Finest – Revolutionizing student housing

Transformation Opportunity

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This document presents a transformation opportunity proposal developed in the ELEC-E9900 - Networked partnering and product innovation – NEPPI course at the Aalto University.

Version: 10 December 2020

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1. The Opportunity

1.1. Problem Description

"It is hard to argue that housing is not a fundamental human need. Decent, affordable housing should be a basic right for everybody in this country. The reason is simple: without stable shelter, everything else falls apart." - Matthew Desmond

The above quote drove the meaning of FINEST from start to finish and represents our core value across the whole project, which is housing for everyone!

When imagining the world in 2100 in the first week workshop, we juggled with a few ideas. However, we were all surprised by how many times the concept of housing was mentioned in different topics each member had come up with. We started thinking about how housing might be in 2100 and decided to take a problem-based approach towards the idea. Issues such as overpopulation, prices rising after renovations, people moving more and more into bigger cities and leaving the countryside behind were identified to be on the rise.

The next step was to see how these issues could be solved by the year 2100. There were three possible solutions we pondered.

1) People can live anywhere in the world, wherever they choose to live; meaning that borders would disappear giving people the freedom to spread across the globe and equalize the population hopefully around countries in the world so that none would be overcrowded.

2) Governments in the future would allocate people depending on their value and contribution to society; this would lead to everyone having a 'place to live'. However, it would be entirely based on how much they can offer (i.e., the term

'offer' here could be anything ranging from their position at a job, how much they studied or even birthing new kids for the future of a country).

3) Each person would be allowed to have a house wherever they want; however, these houses would not be based on today's concept of housing, instead can be imagined as containers with essential living requirements. These containers would allow the homes to be moved around easily and placed where the person would want them to be, hence, even be tied back to the first concept of opening up the world to everyone to take their house anywhere.

When assessing all the concepts at the end of the ideation session, we noticed a hidden issue which we hadn't precisely addressed or thought of when addressing housing. This issue was homelessness! In each vision for 2100, homelessness was being addressed. However, we had never written it down as an explicit issue. From here on, we grew very passionate about the issue of homelessness and trying to solve it. Once we started our research process into homelessness in Finland, two main issues were discovered.

1) There are way too many organizations in Finland which any homeless person has to deal with. Having too many organizations meant more obstacles for the team in its research as:

a)   Information gathering from all the different organizations to be able to identify the pain points of homelessness in Finland was difficult.

b)   Each organization has its own set of rules and 'types' of homeless people which they deal with, which means that including civic service and conducting interviews in our research to understand the feelings and thoughts of the people at stake, was a too complicated task, considering the time at hand.

2) Homeless people were prioritized differently by the government, depending on the type of homelessness they were facing [Section 2]. The biggest group of homeless people in Finland was ones living with friends or family. Naturally, this group also included students, as they typically stay with friends or find a hotel when they move from afar and have not been granted student housing yet.

With these two issues in mind, we decided to choose a focus group of homeless people to look at. Having a narrower focus allowed us to have fewer organizations to look at, while at the same time find solutions for a group close to our own heart, students! From this stage, we formed the question of 'How might we ensure that students moving from afar have an affordable and reliable living solution for their temporary need?' to lead the project forward in its concept design, business plan and solution generation.

Homelessness is in a prominent better place nowadays in Finland as to where it was 10-20 years ago. However, it is still an issue and should not be overlooked! Having a place to live is a human right. Therefore, we were passionate about doing our part for this issue and hopefully inching it forward towards a better future.

When discussing the problems in student housing, we had already several pain points to highlight from our previous experiences. It became evident that the whole process from the application to the departure phase had some flaws in it. In the interview it became clear that the moving process has been made simple in theory but in practice the moving process did not work as it should have. We mapped the most significant problems for a student arriving from afar, which where the following:

1) Navigating to the housing unit without internet connection
2) Availability of keys only during office hours
3) Lack of furniture

4) Dispersion of services essential for an arriving student

5) Negligence in cleaning before check-out

Too often international students found it extremely difficult and frustrating to find suitable student housing before their arrival if they were not able to receive an offer from a student housing organization. Renting an apartment from the private market was expensive and difficult as international students were not familiar with the city. It was also hard for them to figure out a suitable location for their rental apartments as there was no one who could help them to understand the distances and public transport options. When they arrived at the airport it was hard for them to find their way around the new country.

Additionally, students were required to collect their apartment keys from a distant office during specific office hours and because of these tackles they were often required to first stay in a hotel before getting into their student apartment. Problems also occurred with furnishing as most student apartments are rented out unfurnished. Without a suitable car, students found it hard to find the needed furniture for their new apartments. Therefore, it became clear that there was reshaping to be done especially in technological and service aspects of student accommodation. This would require a careful assessment of current standards and changes in the fundamentals of housing units.

1.2. Requirements for the Solution

To tackle the significant issues, we started discussing possible changes. It was underlined that the use of varying smart solutions in houses has become increasingly common over the last years. Residents of smart buildings are these days able to

control functions within the four walls with their handheld devices, thanks to advances on the Internet of Things technology.

