these insights Movesca has developed a semi-structured interview guide ensuring that they cover important topics at the meeting.
When preparing for the meeting we learned that Movesca divide their investigations around the hospital work processes in two tracks; nurses and kitchen. The same meeting procedure applies to both meetings. The first key person meeting with the nurses was conducted prior to the start of the thesis, and we were therefore only able to attend the key person meeting with the kitchen.

Findings

Unclarity

Arriving to the meeting with Mai, we learned that it was somewhat unclear who would participate in the meeting. Mai had arranged the meeting with the key-person, Sidsel who then was responsible for gathering relevant people from the kitchen department.

The meeting started with a brief introduction of all participants. We introduced ourselves and told the reason for our participation which was welcomed by all. Mai initiated the meeting by sharing that the goal of the meeting was to understand the work processes of the kitchen in order to regulate functions in the platform if needed.
Observant notes

A few minutes in the meeting, it was clear to us that the participants, except from Sidsel, had only heard of the name, MinMenu. They were unaware of the purpose of the meeting and why MinMenu is being implemented. They said somewhat along the lines: "I know the name and that it has something to do with ordering meals".

Technical requirements

Mai ended the meeting by sharing that they would deliberate these new learnings to regulate functions of MinMenu.
Observant notes

Observing the interview, we noticed that the topics primarily seeked to understand and define platform requirements. Mai focused on what the kitchen are doing today and what the platform is technically capable of. We were surprised that they did not have more focus on understanding the whole journey, the people and the processes involved - for example how MinMenu will change the workflow of the staff.

Minor role

Another discoverance from the meeting was that the kitchen would not be heavily affected by the implementation of MinMenu. The main obstacle was that they had to take pictures of the food for the platform to showcase the meals. Nobody had initiated solutions to do this, which can be linked to the above finding - that Mai was only focusing on solving technical issues.

Analysing our notes from the meeting, we both agreed that this solely technical focus could be a problem and might prevent Movesca from learning and clarifying how MinMenu is best integrated into local processes. This we will investigate further.

Key take-outs

- Little empathy with the people involved
- Mostly focusing on platform requirements when preparing the implementation
- The kitchen has little interaction with the platform


C-221 Medicinsk

WORK GROUP MEETING

Participants: Mai - consultant at Movesca, Jess - IT developer at **Movesca,** Christel - department manager, Mia and Eva - MinMenu key persons and nurses and Helle - development nurse
Location: Meeting room at Gentofte Hospital, medical department
Duration: 1,5 hours
Method: Participant observation, in the role Observer-as-participant
Themes: Planning, nurses, meeting format, rollout

Stated procedure

The Work group meeting was the third meeting between Movesca and the hospital since they started the implementation process. The meeting aimed to plan the steps for the 'rollout' and review the platform functions, which Movesca had drawn from their past meeting with key persons. The 'rollout' is the step where MinMenu is integrated into the department and taken into use by both patients and nurses.

Findings

Observing the meeting we gained insight into very specific challenges, which provided a new understanding of the implementation compared to what Movesca had stated. From the meeting we gained a better understanding of the hospital department's role and the actors' feelings towards the process.

Only a short time into the meeting, the department manager Christel expressed great frustration. Her frustration was firstly based on lacking knowledge about the formalities of the meeting and secondly,on her lacking overview of the process.

Jess and Mai responded that a list of activities was shared via the digital platform Sharepoint, which she was invited to by mail.
Observant notes

Lacking overview of the process

From the conversation, we learned that the department manager missed a detailed process timeline, which provides her with an overview of meetings, dates, activities etc. Christel stated; *"I miss a timeline of the process and I need to plan the staff timetable well in advance...."* (Christel, department manager, 2017). From this situation we learned that the lacking overview is a big stress factor for the department manager.

Role of the department manager

The department manager is responsible for the planning of staff timetable and any changes that should occur. Knowledge and overview of Movesca's implementation activities is therefore very important to her planning. It was clear, that being prepared is an important factor for her in this process.

Purpose and benefits

Mai started going through the different platform functionalities using a projector, while the participants followed the presentation from the table. This led to some questions from the participating nurses.
Observant notes

Observing Mai's presentation of the platform, we learned that the nurses lacked knowledge about the purpose of the implementation and what benefits MinMenu would bring to their daily

workflows with patients. It seemed that it was difficult to imagine the platform in practice and how it would fit in with their current workflow. This also applied to the key persons Mia and Eva. We found this insight surprising being this close to rollout. It is important that the key persons can share this information with their colleagues to create a collective purpose.

Mobilization of Minmenu

Mai and Jess tried clarifying the confusions by explaining the different platform functions. They had difficulties communicating clear answers that could make it easier for the nurses to understand. All explaining and communication were done from the platform view.
Observant notes

After reviewing the platform, Mai directed the conversation towards preparation for the rollout days. Mai did not present a plan or proposals for this topic, instead she allowed the nurses and department manager to come up with suggestions. Once again, a lot of questions were asked.
Observant notes

From the observation, we found that Movesca has not prepared a specific plan for the integration and rollout of MinMenu, which made them unable to guide the staff. This triggered a lot of practical questions, e.g. about integration and charging of tablets, and specifications about their new tasks with the platform. Jess and Mai were unaware of the physical environment of the patient rooms and were therefore unable to answer their questions.

Their lack of answers and knowledge stressed out the department manager. "I don't feel that you have control of the process. The technical stuff are very important and is not something that should be prepared just before the rollout." She pointed out; "...our "store" continues although a new system is being implemented. We must therefore preferably be three steps ahead." (Christel, department manager, 2017)
Observant notes

However, we also noted that the key persons, Mia and Eva, responded differently. The two younger nurses were open and positive towards finding solutions to these challenges.

Analysis of procedure

The above insights provided a more clear picture of the issues that Movesca is faced with in the context of the hospital and the actors involved from the department. The communication between Movesca and the department manager seemed lacking, and had mainly consisted of some email correspondences. This approach did not seem to be efficient enough when passing on information regarding planning or when matching expectations about the process. The communication issue also applies to the nurses who lack information about MinMenu and why the platform is being implemented in the department.
In addition, we were confirmed about Movesca's lacking empathy with the people and the local processes. They lacked understanding of the nurse's current workflow, which enables them to relate MinMenu tasks to the nurse's daily workflows.

Key take-outs:

- There is different roles and needs to consider
- The department lacks overview of the process and new workflow
- Confusion about purpose and benefits of MinMenu
- No mobilization phase
- Movesca provides limited guidance before the roll-out
- Lacking communication between Movesca and the department
- Lacking empathy with the department staff

MORNING MEETING

Participants: Mai - consultant at Movesca, Christel - department manager, Mia and Eva - MinMenu key persons and nurses, Helle - development nurse, and all nurses on shift that day (ca. 10)
Location: Staff-room at Gentofte Hospital, medical department
Duration: 15 min
Method: Participant observation,
in the role Observer-as-participant
Themes: How is MinMenu presented to the nurses, meeting format, attitude towards the change

Stated procedure
It was arranged for Mai to visit the department's morning meeting. At the meeting Mai would present MinMenu to the nurses that have not been included in the previous implementation meetings.

Findings

This observation gathered insights about how Movesca presents MinMenu to the staff that has not yet been introduced to the project.

Presentation of MinMenu

The presentation was held in the staff room which is a small room used for breaks and quick meetings such as the morning meeting. All participants gathered around a table in the middle of the room, our self included. Mai started presenting at the same time as the nurses began eating from a shared breakfast.
Observant notes

Observing the presentation, we discovered that the context highly affects how the information is received. The small room and the tossing of coffee cans and bread made it difficult to concentrate on what was being told. We found it surprising that this presentation was held in such environment, with a short time frame and without facilitation tools such as a tablet or projector. We wondered if Movesca has considered this.

Mai focused on presenting the platform and key functions. She introduced the tablet to show the patient view and then a printed A4 to show the website view as she did not have a screen or computer available. A lot was introduced in a short time.
Observant notes

The presentation format prevented a group of nurses in following the visuals properly and they had to rely on listening. This resulted in a lack of focus and lack of interest. It was moreover obvious that the meeting was too short compared to the amount of information presented and the number of questions asked. It was also noted that even though purpose and benefits were unclear at the last meeting, the communication strategy was still the same with focus on platform functions. According to our investigations about the importance of sharing a purpose, we find this to be a wrong approach to introducing a new system.

Key take-outs

- The context of the presentation impacted the sense of urgency
- The presentation lacked information about the purpose of the implementation


FUN one

SUPER USER TRAINING

Participants: Mai - consultant at Movesca,
Mia and Eva - MinMenu key persons and nurses,
and two nurses (in the end of the training)
Location: Meeting room at Gentofte Hospital,
medical department
Duration: 2 hours
Method: Participant observation,
in the role Observer-as-participant
Themes: Training format, super users role, coaching,
responsibility and ownership

Stated procedure

Movesca is facilitating the super user training using side-by-side coaching. The aim is to coach the nurses to become super users in the platform. They are introduced and trained in all the MinMenu platform functionalities.

Findings

The observation discovered interesting insights about the format and Mia's and Eva's behavior during and after the training in relation to Movesca's earlier problems with implementing among the nurses at Herlev. It also provided new information about the resources given to the nurses.

Extra resources

Mia and Eva were exempted from their normal tasks with the patients in order to focus their energy towards the training. This proved to be a good use of extra resources as it allowed for a calm walkthrough of the platform and time for Mai to answer all of their questions.

Side-by-side coaching

Mai did not introduce a plan for the training which made it a bit messy in the beginning. It helped that Mia and Eva both were very motivated and eager to get started. Eva was quick to start using the platform and asking questions along the way.

Observing the nurses, we found that it worked well with Mai coaching from the side, while the nurses were executing the tasks in the system. This allowed them to be familiar with the platform before it is being integrated. Both nurses seemed to understand the processes of the website quickly. It was clear that they both were skilled IT users which could be an important parameter to consider when selecting super users.

Mia and Eva expressed that the system seemed easy enough to operate, but they were unsure about how to implement the platform and tasks into the daily workflows. Mai replied, that given their knowledge of the current routines, it was best if they found a solution to the new workflows.
Observant notes

This incident indicated that Movesca failed to provide the necessary support for the nurses. It was very clear that Mia and Eva needed help in understanding the new workflow. We discovered that they found it difficult to relate the new tasks to their current routines.

System bugs

The training was carried out in a test version of MinMenu. During the training a few system bugs was discovered which prevented the nurses from completing 'create patient' and 'remove patient' – two of the key tasks when operating the platform. The system bug stopped the nurses from exploring the full experience with the functionalities.

Super user role

Observing the super user training we discovered that Movesca, as a starting point, only provides training for the super users. Afterwards the super users are responsible for the training of the rest of the staff.

In continuation of the training, Eva and Mia saw the opportunity to start training their colleagues. They agreed to focus on the first steps which ensures that the patient can order food and leave out the registration of dietary intake. This way they would feel confident with teaching the steps to their colleagues. This received no objections from Mai.

Observant notes

Observing the key persons, we saw that by involving them in the decisions they felt empowered to train their colleagues. However, we also saw that the purpose of food registration was lost as no future plan was discussed. We had expected more guidance from Mai in order to ensure that all key functions are introduced and trained.

Mia came back with one of her colleagues. Colleague: "Ehm, how long will it take?" Mia: "Just 5 min" Colleague: "Oh, okay then". After the session, the colleague is relieved that the training was actually just 5 minutes.

Observant notes

Eva and Mia managed to train two nurses. From observing the sessions with the nurses it was clear that resources are few. Both nurses were distracted and more focused on getting back to their patients. They only agreed to the training because of the short time. The key persons showed great responsibility towards MinMenu and defended it from their colleagues' skeptic questions.

Key take-outs

- IT bugs should not be an issue in the testing environment
- Super users need support in planning the new workflow
- Time is of the essence to the nurses
- A need for a training strategy that considers the nurses busy environment
- The involvement led to responsibility

DEFINING

In this chapter...

The following chapter will download and synthesise the data found during the discover phase. We will work with our insights to concretise themes, design opportunities and sharpen the focus of the thesis.

UNDERSTANDING DATA

At this point in the design process, different observations and interviews have been performed to detect pain points and understand the context of the current implementation service. To get an overview of all the collected learnings a workshop in the group was conducted.

The purpose of the session was to achieve a collective understanding of our research to align the team and make individual learnings into group learnings. It was also used to evaluate learnings and define specific themes to guide the next design phase.

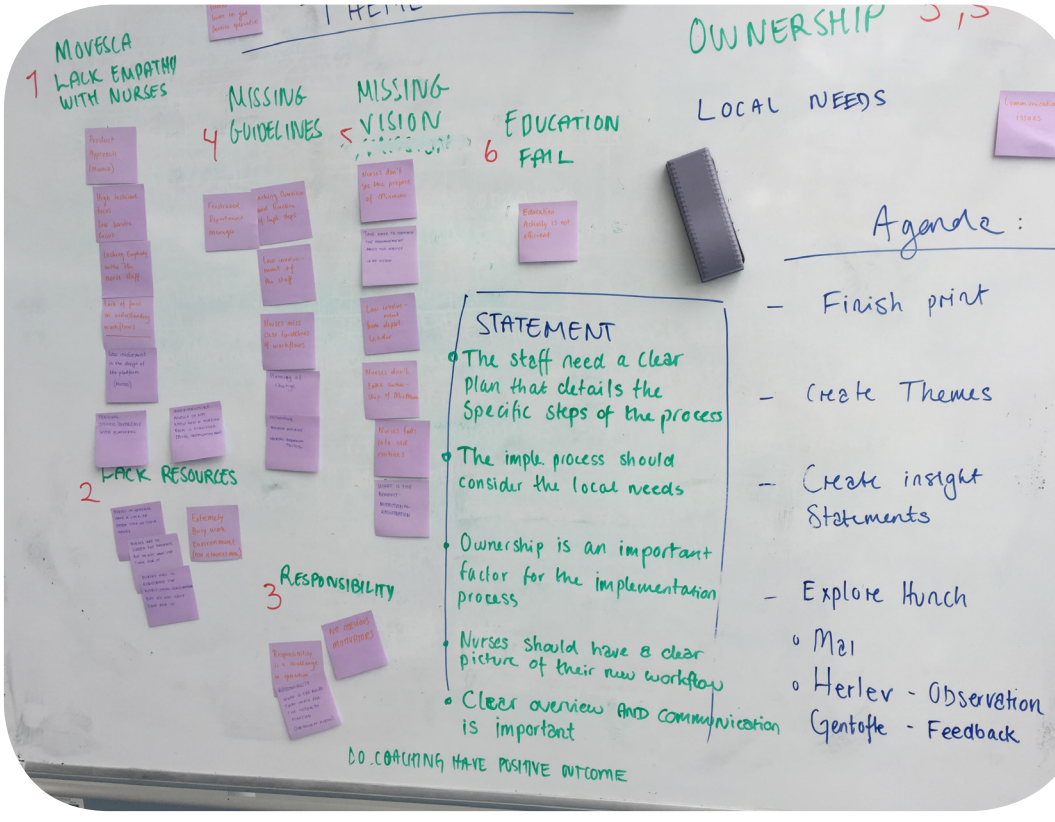
Preparation

Having collected a lot of data, we went through each research activity individually to make sense of photos, notes and impressions. Most of the material used had been processed in the form of text or analysis after each performed activity.

Mapping themes

The first part of the workshop focused on a "download"-session (IDEO, 2015), where insights in shape of ideas, statements, and stories were pulled from each research activity and written on post-its and shared with each other. This session allowed great discussion of findings and experiences within the group. After finishing the "download"–session we clustered the post-its in order to reveal patterns and categorize our findings. By categorizing the findings we were able to define narrative themes, as well as uncover relations between insights. The themes provided a more clear overview of the pain points found during the discover phase, and were used to guide the further process.

Clustered themes



Mapping the service experience

The second part of the workshop focused on mapping and structuring findings in relation to the specific implementation process. To do this we developed an experience map, where findings on each implementation activity was mapped. An experience map is a catalyst of empathic insights and takeaways that drive the next design phase (Risdon, 2011). The map includes the customer journey and conjoint the journey with the experiences of a person. We moderated the model to accommodate the range of persons that had interacted with the implementation service. The map was divided in four information layers: Format - describing the physical environment of the touchpoint. Touchpoint - describing the interaction that Movesca has with the hospital during the implementation process. Experience: describing the actor's emotional state through the touchpoint. These are interpretations based on the cues like body language, choice of words and tone of voice. Learnings & opportunities - describing the key take-outs from each implementation activity and hypotheses about improvements.

The experience map served as a great tool for internal group discussion and for providing a general overview of the implementation steps that Movesca is doing today. It furthermore provided an understanding of the individual actors experience with the activities.

This was to get an overview of the emotions which occurred during the experience. By analyzing the emotions, we tried to find patterns and relations between each other. This was done by discussing what each statement involved and then drawing lines between the relations (figure 10). It has to be noted that some of these statements were reminiscent of each other, however, caused by different events.

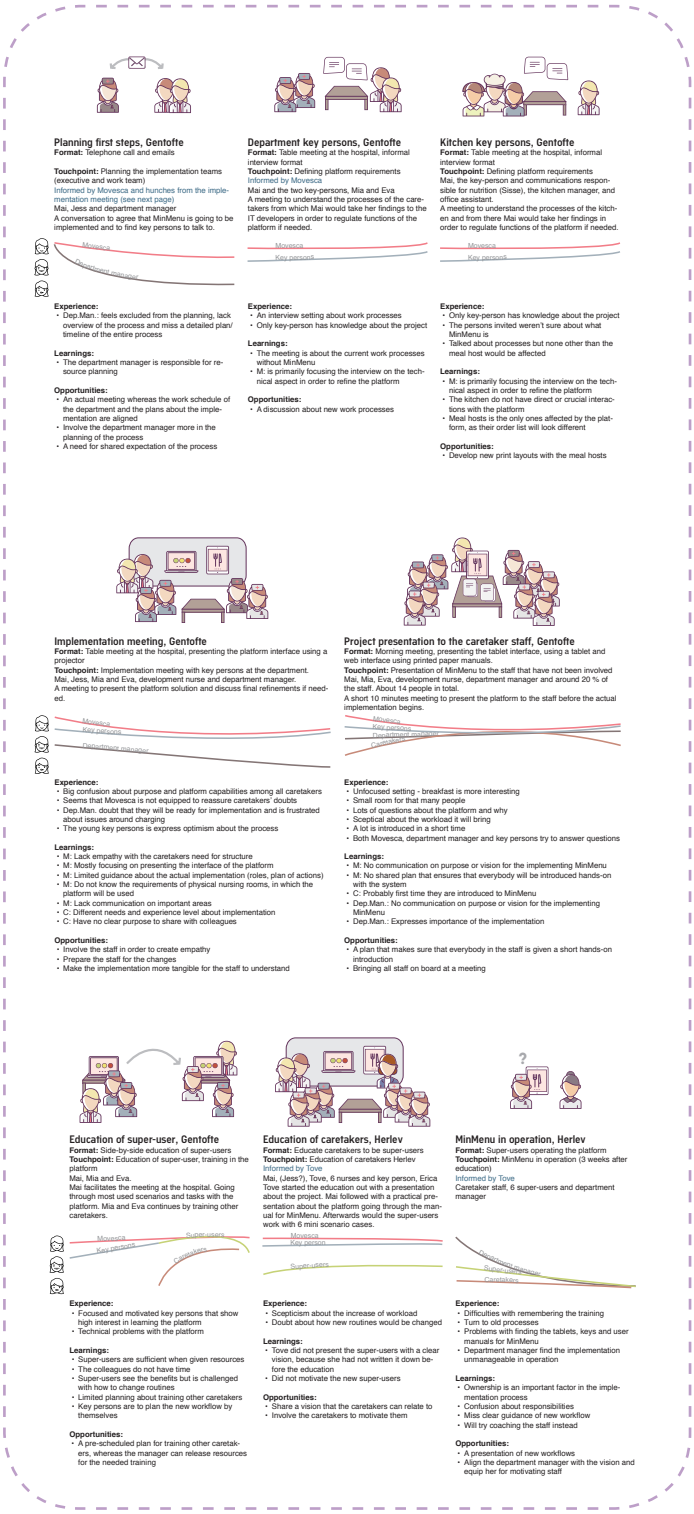


Figure 10, Experience map

MÅL:
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IMPLEMENTATION BARRIERS

Throughout the analysis of data we identified a number of themes, that represented key barriers found during our discovery of the implementation process. In this section we will examine four themes together with key findings of the chapter, implementation research (implementation research, p. 29-31). Each theme will then be transformed into core insight by rephrasing it to a short statement. These statements will guide our direction for finding solutions in the development phase (IDEO, 2015).

Theme: Sharing a project vision

From Kotter's 8 steps for leading change we learned that a sense of urgency, a project vision and short term goals are important to drive employees out of their comfort zone. The implementation at Herlev was managed with an unspoken vision for the process which led to challenges. Important actors, such as the super-users and the nurses felt misinformed about the reason for the change and the future direction with MinMenu. The missing vision affected the hearts and minds of the actors who did not see a purpose of operating MinMenu. We argue, that this is the reason why super-users and nurses went directly back into old routines.

