Lav Förening

Service design: lichen study, farm innovation and enterprise framework for re-active rural cultural landscape

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Abstract

I start this project as my master degree project which is the last assignment during my graduate education in Sweden. I own the bachelor degree in industrial design which is the beginning I ponder in a designer’s way. With the accumulation of my knowledge and study, I am willing to attempt different design fields in sustainable perspective, like product design, furniture design, exhibition design and service design. The working and study experiences provide valuable resources for me to recognize self. And the environment in Swedish society also is a school to acquire knowledge and know the world. The project, Lav Förening, was born in these contexts.

The main study fields: Rural depopulation was addressed as a global issues in economical, ecological, socio-political and cultural contexts in sustainability perspectives. The rural economic stagnation can be restore by government policy support. However, the disappearance of cultural landscape would cause irreversible loss. With case studies and fieldwork in Varshult, I define my study field in service design involving lichen study, farm innovation and enterprise framework for
re-active rural cultural landscape. It is a proposal, through figuring out local renewable resource (lichen) and integrating stakeholders’ framework, to create an attractive community for rural part-time residents and young active citizens to participate. In order to complete the concept, there are six fields need to be study: depopulation and sustainable rural development, cultural landscape, lichen and essential oil, community agriculture and Boda Glass Factory.

The major findings of my study: The service in this project is human centered. Through studying Maslow's hierarchy of needs, I analyze the needs of my target group. For the target group in Lav Förening, rural part-time residents and young active citizens, they have a good living conditions and enough spare time for their interests and pursuits. For the organizers and land owners, we are concerning the social phenomenon, rural depopulation, and we devote ourselves to figure out the opportunities to solve the problems and keep the rural cultural landscape alive. We pursue a higher level of psychological, belonging, esteem and self-actualization needs. There are six programs on lichen journey based on the needs study: Varshult visiting & lichen planting,
bottles making, lichen collection essential oil extraction & tincture making, handmade workshop and market & exhibition. The proposal will be presented with visualizations and evidences.

The Lav Förening service proposal need to be refined continually. It shows an opportunity to oppose rural depopulation in design field. It is a practice for me to analyze a complicated framework and present it. The design process and report have recorded the development and exploration on my design study.

**Key works:** Service design, Rural depopulation, Sustainable development, Cultural landscape, Lichen community
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1. Introduction

In this project, I will use the service design thinking to figure out a proposal to help maintain the rural cultural landscape alive. This proposal is situated in the phenomenon of depopulation in rural areas in Sweden. Through establish an interest community based on lichen and moss growth and derivatives making to gather people and attract their awareness on rural areas. This report will present the delineation of field of study, theoretical and methodological frameworks, context in ecological, economical, socio-political and cultural perspectives, project and process and summary.

Lav Förening is a community involving lichen study trip and rural cultural landscape re-active programs. We are designers, farmers and socially conscious. We come from different fields, age even different nationalities. However, all of us want do something by hand and do it from very beginning.

The problem of abandonment and depopulation of rural areas has been addressed globally. Statistics show that by year 2050 approximately
70% of humanity will live in urban areas, which creates discussions of whether rural areas are decline and slowly die out.

Varshult is one of many places that has transformed, from being an active village into a village where only two houses now are inhabited. The meadows and the buildings have been maintained due to cultural value and is now protected as cultural heritage. Varshult now is seeking ideas for new use of the land and the buildings. Lav Förening emerge at this moment.

Lav Förening is going to create participation in different events and set up market and producing process to create an attractive image for the potential residents to reactive the cultural landscape in rural areas.

In this phase, we will make friends with Oak moss and Reindeer moss. Learn to take care of their lives. Then there will be some exciting activities on extraction. With the products (essential oil or tincture) we can make our own soap, candle and perfume! There are six programs on lichen journey:
Varshult visiting & lichen planting
Bottles making
Lichen collection
Essential oil extraction & tincture making
Handmade workshop
Market & exhibition

Varshult is the main stage in our programs. Lichen planting, collection and handmade workshop will happen there. When it turns to bottle making, we will go to Boda Glass Factory to participate the glass workshop. Prepare for your liquid. In order to get oak moss essential oil, we need vacuum distillation method. This will happen in Linnaeus University Laboratory. Finally the market and exhibition will be hold in Växjö city.

1.1 Brief project description

The project title is Lav Förening. Lav Förening is a Swedish phrase which means “lichen community”. It is more understandable and acceptable to use the Swedish language as a title because this project
is based on a Swedish social context. Lichen usually is confused with moss because many common names for lichen include word “moss” (McMahon 2016). Besides, in the Swedish pronunciation, Lav and Love are similar. When they pronounce Lav Förening, it sounds like Love Förening. The name remind us that this is a community filling with love.

In this report, my research objects are oak moss and reindeer moss. They belong to lichen while they are called moss. Lichen, as a main character in the storyboard, leads to a service design on lichen study, farm innovation and business framework. Lav Förening aims to maintain the rural cultural landscape alive and develop rural areas in a sustainable way. There are five programs on lichen and essential oil journey: Varshult visiting and lichen growing, bottles making, lichen collection, essential oil extraction and market & exhibition. Lav Förening integrates the local resource to identity Varshult and Småland and attract the part-time residents’ awareness on rural development and cultural re-active.
By analyzing the context in ecology, economy, socio-polity and culture, Lav Förening involves following fields: depopulation and sustainable rural development, cultural landscape, lichen and essential oil, community agriculture, Boda Glass Factory and service design. With the help of case study in different fields, Lav Förening has been defined and developed.

I work as a program organizer and service designer to communicate with all the stakeholders and design the service with tools and methods. The final outcome should be a service design proposal with evidencing and visual identity presentation which includes mood board, poster, storyboard, system map and stakeholder’s motivations map.

1.2 Background and motivation

The concept comes from one of my study trips to Varshult, a small village in Småland. The village is one of many places that has transformed, from being an active village with a railway station, dancing and amusement place, a “Folkets hus”, and several farms, into a village where only two houses now are inhabited. The former very
active farming community consists now of one farm holding cattle and small scale forestry. The two families inhabiting the village have all works next to the farming, one being a truck driver, and the other running a cleaning service. Other buildings stay unused and are used only occasionally for stay over or vacation.

Though, the meadows and the buildings have been maintained due to cultural value and is now protected as cultural heritage. Once a year there is a summer event when relatives and friends of the village gather and beats meadows with scythe, in Swedish a slåttergille.

