

Aalto University
School of Science
Master's Programme in ICT Innovation

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TalentPal: A Platform for Newcomers and Locals to Integrate

Master's Thesis
Espoo, October 9, 2017

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Title:	TalentPal: A Platform for Newcomers and Locals to Integrate	
Date:	October 9, 2017	Pages: viii + 99
Major:	Digital Media Technology	Code: T-111
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<p>Newcomers arriving to a land face barriers to integrate. This thesis aims to tackle the difficulties with integration of newcomers with locals through the use of a technological solution. Interviews were conducted to identify the solution's user groups and their main problems. Then, in two iterations, prototypes of a hypothesized solution were made and tested with the users through cognitive walkthrough usability evaluation method to determine the key useful features. The user groups are newcomers seeking opportunities to build on their skills, while increasing their social capital, and local organizations looking for volunteers with specific skill-sets. The solution is an online platform that enables the newcomers to showcase their talents through 10-second video profiles which are accessible by the organizations. The key features are video, skill tags, and ratings. Further work includes developing a real platform and finding concrete metrics to evaluate successful integration.</p>		
Keywords:	Integration, newcomers, asylum seekers, local organizations, user research, user interface evaluation, usability testing, design science, technological artifact.	
Language:	English	

Acknowledgements

Without the following persons who gave their precious **time**, this thesis would not have been possible. “Kiitos paljon” to all of you.

Matteo Bonifacio, this is in memory of you, who were the main support since the conception of the idea during the EIT Digital Summer School. You inspired me to let the idea fly limitlessly. **Milena Stoycheva**, you were the mentor who brought the idea back to earth and made it tangible. I cannot thank you enough.

Petri Vuorimaa, my supervisor, your trust and flexibility were channels for innovation; they constantly gave me the freedom and comfort to try different things. I am grateful for that. **Olli-Pekka Mutanen**, the mentor and friend who led the pre-incubator and volunteered to coach even after the incubation stopped, thank you for your continuous care to let the ideas of students see the light. **Hani Tarabichi**, you coached me and gave me spot-on feedback to move ideas to action. I appreciate your time and your valuable insights. **Marko Nieminen**, who was dedicated in discussing how to structure the research when I was bewildered. Thank you for giving me the grounds on which I started my writing journey. **Mika Nieminen**, thank you for helping me with realizing the formal ways to test and evaluate the prototypes with users, which is a main pillar of this thesis.

Heikki Ruhanen and **Helena Meissner**. Waiting long to find teammates was tough and discouraging. Yet, thinking retrospectively, finding you was worth the wait. You taught and inspired me, and I hope to continue a fruitful journey of learning with you. Remember the times I said “Sorry guys, I cannot meet today”? I was writing this :)

Daniel Bruzual mi hermano, and other friends at Aalto and EIT Digital, who were on the forefront seeing all the stress of this period, big thanks for motivating me, carrying me through, and wanting the best for me.

Thanks to the **newcomers** who helped during the different phases of the project. I salute your patience and perseverance. Thanks to **Yesmith Sanchez**, **Kati Mayfield**, and **Anne Badan** from The Shortcut, and **Rosa Rantanen** from the Finnish Red Cross.

Basilio, **Mom**, and **Dad**, the all-time heroes and mentors in life, who taught me love as a prime value... before this gets too emotional: thank you, “shukran”.

Peace and love,
Sharbel Dahlan
Espoo, October 9, 2017

Abbreviations, Acronyms, and Definitions

Pal	The name of the platform. It can be: <ol style="list-style-type: none">1. a synonym for “Friend”¹2. an acronym for Peace and love, which is the tagline of the platform
Platform	A digital service or application, whether web or mobile. Throughout the thesis, this term will be used synonymously with “software solution” or “artifact”.
Asylum seeker	A person who has been forced to leave his or her country to another due to harsh circumstances that threatens safety. According to UNHCR (United Nations High Commissioner for Refugees), an asylum seeker is “a person whose request for sanctuary has yet to be processed.” ²
Refugee	An asylum seeker who has been granted the right of residence in another country. According to UNHCR, “[t]hey are defined and protected in international law, and must not be expelled or returned to situations where their life and freedom are at risk.” ^{3 4}
Newcomer	A person who is new to a country. In the context of this thesis, I refer to both refugees and asylum seekers as “newcomers” to a new land.
Local	This term refers to the local person, or citizens of a land.

¹<http://dictionary.cambridge.org/dictionary/english/pal>

²<http://www.unhcr.org/asylum-seekers.html>

³<http://www.unhcr.org/refugees.html>

⁴<http://dictionary.cambridge.org/dictionary/english/refugee>

Local Organization	An organization that is based in the country the newcomer approaches. In the context of this thesis, it is an organization in Finland.
Reception Center	A center that is managed by a local organization that receives asylum seekers who stay and wait for their residence permits.
User	The targeted person to use the platform, whether a newcomer or a local, or a person from a local organization.
Customer	The client that a company serves. In this thesis, the newcomers and local organizations are referred to as “customers” or “users”.

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Chapter 1

Introduction

One of humans' core values is to interact with each other in a proper living environment and be productive members of society. In different areas of the world, this interaction involves people of different cultural backgrounds. The more these areas become multicultural, the more the environment gets enriched. This is the basis on which the economies of many countries have flourished, since the addition of foreigners entails foreign talent that adds a new dimension to the countries' talent base, from trade and innovation to arts and culture [1]. Yet blending of new cultures is not simple, since challenges arise when newcomers try to integrate in their new society. These challenges can stem from the difference in the cultural backgrounds, values, beliefs, or even government systems and regulations. Whereas to some people moving to a new country and bearing these challenges is a choice, to others this is not a question. Due to unfortunate happenings like war in their home countries, some people were forced to find a safer place to move to.

In the recent years, the problem of integration has been highlighted with the crises our world has run into, most prominently the European migrant crisis. Since it has started, the crisis complicated the integration possibility, considering that the integration schemes that migration agencies have had were not prepared for such unprecedented influx of people in a short time. As a result, governments and migration agencies in specific were overwhelmed by the number of people they are trying to help, and unfortunate newcomers, also known as refugees, have faced hindrance in their lives mainly since the process of getting settled in their new land is bound by bureaucracy.

A growing topic of interest, the issue of integration has been in the agenda of government organizations, journalists, social activists, and startups. However, despite the existing initiatives and attempted solutions, there are still barriers that each of the newcomers and locals face, mainly related to lack of awareness and trust. In the spirit of leveraging the existence of technologies, I attempt to tackle the issue by making use of social media. Considering the increase of its value to people in the past decade, helping them solve problems such as raising awareness, especially with the trendiness of videos, how can I channel this power to solve

the problem? In other terms, what is the best way to connect those newcomers and locals using existing technologies of videos and social media, thereby bringing them a step closer towards integration? These are, in broad terms, the questions that I try to answer in this thesis.

Problems in this world fuel us to find solutions and continuously strive to better ourselves and progress. Making use of the key reason for technology's existence, which is to better our society, this thesis attempts to tackle a societal issue and propose a solution that brings humans a step closer towards integration.

1.1 Motivation for Solving the Problem

Several reasons have driven me to target such a problem and pursue this master's thesis. I briefly discuss these motivations next.

The first reason is that I wanted to work on a problem that has societal impact. Given its magnitude and its potential influence (as described in detail in Chapter 2), this problem became my top choice. Additionally, a large amount of academic research (more in Chapter 3) is going towards this problem, which heightens its value and encourages contributing to its solution.

The second reason is that this topic is recent and I have relevant experience with it. My relevant experience includes being a study-abroad student and having friends and family members with refugee experience. Hence, I have closely encountered the challenges of integration.

The third reason is that I wanted to work on a topic that gives the big picture of engineering. I found that it is good to have that through taking a real-world problem and solving it through technology. In doing this, I have a great chance to practice the proper research and methodology for coming up with the solution, which, at the same time, has immediate use.

Fourth, extending from the reason above, and considering that this major thesis is part of the EIT Digital Master School which blends Engineering to Innovation and Entrepreneurship, this topic has a perfect combination that fits in that category. In line with the spirit of the master's program, I wanted to have a real entrepreneurship experience. I wanted to work on a real startup idea, which has a business angle and a certain time-frame to deliver a project.

Finally, I have validated the importance of pursuing the problem after I have won several pitching challenges. These include winning the EIT Digital Summer School with the best Innovative idea, being selected to the EIT Digital Entrepreneurial Student Network (ESN) Program, and winning the first place in both the Business Ideation Weekend and the Digital Prototyping Weekend challenges by The Shortcut organization. This support from professors, business coaches, NGOs, entrepreneurs, and even investors has motivated me to pursue the idea further.

1.2 Objective and Scope

In a broad sense, the objective of this thesis is to solve a significant societal problem through the use of technology. I want to achieve that through performing research based on the best practices of human-computer interaction design.

Since I am targeting a large problem whose existence is not recent, I will narrow down the scope to certain aspects of the problem and to a specific geography. Thus, I will focus on the part of the solution where there is most need to integrate, such as the case of refugees. I will also focus geographically on Finland due to the significant number of newcomers in the country in the past few years, and due to being physically present there and able to reach the main stakeholders.

1.3 Research Questions (RQs)

Extending the question I asked in the introduction, I frame my main research question as follows:

What is the best way to integrate newcomers and locals using technology?

This question defines the reason of my thesis work in the broader sense. To break it down to more actionable questions, I ask the following:

RQ1 What are the user groups that this service will solve a problem for?

RQ2 What are the main problems of these user groups?

RQ3 How can I leverage existing technology to solve the problem?

RQ4 What are the key features that make the solution successful?

Answering *RQ1* guarantees that I find a suitable solution for the specific user segment. The problem is broad and is faced by a wide range of people, and finding one solution that fits all might not be possible. The more I define the different user segments, the better I can channel my efforts to find a solution for specific segments. After defining the users from the first question, we pose *RQ2* to know what is the main problem that I try to address in order to be more directed towards a solution. *RQ3* is concerned about finding the best way to validate the ideas of solutions I propose through existing technology, like social media. *RQ4* targets the evaluation of my solution from a usability perspective.

1.4 Approach

To meet the objectives, I am going to conduct user research, create prototypes of the solution, test these prototypes with the users, and improve on them based on the user needs. These user needs are concluded from usability testing and user surveys that I perform along the way. The designed prototypes will start from low-fidelity prototypes and extend to high-fidelity prototypes. The approach is more elaborated in the Chapter 5, Methodology.

1.5 Brief about the Proposed Solution

My novel contribution is to create a solution that makes the physical solutions for integration happen faster by leveraging the existing platforms and their user base.

I want to do that through empowering both newcomers and locals to raise awareness about their stories and talents, and let them connect based on common interests, which breaks the barriers between both sides. These stories and interests are expressed through short 10-second videos that are tagged based on the talents and interest topics. Connections can be person-to-person or person-to-organization. For instance, on the personal interaction level, two people passionate about music or a sport could connect to practice that interest. On an organizational level, local organizations could use video profiles to recruit volunteers for their events. To the newcomers, more connections means more chances to integrate. As a worst-case scenario they are increasing their network and practicing to sell themselves in 10 seconds. In best cases, more connections means a higher chance of getting a job. On the other hand, locals can find members to their band or a talented teammate easily, and local organizations have a more efficient way to screen talents at a pre-interview stage.

1.6 Structure of the Thesis

Chapter 2 presents an overview on the problem, its importance, and the general efforts targeting it. Then, Chapter 3 has a literature review on technological solutions that tackle integration challenges. It shows how others have approached the issue using technology. Next, Chapter 4 shows how I approach the issue by presenting frameworks of Design Science, Business Models, and Usability. In Chapter 5, I discuss the methodology I followed for conducting the research. Then, Chapter 6 shows the results of my data collection interviews, my implemented prototypes, and their usability evaluation. Chapter 7 provides discussion and insights on the implementation, results, and the evaluation of the solution and the research, including the strengths and limitations. Finally, Chapter 8 summarizes the main findings of the thesis and the answers to the research questions.

Chapter 2

Conceptual Background

Reasons for moving to a new land can be distinct, yet what remains common among them is the hardship of integration to a new environment. Among the different reasons, seeking a safer life by asking for asylum in a new land is what I will focus on. The reason is that asylum seekers and locals are among the most in need for a solution to their integration challenges.

In this chapter, I give a background on the integration problem, highlighting the importance of the situation in the recent years. I begin with providing facts and figures to clarify the problem's size in Europe before I focus on the status quo in Finland. Then, I mention the related work and efforts being made to solve the problem, and pave the road for the gap that I can fill through my solution, which I will propose in Chapter 6. I conclude with a summary of key concepts and terms that will be used throughout the rest of the thesis.

2.1 Immigration Situation

The globe is witnessing a substantial growth in the population of forced immigrants. According to the United Nations High Commissioner for Refugees (UNHCR), whose sole work is involved with refugee matters in the world, the number of forcibly displaced people reached 65.6 million by the end of 2016 [2]. Throughout the years, Europe has been playing a large role in accepting refugees. This section is about the general situation in Europe and the specific situation in Finland.

In Europe

To the time of writing this thesis, the migrant situation in Europe continues to exist with sizeable numbers. The UNHCR declares that in 2015 the number of refugees and migrants to Europe exceeded a million. This number increased by 347,000 in the year after [3]. The International Organization for Migration counts

that in 2017, more than 73,000 migrant arrivals entered Europe [4]. The main reasons for seeking asylum are persecution, conflict, or violence.

According to data from the statistical office of the European Union, Eurostat, the persons seeking asylum in Europe has reached 149,000 in the second quarter of 2017 [5]. The main European countries that host asylum seekers are Germany, Hungary, Sweden, and Austria. While each of these countries witnessed an increase in the number of applicants between 2014 and 2015, Finland witnessed the highest influx difference. Compared to only 3,490 newcomers the year before, Finland was approached by 32,150 in 2015 [6]. Huge potential lies behind pursuing the problem for other countries in Europe, yet I focus my efforts on Finland, mainly since the research is conducted there.

In Finland

In the past two years, Finland has been occupied with plenty of immigration matters. Considering asylum applications alone, the numbers are still noteworthy. The Finnish Immigration Service's statistics indicate that there has been a total 42,822 applications for international protection between the January 2015 and August 2017 [7]. As stated by the European Union directives and the Finnish Aliens Act, *international protection* means gaining a residence permit on the basis humanitarian protection, which mainly means having a refugee status [8].

Although in the mentioned period the number of persons granted the international protection and the residence is 12,511 [7], every person who applies has to wait a significant period of time for a decision to arrive. The average processing times for asylum applications has been 160 days. However, due to the large number of applications in 2015, the waiting times are hard to predict, especially that the cases of the applications vary [9].

Time is not only the concern in this issue. What adds to the problem is that the majority of the newcomers, precisely 60.5%, are young people aged 18 to 34 [7]. To these people, issues regarding continuing their education or assuming work are the immediate concern after the major concern of their asylum is resolved.

Processing the asylum applications and giving decisions is not the only task by the Finnish Immigration Service. A lot of actions take place throughout the procedure, and will be covered in the next section.

2.2 Stages of the Asylum Procedure

The asylum seeking process involves several stages from the time of fleeing the country of origin to the time of settling in the new country. In general, the procedure for asylum is similar across the countries. However, it is important to note that it might differ from case to case even in the same country. In this section, I will state the stages of a typical asylum procedure.

Stage 1

Stage 1 is during the time the asylum seeker is fleeing to a new country, before arriving to the country of destination. This includes travelling mainly through the Mediterranean sea, then continuing the journey on land. Data from the UNHCR counted that in 2017 until the end of September, there has been 136,423 sear arrivals [10].

Stage 2

Stage 2 is when the asylum seeker has arrived to the new country and is applying for asylum in the migration agency. This requires that the applicant informs about their will to seek asylum to the police or border control officers, who will then take care of the initial measures. These measures include registering data and fingerprints of the applicant, and placing the application in the queue [11, 12].

Stage 3

Stage 3 is when the asylum seeker has applied for a refugee status and is waiting for their interview in their reception centers which they are assigned to stay in after their application [11, 13]. This process can take a few months to a year, and it varies for each case.

Stage 4

Stage 4 is when the asylum seeker has done the interview and is waiting for the decision of their residence. Upon providing all the details and basis of applying for asylum in the interview, each case will be evaluated and either a refugee status (and a residence permit) will be granted or the application will be rejected [9, 11].

Stage 5

Stage 5 is when the asylum seeker has gotten residence and is assigned to live in a municipality in which they will have a place to live [11]. At this stage, asylum seekers granted the residence begin following the government's integration plan, which will be discussed in the next section.

On grounds of the facts discussed so far, it is safe to say that there are young people that have to wait a substantial amount of time in their life to get a decision. Their future is hindered and filled with uncertainty about its fate. The next section will define the related work being done regarding this problem.

2.3 Related Work Targeting Integration

Since immigration is a topic of broad and current interest, notable efforts are made to address solutions that aid in integration. In line with that, government agencies, local organizations, and researchers, are working on finding better integration solutions in Finland.

2.3.1 Efforts by the Government

In Finland, the focus on channeling the change in demographics towards finding opportunity has been expressed in several cases. The Ministry of Economic Affairs and Employment's Migration Director, Sonja Hämäläinen, emphasizes the importance of newcomers to Finland in boosting the country's economy. She trusts that a more multicultural working environment brings Finland to a more competitive stage [14, 15].

For the purpose of promoting equal opportunities to newcomers, the Finnish government sets up an integration plan for asylum seekers upon accepting them as refugees. An *integration plan, program, or scheme*, is a set of activities prepared for the refugees in order to help them integrate. Activities include learning the local language and getting vocational training to complement the newcomers' skills. Integration plans usually span 3 years [16, 17]. The entities responsible for integration plans are the municipality [18], the Ministry of Economic Affairs and Employment [15, 19], the Centre for Economic Development, Transport, and the Environment [20], and the Reception Centers [21].

2.3.2 Efforts by NGOs and Social Enterprises

Besides the public sector, non-governmental organizations (NGOs) and social enterprises have also made efforts targeting integration. This subsection presents some of the local not-for-profit organizations that have their core work focusing on newcomers in Finland.

Whether by helping in the housing situation, providing language or skills training, or covering costs, private-sector organizations adjust national policies and practices to assist in the integration process [22, p. 50].

Well-established organizations, such as the Finnish Red Cross, play a key role in integrating newcomers at the early stages. From the point of their arrival to the destination country, a large number of asylum seekers are aided by the Finnish Red Cross through getting shelter in the Red Cross reception centers and undergoing integration activities, such as voluntary work [23].

Social enterprises in Finland have also been aiming towards integration. Developed by the European Social Funds, social enterprises blend their business prowess with a social mission which they strive to achieve, as expressed by Linda Andersen

et al. in the book *Social Entrepreneurship and Social Enterprises: Nordic Perspectives*. The book emphasizes that despite the promising potential of social startups rising, the social enterprise model is not short on challenges and needs to have support from governments in the future [24]. More efforts from startup enterprises such as The Shortcut and Startup Refugees will be discussed in the next chapter.

2.3.3 Efforts by Researchers

Integration appeals to researchers in various fields, such as Economics, Humanities, and Social Sciences. In this subsection, I present a few of the most recent studies related to newcomers integration in Finland and other Nordic countries.

A study from Hanken School of Economics by Yesmith Sánchez explores the factors that influence integration of voluntary Latin American immigrants to Finland. Her thesis points out that among the most important factors affecting integration are finding work, networks, and learning the local language. She implies for stakeholders such as the governments, organizations, entrepreneurs, and researchers that boosting their reliance on foreign talent creates a diverse environment that in turn leads to a more social and economically-sustainable country [25].

Another study made by Miguel Peromingo at the Refugee Studies Centre at the Oxford Department of International Development focuses on work and refugee integration in Sweden. While mentioning that in general immigrants are profiled as less competent than locals in the job market, refugees are stigmatized as even less competent, with similar barriers in other Nordic countries in general. With a case study, he finds that refugees are beyond capable. Although the numbers show that proper integration in Sweden is still not achieved, he indicates the points of strength in the Swedish integration program – that it makes integration activities such as language learning and training in parallel. This makes Sweden move slowly towards a long-term approach to solve the integration barriers [26].

Matti Sarvimäki from Aalto University conducts a study as part of the Nordic Economy Policy Review. He makes a case that, based on previous data and trends, the asylum seekers in Finland would face more difficult challenges than ever while integrating to the labor market, especially with the spike in the number of applicants in 2015 [27]. Another study conducted by Sarvimäki and Hämäläinen shows that restructured integration plans specifically designed for immigrants prove to be better than one-size-fits-all solutions, yet they remain incapable of being fully effective [28].

A study from University of Helsinki by Eeva Lindström explores volunteering as a tool for inclusion and integration. She studies the effects of having asylum seeker participants volunteer as a means of enhancing their social capital. Her findings include that the overall effect of volunteering on newcomers is positive, leading to a more inclusive society, with an emphasis on the importance of both sides, newcomers and locals, working together towards integration [29].

The efforts presented so far show that the work on integrating newcomers is important and ongoing. For such a topic, however, multiple approaches from different sides, including governments, private-sector organizations, and entrepreneurs, need to be taken to achieve integration.

2.4 Summary of Key Concepts

After presenting a conceptual background and related work, I will summarize the concepts that are relevant to the problem of this research and that will recur throughout the thesis.

Newcomer

Asylum seekers, *refugees*, and *immigrants*, might often be used interchangeably, although they are different. An *asylum seeker* is a person who has been forced to leave his or her country to another due to harsh circumstances that threatens safety. According to UNHCR (United Nations High Commissioner for Refugees), an asylum seeker is “a person whose request for sanctuary has yet to be processed.” [30]. An asylum seeker who has been granted the right of residence in country he or she applied in is then called *refugee*. According to UNHCR, “[t]hey are defined and protected in international law, and must not be expelled or returned to situations where their life and freedom are at risk.” [31, 32]. An *immigrant* is a person who comes to a country in the intention of living permanently in it. [33] Often throughout this thesis, I will refer to an asylum seeker, a refugee, or an immigrant as a *Newcomer*.

Integration

In its dictionary definition, integration is “the process of becoming part of a group of people” [34] or, “the intermixing of people who were previously segregated.” [35]. However, according to a UNHCR publication about Refugee integration in Europe, there is neither a consensus on the definition of integration, nor an existence of the definition in international refugee law [36, p. 1]. What adds to the complexity of defining integration is that it happens to an individual actively controlling certain aspects of their life in a new environment rather than passively getting integrated with time. The paper emphasizes on that integration is two-ways and involves both newcomers and the local environment. Although integration aims for “equality, inclusion, and achievement”, governments’ view on integration may be different than that of the newcomer’s [37, p. 12].

This subjective nature of the definition of integration leads to part of the research in this thesis to be empirical, wherein the newcomers will be asked about their own definition of being integration. This goes along well with the user-centric

theme of the thesis – focusing on the user and finding their problems to move to the solution. More on this will be presented in Chapters 5 and 6.

Integration Plans

Newcomers undergo a set of activities to help them integrate. These activities include learning the local language, finding a job or pursuing studies, and forming contacts and networks in the Finnish society. From their perspective, government agencies and municipalities provide the aforementioned activities to help newcomers integrate. Throughout the research, newcomers will be asked about how effective the integration plans are in their perspective, as will be seen in Chapter 6.

Integration has been an everlasting major topic, with the most recent wave occurring since in the past half a decade. Hence, pursuing such a global issue in a research is worthwhile. In addition, the literature review presented in this chapter shows that the recent work on integration still needs improvement, making efforts towards the topic relevant. In the next chapter, I discuss the technological background of how the problem is currently being tackled, including literature review on relevant technical papers published.

Chapter 3

Technological Background

The conceptual background in the previous chapter showed why considering the topic of integration is a must, while presenting the related work from various fields. In this chapter, I will point out the related technological work and efforts being made to solve the problem. First, I present the academic work that is solidly linked to the research questions of this thesis. Then, I conduct a survey on related technological solutions that are already in the market. Finally, I will conclude with some insights on the current solutions and pave the road for the gap that I can fill through my solution, which I will propose in Chapter 6.