Observing the implementation at Gentofte, very similar issues occurred. The key persons were confused about the benefits of MinMenu and like Herlev, the most involved actors were not provided with a vision to guide the implementation of MinMenu. This affected their role as responsible for reminding about why the department is implementing MinMenu and made them unable to share a collective version of the vision. With no sense of urgency or shared vision leading the implementation, it was clear that nurses scepticism towards the change came from a lacking purpose. Instead, they felt the implementation of the platform was forced into their workflow and not a beneficial tool in their daily routines.

Insight statement:

The implementation should have a project vision to give the department a collective purpose and motivation for implementing

Theme: Planning & Communication

Our observations found that the hospital department operates from a more structured work environment which clashes with the implementation process. The department manager stated that healthcare implementations have to be at least three steps ahead. This confirms a need for a process that is supported by integrating a profound understanding of what is going to happen, when it is going to happen and who is responsible etc.

Movesca did not manage to communicate the necessary information to the actors involved. The department manager lacked detailed overview of the process in order to organize resources. The super-users and nurses lacked information about why MinMenu was being implemented and what benefits it would provide them. Research also found that the actors have different needs in different stages of the process, i.e. the department manager was focused on the resources while super users were concerned about the workflow. Based on Cameron and Greens stated requirement of a communication plan, we recognised an immense need for a plan to direct relevant information to specific actors at the right time. According to the research these conversations also provide a mean to discuss obstacles that block the implementation.

Insight statement:

The implementation should have a plan to direct relevant information at the right time to the right actors

Theme: Understanding new workflow

The implementation meetings uncovered that Movesca implement MinMenu with a technical focus.

The meetings primarily focused on platform requirements and walkthroughs of the platform showcasing the features. This technical focus prevented them from supporting the super-users in understanding their new workflow with MinMenu.

We found that the super-users quickly learnt how to operate the tablet and website but were missing support for the implementation into the daily workflows. Movesca stated that super-user's should use their expertise to find solutions to their new workflow. This left the super-users with an extra role during the implementation. It demonstrates a lack of empathy regarding the needs of the super-users.

Insight statement:

The implementation needs to support the super-users to understand and develop their new workflow with MinMenu

Theme: Training of staff

Attending the training of the super-users at Gentofte, we noticed that resources have a big impact on the capacity to learn. The super-users had the time and energy for learning and asking questions about the usage of MinMenu, while the nurses had their mind-set on their ongoing tasks with the patients which caused big concerns about how much time they need to spend on the training.

The super-users regulated the training to focus on the first steps that ensures that patients can order food. We acknowledge the need to break down the training into steps to accommodate the nurses lack of resources. Nevertheless, we question if the nurses will be taught the next steps in order to registrate the dietary intake, as the super-users were not supported with any further guidance for the future training of the nurses.

Insight statement:

The implementation should guide the super-users in the training of their colleagues

CURRENT APPROACH

From our insights this section will define a journey of the implementation process and locate the barriers in it.

The purpose of the journey is to trace when the barriers originate in the process and which actors are the first to be affected by it. This help us uncover when solutions are needed in the process.

Execution

We mapped how Movesca is approaching the implementation process today by visualizing their activities, which tools they use to support the process and illustrate the active actors according to four phases; planning, defining requirements & solution, training and roll-out (figure 11).

Planning

The planning of the implementation activities.

Define requirements & solution

The involved actors suggest refinements and approve of the adaptations.

Training

The test-version of MinMenu is provided for the actors to try out the platform.

Roll-out

From the work group meeting we know that the training will be followed by a "roll-out" of the platform. For this overview we have not participated in the roll-out which is why the topic is only outlined.

Placement of barriers

The numbers reference the red points in the figure.

1: Sharing a project vision

The organised executive group and the work group is the actors who create a project vision to give the department a collective purpose and motivation for implementing.

2: Planning & communication

Movesca managed the planning of the implementation process with high flexibility, allowing that meetings, activities and details were scheduled and planned along the way. This approach revealed little emphasis on involving the actors in the development of the plan. Therefore, we locate the need for a co-created plan in the event of the initial planning. This enable the manager to share the overview and empower the manager to organize the resources while knowing when and what is going to be communicated to the staff.

3: Understand the workflow

Movesca learns about the current workflow from the key person but only to modify the functions of MinMenu. Referring to Robert and Macdonald's requirement for addressing practical concerns of the stakeholders, we find that Movesca could benefit from actually learning about the current workflow in order to provide sufficient support to the super-users.

4: Training of staff

The training of the super-users did not provide them with any guidance about how to train the nurses. Guidance for the super-users in training the nurses should ensure that their colleagues are efficient in operating every step of the platform over time.

1: Sharing the project vision, 2: Planning & communication, 3: Understanding the new workflow, 4: Training of staff

Analysing the map we found that the key persons become super-users during the process. We anticipate that this transition will recur in the future implementations due to the key persons' task of getting the vision to operation and providing feedback on the solution (actor network, p. 35). We assume that sufficient knowledge of operating the platform is required in order to solve the above task.

Further analysis found that the barriers are closely related to the department staff. The kitchen key persons are only involved in the beginning of the process and steps back after the event of understanding their workflow. At the kitchen meeting we learned that this is because of the kitchen's minor interaction with the platform (p.38). This confirm the department staff as the most involved actors and important end-users of MinMenu. The analysis encouraged us to direct our focus on the department staff for the further development. Before deciding on the focus, we needed a confirmation from Movesca as the decision affects the outcome of our recommendation for the implementation of MinMenu.

Feedback and narrowed focus

We presented Movesca to our findings of the four barriers and discussed our thoughts about a focus on the department staff, which consist of the department manager, the key person/super-user and the nurses. The founders and Mai were pleased to discover our newfound focus. They acknowledged the findings and further elaborated that their past development of the service had not fully emphasized the group of actors. This feedback will direct our further inquiry, as we need to gain a deeper understanding of the department staff to discover new opportunities for an efficient implementation process with them.

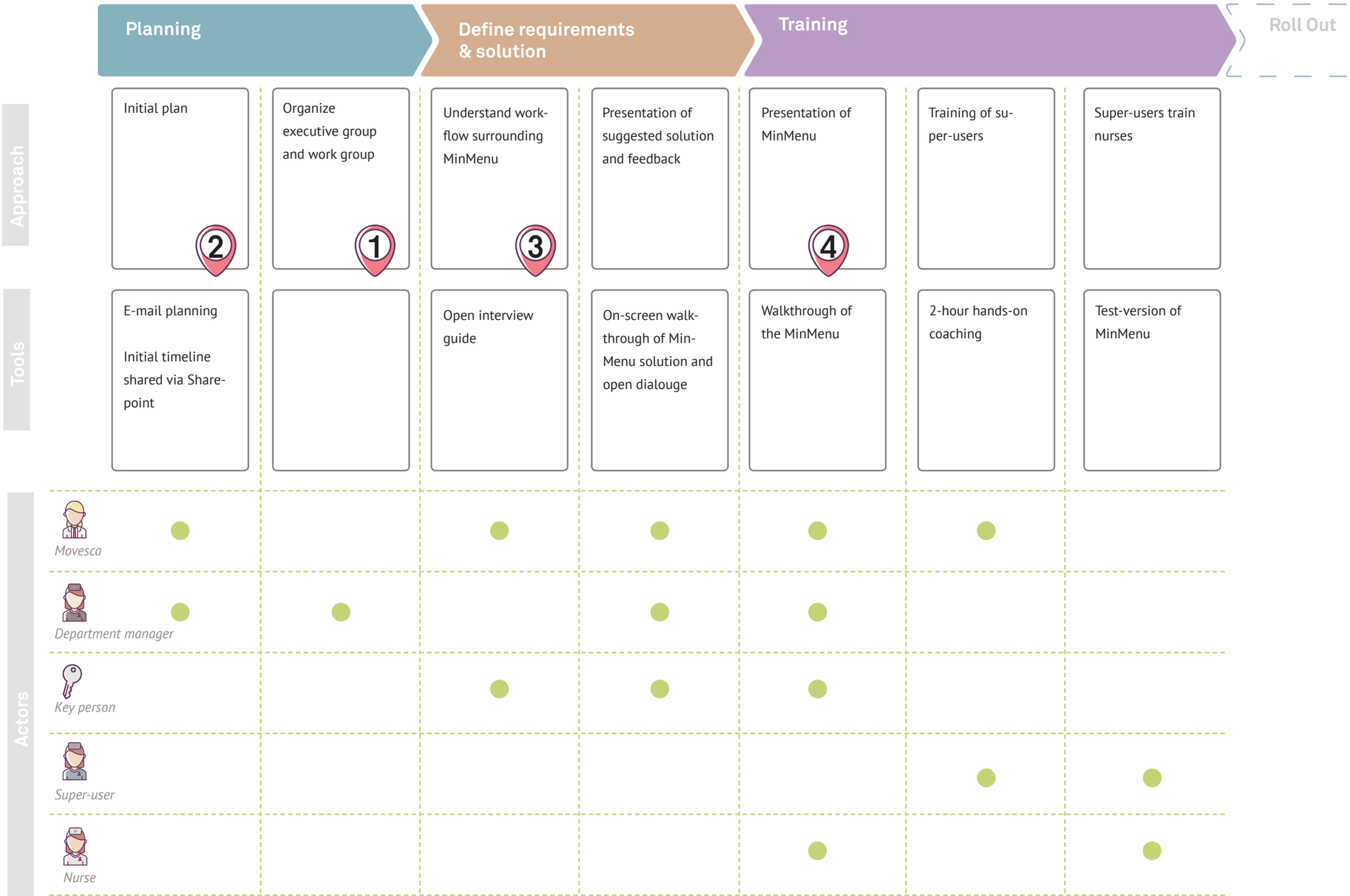


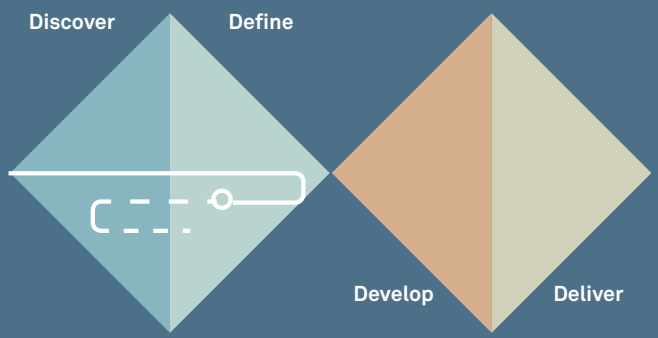
Figure 11, current approach and actors

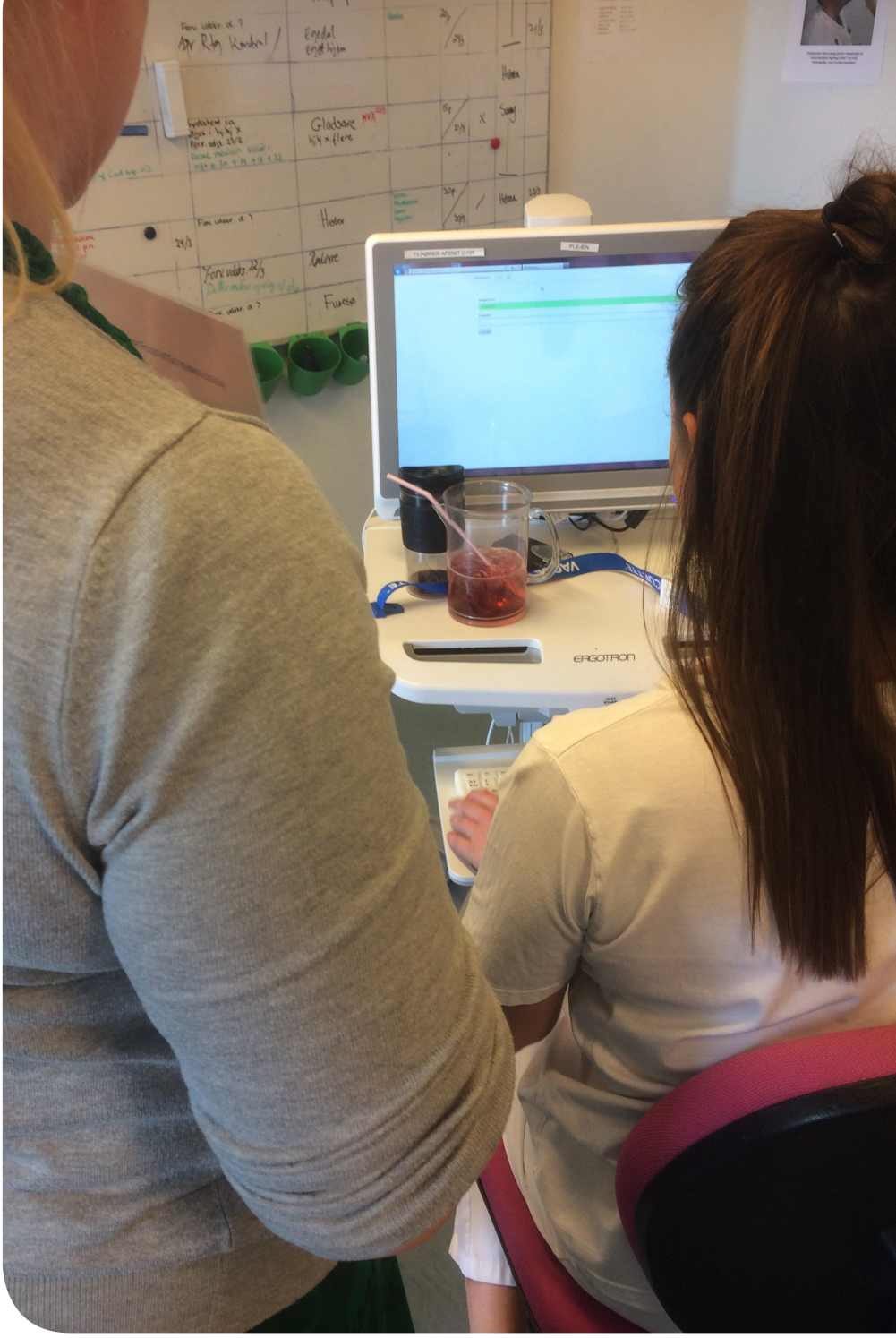
EXPLORE HUNCH

In this chapter...

At this point in the design process, we had a deep understanding of the current implementation process, a more directed user focus and four key barriers. As a next step we seeked to gather some first-hand data about the nurses and the hospital context that MinMenu is being implemented into, with the goal of collecting insight to provide a more solid foundation for ideation.

The diagram shows project progress so far in relation to the double diamond model.

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A DAY IN THEIR SHOES

To learn more about the nurses and the environment of a hospital department, we conducted a contextual interview. The purpose was to gain a deeper understanding of the nurses motivations and workflows, in order to take these users needs into account for the future design of an improved implementation.

Participants: Pernille - Nurse, Helena - Nurse
Location: Herlev Hospital, medical department
Duration: 7 hours
Method: Contextual interview
Themes: Workflows, values, needs

Preparation

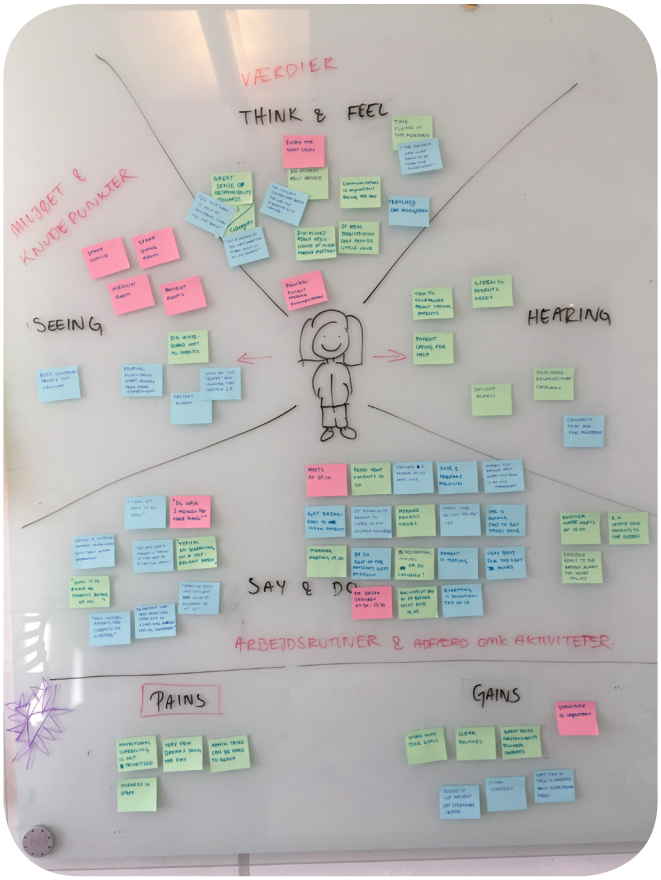
Contextual Inquiry is based on observing people in the context of their life and work and while they do their normal activities, aiming to get detailed design data (Morgan & Claypool, 2015). One of the benefits of contextual inquiry is that it immerses designers in the user's shoes— including those aspects which the user does not know how to articulate (Morgan & Claypool, 2015). The real use context is an important perspective as it can help to show what creates value and frustration in the user's everyday life, as well as what activities or technologies take their attention (Hall, 2013). Conducting a contextual interview allow us to observe specific details and probe specific behavior interesting for the context of implementing MinMenu. Furthermore it allows us to gain an understanding of the social and physical environment surrounding the service being examined (Stickdorn & Schneider, 2011). These aspects enable us to gain insight and design for the real context.

Execution

The contextual interview was conducted at the medical department at Herlev, where we followed two nurses, Pernille and Helena, through their workday. We started with a conventional interview, introducing how we would run the interview. This information was beforehand shared by e-mail with the department manager, as guidance to find the right users. In practice, we chose not to interrupt too much in their workflow, unless the circumstances allowed. Instead we followed them closely, letting them lead the interview by doing their own activities and commenting, and we would ask about what we observed. This approach provides an understanding of their motivations of the activities and how they contribute to their overall workday (Morgan & Claypool, 2015). By paying attention to what was being observed and informed we steered conversations to meaningful topics regarding our project scope.

Findings

The insight was documented on the day and visualized in an empathy map (The Interaction Design Foundation, 2017). The empathy map was used as tool to help emphasizing and synthesizing the contextual inquiries in categories in order to draw out key insights about the nurses' needs. Our empathy map is divided in four categories: Think & feel, Seeing, Hearing and Say & do.



Empathy map with findings

Saying & Doing
– attitude and behavior

We observed a 'day shift' from 07.30 to 15.00 pm. An important observation of the day is that during nearly the entire day shift the nurses were busy with activities focusing on the patient. These were both practical activities focusing on the patient's well-being and administrative activities as constant patient documentation in the Sundhedsplatformen. Their working day did not include other projects on the side or any sort of private errands.

Another observation is that their day follows a clear schedule and clear work routines. A lot of their tasks are determined by scheduled activities, such as patient meals and staff meetings. A scenario observed: The patient medicine is given with breakfast served at 08.15, so the medicine should be dosed and prepared before that time.

Other relevant observations from the day were that a 'day shift' nurse in general has a busy shift due to the amount of activities. And it is often the busiest shift; "The day shifts have more tasks than the nightshift…"(Pernille, 2017). Moreover, they are particularly busy during the morning hours, where a larger part of the tasks must be done. "The goal is to reach all patients before 09:00, where we have the morning meeting with the doctor" (Pernille, 2017). In our shadow of Pernille, it was also observed how fast a normal busy day could change into a chaotic day. If one of their patients is 'tipping', they have to put all their focus on that patient; "… a patient is 'tipping' if they are at a very critical state" (Pernille, 2017). In these situations they will often rely on colleagues helping to care for their other patients; "Do anyone have some time to check in on my patients? I need to…"(Pernille, 2017). This day Pernille was caring for 5 patients.

A day in their shoes could conclude that a number of today's activities are scheduled and occur regularly. Also, the structured work routines are important for their workflow in order to handle busy and chaotic hours and the frame in the daily schedule. It stresses the importance of considering their local work routines when integrating MinMenu.

Design question:
How can we design the implementation, so MinMenu is included as a natural and scheduled activity for the nurses?

Hearing & Seeing
– environment and interactions

An important observation of the day is that a staff office functions as a physical meeting place, where the staff continuously meet during the day.

The shift starts at the staff office with a short informal meeting between nurses and the department manager, where they get an overview of patients and divide them between the nurses. The meeting is regular and is mostly communicated by the department manager. This activity is followed by interaction with Sundhedsplatformen where Pernille reads latest documentation on her patients. From the staff office the daily morning meeting is also facilitated. The morning meeting focuses on information and knowledge sharing between nurses, department manager and doctors regarding the patient's' condition, and if they are well enough to go home. At the meeting they speak from two big whiteboards which present an overview of all their patients. Besides meetings, task coordinating and access to the Sundhedsplatform, a long line of paper schedules and protocols are located here.

Another physical meeting place is the staff room that unlike the staff office is used for breaks away from an otherwise busy environment. Although it is used for breaks, a patient alarm clock is ringing occasionally communicating the number of the room that needs immediate assistance.

The staff room is also used for a meeting called '15 professional minutes' which is held twice a day and focuses on specific nursing topics. The topics are presented by colleague(s) to colleagues and is a valuable activity during their workday. Due to a very busy day the '15 professional minutes' was cancelled that day.