It was noticed that there were multiple opportunities in IoT that could solve problems that we had underlined. An all-in-one application to assist a student throughout the process of applying, arriving, staying, departing and reporting could ideally provide notable progress. However, the housing standards would need to support this change, as the current units provided by the likes of Aalto Student Union and HOAS would require a complete overhaul.

Because of these points, we came up with Finest, a living solution to revolutionize student housing. Finest is not only a nice apartment building that provides a soft landing for students coming from afar. It is a combination of a housing unit that has useful smart functions, which can be controlled with an application installed in the smartphone of the student, and a selection of most essential services that provide support for a student in a completely new environment.

At its best, Finest could provide reliability, convenience and social benefits for the student. The housing organization would enjoy lowered costs and new potential openings in the theme of student living.

1.3. Our 10-year vision

We expect the number of students coming from afar to have increased massively in ten years. For instance, the rector of University of Helsinki, Jari Niemelä, has addressed his concern towards the changing demographics of Finland (Niemelä, 2020). This means that the country has to be prepared to welcome a substantially

larger number of foreigners to tackle the problems in the aging workforce. Feasible living conditions are crucial for the wellbeing of students, especially in a new environment. Therefore, there have to be full-fledged solutions that aid them to a good start in their new circles.

In ten years, Finest has been adopted as a solution by a student housing organization, welcomed warmly by students, and functions as a trendsetter, even on a global scale. The initial hiccups have been tackled concerning technology and the revenue model, and new units are being planned. The development in building materials and processes provide further leeway for resource allocation and savings.

Figure 1: A visual representation of Finest as a full-fledged student housing solution.

2. Background Research

2.1. Initial Focus Group

Homelessness is a complex problem that has different levels of issues intertwined together. Some still consider homelessness as a matter of choice or personal failure and inadequacies (The Homeless Hub, 2009). However, such a view would be easily changed when the true experience is felt as a homeless person. With such empathy in mind, we started our literature and online research in the theme of homelessness and housing problems.

At first, we started from where we are, in Finland. Soon, we realized the situation here is a bit different than the other countries in the European Union. That is, only in Finland, the homeless population is actually falling (FEANTSA, 2018). Many put the credit to the Housing First principle, which Finland adopted actively since 2008 as a part of the first National Programme to Reduce Long-Term Homelessness (PAAVO I). In short, The Housing First principle doesn't consider dwelling as a reward that a homeless person gets after putting their life together but dwelling as a foundation that a homeless person can build their life upon (Y-Foundation, 2020). Housing First principle originated in the US and later on adopted to Europe, but due to its non-traditional approach that provides housing first and prior to addressing the underlying issues homeless people have, many countries didn't adopt it full-heartedly.
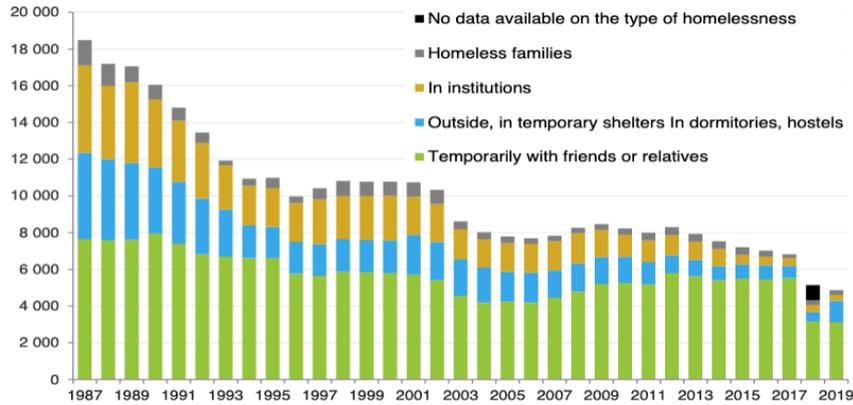
Figure 2: Homelessness in Finland 1987-2019

(The Housing Finance and Development Centre of Finland, 2020)

With the effort Finns put into the housing first principle, the number of homeless living on the street or in temporary accommodation reduced consistently. At present, the female homeless population is not decreasing and that's one area of focus in Finland. The other remaining issue is to reduce long-term homeless people.
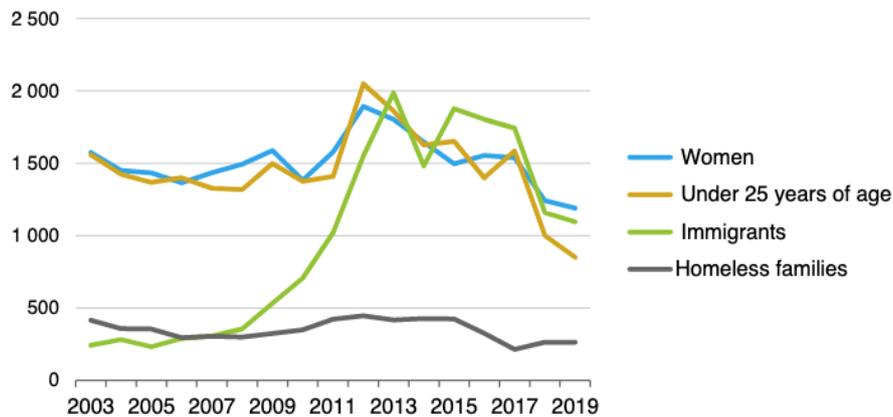

Figure 3: Homelessness by group in Finland in 2003-2019

(The Housing Finance and Development Centre of Finland, 2020).