Based on the brief understanding about Varshult, we started our study trip. Shince there is no public transport between city and countryside, we have to gather in our university and drive there. After one hour drive, we arrived at the silence village, Varshult. Mr. Carlsson and his wife came to welcome us. We spent breakfast time together in a delicate and primitive farmer house. They also maked a brief introduction about this village. Then they guided us to visit the farm houses and farm land. More than half of them are empty. The owners
will come back in summer time for a long vacation. Varshult was very active in the past time. Even they have their own train station and school. But now, we can only find the remains of them. Also there was a huge storage which is full of tools. And the bar cannot be crowded now.

Varshult now is seeking ideas for new use of the land and the buildings. The design should be human centered and engage to participation and thought, with respect for both the nature, history and the inhabitants of the village. And the Swedish Arts Council have asked designers to propose a campaign for Earth of Småland. They ask for innovative proposals that will communicate the value of the soil. This could be the soil as a resource, farming, history or the soil as in area of use, tourism etc.

This is a new perspective for me. This is an exercise in combing the use of design methods and through case implement and challenge those by introducing a sustainable design proposal. The proposal should contribute to ways of experiencing the village in a new
contemporary and sustainable long-term perspective. I should explore the traditions, history and contemporary challenges regarding depopulation of the countryside and a paradigm shift in use of land in my proposal.

1.3 Aims and purposes

With the cultural background and rural depopulation phenomenon, the aim of this project is to maintain the rural landscape alive. The aims created in the situation that the demographics across time and space. In some region population was developed. But in other parts, the population was declined with the movement. Rural areas will be affected because of the lack of enough tax revenues. The number of education center will decline. While medical service will be more experience (Coffey, Polese 1985). The pull factors for young people move to the city center are education. The rural areas was left a growing population with aging and lack of human resource. The challenge for the countryside is to maintain themselves alive (Coffey, Polese 1985).
In the case of Sweden, the government give the support of capital investment. But in nowadays rural development, it more and more obvious that local residents play and important role in rural internal development (Glesbygdsverket 1997). Obviously, all cities realize the problem of rural depopulation. Under the research in three municipalities, making the part-time residents become a full-time residents is regarded as the potential solution for opposing depopulation (Safari, Papola 2012). Municipalities trying to sell yourself by creating an attractive imagine through different events.

The rich biodiversity and cultural features of Småland countryside is a valuable asset to a growing number of businesses, not least the “experience tourism” industry. For example, during the experience I stayed in Varshult, I find the stones which were picked out from soil during human farming activity were covered with moss and lichen. Through researching the moss and lichen, I find that they provides new directions and benefits. For example, oak moss can be used to produce essential oil for the perfume and the white moss is good for human skin. And also moss layer can be used to protect the roof in the
architecture study field. By establishing a lichen test field and studio, the project integrates local resource to present a proposal which aims to attract the potential municipal residents and create enterprise and employment and research arena to oppose depopulation.

1.4 Delineation of field of study

With the current situation in Småland, there are many local resources. The rich biodiversity, cultural heritages and the classic glass crafts show diverse opportunities to a growing numbers of study researches, services and business, not least the “experience tourism” (European Communities 2006, p.113). This project is comprehensive but not complicated. There are six sections: depopulation and sustainable rural development, cultural landscape, lichen and essential oil, community agriculture and Boda Glass Factory. The report in this section will introduce each of them.

1.4.1 Depopulation and sustainable rural development

“The problem of abandonment and depopulation” in rural areas is seen to be a global challenge. Statistics show that by year 2050
approximately 70% of humanity will live in urban areas, which creates discussions of whether rural areas are decline and slowly die out (United Nation 2008).

In Sweden, the movement of population is a different situation with what happened in the history. The migration move from rural areas to urban areas are attractive by the metropolitan centers which are attractive economic, social and cultural polls (Niedomysl, Amcoff 2010). But the situation in history, occurring migration was families moved to within a rural community during the 19th century in Sweden. Statistics shows that 80-90% of moves within a village while 3-4% were from rural to urban (Dribe 2003).

“The major pull factor at that time for local migration over short distance was the desire of landownership and wealth, this view upon as the career motive for moving. The push factor was the cause behind movements from one farm to another as servants, or due to poor housing and poor living conditions” (Dribe 2003).
Today on the other hand there are different patterns of push and factors for young people leaving the rural areas. Current push factors are due to limited activities within rural areas, the pull factors are education and the variety of new lifestyles. This indeed leads to depopulation of rural areas (Ariana Safari 2012). Families with children often tend to move to municipalities located nearby urban cities, which in turn generates into a growing population of urban areas (Lexen, Gårdlund 2011, Lexen, Torege 2002).

Figure 1_ Situation map

The figure above is the situation map which shows the brief project description and presentation of expected result.
Lav Förening aims to make full use of the renewable resource under the condition without changing the original ecological environment. Sweden is among the Member states with the largest wooded surface (3/4 of its territory) and the highest forest area per capita (3 times the EU average). The country’s bio-economy has great ‘green’ growth perspectives. The natural resource in this project are soil, stones and forest. In that situation, stones and forest are ‘unused’ but the values they can provide are more than we can see. Lichen cover everywhere in rural area. I pick up lichen as the raw material to extract essential oil which can also be used to produce others products, like perfume and body care products, to vibrant rural area and add economical value. In order to maintain ecological continuity, farming the lichen artificially is a good solution. There is a sustainable circle which contains lichen growth, essential oil extraction and leftover recycling and enterprise.
1.4.2 Cultural landscape

In Varshult, the residents are seeking new encounters in sustainable land-use without damaging or changing the original natural landscapes. They want to keep the traditional costumes and agricultural heritages. For this reason, to protect, maintain or enhance the cultural landscape in Varshult, designers need to consider the modern technologies and sustainable innovations in economical, socio-political, cultural and
ecological perspectives. Besides, the protection of cultural landscapes contributes to support the biological diversity. Thus, “The protection of traditional cultural landscapes is therefore helpful in maintaining biological diversity” (SAUER, C 1925).

Cultural landscape was defined by Carl Ortwin in 1925 which was published in the monograph “Landscape form” in order to study the actual geographic characteristics (UNESCO 2012). Cultural landscapes are defined as “cultural properties” and present “combined works of nature and of man” (UNESCO 2012). Cultural landscapes record the history of human society development and settlement. Cultural landscapes exist “under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal” (UNESCO 2012).

The phrase “cultural landscape” has been used widely from the twenties century. It is the product of human activity on earth. It is a complex of cultural phenomenon which includes natural scenery,
fields, buildings, villages, factories, cities, vehicles and roads as well as characters and costumes. Cultural landscape reflect the characteristics of cultural system and a region geographical features. In addition to some visible and physical images, cultural landscape also means unseen but valuable things. For example, landscapes often contain the origin of culture and other aspects of the diffusion and development. The cultural landscape change in space, but also change over time. The difference in space reflects their cultural characteristics of each group on shaping the landscape. While through the observation in time aspect, cultural landscape record the transition and development of the living life in the past (UNESCO 2012).