3.1 Related Academic Work

Several academic papers and publications are targeting integration and the refugee crisis in the recent years, providing technological solutions and recommending pathways for interesting further research. I select the relevant academic papers that are linked to the main research question.

Conner Evans et al. wrote a paper on “Leveraging Humanitarian Technology to Assist Refugees”, providing suggestions to UNHCR on how to utilize emerging technologies to alleviate problems faced by refugees. Along with drones, smartphones, and health technologies, they suggest the use of online platforms, given the possession of smartphones by refugees. Particularly, they provide two recommendations for two different problems. The first problem is the tensions between the refugees and the locals in the host country, to which they recommend communication through community groups of social media platforms. The second problem is the lack of opportunities found by refugees, to which they recommend building entrepreneurship or job-seeking apps while having refugees in context [38].

Another recent study on the importance of the internet and digital media to the refugees’ life was written by Kutscher and Kress. Focusing on unaccompanied minor refugees in Germany, the empirical study finds the importance of digital media for withstanding the challenges faced by the newcomers [39].

Andrade and Doolin analyze of the use of Information and Communications Technology (ICT) by over 50 refugees to aid in their social inclusion. They suggest that refugees use ICT to participate several integration practices, including social connection and understanding [40].

Baranoff et al. realize the need of newly-arrived asylum seekers to the United States. They write a paper on Lantern, a technological solution combining previous generation technology with Near-Field Communication to help refugees navigate through their new surroundings [41].

The works presented in this section were latest studies that signify the importance of pursuing the integration problem from a technological angle. The next section shows the technological solutions that are already in the market and have been used by people involved in the refugee crisis.

3.2 Technological Solutions Targeting Integration

When the recent spark of migrant crisis occurred, technological solutions began accompanying the situation to help asylum seekers with various needs. These technological solutions included software solutions such as web or mobile applications, as well as a few hardware solutions. While some of them continue to be used today, others served a great number of users in a certain period of time, after which they became inactive.

The booming of technological solutions for refugees was accordant with refugees' possession of smartphones as the most vital tool. In fact, smartphones were the single belonging that no asylum seeker would leave their land without, since it was used primarily to navigate the way to the new land. Part of the smartphone usage was for applications were either generic social network services which contained updated information on routes to take, or private chatting applications that were used whenever privacy was a concern [38, 42]. Another part of the usage of smartphones was for the other technological solutions that were specifically developed for the situation, and which will be covered next.

3.2.1 A Survey on Related Technological Solutions

In this section, I will include a survey on the related technological solutions in Table 3.1. For each solution, I will include the following:

1. the **category** that the solution helps with, including:
 - (a) *Basic Needs*, which includes information, navigation, and internet connectivity, or finding family members.

- (b) *Integration and Culture*, which involves meeting between newcomers and locals and undergoing activities such as exchanging knowledge about each other's culture.
 - (c) *Language*, which means that the solution aids in language learning.
 - (d) *Work*, meaning that the solution either helps with job finding or developing skills of newcomers.
2. the key **features** of the solution,
 3. the **mode** in which it is available, including:
 - (a) *Mobile Application*
 - (b) *Web Application*
 - (c) *Website*, a static page containing just information.
 - (d) *Hardware*
 - (e) *Physical*, mainly involving offline and physical interaction where the newcomers and locals meet in person.
 4. and the **region** where it mostly operates.

As can be seen in the table, some mobile applications aid in navigation of asylum seekers when they are fleeing their country, or provide general information on the residence process or other regulations the refugees should expect. Other mobile applications provide chat rooms with locals who help in providing translation or general information services. A few other solutions involve language learning, or skills training.

Basic needs is the most common category for the solutions, with *work* being the second most common. Most of the solutions involve mobile applications as the main mode in which they operate. While some solutions are specific to certain countries (mainly Germany), others can be used in multiple countries across Europe.

Table 3.1: Summary of solutions targeting the refugee crisis in Europe.

Solution	Category	Features	Mode	Region
Info Aid [43]	Basic Needs	Online translation Chat room, Multi- lingual	Mobile App	Hungary
Meshpoint [44]	Basic Needs	WiFi Hotspot	Hardware	Croatia
Refunite [45]	Basic Needs	Searching, Match- ing, Messaging	Web App	Africa, Mid- dle East, Asia, and Europe
Refoodgee [46]	Integration and Culture	Matching, Messag- ing	Mobile App, Physical	Berlin
Love-Europe [47]	Basic Needs, Integration and Culture, Language	Navigation, Event Notifications, Mul- tilingual, Useful Sentences	Mobile App	Europe
Ankommen App [48]	Basic Needs, Language, Work	Information, Job search, Speaking to locals, Multilingual	Mobile App	Germany
Refugees Welcome [49]	Basic Needs, Integration and Culture, Language	Matching refugees to Shared Flats	Web App, Physical	Europe
Refugees on Rails [50]	Work	Programming Classes	Physical	Germany
Welcome to Europe [51]	Basic Needs	Information or- dered by Categories or Countries	Website	Europe
First Contact [52]	Navigation, Basic Needs, Language, Work	Basic Information	Website	Europe
Refugee Aid App [53]	Basic Needs	Navigation, Multi- purpose Informa- tion provided by NGOs	Mobile App	Europe
Gherbtana [54]	Basic Needs, Work	News and Informa- tion notifications, community help, Jobs, Finding nearby newcomers.	Mobile App	Turkey
Refugees Work [55]	Work	Resume building, Preparing for job interviews	Web App, Physical	Austria
Welcome Talent [56]	Work	Search for positions for newcomers through #wel- cometalent	Web App, Physical	Sweden

3.2.2 Solutions Relevant to the Stages of the Asylum Procedure

The solutions presented in the above survey, as well as others, were also explored based on the time-frame in which they are most effective. Figure 3.1 maps these solutions to where they are relevant in the stages of the asylum seeking procedure, which was presented in the previous chapter.

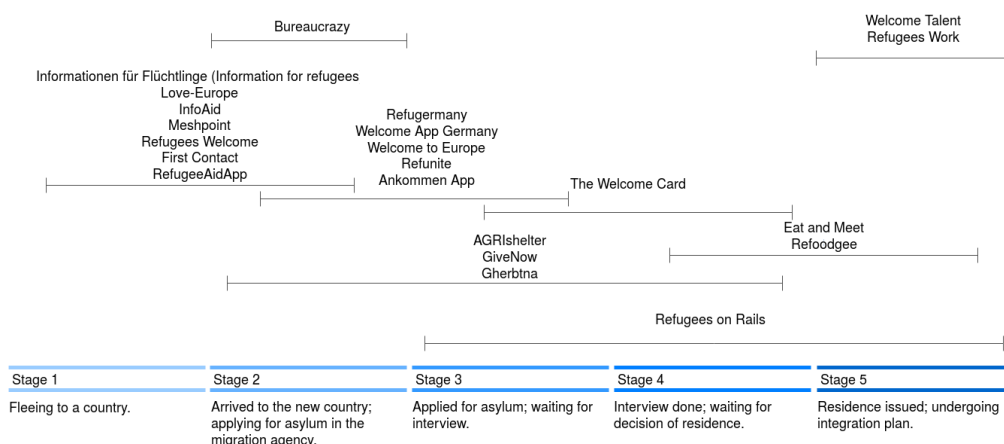


Figure 3.1: Relevant Solutions based on the refugee’s journey.

As apparent, the solutions are condensed in the first three stages. Few solutions aid asylum seekers after their interview is done and while they are undergoing the government integration program. However, challenges faced by newcomers do not cease at these later stages, suggesting that there is plenty of opportunity for work. More needs to be understood throughout the data collection to know the specific needs.

The solutions discussed so far are generally existent in Europe. Even through there were many more solutions in the past, a few of them remained functional. The solutions that exist in Finland will be presented next.

3.2.3 Solutions in Finland

Startups in Finland with a social mission began targeting integration in their own way. The mode of operation of these solutions divide between fully digital and physical that are related to technology. Table 3.2 shows these solutions, along with their category, main features, and mode of operation.

Table 3.2: Solutions targeting the refugee crisis in Finland.

Solution	Category	Features	Mode
Funzi [57]	Language, Work	Flashcards and quizzes, Multilingual	Web and mobile Apps
Moni [58]	Basic Needs	Prepaid MasterCard, Customized mobile payment	Payment Card, Mobile App
Startup Refugees [59]	Work	Helping refugee entrepreneurs, Matching refugees with companies	Physical
The Shortcut [60]	Work, Integration and Culture	Programming Classes, Workshops, helping foreign entrepreneurs, job matching	Physical
Zharity [61]	Work	Building simple resumes, Job matching	Web App, Physical

Funzi aims to teach newcomers the Finnish language, as well as get them acquainted with general information concerning living in Finland. Moni alleviates the inability of asylum seekers to have bank accounts by providing a card payment solution. Zharity helps newcomers build resumes and prepares them for the job market. Startup Refugees achieves similar work albeit physically, having volunteers that interview asylum seekers and build their resumes. Finally, The Shortcut also operates physically to help various newcomers in job-finding, and skills enhancing.

The work presented in this chapter provides evidence for the significance of humanitarian application of technology. Despite the abundance of many solutions, the need for integration remains. The solution that this research strives to achieve has two core purposes. First, it aims to fill the void that is still not targeted by the existing solution, mainly including the lack of solutions in the later stages of the asylum process, and other factors that will be discussed in detail in Section 6.2.2. Second, it intends to bridge between the physical solutions and the rapidly moving technological world, starting from Finland as a first step.

Chapter 4

Background on Design, Business, and Usability

In the previous chapter, I gave a technical background on how the current technology is used as a means of solving the integration problem. One common factor among these services is that their large user-base. For a software tool to be successful, a vital metric is usability, which identifies how easily a user of a software tool achieve a goal using that tool. This happens when I follow certain practices to design the software tool, which I explain in this chapter.

In order to achieve a usable service, I need to be aware of the design process and the proper metrics to measure the usability. Section 4.1 introduces *Design Science*, a formal process for creating a software platform that solves a problem. Then, Section 4.3 discusses the process of evaluating a usability of a created software. These processes will be useful for my thesis since I am creating a software platform to solve a real-world problem.

4.1 Design Science

Designing a software tool that is considered a solution for a problem requires several components to work together to achieve that. Consisting of computer hardware, software, databases, and people, these components can be collectively referred to as *information systems* [62–65]. Information systems follow certain processes to reach a solution to the targeted problem, and one major process is *design science*. The design science process usually results in a design artifact, which can be in the form of an software or Information Technology tool.

In their efforts to formalize a the process of solving a real world problem through a software platform, Alan Hevner et al. assess how design science research performs in information systems. Titled “Design Science in Information systems research”, the paper describes a set of guidelines to implement and evaluate the research for other practitioners to follow [66]. I present the seven guidelines as they

appeared in the paper next, while explaining the relevance of each to my thesis:

1. **Design as an Artifact:** Design science research must *result* in a meaningful IT artifact whose purpose is solving a problem. [66]

I attempt to solve a problem using technology, hence my result will be a design artifact in the form of a software platform. The form of the platform will depend on the stage of the research, and will range from a concept on paper to a digital prototype.

2. **Problem Relevance:** Design science must have the *objective* to solve a relevant real life problem.[66]

My main objective is to target a real-life problem whose magnitude has recently increased in the whole world.

3. **Design Evaluation:** Evaluation of the design must thoroughly prove its quality.[66]

The quality of the design artifact I am creating will be extensively evaluated. This will be achieved through the usability evaluation that I will discuss in Section 4.3, since usability comprises a significant part of my artifact's quality.

4. **Research Contributions:** Design science research must *contribute* in the areas of design artifact, design construction knowledge, or design evaluation knowledge.[66]

I contribute in a combination of ways suggested by the guidelines. My contribution lies both in the novelty of the designed artifact and the methods and metrics I use to evaluate it. The artifact combines the physical means of solving the problem with the existing technology, and it is designed and evaluated through a combination of methods.

5. **Research Rigor:** Design science research must *apply rigorous methods* in both construction and evaluation of the design artifact.[66]

My research rigor is guaranteed by the methodology that I perform to construct the artifact and then evaluate it.

6. **Design as a Search Process:** Design should be an iterative process that *utilizes available means* to reach the desired solution to the problem.[66]

In order to reach to the artifact that I want to design, I undergo several phases to break down the problem and focus on one area of it, and I benchmark through several existing solutions.

7. **Communication of Research:** Research results must be presented to both technology-oriented and management-oriented audiences.[66]

I communicate my results through this thesis, as well as through several other means, such as pitching and presenting, or online channels.

The methods that ensure following the guidelines will be discussed in Chapter 5.

4.2 Business Model

To be effective and sustainable as a solution, an artifact usually has a viable business plan behind it. However, a robust business strategy does not guarantee the success of the solution. Without testing the actual solution, extensive planning gives little indication of its success. Based on his work on applying business model ontology using a design science approach [67], Alexander Osterwalder tells where to find the balance between the business planning and implementing the solution through his creation of the Business Model Canvas. The Business Model Canvas is a tool used in the process of creating the business model of a solution. It takes an iterative approach to business planning, where refinements are made to the plan the more the solution progresses in the market. This iterative process is the focus of the *Business Model Generation* book authored by Osterwalder and Yves Pigneur, and co-created by 470 practitioners from 45 countries [68]. Proving its effectiveness in various worldwide businesses¹, the book defines nine building blocks constituting the business model canvas (shown in Figure 4.1), which I briefly define next.

¹Rated 4.5/5 in Goodreads.com, and has more than 5400 citations on Google Scholar

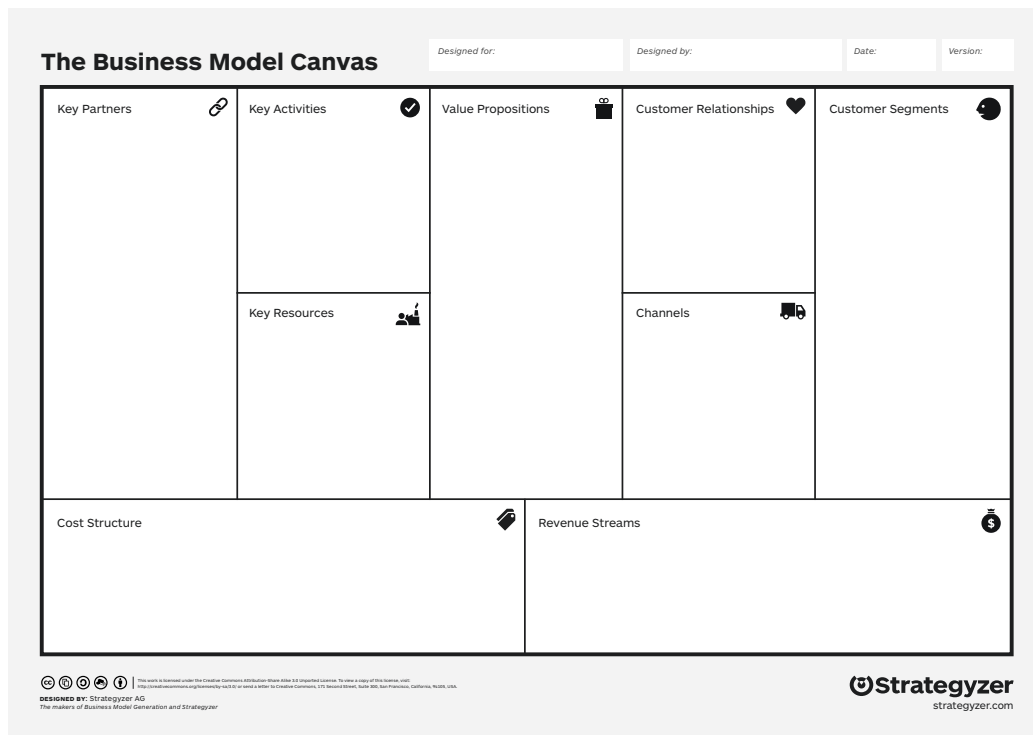


Figure 4.1: The Business Model Canvas, [69]

1. **Customer segments:** The individuals or organizations that a company intends to serve through its business.
2. **Value proposition:** What the company promises to provide to its customers in terms of satisfied needs or solved problems.
3. **Channels:** The means of delivering the value to the customers.
4. **Customer relationships:** The connection established and maintained between the company and its customers.
5. **Revenue streams:** The means of getting revenue upon a delivered value to customer.
6. **Key resources:** Assets the company has.
7. **Key activities:** Actions performed by a company using its key resources to achieve its goal.
8. **Key partners:** External entities that are outsourced to help the company.
9. **Cost structures:** What causes the company to pay to perform its activities.

Out of these nine blocks I focus on 1 and 2, which are also focused on in the book *Value Proposition Design* by Osterwalder et al. [70]. The book zooms a step further into the customer segments and the value proposition blocks, helping companies to find the right fit between both. This happens by having the companies examine details of each block. For the customer segments, the company lists the customer activities and the pains customers face while undergoing these activities. For the value proposition, the company lists the possible pain relievers for each pain and the products or services through which the pain is relieved. This process is done using another tool called the Value Proposition Canvas, which I show in Figure 4.2. The right side of the canvas is called the customer profile, which lists the characteristics that help better understand the particular customer segment. The left side of the canvas is called the value map, and helps to map product and services to the value proposition. [70] I discuss each side next.

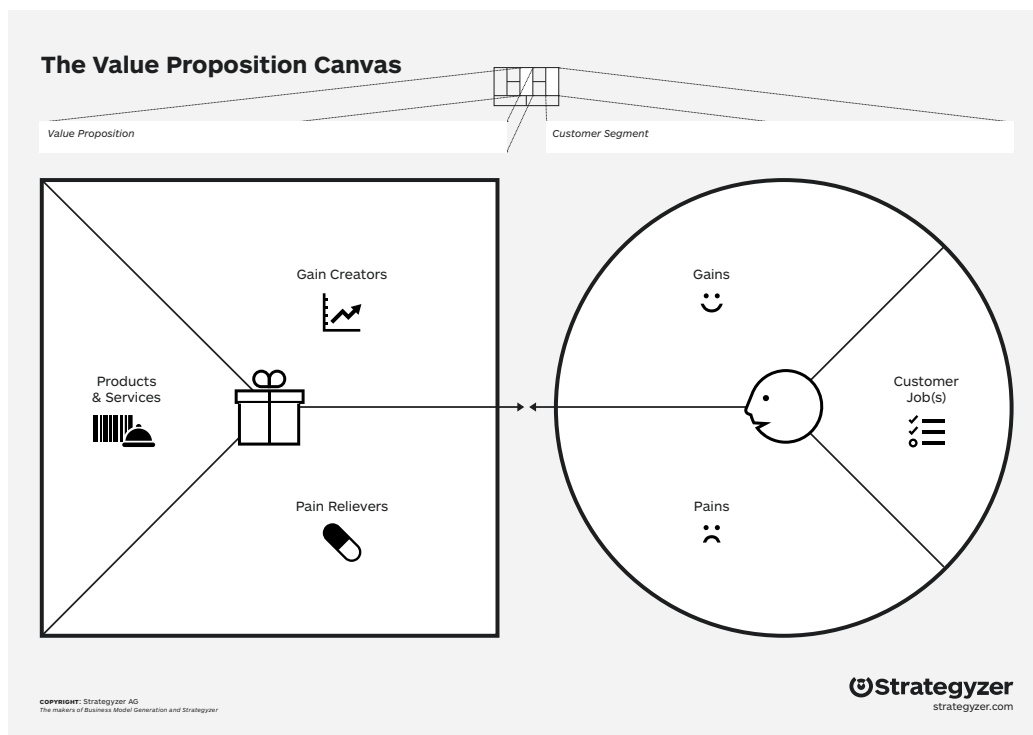


Figure 4.2: The Value Proposition Canvas, [69]

4.2.1 Customer Profile

Customer segments include mass or niche markets, could be segmented or diversified, or could include multi-sided markets [68, p. 21]. Multi-sided markets include two or more interdependent customer segments that are required to make a business model work. For example, a company providing a recruitment platform has

both recruiters and job applicants as its customer segments. Once a customer segment is defined, the specific customer profile is studied by looking at three main dimensions [70]:

- **Customer jobs:** Things the customers try to achieve during their life. These could include functional, social, or emotional.
- **Pains:** What obstacles they face while doing their jobs.
- **Gains:** What outcomes they desire while doing their jobs.

4.2.2 Value Map

Values delivered to customers could be quantitative, such as saving money or time, or qualitative, such as convenience or usability [68, p. 23]. To come up with the right value for the right customer, the value map which consists of the three following dimensions, is used [70]:

- **Products and Services:** What a company offers to customers.
- **Pain Killers:** How the products and services alleviate the pains.
- **Gain Creators:** How the products and services create the gains.

Once these elements are defined, the process of creating a proper fit is more likely to happen. Nonetheless, the whole process remains iterative and is likely to change the more the idea is validated. Idea validation, in its turn, happens through research, interviews, and testing. The research, much of which I have done in the previous two chapters, mainly involves gathering pre-existing data, and helps in getting some direction towards the problem and the users. The next stage is getting interviews from the users to have a closer insight on the problem. Having interviews at different stages guarantees that the solution to the problem is actually what people need. In order to get the most out of the interviews, I have to ask the right questions to the potential users. To achieve that, I follow interview guidelines given by lean start-up practitioners and authors. I list a few guidelines that I crunched from both Osterwalder's *Value Proposition Design* [70] and Ash Maurya's *Running Lean* [71].

General Guidelines for the Problem Interview:

1. Make a preliminary customer profile, then derive the interview questions about the jobs, pains, and gains that you would like to learn more about [70, p. 110].
2. Adopt a beginner's mind, meaning leave the interpretations aside and be open to unexpected jobs, pains, and gains [70, p. 112]. Collect demographics to be able to segment better and test the customer segment you put in mind [71, p. 86].

3. Listen more than you talk. The interview is more about getting to know the customer's beliefs and facts rather than imposing own opinions [70, p. 113]. Test problem, and explore customer's worldview [71, p. 87].
4. Focus on getting facts rather than opinions. Formulate the questions in such a way to know when was the last time a customer performed an action, rather than asking their opinion about what would they do. [70, p. 113]
5. Get real motivation by asking "Why" [70, p. 113].
6. Do not sell or mention solutions too early [70, p. 113]. Maurya also agrees by suggesting to talk about the solution after exploring the problem from the customer's viewpoint [71].
7. Hook and ask for permission to follow up. Open doors at the end and ask for more contacts. [70, p. 113] [71, p. 88].

In my thesis, I will use a combination of the canvases and the validation techniques discussed above to help answer the first three RQ's I posed in Chapter 1, and show the results in Chapter 6.

4.3 Usability of a System

In order to design a software system that serves people, it needs to be usable. The *usability* of a system is a property of the user interface that is concerned about how well users can use system's functionality, as defined by Jakob Nielsen, the leading researcher in the field of Human-Computer Interaction. In his book *Usability Engineering*, Nielsen states that usability has the following attributes [72]:

- **Learnability:** How easily a user learns a system to get a job done using it.
- **Efficiency:** How productive the user is after learning the system.
- **Memorability:** How memorable the system is to the user when returning to use it after a period of time.
- **Errors:** How possible it is for users to make an error while using a system, and how easily can they recover from errors.
- **Satisfaction:** How pleasant is the system to the users.

4.3.1 Usability Guidelines

Achieving usability requires following basic guidelines to design a tool that helps users get their job done easily. Nielsen and another prominent usability researcher Ben Shneiderman have each made set guidelines which are widely followed by designers. I map Nielsen's ten heuristics to Shneiderman's eight golden rules for usability in the Table 4.1.

Table 4.1: Usability Guidelines Combined Guidelines

Nielsen [73]	Schneiderman [74]
Consistency and standards	Strive for consistency
Flexibility and efficiency of use	Enable frequent users to use shortcuts
Help and documentation Visibility and system status	Offer informative feedback Design dialogue to yield closure
Error prevention Help users recognize, diagnose, and recover from errors	Offer simple error handling
User control and freedom Match between system and the real world	Permit easy reversal of actions Support internal locus of control
Recognition rather than recall Aesthetic and minimalist design	Reduce short term memory load

When designing my software solution, I will follow these design guidelines to make the solution usable. However, achieving usability is a process that requires testing my solution prototype with the users, and iterating on the prototype until the usability problems are minimized. The next section describes how to make this process more systematic.