2.2. Narrowing Down the Focus Group

Figure 4: Homeless student. (LA Johnson/NPR, n.d.)

Due to its sensitivity and scale of the issue, we took a different approach of thinking about homelessness from a fresh angle by thinking homelessness, as is literally obvious, that referring to the people who don't have permanent homes or a place to stay. We students coming from afar - regardless of the national origin - are essentially homeless at first. While discussing each other's experience in the settling period in Finland, we found out there is a commonality of difficulties people face when securing a permanent place in Finland. It was common to hear someone that stayed with friends or used Airbnb or hotel/hostel as they couldn't find their permanent accommodation on time. Or they secured housing but not up to their requirements. In other words, we found our niche as a transition from being homeless to being settled for students coming from afar.

2.3. Participatory Design & User Interviews

As we defined our main stakeholder group as students coming from afar, we started validating our initial assumptions about the issue through a series of user interviews. Our aim was to involve all major stakeholders including student housing organizations, however, due to the limited project time we had to focus on users.

Interviews were done throughout the processes while building the concept of our solution. Initial interviews were focused on knowing more about the general steps the student took to secure their accommodation and the pain points they experienced while doing so. As the solution matured, interviews served the additional role of validating our proposal as well.
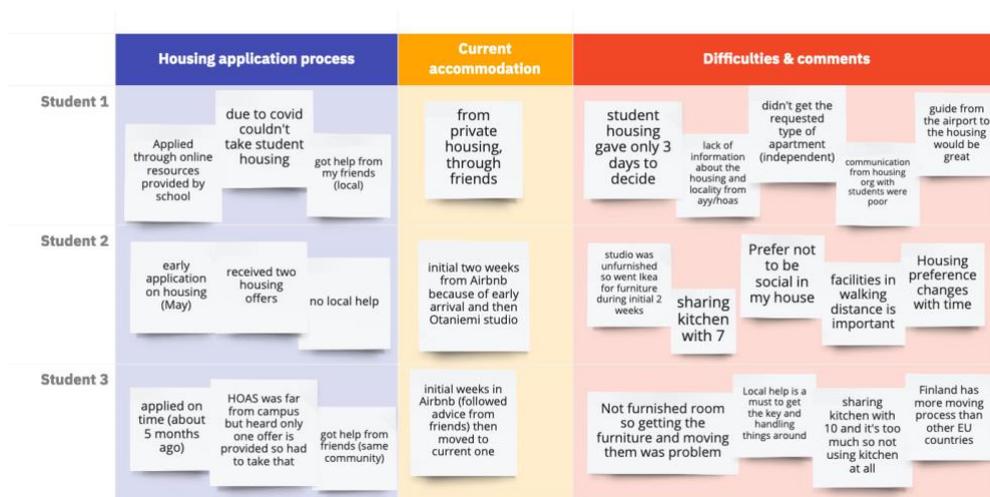

Figure 5: Housing application process and difficulties of the users.

As shown in figure 5, all interviewees followed the instruction Aalto provided during the admission and applied student accommodation. However, due to the low number of housing available with their preference (i.e., independent bathroom or studio apartment), sacrifices on low priority features (i.e., giving up the separate kitchen) were made. Even though the school provided all basic information about getting student accommodation, still many students especially coming from different continents faced many issues from getting the details on the locality where their potential apartment is located to furnishing their new apartment.

2.4. The Idea

After we had framed the problem and recognized the key stakeholder group, we started to format our solution for this trivial problem. We decided to format a business model for Finest house which would be a student house primarily targeted for students moving to Helsinki from afar. However, we did not want to limit the housing solution only to international students as especially, during Covid-19 the demand would not have been probably large enough. Therefore, we organized our target groups in priority order so that available apartments could be also offered to other than international students:

1. International students moving to Finland AND exchange students
2. Finnish students from outside of the capital region
3. People in need for emergency housing
4. Everyone else

Additionally, rent pricing could also be adjusted based on this order and therefore leftover apartments could be rented out to anyone interested with a slightly higher price to cover costs.