Having followed Pernille and Helena, we concluded that many tasks are performed independently which might be related to the structural relationships or the amount of resources in the specific department. However, an observation regarding the group dynamic was noticed. Even though a lot of tasks are done independently, group work is still occurring in the form of knowledge sharing, decision making and supporting one another. A strong group dynamic is furthermore perceived in the continually interaction and information sharing with colleagues, patients and relatives.

Design question:
How might we incorporate the implementation activities into the department's regular meetings?

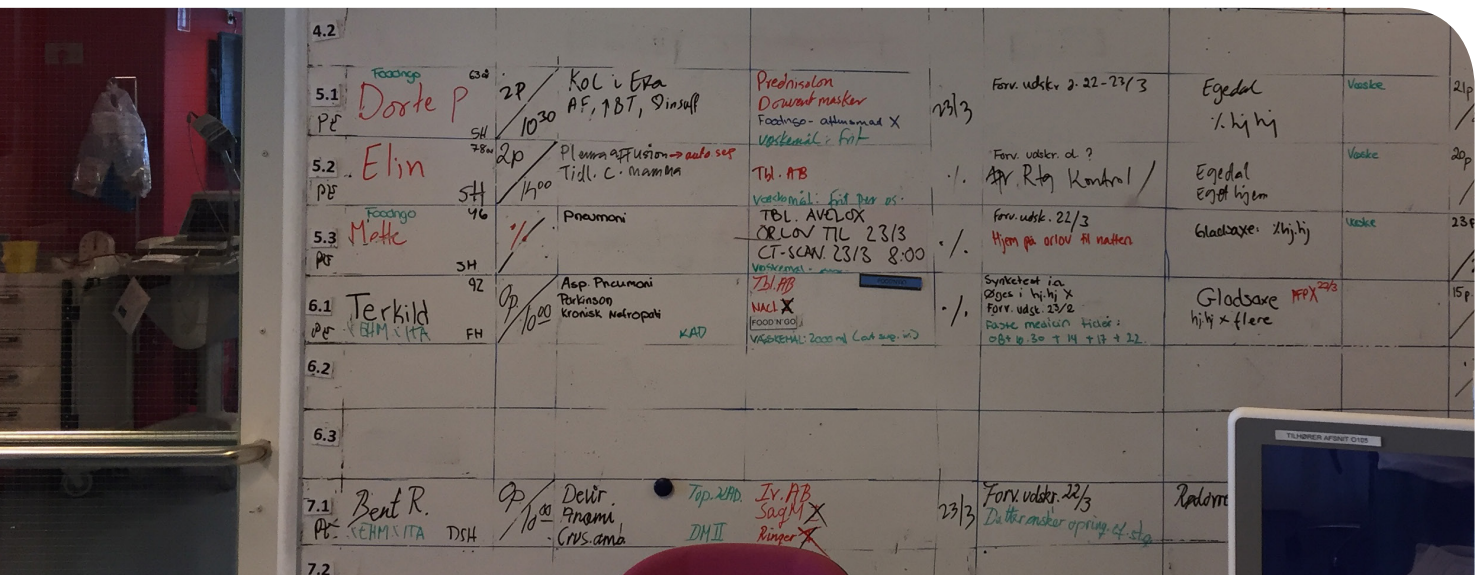
Thinking & Feeling

The most striking observation is the nurses' focus and care for patients. It is clear that helping their patient is the biggest motivation of their work. This is perceived in their daily focus and prioritization of tasks; "Main focus on the patients, then medicine and documentation." (Pernille, 2017). From our observations, it appears clearly that all nurses are working towards the same goal that focuses on helping the patients. There is a great common sense of responsibility amongst the staff which is seen in their motivation in helping each other during the day; "I will do administrative tasks if the time allows it. If it is busy, I will help my colleagues on the floor." (Helena, 2017). Another observation from the day is their obligation in attending and being punctual to those meetings, even when they are busy. These meetings are part of the regular routine and are important as regards of information sharing. We furthermore discovered that the nutritional screening of patients often has low priority. Even though they know the importance of it, they still feel that other patient tasks are more important.

This concludes a remarkable focus on the responsibility of patients well-being both individual and as a group. However, the screening of patients has become a pain point in nurses workflow which causes them to prioritize other tasks with the patient.

Design question:

How might an increased patient focus support the implementation of MinMenu for the nurses



OBSERVED ACTORS

At this point of the process we see a need to synthesize the insights on the department actors into a more workable format. The aim of this section is to define rough personas whom the team will engage with through the phase of development. The three personas were developed from research insights gathered from ethnographic inquiries and the empathy map presented on page 56. The construction of the personas is inspired by Cooper's "Goal-Directed Design" method which maintains that personas make the designer understand the user (Nielsen, L., 2017). In the persona descriptions the method focuses on the users' work goals, allowing us to characterize real-world motivations observed in the users' work context.

The purpose of the goal-directed personas is to gain a deeper understanding of the users affected by the implementation service. The personas include descriptions about motivations, needs and goals according to their role in the implementation.

The created personas represent different characteristics of actors describing goals and needs which are important to the implementation of MinMenu. The method provides the team with different perspectives on the service, ensuring that critical user needs are considered. Additionally, it was used as communication tool to discuss and guide the design development.

Nurse

Goals

Help the patient get well

Needs

Structure and routines in their workflow

Knowledge sharing and clear communication

Department manager

Goals

Lead and communicate change

Support the department staff

Needs

Overview to manage department activities and resources

Key Person + Super user

Goals

Help and support colleagues

Support the process of change

Needs

Support and guidance to perform the goals

IDEATION

In this chapter...

In this chapter we will explore opportunities of solutions. First we gather our own ideas and then we co-create ideas with the department staff. This is done to compare our initial ideas with needs and ideas of the department staff. The comparison and patterns between the ideas will help us to identify the most feasible ideas to focus on for the development phase.

TEAM IDEATION

The gathered knowledge of the topic implementation, the 4 barriers and the sharpened design opportunities provided a good foundation for the idea-generating phase.

Brainstorm session

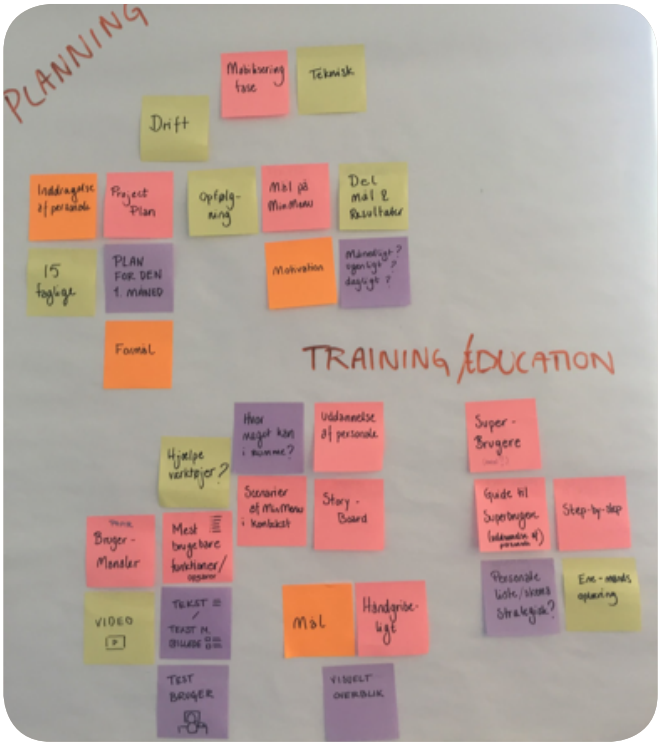
As a first step in the ideation phase, we conducted a brainstorm session in the group where ideas gathered during the previous phases were downloaded and new ideas were generated. During the discover phase, we created an idea catalog where ideas and statements were regularly noted and saved for this phase.

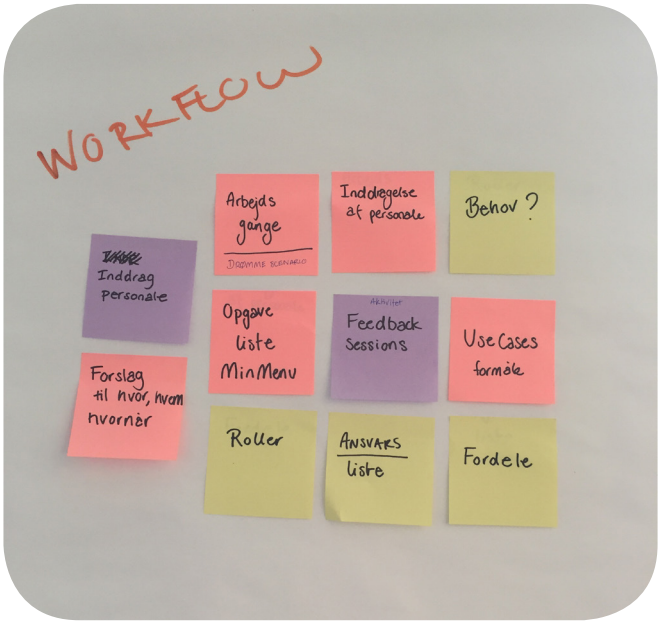
The purpose was to generate a lot of ideas and co-create ideas in the group.

Preparation and execution

To initiate the session we created topics in order to stay relevant to our findings and the project scope that we are designing for. The topics furthermore helped kick-starting the session. The ideas were visualized by pens and post-its and mapped on a big paper in order to share the ideas within the team.

The session resulted in a lot of ideas and some loose concepts. The ideas provided material for the coming ideation session with the department staff and a basis to uncover any patterns between our ideas and the staffer's ideas.





Paper from brainstorming session

IDEATION W. STAFF

This section describes three short ideation sessions with the department staff at Gentofte. At two of the meetings we discussed how the progression for implementing MinMenu went, while we debated possible ideas for solutions. The third session was conducted with the development nurse, Helle Hougaard Nielsen, to further deliberate on ideas. She has been attending the meetings between Movesca and the department throughout the implementation.

The purpose of these sessions is to generate ideas in collaboration with the staff to uncover opportunities and stay relevant to the further development of our recommendations for the implementation process.

Idea session w. staff

Duration: 2 x 30 min.

Preparation and execution

The meetings were arranged between the actors, which gave us the role as observant-as-participant, because we would be active in the debate on ideas.

The first gathering was a follow-up meeting arranged between the consultant at Movesca, Mai, the key-person, Mia and a researcher from Herlev, Rikke. At the meeting Mai and Rikke asked about the progression while we opened discussions about possible solutions to issues.

The second meeting was between the development nurse, Helle and both of the key persons, Mia and Eva. The meeting was arranged as a response to their experience with a difficult implementation process of MinMenu. The participants discussed opportunities and solutions to improve and reach a successful implementation.

Findings

A month to the implement of MinMenu

In the first week after the super-users were trained, they were exempted from their normal tasks to concentrate on training their colleagues. The week after the super-users were trying to balance both their normal tasks and training of staff, as half of the staff needed training while those who have had training were still unsure of the procedure. This was stressful to the super-users as the tasks with patients also had to be carried out. Furthermore, the training was specified around the ordering of food which resulted in the fact that the department was not registering any dietary intake. We debated that super-users needed to be excused for a longer period of time in order to train the entire staff the full procedure from ordering food to registering dietary intake. The participants were not able to determine the length of the implementation, but estimated that a month would be desirable.

Planning responsibility in the absence of super-users

For the Easter holiday both Mia and Eva were away. The nurses of the department went straight to old routines during those days. In that relation, we discussed a need to make a plan that ensures that other persons can take over the role as super users. The participants stressed to direct the assignment for the management, as nurses would respond better to top down chores.

Visual learning methods

The manuals did not stimulate the nurses to learn the platform. We raised a notion that nurses might have differentiated styles of learning and proposed the idea of providing short videos on the website. The keyperson was optimistic about the thought of visual learning as a supplement to texted pictures but were unsure about time resources.

Printouts of operational goals

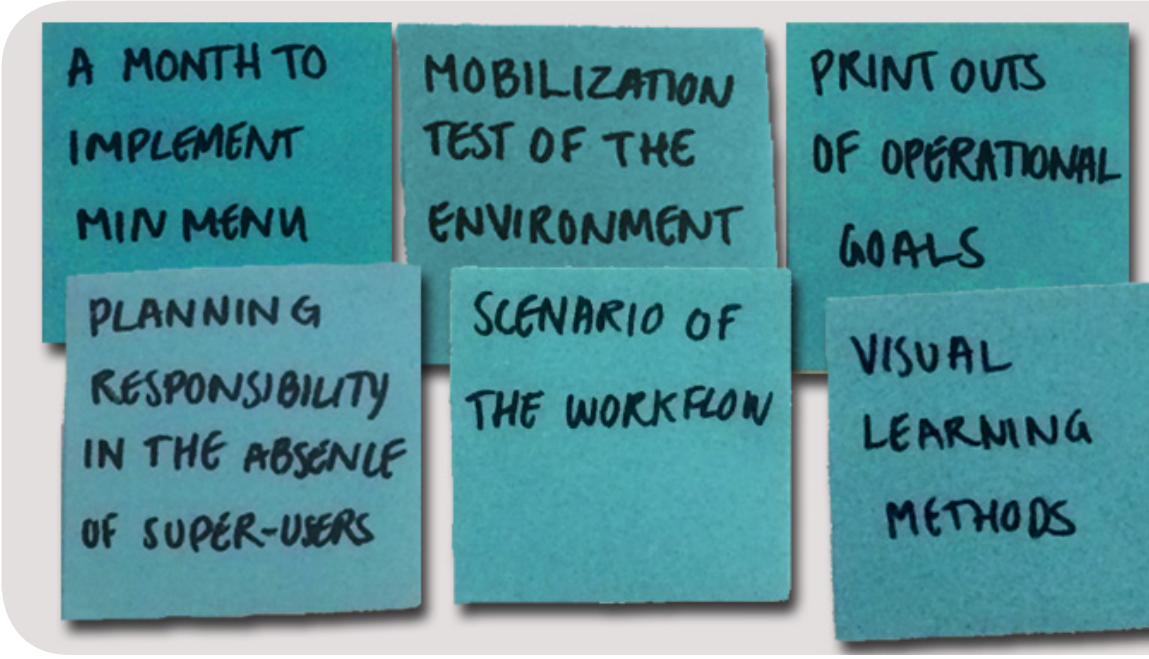
We led the debate into discussing short-term goals of the implementation. The participants deliberated that operational goals were a common motivator of the nurses which formulated an idea about print-outs of the progression. These goals could stimulate discussions about pros and cons in the process with the staff. Furthermore, the goals would help the department to know more about the progression of the process.

Mobilization test of the environment

A big issue of operating MinMenu was charging of the tablets. Often tablets had run out of battery time. This caused immense frustrations in the busy schedule of the nurses when waiting for the tablet to start up. Chargers also disappeared due to occupied plugs and hospital beds constantly being moved around. The participants came up with the idea of a test-period in order to mobilize MinMenu to determine solutions of the local technical and physical environment.

Scenarios of the workflow

Mia and Eva were familiar with the workflow of the manuals and were sufficient with the structure of ordering 30 min. before the deadline as they were directed to do by Movesca. However, the super-users were not able to incorporate the new flow of creating profiles for the patients with the current flow. They did not know who were responsible or when the tasks had to be done. This meant that only the super-users were operating the website and updating profiles. We debated that the manual was not a sufficient tool to gain an understanding of the workflow. Thus the participants discussed an idea of creating scenarios of the workflow to construct a tangible overview of tasks surrounding the functional manual i.e. a scenario about receiving a patient and creating a profile.



Ideation w. Helle

Duration: 1 hour

Preparation and execution

Throughout the process Helle has been in close contact with both nurses and the key persons, Eva and Mia, who offered a different perspective on their progress. Helle's profession as a development nurse provided know-how about implementing healthcare projects into the session.

The discussion about scenarios of the workflow and our former user-journey (figure x) engaged us to build an overview of the nurses' work process for the session. Alongside, we produced discussion cards inspired by the prior idea sessions. These would aid our discussion about the experienced issues with MinMenu and their solutions. We conducted the session as a semi-structured interview to direct our questionnaire towards the journey and cards while engaging Helle to deliberate on her experiences and expertise.

Findings

Coordinate the plan with the department manager

Helle was displeased with the planning of the implementation. She stressed that Movesca should have arranged a planning session with the department manager to oppose to unengaging e-mails. The session would provide structure and strategy to the implementation which she acknowledges as valuable to the healthcare sector.

Guidance for super-users

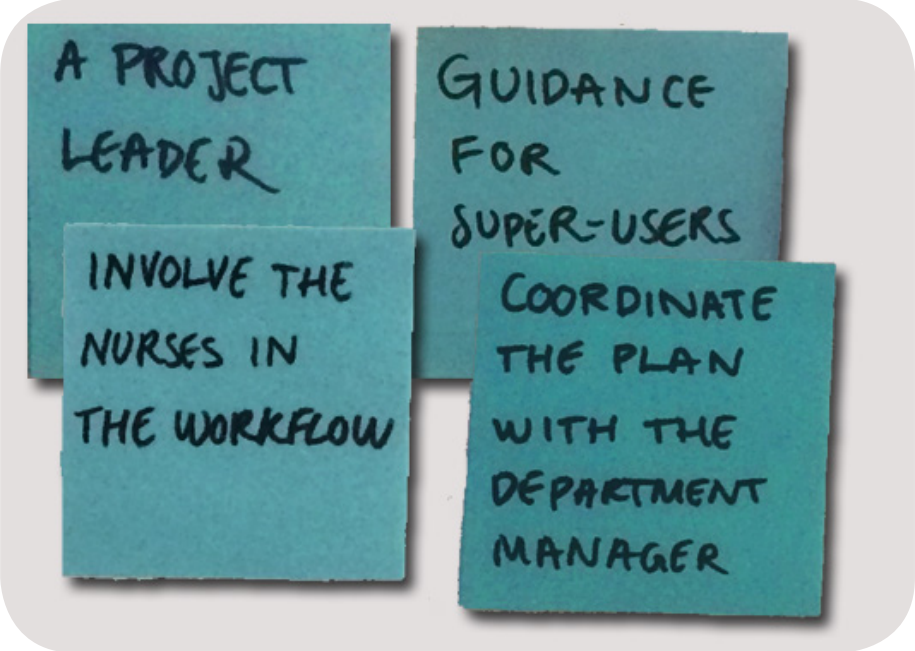
Eva and Mia are trained nurses but have no know-how of training. Helle shared that the super-users did not comprehend the need to detach themselves from their colleagues. The two of them would offer too much support resulting in nurses being dependent of the super-user. Helle recommended to offer them guidance about how to get dispensable in the training.

Involvement of the nurses in the workflow

We brought up the former idea of stimulating the nurses to give feedback on the process and discussed if any other occasions would be appropriate for involvement. Helle was supportive of their involvement of the workflow. Though, she also pointed out that it was important to limit the involvement to a level at which the nurses could make an actual difference in order to maintain motivation.

A project leader

During a discussion about the delegation of responsibilities, Helle shared that in her past experience of healthcare implementations the department used to have a project leader. The leader's role would be to distribute responsibilities between the nurses, follow up on their progress and motivate them. She elaborated that this person also might act as a guide for the super-users.



Planlægning
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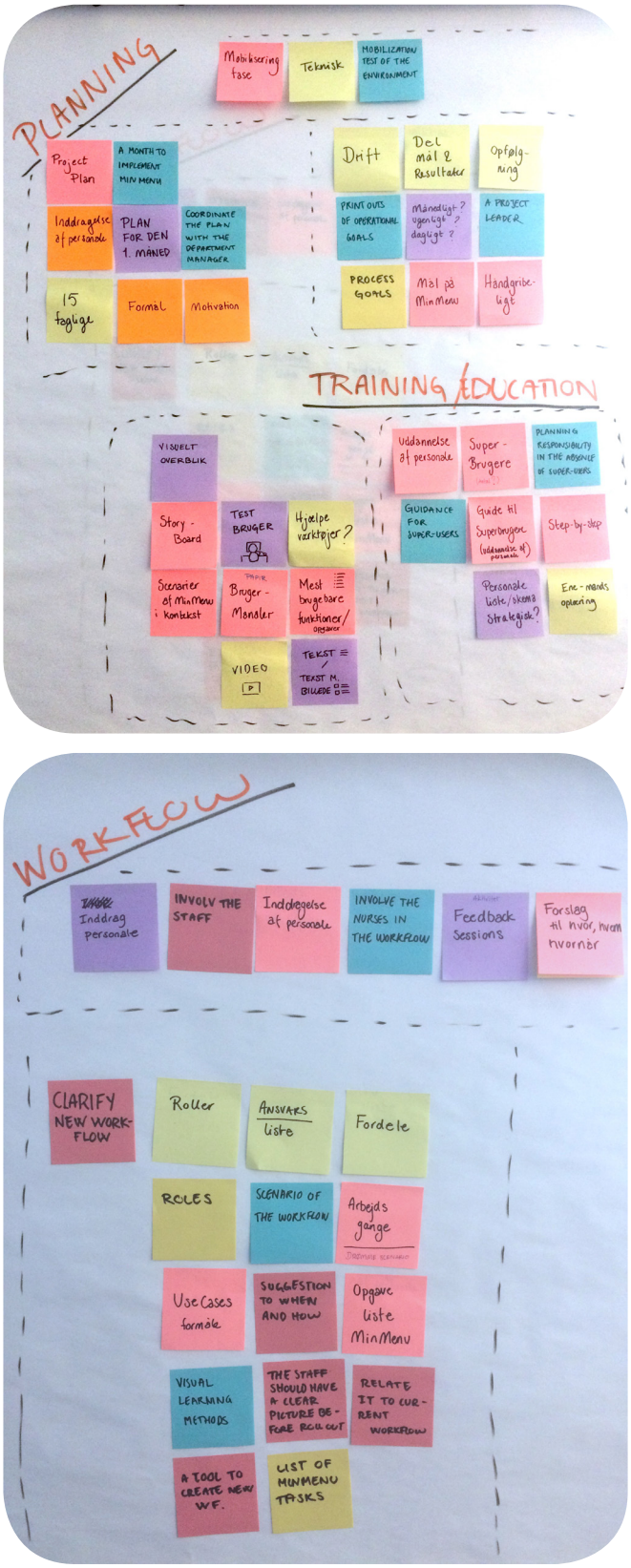
PATTERNS AND SELECTION

The team ideation and the sessions with the department staff revealed patterns of ideas to improve the implementation process of MinMenu. This section will explore the convergence of the ideas by comparing our insight statements of the 4 barriers (50-51) to all gathered ideas. This should help prioritizing our development according to our resources and needs of the users.

