

EIT Digital Summer School 2016 Report

Topic: **Cyber-physical Systems**

Location: **Paris**

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Project Title:

Pal

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Overview

Under the theme of Cyber-physical Systems (CPS), this two-week summer school contained both technical discussions and business cases. Ideation, team building, and pitching were extensively practiced in order to create sound ideas by the end of the course.

This report will contain both the process by which the business is developed as well as the actionable business plan. It will be concluded with the lessons learned and the next steps.

Motivation

Starting from real problems, the teams had to choose between environmental, business, and social sectors and find a sound CPS-related solution. With intense passion about solving global social problems, the choice of the final business idea fell on the social enterprise category, particularly to tackle aspects of the refugee crisis in Europe.

Particularly in our team, what raised the motivation is having several members with a degree of experience with refugees, from taking part in hackathons related to refugee problems, to being directly related to refugees who fled to Europe. To produce a sustainable solution that solves the problem in the broader sense, we decided to tackle the challenge of refugee integration in their new society.

Problem

In the year 2015, around 1.3 million refugees arrived to Europe, 13% of which stayed in Sweden¹. Leaving their homes for unforeseen harsh circumstances, these humans need time to adapt and function in their new setting. What adds to the issue in Sweden's case for instance is that the application processing time for asylum seekers has been taking longer than ever, given the increase of the refugees in the past year to 163,000². An average of 7.5 months³ is what they have to wait for until they are able to attend schools and learn the language, let alone beginning to work or resuming their disrupted career.

Zooming in to the problem, and talking to both refugees and European residents, we find that the issue of integration stems from the lack of trust between the residents and the refugees.

¹ UNHCR Data - Syrian Refugees. Web link: <http://data.unhcr.org/syrianrefugees/regional.php>

² Swedish Migration Agency, News Archive, January 2016

³ Swedish Migration Agency, Statistics - Decisions, November 2015.

Social activists who work closely with the refugees, such as Sanna Nilsson, believe that trust starts when barriers with these refugees are broken and their stories are known⁴. Instead of having the only knowledge of refugees as a mere number of strangers, people need to have knowledge about their stories in order to connect with them and understand that they are only visiting humans perhaps with a stringent situation. Thus, we needed to find a way in order for these refugees to tell their stories, which could be through a platform that enables them to express what their life looks like and how they are capable of building society.

Proposed Solution

Looking at the existing technological solutions that target refugee problems, we noticed that the solutions ranged from refugee-hosting services to donation and remote support. What we found was lacking, however, is the lack of solutions in which the residents have some sort of interaction with the refugees before meeting them. As previously mentioned, this constitutes to the gap that most residents find with the refugees who to them are complete strangers.

With that in mind, **we wanted to have a service that enables refugees to share their stories which residents can follow, connect with, and show support.** Through this service, the time by which refugees wait in their camps until their application results are determined can be used to make them learn the language, meet with the country's residents through events, and promote their skills and competencies. Under the idea that refugees are pals in society, since they share the right to live a normal life like the rest of the people, the service was given the name *Pal*, which also is an acronym for "peace and love".

Project Work

Following is the project work that took place in the course of two weeks, including conception of the idea through a business process and formation the team.

BUSINESS PROCESS

After founding the idea, it was time to perform a role-play in which pitching to investors takes place, such that the best ideas remain and teams are formed. Then we immediately began with

⁴ Swedes: Stop obsessing over your material life and start talking to strangers – The Local - <http://www.thelocal.se/voices/view/swedes-stop-obsessing-over-your-material-life-and-start-talking-to-strangers>

interviews, the best way to really understand the problem is talk to the people. In parallel with the interviews, we had to research several aspects of the project, including the numbers to accurately identify the magnitude of the problem, the existing solutions that touch upon the problem, and the potential partnership routes that we can take to cooperate on making a rigid solution.

Then a clearer idea was formed on what exactly we want to solve. It is worthy to mention that the input from the supervisors both in business and technology was useful in sculpting the idea and keeping it focused. This is not to deny, however, that focusing the idea was also challenging. We finally put together the pieces to form a business plan that will be discussed in the next section.

TEAM

Although there were set positions for each member, the roles and activities were often extended and interchanged. The team members and their roles were as follows.

Member	Position	Activities
Ana	Public Relations Officer	Research reports, facts, and figures such as from the UN, formulate interview questions, interview potential users and partners, and design visual aid material such as presentation slides.
Arya	Secretary	Ensure proper auditing and smooth inter-team communication, research about current solutions, conduct market analysis, and interview potential partners.
Sharbel	Marketing and media.	Formulate the problem, interview potential users to identify the problems and discuss possible solutions, create a preliminary market analysis scheme, revise presentation flow, and pitch the idea.
Sudarson	Technical Head	Conduct technical research, provide technical suggestions and solutions, interview potential partners for technically related matter, and design visual aids.
Tiago	Project Manager	Define the enterprise's missions and vision, Set project goals and activities, formulate the problem and interview potential users, research facts and figures, and conduct financial analysis.