Finest would solve the problems that we had addressed previously in this report. The main idea was that a student moving from afar would first apply for an apartment from a student housing organization. The organization would then contact Finest asking for available apartments. A student would then receive an offer from Finest, which could be accepted with Finest application. The application would also then be used to take care of all the issues regarding the housing issue. This way all the information would be easily available in one application.
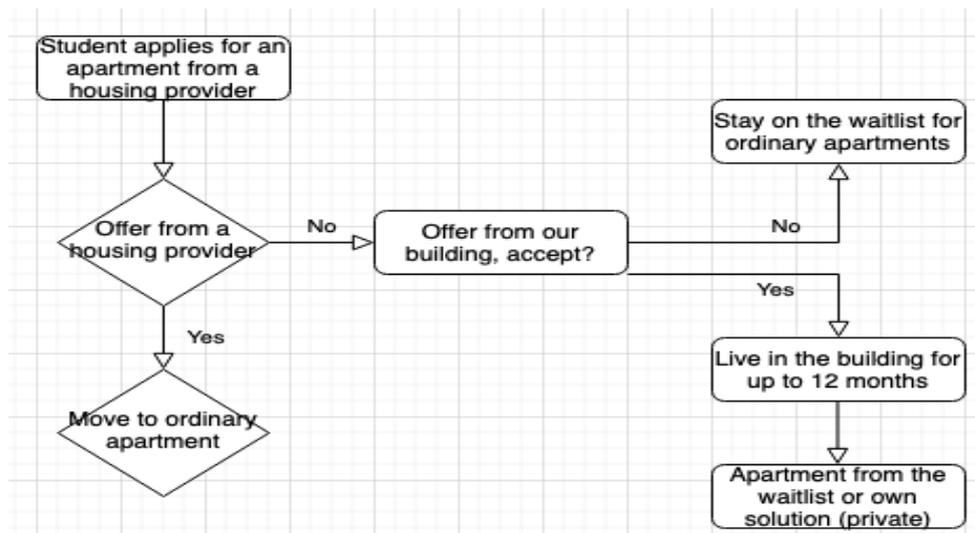
Figure 6: The process of a student finding his/her way to Finest services.

Overall, Finest was created to offer short-term housing to work as a soft landing spot for international students. Therefore, students would be able to stay there up to 12 months. During their stay, international students would have enough time to settle in their new home country and find a more permanent living solution. Common living aspects would also encourage students to get to know each other more which would also help with the integration. All in all, Finest house would locate close to Helsinki city center and would include the following components:

- Single bedroom apartments (w. Baths and fridge)
    - Furnished but own sheets/towels/tableware needed
- Shared kitchens
- Common space upstairs (inc. sauna)
- Lobby, laundry rooms and Posti box lockers downstairs
- Bottom floor space saved for service providers such as Kela, teleoperator services, grocery store, mini-ikea, pub etc.

Arriving, living and depraturing the Finest house would be made easy and simple with the technology solution described in section 3.

3. Technology for the Transformation

3.1. System Overview

Figure 7: Overview of the building blocks of Finest.

The figure 7 displays the building blocks of our service. The Finest service solution consists of networked partners, physical properties, services and the app, which acts as a primary communication channel between the user and Finest service. The app receives information from the available apartments through a database that is collected to a cloud. The Finest service works in collaboration with other student housing organizations and receives information about the candidate's apartment situation, such as how long they have to wait for an apartment offer.
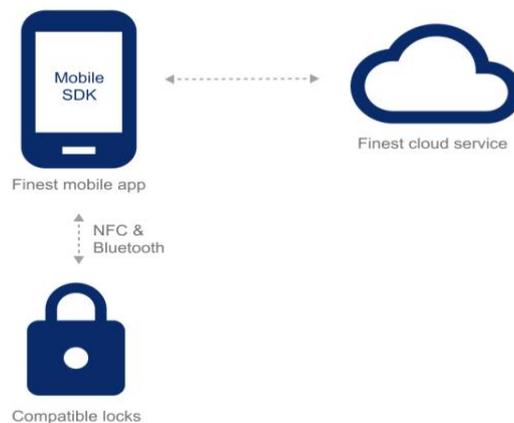

Figure 8: The architecture of the smart keycard.

The smart keycard acts as an electronic access and authorization system for the apartment lock. It allows the user to have seamless experience entering and leaving their apartment. The smart key has a backup system, where you can assign your credit or debit card to have the same authority to unlock and lock the doors. The smart key is activated and managed through the settings on the main screen (Figure 10). The smart keycard uses wireless technologies and home automation systems. The app communicates with the lock system that is attached to the door. When the app is placed near the door lock, it will connect the phone via Bluetooth or NFC and unlock or lock the door depending on which side the user is located. To create the app software, we would use existing software development kits. For the hardware system we outsource the manufacturing to third party services and our technology partners. Same tactic would be used to build physical buildings.

3.2. Envisioned User Interface

Figure 9: Overview of the whole interface flow.

The mobile app is the initial touchpoint with our service. The Finest user interacts with our service mostly through the mobile app (Figure 9). The goal is for the user to be able to handle everything through the app. Our goal was to construct the user interface in a way that is easy to use and puts the most important actions first. By

setting design principles we were able to build an interface following the real user needs.