The purpose of categorizing ideas into patterns is to provide the means to prioritise the direction of the development phase. The patterns can help to facilitate discussion in order to identify the most feasible ideas to continue working on. Some ideas might be seen as more supporting elements to other patterns.

Execution

To understand the connections between the ideas, we did an affinity mapping session. All ideas were written on post-its and categorised by their similarities to the ideas of the team ideation. We then compared our insight statements of the barriers to our new discoveries in order to generate findings which guided a prioritizing of the related ideas.



Affinity mapping

Findings

The input clarified that the barriers of "sharing a project vision" were strongly related to "planning & communication". The purpose of a vision is to lead the implementation from where a connection to planning the process and directing information are revealed, when grouping ideas. On basis of that, we conjoined the project vision with the planning & communication barrier. This will help us to reflect on the vision as a piece of content in the planning and communication strategy.

The ideas made a pattern which validated our assumption about guiding the super-users in the training. However, our assumption was directed at fulfilling the steps from ordering to registering. The super-users additionally need guidance on the training itself to detach themselves from the nurses. The sessions did not provide us with suggestions to generate a guidance, we therefore need more ideas about the actual training of nurses.

The patterns authenticate the barrier between super-users' need for support into understanding and the development of the new workflow. Through the ideations, we recognise that the nurses were missing the understanding as well. Combining the idea of workflow scenarios with the positive response to visual learning, we generated an idea of creating a visual tool of the new workflow. Relating to Robert and Macdonald's consideration of the local knowledge, and Kanter, Roberto and Levesque's notion of experimenting with the employees, we argue that a tangible tool could unite these theories into practise. Additionally, the tool considers nurses' needs by emphasising the design question of designing the implementation to include MinMenu as a natural activity of the nurses.

Prioritising

The notion of coordinating the plan with the department manager validated our prior origination and location of the planning and communication barrier in the current approach (figure x). The figure outlines that the manager is the first actor of the department to be affected. This marks the manager as a core actor to further ideate solutions of the combined barriers of project vision plus planning and communication. During our discoveries we empathized that the managers were occupied with back to back meetings which created an immense obstacle to ideation and testing. Furthermore, the affinity map intensified that the richness of our insights were compound around the super-users and nurses. This reflects that their needs regarding the implementation have been at the essence of creating opportunities of the development. We can therefore conclude that the barriers of the workflow and training have a great stake in improving the experience of implementing MinMenu.

In order to balance our remaining resources of the thesis, we decided to prioritize the barriers of workflow and training. This help us to acquire a more concrete development of our recommendations for Movesca. Additionally, we argue that the concretisation resonates with the on-going scaling of MinMenu which requires that the outcome is introduced to the real world application shortly after our delivery.

DEVELOPING CONCEPTS

In this chapter...

The chapter introduce and develop two concepts; co-creating the workflow and step-by-step. The following concepts is developed according to the insights gathered through the patterns of the ideation session. The concepts will be tested and validated throughout the process.

MOVESCA AS FACILITATOR

As to the development of concrete concepts into the workflow and training, we recognised a need for a facilitator to guide the department staff. This section uncovers the requirement of Movesca to change their role in the implementation process. The following will explore their current role and define the change of it.

Redirection of approach

Throughout our discoveries and input from the ideation, we uncovered that Movesca's does not provide sufficient support to the change of values and norms. They only deliver functionalities and manuals which were not adequate for organisational change. This has directed Movesca's service development towards a service interaction design, rather than a service intervention (Junginger, S. & Sangiorgi, D., 2009). We argue the need to redesign the implementation service into an intervention in order to achieve improvements (figure 12). Hereby, Movesca has to provide the department staff with more support as the department has not been able to motivate the change in values and norms by themselves.

Support and ownership

During desk top research on the role of supporting a client, we found a case study of an organisational change by the service design company Fjord (Belmonte, B. et. al., 2016). The case acknowledges the need for support together with a need for transferring ownership. We recognise these considerations to be of value to Movesca as well. The goal of scaling MinMenu requires that Movesca can distribute their resources to more than a few departments. In order to achieve this goal it is important that Movesca supports the process of transferring ownership to the hospital during the implementation. We have interpreted this process into a graph for MinMenu (figure 13). The figure shows that Movesca has a big role in the start of the implementation. We argue that this role requires Movesca to be facilitators of co-creations in order to involve the department staff and thereby create ownership. Co-creating facilitators provide their participants with tools to engage them in expressing their experiences (Sanders, E. & Stappers, P., 2008). We will therefore explore tools for co-creating implementation initiatives between Movesca and the department staff.

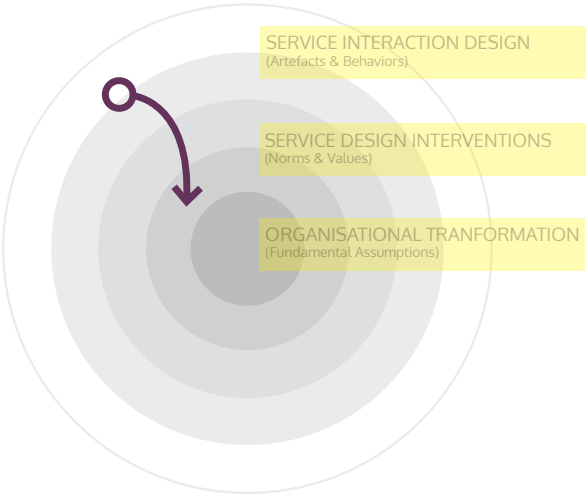


Figure 12, From service interaction to service intervention

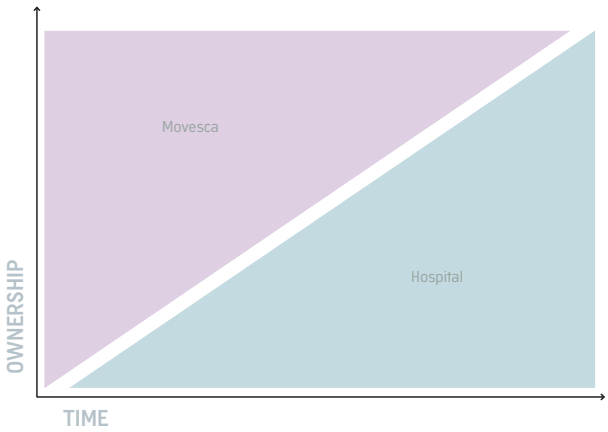


Figure 13, graph of transitioning ownership of MinMenu

CONCEPT 1

Co-creating new workflow

The concept visualised in explores the idea of a co-creation activity between Movesca and the super users. The activity should help Movesca to understand the nurses' current workflow and make it possible for them to support super users in the development of a new workflow with MinMenu.

1. Introducing the timeline

For this activity Movesca will bring a printed timeline and mobile icons to support the communication about the workflow and make the system of the workflow easier to imagine for the super users.

2. Mapping the local workflow

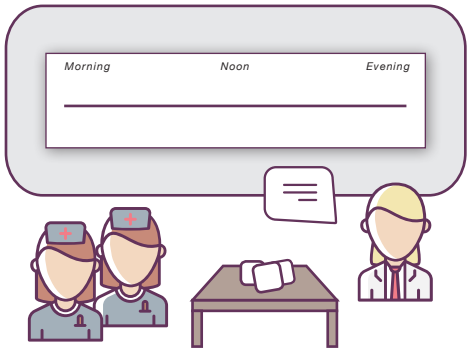
The first step focuses on understanding the local workflow of the department such as daily tasks, scheduled activities etc. Movesca will invite the super users to map the above on the timeline. The timeline and mobile icons should help and engage super users in mapping their workflow.

3. Mapping MinMenu into local workflow

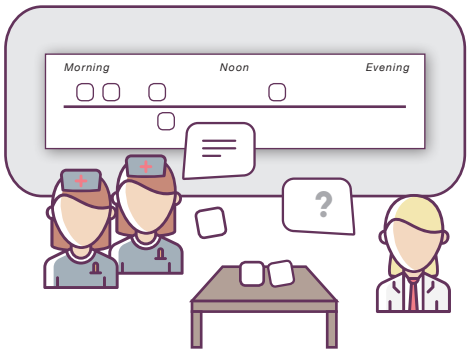
Secondly Movesca will discuss how MinMenu tasks can be integrated in their local workflow. Movesca will present MinMenu tasks, and again invite the supers users to share their thoughts. The mobile icons should help super users to engage with the timeline and try out different solutions.

4. Talk about of responsibilities

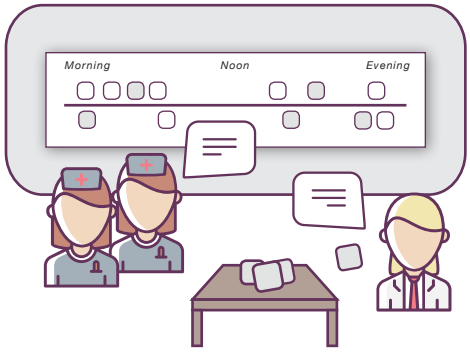
The mapping of tasks should also facilitate discussion on responsibilities. This is to ensure that there is no doubt about who does what and when.



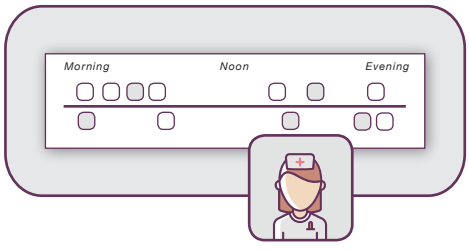
Introducing the timeline



Mapping the local workflow



Mapping MinMenu tasks into local workflow



Talk about of responsibilities

PROTOTYPE DEVELOPMENT

Based on the concept 'Co-creating new workflow' we developed a prototype. The following section will present the prototype and elaborate on how the prototype was made.

The purpose of the prototype development was to learn if the concept could bring the desired outcome, and be a solution of improving the implementation service. The development of prototypes makes designers able to test an idea on users by simulating an experience. It can make an idea tangible and helps to develop a deeper understanding of the service and how it is going to function (Bechmann, S., 2010) (Stickdorn, M Schneider, J., 2011).

About the prototype

Some overall requirements for the prototype were defined in order to specify the development and accommodate our previous insights of pain points.

Empathy

The prototype should allow Movesca to understand the context and the users to whom they provide their service. This will allow Movesca to connect and understand their needs when they implement MinMenu into a hospital department.

Involvement

Involvement of the user will break the current one-way communication to the nurses, into dialog. The dialog will allow different perspectives in order to develop the best solution. This will ease the adaptation of MinMenu to the local context, and address practical concerns before integrating.

Visual communication

The prototype should create a common understanding by breaking down complexity into a form that both Movesca and the users understand. Visual communication helps to provide clarity and explains things that are difficult to understand. Visual communication will allow Movesca and the users to understand and agree on what they are trying to accomplish.

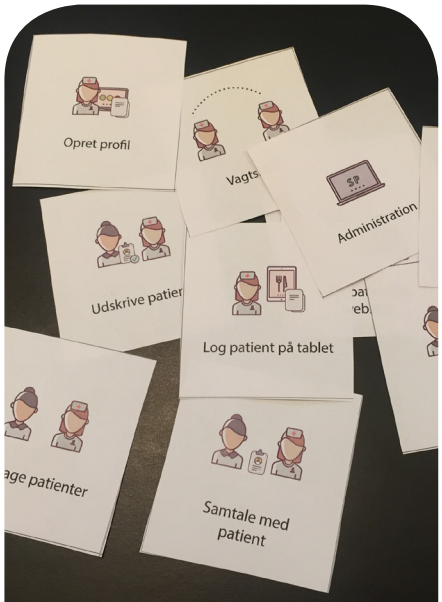
Icon cards

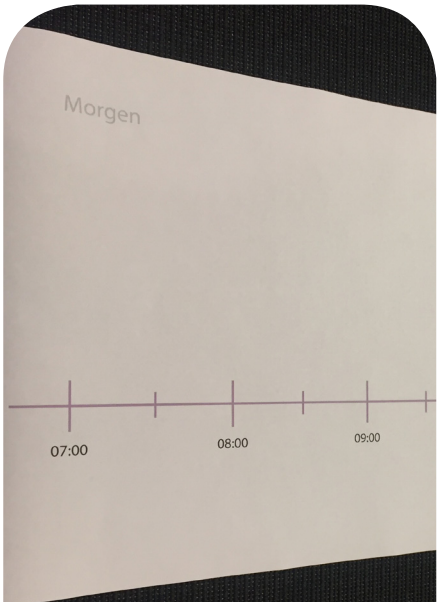
The mobile icons help to visualize the local tasks and the new MinMenu tasks, in order to better plan and experiment with the new workflow. The images should help gaining a faster understanding and better communication around the topics. The mobility makes it easy to try different solutions before deciding.

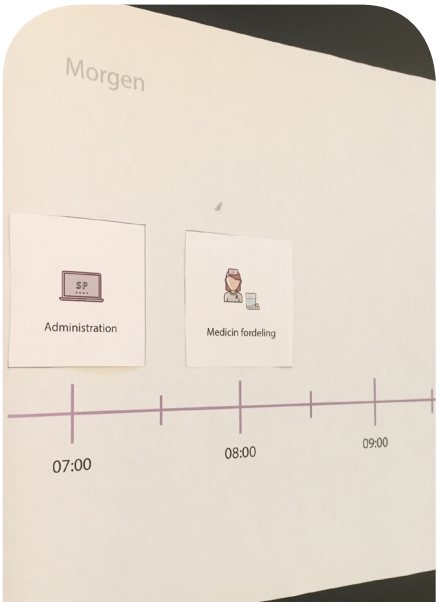
Timeline

The timeline will further help to plan the new workflow by giving a visual overview of their daily working hours. The timeline makes it possible to visualize when the various activities take place during the day. This gives an overview of the local activities and tasks when integrating MinMenu tasks. The timeline can help to give a more realistic picture of the day in relation to possible ways of incorporating MinMenu.

The combination of current and new tasks, and the timeline aid to understand the change of norms that take place.







WORKSHOP WITH USERS

The following section describes a workshop session that aimed to test the previously described prototype of the concept 'Co-creating workflow' and to ideate concepts around 'Staff training'. A service prototype test helps iterating the solution with the focus on the user's experience (Stickdorn, M Schneider, J., 2011). The ideation was needed to acquire a framework for training the nurses.

Participants: Christina - Nurse
Location: Staff room at Herlev Hospital, medical department
Duration: 1 hour and 30 min
Method: Service prototyping and co-creation

Christina is a nurse at the elderly medical department of Herlev Hospital who has been in contact with MinMenu through the first implementation. This gave us the chance to step right into the prototype.

The purpose of the first part of the workshop was to validate if the prototype is useful for nurses to gain an overview of the new workflow. The second part aimed to ideate concepts on how to improve the training for nurses.

Preparation

Based on the empathy map (p.35) and the user journey (p. 27), we developed mobile cards that visualize the nurses' tasks. To ensure visibility of text and icon we sized the mobile cards 7x7 cm. The timeline was four times the length of an A3 to make sure that cards would not pile up. We also created an agenda to safeguard that the workflow concept was tested end-to-end.
To support the ideation of training concepts, we conducted a deductive process of building alternative scenarios (Manzini, E., et. al., 1999). The scenarios are built by combining relevant polarisations of the current service system. We tried out a range of possible polarisations before deciding on a combination of two. 1: learning every step of MinMenu at once vs. taking a step-by-step approach. 2: few resources vs. a lot of resources. The step-by-step and few resources were founded from our prior discoveries, while their counterpart sparked "what if" scenarios to explore potential future scenarios (Stickdorn, M Schneider, J., 2011). This enabled us to generate new tentative ideas. We illustrated the ideas with pictures and labeled them with a title (figure 14). We also arranged blank scenarios to engage Christina into an ideation on these.

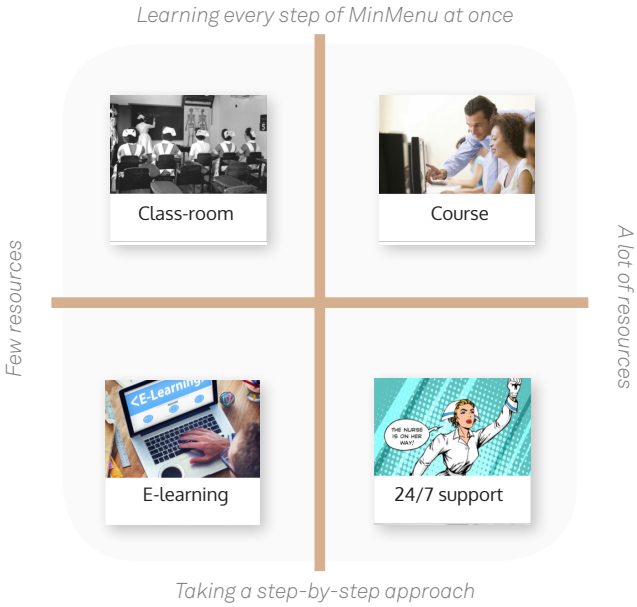


Figure 14, scenarios

Test of timeline

Execution

Following the concept of 'co-creating the workflow' we acted in the role of Movesca. We started the session with introducing the tool and placing the timeline on a table. We then interviewed Christina to locate the department's normal workflow without MinMenu. This was supported by the predefined cards and blank cards which identify unforeseen processes. Afterwards, we discussed and mapped the cards of MinMenu while debating roles and responsibilities of the tasks. The prototype test ended with a discussion about how to communicate the new workflow to the nurses.

Findings

Screening

Discussing the current workflow, Christina explained that nurses often avoid nutritional screening because the procedure takes around 15 min. pr. patient. Within the 15 minutes they document data at three different places, including MinMenu. This underlined why the screening is a big task to overcome by the nurses.

Clarifying flow

The importance of mapping the local workflow with the nurses were proved at the test. Christina elaborated that Herlev had just implemented a time-out session, where nurses would gather to give each other an update on their day. This started a discussion about using the time-out for delegating MinMenu tasks or asking for assistance. I.e. if a nurse can not reach to help her patients to order, another nurse will step in. The timeline highlighted that nurses have a lot of tasks in the morning in comparison to the evening. This led to a discussion about food ordering and the fact that patients are not enthusiastic about ordering lunch right after the breakfast. This generated an opportunity, where the task of assisting patients to order breakfast and lunch would be more feasible in the evening. This directed a new responsibility to the evening shift which validated the significance of the responsibility cards.

Quote

Christina expressed that the visual overview helped her foresee obstacles and understand the new workflow with MinMenu.

"It was a positive experience for me to work with the timeline and the mobile icons. Prior to the interview a thorough preparation was done so that one part of the icons represented precisely the culture and workflows that already exist in the department and the other part of the icons represented the new initiatives in connection with the implementation of MinMenu.

Placing the icons on the timeline put the new tasks in a visual perspective to the existing workflows. This gave a basis of reflection on how to include the project in the department and relate it to the current tasks in the best possible way, in order to make it a realistic and a more natural part of the daily routines rather than an additional task.

The mobility of the cards provided the opportunity for constant consideration and discussion on where the new actions should be taken most appropriately. Working with the timeline gave a good overview of the whole day at the medical department where tasks are done 24 hours a day. It is therefore important that all hours are involved when implementing such an extensive project as MinMenu."
(Christina, 2017)

Share with nurses

With regards to communicating the workflow to the nurses, Christina stressed the importance of sharing the timeline. She recognises that it would provide an overview which was missing at the first implementation.

Additionally, Christina pointed out that it would be a good idea to involve the department manager in the development of the workflow. This ensures that the tasks of day, evening and night shifts are considered.

Ideation on training

Execution

We presented the polarisations and alternative training scenarios to Christina. She would then elaborate on her former experience with MinMenu and discuss pros and cons of the alternatives.

Findings

Presentation of MinMenu

In the last implementation, Christina missed that nurses received a clear communication about the vision, purpose, background of MinMenu and goals to be motivated by. This information could be presented at a staff meeting, where as many as possible from the staff are gathered. As a supplement to this, the 15 professional minutes could include a short version of the presentation until all the nurses are familiar with the purpose.