1.4.3 Lichen and essential oil

Lichen is the main character in all the service and program of my project. In this section, I will introduce how and why I figure out this role. And how lichen works in the context network in Varshult. Also the research on lichen and derivatives will follow.

Varshult is surrounded by forest and many human activities and
products are connecting with forest. To figure out a renewable resource and sustainable raw material, I need to consider all the conditions in Varshult.

Sweden is known as a country with a rich resource of forest. The forest areas in Sweden increase from 1990 to 2015. The statistics of “Total amount of forest area in Sweden from 1990 to 2015 (in square kilometers)” shows that the increase of forest areas from 280,630 square kilometers in 1990 to 280,730 square kilometers in 2015. There are 100 square kilometers increase (Statista 2016).

The rich resource of forest provide wood product and also non-wood forest products (NWFPs). Plant and animal can be defined as NWFPs. Plant origin are classified: Food; fodder; raw material for medicine and aromatic products; colorants and dyes; utensils, handicrafts and construction; ornamental plants; exudates and other plants products. And animal origin are grouped: living animals; hides, skins and trophies; wild honey and bee-wax; bush meat; raw material for medicines; raw material for colorants; other edible animal products
and other non-edible animal products (Stryamets 2016). In Sweden, it is a “cultural tradition” and one of “recreational activities” to make use of NWFPs (Stryamets 2016). With the aim of defining renewable resource, I started my research in Varshult.

During the study trip in Varshult, I used the observation and interviewing methods focusing on the earth to find out the new opportunities in land-use. There are old buildings for bar, storage, train stations, school and living. Also abandoned farm land and meadow. I find the stones which were picked out from soil during human farming activity were covered with moss. Through researching the moss, I find that lichen provides new directions and benefits. For example, oak moss can be used to produce essential oil for the perfume and the white moss is good for human skin. And also moss layer can be used to protect the roof in the architecture study field.

I had an interview with the land owner Mr. carlsson. He said when he was a child, the whole family work on the agricultural activity. They worked hard but the income did not scale linearly. When I asked about
how they deal the moss and lichen in garden and farm land. He said usually he would remove them from the garden and they turned over the soil in the farm land in order to grow the potato. Comparing the previous and current situation in village, I figure out a network.

Under the condition without changing the original ecological environment, I decided to start a project aiming to make full use of
renewable resource which are moss and lichen. In the original agriculture framework, there are many points. Soil is the basic and farmers grow potato for food. In economic perspectives, the price of potato is cheap and need a large farm areas. This activity produces low value with a great deal of human resource. They need work every day. It is a mass-produced process. The aim in this process is for survival. However in my design concept, Lav Förening, the stone, trees and lichen are valuable, renewable and sustainable resource. The products extracted from lichen and moss are luxury, expensive and limited. The raw material, lichen and moss, need the natural farm without artificial work. The lichen and moss can grow naturally after a few times manual irrigation. The aim in my design concept is redevelopment.

After the analyzation on the above network, I lock onto two species lichen: oak moss and reindeer moss. Oak moss, also known as Evernia prunastri, is a species of lichen which is mainly grow on trunk or branches of oak tree, pine tree and fir tree and so on. They prefer the cool and damp environment. Oak moss distributes widely in the subtropical, France, Eastern Europe and North America. The lichen
plant can be extracted essential oil and immersion oil which is thick liquid with blackish green color. Oak moss essential oil is used as disinfectant, preservative and expectorants. It is also used to make perfume and it is a good raw material that can modify the aroma (Acharius). Reindeer moss, Cladonia rangiferina, is also called reindeer lichen belongs to bushes litmus lichen. Reindeer moss is an extremely hardy creatures and mainly grows in alpine tundra. Reindeer moss is named with lichen because it is the important food for reindeer in Europe and America (Wiggers 1780).

1.4.4 Community supported agriculture

In this section, I will study the Community Supported Agriculture (CSA) which is popular in modern urban life. To maintain Varshult and the cultural landscape alive, it is important to create an attractive image to promote Varshult. The target group of Lav Förening is part-time residents who live in urban but travel to rural areas very often or have an interest on hand made lichen products. In addition to the activity location, CSA and Lav Förening have the same target group and purpose.
The concept of Community Supported Agriculture (CSA) originated in Switzerland in 1970s and it was developed in Japan later. It was a new farming idea to establish a cooperated network between farmer and costumers who aim to produce safe food (DeMuth 1993). In 1965, a group of housewives in Japan began to care for the pesticide contamination on food. More and more machining and importing food exist on the market. While the local agricultural product are vanishingly rare. In that case, they reached an agreement of supply and demand with the organic food producers, which is called Teikei system. Teikei means working together. This concept was spread to North America and Europe and developed to CSA gradually. CSA aims to build a local food economy and create an environment. In this environment, farmer and costumers cooperate and work on food security. And it is also important to keep the economy, society and nature develop in a sustainable way. There is no specific pattern for CSA. It depends on different resources and conditions in different communities (DeMuth 1993).
Community agriculture refers that a group of people living in a certain geographical area do the common agricultural farming activities within the same space in the city. In the community agricultural context, people consider more about the value orientation and demands, such as the desire of interpersonal connection and integration, the attention to physical and mental health, the participation in environmental action and the consciousness of social innovation.

- The desire of interpersonal connection and integration

In the urbanization, the rural population move into urban areas. A large number of population with rural background desire to integrate and resonate into new community naturally. However in this urban community transformation, it’s difficult for heterogeneous residents to construct new interpersonal relationship. Considering this situation, people are more like to choose a “community” which can reflect who we are, what we want to be. They can participate, whether in reality or the "virtual” world, and get involved in a common emotional tendency. There is a growing need for a channel or community where
participants could get contact, interaction, participation and influence activities in a broader, deeper and more intimate network (Maslow 1943).

- The attention to physical and mental health
Nowadays, citizens began to think about the balance between pursuits of high compensation and health in physical and mental. More and more people eager to obtain the release and recreation of body and mind. The spiritual dimension contains a self-realization and development, construction of interpersonal relationship in family and friends and demands for social cohesion, social security, personal health, life and work balance, and education and culture (Jegou, Manzini 2008).

- The participation in environmental action
With the development of urbanization, the urban areas were expanded followed by the increase of pollution scope and environmental problems, such as haze, greenhouse effect, global warming and abnormal. While the growth and liquidity of urban population also
increased social problems, for example food problems, traffic congestion and vehicle emissions which have become a serious "urban disease." All these negative factors push citizens more than just to propose the protection of natural resources and environmental health, as well as the desire for sustainable solutions.

