Project Missions for ETSN15 -2022/23

1. **Codiska** - a multilingual online platform for teaching computer programming to kids in their native language

2. **EyeTalkHealth** – a web-based application for treatment of PTSD

3. **Pinteg** – a privacy UX feature for the company's privacy data management software.

4. **Product Shot** – an application for managing product screenshots, e.g. in product manuals, marketing material.

5. **Medshare** – a platform for sharing expensive medical equipment

6. **Noui** – a mobile app for the company's wearable bladder monitor, used to manage incontinence.

7. **Agrodit** – a platform for managing smart irrigation systems

1. Codiska

Our company is called UniverKids and our product is Codiska. The currently launched version of Codiska allows students to signup/signin and access to the learning material (according to the course they are in), and provides the infrastructure for online 1:1 meeting with their mentors. In this version, the mentors are added and assigned to students manually, before the students signup.

Description

Codiska is a multilingual online platform for teaching computer programming to kids in their native language. The platform connects students and mentors worldwide around our project-based learning materials designed for kids and provided in different languages. The kids' roadmap when they join Codiska starts with block-based programming like Scratch and goes through Minecraft, robot programming, and more complex and advanced topics such as Python, game programming, IoT, and even data science and AI. Each month, kids work on a fun project, broken down into weekly phases; kids get access to videos, other learning materials, and supports as well as weekly 1:1 sessions with their mentor to discuss their solutions, in their chosen language.

Project Scope

Accordingly, we firstly would like to complete our product with the following features as well as improving existing features

1. Mentor management system
2. Feedback system for quality control
3. Automatic matching between students and mentors, which needs specifying and collecting appropriate data

The ultimate goal is an AI-powered platform that allows students and mentors to sign up, and automatically matches students and mentors based on the diverse set of data collected contiousely over the time. An essential feature of the platform is a feedback system that allows students and mentors to provide their feedback on the other side and the platform as well.

Additionally, we are now planning to introduce our product/service to schools. This is very preliminary and we need to find out the main users and their needs and then, define and design the right product/service for this purpose.

Potential Customers

- Parents/guardians
- Schools
- Educational Associations/Systems

Stakeholders

- Parents/guardians
- Students

- Mentors
- Platform Managers
- School Admins
- Teachers

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2. Eyetalk Health

Getting access to psychotherapy is associated with long waiting periods. We would like to enable psychotherapists to take up more patients over a given time by developing an Eye Movement Desensitization and Reprocessing (EMDR) therapy that can be administered by the person himself with the help of our web-based application.

EMDR is a well-researched procedure for the treatment of PTSD that was developed by Francine Shapiro. It consists of eight standardized phases. The main phase is the recollection phase where the patient recalls the traumatic memory by thinking of a predefined sentence that is connected to the memory while moving the eyes from the left to the right side. Through this, the traumatic memories should become less arousing.

Our mission is to make psychotherapy accessible for everyone in a reasonable time. In 2017 between 1-3% of the European population developed PTSD, these are 7.7 million people (Nemeroff et. al. 2018). This number was collected after the war in Syria, but before the war in Ukraine which impacts the statistics of PTSD prevalence. Refugees, in particular, are at risk of mental health conditions such as PTSD. The European council counted 4.8 million refugees because of the war in Ukraine that registered for temporary protection in the EU from February to December 2022.

Right now, we are conducting customer research, developing a business model, and creating our first financial plan. Next year we would like to search for new team members and the resources to start developing an MVP, this includes financial resources and a university hospital to cooperate with for clinical studies to prove the health effect and security of our product. Ideally, the MVP should be finished before the summer of 2023 so that we can start the study at the end of the summer of 2023.

Project scope

We would like to provide a web-based application, that leads the user through six of the eight steps of the therapy. The first and the last phase should ideally be accompanied by a psychotherapist. The user should get suggestions on what pace he should do the therapy and be able to plan the sessions. As some of the patients will cooperate with their psychotherapist having a connection to the calendar of the treating person would be a valuable tool to coordinate the appointments. Before starting the actual therapy the patient should be informed about contacts in case of an emergency, for example, suicidal thoughts. The six steps are:

(1) Explain to the user how the therapy works and what methods the user could use to calm down if strong feelings arise.
(2) The target event is clearly defined along with images, beliefs, feelings, and sensations that are associated with it. The user should be led through a series of questions to break the target event down to one sentence.
(3) The user can now access an EMDR tool where a dot moves from side to side. The users should be able to predefine the time that they are spending on the tool and the pace of the movements of the dot. Furthermore, they should hear a sound each time the dot reaches one side. While using this tool the patient will recall the target sentence for a defined time (e.g. 60 sec). This will be done a few times with short breaks, where the user should answer the SUD scale to track their distress (it is a scale from 1-10).