Business Plan

In the subsequent sections, major parts of the business model will not only be discussed, but also linked to each other, as well as followed with a plan for the near future that transfers it from a mere model to an actionable business.

VALUE PROPOSITION TO CUSTOMERS

The value proposition given to our targeted users is the key of this social enterprise. The strongest factor is the impact that this service would have on the people and the size of the problem that is being solved. Several **customer segments** exist for Pal, including migration agencies, people living in Europe and actively looking to host refugees (we will focus on Sweden as a start), people who are involved in social causes and activities, and the refugees themselves. The **value** that we want to create to the customers range from building trust and alleviating waiting times for refugees on a specific scope, while encouraging integration on a broader scope. Through these values, we believe we are bringing the world through baby steps to minimize humanitarian crisis and achieve diversity. Still, a great deal of work needs to be done to convey these value propositions to the customers, and this will be the focus of the go-to-market plan in which we utilize the channels to maintain our relation with all the segments, as specified next.

CHANNELS AND CUSTOMER RELATIONS

To enter the market and reach our different customer segments, we need to start with the current entities that deal with the refugee problems. So, we will reach the migration agency and the communities through physical channels initially, despite our main service being a digital platform. Ultimately, our **channels** will consist of both the platform and the physical means of reaching these entities, mainly due to the nature of the idea. To elaborate, think of the språkcaféer as one example of the communities who are already trying to solve the problem of refugees integrating and learning the language. Through these communities, we could raise awareness about our platform and explain how it goes in alignment with what they are achieving. Since in the end it is the physical social interaction that we care about, the solution is not complete with just a digital platform involvement.

The **customer relations** that we will maintain will be in the form of personal assistance for the migration agency, since we are developing with it a solution that also helps with its function, as well as exploring possibilities of creating a verification scheme in which refugees biometrics can be taken and later on verified once the migration agency achieves the registration. As for the communities, our relations will be through both cooperating with the existing ones on making events and meet ups with the customers, and creating more communities focused on a certain aspect, such as education or skills sharing.

COST STRUCTURE AND REVENUE STREAMS

The cost for such a project consists of mainly the software development cost, personnel costs, infrastructure, maintenance, and marketing. Since we are working as a non-profit social enterprise, the fund will mostly be public fund. Revenue can still be achieved, however, as this depends on how we want to approach partners. One idea, as thankfully suggested by Prof. Bonifacio, is to partner with telecommunication companies, who can provide special deals for refugees to call their parents or relatives who are still in the war-torn country. Not only will this create a benefit for the refugees, but also will have a return for the companies since their profiles would be associated with humanitarian acts.

RESOURCES AND PARTNERS.

Our project is based strongly on the partnership with entities that are dealing with the problem. Partners include government agencies like the Swedish Migration Agency (Migrationsverket), and international organizations like UN Refugee Agency (UNHCR), the Red Cross, other startups related to the issue (like Refugees Welcome), and language learning applications such as Duolingo.

DIFFERENTIATING FACTOR

Pal does not compete in the sense that it eliminates the use of other platforms, but rather takes a different approach to how refugees are being helped through building trust. The main differentiating factor is that Pal involves the initial social connection and interaction between the refugees and the people who are willing to help, rather than having a remote help without the previous social interaction. This is illustrated in the following figure.



Figure 1: Pal is the intersection between having the previous social interaction with the refugees (before the physical meeting) as well as direct involvement with the help, such as hosting in homes.

NEAR-FUTURE PLAN AND FURTHER CONSIDERATIONS

To implement all that, we needed to construct a plan that puts in perspective what needs to be done on a quarterly basis, as illustrated in the following timeline.