The consciousness of social innovation

With the challenges on environment and society, we realize the development of technology cannot provide all the solutions. A report “Study on Social Innovation” which was published in 2010, mention that “Just as the Lisbon strategy for jobs and growth focused on innovation, entrepreneurship and the knowledge-based economy, the new strategy for Europe, Europe 2020, must have social innovation at its center as a means of simulating a more dynamic, inclusive and sustainable social market economy.” Professor Sara Ilstedt Hjelm (2011) mentioned that design, a creative strength, is one of the new path and methods to “reinvigorate Europe as a successful builder of society and not just economies”.

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1.4.5  Boda Glass Factory

Integrating local resources is one of my aims and purposes in my project in order to development rural areas in a sustainable way. Småland is well known for the crystal and glass making. And there is a close relationship with the tour of lichen essential oil in bottle design and making activities. Boda Glass Factory, with a traditional glass making technique, are seeking new opportunities and direction to develop. In this case, combine Boda Glass Factory into my service network could create new encounter and customer.

Crystal ware was produced since the 17th century. Sweden is the most well-known place of crystal design and production in the world. The oldest crystal mill even has 270 years of history. Their crystal ware, made with sophisticated skill and in excellent quality, have been appreciated by numbers of customers. It is famous all over the world.

Kosta, Boda, Orrefors are the origins of crystal, located in Småland. There are 13 such kind of ancient glassworks in southern Sweden. A reputation as Crystal Kingdom comes from here. Today, the factory of
Kosta Boda has become a Swedish national monument. Kosta Boda Crystal has become the precious heritage that all swedes are proud of.

The distinctive personality makes Kosta Boda successful in a huge market worldwide. Especially in the United States, Japan, Germany and Australia, the crystal products are very popular. Now, every Swedes is proud of the precious heritage, Kosta Boda Crystal. It not only inherited the ancient traditional crafts, but also full of youthful vigor. More importantly, Kosta Boda crystal can express fashion and artistic taste with the most spiritual language. Although there is a long history, Kosta Boda crystal does not rigidly adhere to the shackles of tradition. Compared with many old works of art in crystal, Kosta Boda crystal design is the most modern and the most artistic. One important reason is that Kosta Boda crystal has given enough space to numerous independent artists to express their artistic views freely.

Boda glass is the representative of life and creativity in the 60s and 70s in 19 century. Boda Smithy, Boda Wood and Boda Nova were founded in this place. The glass was shaped as legends such as Erik
Höglund, Signe Persson-Melin, Monica Backström, Rolf Sinnemark and Kjell Engman. The Municipality of Emmaboda collected many historical glass from Boda, Kosta and Åfors glassworks in 2009. It is one of Scandinavia’s largest glass museums, Boda Glass Factory.

1.5 Delineation of project

I define my project as:

- A combination of social campaign and service design
- A potential solution to oppose depopulation in rural area
- A business model to survive the abandoned village
- A discussion about waste and value
- A manifesto to call for the concern towards human, society and earth

1.6 Formulation of question

Based on the phenomenon of rural depopulation, a research of Småland will be made to study how to clarify the underlying causes. Seek opportunities and give out a potential solution in a service perspective. The questions I formulate in my research and design
process should adhere to the principle of objectivity, consistency and motivation.

What is the potential solution and opportunity to oppose rural depopulation?
How to consider a social issues in a design perspective?
How to present a service proposal in an efficient way?

With service design thinking, this project and report will present the process how this lichen program answer the questions above.
2. Theory

This project, Lav Förening, is based on the Swedish rural depopulation phenomenon. With the current human movements, the village lack vigour and vitality now. There will be negative effects on food supply and living qualities of rural residents. Furthermore, the abandoned cultural landscape in rural areas will be retaken by nature and disappear. To oppose rural depopulation and re-active cultural landscape, it would be particularly important for us to do the researches on sustainable rural development.

Through the research, I find opportunities from design perspectives, epically in service design. By branding Varshult and organizing an interest community, Lav Förening aims to attract citizens’ awareness and realize the business ideas. The service design could help Lav Förening to construct the framework, integrate the local resource, organize the programs and provide service experience.

In this theory section, I will discuss and present the researches on sustainable rural development. And an introduction on service design
will be followed. Within the service design introduction, there will be three sections in detail: 4D service design principle, D4S map and service design tools and methods.

2.1 Sustainable rural development

The organizing principle for sustainability is sustainable development, which includes the four interconnected domains: ecology, economics, politics and culture (James 2015). The four domains should be developed completely and mutually. This report mainly focuses on sustainable development in rural areas.

“Building a sustainable society” is the discuss topic of Rural Development Policy in the Government Communication on sustainable development. The public initiatives must promote
ecological, economical, socio-political and cultural sustainable rural development (Government Communication 2015). “Various public initiatives must promote sustainable use of natural resources, enterprise, growth, employment in the environmental and land-based sector and other rural enterprises, as well as attractive environments for rural housing” (Government Communication 2015).

2.2 Service design

Service design is defined with an effective planning and organization involved relevant infrastructure, communication and materials to improve the quality of users’ experience and service activities. Service design is one of the design thinking to create and refine service experience. The experiences happen on different touch points in the timetable. The purpose of service is to refine the user experience and improve the service quality (Moritz 2005). Service design can be either tangible or intangible. Service design will be merging with others, such as communication, environment, behavior and other materials.
Service design is a multi-field research methods, which combines different disciplines in many ways and tools. Services Design still slowly evolves and develops. There is no final definition or elaborate language for service design. If you ask 10 people about what service design is, you might get 10 or more different answers. The scholastic definition of the service is designed to help create new or improve existing services to make these services more useful for customers (Moritz 2005). Service design is to make your service to provide a useful, usable, efficient, effective and needed experience (UK DESIGN COUNCIAL 2010). From the customer perspective, service design is committed to making the interface more useful, usable and needed. From the perspective of the service provider, services design aims to make their services more effective, efficient and distinctive (Mager 2009). Service consulting company, Engine Service Design (2010), defines service design is to “work to enhance customers’ experiences and to improve business performance across a wide range of industries and sectors.”

With the development of society, people’s requirements is expected to
increase continually. There is no doubt that people have never been so concentrated on the service that they have received. The experience that a customer has gained during the service will determine the psychological value and affects the brand value thereby. By enhancing brand awareness and brand identity, more business opportunities and investment cooperation will come behind (Polaine 2013).

Lav Förening, as a service and business idea, aims to create or figure out the relationships among human, urban and countryside, economy and nature. The organizer of Lav Förening work as a bridge to communicate with all the stakeholders in this framework. Identity Lav Förening through visualization and programs planning to create Småland features and provide unique experience.