4.3.2 Usability Evaluation

Nielsen provides different ways to evaluate the usability of an interface [75], which I state below:

- **Heuristic evaluation:** an informal method performed by usability specialists judge whether a system follows the usability guidelines.

- **Cognitive walkthroughs:** a detailed process that assesses the ability of the user to perform the intended task. This typically happens through involving the users in a dialogue that checks whether what they have in their memory helps them do the correct action and reach the wanted goal.
- **Formal usability inspections:** combines both methods 1 and 2 in a six-step procedure.
- **Pluralistic walkthroughs:** involve meetings between users, developers, and human factors people discuss certain use-case scenarios in detail.
- **Feature inspection:** is a method in which proposed features are tested based on sequential listing of features that are used to accomplish a certain tasks. The difficulty of the features and whether they require a certain experience or knowledge are assessed.
- **Consistency inspection:** involves other designers who inspect a certain interface and make sure that its logical flow is consistent and resembles the flow in their own designs in other projects.
- **Standards inspection:** involves a specialist assessing the interface's compliance with a certain interface standard.

Whereas the pluralistic walkthroughs and consistency inspection methods require a group, heuristic inspection, features inspection, cognitive walkthroughs, and standards inspection can be done individually [75].

After creating the prototypes of my solution, I will be conducting interviews with real users to test the solution's usability. Since my research involves real users, I will evaluate my user interfaces using empirical methods, which, according to Nielsen, is a main method that involves testing the interface with real users [75]. I will rely mainly on the cognitive walkthrough as the user testing method for two reasons, which I will explain next.

First, the cognitive walkthrough method was developed for rapid evaluation of early mockups. In a conference proceeding "Usability evaluation with the cognitive walkthrough", John Rieman et al. indicate that cognitive walkthroughs require neither a fully functioning prototype nor real users [76]. Although my research will involve rapid prototyping, I will rely as much as possible on testing with real users.

The second reason for choosing the cognitive walkthrough method is that it gives an idea of the real user's experience when using the end product. Since it involves closely observing how the user is using a prototype without help given, it can give proper indication on which part of the user interface is straightforward and which is difficult to user or unclear. Although they might be relatively time consuming to conduct, cognitive walkthroughs have the ability to capture details that are hard to capture through other faster methods such as surveys.

I will present the cognitive walkthrough procedure based on the paper from John Rieman et al. [76, p. 387] and another from Clayton Lewis et al. [77, p. 238].

The Cognitive Walkthrough Procedure

A typical cognitive walkthrough involves the designer of the user interface and the user who is testing the interface. The designer might have other team members recording notes. The procedure includes the following:

1. The designer specifies a set of tasks that will be evaluated by the user, specifying a brief description of the situation and intended use of the interface, and the final goal that will be reached upon using it.
2. The designer specifies the sequence of actions description of the specific tasks that need to be done to reach the goal.
3. The user goes through the tasks in a problem solving manner, answering whether each action was clear or not, or was successfully completed or not.

Usually, the test user is asked to think loud throughout the interaction with the interface, while active note-taking occurs throughout the evaluation interview. This procedure will be followed during the usability evaluation stage of the thesis, which is reported in Section 6.3, albeit I will be the person conducting the interview and taking notes.

The concepts presented in this chapter constitute the core work on which I base my research. Creating a useful software solution requires following a certain framework such as design science, as well as appropriate business model generation tools for developing industry relevance. Furthermore, a solution undergoes formal usability evaluation method to ensure proper insights and scrutiny from the users' perspective.

Chapter 5

Methodology

After presenting the backgrounds and the literature reviews on the related solutions, I will discuss the methodology that I followed to answer the research questions. My research method takes both inductive and deductive phases; it involves iterating between the theory and practice in order to find answers to the research questions. The research questions that I have asked require that I start with collecting data first, analyzing it, then drawing conclusions. This means that the first phase of my research method is inductive. Additionally, since I am to propose a solution and test it, then my second phase of the research will be deductive.

5.1 Inductive Phase

The inductive phase of my research involves data collection to understand the problem and formulating a hypothesis as a solution for the problem. The data collection techniques I will follow are personal interviews with the users. I will start with interviewing both the newcomers and the local organizations that work closely with them. To get the most out of their answers, I ask the users open ended questions, following the interview guidelines I introduced in Section 4.2. Based on the interview results, I propose a solution in the form of a testable hypothesis. The process of making a proposed solution involves performing business development practices I presented in Section 4.2, including the business model canvas and the value proposition canvas tools. Next, I concretize my solution through a prototype, starting by leveraging existing social network platforms. From that point, I enter the deductive phase and begin validating the solution by testing with the users.

5.2 Deductive Phase

The deductive phase involves testing the hypothesis and iterating on the prototype until a satisfactory answer to the research question is reached. The way I test my

hypothesized solution will be a combination of the solution interviews and usability testing I introduced in Section 4.3. Based on the feedback from the interviews and the evaluation of the prototype's usability, I iterate on the prototype, which potentially requires iterating on the hypothesis, until I am able to answer the main research question. I illustrate the methodology in Figure 5.1.

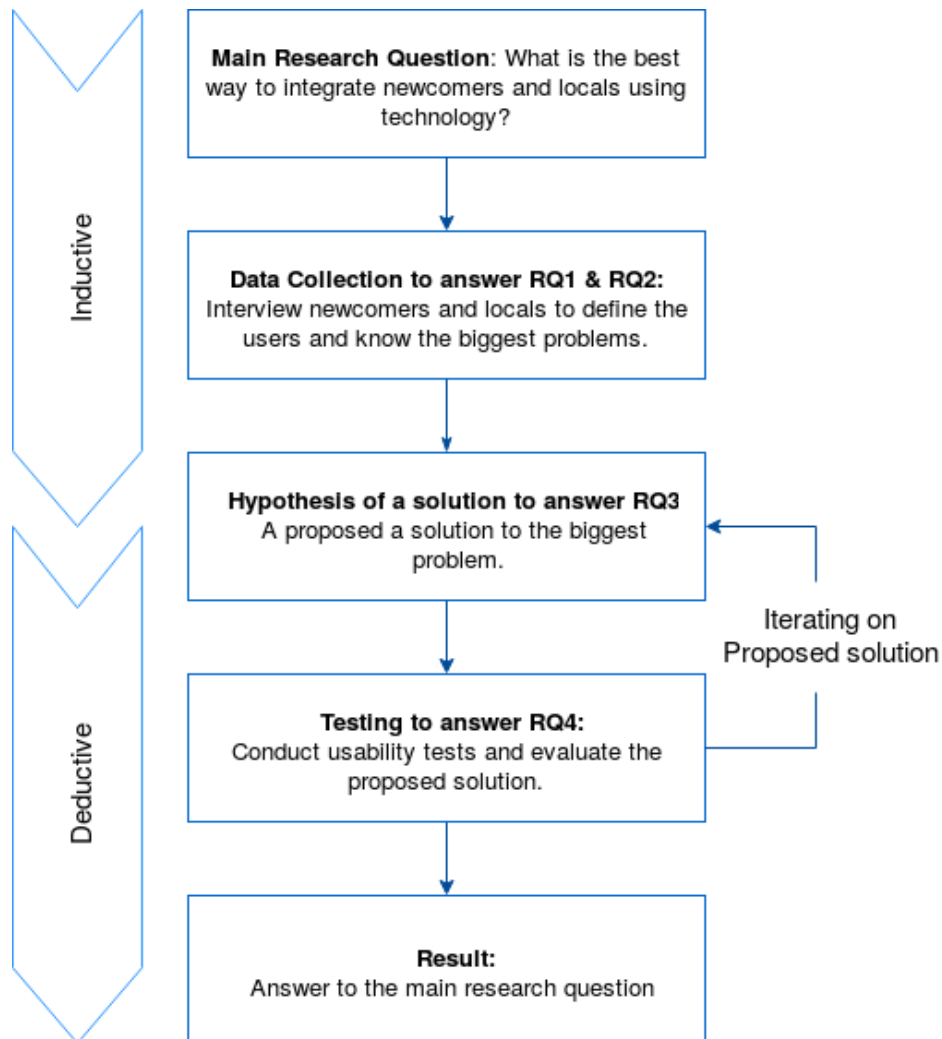


Figure 5.1: My Research Methodology

Chapter 6

Results and Evaluation

This chapter presents the results of the journey from collecting the data to finding solutions to the problem in question. Each section contains the findings for each of the research questions.

6.1 Data Collection Results: Answering RQ1 & RQ2

After research and observation of the targeted users, I have conducted interviews with a sample of both newcomers and local organizations to verify my speculations about their situation. So, the main idea from my problem interview was to know the main problem they face while in a new land and how they are alleviating it at the moment. I formulated my problem interview questions following the guidelines I presented in Section 4.2. As per the guidelines, I emphasized on getting the user's facts rather than opinions. Thus, my questions were solely about the users' current experience. I asked twenty newcomers that are mainly asylum seekers I met at the reception centers or outside. Based on the newcomers' responses I interviewed four organizations. To preserve the privacy of the respondents of the interviews, I will keep the full names confidential and only mention initials of the interviewed persons or organizations.

6.1.1 Newcomers

Each interview with a newcomer was a conversation rather than interrogation or following a strict format. I wanted the subjects to feel comfortable and speak about their real situation. I went to different refugee reception centers in Finland in order to have insights from different places, to eliminate any bias for situations that might be related to only one reception center. First, I asked about their background to get some demographic information. Second, I concentrated on their

situation in Finland, and asked about their residence status and how long have they been waiting for the decision of their residence. Finally, I asked about the main problem they face regarding integrating in the country and what helped them alleviate it. The detailed questions and responses of the interview can be seen in *Appendix A: Data Collection Interviews*. Based on the responses, the observations I got were as follows:

Demographics

- Ages range between 18 and 35.
- Most of them come from Iraq.
- Education: More than 70% of the interviewed sample has Bachelors Degree, The rest have either High school, Primary School, or Masters degrees.
- Skills: People have at least one skill that they have worked with. Many people have more than one. Generally the people expressed willingness to work.
- Most have been in Finland for at least one year.
- Most of them still do not have residence permit (80% of the interviewed sample, out of which 25% got their residence request rejected once).

Main Problems

I left this question open ended although I asked for the main problem. The goal was to let them speak what they think of, and not try to put their responses into categories when meeting them. I quote some typical responses below:

- “The main problems are learning the language and finding work. Locals cannot help you if you do not have official identification.” - Haydar, a News Editor.
- “[Unstable policies are] stressful for me, even when I consider my case is strong [with the skills I have]. The typical refugee here has done a lot of things and is good at them. So we feel that our skills are just being killed.” - Zaid, over 8 years of experience in Electronics and Sales.
- “[The current] Integration plan [does not] get the most out of a person’s potential. This leaves me looking for ways to get out of the reception center and try to look for opportunities.” - Ahmed, has a Computer Science degree.
- “I cannot do much in the reception center. It is a slow process and a lot of time is wasted. Besides that, there is no social life to make up for the situation.” - Daniel, Masters’ teacher in Horticultural Sciences.

Based on the responses I got, I recorded which problems were recurring the most in the newcomers' responses. The result is illustrated in Figure 6.1.

Most Recurring Problems Among Newcomers



Figure 6.1: The Most recurring problems mentioned by newcomers.

How the Problem is Currently Alleviated

- “I would like to feel useful. Every day I sit here without doing anything, it stresses me out. Volunteering was making me feel more useful. ” – Z.
- “I desperately look for ways to get out and try to do activity work here and there to meet locals. Some volunteer work with [an organization] is done, not regularly, but it helps us feel we are doing something useful.” – W.
- “I volunteer for The Shortcut community and Startup Refugees. I am also a volunteering member in [an organization]. That is how I try to get myself to meet friends from Finland.” –A.
- “I volunteered a lot during my stay, and now I got a part-time job as a translator. That is still not enough for my residence, but I try to alleviate the tough situation throughout working and volunteering. I feel better when I help people using my English skills.” –N.
- “Rather than staying stressed about it at home, I worked in a lot of places for free, until I actually found a paid job. I am still waiting for my residence decision, but at least I keep trying to work until they really want to stop me and get me out of the place.” –M.

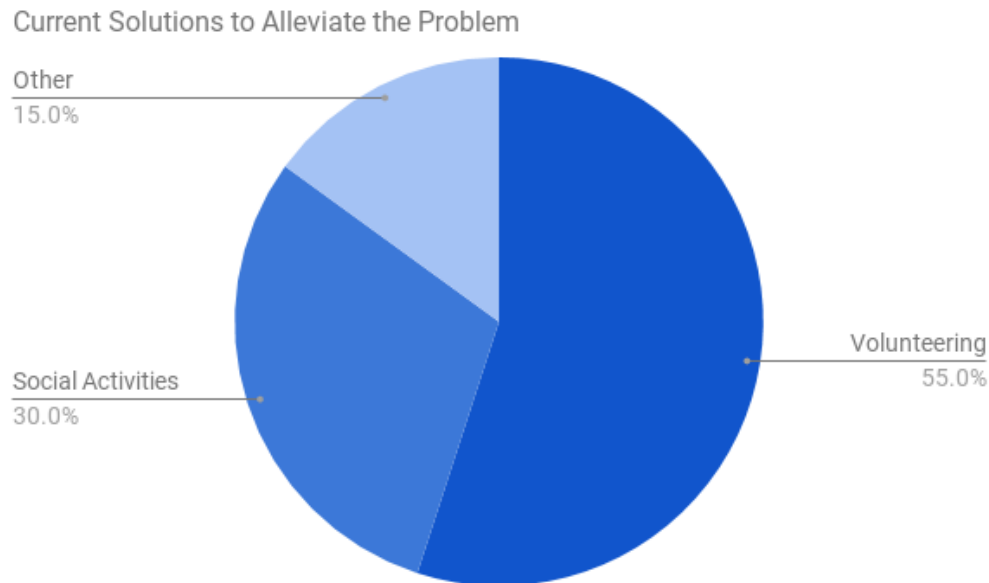


Figure 6.2: Current solutions newcomers have been finding to help them alleviate their problems.

Observations and Reflections

Based on what I found from the interviews with newcomers, their biggest problems arise from the stress while waiting for the decision of their residence permit. They are given by the migration agency a certain integration plan that they do not find efficient. They are given only two hours of language learning per week, 90 Euros of allowance that they cannot do much with, and the fact that they lack official identification documents is limiting them from very basic rights (one newcomer was denied borrowing a book from the library because the ID card from the reception center was not considered official).

With little things for them to do at the reception centers, newcomers look for different ways to socialize and get to know locals. One common recurring solution to relieve their stress was that they were given opportunities to volunteer by organizations (Figure 6.1). Not only did this action make them feel better because they are being helpful and giving back to the community, but also it is helping them get some connections with the locals. Most of the newcomers who mentioned volunteering and other events expressed keenness to involve in more of these activities whenever they get the opportunity. Moreover, I found that some newcomers have benefited from volunteer work by eventually finding paid jobs.

After learning about these facts, I now know that my targeted users are refugees who have been in the reception center for at most a year, when they are the most

enthusiastic about volunteering. Next, I wanted to look at the user segments from the locals, in order to complete the answer to RQ1. I discuss that in the next section.

6.1.2 Locals

Based on the initial interviews with the newcomers, I figured that the best approach is to start with the local organizations that are directly involved with the refugees. This way I get views based on first-hand experience with the situation and insights to tackle the problem faster. Thus, I started to gather data from these organizations by interviewing them.

I had three goals from the first interview with organizations. First, I wanted to clarify the value chain related to the refugee integration plan in Finland and have a broader view on the picture. In other words, I wanted to understand the shareholders dealing with the refugee situation. This helps me in identifying where in the value chain does my solution fit and how can I relate to the rest of the shareholders. Second, I wanted to learn status quo of how the organizations are recruiting volunteers and why they are doing it. Third, I wanted to know what problems organizations are facing while recruiting volunteers, to see how I can tackle these problems with my solution.

With these goals in mind, I designed interviews tailored for each organization. I interviewed representatives from different organizations including well established organizations and other Finland-based startup organizations that are involved with the integration of newcomers. The full interviews are shown in Appendix A.

Main Problems

Following are the responses I got from the local organizations regarding the main challenges they have when recruiting volunteers:

- “Problems include:
 - “how are we going to find volunteers?”,
 - “will we find enough volunteers?”, and
 - “how can we find the right ones?”

Also... reaching the right people to volunteer for the right place is hard, and the means such as email lists often goes as spam.” - R., from an organization in Turku.

- “Although volunteers feel super excited about volunteering, they are not sure what they can help with. We also face the same challenge since we do not know what proper task to assign them. Sometimes we assign tasks but they would not be a perfect match, which decreases the chance by which

they return to volunteering in the future” - Y., from a startup organization in Helsinki.

Value Chain

During the interviews, I wondered how Finland deals with the situation from the government’s side to the asylum seeker’s side. Therefore, I included a question about the value chain, as can be seen in detail in Appendix A, question 9. The question was necessary to know what the integration plan, which was referred to by many newcomers, actually is. The response came as follows: “Based on [the Finnish Constitution’s act about receiving people seeking international protection], the Migration Agency organizes different integration plan and makes decisions about the residence permits. Then, the Migration Agency works with the Red Cross, reception centers, and other companies on the organization of integration plans, wherein they put newcomers, after they were given the residence, in a school to learn the language as well as in an internship.”

Building on the given response, the value chain can be illustrated as follows:

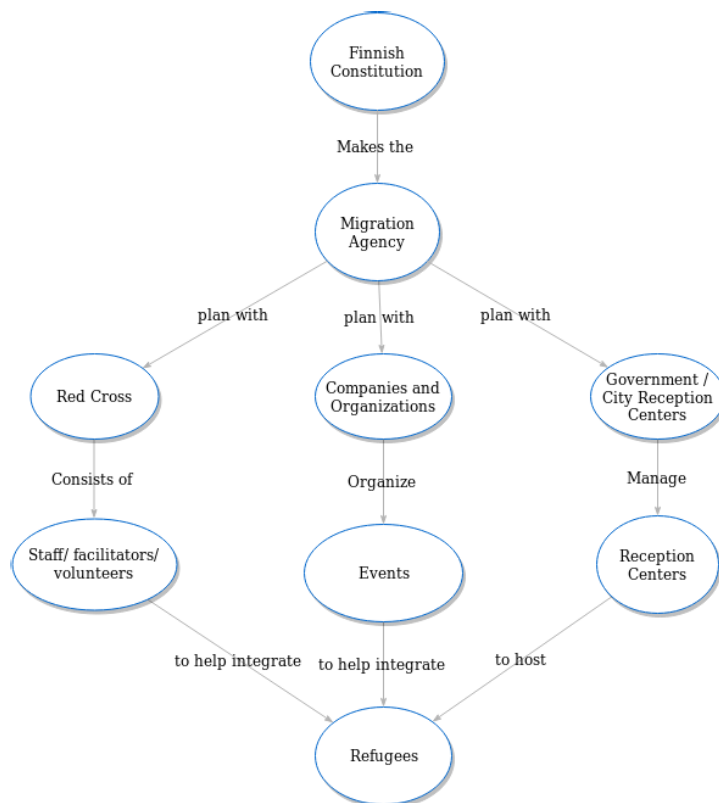


Figure 6.3: The value chain for the integration plan, illustrating how it is implemented in Finland from the government to the asylum seekers.

Observations and Reflections

From the information I got from the local organizations, I understand the following:

- Newcomers are distributed between reception centers administered by private companies or by the Red Cross.
- Reception centers often organize events for newcomers, including language learning and social events.
- Organizations offer volunteering opportunities and welcome newcomers to be part of it. Often organizations like the Red Cross are trying to get more of the newcomers to volunteer.
- The current way of looking for volunteers is through word of mouth or Facebook groups.
- A common problem among organizations is the lack of proper placement for newcomer talents. This makes assigning volunteers to the right tasks hard.
- Organizations continuously look for ways to find more volunteers and assign the right talents to the right tasks.

Answers to RQ1 and RQ2

Based on the observations, I answer the first two research questions as follows:

RQ1 *What are the user groups that this service will solve a problem for?*

The first user segment is refugees who have recently been in Finland for about a year. This is the segment that is continuously looking for opportunities to integrate, and are keen on volunteering. The second user segment for my service is local organizations like the Finnish Red Cross and The Shortcut.

RQ2 *What are the main problems of these user groups?*

The main problem for refugees is that they cannot work with the lack of official identification. This leaves them stressed and continuously looking for opportunities to increase the chances of their employment through having social connections. The main problem for local organizations is that recruiting volunteers is inefficient since they hardly know the right fit between the talents the potential volunteers have and the actual volunteering opportunities.

Now that the user segments are more defined and their problems are clearer, I proceed to propose a solution, which is the focus of RQ3.

6.2 Proposed Solution: Answering RQ3

In Chapter 2, I discussed the background about the problem and how it is being tackled. I also expressed how despite these efforts, the locals and newcomers still face barriers to integrate, due to the lack of both the social aspect and actionability of the current solutions.

Based on the problems researched during the literature review and discovered during the data collection phase, I hypothesize a solution that fills the gap left by the existing solutions. This will be the answer to RQ3:

Answer to RQ3

RQ3 How can I leverage existing technology to solve the problem?

I propose to match newcomers interested in volunteering to organizations that have volunteering opportunities. This happens through a platform where newcomers showcase their talents through ten seconds of videos that will be available for organizations to see and select the candidates. The technology to be used is Instagram as a first prototype, since it already has the users and the video functionality. However, since direct connection between organizations and newcomers does not happen through an Instagram account, the ultimate prototype would be a web application with users including both newcomers and organizations, and direct communication functionality possible. I will refer to this platform as TalentPal, “pal” standing for “friend” and also for “peace and love”, the state in which I wish for both newcomers and locals to live.

In this section, I discuss my proposed solution in detail. First, I begin with exploring the value proposition it gives to the targeted user segment. Then, I state the differentiating factor by performing competitor analysis. Next, I talk about the features my solution will have in general. Later, I discuss the environment of the solution and how it plugs in with the other solutions. After that, I state the impact this solution could bring, and I close with the possible challenges I foresee.

6.2.1 Value Proposition

To establish relevance of the solution to the real world, I developed the business model for the solution. This happened during the early research phase and while learning more about the problems through the data collection phase. Following the discussed concepts in Section 4.2, I performed the business model generation using both the business model canvas and the value proposition canvas. The results of

the process are shown in *Appendix B: Business Model of TalentPal*. In this section, I present the main findings for the value proposition that the proposed solution provides for each targeted user segment.

Producing value propositions require understanding the user profile. Then, the values are mapped according to the user's pains and expected gains. For each user segment below, I will state their jobs, their pains, and expected gains. Then, I will list the relevant pain killers for them.

Value Proposition for Newcomers

Jobs Focusing on the refugees as newcomers, I find that their main jobs include:

- Getting employed. This job is functional and, as found out during the interviews, is one of the main ways to settle down.
- Learning the local language. This is both functional since it helps in better work opportunities, and social since people think they are part of society.
- Feeling home. This job is both social and emotional.

Problems Their challenges and pains in this process are include:

- They are lonely and not trusted. Every newcomer has to start from the beginning to build their network, which feels overwhelming.
- No efficient language learning done. Refugees get only two hours per week.
- They feel distant from society, isolated in the reception centers.
- Laws and regulations slow down integration. The cycle goes such that newcomers need valid residence to be able to work, although having a work contract can help in getting the residence permit.

Values The values the solution can provide them:

- **Expand their network.** Since refugees in the reception centers tend to feel lonely, allowing them to increase their connections and expand their network provides value to them. Once newcomers start having more contact with locals, they get to learning and practice the language more naturally than in a classroom setting.
- **Showcase talent.** By providing the refugees with a means of showcasing what they are capable of doing, the solution tackles the issue of the trustworthiness that arises from not knowing strangers.

- **Get the sense of belonging.** The solution provides value to the refugees when it offers them volunteering opportunities and makes them feel that they are giving back to the community. This in turn relieves the stress refugees are going through.