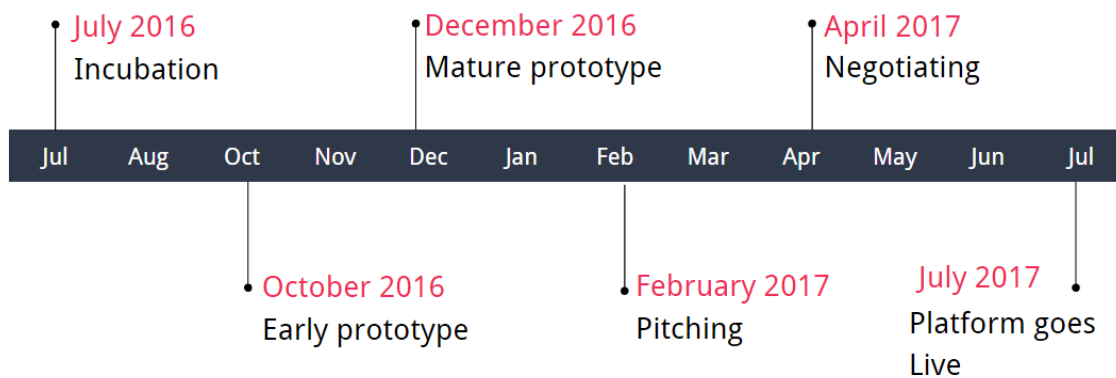


Figure 2: A brief roadmap for the near future

We will start with applying for incubation, while at the same time still interviewing different parties, mainly refugees and communities. In the next quarter, and after there is a clearer idea from the feedback of the interviews of how the prototype should look like, there will be an

early prototype that is taken and tested with the different parties, now with the inclusion of the migration agency. Then, a mature prototype can be developed to be taken and pitched to investors, after which serious negotiation with the government parties can be taken to bring this platform live.

Further considerations after having the platform live include the integration education features (such as language learning), as well as the possibilities of finding more partners to sustain the project financially and perhaps make it grow. But this will not stop there. The project will need more personnel to work in the future and be able to spread through the existing and the formed communities, hence recruitment is also a serious consideration.

Lessons Learned

My learning experience in this summer school was rich, both content wise and process wise, as discussed in the following sections. Although a lot of these lessons might have been recurring during the whole year of my master's program, there are always new things to learn and have deeper understanding through further experiences. I will point out which ones are totally new to me and which ones I had previous knowledge in but learned them deeper.

RELATED TO TECHNOLOGY AND COURSE CONTENT

- **Cyber-physical Systems could sound intimidating, but it can very much be a smartphone and you.** One of the main challenges was to try to solve our real-world problem with a technology-based solution. This became more difficult when we were dealing with a social enterprise that is not going to make money. How fancy shall we get with the technology and CPS? I came to learn through the lectures and discussions with the technical coaches that CPS can even be in present solutions, like smartphones, as long as they are being used in a certain way. When we are solving our problem with having refugees being represented through their phones, which for instance identifies their location the CPS element is present. Nonetheless this is just one of numerous ways the solution could use CPS. Other discussed solutions included detecting the stress level of a refugee based on the typing pattern, or scanning biometrics of refugees to be verified by the migration agency (thereby also speeding the migration agency's process).
- **Broadening your horizon is always good.** I am a Digital Media Technology student, and this summer school topic might not have been the perfect match for my major. However, I wanted to broaden my perspective and learn something new, with the hope that it could be useful in the future, aside from seeing a nice city like Paris. I can surely say that the choice was worth it.

RELATED TO THE INNOVATION AND ENTREPRENEURSHIP PROCESSES

- **It is not always about the money it makes, but the value it brings and problem it solves.** The main lesson learned with regards to the entrepreneurship process was related to the fact that we were in a non-trivial start up, but rather a non-profit social enterprise. At least a new experience to me, the idea of having a solution to a real problem on such a large scale, while having to sustain it without making money out of it was something worth trying. What I first learned in regards to that was the fact that revenue streams should not be the focus to make this idea sustainable. In fact, the main selling point of this idea is the value proposition that comes with it, as well as the magnitude of the problem being solved. This leads to the next lesson learned.
- **When pitching to investors about an idea that is not supposed to generate money, the way to go about it highlight the magnitude of impact it brings.** We were so used to making financial projections and impressing investors by the millions of euros a certain idea will generate in a couple of years from its conception. Yet, what do we do when this idea does not make money? This is a new challenge that I found when approaching the final pitch in the summer school. Our idea was different from the rest. There will not be revenue to talk about in our slides that are based on Guy Kawasaki's model of pitching. Nevertheless, one point that is easy to miss in Kawasaki's model is that the financing part could very much be about explaining the impact this solution brings – how many people's lives will become better in our idea's case. This is what investors in social projects look for, caring less about whether there will be monetary return on investment.
- **Think big, but be concrete.** I am aware that we are still in a very early stage in which the true experience is not yet present. Although the idea gained the votes and made it to the top, having this concrete solution as an outcome is still what awaits the project.
- **The idea is important, but it is not everything.** As much as I keep hearing this in the entrepreneurship classes, I still consider it a vital lesson learned, because it is easy to fall in love with the idea more than focusing on the problem being solved. We started with the idea of having European residents hosting refugees, like an Airbnb for refugees, but soon we had to let go of that idea the more things got unfolded. We might reach to a dead-end if we keep finding that a particular idea does not work, but the more we talk to people who have the problem, the more likely we will find a solution. Most importantly, we better not marry an idea that only sounds awesome.