2.2.1 4D service design principle

Service design has been considered as a push factor and resource in development and innovation of new product and service during the past 20 years (Bayazit 2004). Service design is a complete service experience and strategy. In RSA- Service Design seminar, advanced
design strategist Jenny Winhall in British Design Council divided service design into four stages, discover, define, develop and deliver, also known as 4D principle.

**Discover**: we explore design opportunity by understanding user and market demand.

**Define**: we explore design concept according to the issue defined by demand.

**Develop**: we improve the design concept and transform it into a viable solution.

**Delivery**: we generate ideas to solve existing problems and propose

Figure 5_4D service design principle
possible means of implementation.

The 4D service principle provides a guide strategy with significance and an appropriate way to define the best solution. It helps designers to elaborate and present their views to customers in the complex structure of the service process. By shaping the prototype and testing the solution, designer could complete the final output. Using the methods and tools aims to make the service experience conforming, satisfactory, effective and feasible.

The stage between DISCOVER and DEFINE should be concept exploration. Through observation I discover the phenomenon of rural depopulation and cultural disappearance. To maintain the cultural landscape, the successful cases in rural development show that Varshult should integrate the local resource and draw an identity image. Moss, as a character in this storyboard, is prolific and it build connections with other stakeholders, such as Boda Glass Factory and Linnaeus University Laboratory. There is a concepts gathering process. After that, narrow down the framework and define one direction to
develop the service. There is another exploring and narrowing period. Then it will be the final outcome.

### 2.2.2 D4S map

Professor Anna Meroni and Dr. Daniela Sangiorgi contructed “D4S map” in the book Design for Services. Depending on the different purposes, D4S map divides services design intervention into four blocks:

- Designing interactions, relations and interfaces.
- Designing interactions to shape systems and organizations.
- Exploring new collective service model.
- Imagining future directions for service system (Meroni, Sangiorgi 2011).

Although the four blocks have their own focus on the design objectives and strategies, the core idea the four blocks having in common is human centered approach. The D4S map is a systematic method of organization and presentation on different service design perspectives. It provides a design paradigm and guidelines for
2.2.3 Service design tools and methods

In this project, I study and explore the service design tools and methods systematically summarized by Politecnico di Milano and Domus Academy. There are four sections: service design tools in design activities, representation, recipients and contents. Using these
methods and tools, designers could tell the story and show the result to service stakeholder during the design process. Also it helps a lot in visualizing and presenting the ideas.

The methods and tools that I will use in my project exploring stage are interviewing, personas, experience prototype, blueprint, touchpoints matrix and evidencing. And in the service visualization, I will study through mood board, poster, storyboard, and system map and motivations matrix.

3. **Context**

3.1 **Ecological, economical, socio-political and cultural contexts**

- Political factors: in terms of local political structure and organization of development strategies, which is closely connected to the concept of development approaches, Lav Förening.

- Social factors: primarily focus on factors related to the family such as access to friends, school, health care, elderly care, kindergarten, security etc.

- Economic factors: mainly focusing on issues related to income
opportunities, and access to physical infrastructure in form of for example public transport etc.

- Ecology factors: primarily focusing on the ecological environment and product life cycle in sustainable thinking
- Culture factors: mainly focusing on the study of personal preferences trend towards their lifestyles in current situation

![Diagram showing eco, economy, soco-policy, and culture contexts](image)

Figure 7_Contexts

### 3.2 Contemporary works

3.2.1 **Sustainable rural development oppose depopulation case study**

The aim and purpose of my project is to maintain the rural landscape alive. “Sustainable development involves safeguarding and utilizing existing resources in a sustainable way” (Swedish Ministry of the
Environment, 2004). The proposal on sustainable rural development must be economically, ecologically and socially. The case in Bråbygden is a good example to study the local resource integration and identity making.

Bråbygden, “where the wind turned…”

- rural development, biological and cultural diversity

The Bråbygden district, consisting of 14 small villages in Kalmar County, has changed from a “moving out” to a “moving in” district. The aim of this project is to reverse a migrating trend to make the Bråbygden district prosper. Bråbygden is known among scientists as a countryside with high nature and cultural values. Since Sweden joined
the EU in 1995 the economic support has improved both in terms of quality and quantity. For the landscape and to the biological and cultural diversity in Bråbygden, it meant a necessary improvement in management as well as successively increased areas being taken care of. The landscape thus create proved to be attractive to young families starting to move in and also to research projects, excursions for non-governmental organizations, schools and people in general. This has led to a very positive development and different projects were started up.

Bråbygden Association (www.brabygden.org)
The association started in 1993 and since then has been “the engine” in the development.

Examples of projects initiated and led by Bråbygden Association

- The pollard project
- The wooden fence project
- The meadow project
Examples of research projects
- Long-term studies of vegetation and flora changes in semi-natural grasslands
- Project concerning re-establishment of species in semi-natural meadows
- Long-term studies of the effects of different management methods on vegetation and flora

Bråbygden changes its move-out situation successfully and protects the landscape in a sustainable way at the same time. They attract many research programs and now they are known among scientists as a countryside with high natural and cultural values. In my case, I’m working on the identity of Varshult village. Use the moss, which is resource-rich, as the raw material to develop activities on different field.

3.2.2 Cultural landscape

Shimanto Newspaper Bag, Japan
Shimanto is small city in Japan which is said to be home to Japan’s clearest river, the Shimantogawa in Kochi Prefecture. The local agricultural products are hardly sold out. The initial idea was come up by designer Mr. Kochi Umehara. They wrapped souvenirs with the shopping bags made of old newspapers to spread out the local features and customs.

Since the design is full of ingenuity, the program raised a widespread concern. The bags are not only to convey the concept of the ecological environment, but also a combination between the traditional Japanese “origami” and “cherishing”. And the local customs published in local

Figure 9_ Shimanto Newspaper Bag
newspaper go along with those shopping bags back to customers’
home, also will be stuck in their hearts.

Newspaper bag become local specialties. And the project has been
explored to a framework including workshop, instructor, business,
museum and award. They will organize a variety of design
competitions throughout the country to promote the contribution of
newspaper recycling concept. The integration of local culture and
design attributes the success to this project.

This is a good case that shares Japanese aesthetics through origami
and a sense of mottainal. The bag inheritance and spread the local
culture. In the same way, this project aims to maintain and reactive the
cultural landscape. It gives a good reference about how to present
culture through culture.

3.2.3 Life style

O|O
O|O is a small brewery specialising in beers we love. Make uncomplicated beers with attention to detail and style. O|O Brewing is a recently founded micro-brewery built upon a foundation of many years of home brewing. Founded by two beer connoisseurs – O|O aims for quality rather than quantity, brewing high-end beers serving as a suitable alternative to the traditional choice of wine in fine dining contexts.
For the product of O|O brewing, the package design and brand visualization provide an attractive visual identification.