Practical training

She also argued that practical training is the most effective way to implement new initiatives. The practice allows the nurses to take patients' individuality into consideration in oppose to a perfect case on paper. The practical training should be facilitated by Movesca in order to get a proper introduction to the system. The training could be scheduled in order for Movesca to reduce their own resources.

Step-by-step

The step-by-step approach is what the nurses have been requesting during the last implementation. The small changes of the workflow for each step, makes it more feasible for the nurses to practice the training. However, Christina stressed that the steps alone would not give an instant cohesive result of the implementation. This raised the importance of presenting the process of implementing MinMenu in the beginning.

Train one step for a week

Christina did not find the system of MinMenu complex enough for an extended course. Instead, she suggested that the '15 professional minutes' could be used for the technical training. Each step should be trained for a week to ensure that most of the staff had the training. This training did not have to be facilitated by Movesca, but the department manager should be responsible for ensuring that every nurse receives training.

Reflection

The workshop confirmed that the visual tool is useful to gain the overview of the new workflow. However, facilitating the tool made it clear that the cards of MinMenu have to be assembled in categories. The large number of cards quickly got confusing when discussing the different processes. On basis of Christina's validation on the step-by-step training, we see a good opportunity of categorizing the cards in topics that reflects the steps. This will provide the facilitator with a better flow when introducing and discussing the cards.

Another reflection pointed to the practical training facilitated by Movesca. We argue that to support the transition of ownership, it requires that the department also take a certain responsibility for the process of implementing. This is necessary in order to manage the process, when Movesca pulls out their support with time.

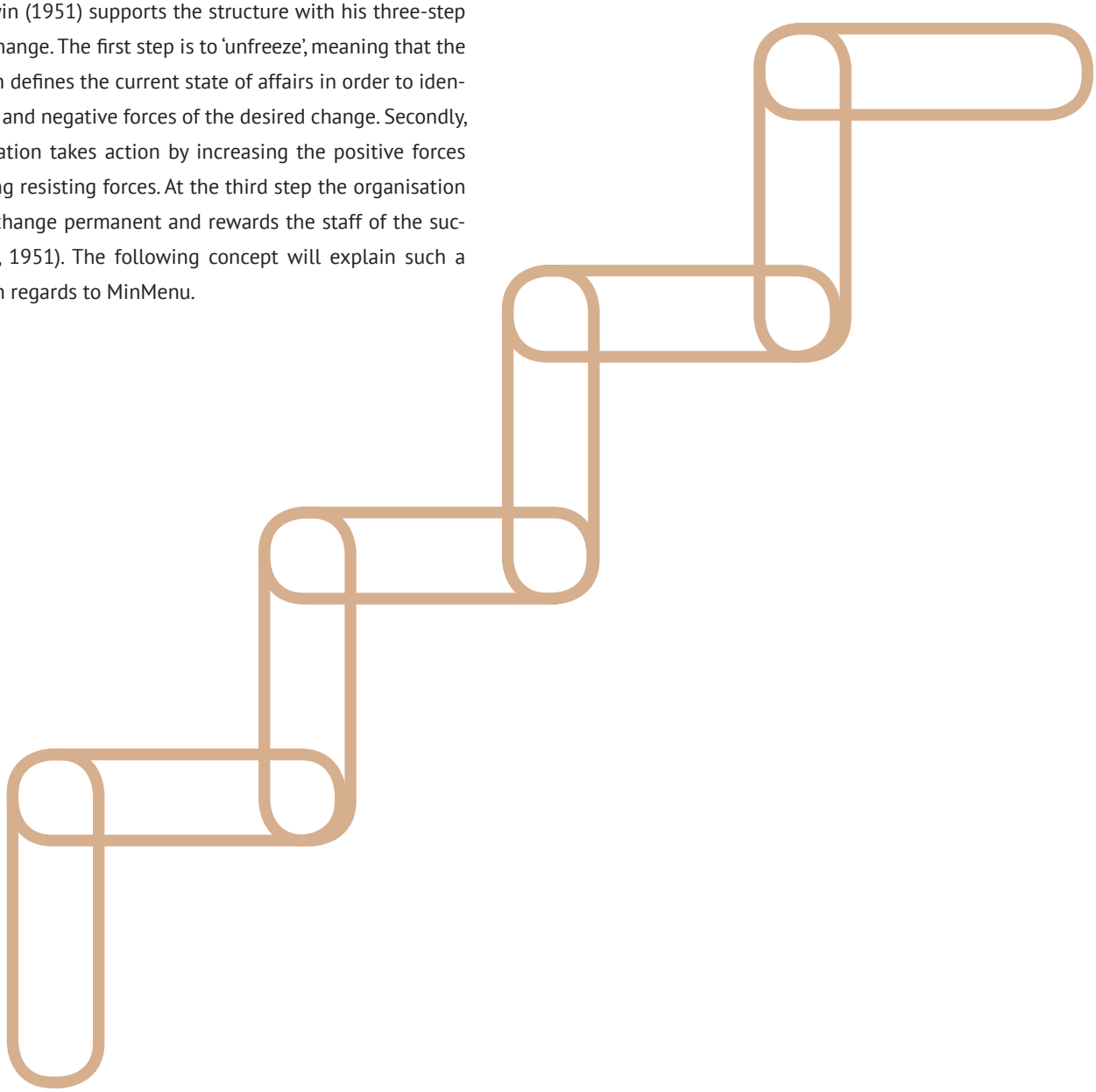
Nat
Aften
Middag
Screening
Opret profil
Tjek op på bestillinger
Log patient på tablet
Opdater patient
Print af bestillinger
Madvært får bestilling
Patient får bestilling
10:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00

CONCEPT 2

Step-by-step

Based on the desirability and feasibility of the step-by-step approach this section will explore the scenario as a concept. First we uncover the effect of taking the training in steps and then we illustrate the concept in relation to MinMenu.

The approach enables the department to break down the project vision into minor organisational changes that the nurses can overcome. This requires that the steps will build upon each other like a staircase. Each step needs an end-date to know exactly when one step ends and another begins. In organisational change, Lewin (1951) supports the structure with his three-step model for change. The first step is to 'unfreeze', meaning that the organisation defines the current state of affairs in order to identify positive and negative forces of the desired change. Secondly, the organisation takes action by increasing the positive forces or decreasing resisting forces. At the third step the organisation makes the change permanent and rewards the staff of the success (Lewin, 1951). The following concept will explain such a process with regards to MinMenu.



1. Formulate a project vision

The executive group decides on a project vision. This vision is to be placed at the very top of an illustrated staircase, to outline what the department is striving for.

2. Identify steps

The work group then puts this vision into process by writing down steps according to operating MinMenu. Then they place them on the staircase to identify which is the first step, the next and so forth. The first step might be ordering food. Examples of steps that we have discovered are 'screening patients' and 'registering dietary intake'.

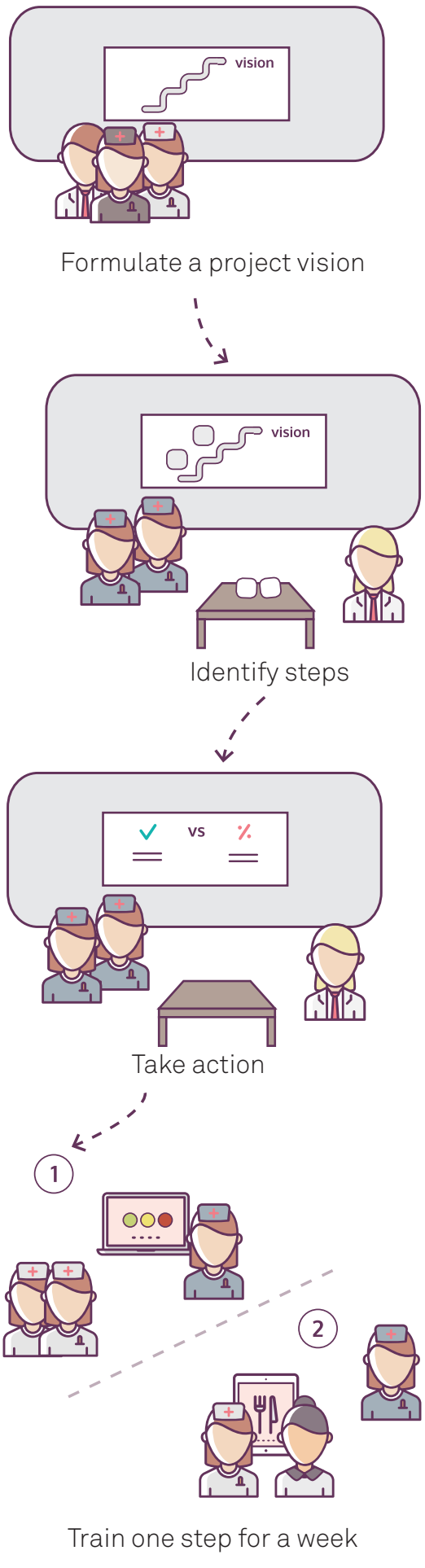
For each step the work group will discuss positive forces of MinMenu and negative forces of the change. I.e. ordering meals have a positive force of freeing the nurses of explaining the menu to the patient, while the resisting force could be the nurses concern about elders not being able to operate a tablet.

3. Take action

The work group estimates if the positive forces outweigh the negative forces. If not, they have to find solutions with Movesca to decrease the negative force. I.e. Movesca could prove the nurses wrong about their concern of tablets and elders by introducing results of their usability tests with elders. Thereby, Movesca can decrease the negative force.

4. Train one step for a week

To ensure that the majority of nurses receive training, each step takes a week. The super-user will present the purpose of the step and facilitate technical training. This could be done at regular meetings like '15 professionnel minutes'. This is followed by a practical training where MinMenu is used in the real context. The combination of the training should establish the change and help the nurses to adapt to the new norms.



TESTING WITH USERS

The following section describes the second test of the concept 'co-creating the workflow'. The re-implementation at Herlev hospital allowed us to test the prototype 'co-creating the workflow' in application to a real world context. Having the concept validated by Christina, we could focus more on refinements of the service prototype (Stickdorn, M Schneider, J., 2011). The pragmatic approach generated "reflection in action" (Schön, 1992) on the facilitation of discussions, decision-making and concrete improvements of the tool which the findings will uncover.

Participants: Sofie - employee of Movesca who specialises in nutrition, Mai - consultant at Movesca, Laura and Ulla - MinMenu key persons, Katrine - department manager, and Erica - assistant department manager
Location: Staff room at Herlev Hospital
Method: Prototype testing
Themes: Testing, facilitation

The purpose of the prototype is to generate insights to refinements of the prototype when introducing it to the real context.

Preparation and execution

Our reflection on dividing the cards into categories, engaged us to formulate the categories; "create patient profile", "ordering" and "registering". The timeline and task cards were printed, and the cards were divided between the 3 categories. The specific context gave us the opportunity to test the concept and the facilitator role in a real-world setting.

We started presenting the concept of co-creating the new workflow and the functionality of the timeline. The timeline was put on the wall in order for all to see and then we started debating the tasks with the participants.

The participants' interaction with the tool led to discussion and decisions about the presented tasks. We guided and observed their usage of the tool while discussing improvements of the prototype.

Findings

Discussing obstacles

Some of the tasks proved to initiate powerful discussions between the participants i.e. the task of screening the patients for their nutritional needs. The group did not only discuss the application of the task, but also how to overcome the fact that nurses do not screen the patients today. These discussions slowed down the pace for decision-making but they were necessary to uncover present obstacles of the implementation.

When the managers had to leave, some discussions were left open-ended. We argue that these discussions should happen more often in order to open the discussion and reflect upon it before deciding on final actions.

Frontline and backstage tasks

The timeline required more space under the line as some tasks were to happen in the same timeslot. A visibility line would be valuable based on its integration of different user perspectives (Stickdorn, M. & Schneider J., 2011). The separation of frontline and backstage actions would avoid questions like "is 'helping the patient order' referring to us helping them on the website or helping them on the patient's tablet?".

Procedural manuals

Putting the tasks on the timeline created a notion about the underlying complexity of operating MinMenu for the super-users. The task of i.e. 'creating patient profiles' was anticipated to be remembered best in relation to registering the patient to the department. Due to the fact that patients are registered throughout the entire day, this task do not has a specific time. Such tasks were numbered and placed above the timeline. However, these tasks are essential to adapt MinMenu to the context. In order to structure these tasks super-users could benefit from creating procedural manuals.

Focus on one step

During the test, we presented all the steps and their related tasks. We learned that this approach created a lacking overview of the situation, as the department is currently focusing on 'food ordering'.

On that basis we made a "next step" column beneath the time-line. This created a more simple overview of the tasks related to the first step and an overview of the tasks to come. We found that the next steps looked more manageable in this way. We see this as an valuable add-on to ensure that super-users and nurses are aware about future steps and the content of each step (ref. step-by-step training).

Sharing the workflow

Learning that Laura and Ulla were invited to facilitate a talk about MinMenu once every week, we presented our idea about sharing the workflow with their colleagues. We encouraged them to involve the nurses by showing the timeline and share their reasons behind the decisions. This could initiate an open dialogue about the changes of MinMenu and involve them in what is going to happen before it happens.

STATUS MEETING

After one week of using the timeline we went back to receive feedback from the super-user Laura. This section presents their usage of the tool and discusses future considerations.

Creation of procedural manuals

The super-users had created mini procedural manuals inspired by the cards from last time. However, the manuals were placed on the board which forced the nurse to enter the staff room and remember the guide by heart. This was not sufficient for the nurses who needed the manuals close to the patient.

We recognised that for the future facilitation the super-users should be provided with a suggestion of testing the manuals. Together with their colleagues they might have discovered how the manual could be of better use.

Feedback area

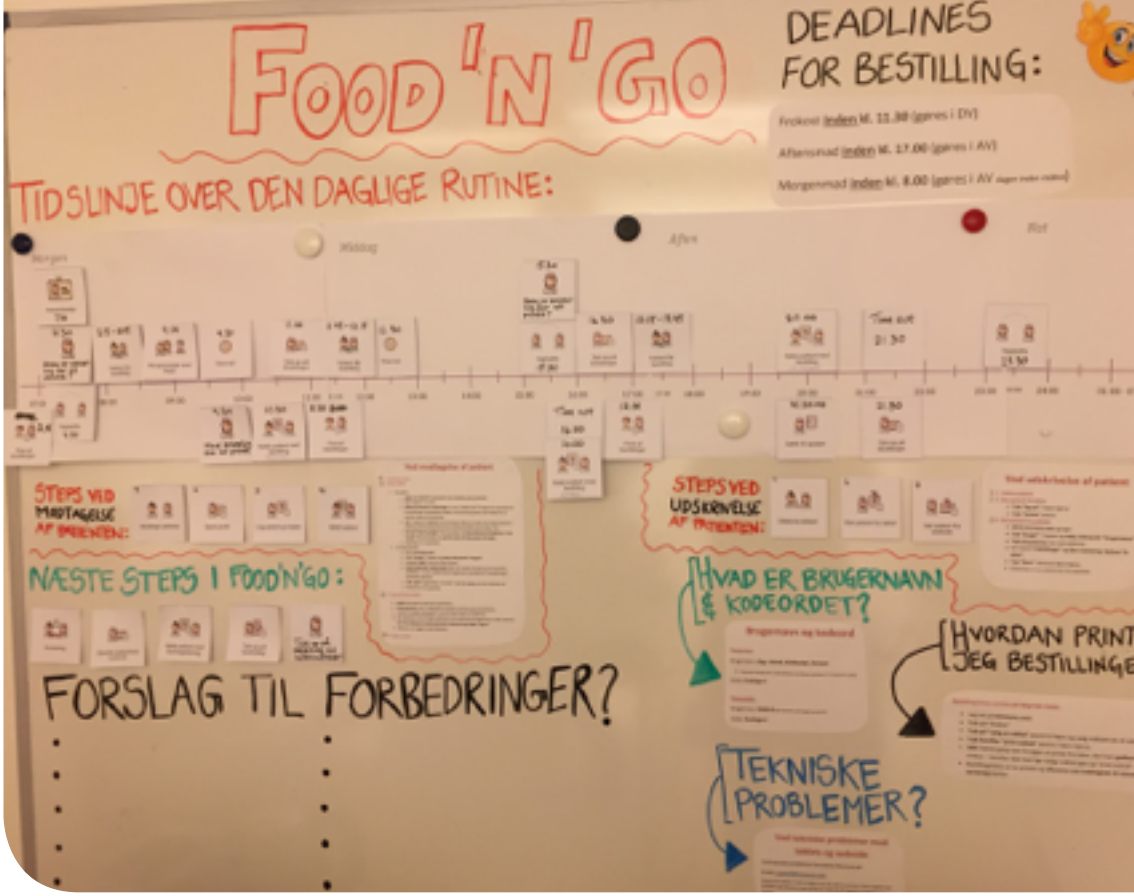
The super-users had added a feedback area for nurses to write down suggestions. Some nurses had used the opportunity by themselves while others had given feedback orally for the super-users to write down. This add-on gave the nurses a space to make suggestions and ask anonymous questions. The super-users found that the nurses were hesitant to ask questions at a meeting. This might be due to a fear of displaying to everyone that they do not understand the system. The super-user would therefore answer these questions in an associated notebook for everyone to see. All feedback and questions would be transferred into this book by the super-users. However, Laura was not sure if all the nurses read the answers in the book.

We were inspired by the feedback area. The area provided a space for the nurses to be creative and open discussions outside of the meetings. We recognised this as the term 'public space' which we came across in our implementation research of Robert & Macdonald. The public space is a forum where essential actors work collaboratively to realise the design of a certain future (Robert, G. & Macdonald, A., 2017). The co-creative aspect of our concept would benefit from the incorporation of a public space and has been proved feasible in the context by the super-users. Therefore, we will explore how to include the public space in our concept in the following sections.

Sharing the workflow

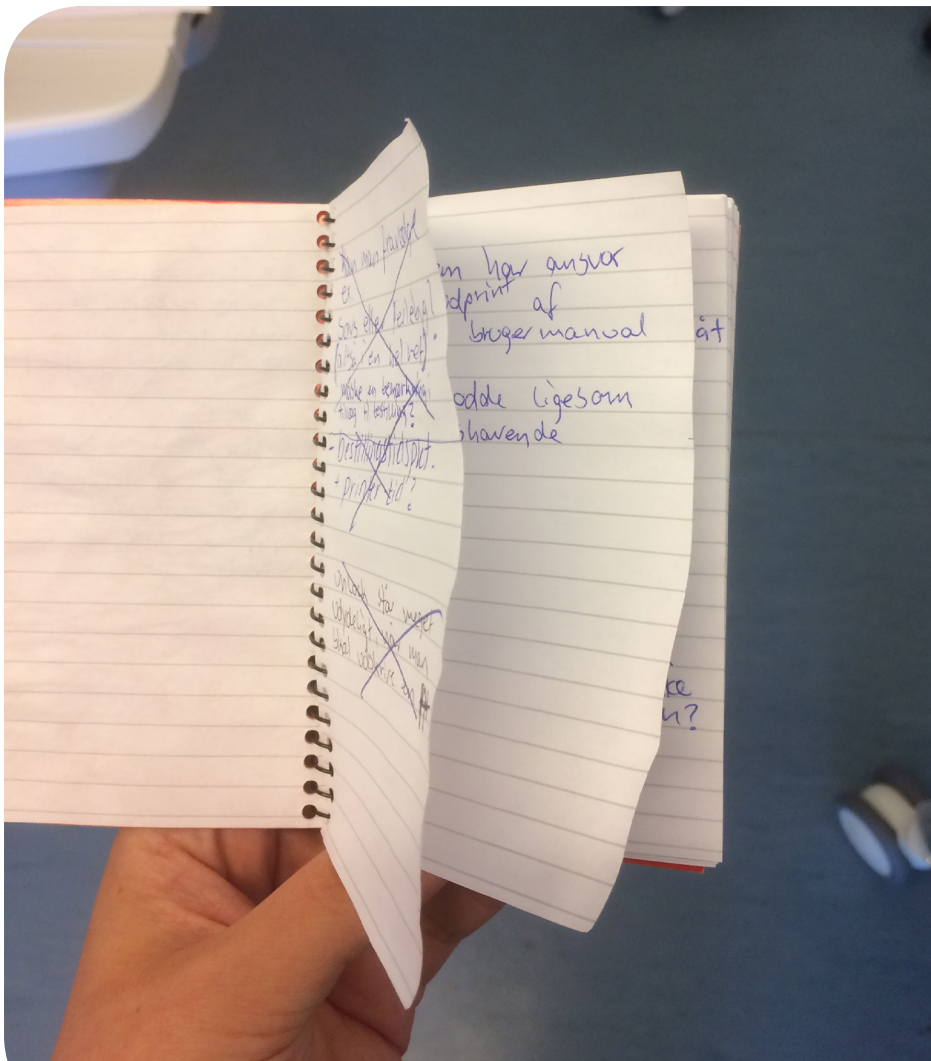
At the 15 professional minutes the super-users were provided with 7 minutes to present the new workflow. This was not enough time to both present the purpose of the timeline, sharing the logic behind their decisions and open a discussion with the nurses. Furthermore, they also had to present the manuals and the feedback area. Therefore, the super-users prioritised to present the overall concept of the board and did not go into detail with their decisions.