Design principles:

- Having easy access to the house through a smart keycard
- Supports common living
- All the services under the same building and app

Thus, we have created an on-boarding process where the user can accept or decline an apartment offer (Figure 10). We added smooth verification using a unique code that is sent to each user by email or phone. Users can also sign the contract easily with an electronic signature. The envisioned keycard is placed visible in the home page, where the returning user lands every time they open the app (Figure 11). Getting an offer and using the keycard are the main uses of our app. Secondary uses help to accomplish our two other design principles: Support for common living and having all the services under the same building and app. Users are able to reserve social spaces and find relevant information inside the app. To support these features, we added a chat, where users can ask help from an official personnel or chat with friends inside the house (Figure 13).
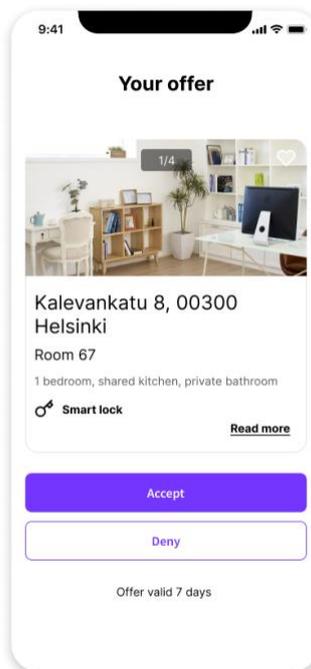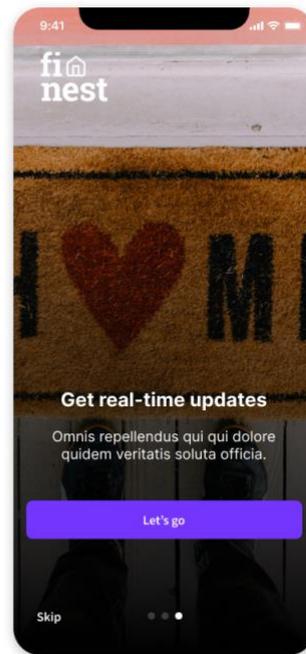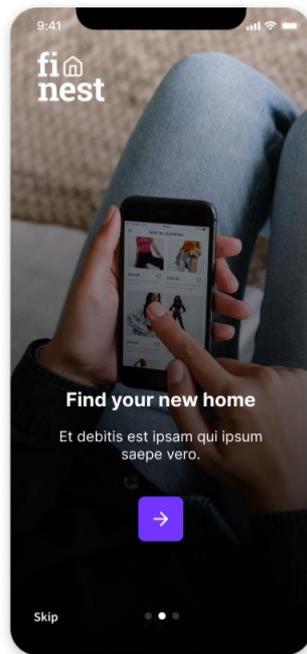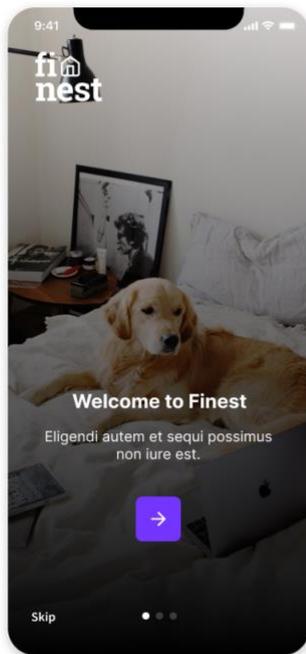
The main uses of the app:

- Using the smart keycard
- Accepting or decline an apartment offer

Secondary uses of the app:

- Booking social, laundry and sauna rooms
- Managing payments
- Finding information and help with practicalities

Specific features

- Smart keycard controls
- Smart light controls
- Apartment offer
- Payment methods
- Apartment contract
- News about the apartment
- List of available spaces
- Links to helpful services in Finland
- A guide to buy HSL ticket
- A guide to set up a finnish phone number
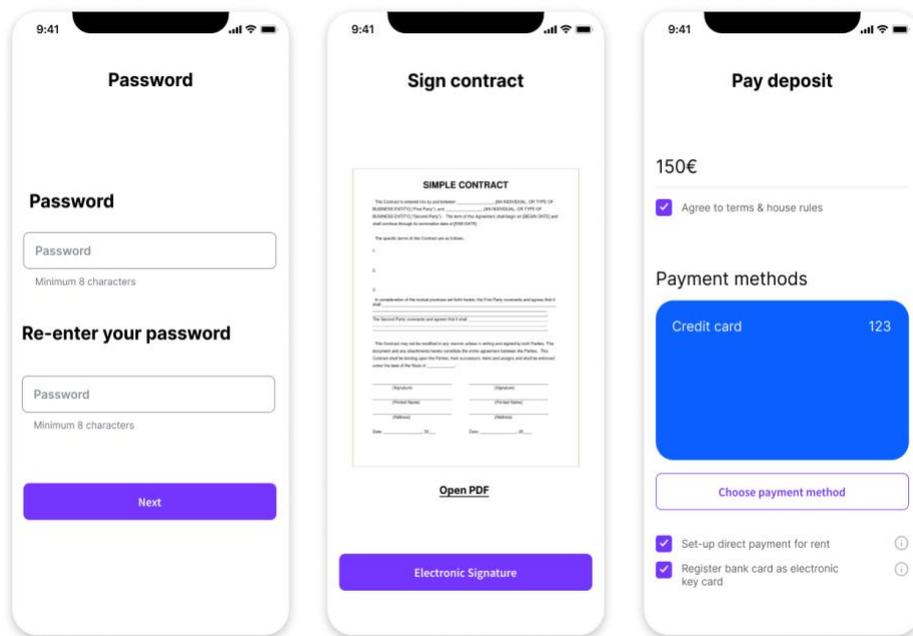- Official chat
- Friends chat
- Contact information