“With many friends of the brewery being involved in creative disciplines – we designed the labels leaving a defined space serving as a canvas for artist collaborations. With each beer being produced in limited quantities, the labels will serve as a micro-gallery growing over time.”(Lundgren+Lindqvist, 2013)

For the service and brewing program, O|O attracts many customers in different fields, like beer lovers, designers and artists. They pay attention to the quality rather than quantity. Therefore, it’s very important for each participants to experience the brewing process and enjoy the beers through their labor.

3.2.4 **Lichen growth and the existing market case study**

Lichen resource is rich no matter in the forest and in human active areas. And it spreads quickly and naturally. To use the lichen resource in a sustainable way is not to pick amount of lichen in nature. So Lav Förening is a good choice to get the raw material. The case Mountain
Moss is working on that.

Mountain Moss

Mountain Moss is happy to announce expansion of our nursery operations – The MOUNTAIN MOSSERY! While Mountain Moss focuses our moss collection on rescues from high impact sites, they recognize the value of cultivating bryophytes for sustainable landscape applications. Mountain Moss have addressed issues of propagation and conducted our own research on growing all types of bryophytes with an emphasis on fast-growing types and those mosses that tolerate sun exposures. Their goal is to introduce new eco-moss options to environmentally-conscious homeowners, landscapers and green roofers.
Mountain Moss produces moss and use it in the natural way. It shows
the moss can be farmed artificially and be used in our daily life. But
it’s not a special and attractive idea for my target group, modern
citizens. They need something more interesting and knowledgeable.
The research on lichen species and derivatives should be done later.

3.2.5 Interest group

Mushroom Cultivation courses, Sydney
A mushroom cultivation course was run in Sydney to grow delicious culinary mushrooms at Milkwood, by Kirsten Bradley. One of the easiest and cheapest ways to grow them is on sawdust spawn that you can make yourself…

Kirsten Bradley discovers that shiitake mushrooms can be grown on
DIY substrates made by combining sawdust and straw. And she runs the courses on a farm in Mudgee and a rooftop garden in Sydney, Australia. "One of the easiest and cheapest ways to grow (shiitake or oyster mushrooms) is on sawdust spawn that you can make yourself," she writes.

The process to make the substrate:

Mix the straw and sawdust

Fill the mushroom bags with the substrate mix

Pack and seal the bags

Sterilize with steam

Growth

The project invents food-based way to use sawdust instead firing to have a barbeque. The approach of Mushroom Cultivation courses is designed to give the knowledge and tools to grow a sustainable, diverse mushroom supply at home – all year round. It solves a waste problem and create a new way of living at the same time. Growing organic mushrooms can lead to a successful micro-enterprise that fits
well with many small farms, homesteads and urban growers.

### 3.2.6 Community agriculture service design case study

**HK Farm**

![HK Farm](image)

**Figure 13_ HK Farm**

Hong Kong Rooftop Agricultural Farm was set up by a group of local designers, farmers and artists in March, 2012. The program aims to convey the benefits of local food production and the value of rooftop agriculture to public. As we all know, Hong Kong is a city where land is tension with built-up buildings. And it is overcrowded, with a large population. There is no sufficient land within the urban area. In this
situation, the HK Farm innovation shows a new direction for community agricultural development to citizens. Through transforming the building roof, HK Farm uses the space in vertical direction to build the roof farm. They make the movable cultivation equipment by reusing the old containers and collect natural rainwater for irrigation.

In addition to the roof farm, the artists and designers devote themselves to refine Hong Kong urban community agriculture service by product design and agriculture service. HK Farm also cooperate with the local schools, shops and other agricultural organization. They encourage citizens to participate the organic agriculture exhibition, workshops and other public events hold by HK Farm. It is more like an agricultural-themed creative community platform.

HK Farm provided services including:

Agriculture exhibition and sale

The themes of exhibition are mainly focusing on roof farm and local food culture. The farmers are curators and they also organize
peripheral product market. Movable planter, photograph works, handmade candles and other handicrafts are popular in the market.

Workshop and classroom
There are workshops associated with food and agriculture, such as planting, weeding, making planters and so on. There are also many workshops on urban agricultural culture, art and design, like plant monochrome printing and dyeing and handmade candle making and so on.

Sightseeing service
The tour with the theme of agriculture and a creative sightseeing service attract many tourism. Such as day trips, an afternoon tea in the farm or handmade souvenirs making.

Network platform
HK Farm update their information regularly in the official website. They also promote activities and open new channels for the public to participate in newspaper. There will be an online shop for selling
creative products.

### 3.2.7 Essential oil service design case study

**Deluxking Museum**

Kunming Deluxking Museum is the first private perfume museum in China. It was founded by perfumer Yinkai Yun in 2011. Deluxking Museum is dedicated to the dissemination of culture fragrant, the development of aromatic technology research and the design of...
aromatic product. To identity their fragrance brand, they explore and exploit the local resource of Yunnan aromatic plants, communicate and study the international aromatic culture.

Deluxking Museum offers the following products and services:

- Provide seedlings and guide natural spices cultivation.
- Provide natural essential oil and raw material of perfume.
- Provide technical support and formulations to cosmetic companies.
- Brand design and planning
- Customization

3.2.8 Bottle design case study

Boda Glass Factory lab
Workshop: Make your own glass – for example, shaping of blown glass, flame working, glass beads, engraving, cutting, glass painting, Tiffany techniques and more. Can be booked by various groups (minimum 4 people) such as school groups, birthday parties, conferences and team building.

Crystal was born from the efforts of many people, of which there are artists, handmade technicians, as well as crystal enthusiasts. Until the 19th century, Boda crystal crystal products are technicians own design.

Figure 15_ Boda Glass Factory Lab
Stockholm exhibition in 1897, the criticism that the company's crystal products crystal too monotonous, which had prompted the recruitment of production designers and artists ideas. Boda Glass Factory first designer Gunnar Gson Wennerberg in 1898. Since then, a large number of artists and designers to use their artistic talents to enrich the tradition of the company is made of crystals.

Now Boda Glass Factory starts to think about the inheritance and popularity of crystal culture. It open the opportunities to customers and glass enthusiasts. Through making the glass products by participants, Boda Glass Factory spreads the traditions and knowledge successfully. Many young people like to join the program and help Boda Glass Factory grow.

3.3 Changes and challenges

Under the guidance of social values, people are no longer satisfied with low-level physical security requirements. Increasingly, they concerned about their living environment, interpersonal communication with surroundings, public responsibility and
participation in public affairs, etc. (Tao 2014). For the target group in Lav Förening, citizen also part-time residents in rural areas, they have a good living conditions and enough spare time for their interests and pursuits. For the organizers and land owners, we are concerning the social phenomenon, rural depopulation, and we devote ourselves to figure out the opportunities to solve the problems and keep the rural cultural landscape alive. We pursue a higher level of psychological, belonging, esteem and self-actualization needs.