(4) Questions will lead the patient to a positive belief that the patient wants to associate with the situation in the future and the eye movements will be administered and the SUD will be collected again.
(5) A web application assists the patient in performing a mental body scan. While remembering the target event, the patient scans his whole body for sensations that might arise.
(6) The patient is brought into a state of calm by a relaxing session guided by the web application.

If the patient is working together with a psychotherapist there should be a possibility for the user to track the development of the SUD and the answers and to share the results with the treating person to discuss it and make future plans. Furthermore, there need to be different ways of accessing the website. Some will get a code to access the treatment from the insurance company, but others should be able to pay directly online to get an access code. Parts of the website can be accessed without logging in and other parts should be only available after logging in and redeeming the code. Overall, data security is very important as we are dealing with health-related data.

Existing systems and data sources

We have not started to develop a product but some of the data sources we will be using are standardized government guidelines for conducting this type of therapy when outlining its digital procedure.

Potential customers

The target customers are insurance companies, clinicians, and private individuals with PTSD. Insurance companies should be able to diversify their digital portfolio and be able to save costs by increasing the number of treated patients that are then not developing a chronic illness. Users could benefit from a flexible therapy schedule and the ability to do the therapy in their preferred environment while having all the benefits of in-person psychotherapy. The goal is to make our application available to the whole of Europe.

Other stakeholders

Most likely, the paying entity will be the insurance company or the user with PTSD himself. Important stakeholders are psychotherapists. They are the ones that will take the decision to use our product, prescribe or recommend it to their patients. They are incentivized to implement our product in their therapy process to be able to save time and be therefore able to take up more patients. Through this, we would minimize the pressure on the psychotherapists that is generated through the long waiting times and would enable them to generate additional revenue.

To apply for a European medical product license (CE marking), we need to present research about the security and value of our product. This research is traditionally conducted in cooperation with university clinics. Hence the licensing institution and the university clinics are major stakeholders. In this regard, patients' data security must be ensured as well as their privacy and integrity should remain anonymous.

Similar product

Virtual EMDR (US company):
https://try.virtualemdr.com/online-emdr?gclid=CjwKCAiAheacBhB8EiwAItVO2ykc4IyCSFAjMN6FkbBAF3aaQNZTOn7v4JdaSXJLTFQV8dYT5RjcRxoCb-8QAvD_BwE

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3. Pinteg: Privacy UX

Pinteg was founded in January 2020 in Lund Sweden, and is a Privacy Data Management software company caring about correct handling of personal data, for both individuals and businesses. We believe in new solutions in the personal data privacy field in order to build transparency and trust, and by that contribute to a sustainable society.

Pinteg AB:s product, Fairity, is developed into being a very powerful and unique SaaS platform based on advanced architecture and easy-to-use interface, capable to meet not only current demands, but also future demands of privacy data management software services. Fairity is sold as a subscription service.

With pre-populated templates and simple to follow guidance, a business can enter their well-known data and conditions to make Fairity generate legally correct and user-friendly privacy statements and consents. Compliance with GDPR will be obtained and customer request to manage personal information simple to respond to. It will save a lot of effort, time, and legal expenses. To comply with regulations and be able to manage personal data in a good way is now possible. Pain relieved.

You can read a bit about the main product Fairty on https://fairity.io/ and the company Pinteg AB on https://pinteg.eu/ .

Project scope

One of the main features in Fairity is the so-called "Privacy UX feature". This is the communication that must happen according to GDPR when an organisation or company wants to collect personal data. This is the Privacy Notice that you find in all places where an organisation wants to collect personal data about citizens in EU.

Now, there is no standard yet how this Privacy Notice shall look and be designed for being as understandable as possible and give understanding and trust to the individuals that shall accept this Privacy Notice and share their data. There are clear legal requirements what it shall contain e.g. "what data is collected", "how long is it stored", "is it transferred outside EU", "who has access" etc., but not how it shall work or look.