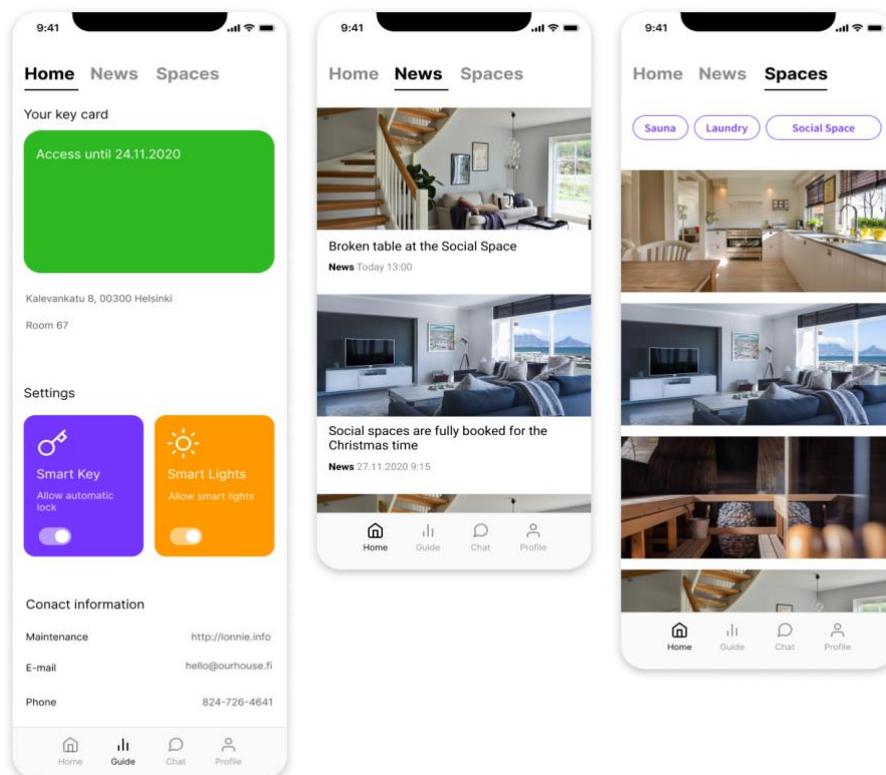Figure 10: Onboarding screens in the order of appearance.
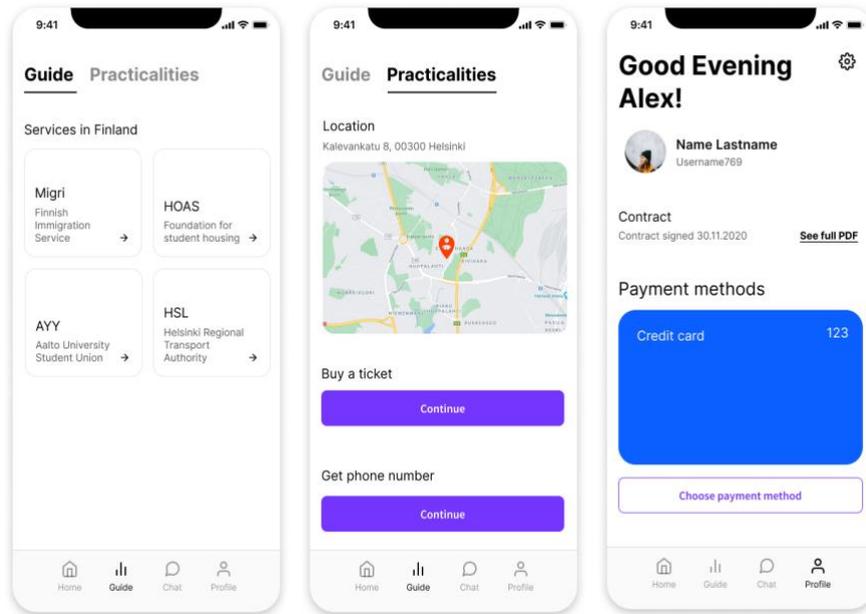

Figure 11: Home screens.

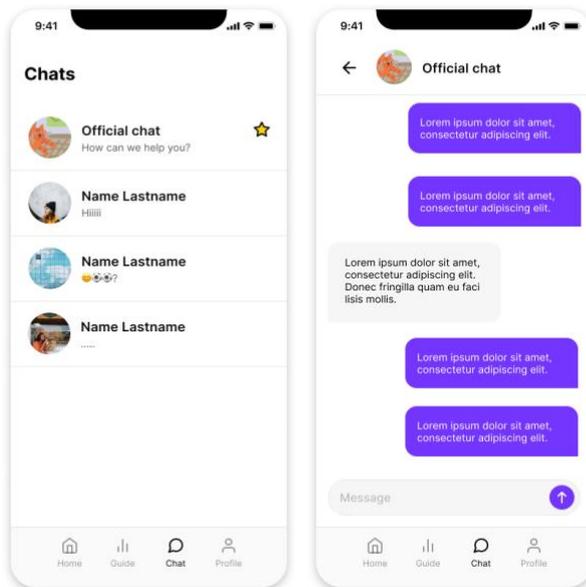Figure 12: Guides tab and profile screen.