Maslow's hierarchy of needs is one of the behavioral sciences. American psychologist Abraham Maslow (1943) mentioned it in article “A theory of human motivation”. The theory devided human needs into five categories like ladder from low to high levels, namely: physiological need, safety needs, love/belonging needs, esteem needs and self-actualization needs (Maslow 1943).
The “physiological” needs

The needs are so-called “physiological” needs. Breathing, food water, sex, sleep, homeostasis, excretion and so on are involved in. They are the most basic motivations for human and the theory starting point.

The “safety” needs

“If the physiological needs are relatively well gratified, there then emerges a new set of needs, which we may categorize roughly as the safety needs” (Maslow 1943). Security of: body, employment,
resources, morality, the family, health and property. The same with physiological needs, safety needs are also basic motivations for human.

The “love” needs

“If both the physiological and the safety needs are fairly well gratified, then there will emerge the love and affection and belongingness needs” (Maslow 1943). Human start to construct the relationships in their network, like friendship, family and sexual intimacy.

The “esteem” needs

Maslow(1943) write in his report that “all people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others.” The needs exist obviously in the course of associating with others, namely: self-esteem, confidence, achievement, respect of others and respect by others.

The “self-actualization” needs

After the basic motivations, physiological needs and needs, we start to
put our views on the relationships with others. Then we work on satisfy the love and esteem needs. “Even if all these needs are satisfied, we may still often (if not always) expect that a new discontent and restlessness will soon develop, unless the individual is doing what he is fitted for” (Maslow 1943). We keep our eyes back on ourselves. Morality, creativity, spontaneity, lack of prejudice, acceptance of facts will be the pursuit of spirit and personality.

Maslow's hierarchy of needs make an important significance on the human motivation theory. However Wanba and Bridwell (1976) argued that there is not enough evidence for some specific needs. And Hofstede (1984) think Maslow's hierarchy of needs will be criticized for being ethnocentric.
4. **Project and Process**

Lav Förening is an unprecedented service concept. It supposes to build a community including the service provider, cooperator and participants. The goal of this project is to establish and improve the service system and present it with a relatively consummation service blueprint. There are few strategies that can be made reference. Therefore, the research and analyses on the context play an important role during the design process.

In this section, I will introduce the design process according the design schedule. The concept come from the phenomenon of rural depopulation in the Swedish society context. Combining with the study trip in Varshult, the original concept is going to have a deeper understanding of population situation and trying to figure out the approach to maintain and re-active the rural cultural landscape. After the relative case study, I draw the concept map and start to make a schedule. Since the service design is totally new for me in design fields, I began my design process with the service design theory and methods study.
Through define the target group, I make the service design scenario. Then Lav Förening become more and more clear and understandable. There are six programs: Varshult visiting & lichen planting, bottles making, lichen collection essential oil extraction & tincture making, handmade workshop and market & exhibition. The proposal will be presented with visualizations and evidences. For this design, the visualizations of proposal are the main conclusions and contributions.

![Diagram](Figure 17_ Maslow's hierarchy of needs)

It can be prefigured that Lav Förening should be an mplicated project including the program promoting, marketing, technology support, program proposal making, visual identity, transport and budget. Since it is a personal and individual assignment, I cannot complete all aspects. As a designer, I pay my attention to build the program proposal in service design perspective.
4.1 Aims and schedule

The challenges of tax revenue, food supply and cultural landscape disappear become the driving force to manage and keep the rural alive. With this situation, the aim of this project is to maintain the rural landscape alive and break the rural boundary to create a new life style for current citizens. After the interviews and participatory workshops, I define this project in service design: lichen study, farm innovation and enterprise framework. Lichen is the raw material and main character. And all the activities will be themed with moss, such as Varshult visit and lichen planting, bottle making, essential oil extraction and market and exhibition. The project Lav Förening is going to create participation in different events to set up market and producing process to create an attractive image for the potential residents to reactive the cultural landscape in rural areas.

I work as a “bridge” to connect the land owners and government and organizations together to be a community. This community
is the provider in this service. The provider implements the service and programs through integrating the local resource, like people, infrastructure, communication and design, etc.

Schedule making is important during a design process. It will hold the direction for designer and make the concept clear. The schedule in my project start with the target group definition. Then analyze the purpose of the project and the requirements from customers. Build the prototype to test and analyze the activities in service journey. Finally should be service proposal writing and visualization. The timetable below shows design steps in detail and the descriptions in each step followed.

Timetable
- **Objective – concept definition**

To highlight the social phenomenon, depopulation in rural areas. And to survive the village with a sustainable enterprise innovation, the project aims to figure out a competitive product running in a service framework.

- **Mapping – concept exploration**

Using the service design logic, the project focus on human being and explores to design, social innovation and enterprise. This is a long term process in the whole project and also the structure of the final output.
- Research in framework – concept

To enrich the framework and support the concept, the project needs amount of information in varies field. Through interviewing and researching, stakeholders in the framework will be involved in.

- Scenario

At the beginning of the process, it is not necessary to clarify the final product. Through scenarios to present the concept in different field, such as materials, social context as well as ecological and economical perspectives.

- Concept generation

- Workshop in field 1

Test the generation concept in small scaled field. In this step, I leave with lichen which are picked up from forest. Test the Lav Förening knowledge got from books and feel the atmosphere.
- Workshop in studio 1 – methods exploration

Using Collaborative mapping to explore concepts and proposals. Organize a workshop to gather designers and non-designers to discuss the situation and map out the potential proposals. Based on the framework, those two methods involve stakeholders to verify the service interaction in social context.

- Prototyping 1 – methods exploration and communication

With the results from workshop 1, the next step is to prototype and select one proposal as the final direction. In this process, the methods Experience Prototyping can be used to test the proposals. First to make the modes. Then invite persons to do the prototyping. Video and text documents are necessary.

- Workshop in field 2

Testing the concept in detail and reality. Invite one participant to farm the lichen in piece of land. The size of
the land is 4 m².

- Workshop in studio 2 – methods exploration and product definition

There are two methods happening in this process: collaborative mapping and AT ONE. This is an opportunity to share the knowledge in different field and a chance to cooperate. AT ONE is a good method to clarify the service in actors, touch points, offering, need and experience perspectives.

- Refinement

Through tutoring with teachers and present to other colleagues, I can get many valuable feedback. And according these experiences I can refine my service network.

- Prototyping 2 – communication

Make the evidences for the service. Prepare for the final
presentation.

- **Visualization**
  The milestone steps for present service design: mood board, poster, storyboard, system map and stakeholder’s motivations map.