The project scope is to identify the requirements for Fairity's privacy UX feature with the aim of providing the best privacy notice on the market. The legal information (privacy notice info) that shall be presented to the individual for acceptance before data collection can start is delivered by Fairity backend in a structured way. This information shall then be integrated in different interfaces where a data collection can be performed, e.g. on websites, in products while starting up, in cars etc etc. The feature can be used in whatever context individuals are to use products or services that want to collect personal data.

The project includes producing a mock up that will be used in our Fairity product as an example. The work can be seen also as a Legal Design type of project to combine Legal requirements with Technology requirement.

Existing systems and data sources

We, Pinteg, has developed the Fairity product ourselves and it is a cloud based SaaS solution. We can give a detailed session about the technology of Fairity when project starts up.

Potential customers

Customers to Fairity are all organisations and companies selling products of services to EU citizens where personal data is handled. The prioritized target customers are found in Health sector, Schools, e-Commerce, Recruitment etc where a lot of personal data is processed and it is also sensitive personal data.

Similar products

There are competitors in the Data Privacy industry, mostly international. There are no standards or certifications yet for the interaction towards the individual, so this project outcome will have big possibility to be part of this standard and best practise build up as we will bring it into the Sjyst Data project as best practise.

Other

Pinteg and Fairity is part of a large research project in Sweden called Sjyst Data. Riven by RISE and financed by Vinnova and with the aim to develop a standard and certification within Data Protection in Sweden. Pinteg is part of this project and this project idea is very much connected to this Sjyst Data project. https://www.ri.se/sv/vad-vi-gor/projekt/sjyst-data-0

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4. Product Shot

The company Cargo-Planner https://cargo-planner.com wants to develop a new product called ProductShot.

The company was founded in 2014 and the main product is a software for planning and optimizing the contents of shipping containers, trucks and cargo aircrafts. The company has paying customers such as DHL, DSV, Kuehne+Nagel and more.

Project scope
A (new) application to take and maintain product screenshots. Product screenshots are necessary in marketing, presentations, documentation and PDFs, but as the product changes, they are hard to maintain in all places they are used, and sometimes hard to reproduce.

We imagine an application where the user can decide the part of the product & the inner-state of the product, similar to a testing framework, but for taking pictures. Limiting the application to only support web-applications (or even certain type of web-frameworks) might be a good restriction.

Existing systems and data sources
This is a green field application. It's a new branch of our company and there are very few resources available.

Potential customers
Companies with web-based SaaS products: (Qlik, Simple-Analytics, Figma, Stripe, etc.). Any company with a product based on a web-app. Initial target audience is most likely smaller companies/start-ups with products like this.

Other stakeholders
Several roles within those customer companies will be interested in such a product but have different opinions on what is important.

Similar products
Snagit, regular screenshot tools included on computers and phones.

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5. Medshare

$270 million. If you'd win the lottery tomorrow, what would you do with $270 million? You could buy your own yacht and your own island right with it. Or you could buy ONE INUMAC MRI Scanner. While medical devices become way more advanced and innovative, they also become a lot more expensive. How can we benefit from these innovative devices, if no one is gonna be able to afford them? The story doesn't end here, did you know that once a medical device is purchased it is often only used around 40% of the time? Unbelievable, to know how much money is spent to purchase new medical devices in order for them to just end up standing around for a majority of the day! At the same time many healthcare professionals are not able to access the medical devices they need, as they are too expensive to obtain. With our solution these issues are no longer a problem. We want to connect medical professionals by providing a digital platform for sharing medical devices. Our solution benefits both sides, as device owners can get the most out of their devices by lending them, therefore increasing their return on investment and reducing their operating costs. Devices seekers can get easy access to (specialized) medical equipment, expand their business activities, and reduce their initial expenses. Thanks to our platform everything is done in just a few clicks. Sharing medical devices was never easier.

Medical devices are very expensive to obtain and medical professionals are often struggling to get access to the right device, when needed. They may not need them all the time, can't afford them, or they do not have enough space to set them up in their own practice. At the same time, medical devices often have idle time slots. We would like to match this supply and demand by providing an online platform for medical professionals who own or seek devices, to come together and share their medical devices with each other.