Figure 13: Chat screens.

4. The Ecology

4.1. Power Relations and Possible Arrangements

In our project, we divided our stakeholders to two different groups: primary and secondary stakeholders. Primary stakeholders are student housing organizations, students and technology providers as these stakeholders would be needed to contact first when our project implementation would start. Additionally, primary stakeholders could provide most insightful information when designing the project plan. Secondary stakeholders are the government, universities and the environment. These stakeholders are connected to our student housing plan, but they are not as connected to the project than primary stakeholders and are therefore able to support the project from a distance.
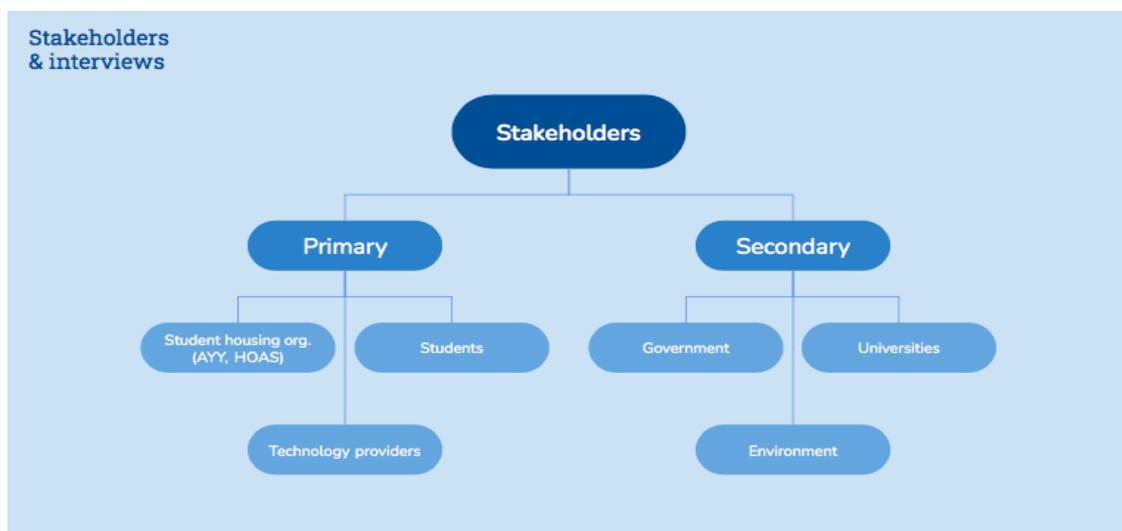

Figure 14: Stakeholder map.

To understand better the needs of international students, we interviewed three Aalto students that had recently moved to Helsinki. Finest house is primarily designed for

students moving to Helsinki outside Finland and therefore we interviewed students that had not visited Finland before their arrival. As Finest is designed for students, it was extremely important to interview them to get a better idea of what kinds of solutions are needed to implement in the Finest building.

4.2. Money, Value, and Viability

No good idea survives if there is no sustainable profit formula designed to cover the finances. Even though Finest would most likely be supported by the government and universities, it is important to build a sustainable profit model for the housing project. When Finest business model was designed, we wanted to put the focus on incoming and outgoing cash flows. The goal was to add as many incoming cash flow streams as possible and at the same time minimize all costs. Building a new house in the Helsinki city center would of course cost a lot of money, but we wanted to focus on creating a sustainable profit formula for Finest operations after the construction.

We started from cutting unnecessary costs. We decided that reception staff would not be needed when there would be smart locks implemented throughout the Finest house. Students could unlock the doors with their phone only and therefore reception staff would be unnecessary. Smart locks would also add value for students since they would not be needed to visit any office in order to get a key for their apartment. Necessary staff would be a cleaning service for common spaces as well as a housing manager to help with repairs and other general problems related with the Finest house. Students would need to clean their apartments themselves to save costs. Additionally, there is a chat option in the app and therefore someone should be on duty if any problems occurred. Generally, the chat option would be AI chatbot assisted.