Value Proposition for Local Organizations

Jobs The local organizations' main jobs include:

- Helping people feel integrated. This job can be classified as social. It is an important focus for organizations such as the Red Cross and The Shortcut.
- Organizing events. This is a functional job that goes towards the mission of integrating people.
- Recruiting volunteers. This is a functional job that is required when organizing events.

Problems Their challenges and pains in this process include:

- Difficulty in matching the proper talent to the proper volunteering positions. As discovered during the data collection phase, neither the volunteers nor the organizations have a clear view on the best fit between the wanted skills for the needed tasks.
- Recruiting volunteers gets time consuming. This includes first finding a number of volunteers and then going through their profiles and finding what skills they have.
- Lack of insight towards the volunteer profiles before physically meeting them.

Values The values the solution can provide them:

- **Better talent positioning.** Through being able to browse and search for talents according to their skills, organizations can match the right skill to the needed volunteering position.
- **Save time by having efficient recruitment.** Searching for the needed skills and checking a short-video profiles offers a chance to screen through candidates before having to call them for an interview.
- **Get insight to what the candidate is capable of.** This way the recruiters have a better view on the personality of the volunteering candidate.

The value propositions for each customer segment are summarized in Figure 6.4.

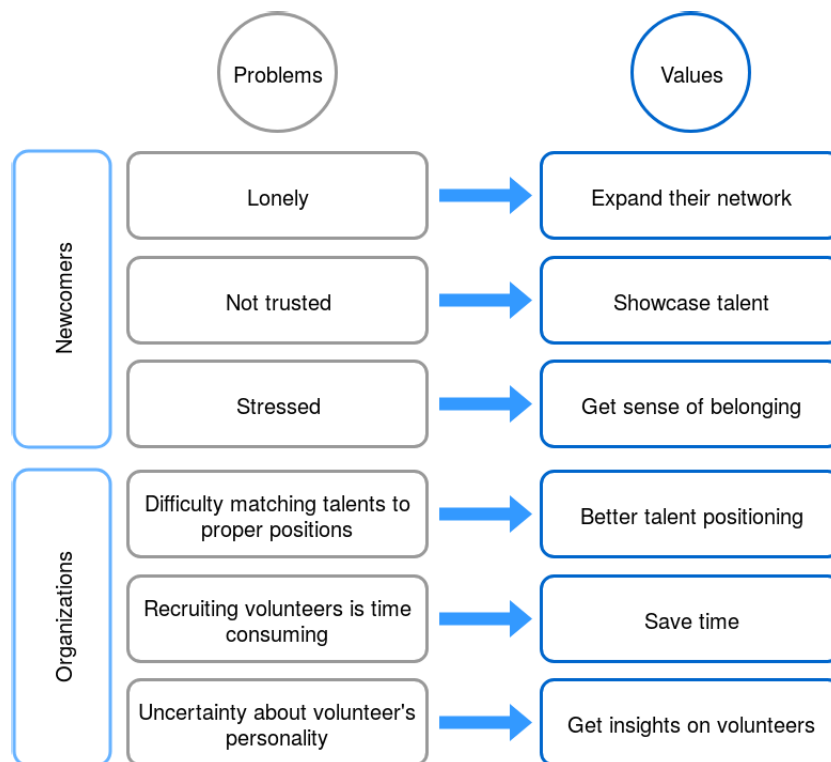


Figure 6.4: Value propositions for each user segment.

6.2.2 Differentiating Factor: Competitor Analysis

In Chapter 3, I presented the current solutions helping refugees in the recent years. In this section, I present how the proposed solution, TalentPal, differentiates with the other solutions in Europe and specifically in Finland. To express the differentiating factor, I will perform Competitor Analysis. Despite the term “competitors”, the other existing solutions are in fact potential “collaborators” or “partners”. In the business world, even competitors can partner for mutually beneficial purposes, and the same goes with social enterprises. In more concrete terms, the Finnish Red Cross and The Shortcut are two organizations that target the problem in their own ways, and they are both partners or customers of TalentPal.

In Finland

Several metrics are used to differentiate TalentPal. When contrasted to other solutions in Finland, it has two main metrics: what it helps newcomers with, and the means by which it does that. In more concrete terms, the first metric is what TalentPal exactly does: it helps newcomers find volunteering opportunities by marketing their skills. This compares to The Shortcut [60] and the Finnish Red

Cross [78], which also provide the same, and contrasts with Startup Refugees [59], Zharity [61], and partly Funzi [57] which help in finding a job. The significance of this differentiation comes from the difficulty level of each process. Finding a job is a more difficult process since it requires official documents, which are common missing factors from the refugees. On the other hand, volunteering is simpler since it avoids bureaucracy by inviting enthusiastic individuals to open opportunities without requiring official identification. The second metric is the means by which the solutions work. While most of the volunteering solutions are physical and rely on word of mouth, TalentPal starts by making the process more digital. This helps in making the process of matching volunteers to opportunities more efficient. Organizations get to screen through profiles of potential volunteers and begin to know about each candidate a step before meeting them in person. This is where TalentPal can partner with the physical solutions, easing their effort by leveraging the digital media. The differentiation of TalentPal among other solutions in Finland is illustrated in Figure 6.5.

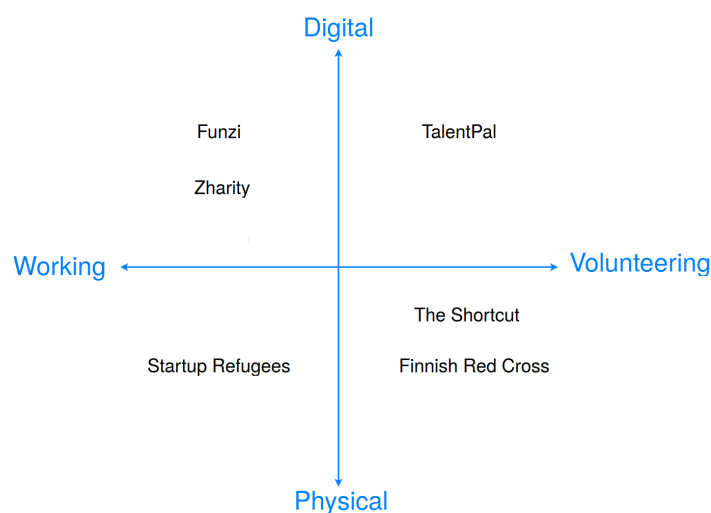


Figure 6.5: Differentiating factor of TalentPal among other solutions in Finland.

In Europe

Being differentiated mainly using the aforementioned metrics, TalentPal is characterized by additional factors when contrasted with other solutions in Europe. In the following paragraphs, I will discuss how TalentPal is different according to both the time frame by which it is effective and the functionality when compared closely with similar solutions.

First, the time frame where TalentPal targets the issue of integration is different than other solutions. Referring to the stages of the journey of an asylum seeker described in Chapter 3, most of the solutions in Europe target the problem at Stages 1 through 3, before arrival to the new country, at the first few days of arrival, and after applying for asylum. On the contrary, TalentPal targets Stages 3 through 5, after newcomers arrive and figure out the basic information and process of their residence, and while they begin to find a job, meet people, and learn the language. Based on the initial interviews, this is the time where newcomers are open to trying more opportunities to meet locals and enhance their connections.

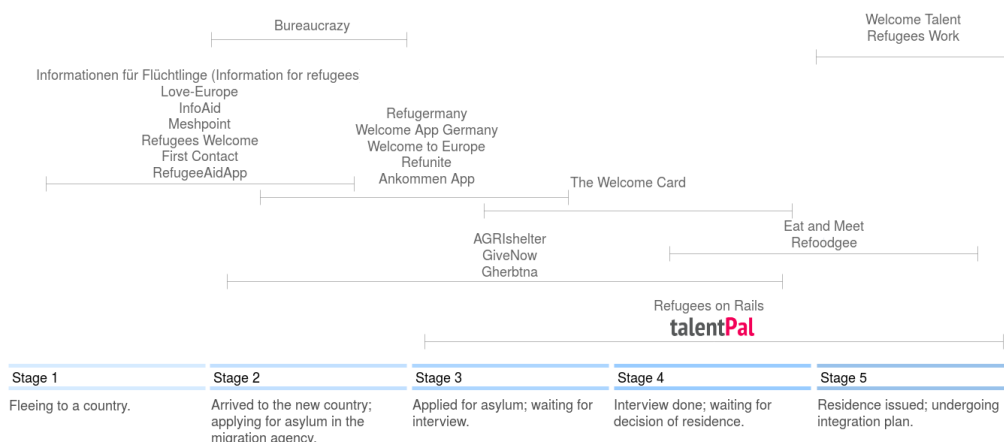


Figure 6.6: TalentPal's position according to the asylum procedure.

Second, in comparison with similar solutions that involve connection between newcomers and locals, TalentPal's functionality is distinguished in several ways, as shown in Table 6.1. The solutions listed are similar to TalentPal in that they involve either skills marketing of newcomers, like Welcome Talent [56], or social connection between newcomers and locals, like Refugees Welcome [49] or Welcome Movement [79]. The following list explains each functionality:

1. **Action-based** means that the solution involves interaction between newcomers and locals happens with a certain aim. All solutions compare in that they are action-based. With Refugees Welcome, the connection happens on the basis of hosting refugees. Similarly with Welcome Movement, the connection happens on the basis of going to events in which newcomers and locals are expected. In the case of Welcome Talent, the basis of connection is matching the right talent to the right company. With TalentPal, the action is volunteering.
2. **Previous Connection:** This involves having a connection between newcomers and locals before the physical meeting. In solutions that involve

matching between locals and newcomers such as in the case of Refugees Welcome and Welcome Talent, the first connection happens when locals meet newcomers physically. This means there is risk associated with the first meeting, since there needs to be a certain level of trust between both sides. In the case of Welcome Movement, this happens through a “handshake” that happens between newcomers and locals on the mobile application. With TalentPal, the connection happens

3. **Skills Marketing** is a means for the newcomers to show their skills. With Welcome Talent, this happens through the LinkedIn¹ integration. TalentPal’s core functionality is skills marketing to show what newcomers are capable of.
4. **Social Media** integration includes sharing or even using the solutions through other social media services. As mentioned, Welcome Talent is integrated with LinkedIn, whereas TalentPal involves logging in through Instagram.
5. **Video-based** services are more personal and intriguing. While all other solutions are text-based, TalentPal is based on videos, which keeps the content more engaging.

Table 6.1: Differentiating TalentPal from similar solutions in Europe.

	Refugees Welcome	Welcome Talent	Welcome Movement	TalentPal
1. Action-based	✓	✓	✓	✓
2. Previous Connection			✓	✓
3. Skills Marketing		✓		✓
4. Social Media		✓		✓
5. Video-based				✓

Indirect Competitors and Inspiring Solutions

Social network services like YouTube², Facebook³, and Instagram⁴ can be also used for the purposes of integration. In fact, several Facebook groups have been created to solve some problems with refugees or to share stores, or simply to find

¹<https://www.linkedin.com/>

²<https://www.youtube.com/>

³<https://www.facebook.com/>

⁴<https://www.instagram.com/>

volunteers. However, these existing services have more general purposes, and can therefore be seen as indirect competitors. With TalentPal, the focus is more on skills marketing for newcomers as a starting point. Moreover, matchmaking or job-finding services can be seen as inspiration to the current solution, including Tinder⁵, Klip⁶, and LinkedIn. Some of these solutions have inspired some features that will be used in TalentPal, as will be discussed next.

6.2.3 Features

Based on the needs and the values that so far resulted for the user segments, the features TalentPal can be assumed. This section presents the features ranking from most important to nice-to-have. Nevertheless, since the process devising a solution is iterative, these features and their importance are all subject to changes. More will be found out when usability evaluation takes place.

Features

The two users of the platform are *newcomers* and *organizations*. For newcomers to become candidate volunteers that are selected by organizations, they need to have profiles that consist of a combination of video and text, and other features.

1. **Video profiles:** The short video profile, within ten seconds, is a key feature that gives more insight to the personality than a picture or text. As discussed in 6.2.2 this is a key differentiating factor.
2. **Tags:** Following the video, text in the candidate's profile mainly consists of skills, which are presented as tags. Tagging the skills helps in searching or categorizing functionalities. That is, a skill-tag can be searched for or selected to view other candidates with the same skill or can be.
3. **Searching:** In the event that organizations require volunteers with specific skills, they could search for certain skill-tags. Candidate volunteer profiles could also be searched for.
4. **Reviewing:** Once a certain volunteering experience has occurred, volunteers and organizations can both be reviewed. Including a review mechanism (such as through rating) opens the channel for users to express feedback and can act as a means for candidates and organizations to strive to maintain high standards.

⁵<https://www.gotinder.com>

⁶<https://www.joinclip.com/>

Given the above features, the design of the solution can be devised. The plan is to design a prototype of the solution, test it, and find which features are important from the users' perspective to implement in the subsequent prototype. The next section discusses this process in detail.

6.3 Evaluation of the Proposed Solution: Answering RQ4

After the problem was defined and the solution was proposed, the next step was to test the proposed solution with users. This was done by designing prototypes of the solution and performing usability evaluation, which gives the answer to *RQ 4 – What are the key features that make this solution successful?* This section presents the results of two iterations on the prototype and the testing performed on each.

A lean and rapid prototyping method will be followed in the design process. Through this method, the focus is to get the most feedback possible from the users with the least resources spent on designing the solution. The reason is that testing with the users after designing a full-fledged solution can be costly in case the users do not find the solution useful. Since TalentPal is still a hypothesis of the solution to the integration problem, I will begin with a quick solution that requires the least effort to get the most feedback possible.

6.3.1 First Prototype

The first prototype will be done using an existing social platform, which is Instagram. Despite foreseen shortcomings, several reasons have resulted in this choice. The advantages and disadvantages of using Instagram as a first prototype are presented next:

Instagram Prototype Advantages

- Features 1 to 4 mentioned in Section 6.2.3 are present in Instagram, hence the platform could be used as a quick first prototype to test those features. Instagram's sole purpose is sharing photos or videos, videos can be easily posted through the platform. Moreover, through the use of Instagram's hashtag feature, the skills tagging can be done when writing the description of each video profile as a caption under it. Additionally, the search feature is found through Instagram, so certain hashtags or profiles can be searched for. Further, the reviewing of each profile can happen through commenting on each profile.

- Instagram has the user base, so choosing it eliminates the effort of getting users introduced to a new platform.

Instagram Prototype Disadvantages

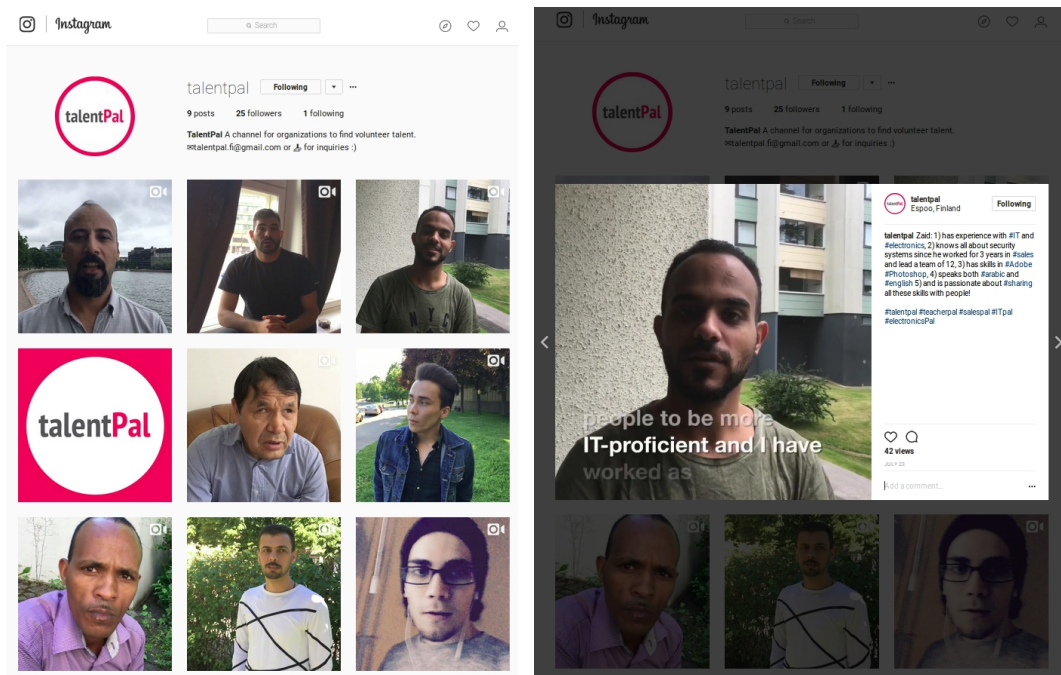
- Since Instagram's purpose is more generic than the intended use with TalentPal, more work has to be put into communicating how to use it for the specific purpose. This can be through video tutorials on the channel.
- Through this platform, TalentPal would be an account containing all the video profiles. This means that individual effort will be done to collect the videos and put them on one channel. In this case, no direct communication between the interested organization and the newcomer is possible. The communication would happen through the channel, where I would be the middle person. Another alternative would be to enable Instagram users to post videos of their own and include a certain hashtag (`#talentpal`). Searching for that hashtag can collect all profiles, but could also contain other posts that have the same hashtag but not related to the service. Another drawback with searching is that it is only possible for one search term, which eliminates some usability convenience such as searching for two or more skills at the same time.

With these advantages and disadvantages in mind, I wanted to count Instagram as a proof of concept to immediately test the features. For this prototype, majority of the work was done through getting the first users which were asked to sign a consent form to agree that their video profiles go public on this channel for the purpose of the research. After consent was taken, the videos were posted on the main Instagram channel's page, as shown in Figure 6.7a. Once an organization representative lands on this page, they click on a video and the view changes to Figure 6.7b, showing the video and more details of the newcomer's profile.

The first prototype was evaluated with both user segments. The focus of the evaluation was to test how the newcomers perceive the video concept to showcase their talent, and whether the organizations can find what they want easily. The detailed interviews are presented in Appendix D. The main positive (marked +) and negative (marked -) feedback for each customer segment is highlighted next:

Evaluation by Newcomers

- + Video provokes the newcomers' creativity to come up with an interesting profile.
- + Instagram is common to have across the newcomers, so accepting it as a platform is easy. Newcomers were sharing their own videos on their profiles.



(a) Account page containing all newcomers' profiles. (b) A newcomer's profile containing their skills as hashtags.

Figure 6.7: TalentPal's first prototype using Instagram. The prototype can be viewed at <https://www.instagram.com/talentpal/>

- Some training is needed before taking the video, especially that they are communicating in a language other than their mother tongue. Despite being able to communicate in English, doing that through video becomes harder.
- Due to lack of information on how the idea is applied on the platform, newcomers were concerned with type of volunteering positions they get. They wanted to ensure the positions they get were for opportunities relevant for their career and could build on their experience.

Evaluation by Local Organizations

- + The video concept is catchy and can get addictive to watch the videos.
- + Hashtags are a good way of showing the skills.
- Short videos are good in giving the gist and act as a teaser. More is needed before a recruitment needs to happen.
- The actions are not clear, so more communication needs to be done to know what should be done to acquire a volunteer.

- In real life, recommended people or familiar faces affect recruiting. Without familiarity and any recommendation by other people, getting to connect with somebody whose video is there is not the preferred option.
- Searching for hashtags still might show other results not related to the service.

Based on this feedback, the second prototype needed to be a solution that is more specific for the purpose of matching volunteers to organizations. For newcomers, this means that there needs to be a clear mechanism of adding their profiles and knowing what events they are asked to volunteer for. For organizations, this means the searching has to be more focused on the newcomer's profiles, and that there should be a means of directly messaging people to show interest in recruiting them. The next section shows the design of the second prototype and its evaluation.

6.3.2 Second Prototype

To design a software system to serve as a prototype of the solution, the previous feedback was analyzed and turned to requirements for the next iteration of the design. Common ways to do that using Software Engineering techniques like use-cases or user stories.

Use-cases, or use-case scenarios are detailed steps describing the interaction between the user and the system. A UML diagram, called the use-case diagram, is used to illustrate actors that interact with a system through certain use-cases. Each use-case is then specified in detail to make the prototyping process clearer for the software designers and developers.

User stories compose another prototyping technique commonly used in Agile Software Development. Through this approach, a software solution can be designed based on a certain story that is made for a persona, which is the intended user of the system. Usually short, the stories are formatted in a way to convey the goal the user needs to reach when performing an action using the system. The general format of a user story is as follows:

As a <user >, I need to perform <action >in order to achieve <goal >

I blend the two methods together, first drawing a use-case diagram the writing a user story of each use-case. In the rest of this section, I will show the use-case diagram and the corresponding user stories. Then, I highlight the main screens to demonstrate the second prototype, followed by the prototype's user evaluation. For the sake of brevity, I will show only the main screens of the second prototype here, while I present the full one in Appendix C.

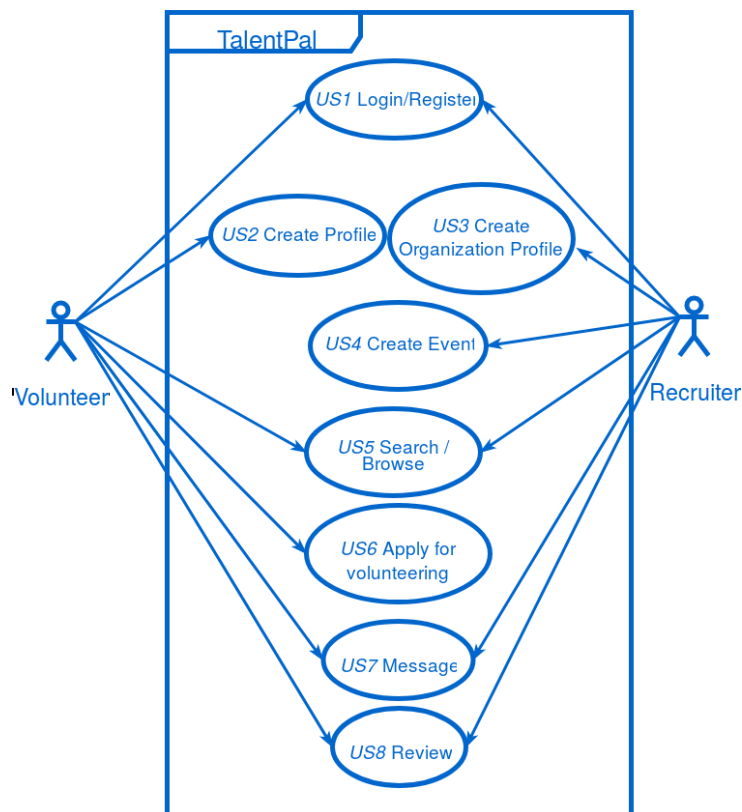


Figure 6.8: Use-Case Diagram of the System

In the use-case diagram shown in Figure 6.8, there are two actors interacting with the TalentPal system: the volunteer, who represents the newcomers, and the recruiter, who represents the organization. Each of these actors is connected to a bubble containing the use-case, with some use-cases being shared since they involve both actors. For each use-case, a user-story is written. The user story is meant to describe a the typical cases for the usage of the system and is not meant to be exhaustive. The numbers of each user story (*US*) correspond to a use-case.

User Stories for Newcomers

Zaid is a person who arrived to Finland as an asylum seeker. Having done his interview with the migration agency, Zaid wants to integrate with the local community while waiting for the decision of his residency. He hears about TalentPal and decides to use it to get volunteering opportunities.