Our value proposition it two-fold and targets the both the owners and the users (seekers) of medical devices. For *device owners*, we offer an online platform that helps medical institutions and healthcare professionals who want to utilize their medical equipment more cost and time efficiently by reducing idle time slots of the equipment and connecting potential partners while keeping the organizational effort between the contractors to a minimum so the return on investment of the devices can be easily increased and additional earnings can be created (unlike existing offline sharing models). For *device seekers*, our online platform helps medical institutions and healthcare professionals who want to get access to (advanced) medical equipment by reducing the investment risks for essential equipment, reducing space and management requirements, and by reducing the time and effort to find available equipment, therefore enabling a reduction in costs, easy access, time savings, and the creation of a strong network to ultimately offer a better treatment for their patients (unlike existing offline sharing models).

Medshare plans to initiate its business activities in urban areas in Germany, as there is a high density of medical practices and healthcare professionals. The sharing of medical devices is already happening on a small local scale offline. We want to make it more scalable and efficient by providing a digital platform to improve the process. The usage of our service will be charged, which will be our main source of income.

Project Scope

The biggest part of this project for us is the development of our platform, we also need our own website and we already started to create that: http://medshare.siller.sk/share-device/?id=meeting (this is the link to the english version which is not at all finished yet). For this, we want to identify a minimum viable product to start with consisting of a website/platform, and with potential integration with systems of (some of) our clients.

Existing systems and data sources

Right now there is no system existing from our side. We are considering either building it from scratch or customizing a platform on sharetribe.com. It would be helpful to investigate other options though.

There is no need for external data sources in order for our minimum viable product to function, but for a potential future integration of our system with our client's system we might need to follow some standards which would need to be investigated. There are existing standards for medical data such as ePI, API, and FHIR. But we don't know if there is some standardized data structure that is currently used by healthcare institutions in Germany. There might also be some standards planned for EU/Germany.

Potential Customers

We want to offer a B2B service between two parties:

• Device owners: Healthcare institutions/professionals that want to offer free slots of their medical devices to device seekers
• Device seekers: Healthcare institutions/professionals that want to use/book time slots of medical devices which they do now own or for which they have a higher demand than they can fulfil with their current devices.

We are focusing on Germany as our starting market, more specifically we plan to launch our pilot in Berlin.

Stakeholders

• device owners as they act as our suppliers while also being our customers
• device seekers are also our customers and therefore also stakeholders
• Employees: lawyers, customer support, sales
• Investors

Similar products

We want to be "the Airbnb for medical devices", by adapting airbnb's concept of renting out private apartments to the medical sector and renting out medical devices.

Current competitors are Cohealo, Intrakoop and HealthShare. For further information, see
• https://cohealo.com
• https://www.health-share.ca/home.html
• https://deelplatform.intrakoop.nl/intrakoop.html

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These contacts will be available in Lund during lp3, for face-to-face meetings etc.

6. Noui

Noui, https://nouilife.com is a wearable bladder monitor produced by Innovation Partners (Europe) AB. The company is launching a real-time bladder monitor using electric signal transmission (electromagnetic communication) capacitance coupling method to compare the signal strengths and estimate fluidity of the bladder. It notifies caregivers the time to empty the bladder. It is built on a simple electronic construction and small size. The electrodes can be integrated into textile computing to ensure an extra comfort for patients with dementia. The company consists of four people with an extensive international background with a dynamic global advisory board based on four different countries in two continents. The product has two parts, there is a tiny device and electrodes.

Noui is a tiny, flat wearable device which can be worn onto the wearer's underclothing pocket that monitors continuously the wearer's bladder level. For relatively healthy elderly or handicapped individuals, they can get notification via vibration and mobile apps in 20 minutes' before their bladder is full. They can seek for the rest room and empty their bladder (toilet function or catheter) in time before they get wet. The mobile apps shows only green and red (red means the wearer's bladder is nearly full so the wearer shall start preparing toilet function).

The device sends a low frequency electric signal every 30 seconds to mobile apps or if they do not smart phones to desk top apps or tablets) to record the data. The device is set the thresholds so when the collected data is reaching to the threshold, the warning vibration is sent on the device or red sign appears on the mobile.

Our customers are retirement homes and hospitals, and the Noui team is currently working on developing the device according to user preferences in Poland, gathered in a previous investigation of independent elderly people. In that investigation, we found that patients(or the elderly) with overflow symptoms and with excessive (unnecessary) use of catheter on daily basis, often wear diapers and are wet for several hours a day. With Noui, the caregivers could be notified and assist the patients in going to the bathroom in time.