We agreed that the time for the presentation was too short. If the nurses had a former introduction of MinMenu, they might have been familiar with the set-up. This could have eased some of the information. Moreover, we anticipate that the department manager was not familiar with the content of the presentation. This might have prioritised the presentation more.



Board in the staff room

Associated notebook



VALIDATION WITH MOVESCA

In order to present and get feedback on ideas and developed concepts, a meeting with the collaborating partner was arranged. The purpose of the meeting was for the group to validate the concepts, in order to examine if the development was on the right track. It was also planned to give Movesca the opportunity to share knowledge and ideas for final adjustments.

Participants: Jon, Jess, Mai and Sofie
Duration: 3 hours
Location: At Movesca, Kongens Lyngby
Materials: Powerpoint presentation with process and findings, prints of key topics and concepts

Preparation

For the preparation of the meeting with Movesca the findings from discover, define and develop phases were gathered in a powerpoint presentation. The findings should give Movesca an overview of the process and insight into our work. The elements presented were our design principles, the key findings, the four barriers, the concepts; 'Co-create workflow' and 'Step-by-step' and the idea 'Public space'.

In addition to the presentation, we designed different print materials that could be used to explain different elements and concepts during the presentation. The initial prototype was also presented to provide a more realistic picture of the concept and show how a tool such as the 'timeline' could look like in the future.

Analysis

To analyse the meeting with Movesca the elements discussed during the presentation and the ideated materials were studied. Many of the discussions were also confirmations on the findings and will not be elaborated upon.

Findings

The findings from the meeting are as follows.

Vision

Movesca admits that they have not been good at sharing the vision outside the executive group. They acknowledged the importance of sharing a project vision to all involved actors at the department. In addition, Jess emphasized that the vision shared with the nurses should be one that they can easily relate to. This led to a discussion about designing a vision that relates to the steps and goals that follow MinMenu.

Validation of step-by-step

Movesca shared that they have focused on proving MinMenu worthy which unfortunately has led to lacking empathy with the nurses. They agreed that the step-by-step approach would be a very relevant solution to the nurses in order to learn MinMenu and adapt to the change.

The presentation of the concept led to an idea about a mobilization phase which gives the super-users and the nurses an opportunity to test and experiment with the steps. The idea was build upon our finding about how experimentation can empower the nurses to take ownership. A mobilization phase can also help that more nurses feel comfortable in using MinMenu when the department goes Go-live.

Co-create workflow

"There is no doubt that the timeline is both a great tool for us and the nurses"
Jess, Movesca

Mai shared that she has started to implement the timeline to her meetings with clients. However, to make it implementable they needed to know who and how many people we recommend for these activities.

‘Public space’, “Consultation period”

Following the talk of the workflow concept, we introduced our idea of a public space. A Public space should ensure that all nurses have understood the reasons for the implementation and feel involved in the process. The idea was developed on the basis of the workshop and the test with the nurses at Herlev.

The idea of a public space was considered very effective because it allows the nurses to be anonymous. Movesca also liked the fact that nurses are involved without the need for additional resources.

Evaluation scheme

In relation to a discussion about training of the nurses an idea about an evaluation scheme for the super users was generated. A scheme where super users can indicate if their colleagues are fully trained or if they still need support. It will give the super-users an overview of the training and of who nurses to put their focus on.

Resource / empowerment plan

After presenting concepts and ideas we started a discussion about how Movesca can plan their support throughout the implementation process.

In regards of the new activities it is important that a rough time estimation is made before the integration of MinMenu. This will help Movesca when planning resources in the beginning of the process. We presented the chart that visualizes how Movesca can structure their resources over time with the purpose of empowering their clients to take ownership (Movesca as facilitators p.x). Jon elaborated that such plan is a great tool for starting discussions with the executive group. In order to match e

IDENTIFIED REQUIREMENTS

During the development phase, we conducted three sessions; a workshop, a test, and validation. Each of the sessions has identified new requirements of the concepts (figure 15). This section will list the requirements that will direct finishing changes of our concepts for the final service solution.

New requirement	Based on the session
Share the timeline with the nurses	Workshop and Validation
Proper introduction to MinMenu	Workshop, Test and Validation
Practical training of nurses	Workshop, Test and Validation
Train a step for a week	Workshop
Make sure that all nurses are trained	Workshop and Validation
Step-by-step approach to developing the new workflow	Test
A feedback area / public space	Test and Validation
Mobilizing before roll-out - test period	Validation

Figure 15, requirements

REFINEMENTS

This section will explore new refinements of our concepts, which was inspired by the new requirements. Then it will demonstrate a blueprint in order to prototype the a mobilising concept. Lastly, it refines the timeline tool, due to new requirements.

Mobilising

Movesca's requirement of mobilising the department became a source for immense inspiration to our development. To align ourselves we defined amobilisation as a trial period with a few hospital beds as test subjects, before going live. Working with this principle, we were able to make connections between our concepts. The steps became a framework of the content when co-creating the new workflow. This created a criteria for the activity to recur every time a new step would be introduced to the department. We recognise that the department might need a second round of mobilising a step, in case unforeseen obstacles arise. We have therefore incorporated a review activity which declares if the workflow is run or need another iteration. Furthermore, the new requirements of sharing the workflow and having a public space would help the mobilisation to involve the nurses.

Mobilize step

In the following we will explain the concept of mobilising the steps. This process is illustrated in figure 16.

Develop new workflow

As we have explained earlier in the process Movesca will need to discuss the underlying positive and negative forces with the department and also understand the local workflow before going into the development. To implement the steps, Movesca need to debate possible ways to incorporate the new workflow of MinMenu into the local flow. A member of Movesca, the key persons, the super-users and the department manager should gather in a session that aims to create the new workflow. The session should also confirm which actions the group will take to overcome potential negative forces.

Share workflow

As a part of the involvement of nurses, the new workflow should be shared with the nurses at a meeting before the training. This provides the nurses a chance to get familiar with the value of the step, the new flow and the decision-making that justifies it. Discussing the new workflow might identify unforeseen obstacles that the key persons and super-users have to take into consideration.

Make it public

In preparation for the training, the key persons and super-users should make the workflow and date for the training public. This is done in order to include the nurses whom could not participate in the meeting. Furthermore, it provides an area for feedback where nurses can elaborate on their experiences with the new workflow, provide ideas and ask anonymous questions about the new flow. This anonymity will free the nurses of the fear of being judged on their uncertainties about MinMenu. The key persons and the super-users should respond on the feedback in the answer area on a regular basis. This will keep the nurses updated and engaged to provide additional feedback.

Train staff in workflow

To provide the nurses with a safe environment to get familiar with the new workflow only a few hospital beds are assigned as test subjects when training. For each step, the training lasts a week to ensure that most of the nurses had the training. One by one, the super-users will walk the nurses through a mixture of technical and practical training for each step. For the technical part of the training, the super-users provide the nurses with the test version of MinMenu. This ensures that the nurses get a feel of the platform without disrupting the data of the test subjects. The practical training is valuable for the nurses in order to experience the individual needs of the patients. In the practical training, the super-users step back and act as a supportive guide while observing how the nurses handle the process. The observation helps the super-user direct their efforts of support when MinMenu go live. Movesca needs to support and observe the super-users in the first sessions of training. This support should teach the super-users how their training can guide the nurses to get independent of the super-users and self-reliant in the new workflow.

Review the workflow

The public space and the training should have provided new data and possible new feedback from the nurses about the workflow. These new inputs might demand new decision-making. The key persons, the super-users, the department manager and a member of Movesca should meet to discuss the feedback. Ideas from the nurses should be debated and applied if they are presumed to have immense importance to run the new workflow. In case the process has been successful and new ideas are easily applied, the department manager will take action and decide to run the workflow. However, if the department has faced many obstacles a new iteration of the mobilisation process is required.

Run workflow

When the department manager decides to run the new workflow, it generates a celebration event with the nurses. In preparation for the event, the key persons, the super-users and the department manager define operational goals which help to maintain future motivation of the nurses. At the event, the key persons and super-users present the new workflow and the operational goals. To show support, the department manager share the date for going live with the rest of the hospital beds. This event further helps to involve the nurses as they are informed and presented with the result of their feedback.

Undstand local workflow

Review the workflow

Train staff in workflow

Make it public

MOBILIZE STEP (X)

Share new workflow

Develop new workflow

MOBILIZE STEP (Z)

Run workflow

Celebration

Figure 16, process of mobilising

Blueprint

To prototype the new concept we developed a service blueprint. A service blueprints help us show how the actors interact with the concept in connection to frontstage and backstage processes of Movesca (Stickdorn, M., Schneider, J., 2011). Referring to the principle of transferring ownership to the hospital, the frontstage activities of Movesca will decrease over time. This prototype therefore represents the activities that happen when step no. 1 is initiated (figure 17).

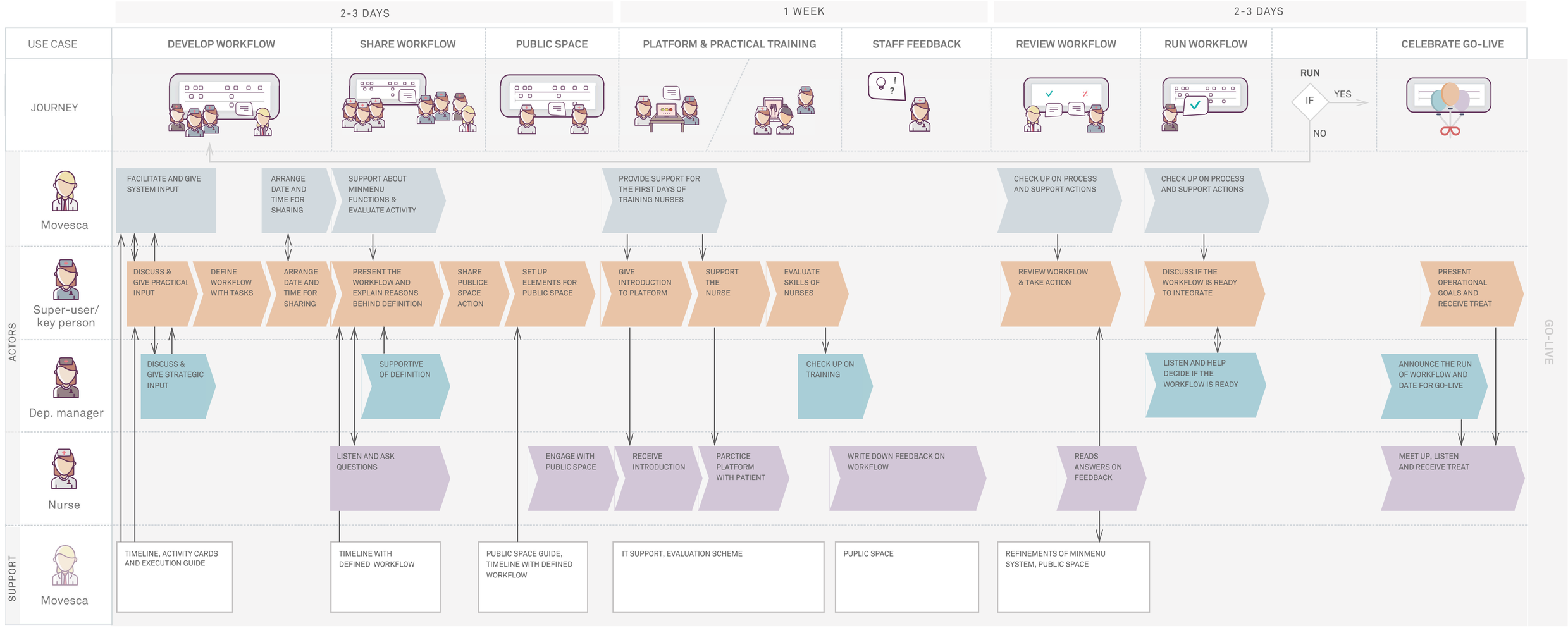


Figure 17, blueprint of step no. 1

Refinements of the timeline

To round up our concept we needed to refine the timeline on basis of the reflections we had at the test session and new reflections in the development of the mobilising concept.

Icon cards

Dividing the cards into categories of the steps helps concentrating the workflow development on the current step. The other cards should be placed beneath the timeline to visualise the next steps to come. A date will indicate when the new changes is planned to occur.

Timeline

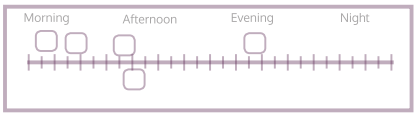
To avoid confusion about tasks that happen with and without a patient, we rearrange the tool. We here introduce the a frontline and backstage aspect to the tool.

Procedural manuals

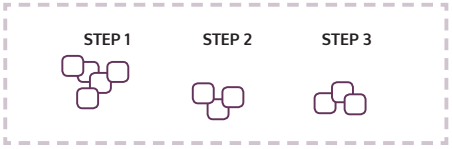
Another addition to avoid confusion is to place tasks without a special time in an area for procedural manuals. This should engage key persons and super-users to develop these manuals.

Public space

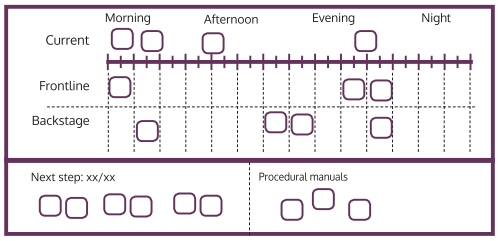
After introducing the tool to the nurses it will expand with an areas for feedback and solutions to the feedback.



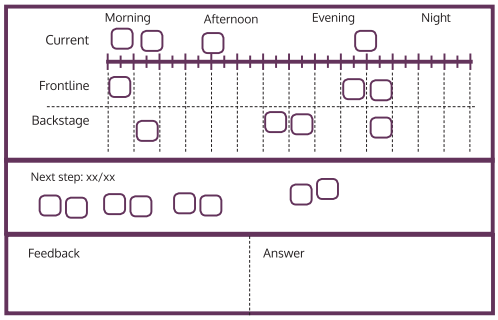
Before refinements



Categorising cards



Developed new workflow to share



Make the workflow public


Husk og vær' positiv
-det smitter!
Food'n'Go
UNDERVISNINGS-
OVERSIGT
VI ♡ AT UDLEVSDELE MED
VORES MEGA KLOGE KOLLEGAER
Frokost
Middag
Aften
Time out
16.00
Time out
21.30
ABS: hvilke ting på menuen har vi ikke
på afdelingen?

DELIVERY

In this chapter...

In this phase, the design that was developed during the divergent design-phase of the double diamond, is wrapped up in a package that makes sense to the client organisation. The phase was also a time for feedback to the solution, that could be included with or in the final deliverables (Design Council, 2007).

This section will provide a short overview of what we are delivering and what the idea behind each deliverable was.

Presentation

It was essential to have the presentation at the validation session with Movesca. This was our first piece of the deliverance which presented findings from the discover, define and develop phases. Our product report will therefore only briefly present our process, before going into a concept roadmap.

Concept roadmap

In order to provide Movesca with our final recommendations for improvements on the process of implementing MinMenu, we decided to develop a concept roadmap.

The concept roadmap contains six areas of recommendation, designed to act as a guide towards a more user-centered and collaborative approach to implementation. Each recommendation contains a description of its intended purpose and related actions. Certain descriptions will also contain resources in form of guides, tools or graphical material necessary to execute the concepts. The resources are named according to their function.

Drive with graphical elements

As a result of developing the process and product report, we have designed a backlog of elements that will help Movesca get more visual in their facilitation with the hospital actors. Furthermore, these elements can be shared with the department staff to let them have access to print the elements themselves, when Movesca will decrease their level of support.

CONCLUSION

Through this thesis, we aimed at investigating the problem statement: "How can insights of the current implementation of MinMenu and co-design help us to design recommendations for Movesca, to improve the implementation process with hospitals in future collaborations?" This section will summarise our process to answer the problem statement and discuss our concepts and solution.

Summarized process

We found that Movesca had the challenge of motivating the hospital staff for transitioning the implementation process into operating MinMenu. Exploring this challenge, we engaged in a range of interviews and observations to understand the current implementation. We uncovered and prioritised two main barriers of the department staff. They were missing an understanding of the new workflow along with a clear guidance for training nurses. We discovered that these barriers were due to Movesca's current approach. They focused on the development of the backend, which affected that their main concern was to regulate functionalities of the platform. This encouraged us to build empathy with the the department staff in order to define their needs. Ideating and testing with the department staff generated our inspiration for three concepts; 'Co-creating the workflow', 'Step-by-step' and 'Public space'. These concepts have been refined according to requirements that we gathered from a workshop with a nurse, a test session with super-users and a validation session with Movesca. This process showcases that we have ensured to understand the current situation and co-designed with both the department staff and Movesca to develop new concepts and a final solution.

The concepts

The co-creation of the workflow involves the key persons, the super-users, and department manager to develop the new workflow. We argue that this will resolve the current missing understanding of it. To ensure that nurses get this understanding as well, the public space invites them to ask questions and generate suggestions for improvements of the workflow. The step-by-step approach provides a guideline that helps plan small changes in the department. This is more feasible for the nurses to overcome in relation to their resources. The mobilisation ties these concepts together in a coherent iteration, as we recognise that the process might identify new obstacles for implementing MinMenu.

The final solution

We argue that the solution as a whole aids Movesca to change their approach and view MinMenu as an organisational change. This requires a planning of the communication activities with the department. We proved that to be true, as conversations of planning the vision and activities for involving the staff impacted our concepts. The process has not been fully tested for this thesis which made the activity of reviewing the process an important reminder to Movesca to experiment with the solution.

Support & ownership

Providing Movesca with tangible tools and guidelines helps them to engage in their new role as facilitators. We argue that this engagement implies a continuous application of co-design. This is due to the new approach of creating creative solutions with the department throughout the whole implementation process. This also helps to transfer the ownership of the process to the department.

REFLECTION

Co-design process

Movesca as an external partner to the hospital had some effect on our process. We became a third party collaborator, which initially made us dependent of the meetings organised by Movesca. However, a base of contact persons was slowly built up as we conducted observations. This enabled us to contact people to co-create our ideas and concepts with. Arranging these meetings proved to be a challenge, we went through a chain of persons via mail. Personal contact became our go-to method for arranging meetings. We listened in for every opportunity to meet the department staff in order for us to collect their ideas. For this thesis, we have picked the most insightful meetings as we have generated a backlog of inquiries. We learned that in the busy environment of the hospital, co-designers must be willing to adapt to the nurses. Important alarms might go off or essential matters about a patient could require a discussion right away. This made it challenging to facilitate the session because we never knew exactly how much time we had with the nurse. Our preparations for the sessions reflected these concerns over time, as we got familiar with the conditions.

Business aspects

Our main focus for the thesis has been to build empathy in order to co-design. Through the process, we narrowed the user group into the department staff. This was due to an acknowledgment of Movesca's lacking concern of the group's perspective. This directed our further process, where Mai aligned us with the basic information of Movesca's back-end development, as we often met her at the hospital. We admit that we neglected the importance of regular meetings with the founders through the process. At these meetings, we could have had deeper discussions about the business aspects. We acknowledge that our solution demands an immense effort of both Movesca and the most involved actors (key persons, super-users, and the department manager). Especially, the current resources of the department will be affected by the process requiring more than just one week of training. Drafting a new business model canvas with Movesca might have raised our concerns about the budget. However, we argue that the new process suits the context of the nurses which in return effects that the platform gets into actual operation. This notion promotes to put in the extra resources.

Service designer's role

This thesis gave us a new perspective of the possibilities with service design. We gained knowledge of the implementation field with a mixture between service design and organisational change. It was interesting for us to learn that our thesis can act as a contribute to a relatively new line of thoughts within service design. Though, we must admit that it has been somewhat of a trial. Due to our fairly new role as service designers, while we also learned a new line of theories. Our own resources have been used to a maximum, due to all new considerations and discussions of merging the two fields into a solution. To align our ideas of the development, we used visualisation. We acknowledge the importance of visual communication, as we reached a new level of mutual discussions internally and with the actors. The fact that Movesca has been inspired to implement the timeline tool right away, again prove the power of visualisation. Our most significant contribution has thereby been to provide tangible tools to facilitate discussion on organisational change. We see that our role was valuable which makes us argue that Movesca will need a service designer when reviewing the process. We assume that new opportunities for tools will emerge as we have not been able to test the full process.

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PRODUCT REPORT

Service design in the healthcare context:

Improving the process of implementing the service platform MinMenu

Master Thesis by Christina Parlov & Carina Jensen
Service systems design, Aalborg university Copenhagen, 2017

Master thesis

Product report

Title:

Service design in the healthcare context: Improving the process of implementing the service platform MinMenu

Programme:

MSc Service Systems Design, 4th semester

Project Period:

1st February 2017 - 31st August 2017

Collaboration with an Organisation:

Movesca

Contact person:

Jess Riis Jensen mjrj@movesca.com

Supervisor:

Amalia De Götzen

Group members:

Christina Parlov

Carina Jensen

ABSTRACT

MinMenu is a new nutritional platform developed by the IT company Movesca to empower elderly medical patients when being hospitalised. The platform was recently implemented at the Hospitals of Herlev and Gentofte. However, Movesca experienced several challenges in the transition from implementing to operating MinMenu. This thesis investigates how the process of implementing MinMenu can be improved through the use of service design, allowing methods from other disciplines and co-designing with actors throughout the design process.