US1 Zaid opens the application for the first time and is prompted the screen show in Figure C.1a. To sign in the system, Zaid uses his email or linked social media account. The interface is similar to the one in

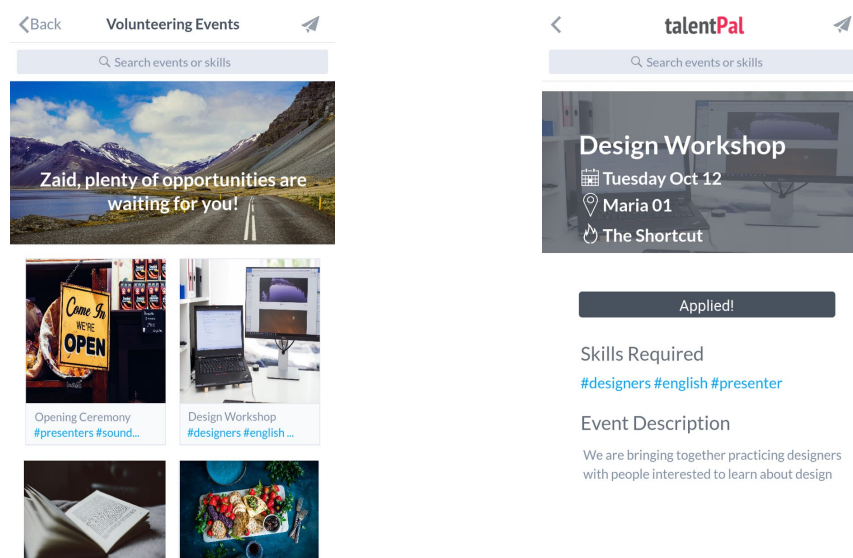
- US2* Zaid is asked to record his video profile, like in Figure C.1b. Once satisfied with the video, he adds his skills as hashtags in the *Details* box below the video in Figure C.1c, then clicks *Save Profile*.
- US5* Zaid browses through volunteering opportunities posted by organizations, as shown in Figure C.1d. He can also use the *search bar* to look for something specific with his skills, for example.
- US6* Once Zaid finds an interesting volunteering position, he clicks on it and the view of the event expands with more details, like in Figure C.1e. Then, he clicks *Apply* to express his interest (Figure C.1f). His interest in the position will be shown on the event. Zaid can click on the event's organizer to view the organization information (Figures C.1g and C.1h).
- US7* Zaid gets a message from the organization that created the volunteering opportunity and a connection is made. Through the messages, he gets a *Confirm Volunteering* button from the organization that he clicks to confirm his attendance to the event (Figure C.1i).
- US8* After the volunteering experience, Zaid is presented with a pop-up page in which he writes a review and rates the volunteering experience with the organization.

The chosen platform for the newcomer's solution is a mobile application, mainly since newcomers mostly own mobile devices. Figure 6.9 shows two screens, including an example of what the newcomer would see after creating a profile, as well as a certain event's details page. The full prototype screens are shown in Appendix C.

User Stories for Local Organizations

Kati is a talent acquisition officer in a local organization, which is holding an event and requires a lot of volunteers with certain skills. Without thinking twice, she goes to TalentPal because she believes that she will get the skills with little effort.

- US1* Kati lands on the page in Figure 6.10. She decides to login the system through her organization's account.
- US3* Kati enters details of her organization (Figure C.2b) and clicks *Save Organization Profile*.
- US4* Kati creates the event that she requires volunteers in, using a screen similar to Figure C.2c, adding an *Event Name*, *Description*, *Time*, and *Required Skills*. The *Required Skills* parameter enables putting skills as hashtags so they become searchable by the users. Then, Kati clicks *Create Event* so that it can be published for other users to see.



(a) List of events presented to Newcomer. (b) Detailed event page where the volunteer can apply.

Figure 6.9: TalentPal's second prototype as a mobile application for the newcomers.

US5 Kati gets the relevant volunteer profiles upon posting the event, as in Figure C.2d. She finds Zaid, and clicks on his profile to view his video and other details, and a screen like Figure C.2e. Kati could also click on *Explore Talents* to see the list of talents such as in Figure C.2a. If she wants, she could search for a profile with certain skills, such as in Figure C.2j.

US7 Kati messages Zaid to see if he is interested in volunteering for the event and he agrees. Kati sends a *Confirm Volunteering* button for Zaid to click (Figures C.2f and C.2g).

US8 After the volunteering experience, a pop-up page prompts for Kati and she is asked to rate Zaid's profile and write a review (Figures C.2h and C.2i).

The chosen platform for the organizations is a web application, mainly since it is more convenient for recruiters to browse through profiles and make their choices. Figure 6.10 shows two screens, including an example of what the recruiter would see upon creating an event, as well as viewing the profile of a potential volunteer. The full prototype screens are shown in Appendix C.

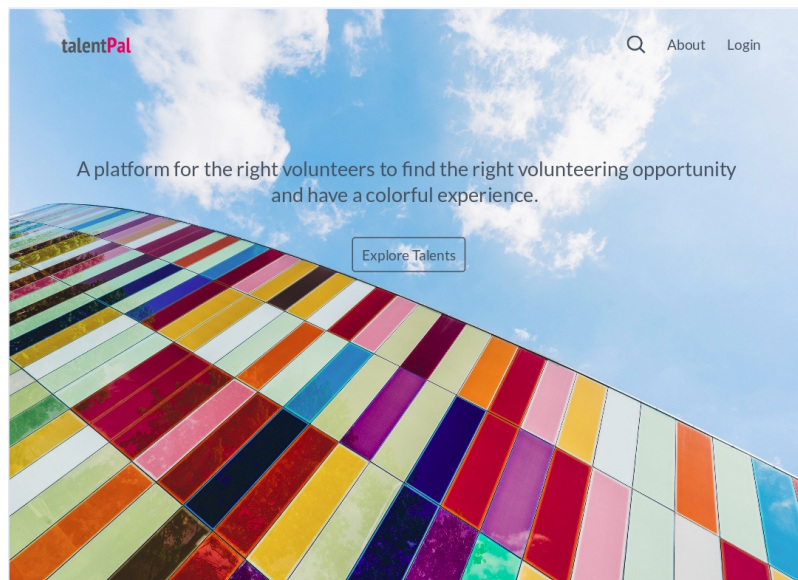


Figure 6.10: TalentPal's second prototype as a web application for the organizations.

After the second prototype was designed, it was tested with the users. Following are highlights of the user evaluation, with details in Appendix D.

Evaluation by Newcomers

- + Interface easy to use.
- + Good to see ratings on organizations.
- Coming up with a video profile as the first thing is not encouraging.
- More details on the volunteering position were needed. The description was not sufficient to know if the position and the skills are actually a good match.
- “I would only volunteer for something that adds to my experience, hence it is important to be clear on what I can get out of the experience”.

Evaluation by Local Organizations

- + The prototype engages more, and the steps are clearer than the previous prototype.
- Some things are still not clear where they came from, such as the rating.
- Choosing between different profiles that have similar skills gets uncertain. Need to have some way to make sure who is really experienced.

- The confirmation button is too early to have. Usually meeting the candidates in person before confirmation is preferred.

Reflection on Usability Evaluation

The usability testing and evaluation of the prototypes gave me insights on what features of the service to keep and what to remove. It enabled me to validate or refute some of my speculations, sometimes in a surprising manner. Several lessons were learned from the performed evaluation, and will be implemented in the subsequent prototypes:

- **Observation:** In general the second prototype led the subjects to spend more time on it, as opposed to the first prototype when they were impatient and ready to leave due to the lack of information. While designing the second prototype, I considered simplicity as a prime characteristic of the user interface. However, both user segments agreed that more details are needed to understand the exact functionality. Despite being generally more accepting to use the second prototype than the first, none of the users wants to use a system that is too simple that is vague. This also poses a risk on having users abandon the application altogether. To work on that weakness for the next prototype, I need to find the right balance between brevity and details.

Reflection: There needs to be proper user on-boarding at least at the early versions of the prototype until users become used to the service. implementing features that were necessary, and removing features that were not found useful.

- **Observation:** Newcomers saw that the details of the event need to be focused on the tasks. They needed to know what each skill is going to be used for exactly. Oftentimes a volunteer is interested in doing only a specific thing from the list of required tasks and currently there is no way of indicating that.

Reflection: One suggestion would be to have a mechanism for organization to specify each task and let the volunteers specify which of these they are particularly interested in.

- **Observation:** The messaging between both organizations and potential volunteers was seen natural. This went as speculated. However, the confirmation of attendance feature was too soon to have. Representatives from organizations agreed that they would actually want to spend time in knowing their potential volunteers before going for the last step, so they would take the conversation offline after using the service to find the match.

Reflection: This feature was introduced and hypothesized that it would add to things being quick. Despite people wanting solutions that cope with

their fast moving day-to-day work, they also need to perform their task in the best quality possible. This means they would rely on the system to get them the initial connection, but confirming volunteers just from the system is too bold of a move. This feature can be dropped.

- **Observation:** Newcomers were constantly asking for certificates upon volunteering to act as a proof of their work done. Based on their past volunteering experience, these certificates were useful in proving that they have done certain work and have experience in it.

Reflection: Initially, I was presenting certificates to those who have setup their video profile as a form of appreciation that they were a step ahead towards volunteering and integrating. Despite being a small gesture, the certificate was able to make them feel the sense of achievement. In the future versions of the service, certificates of achievements can be introduced to the system every time a newcomer achieves a milestone, starting from setting up their profiles, to having a certain amount of successful volunteering experiences. Besides making newcomers feel good about their achievements, these certificates can be a factor in determining which candidates have more experience.

The above reflections were based on comments that can have immediate actions and fixes. However, there were more interesting observations in the feedback that spark some ideas for future versions of the service, and they will be discussed in Chapter 7. Given this feedback, the answer to the fourth research question can be stated.

Answer to RQ4

RQ4 What are the key features that make this solution successful?

Based on the usability evaluation of the first and second prototypes, the key features that would make the solution successful include: video profiles, skill-tags, and rating. Other features, such as recommendation and certificates of achievement, are found to be promising for future implementations, yet need to be further tested.

The results obtained throughout the journey and evaluated by the users themselves served as answers to the research sub-questions. I reflect on the results and evaluation in the next chapter, as well as discuss the strengths and weaknesses of my whole research approach and solution.

Chapter 7

Discussion

In this chapter, I share my insights on both the solution and the thesis as a whole, each in a separate section. In the first section, I discuss the solution's industrial value, limitations, and future work. In the second section, I scrutinize the research, implementation, results, and mode of evaluation, also by discussing strengths, weaknesses, and future research.

7.1 Insights on the Solution

In this section, I reflect on the solution that came as a product of the thesis. I begin with the strengths of the solution. Then, I discuss the solution's limitations, before I conclude with the future work.

7.1.1 Strengths: Industrial Value

A core aim of this thesis is to solve a societal problem. Thus, emphasizing the solution's magnitude of impact is vital. As discussed in Chapter 2 the number of newcomers in Finland has risen to tens of thousands of newcomers in the past two years. Since the solution begins in Finland, it aims to impact this number of newcomers, most of which have arrived to Stages 4 and 5 of the journey described in Figure 6.6.

Scalability

Furthermore, since the problem is common across Europe, the solution is scalable. Given that a common factor across newcomers is their possession of smartphones and their presence on social network services, the problem can be scaled to other countries with a high number of newcomers. Once the solution is scaled, the impact can be estimated to be in around 1.4 million persons in Europe. Although this number mainly involves refugees, scalability is not confined to that. Given the

unique differentiating factors, the platform can scale to include any person willing to volunteer, or any organization willing to advertise its volunteering opportunities. In fact, the ultimate vision is for the platform to become a worldwide facilitator of integration through volunteering.

User-friendliness

The fact that the solution was simple and user-friendly made it likeable by both the organizations and newcomers that tested it. The catchiness of the videos was a selling point as the organizations have indicated. Moreover, familiarity with the hashtags made the solution more relateable to both user segments, thus making the idea less sophisticated. Benchmarking with existing solutions helped in inspiring a new solution that does not diverge away from the features that people are familiar with. At the same time, differentiating it from the other solutions helped in clarifying the context in which this solution is useful. Although the idea can possibly expand to other purposes, making it focused on volunteering eliminates vagueness of how the solution can be used to achieve integration.

7.1.2 Limitations of the Solution

With every solution, there are challenges and limitations that accompany it. With TalentPal, these stem from both the newness of the solution and some technical factors. I will briefly describe each in this section, and include some ways to address these concerns.

Skepticism towards New Solutions

The fact that the solution is new brings several concerns. The nature of the problem is sensitive, involving newcomers who are already stressed and their level of trust of technological solutions claiming to solve their problems is lower than before. From the interviews conducted, a lot of the newcomers expressed that they were already depressed from the fact that they could not get residence regardless of their strong cases. The main way to approach this issue is to be transparent about what the solution provides. Rather than guaranteeing residence in the country, the solution offers a channel through which newcomers express their potential and expose it to opportunities. Also, through approaching newcomers at Stages 4 and 5 as described differentiating factor mentioned in 6.2.2, guarantees that I am approaching the correct user segment.

Privacy

A second potential limitation with the solution would be that some newcomers prefer to keep their identity private, hence the solution might not work the best for them. This can be addressed in several ways. One solution will be to set the

privacy of the newcomer's profile to be visible to only the organizations that are on the platform.

The Challenge to Start with Videos

The process of recording a video has a great return once the work is done, but constructing one is a challenge. Video is a prominent feature, yet many users would not be extremely comfortable with it. Taking a video is encouraged since it shows a glimpse of the person's behavior and gives them a practice to sell themselves. This means that users definitely need help to create the video, at least in the earlier phases. While I was taking the helper role in the beginning, there needs to be a way for the system itself to help the users in the future. A simple idea would be to show other video profiles as examples to make the idea comprehensible. A more advanced idea would be to have the system suggest a sentence for the newcomers to say in their video, based on the data they input. The complexity arises when suggestions need to be less repetitive and more creative. This will be considered as a future enhancement of the solution. More future enhancements will be discussed next.

7.1.3 Future Work

Based on the observations from the usability evaluation, future enhancements of the solution would include the following:

Recommendation by fellow Volunteers

One of the goals of this solution is to create a community of volunteers. This means opening the volunteer profiles on each other, and making the platform more social. A recurring idea from the interviews was that organizations tend to recruit people who were recommended by others. A quick solution would be a *Recommend* button underneath the volunteer's video. Recommendations on specific skills are also a potential feature in the future.

History of Achievements

Organizers take several factors into consideration for their potential volunteers, so they would like to have a way to see what the volunteers have done in the past. Suggestions were made on having the history of achievement on each volunteer's profile. This could be by adding a page to the volunteer profile indicating the number of hours spent on each volunteering experience. I thought of this feature before hearing it, but wanted the users to ask for it. Hence, I will consider it for future implementations.

Gamification for user Retention

Users might use the system whenever they need a volunteering position. However, if they do not find what they are looking for from the first time, chances are that they will not return to the system again. In the future, the solution will be designed to encourage users to continuously use the platform to find opportunities by awarding points to every action on the platform. This could include volunteering for events, recommending people, reviewing organizations, and updating volunteering profiles. The awarded points can be converted to real-life awards, such as movie tickets or gift cards, which also introduces a revenue stream for TalentPal.

Suggestion based on searches

When a user searches for a certain event or a talent, the system can record the history of searches for future help, such as recommending an event that matches the volunteer's search or a talent that matches an organization's desire.

Custom video profile for each volunteering opportunity

In the future, video profiles can be tailored to different organization opportunities. One way to implement that could be to have a specific video with the application. Another way would be that organizations send questions that volunteer candidates can answer through short videos, thus making screening through candidates more seamless.

7.2 Insights on the Thesis and Research

I begin by reflecting on both the research problem and how it is aligned with the field of study. Then, I discuss my insights on how the methodology was implemented and the results were evaluated. Later, I talk about the limitations of the research. Finally, I indicate possible future research and implications for other stakeholders.

7.2.1 Strengths: Positioning of Research

This thesis combines several learning outcomes from the master's program, including the technical and business aspects, while following practices of the theory and methodology of science. The following sections elaborate on that.

Multidisciplinary Approach

The heart of engineering is to solve the world's problems. The research question of this thesis was positioned to serve as a prime example of how that would be done

using techniques of Human-Computer Interaction Design. This requires researching and understanding techniques relevant to the field, namely: user research, prototyping, and usability evaluation. Furthermore, the proposed solution's main theme was centered around Digital Media Technology, since it involves video over the internet. In addition to the scientific angle of the research question, I wanted to have the business perspective, hence I combined both concepts and included practices of value proposition creation and business model generation in my thesis.

Open Research Question

Along with the multidisciplinary approach, I chose to start with an open research question rather than a research hypothesis. While a research hypothesis might have made the path more focused on testing an idea, I wanted to broaden the process and have as much learning as possible. An open question made me take a question and see where it can end up. I never expected when I started to be working on a service related to volunteering.

Combination of Two Methodologies

Despite choosing an open question, the methodology was not limited to inductive research. I also chose to combine two approaches: the specific-to-general (inductive) with the general-to-specific (deductive). The first phase involved gathering some data to reach a general hypothesis, while the second involved testing the general hypothesis with specific users.

Data Collection Extracting Real Experience

The choice of the method of data collection was mainly focused on interviews, which has advantages and disadvantages. Even though interviews are difficult and time consuming, I chose them over surveys for one main reason: they provide data that is closer to reality than surveys provide. While surveys could get a large number of responses with less cost, the realness of the responses is less than that of the interview's. Survey respondents are bounded with a few open-ended questions and a little time to answer, leading to answers that give little insight to their real experience. On the other hand, interviews have the luxury of being open ended and, if planned correctly, can get the most out of the responses. They involve having closer interaction with the subject and can be customized to each situation and answer.

Real Users

The thesis involved creating prototypes that were tested with real users. This includes testing with newcomers as well as organizations. While testing with any

human could have still given valuable insight on the prototypes, testing with real entities ensures that the solution is designed correctly and eliminates assumptions.

Lean Approach

The extent to which a prototype was created for the solution was a high fidelity mockup of what the real solution would look like. The reason for doing so rather than building an application is that this is a more lean approach. Building a real application takes time. While I am still at the hypothesis stage and do not have the exact answer to the research question, building a real application would be too risky. Consequently, I wanted to focus on the research itself, whereby I evaluate with the users rather than spend time building the application.

7.2.2 Limitations of the Research

Still, my approach to the research has limitations in certain ways, which I discuss in this section.

Research Question Possibly Too Vague

First, the research question was made open, making it seem too broad or vague. Whereas interesting findings can emerge, many findings can result, making the significance of each remain questionable. One way to tackle this would be to evaluate the success of the solution through defining metrics of success, which brings the next point.

What Exactly is being Evaluated

The evaluation in this thesis was mainly focused on the usability of the hypothesized solution by users. The big question remains: do the people feel integrated after using this solution? Nevertheless, the work in this thesis had to be focused on one aspect rather than scattering efforts in attempting different evaluation mechanisms. Additionally, testing success of the hypothesized solution required both a fully functional prototype and a considerable amount of user base, non of which was possible to have in the time-frame of this thesis. In all fairness, what this thesis did was to break down the broad question to more actionable questions. In other words, it simplified the process of finding what is the core of the problem of integration and what could be the solution. It proposes something specific (helping newcomers showcase their talents), delivers what it promises, and proves valuable by the real users. Measuring how effective this is in real life will be an extension of the research, which I will discuss more about in section 7.2.3.

Interviewed Sample

Generally, data from my interviewed sample are compatible with the statistics from the Finnish Immigration Service. The majority of the newcomers that I have interviewed are from Iraq, which matches with the fact that 62% of the newcomers in Finland between 2015 and 2017 are Iraqis. Additionally, more than 60% are aged 18 to 34 [7], which goes in accordance with my interviews' data.

Although the effort was made to have a random selection of asylum seekers for the first interviews, the interviewed sample might not be entirely random for a few reasons. First, the sample interviewed was mainly in two cities in Finland, Espoo and Helsinki. Second, I was not allowed to interview asylum seekers in their reception centers. The only possible way was to meet asylum seekers outside the reception centers or find them by volunteering for events in which they are present. One channel that was enabling me to access a lot of asylum seekers was while I volunteered as a translator. This means that a dominant segment of the interviewed sample was from the Arabic-speaking asylum seekers, leading to a less diverse sample. Nonetheless, according to Harvard's Joseph Maxwell, who spent much of his time on validity in qualitative research, sampling in such situations is done theoretical (purposeful) rather than random [80]. This is what I have done when theorizing that asylum seekers are in most need, and approached this segment of newcomers first.

Scrutiny on Internal and External Validity

This research performed in this thesis is qualitative. For this kind of research, internal and external validity need to be assessed in certain ways. Whereas internal validity involves whether the research is addressing what it is meant to, external validity is the extent to which a study can be applied in other settings [81] [82][83]. Nevertheless, measuring validity in qualitative research is not as straightforward as in quantitative research. According to Maxwell, interviewing without adding personal inference is hardly possible in qualitative research [80]. During my interviews, I tried to isolate my thoughts and assumptions while asking the subjects, but there might have been some bias that influenced my questions and inferences. This thesis attempted to be both internally and externally valid for certain reasons, although still more work needs to be done to insure that.

The research can be considered internally valid since its main question was on how to integrate newcomers using technology. The main answer for such question is a technological artifact, resulting from a journey with the users. However, more research needs to be done on how to further ensure that I am measuring what exactly I intend to measure.

The research can be considered externally valid in Europe since it is thought to lead to similar results upon repetition with other European countries. This claim is based on both contacting refugees and asylum seekers in other European countries, and some online research. The backgrounds presented in this thesis were focusing

specifically on Finland and generally on Europe. Since the government regulations inside Europe are similar, the situation for newcomers, including their challenges and current integration plans, are also similar. This means that if the same kind of research was done in other European countries with the high influx of refugees, similar results are expected to occur. This, however, remains a mere assumption based on some input data, but it only opens a path for future investigation.

7.2.3 Future Research

Solving a societal problem through technology is an interesting topic that this thesis has attempted. However, work beyond the thesis has to be done to continue finding effective solutions. Additionally, in regards to the limitations discussed previously, the avenues for future research and implications for different stakeholders are discussed in this section.

Implications for Researchers

Several interesting research topics could arise or extend from this thesis. One extending research question would be: *How to evaluate the effectiveness of such solution?* This could be by building an actual application, gathering users, and after a significant period, asking if the same problems regarding integration are still being faced. Other research topics would be *How to further concretize measuring integration?* or *What metrics can be used to measure integration?*

Implications for Governments

For a societal problem of this magnitude, a major stakeholder is the government that is already letting its newcomers undergo its own integration scheme. One implication based on my findings is that Governments should work more closely with organizations that are trying to achieve integration. This could be through allocating more grants or funding for programs or competitions themed under coming up with solutions to integrate newcomers.

Implications for Entrepreneurs

Extending from the point above, entrepreneurs are another vital entity whose efforts can be focused on societal projects. The reason is that there is a pool of needs in this field and the chances of making business while achieving corporate social responsibility are enormous. An immediate implication would be to confirm the external validity of this solution through developing it in other countries in Europe. Alternative implications include pursuing the other findings from my data collection, such as newcomers' need to learn the local language and their lack of social life. Vast opportunities can arise from these findings.

Chapter 8

Conclusion

Whereas the issue of integration is not a recent one, its magnitude has increased in the recent years due to the disturbances happening in the world, leading to a spike in the newcomer's influx. Accordingly, several efforts are directed towards achieving better integration from multiple disciplines, including government agencies, non-governmental organizations, and social enterprises. For a topic of this magnitude, there is no single solution that can achieve integration, especially given the varying backgrounds of the newcomers and locals. Thus, multiple stakeholders have to work together on diverse solutions to collectively achieve an ecosystem that is more inclusive, whereby the different needs of both newcomers and locals are met. My efforts in this thesis take a novel approach towards the problem by leveraging the use of technology and aiming to create a solution with actionable steps towards integration. Through techniques of Human-Computer Interaction Design, I systematically reach to a possible solution, which by itself involves Digital Media Technology.

In summation, a newcomer arrives to a land and desires integration to the new society by undergoing activities including work, learning the local language, and getting personal connections. To facilitate the integration process, the government devices an integration plan, while private organizations also collaborate on facilitating the process for the newcomers.

The landscape of technological platforms that alleviate integration problems has expanded. Majority of the solution lie at the beginning stages of the journey of an asylum seeker, helping with navigation, translation, and general information related to the host country. Some solutions are handy at a later stage of the asylum process, assisting newcomers and locals with meeting and culture sharing. A few solutions are useful at an even later stage, aiding newcomers with skills-training and job-finding.