Project Scope

We are planning for making a mobile/tablet app to improve on the current desktop-based solution that measures the increase of capacitance every 30 sec. This student project is to investigate the requirements for this app, and in particular the user requirements for Sweden (as opposed to Poland), and for facilities such as retirement homes (elderly care home) and hospitals.

Examples of questions to investigate include:

- In the app, do we need to give more notification to the wearers/caregivers or how often do we need to measure? Every 5 minutes or 10 minutes?
- What are the other functionalities that are missing in our current desktop application?
- How do the hospitals/elderly care homes receive/prefer to receive the signals specific patients' bladder reach to the maximum or overflowing level (more than 400ml) on their tablets?
- How do users consider the form and materials of the device and electrodes?
- What requirements need to be consider to integrate our Noui solution into the regions/municipality IT systems, national database system, HLR?
- What are they (retirement homes and hospitals) doing related to incontinence care or care for patients without bladder control?

- What does the patient and care person's current situation and daily scenarios look like?
- At hospitals, who is changing patients' diapers? Who is doing catheter or cystometry? (In the UK, an experienced nurse will do catheterization and cystometry.)

Existing systems and data sources

Potential Customers

- nursing homes (retirement homes). Here, there are certain patients who are continuously under catheterization. All of them are infected. However, if they get notification that their bladder is full or not, they can do well-being in natural way or with an assistance by a caregiver. That is significant cost effective to reduce infection cases by catheterization, usage of antibiotics, catheters and absorbent aids costs.

- Hospitals. Here, there are several different types of patients, such as Parkinson, Multiple Sclerosis, Spinal Cord Injuries, Diabetes, Stroke, Cancer etc who have difficulties to empty the bladder. The hospital staff needs to determine who is the at-risk patient, but it is rather difficult to identify. If all patients wear our device, it is instantly identified. The staff can do the identified patients for the further ultrasound checking or treatment, such as urolodynamics, cystometry or catheterization.

Stakeholders

There are IT system integrators at the regions or municipalities, Inera, NPÖ, SKL and publicly purchased IT partners, nurses, physiotherapists, urologists, purchasing departments, catheter companies, 3D or portable ultrasound companies, diaper companies, and also distributors of the home care products. At the hospitals or retirement homes, they use various absorbent aids or catheters.

Similar products

There are a few other companies and products on the market. For example, Sens-U and Dfree that use ultrasound, thus making it impossible to make the device smaller, cost-effective and with a good battery life span. There is another entrant from the United States, UC Davis, using ALS electrochemical analyser.

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7. Agrodit

Agrodit (previously IO-dit) develops smart irrigation systems based on IoT sensors that help agriculture's sustainability by saving water, resources while ensuring plants health and improves crop yield. This is achieved by providing better data-driven decisions. More info can be found on http://agrodit.com

Project Scope

The company offers a platform for managing smart irrigation systems. The platform helps the user (farmers etc) to monitor the soil moisture level and temperature (measured by sensors), and to control the irrigation (managed by remote water valve controllers). The users manage their system via an app that

- displays moisture levels and temperature (measured by soil moisture sensors), weather forecasts, maps
- allows the user to activate or deactivate irrigation remotely
- provides notifications and predictions of moisture levels and irrigation needs
- ability to manage schedules for irrigation

The main aim of this project is to identify the requirements for the next generation of the platform, in particular regarding the user requirements and the interface requirements between the platform and external components (sensors, water valve controllers, map solutions etc). The project entails exploring the currently prototyped solution, reviewing the user needs and usage scenarios, and identifying potential improvements for the whole solution. This includes requirements on the app, on the communication between hardware and app, on the user experience, and on new important feature that could be added. The project is also to explore requirements for potential new customer categories, such as golf clubs and city councils.

Existing systems and data sources

Agrodit current solution is based on In-house developed soil moisture sensors and a prototype app where such data is displayed and notifications are sent to the customer. Weather forecast data is to be integrated to the app, as well as potentially satellite data for contrasting information.

Potential Customers

- Farmers that irrigate actively, mostly horticulture.
- Golf courses and social areas such city parks is also a possibility.

Other Stakeholders

- Data providers for weather forecast.
- Network provider for LoRaWAN back-end.
- Other technical partners/collaborators.

Similar products

SenseFarm, Sensoterra, Irriot, Libellium.

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