The main sources of incoming cash flows would be rent from students and commercial spaces. Based on the interviews, the rent for students should be probably EUR 500-600. This would be something that students are still able to cover but also less than private market housing would cost. As the building would be located in the city center and close to the subway line, it is possible to justify the higher rent price with the central location. The location aspect is important as it is easier for new students to find their way around in the city center, there are more services at the close proximity and commercial spaces are more attempting for service providers. What students are usually looking for their student housing is the price and the location. Additionally, students are more into living in a studio than in a shared apartment (Miikkulainen, 2018). In our interview we also found that international students are looking for an apartment that has a central location with good access to university. For these reasons, we decided to locate the Finest house close to the city center. Additionally, if there would not be enough demand from students, then leftover apartments could be rented out in the private market with slightly higher prices. Other sources for incoming cash flows would be to connect service providers to Finest app. For example, there could be HSL services connected with the application and then Finest would receive a small amount of money when their user uses HSL services through the application.
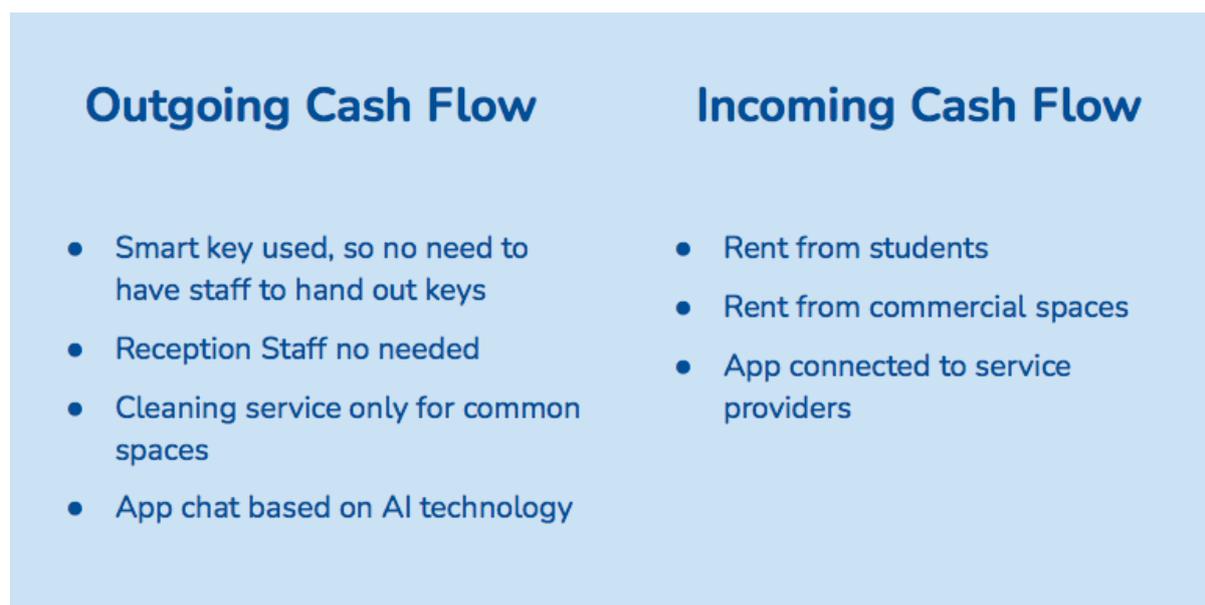
Figure 15: Cash flow chart for Finest.

Commercial spaces located at the bottom floor of Finest house would also bring additional value for the inhabitants. In the interviews, students told how they found it very difficult to furnish their apartments as they did not have a car. All the furniture stores are located outside the city center, which makes it very difficult to furnish apartments without a car. Therefore, it would be extremely valuable for students to have a mini-Ikea or Clas Ohlson downstairs to get the necessary stuff for their apartment. Additionally, Finest apartments would be rented out ready furnished, but students would need to buy their own kitchen ware and sheets/towels. Students also pointed out that they had a lot of administrative things to take care of when they arrived in Finland. Therefore, it would help a lot if these administrations would be located in the same building or at close proximity.

4.3. Security, Ethics, and Sustainability

The main concern with Finest is how to ensure that no one will take advantage of the housing. It happens that students are subletting their student apartments in the private market. Student housing could be listed for example in Airbnb without

permission. It is quite easy to make additional money with subletting student apartments since often rent is much less than what it would be in the private market. To prevent this, it would need some additional staff to monitor that apartments are not being misused. However, in the future there is hopefully an AI technology taking care of this monitoring as it could probably quite easily be monitored by a robot based on the apartment location.

Something that must also be taken into account is that we are currently living in the middle of a pandemic which has reduced the number of international students arriving to Finland. It is also possible that there are new pandemics coming up in the future. Then there would not be enough demand for the apartments and probably many rooms would run empty. This risk can be reduced with possibility for Finest to rent out the leftover apartments in the private market. However, as COVID-19 has shown, it can be that there would not be enough demand even in the private market during a pandemic.

Despite the profit formula we created for the Finest house, we cannot guarantee that incoming cash flow will cover for all the costs. When it comes to housing, there are always unexpected costs involved. We have tried to control what we can with requiring every inhabitant to pay for a deposit before arrival. This is meant to be used to cover repair and cleaning costs if there would have been something to be fixed after a student had left the apartment. All in all, cash flows would generate some insecurity as there is a lot of variance involved with the incoming and outgoing cash flows. Additionally, it can be quite difficult to keep the apartments in full use all the time since the whole building is meant for short-term renting and therefore inhabitant turnover is high.

5. Publicity of this Document

We allow all our work to be used by future students, researchers, engineers, and others who are interested in the subject and would want to take the project forward. However, it is not to be used for commercial purposes.

6. References

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