Even with the existing solutions, the community and social aspects were missing. This made me aim for a user-centered approach to find a solution that fills the gap. To make sure my solution is well-positioned, I followed guidelines of the design science process, assuring that my designed technological artifact solves

a relevant and real life problem, while bench-marking with other solutions and evaluating the quality of my own. Moreover, a pertinent solution in the industry needs an established business model, which I developed using the Business-Model-Generation tools such as Osterwalder's the Business Model Canvas. Furthermore, to ensure that my solution is usable, I followed a combination of prominent usability guidelines including those of Nielsen's and Schneiderman's. For the formal usability evaluation technique, I used cognitive walkthroughs.

The methodology that I followed was a combination of inductive and deductive research. I began with gathering data from 20 newcomers and 4 local organizations through interviews. Using this data, I then hypothesized a solution and created a prototype for it. Next, I tested the prototype with the users and iterated on it based on their evaluation.

The data collection phase aimed to answer the first two research questions about the user groups of the solution and the main problems that they face. The first user segment consists of refugees who have been in Finland for a year, who have certain skills and constantly look for opportunities to work and enlarge their social capital. Their main problems include getting lonely, not being trusted, and feeling stressed about their situation. The second user segment consists of non-governmental local organizations that continuously have volunteering opportunities. Their problems are mainly the low efficiency in the volunteer recruitment process and the lack of insights to the potential volunteer's capabilities.

The proposed solution answers the third research question on how to solve the problem using existing technology. In line with video over the internet as a prime example of Hypermedia, and the existence of hashtags in social network services, the proposed solution was an online platform that uses these components to match newcomers who are interested in volunteering to organization who are looking for volunteers. The use of these components will be by enabling newcomers to showcase their talents through profiles of 10-second video pitches about their main skills, while complementing the video with a text describing their experience and aspirations, with their skills being input as hashtags. These hashtags will be searched for by local organizations, who can get a glimpse on the potential volunteers' capabilities.

To validate or refute the proposed solution's effectiveness, I made it undergo two rounds of usability testing. For the first round, I took a lean approach and used an existing social network service that has the desired features of video and hashtags as my first prototype. I setup an Instagram account with videos of seven newcomers to prove the concept. For the second round of testing, I created interactive mockups for both a mobile and a web platform to test with both the newcomers and organizations, respectively. Each round of evaluation influence the decision of the key features that make the solution successful, which is the interest of the fourth research question. Based on what the users found valuable, the key features that contribute to the solution's success include video profiles, skills as hashtags, rating, recommendation, and certificates of achievement. The features

which are new are still subject to testing in future prototype iterations.

I now come back to the broader research question – *what the best way to integrate newcomers and locals using technology?* On top of the answers to the specific research questions above, the answer relies in taking a user-centered approach, wherein I start from the users, work from their problems, and keep testing closely with them. Through this approach, I can have better insight on the real problem and my solution can depend less on assumptions and more on facts. This is the reason why I was more aware of the situation once I started interviewing real users and seeing the problems from their perspectives rather than from a third party.

Generally, there is a tradeoff between an open research question that could lead to interesting findings yet risk being shallow, and a focused approach that can have little findings yet be more rigorous. In my case, the nature of the problem was broad, so I opted for an open question. Nevertheless, I wanted to add rigor by combining more methodologies (inductive and deductive) for my research, and using more than one discipline (business and engineering) for my solution. Both my research and solution have strengths and limitations.

The strengths of the solution include its scalability and industrial value, its user friendliness, based on the real users who saw the value and want to use it. Nevertheless, skepticism towards new solutions, as well as the privacy concerns might raise limitations to how the solution progresses through the market. The consequential work that needs to be done would be to communicate clearly how user's privacy is maintained, and to add the features that were repeatedly asked for by the users.

The strengths of the research include how it was positioned with a multidisciplinary approach, started with an open question and combined two methodologies to get to the answer, while collecting data from real users and using a lean approach. On the contrary, the openness of the research question might introduce vagueness to the aim of the research, leading to solving multiple aspects without getting deep in any of them. Moreover, the evaluation was done on the usability of the prototype of the hypothesized solution, but ensuring that integration of newcomers was achieved remains an interesting problem that is rather hard to answer. Correspondingly, implications to researchers, governments, and entrepreneurs can be given.

An interesting future research would be defining more concrete metrics that indicate the occurrence of successful integration. An action that governments can take is to highlight the importance of social work by allocating more support and funds towards social enterprises. An immediate implication for entrepreneurs is to find opportunities from the unattended findings of this research.

References

- [1] A. F. Constant and K. F. Zimmermann, “Towards a new european refugee policy that works,” *DICE Report*, vol. 14, pp. 3–8, Winter 2016. Copyright - Copyright CES-IFO GmbH Winter 2016; Document feature - Graphs; ; Last updated - 2017-03-16; SubjectsTermNotLitGenreText - Germany; Europe.
- [2] UNHCR, “Global trends - forced displacement in 2016,” internet report, United Nations High Commissioner for Refugees, Jun 2017.
- [3] UNHCR, “Regional refugee and migrant response plan for europe - january to december 2017,” internet report, United Nations High Commissioner for Refugees, Dec 2016.
- [4] “International organization for migration.” <https://www.iom.int/news/mediterranean-migrant-arrivals-reach-73189-2017-1808-deaths>. Accessed: 2017-09-28.
- [5] “Eurostat - asylum quarterly report.” http://ec.europa.eu/eurostat/statistics-explained/index.php/Asylum_quarterly_report. Accessed: 2017-10-01.
- [6] “Eurostat - record number of over 1.2 million first time asylum seekers registered in 2015.” <http://ec.europa.eu/eurostat/documents/2995521/7203832/3-04032016-AP-EN.pdf/790eba01-381c-4163-bcd2-a54959b99ed6>. Accessed: 2017-09-30.
- [7] “Finnish immigration service - statistics of international protection cases.” <http://statistics.migri.fi/#decisions/23330>. Accessed: 2017-10-01.
- [8] “Aliens act - ministry of the interior, finland.” <http://www.finlex.fi/en/laki/kaannokset/2004/en20040301.pdf>. Accessed: 2017-10-01.
- [9] “Finnish immigration service - asylum application processing times.” http://www.migri.fi/our_services/processing_times/processing_times_-_international_protection/1/0/the_processing_time_for_an_asylum_application_is_estimated_at_the_asylum_interview_54131. Accessed: 2017-10-01.

- [10] “Mediterranean situation - unhcr data.” <http://data2.unhcr.org/en/situations/mediterranean>. Accessed: 2017-10-01.
- [11] “Finnish immigration service - applying for asylum.” http://www.migri.fi/asylum_in_finland/applying_for_asylum. Accessed: 2017-10-01.
- [12] “Finnish immigration service - submitting an asylum application.” http://www.migri.fi/asylum_in_finland/applying_for_asylum/submitting_the_application. Accessed: 2017-10-01.
- [13] “Finnish immigration service - reception of asylum seekers in finland.” http://www.migri.fi/asylum_in_finland/reception_activities. Accessed: 2017-10-01.
- [14] T. Henry-Biabaud, “Finland must stop wasting its international talent potential,” *Academic Engineers and Architects in Finland (TEK)*, 2017. <https://lehti.tek.fi/tyoelama/finland-must-stop-wasting-its-international-talent-potential>, Accessed: 2017-10-02.
- [15] “Ministry of economic affairs - non-discrimination and cooperation are a prerequisite for successful integration of immigrants.” <http://tem.fi/en/integration-of-immigrants>. Accessed: 2017-10-02.
- [16] “UNHCR Resettlement Handbook: Country Chapter - Finland.” <http://www.unhcr.org/protection/resettlement/3c5e57f07/unhcr-resettlement-handbook-country-chapter-finland.html?query=Finland>. Accessed: 2017-09-30.
- [17] “Finnish immigration service - ministry of employment and the economy is responsible for integration.” http://www.migri.fi/information_elsewhere/integration. Accessed: 2017-10-01.
- [18] “Infopankki - integration to finland.” <http://www.infopankki.fi/en/living-in-finland/as-an-immigrant-in-finland/integration-into-finland>. Accessed: 2017-10-03.
- [19] “Ministry of employment and the economy - initial assessment and integration plan.” http://www.te-palvelut.fi/te/en/jobseekers/support_finding_job/integration_services_for_immigrants/assessment_integration_plan/index.html. Accessed: 2017-10-03.
- [20] “Centre for economic development, transport, and the environment - immigration and integration and employment of immigrants.” <http://www.ely-keskus.fi/en/web/ely-en/employment>. Accessed: 2017-10-03.

- [21] “Finnish immigration service - living in finland.” http://www.migri.fi/asylum_in_finland/reception_activities/reception_services/living_in_finland. Accessed: 2017-10-03.
- [22] L. Greve Harbo, T. Heleniak, Å. Ström Hildestrand, H. R. Sigurjonsdottir, L. Jungsberg, N. Mikkola, S. Oliveira e Costa, and A. Huerta Morales, “From migrants to workers : Regional and local practices on integration of labour migrants and refugees in rural areas in the nordic countries,” Tech. Rep. 2017:5, Nordregio, 2017.
- [23] “Finnish red cross - the reception of asylum seekers and refugees.” <https://www.redcross.fi/node/16512>. Accessed: 2017-10-07.
- [24] L. Andersen, M. Gawell, and R. Spear, *Social Entrepreneurship and Social Enterprises: Nordic Perspectives*. Routledge Studies in Social Enterprise & Social Innovation, Taylor & Francis, 2016.
- [25] Y. Sánchez, “Breaking the ice: An exploratory study of the factors that influence the integration of Latin American self-initiated expatriates in Finland,” Master’s thesis, Hanken School of Economics, Finland, 2014.
- [26] P. Miguel, “Work and refugee integration in sweden,” *Forced Migration Review*, pp. 76–77, 11 2014. Copyright - Copyright Refugee Studies Centre, Oxford Department of International Development Nov 2014; Document feature - Photographs; Last updated - 2015-06-29; SubjectsTermNotLitGenreText - Finland; Eritrea; Sweden.
- [27] B. Bratsberg, O. Raaum, K. Røed, O. Åslund, A. Forslund, L. Liljeberg, M. Sarvimäki, M. L. Schultz-Nielsen, H. Grönqvist, S. Niknami, K. T. Jakobsen, N. Kaarsen, K. Vasiljeva, and J. Ruist, *Nordic Economic Policy Review : Labour Market Integration in the Nordic Countries*. No. 2017:520 in TemaNord, 2017.
- [28] M. Sarvimäki and K. Hämäläinen, “Integrating immigrants: The impact of restructuring active labor market programs,” *Journal of Labor Economics*, vol. 34, no. 2, pp. 479–508, 2016.
- [29] E. Lindström, “Voluntary work as a form of social capital and as a tool for inclusion and integration,” Master’s thesis, University of Helsinki, Finland, 2016.
- [30] “UNHCR’s definition of “asylum seeker”..” <http://www.unhcr.org/asylum-seekers.html>. Accessed: 2017-10-02.
- [31] “Cambridge dictionary’s definition of “refugee”..” <http://dictionary.cambridge.org/dictionary/english/refugee>. Accessed: 2017-10-02.

- [32] “UNHCR’s definition of “refugee”..” <http://www.unhcr.org/refugees.html>. Accessed: 2017-10-02.
- [33] “Cambridge dictionary’s definition of “immigrant”..” <http://dictionary.cambridge.org/dictionary/english/immigrant>. Accessed: 2017-10-02.
- [34] “Cambridge dictionary’s definition of “integration”..” <http://dictionary.cambridge.org/dictionary/english/integration>. Accessed: 2017-10-03.
- [35] “Oxford dictionary’s definition of “integration”..” <https://en.oxforddictionaries.com/definition/integration>. Accessed: 2017-10-03.
- [36] J. Crisp, “New issues in refugee research - the local integration and local settlement of refugees: a conceptual and historical analysis.” <http://www.unhcr.org/407d3b762.html>. Accessed: 2017-10-03.
- [37] “A new beginning: Refugee integration in europe - outcome of an eu funded project on refugee integration capacity and evaluation (rice).” <http://www.unhcr.org/52403d389.pdf#zoom=95>. Accessed: 2017-10-03.
- [38] C. Evans, A. Parsons, M. Samadi, J. Seah, and C. Wallace, “Leveraging humanitarian technology to assist refugees,” 2017.
- [39] N. Kutscher and L.-M. Kress, ““internet is the same like food” - an empirical study on the use of digital media by unaccompanied minor refugees in germany,” *Transnational Social Review*, vol. 6, no. 1-2, pp. 200–203, 2016.
- [40] A. D. Andrade and B. Doolin, “Information and communication technology and the social inclusion of refugees,” *Mis Quarterly*, vol. 40, no. 2, pp. 405–416, 2016.
- [41] J. Baranoff, R. I. Gonzales, J. Liu, H. Yang, and J. Zheng, “Lantern: Empowering refugees through community-generated guidance using near field communication,” in *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems, CHI EA ’15*, (New York, NY, USA), pp. 7–12, ACM, 2015.
- [42] M. Gillespie, L. Ampofo, M. Cheesman, B. Faith, E. Iliadou, A. Issa, S. Osseiran, and D. Skleparis, “Mapping refugee media journeys: Smartphones and social media networks,” 2016.
- [43] “Infoaid app.” <https://play.google.com/store/apps/details?id=com.migrationaid.infoaid&hl=en>. Accessed: 2017-08-21.
- [44] “Meshpoint website.” <http://www.meshpoint.me/>. Accessed: 2017-08-21.

- [45] “Refunite organization.” <http://refunite.org/>. Accessed: 2017-08-21.
- [46] “Refoodgee app.” <https://play.google.com/store/apps/details?id=com.memorado.refoodgee&hl=en>. Accessed: 2017-08-21.
- [47] “Love-europe website.” <http://love-europe.org/>. Accessed: 2017-08-28.
- [48] “Ankommen app website.” <http://ankommenapp.de/APP/DE/Startseite/startseite-node.html>. Accessed: 2017-08-28.
- [49] “Refugees welcome website.” <http://www.refugees-welcome.net/>. Accessed: 2017-08-22.
- [50] “Refugees on rails.” <http://refugeesonrails.org/en/index.html>. Accessed: 2017-08-29.
- [51] “Welcome to europe.” <http://w2eu.info/>. Accessed: 2017-08-29.
- [52] “First contact.” <http://www.first-contact.org/>. Accessed: 2017-08-29.
- [53] “Refugees aid app website.” <http://refugeeaidapp.com/>. Accessed: 2017-08-29.
- [54] “Gherbtina app.” <https://play.google.com/store/apps/details?id=namaa.ghrbtina.syria&hl=en>. Accessed: 2017-08-29.
- [55] “Refugees work web app.” <https://refugeeswork.at/>. Accessed: 2017-08-29.
- [56] “Welcome talent website.” <http://www.welcometalent.se/>. Accessed: 2017-08-22.
- [57] “Funzi website.” <http://www.funzi.fi/>. Accessed: 2017-08-22.
- [58] “Moni website.” <https://moni.com/>. Accessed: 2017-08-29.
- [59] “Startup refugees website.” <https://startuprefugees.com/>. Accessed: 2017-08-22.
- [60] “The shortcut website.” theshortcut.org. Accessed: 2017-08-22.
- [61] “Zharity website.” <http://zharity.com/>. Accessed: 2017-08-22.
- [62] ““Information Systems”- business dictionary definiton.” <http://www.businessdictionary.com/definition/information-system.html>. Accessed: 2017-06-15.

- [63] ““Information Systems”- encyclopedia britannica definiton.” <https://global.britannica.com/topic/information-system>. Accessed: 2017-06-15.
- [64] M. S. Silver, M. L. Markus, and C. M. Beath, “The information technology interaction model: A foundation for the mba core course,” *MIS quarterly*, pp. 361–390, 1995.
- [65] N. C. Alessandro D’Atri, Marco De Marco, *Interdisciplinary Aspects of Information Systems Studies*. Springer, 2008.
- [66] R. H. Von Alan, S. T. March, J. Park, and S. Ram, “Design science in information systems research,” *MIS quarterly*, vol. 28, no. 1, pp. 75–105, 2004.
- [67] A. Osterwalder *et al.*, “The business model ontology-a proposition in a design science approach,” 2004.
- [68] A. Osterwalder and Y. Pigneur, *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons, 2010.
- [69] “Strategyzer.com.” <https://strategyzer.com/platform/resources>. Accessed: 2017-06-27.
- [70] A. Osterwalder, Y. Pigneur, G. Bernarda, and A. Smith, *Value proposition design: How to create products and services customers want*. John Wiley & Sons, 2014.
- [71] A. Maurya, *Running lean: iterate from plan A to a plan that works*. O’Reilly Media, Inc., 2012.
- [72] J. Nielsen, *Usability engineering*. Elsevier, 1994.
- [73] J. Nielsen, “Ten usability heuristics,” 2005.
- [74] B. Shneiderman, “Shneiderman’s eight golden rules of interface design,” *Retrieved July*, vol. 25, p. 2009, 2005.
- [75] J. Nielsen, “Usability inspection methods,” in *Conference Companion on Human Factors in Computing Systems*, CHI ’94, (New York, NY, USA), pp. 413–414, ACM, 1994.
- [76] J. Rieman, M. Franzke, and D. Redmiles, “Usability evaluation with the cognitive walkthrough,” in *Conference Companion on Human Factors in Computing Systems*, CHI ’95, (New York, NY, USA), pp. 387–388, ACM, 1995.

- [77] C. Lewis, P. G. Polson, C. Wharton, and J. Rieman, “Testing a walkthrough methodology for theory-based design of walk-up-and-use interfaces,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI '90, (New York, NY, USA), pp. 235–242, ACM, 1990.
- [78] “Finnish red cross website.” <https://www.redcross.fi/>. Accessed: 2017-08-22.
- [79] “Welcome movement website.” <http://welcomemovement.se/>. Accessed: 2017-08-22.
- [80] J. Maxwell, “Understanding and validity in qualitative research,” *Harvard educational review*, vol. 62, no. 3, pp. 279–301, 1992.
- [81] G. Winter, “A comparative discussion of the notion of ‘validity’ in qualitative and quantitative research,” *The qualitative report*, vol. 4, no. 3, pp. 1–14, 2000.
- [82] J. M. Morse, M. Barrett, M. Mayan, K. Olson, and J. Spiers, “Verification strategies for establishing reliability and validity in qualitative research,” *International Journal of Qualitative Methods*, vol. 1, no. 2, pp. 13–22, 2002.
- [83] K. Malterud, “Qualitative research: standards, challenges, and guidelines,” *The Lancet*, vol. 358, no. 9280, pp. 483 – 488, 2001.

Appendix A

Data Collection Interviews

The first set of interviews were performed during the data collection phase in order to find the common problem. As mentioned, I will preserve the privacy of the respondents and denote the persons with letters, while referring to organizations as First, Second, Third and Fourth.

A.1 The Problem Interviews with Newcomers

The questions were asked for refugees who still have not got their residence permit in Finland and are spending time waiting for the decision. This segment is facing the issue at the toughest, since their fate is still not determined, and the activities they attempt to perform in the efforts of integrating (from learning the language or finding a job) are constrained due to the lack of official identification documents.

At this stage I wanted to ask brief yet open-ended questions in order to get a detailed sense of what the newcomers face. So, my interview to the 20 asylum seekers consisted of the following:

1. **What is your name, age, country, education level, and occupation in the home country?**
2. **How long have you been living in Finland?**
3. **Have you gotten your residence permit? If yes, how long have you waited for?**
4. **What are the most pains you face while here?**
5. **What helped you alleviate the pains?**

Besides the results presented in Section 6.1, some general demographic results include the following:

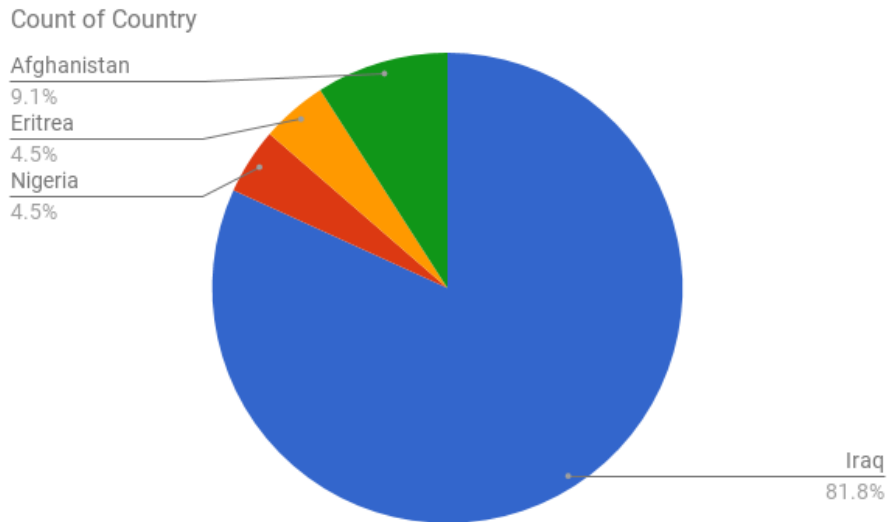


Figure A.1: Nationalities of the interviewed sample of newcomers.

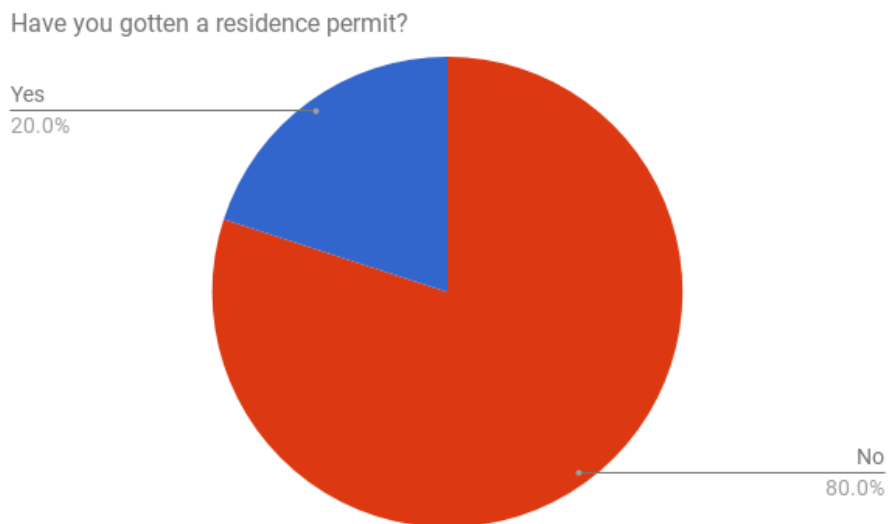


Figure A.2: Most of the interviewed asylum seekers are still waiting for their residence permit.

A.2 The Problem Interviews with Local Organizations

I interviewed Finland-based organizations and communities that typically have events and require volunteers. The way I found the connections was through attending workshops, meet-ups, and startup boot camps. It was the perfect place to find like-minded people working towards similar goals of integration.

First Organization

The first organization I interviewed are a well established in Finland and outside. I wanted to comprehend their point of view on the integration situation. Through their expertise with the problem, I was able to get insights on the prominent problems they are facing to integrate newcomers. The main purpose of the interview was to understand the the overall integration scheme they have, while I focus on the problems they face during the process of implementing that scheme. The interview went as follows:

1. What are your efforts in dealing with the refugee situation?

We aim to make asylum seekers feel home by empowering them to be active and feel they are part of society. We achieve that through helping them volunteer for events we organize.

2. How do you think volunteering will help newcomers integrate?

In its basic values, [our organization] wants to support early integration, and we do that through volunteering. In other words, we leverage the waiting time the refugees face before they get the decision for their residence by making them active in means that do not require official documents, and volunteer work is the prime example. Additionally, refugees are stressed and bored in the reception centers, mainly because they are not employed due to not having residence permits. They would do anything that helps release stress and feel useful.

3. Are there specific profiles you look for in the volunteering candidates?

We never say no to anyone who wants to volunteer. As a volunteer organization, we believe in the effort a person makes to offer help, so we take all who are motivated to volunteer. However, that also makes matching the volunteers with the needs that we have challenging.

4. What is your way of finding volunteers?

Mostly through word-of-mouth, but sometimes through social media (Facebook). As a Voluntary Service Coordinator, I talk with specific people who

are always active in the reception center and they spread the word. It has always been a community-based approach.