In order to gain insight and understanding into the context of the implementation process, an ethnographic study was conducted including contextual interviews and observations of relevant actors. Additionally, a research on service design frameworks of implementation discovered that designers are inspired by change management. This expanded the framework and provided a broader understanding of important elements to consider in the context of implementation. Based on analysis of the gathered insights four implementation barriers was identified. These barriers were explored and ideated with actors of the hospital, which directed our focus towards two of the barriers.

This thesis presents solution concepts designed to reduce or solve the identified barriers. The concepts are developed and tested in collaboration with healthcare staff and validated with our partner Movesca. In order for Movesca to implement and test the recommended solution concepts a Concept Roadmap report is delivered, introducing description of the recommendations, intended purpose and related actions. Based on the process and following feedback we believe that the concepts will improve the implementation experience of MinMenu.

TABLE OF CONTENTS

INTRO

This report is the result of an eventful thesis collaboration between service design students and the IT company Movesca. The report is made as a deliverable for Movesca and introduces a Concept Roadmap, which we developed as the final solution of this thesis project. In order to align the reader the report will breifly present the project context and the key activities of the design process.

CONTEXT

In this section...

CONTEXT

Project Background

The project collaboration was initiated from Movesca's wish to scale their service platform MinMenu. Their vision is to expand the platform to hospitals across Denmark within a five-year period. However, to achieve their vision Movesca acknowledged that assistance in discovering opportunities to improve their implementation process was needed.

The thesis aimed to discover and analyse the current implementation process to explore and co-design recommendations for an improved implementation service.

"How can insights of the current implementation of MinMenu and co-design help us to design recommendations for Movesca, to improve the implementation process with hospitals in future collaborations?"

Project approach

Framing the design process

The design process of this thesis is inspired by the design methodology, design thinking. Design thinking is a mindset that frame problems and opportunities from a human-centred perspective, use visual methods to explore and generate ideas, and engage potential users and stakeholders (Brown, T., 2008, Stickdorn, M., Schneider, J., 2011, Bechmann, S., 2010).

Service design

The table below describes concepts of service design to clarify the process and present the principles which have shaped the solution.

In the following section, the key activities and findings will be presented. However, a more detailed description for the process, tools, and analysis can be found in the Process Report.

HOLISTIC: to understand the entire environment of a service system

USER CENTERED: to understand the service experience through the customer's eyes

INTERDISCIPLINARITY: to innovate service systems, relevant methods and tools are borrowed from a wide range of external disciplines

EMPHATY: to gain deep understanding of users and inspire the design processes

COLLABORATIVE: to successfully work within the network surrounding a service system

CO-DESIGN: to give the users an active role in the design process

DESIGN PROCESS

In this section...

- Seeking inspiration
- Observed users
- Framing challenge

Seeking inspiration

To inspire our development of an improved implementation process we researched two topics; *Service design frameworks of implementation* and *Service design use cases in healthcare.*

Exploring the topic, Service design frameworks of implementation, led to an additional research within the discipline of change management. Service design thinking acknowledges that implementing services demands a process of change and refer to take guidelines from change management. Concepts from change management expanded the framework and provided a broader understanding of important elements to consider in the context of implementation.

Based on an analysis of the gathered insights we defined the following informative statements to guide and inspire the process.

1. VALUES & NORMS
New values and norms affects small or larger changes in the organisation.

2. SENSE OF URGENCY
Establish a sense of urgency to motivate and drive employees out of their comfort zone.

3. VISION
A vision from the urgency should be communicated to capture the hearts and mind of the staff.

4. SHORT-TERM WINS
Creating short-term wins plan for tangible improvements that the staff can strive for.

5. PLAN COMMUNICATION
Provide clear information to the right people, at the right time, through the right medium.

6. INVOLVE THE LOCAL CONTEXT
To adapt the project and address practical concerns the local context must be involved.

7. EXPERIMENTATION
To foster collective ownership the implementation should allow experimentation.

8. VISUAL COMMUNICATION
Visuals create alignment by breaking down complexity into a form that everyone understands.

Framing the challenge

Due to the explorative nature of service design, we mainly focused our research using qualitative techniques allowing a deep understanding of user behaviour and motivation. The solution presented in this report is developed based on insights gathered through interviews, participant observations and contextuel interviews.

The following implementation barrieres were identified as a result of the qualitative analysis and a second iteration within the phase of defining problems. The second iteration allowed us to gain an even deeper understanding of the current implementation process, its challenges and the users affected by the process.

IDENTIFIED IMPLEMENTATION BARRIERES:

INSIGHT STATEMENT: The implementation needs to support the super-users and the nurses to understand and develop their new workflow with MinMenu

INSIGHT STATEMENT: The implementation should guide the super-users in the training of their colleagues

The above insight statements framed the focus for the solution concepts developed for Movesca. The solution was developed in collaboration with nurses through ideation sessions, co-creative workshops and prototype tests. The final result will be presented in the following section.


Food'n'Go
Morgen

Observed users

To give the reader a better understanding of our design choices, this section presents the rough personas whom the team engaged with through the phase of development. The method provided the team with different perspectives on the service, ensuring that critical user needs are considered in the final design.

The personas represent different characteristics of actors describing goals and needs which are important to the implementation of MinMenu.

NURSE

Goals:
Help the patient get well

Needs:
Structure and routines in their workflow
Knowledge sharing and clear communication

KEY PERSON + SUPER USER

Goals:
Help and support colleagues
Support the process of change

Needs:
Support and guidance to perform the goals

DEPARTMENT MANAGER

Goals:
Lead and communicate change
Support the department staff

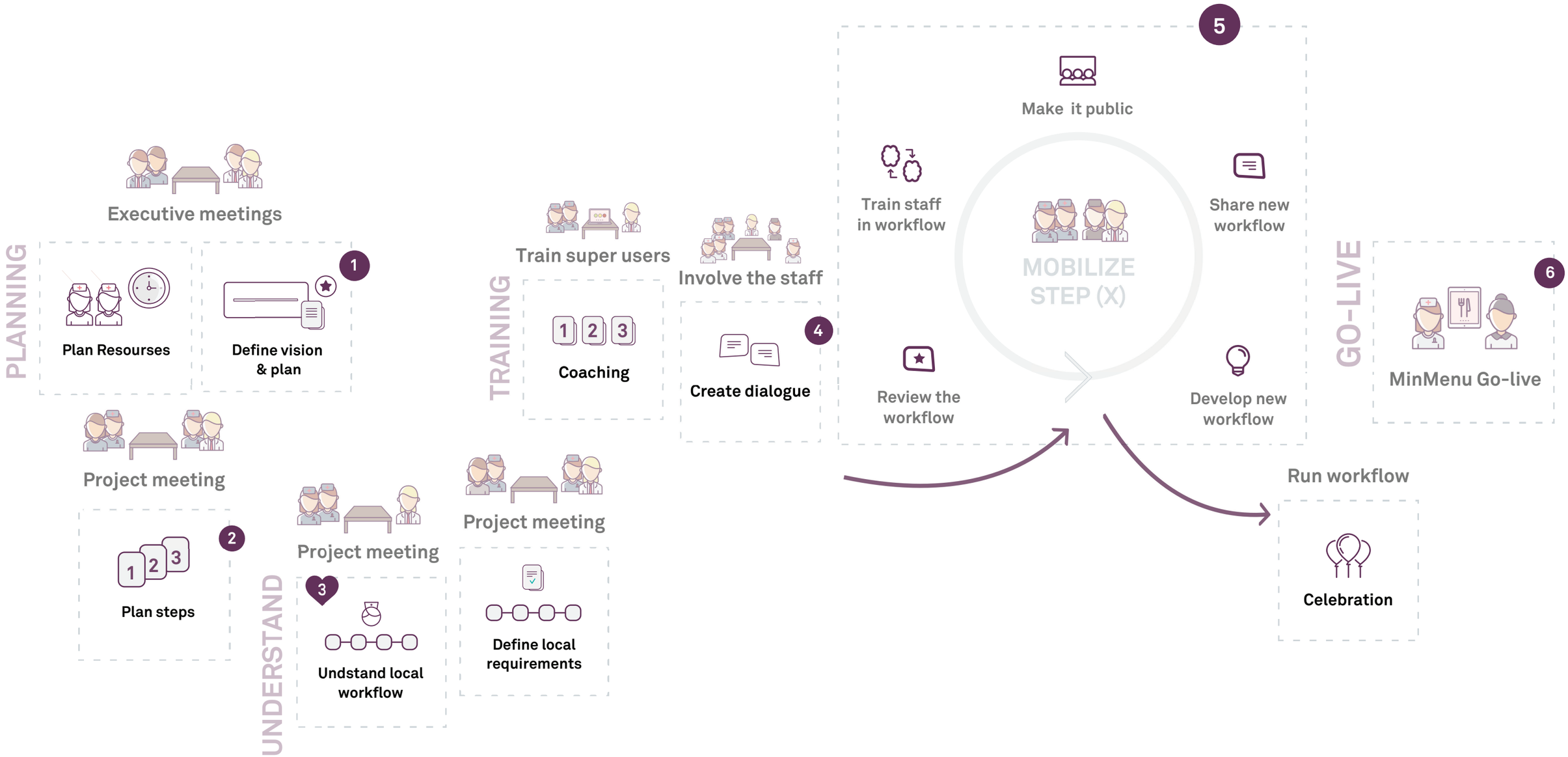
Needs:
Overview to manage department activities and resources

CONCEPT ROADMAP

The concept roadmap contains six areas of recommendation, designed to act as a guide towards a more user-centered and collaborative approach to implementation. Each recommendation contains a description of its intended purpose and related actions. Certain descriptions will also contain resources in form of guides, tools or graphical material necessary to execute the concepts. The resources are named according to their function.

CONCEPT OVERVIEW

The overview is developed as a framework to guide Movesca in our solution. Furthermore, the overview serves as a reading guide for the upcoming sections. Each of the numbers refers to a section that will present a recommendations and and tools.



1. Planning vision

Kotter's 8 steps for leading change (1995) have inspired a need for establishing a sense of urgency, forming a guiding coalition and creating a vision. A sense of urgency examines potential crises or major opportunities in an organisation. The urgency is to be shared with people who have a powerful enough position to make changes a reality. This group of people collectively creates a vision that breaks down the urgency. The vision helps to make changes manageable and aids the group to strategize the change efforts.

Recommendations:

SENSE OF URGENCY

MinMenu is based on a sense of urgency; Malnutrition of hospitalised elderly patients. This urgency should be shared with the executive group. The executives or the department manager have to inform the affected actors why a change is needed. This can start with a few individuals such as the project group but must be extended to include all nurses. This also helps to motivate the nurses to step out of their comfort zone and accept new changes with MinMenu.

VISION AND PROCESS PLAN

A collective project vision for the process will help the executive's align their ambitions with the implementation of MinMenu. The vision enables the executives to plan the needed resources for the project to succeed. With the resources, a project group is formed to lead the process of transforming the vision into the daily workflow. It is recommended that both the project plan and the vision is documented to a format that can be shared with the nurses. This will give the nurses an overview of what is going to happen in the department.

2. Planning steps

To adapt the project vision in the nurses' busy work environment, we need to divide the vision into a plan of minor organisational changes, which we call steps. The steps help to define the content of the training and the related new values and norms. Positive and negative forces will arise due to these new changes. It is important to act on these by defining the current values and norms, and relate them to each of the steps.

Recommendations:

The values and norms are best identified in collaboration with both the key persons, the super-users and the department manager. Preferably, this will be a session that is facilitated by a member of Movesca who can guide the participants to reflect on negative forces.

Duration: 2 hours
Participants: 3-5 persons

RESOURCES:

Three resources have been developed: an execution guide (R.1), a staircase with mobile steps cards (R.2), and a change builder map (R.3).

RESOURCE 1

MAPPING PROCESS STEPS

The purpose of the session is to plan the implementation into minor organisational changes, which will provide a more feasible training for the nurses.

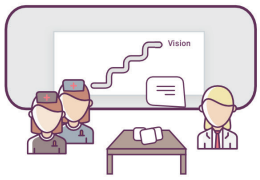
Execution guide

Bring the staircase with the vision written, the mobile step cards and change builder guide.

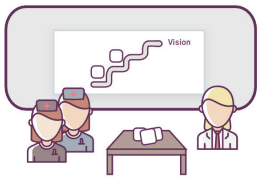
Staircase & steps cards (R. 2)

Change builder (R.X)

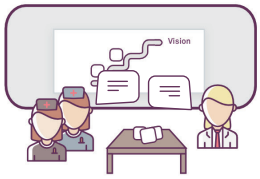
At the session



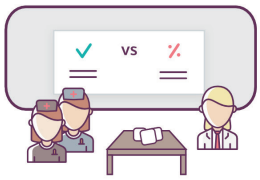
STEP 1.
Introduce the purpose of the meeting followed by an introduction of the staircase and the mobile step cards.



STEP 2.
Identify steps and place the cards on the staircase to visualise how they build on each other to achieve the vision.



STEP 3.
Start discussion about current values and norms related to each of the steps.



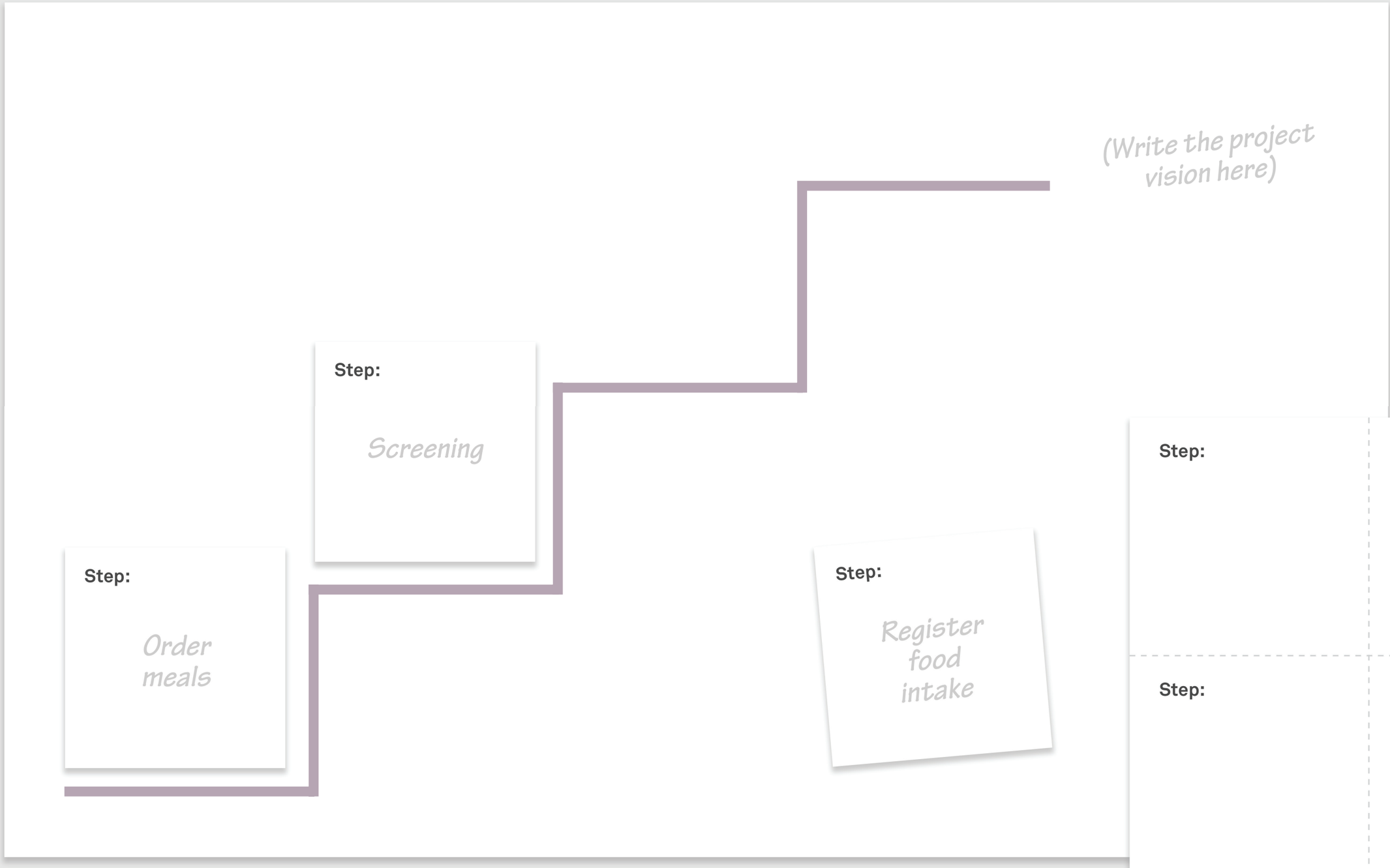
STEP 4 & 5.
Debate positive forces with MinMenu against negative forces that might arise in the department

Define if the positive forces outweigh the negative. If not, the group will reflect on solutions that can decrease the negative forces to finalise a plan of action in the activity of developing the workflow.

MAPPING PROCESS STEPS

The step cards should help to deconstruct the vision into tangible organisational changes. The blank step cards invite the participants to suggest steps.

The staircase visualises the steps necessary to achieve the project vision. The first step represents priority no. 1, the next no. 2 and so forth. It is important to remember that each step requires one week of training and the activities showcased in the mobilisation phase.



RESOURCE 3

DEFINING CHANGE

The change builder should create discussions about the current values and norms in the department and how the new step is going to change these. It helps start the debate on the positive forces that MinMenu brings into the department while also identifying possible negative forces for each step.

STEP: *1. Order meals*

Today we value..	*With the new change we value..*
That patients are assisted by a nurse to order meals	*That patients are empowered to make their own orders*
Today our norm is to..	*With the new change the norm is to..*
Decribe the meal to the patients	*Provide the patient with a tablet that shows the menu in pictures*

Example of forces:

Positive: MinMenu provides the patient with pictures and nutritional information of the meals

Negative: A concern about nurses having less conversation with patients

Here the positive might outweigh the negative. For example, access to the information about the menu provides the possibility of deeper talk about nutrition with the patients.

NOTE: *It might be helpful to reflect about these forces until the activity 'Develop the new workflow'.*

3. Understand local workflow

In order to develop a workflow where MinMenu is integrated as a natural activity for the nurses, we need to understand the context that Min-Menu is being implemented into. This includes identifying the nurses current workflow; processes, scheduled activities and tasks.

Recommendations:

The best way to this is by involving actors such as the key person, the super-user and the department manager. Ideally, this will be a session that is facilitated by a member of Movesca in a room that allows an active meeting.

Duration: 2 hours
Participants: 3-5 persons

RESOURCES:

Three resources have been developed as help to facilitate the session, Mapping local workflow; an execution guide (R.4), a timeline (R. 5) and mobile activity cards (R. 6).

RESOURCE 4

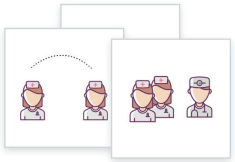
MAPPING THE LOCAL WORK FLOW

The purpose with the session is to create a common understanding of the nurses' local workflow by involving relevant actors.

Execution guide

Bring the timeline and mobile activity cards with nursing tasks, and an open interview guide.

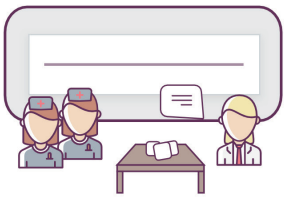
Timeline (R. 2)



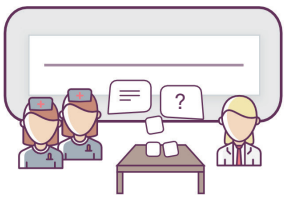
Activity cards (R. 3)

Interview guide (Movesca's own)

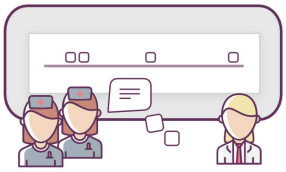
At the session



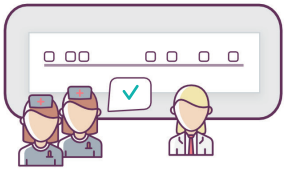
STEP 1.
Introduce the purpose of the meeting followed by an introduction of the timeline and the mobile activity cards.



STEP 2.
Use the mobile activity cards or the open interview guide to learn about the nurses daily activities.



STEP 3.
Invite the participants to engage with the elements and start mapping the local workflow.