5. What percentage of your volunteers are refugees?

Around 20% in our Turku center if the total volunteers are around 500. It is significant and we are working on growing that number.

6. What are the main problems you face when looking for volunteers?

Problems include “how are we going to find volunteers?”, “will we find enough volunteers?”, “how can we find the right ones? Also, as mentioned, reaching the right people to volunteer for the right place is hard, and the means such as email lists often goes as spam.

7. How often do you hold events and require volunteers?

We organize weekly activities and clubs for kids, women, and elderly people.

8. Since you are not looking for a certain volunteer profile, what sort of help would you require to do your job better?

We would be helped a great deal if we classify where each volunteer can be, Finding someone based on their skills such that the volunteering experience is optimal for both of us.

9. Who are the stakeholders in the refugee situation in Finland and how do they relate or interact with each other?

It starts with the Finnish Constitution, which has an Act about receiving people for seeking international protection. Based on that, the Migration Agency plans and organizes different integration schemes and makes decisions about the residence permits. Then, the Migration Agency works with the Red Cross, reception centers, and other companies on the organization of integration schemes, wherein they put newcomers, after they were given the residence, in a school to learn the language as well as in an internship.

Second Organization

The second organization I interviewed organizes several events throughout the year relating to startups and innovation, and its target audience and volunteers are mainly newcomers. The interview went as follows:

1. How do you recruit volunteers for your events at the moment, and who can join?

We do that through word of mouth and some posts on Facebook. Anybody can join.

2. What challenges do you face when recruiting volunteers?

Although volunteers feel super excited about volunteering, they are not sure what they can help with. We also face the same challenge since we do not know what proper task to assign them. Sometimes we assign tasks but they would not be a perfect match, which decreases the chance by which they return to volunteering in the future.

3. How often do you hold events and require volunteers?

There will be many events in the next fall, so will require a lot of volunteers.

4. What sort of tasks do you need volunteers in?

Different events require different tasks and level of knowledge. For instance, since we are opening our lab in the fall, we will require volunteers to help us setting up the space, which is a task that any person can do. Other events require specific skills, such as if an event requires a person who can handle finances or is proficient using the computer.

5. Would knowing English be a requirement for volunteers?

Not in every case. Last week we had communal work and we had volunteers that did not speak English. However, if an event requires a volunteer to greet attendees, they have to speak English.

Third Organization

An interview was carried in a similar manner with the third organization. While their main mode of operation does not rely heavily on volunteers, they did express their interest in having volunteers for some of the functions they carry out in their office space, which includes maintaining a coffee lounge. This organization was kept in mind for future interviewing.

Fourth Organization

A fourth organization was interviewed since their mode of work relies mainly on volunteers. However, they were not found to be the target users of this service for two reasons. First, they have a specific segment from which they choose volunteers, which includes students who are pursuing studies in technology-related fields. Second, they have their own mechanism of volunteer recruitment. This was valuable to know that they are definitely not my target organization for the first stage, when my solution is focusing on newcomers. Nevertheless, they could be approached in the future once the service expands to a broader user segment.

A.3 The Solution Interviews

The second stage of interviewing was the solutions interviews in which I discussed my solution in detail and tried to understand how it would be used by the organizations.

Second Organization

I went back to the second organization to have an interview about the proposed solution.

1. **How have you recruited people for a new event in the past? Can you tell about some concrete cases?**

We have recruited in the School of Startups events. The recruitment mostly happened through Facebook and word of mouth.

2. **Are they all volunteers?**

They were both long term volunteers and episodic volunteers.

3. **What are the requirements for those volunteers?**

They were required to speak English, and to be available. We preferred to have people who were endorsed by others.

4. **Have you had refugees as volunteers before? What's the background of other people that have volunteered?**

Yes, it has happened.

5. **What event was it and how was it to work with refugees there? Were there any difficulties/challenges working with them?**

It was more challenging to work with non-English speakers. Even they felt discomfort.

6. **Have the refugees come back to volunteer again?**

One-third of them would not return because of the English language barrier. Others are either working or in integration classes learning Finnish, which makes them less available.

7. **Have you given certificates for the completed tasks to the volunteers?** We usually give certificates of participation for community members after each of our flagship events (Business Ideation Weekend, Digital Prototyping Weekend and School of Startups). It was a way to acknowledge their presence and learning with us, so they showed learning, for their residency, for jobs and future studies. If someone asks for a specific certificate or recommendation letter, we could give that.

8. **Has anyone asked for a work/experience certificate?** We have written quite a few letters of recommendations to asylum seekers we know well. In order to boost their ability to raise their cases to Migri and find jobs.
9. **What kind of volunteering tasks have you had in the past? Please get as concrete as possible** Managing, check-in and registration, which needed IT and language skills. Data collection, which needed spreadsheet skills Event Space coordination, which needed a combination of the above skills. We also required photography and videography.
10. **What are the concrete volunteering tasks for which you are looking for people right now or in the near future?**

Most of our activities are a lot of the same as the above. Generally: Social media and communications, writers, design, support, tech support, grand variety of skill sets. We even welcome people willing to educate other people.

The First and Third organizations also had the solution interview in a less formal way. They both showed equal interest in testing the idea, and future testings were scheduled.

Appendix B

Business Model of TalentPal

The business model generation took several iterations, and included wider customer segments, including international students and other segments of locals. However, I only focus on a few of these for the thesis. In fact, the purpose of business model generation is to work on certain value proposition for a certain customer segment at a certain time. The business model canvas only helps in putting all the possible value propositions and customers and other elements for brainstorming purposes. Ultimately, the whole process is iterative.

In this appendix, I present the different components of the business model canvas that I considered, with more detail on the first two: Customer Segments and Value Proposition. A simplified version of the business model canvas is shown in Figure B.1. A more detailed version can be seen in this link <https://canvanizer.com/canvas/w2u8hJgQW1fBW>.

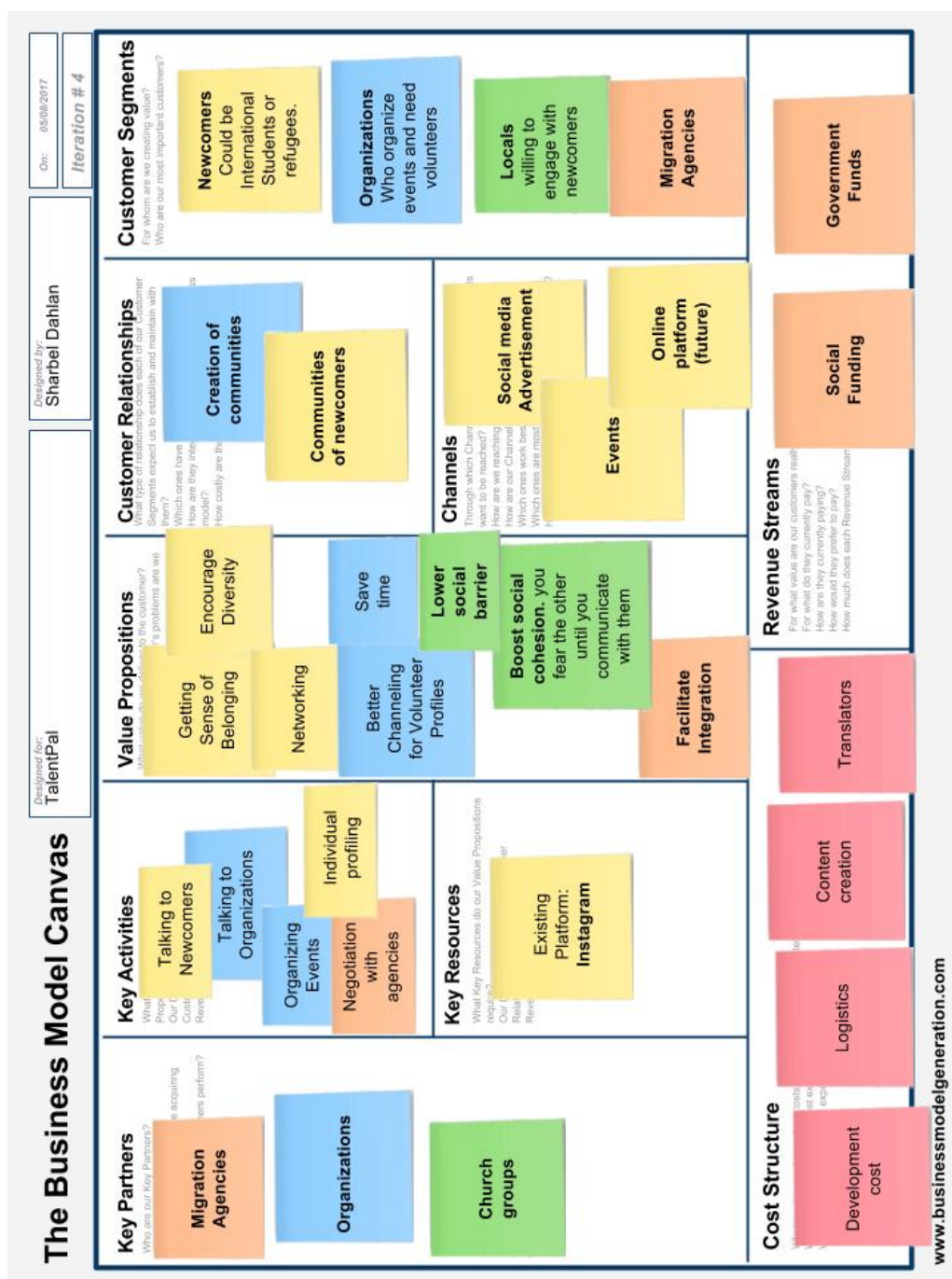


Figure B.1: Business Model Canvas for TalentPal

B.1 Customer Segments

The customer segments that TalentPal intends to serve are:

- **Newcomers** who are looking for integration. These could be refugees, immigrants in general, or international students.
- **Local Organizations** who organize events and need volunteers.
- **Locals** willing to engage with newcomers. That could be on any level, such as for leisure or for professional purposes.
- **Migration Agency** which a main stakeholder dealing with newcomers.

In the next section, the value proposition for each customer segment is mentioned.

B.2 Value Proposition

For each customer segment, TalentPal provides a certain value related to their needs:

- For newcomers:
 - Enhance their network.
 - Showcasing talent.
 - Giving the sense of belonging. Getting to volunteer and give back to the community improves newcomers' well-being, which in turn makes them less stressed.
 - Facilitate job-finding. This is more on the long run, after they increase their network.
- For local organizations:
 - Better channeling for volunteer profiles to find the relevant positions for them. This happens both by having the chance to see more specific skills and by having more possible volunteers when having access to more profiles.
 - Save time while looking for volunteers.
- For locals:
 - Lower the social barrier by getting to know newcomers before physically meeting them.

- For the migration agency:
 - Channel help towards newcomers, which are aspiring residents of Finland.
 - Facilitate integration through socialization.

While all these customer segments could benefit from the solution at some point, I had to narrow the scope. Hence I focused in the thesis only on the refugees from the newcomers and the local organizations for several reasons. First, I had to start from a point and focus my efforts on it rather than scattering the focus on all the customer segments that come to mind. Second I went with the refugee segment of the newcomers since they are facing the pain with the lack of integration on a greater level, since they lack the connections and communities that other types of newcomers, like students or working immigrants, usually have. Third, the initial research and interviews that I conducted led me to this direction, as I mentioned in Appendix A.

For each of the customer segments that I focused on in Section 6.2.1, I went over the value proposition creation in more detail, first examining the customer profile then devising the value map, in order to create the proper fit between need and value. The value proposition canvases for each of the newcomers and the local organizations user segments are shown in Figures B.2 and B.3, respectively.

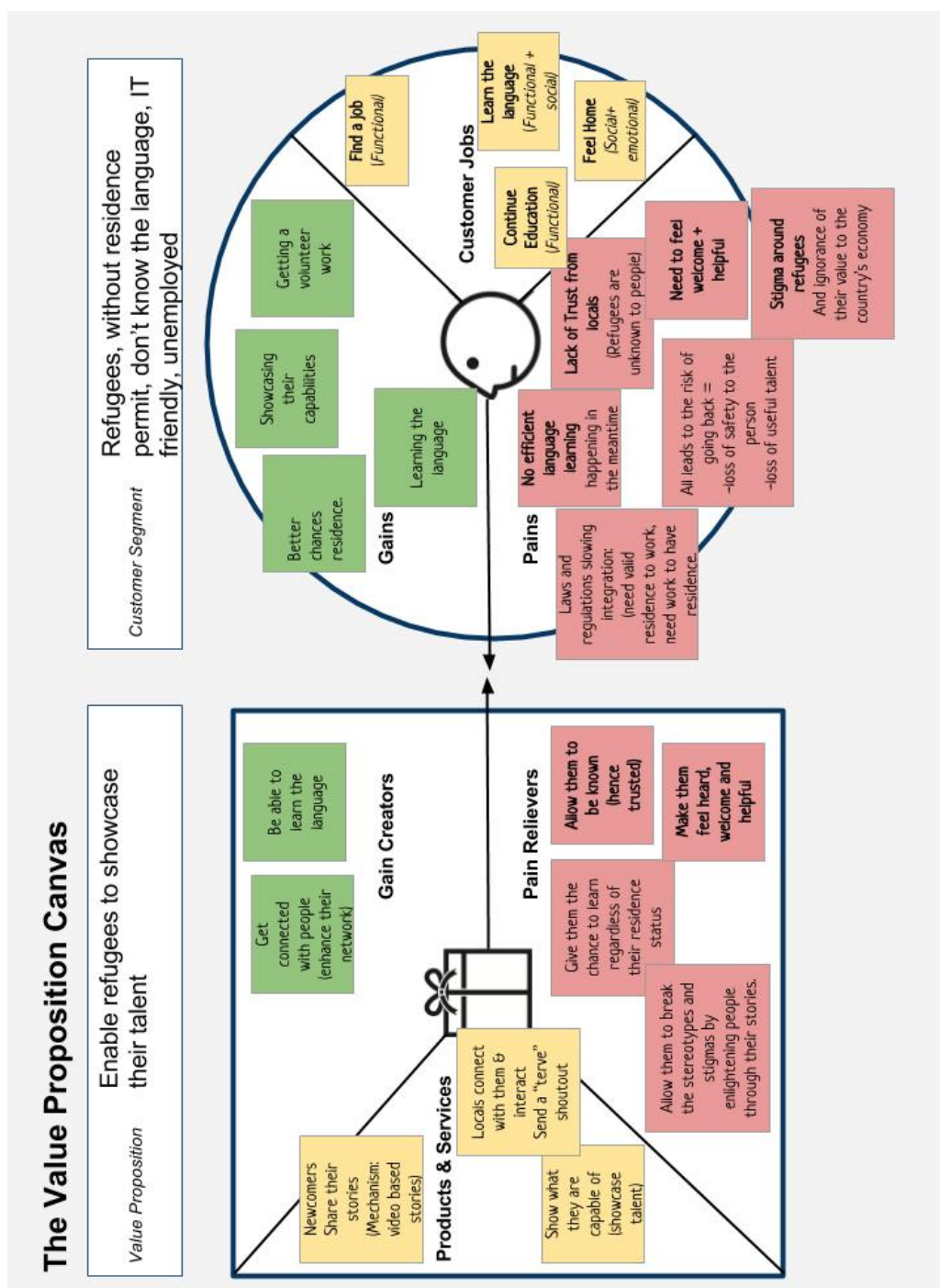


Figure B.2: Value Proposition Canvas for the refugees user Segment

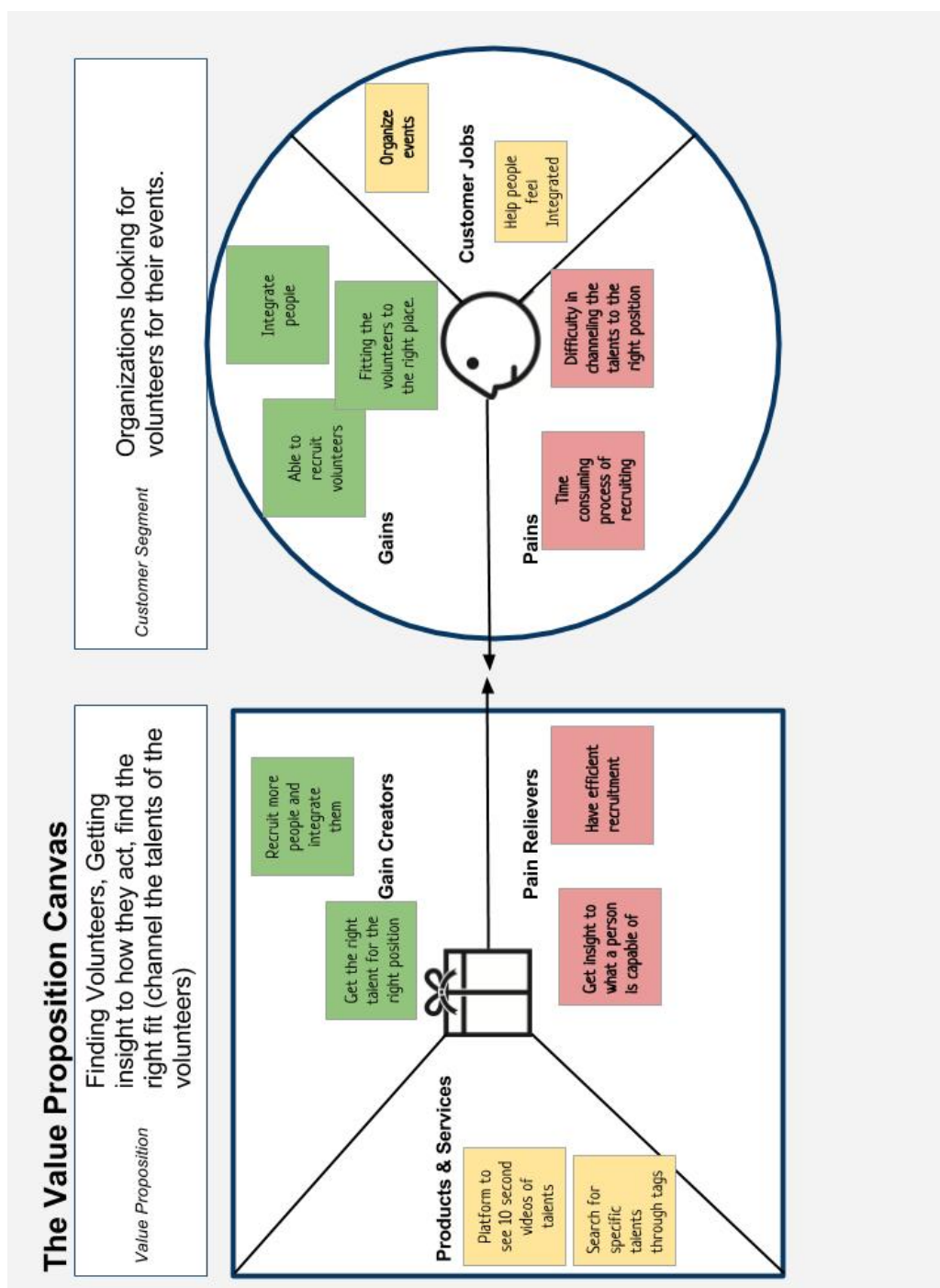


Figure B.3: Value Proposition Canvas for the local organizations user Segment

B.3 Channels

TalentPal plans to deliver the value to the customers through several ways. The first way is through leveraging social media. This includes creating groups and communities over existing social media, as well as advertisements. The second way is to create physical events and meet-ups to raise awareness about the service. The third way, which comes at a later stage, is creating an online platform for the customers, after the community has been created through the existing media.

B.4 Customer Relationships

Through TalentPal, I plan to establish connections with the customers through Instagram, which is also the first prototype. Then, maintaining the connection happens through having a community of newcomers who are continuously involved in volunteering.

B.5 Revenue Streams

The fact that this project is a social enterprise does not limit the means of getting funding to sustain the project. The revenue streams include:

- Social funding for not-for-profit organizations. This could include private investors, as well as Church Groups, or organization such as the Red Cross.
- Contracts with the migration agency. Since the agency is overwhelmed with the number of newcomer cases to deal with, such a service can provide them with value and help them with their work.

B.6 Key Resources

Currently, I have Instagram, which is an existing platform. A typical practice of a startup is to use lean ways to validate the usefulness of its service. By using the minimum effort and time possible to jumpstart the solution, I guarantee that the idea is validated or refuted with the least cost.

B.7 Key Activities

The actions I plan to perform to achieve my goal is to talk to both customer segments. This means that I visit different reception centers to talk to newcomers, as well as visit offices of local organizations. Additionally, a key activity to be

performed especially at the early stage is profiling of individual talents. This means that once a newcomer agrees to take part in the service and converges as a customer, I take their data such as education, occupancy, skills, and special wishes and interests. This will help in the matchmaking between newcomers and organizations.

B.8 Key Partners

The key partners would currently be the Red Cross and The Shortcut. The plan is to expand the partners, such as NGOs and church groups, and then target the Migration Agency.

B.9 Cost Structures

At the early stage the cost mainly includes logistic costs involved with trips to meet the customers. Additionally, the content creation of the video profiles which includes producing and editing the videos all involve significant amount of time, and time is money. At a later stage, costs will arise when the development of a stand-alone platform begins.

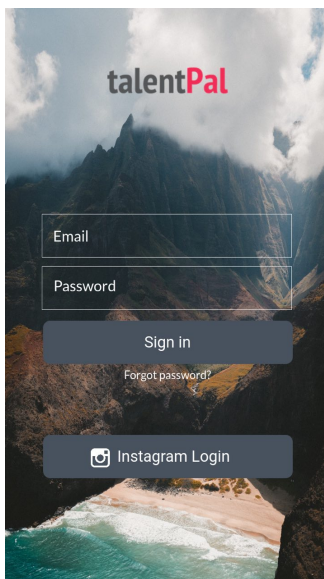
Appendix C

Second Prototype

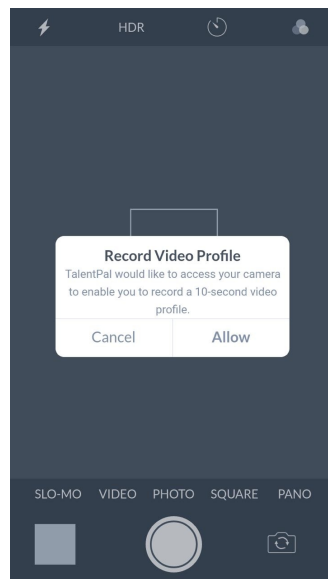
I present here the design of the second prototype described by the user stories in Section 6.3. The design was made using www.marvelapp.com, which enables creating the screens and linking them to each other for an interactive experience.

C.1 Newcomers

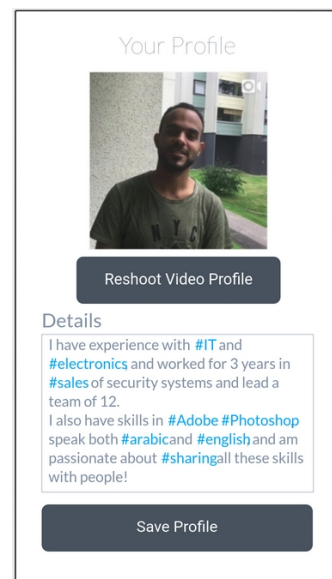
The interactive prototype for the newcomers can be found at <https://marvelapp.com/271h92h>.



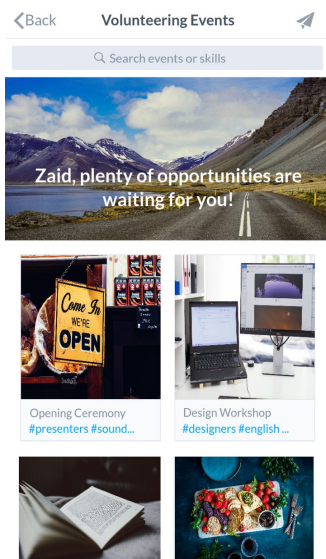
(a) Log in



(b) Shoot Video



(c) Create profile



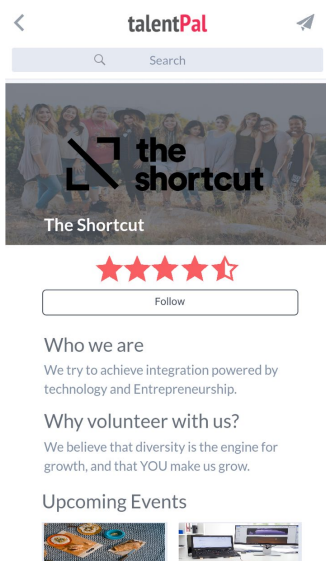
(d) Available Events



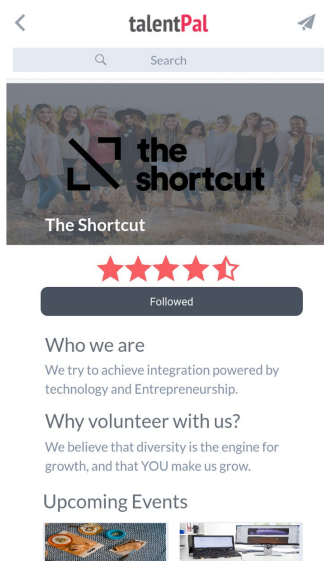
(e) Event Details



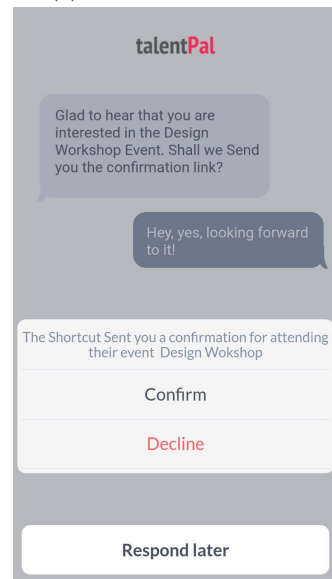
(f) Applied to event



(g) Organization Profile



(h) Organization Followed

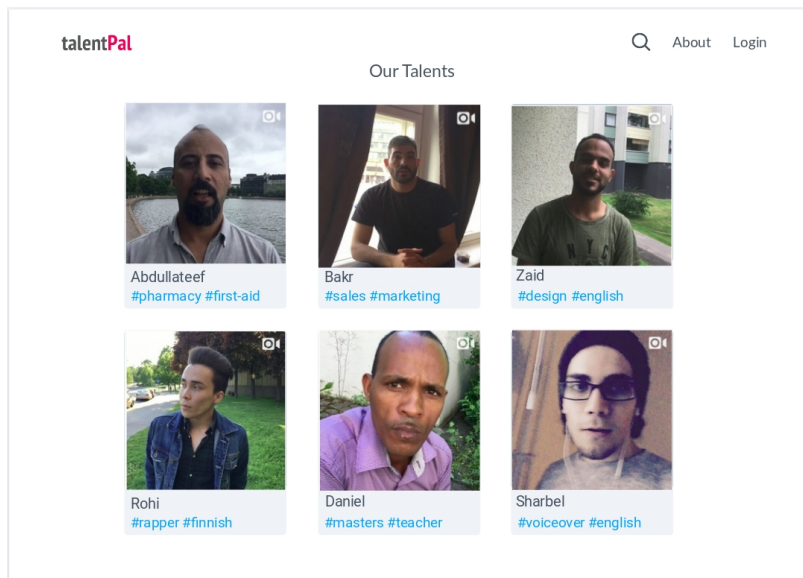


(i) Confirmation through messages

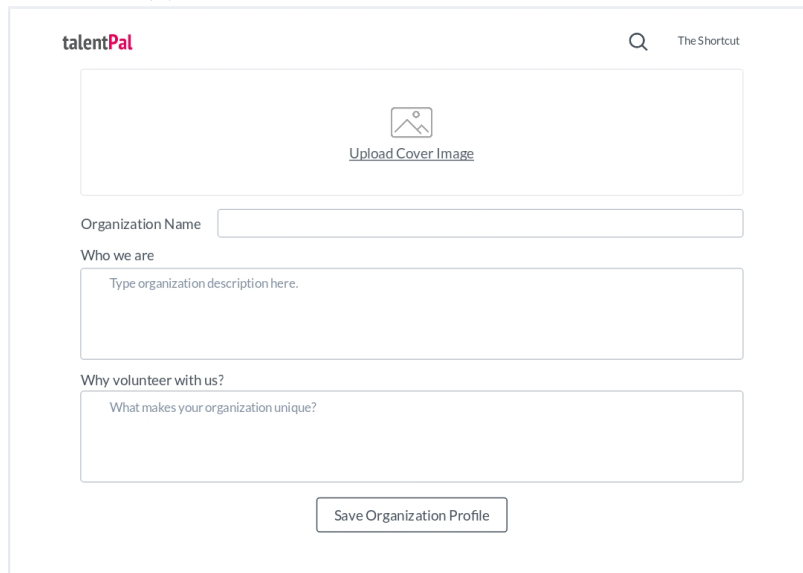
Figure C.1: TalentPal's second prototype as a mobile application for the newcomers.

C.2 Organization Representatives

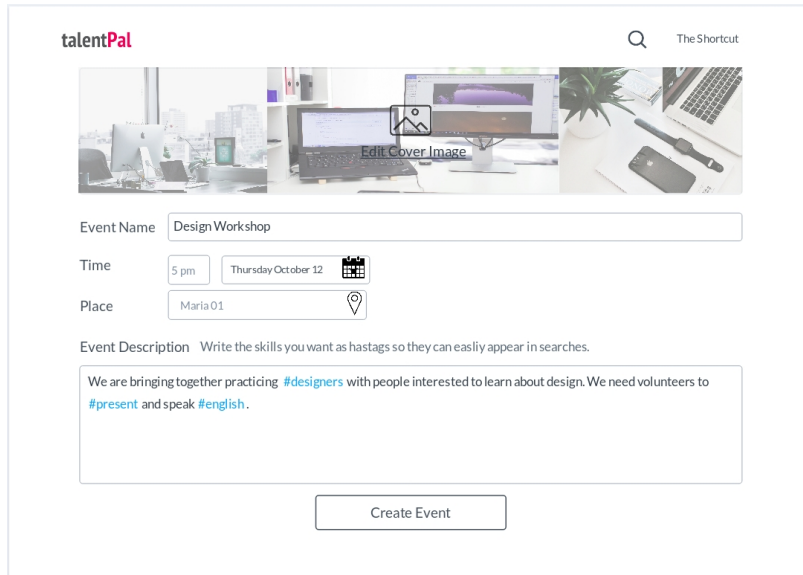
The interactive prototype for the organizations can be found at <https://marvelapp.com/1g2310j>.



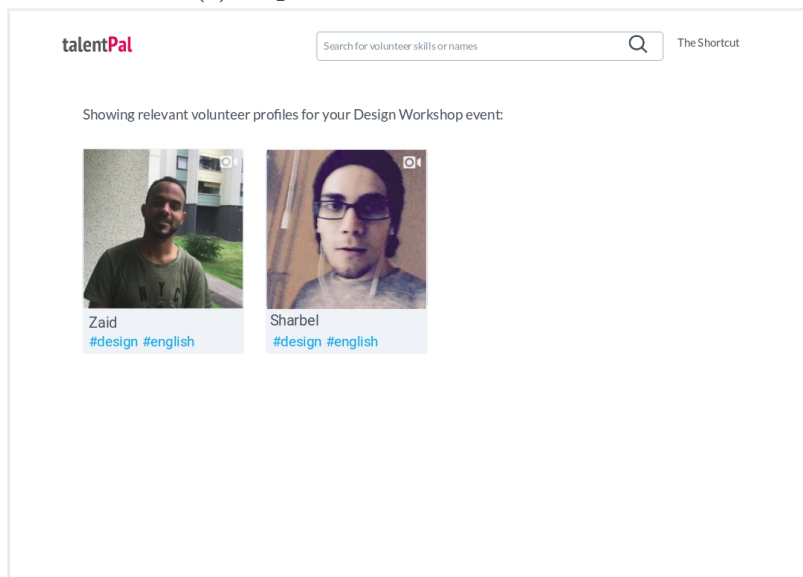
(a) Organization clicks on *Explore Talents*



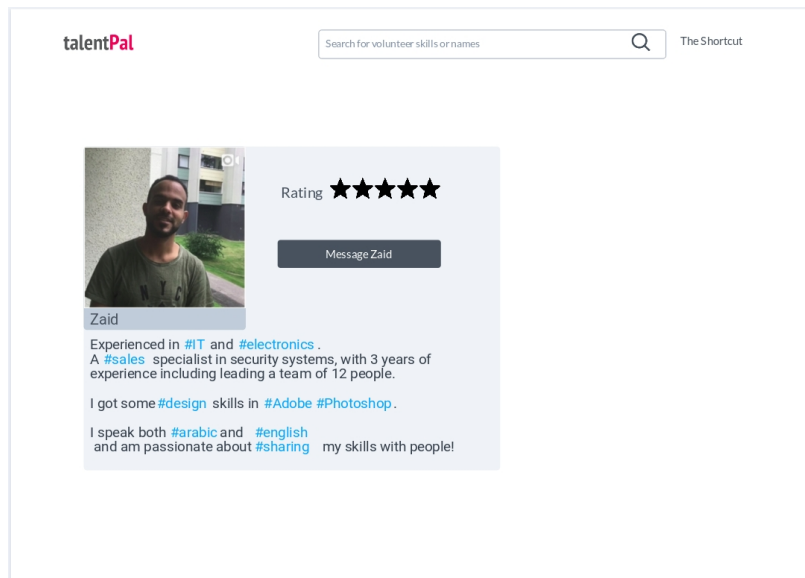
(b) Organization sets up its profile.



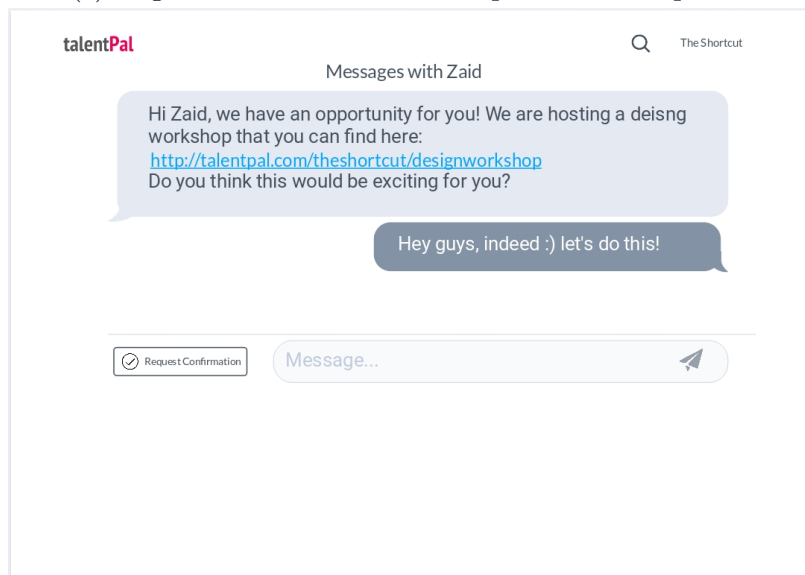
(c) Organization creates an event.



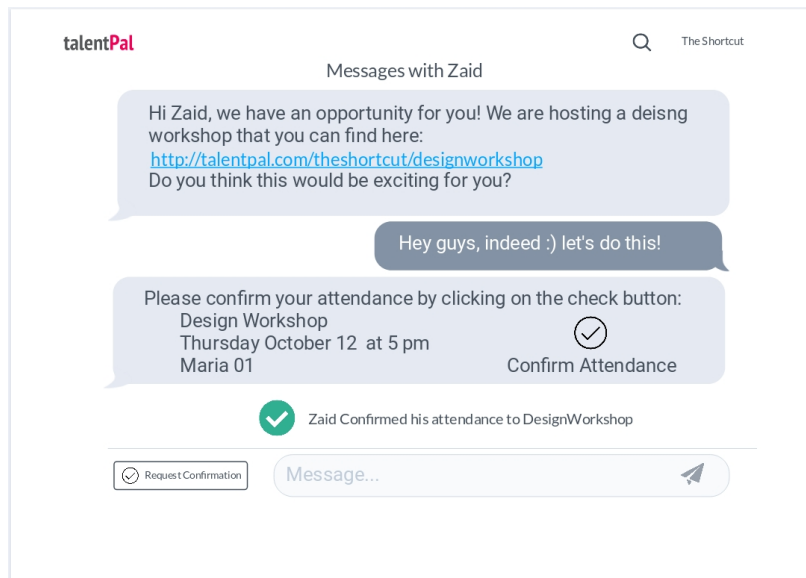
(d) Talents relevant to the event showing as results.



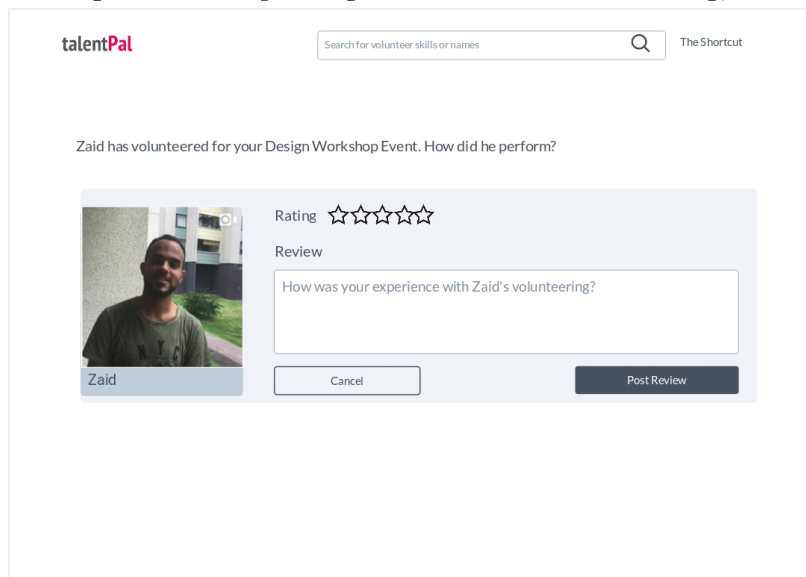
(e) Organization clicks on talent profile so it expands.



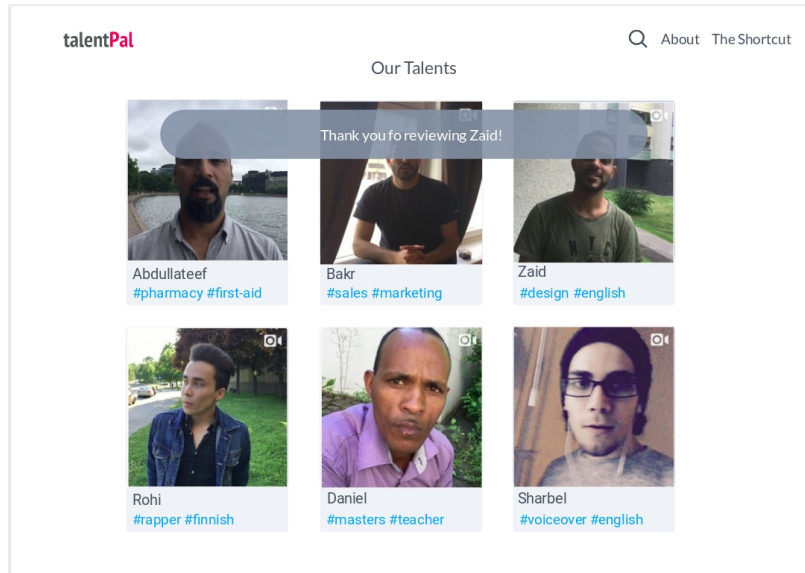
(f) Organization sends message to the talent.



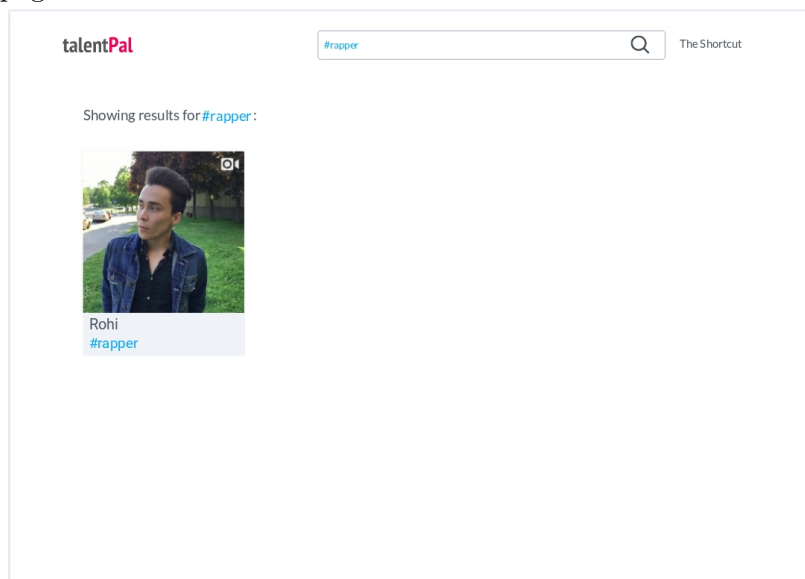
(g) Upon the organization requesting confirmation of volunteering, talent confirms.



(h) After volunteering happens, organization is prompted to review the volunteer.



(i) Upon reviewing the talent, the organization gets redirected to the *Explore Talents* page.



(j) The search functionality differs from that of the first prototype since it shows only the relevant results.

Figure C.2: TalentPal's second prototype as a web application for the organizations.

Appendix D

Usability Testing Interviews

The second set of interviews happened during the testing phase of my proposed solution in order to verify the hypothesis. The interviews were usability-testing oriented. The main testing method was cognitive walkthrough. During this phase, the testing was done with seven newcomers who were available to have their videos taken. From the organizations, three out of the four organizations interviewed in the Data collection phase found the solution valuable, so the testing was planned to be carried with them. The actual usability testing was made with the available organizations, mainly two of them. More testing is scheduled with the other organizations in a time they are available in.

D.1 First Prototype

After I collected video profiles of newcomers and made the first prototype on an Instagram channel, I went on to test the prototype with the users. The testing with the newcomers was less formal and usually made during setting up their video profiles. On the other hand, the interviews with the organizations were more formal.

D.1.1 Newcomers

The newcomers were asked to think of a brief sentence to describe themselves in maximum 10 seconds. I wanted to see if they could first think of something for themselves. I only offered help when they needed, in order to observe how far can they go with creativity.

The main observations were as follows:

- Newcomers were first not as clear on what the service would do as I thought.
- I needed to help in most of the cases to think about the profile.

- English was a barrier for most of the newcomers since it is not their native language. However, it was not the main obstacle, since they were able to comfortably converse in English although some of them had weaker skills.

Despite telling them that they have to come up with the video profiles, what affected the process is that they already know that I am present and can help. This naturally made them more dependent on my help in setting up the profiles. Also, the difficulty could have arisen from the several factors related to the situation. These factors include having to sell themselves effectively in little time, having to memorize and remember the words, and speaking in front of the camera.

D.1.2 Local Organizations

A cognitive walkthrough was performed with the organizations that were available. I used minimal information and relied more on listening from the users rather than directing them of what to do. This requires that I tell them the end goal of using the service, while I ask them to be verbose about their thoughts while doing the actions to achieve the goal. Thoughts can include comments on the interface's difficulty, or their feeling upon using the system and whether they think they have achieved their goal. Letting the subjects speak give me the most insight on whether the prototype is performing well and what areas of it needs enhancement.

I went back to the second organization that was interviewed during the data collection phase (documented in Appendix A). The cognitive walkthrough went as follows:

Second Organization

I asked the head of Talent Acquisition from the second organization to test out the system as follows:

- **Consider you are using the Instagram channel of TalentPal to recruit a volunteer to organize workshop for others. Please speak out loud all what you are thinking.**

K.:

- I see only video profiles, and then I think, “Do I need to look at all of them?”, so I just don’t use the system.
- Then I wait and see a familiar face, so I click to watch the video. it is interesting, I want to save it for later, so perhaps I click the *Save to Collection*.
- I try to find a way to *search* only in this channel, but there does not seem to be such a thing.
- The whole channel looked rather too simple. Sometimes simplicity is a turn-off, since I don’t know how to move forward

- In this case there was not enough information for me to know what to do. Perhaps a link to a website or a document on how to use this would be nice.
- This does not seem targeted to organizational side. We did not feel addressed

- **I can give you a hint, perhaps you could look for descriptions for each video profile.**

K.:

- Now it seems a bit better with the description.
- The descriptions now make it addictive to go through the profiles.
- I still see too much in the description. I understand the storytelling approach, but if I need to be efficient in recruiting, I just want to see facts.
- I see The hashtags as skills, but perhaps present these first, so in case I need to look fast I see them and then if they are what I need, I move on to the story.

- **Now consider you found the person you are interested in, how would you get to the point where you get them to your event?**

K.:

- It is not clear how I can contact the person. I would perhaps send a comment and say "We are interested in you".
- I would like to see other profiles of the person to know more. Perhaps some link to a LinkedIn account.
- It is so hard to reach the person, which still makes me doubt if I will make the effort to use this. I prefer a quick and efficient way of contacting.

- **Any more comments?**

K.:

- This acts as a good teaser service. The video idea is nice, unlike the traditional text-based profiles.
- I get intrigued by profiles, but I would not put a lot of effort into contacting the potential volunteers if that is not easy. There is an email, but I was not encouraged to email.
- Perhaps if videos had the skills on them (as thumbnails for example) it would be faster into giving an idea.

- I would like to see some endorsements of the profile. It always helps when someone is recommended by others.

Based on this feedback, I went on to design the second prototype.

D.2 Second Prototype

As Appendix C shows, the second prototype was made on two different platforms: a mobile platform for the newcomers, and a web platform for the organizations. The model data in both prototypes were matching each other to try and model a real life situation. I carried more formal cognitive walkthrough testing with the second prototype than with the first, especially since I have a separate prototypes for each user segment. I will preset one full interview from each user segment in the sections below.

D.2.1 Newcomers

Consider you are a designer and would like to volunteer to share your skills with others in an events. Using this mockup of a mobile application of TalentPal, find a relevant event and let me know if you have achieved your goal in the end. Please think out loud.

- First, I wonder why can I not login with Facebook.
- The camera permission was clear and transparent of what it needs to do.
- The page shows that there are plenty of opportunities. I thought of this even before reading the actual text saying “Plenty of opportunities are waiting for you”.
- Each event thumbnail is lacking information. I cannot see the date and time information and I would like to see that before I click on the event for details.
- I wonder why they need presentation skills in the description. The need to be clear why they need presenters.
- It would be nice to have a job title in the description. Job title is more relatable.
- More rigorous description is needed. What if I was not a good presenter? Putting “presenter” as a needed skill makes me doubt I want to be involved because I am not sure of my presentation skills. In general, there needs to be more description and exact explanation of what I need to do exactly.

- Message from the organization was too quick. Some small talk would be good so that I have more details and better feeling about the event. Also I got called immediately to the event, without them asking me to meet them before the event. The confirmation message was too early.

D.2.2 Local Organizations

Consider you are organizing a workshop in which you want practicing designers to share their skills with other people interested in design in a relaxed environment. How would you use TalentPal web platform to get to the point of creating the event and getting volunteers? Please think out loud.

- The value proposition sentence on the landing page was too long, I had to read it thrice to understand what the platform is for.
- The question to fill the information should not be dull. It should spark me to write something creative, but it does not.
- You can only see one event and a vague idea of what the organization is looking for. If I were the organization I would spend more time and write more description on what each task needs.
- The resulting cards that show relevant volunteers display only a few skills. Only when I expand, more skills show.
- When I look at a potential volunteer, I want to see some of what they have done in the past. Do they have experience in what they claim?
- I see rating on the volunteer profile, where does that come from?
- I see the messaging as a good way to get in contact, but it is not enough. It is too early to seal the deal through the confirmation message. I would call any candidate for an interview at least once before I have a decision.