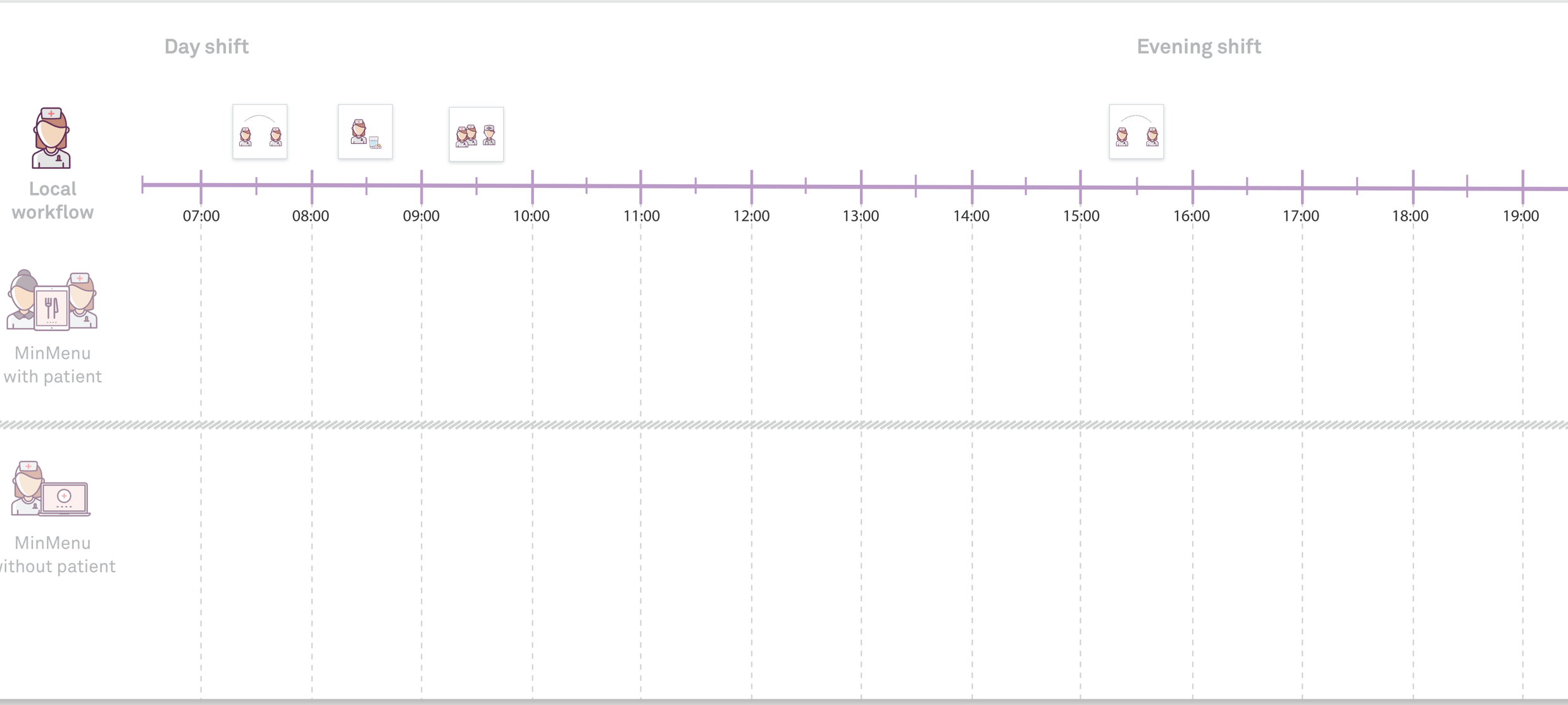


STEP 4.
Use the final workflow to define requirements for MinMenu. Save the timeline for the session; development of new workflow.

RESOURCE 5

MAPPING THE LOCAL WORK FLOW

The timeline should be used to break down complexity into a form that both you and the involved actors understand. It gives an overview of the daily working hours and when the nurses activities take place.



RESOURCE 6

MAPPING THE LOCAL WORKFLOW

Activity cards: Nursing tasks

The activity cards visualize nursing tasks. They should help to a faster understanding and better communication around the local tasks. Mapping the cards on the timeline gives an overview of the local activities.

Receive patients

Shift swap

Discharge patient

Ordering food

Print orders

Medicine distribution

Patient conversation

Nutritional screening

Morning meeting

Documentation

Time out

4. Involve the staff

Currently, the nurses are excluded from most activities around the implementation. We recognize the importance of involving the nurses in a series of conversations throughout the process, in order to inform all actors that are affected by the change with MinMenu.

Recommendations:

In order to ensure that the nurses are involved, we acknowledge a need for a plan that directs relevant information to the nurses at the right time. Informing about the purpose of implementing MinMenu will help the nurses to acknowledge the change. The conversations should also provide them with a vision to motivate the change and a place to discuss obstacles that might block the implementation.

RESOURCES:

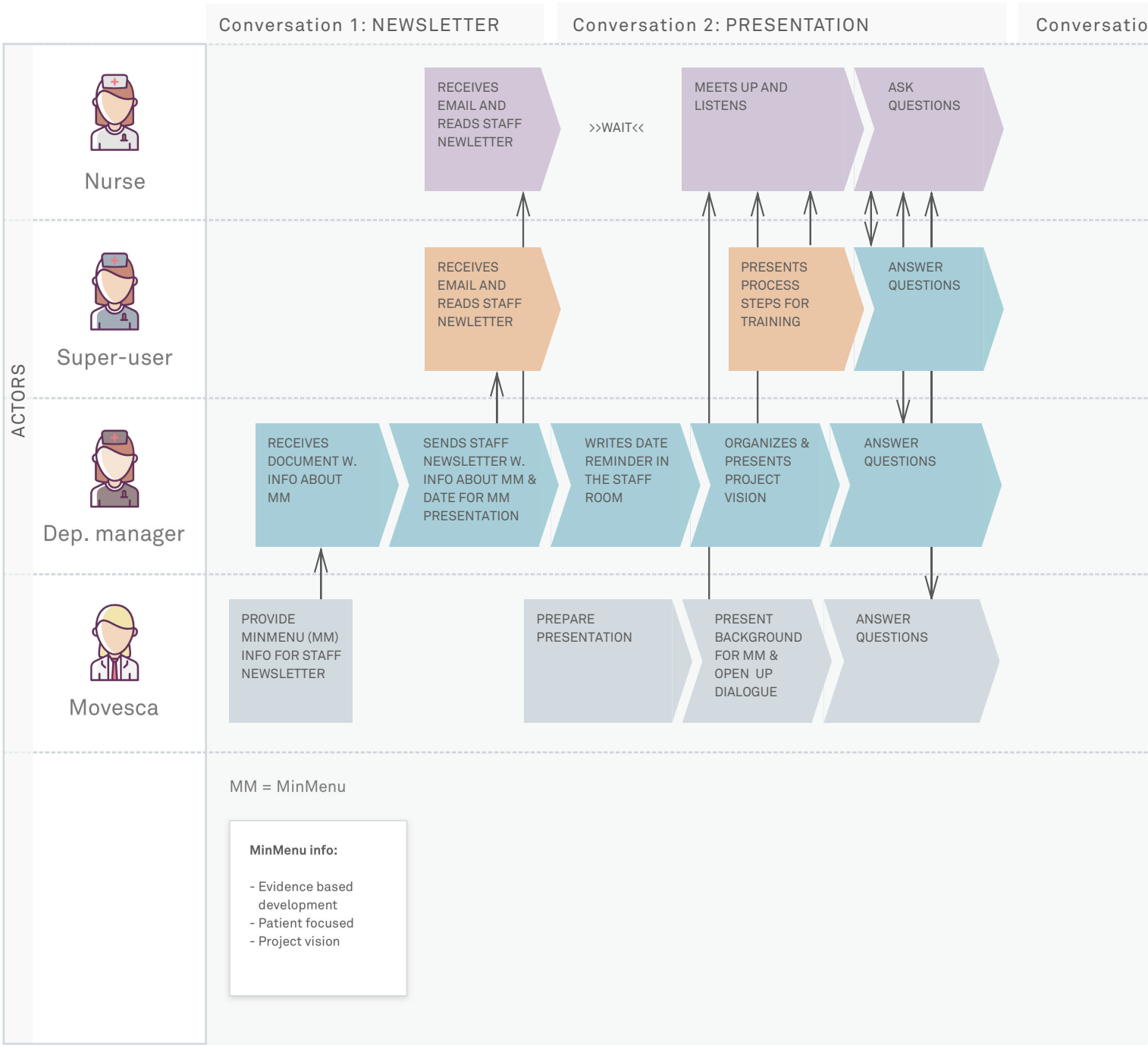
A blueprint is assisted to draft a recommended plan for the first steps of conversations. The blueprint presents the affected actors, and what is required of them in order for the conversations to happen. (R. 7)

RESOURCE 7

CONVERSATION BLUEPRINT

The blueprint details the process of two conversations; newsletter and presentation. Each row describes the user journey for a particular actor group, and the arrows detail interactions.

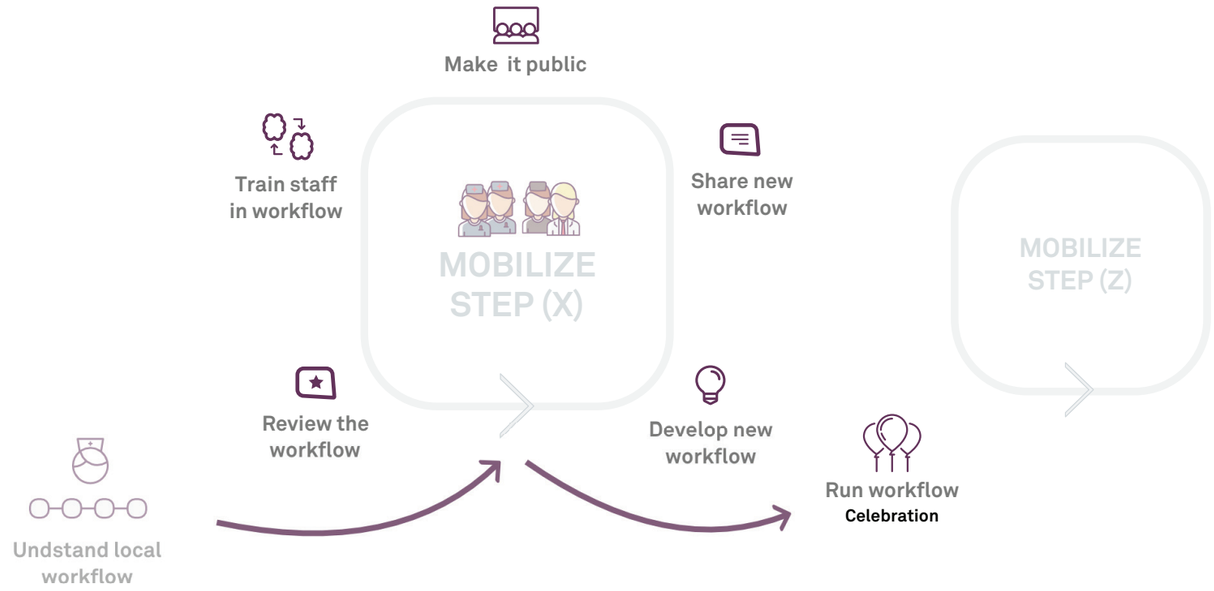
Plan conversations



SERVICE SOLUTION

5. Mobilize step

Each of the defined steps is processed in a loop of actions in order to mobilise the department. This mobilisation helps identify how MinMenu can be integrated into the local environment and help the nurses adapt to the new processes. The end-goal is to test if the department is ready to run the new workflow or not.



Recommendations:

DEVELOP NEW WORKFLOW

In the pursuit of implementing the steps, we need to debate possible ways to incorporate the new workflow of MinMenu into the local flow. A member of Movesca, the key persons, the super-users and the department manager should gather in a session that aims to create the new workflow. The session should also confirm which actions the group will take to overcome potential negative forces.

SHARE WORKFLOW

As a part of the involvement of nurses, the new workflow should be shared with the nurses at a meeting before the training. This provides the nurses a chance to get familiar with the value of the step, the new flow and the decision-making that justifies it. Discussing the new workflow might identify unforeseen obstacles that the key persons and super-users have to take into consideration.

MAKE IT PUBLIC

In preparation for the training, the key persons and super-users should make the workflow and date for the training public. This is done in order to include the nurses who could not participate in the meeting. Furthermore, it provides an area for feedback where nurses can elaborate on their experiences with the new workflow, provide ideas and ask anonymous questions about the new flow. This anonymity will free the nurses of the fear of being judged on their uncertainties about MinMenu. The key persons and the super-users should respond to the feedback in the answer area on a regular basis. This will keep the nurses updated and engaged to provide additional feedback.

TRAIN STAFF IN WORKFLOW

To provide the nurses with a safe environment to get familiar with the new workflow, only a few hospital beds are assigned as test subjects when training. The training of each step lasts a week to ensure that most of the nurses had the training. One by one, the super-users will walk the nurses through a mixture of technical and practical training for each step. For the technical part of the training, the super-users provide the nurses with the test version of MinMenu. This ensures that the nurses get a feeling of the platform without disrupting the data of the test subjects. The practical training is valuable for the nurses in order to experience the individual needs of the patients. During the practical training, the super-users step back and act as a supportive guide while observing how the nurses handle the process. The observation helps the super-user direct their efforts of support when MinMenu goes live. Movesca needs to support and observe the super-users in the first sessions of training. This support should teach the super-users how their training can guide the nurses to get independent of the super-users and self-reliant in the new workflow.

REVIEW THE WORKFLOW

The public space and the training should have provided new data and possible new feedback from the nurses about the workflow. These new inputs might demand new decision-making. The key persons, the super-users, the department manager and a member of Movesca should meet to discuss the feedback. Ideas from the nurses should be debated and applied if they are presumed to have immense importance to run the new workflow. In case the process has been successful and new ideas are easily applied, the department manager will take action and decide to run the workflow. However, if the department has faced many obstacles a new iteration of the mobilisation process is required.

RUN WORKFLOW

When the department manager decides to run the new workflow, it generates a celebration event with the nurses. In preparation for the event, the key persons, the super-users and the department manager define operational goals which help to maintain future motivation of the nurses. At the event, the key persons and super-users present the new workflow and the operational goals. To show support, the department manager shares the date for going live with the rest of the hospital beds. This event further helps to involve the nurses as they are informed and presented with the result of their feedback.

RECOURSES:

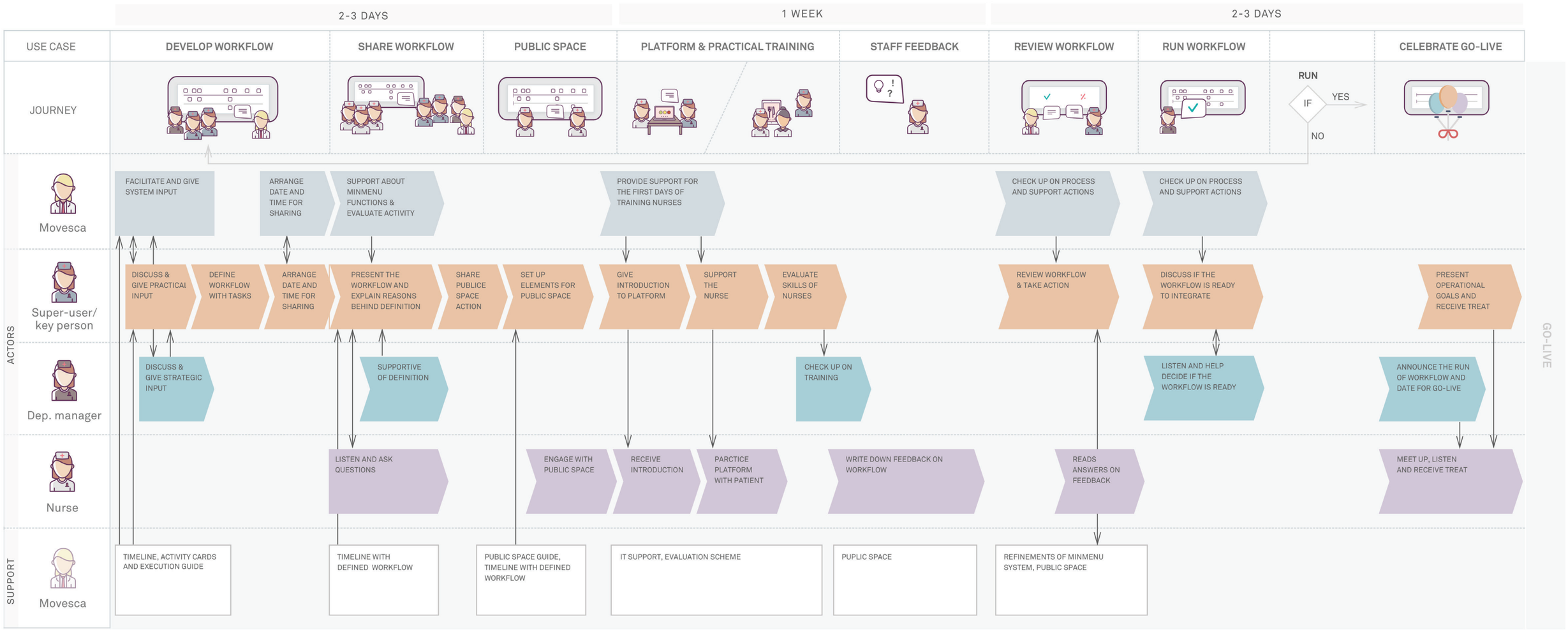
To showcase the actions of the mobilisation a blueprint will represent a recommended draft of the process of mobilising step 1 (R.8), an execution guide of how to develop the workflow (R.9), mobile activity cards of MinMenu (R.10), a guide to use the timeline (R.11) and a mockup of the public space (R.12).

RESOURCE 8

MOBILIZATION BLUEPRINT

The blueprint details the process of mobilizing the first step. Each row describes the user journey for a particular actor group, and the arrows detail interactions.

Mobilize step



RESOURCE 9

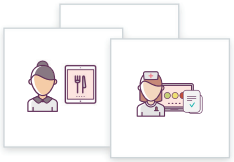
DEVELOPING THE NEW WORKFLOW

The purpose with the session is to co-create and define the workflow of the steps. It should allow different perspectives in order to develop the best solution and address practical concerns before integrating.

Execution guide

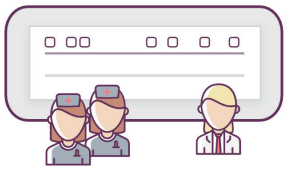
Use the timeline with local workflow and mobile activity cards with MinMenu tasks.

Timeline with local workflow (R. X)

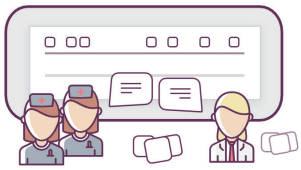


MinMenu activity cards (R. 3)

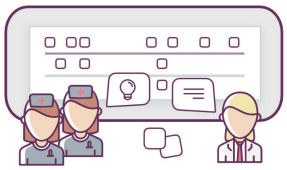
At the session



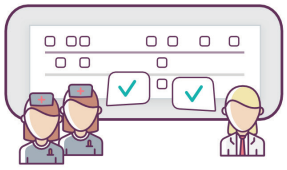
STEP 1.
If any new people should participate, start introducing the purpose of the meeting and the elements; timeline and activity cards.



STEP 2.
Start dicussion of those activity cards that is related to the current step. This can for example be all tasks needed for patients to ‘order food’.



STEP 4.
Identify opportunities for ways of integrating MinMenu into the local workflow. Place the activity cards on the timeline and experiment until you have the preferred solution.



STEP 4.
Save the completed result so that it can be shared with the remaining nurse for the next meeting.

RESOURCE 10

MAPPING THE NEW WORKFLOW

Activity cards: MinMenu tasks

The activity cards visualize MinMenu taks. They should help to a faster understanding and better communication around the new tasks. The mobility makes it easy to try different solutions before deciding on the final.

Create patient profile

Log patient on tablet

Teach patient

Order food

Assist patient with ordering

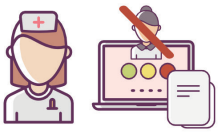
Check up on orders

Print orders

Charge tablets

Create patient dietary goals

Check up on dietary intake



Delete patient from webpage

Delete patient from Tablet

RESOURCE 11

MAPPING THE NEW WORK FLOW

The timeline with the local activities should help to plan and experiment with the new workflow. Use the activity cards to find possible ways of incorporating MinMenu tasks in the local workflow. Start mapping the tasks relevant for the first step.

Procedure manuals is used for MinMenu tasks that don't take place at a specific time but instead is related to a specific nursing task.

Next steps is used to place the activity cards that are related to the next steps to come.

PROCEDURE MANUALS

Receive patient

NEXT STEPS

MAPPING THE NEW WORK FLOW

Public space should provide an area for feedback where nurses can elaborate on their experiences with the new workflow, give ideas and ask anonymous questions about the new flow.

MinMenu with patient

MinMenu without patient

PROCEDURE MANUALS

Receive patient

NEXT STEPS

FEEDBACK

ANSWERS

6. Go-live

In order to go live, Movesca installs the tablets at all the beds of the hospital. The tested work-flow is now a reality at the department and a permanent part of the nurses work with the patients. The next step is to organise for a new mobilisation phase.

Recommendations:

REVIEW OF THE OPERATIONAL GOALS

The nurses are used to being measured regularly which gives them the motivation to improve their work. The key persons, the super-users, and the department manager should inform the nurses of the progression according to the currently implemented step.

REVIEW OF THE PROCESS

For this thesis, we did not have the resources to test the entire mobilisation process. It is important that Movesca reviews the process and makes adjustments if needed. This means, that a new iteration of a step is not necessarily the exactly same as the first one. We recognise that experimentation with the process is needed for MinMenu to adapt to the local environment of the department.

FINAL WORDS

To conclude this report, we would like to stress the enjoyment we often experienced while working on this thesis. Working to improve the process of implementing an innovative platform, as MinMenu was a powerful experience, which we learned a lot from. We were highly motivated by your feedback and the thought of this work being important.

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Service systems design, Aalborg university Copenhagen, 2017