- **Presentation and exhibition**

4.2 **Service design tools and methods**

In this project, service design is more focusing on the proposal and visualizations of Lav Förening. The main goal is to realize and active the programs through organizing and integrating facilities and local resource. How to approach the goal with a way of thinking rationally and methodically? The design tools and methods afford lessons and reference to simplify the complicated process.

There are three methods:
Experience prototype, to test and select the concepts

Service blueprint, to list and visualize the service process

Touchpoints matrix, to go into further detail about the project and figure out the evidences

These three methods are used in different design steps more than once as I mentioned in last section. With these three methods, the design proposal can be clarified and described professionally. This section will introduce and discuss the specific service conditions.

**Experience prototype**

“The experience prototype is a simulation of the service experience that foresees some of its performances through the use of the specific physical touchpoints involved.”(Buchenuau 2000)

“Prototype” should be provided with function, environment or interaction that you will have in your final exist. The experience
prototype can help designer to test the proposals and the activities happened in service. Designers can receive valuable feedbacks directly from participants and observe their behaviours and document the experience. It is a good way to communicate with the stakeholders and present the ideas to audiences. The preparation that designer need is a landscape model and the touch points involved in. It could be a workshop with different stakeholders or an individual talk and play with the model.

The method Experience prototyping is used in process PROTOTYPING 1 and PROTOTYPING 2. In PROTOTYPING 1, the goal is to select one proposal from the results of concept exploration.
Before the workshop, I have sketches and make a landscape based on my six proposals: Knowledge sharing classroom, Workshop and experience classroom, and Children agricultural classroom, market and sale, sightseeing and network platform.

Prepare the points and play with team members and ask their experience at the same time.
Photograph the results and document the experience during the
In PROTOTYPING 2, the goal is to visualise the final framework and prepare the communication tool for the final presentation. (Not down yet)

**Service blueprints**
Shostack (1984) proposed service blueprint (service blueprinting) to examine the process of service output. The Service blueprint become one of the important tool for service
process analysis.

“The blueprint is an operational tool that describes the nature and the characteristics of the service interaction in enough detail to verify, implement and maintain it” (Tassi 2009).

There are 3 essential requirements for a formal service blueprint:
- The line of interaction: This is the point at which customers and the service interact.
- The line of visibility: Beyond this line, the customer can no longer see into the service.
- The line of internal interaction: This is where the business itself stops, and partners step in.

![Service Blueprint Diagram]

Figure 22_Service Blueprint

The method Service blueprint is used in process RESEARCH IN FRAMEWORK and WORKSHOP IN STUDIO 1. In research pried, the goal is to clarify the framework in a hypothetical situation to find more possibilities. And I will do it myself. But in workshop 1, it will be a teamwork to fulfill the network.

**Touchpoints matrix**

Touchpoint matrix was conceived by Gianluca Brugnoli -
teacher at Politecnico di Milano and designer at Frog Design. Touchpoints are the dots or stuffs that a customer may touch during the service experience. Touchpoints matrix is based on the service system map and customer journey map. It helps designers to analyse the framework and connect the touchpoints.

During my design process, I use the touchpoints matrix in WORKSHOP IN STUDIO 2.

Figure 23_Touchpoints matrix

Customer journey (horizontal axis) list the main user actions in
Lav Förening, introduction, lichen planting in Varshult, bottle making in Boda Glass Factory, lichen collection in Varshult & handmade workshop and sale & exhibition. Touchpoints (vertical axis) were taped on the wall by my colleagues. And then connect the dots in chronological order to finish the story.

4.3 Define target group - Persona

4.3.1 Personas

Introduction

1. Define target group

I’m seeking the potential solutions and opportunities on rural sustainable development to maintain the cultural landscape alive. One of the main factors is human who have or will have some activities in rural areas. According to my research upon the historical situation of depopulation in Sweden, I find there are 20% Swedes, or 1.8 million people, owning summer houses in Stockholm archipelago, Skåne, islands Öland and Gotland, the West Coast and Småland, which are the most popular areas to buy (Sweden, 2015). So why this phenomenon that Swedish
summer house attract generation after generation maintains and continue affects Swedish lifestyle? The answers are the simple life, no couch potatoes and year-round retreats. Expanding urban populations and increasing property prices are also a factor to push people chose a summer house in rural areas within commuting distance. In this case, this group of person who own summer houses in rural areas is my target group. They are part-time residents on rural areas. So the opportunity and solution is attracting those part-time residents by some interesting activities in rural areas and changing them to full-time residents. The landscape will be re-active and maintained.

According to the research and analysis, the stakeholders in my framework should be:
The original residents:
Residents in countryside – new incomes for the land owners.

The potential municipal resident:
Citizens – that are part-time residents in rural areas.

The partner:
Garden, housing and perfume companies in Småland.

Local investments:
Government
Local investment programs
Linnaeus University.

Figure 24_Stakeholders

The original residents:
- Residents in countryside – new incomes for the land owners.

The potential municipal resident:
- Citizens – that are part-time residents in rural areas.

The partner:
- Garden, housing and perfume companies in Småland.

Local investments:
- Government – Växjö Kommum
- Local investment programs and climate investment programs

2. Figure out user’s requirement

After summarizing and inducting the results of interviews, I establish a requirements map. List the user’s requirements and analysis the relationships among each points.

Agricultural culture
- The knowledge on history and current agriculture activities
- Nature and culture values

Cultivate activity
- The knowledge on cultivate activity
- Children education
Social activity
- Re-creation and relax activities
- Explore friend circle
- Interest group and club

Business and economy
- The high housing price
- Small-scale business
My project is based on Varshult. Giving the village an identity and creating programs and the services could help to add values to natural and cultural landscape. With the requirements mentioned before, I figure out 6 service programs.

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<td><strong>Agricultural culture</strong></td>
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<tr>
<td>- The knowledge on history and current agriculture activities</td>
</tr>
<tr>
<td>- Nature and culture values</td>
</tr>
<tr>
<td><strong>Cultivate activity</strong></td>
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<tr>
<td>- the knowledge on cultivate activity</td>
</tr>
<tr>
<td>- Children education</td>
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<tr>
<td><strong>Social activity</strong></td>
</tr>
<tr>
<td>- Re-creation and relax activities</td>
</tr>
<tr>
<td>- Explore friend circle</td>
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<td>- Interest group and club</td>
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<tr>
<td><strong>Business and economy</strong></td>
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<tr>
<td>- The high housing price</td>
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<tr>
<td>- Small-scale business</td>
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Figure 25_Requirements
Knowledge sharing classroom & Children agricultural education

- Actors: students and teachers
- Activities: Invite the farmers and teachers in university as teacher. Invite the citizens as students. Through the classroom to share the lichen and agricultural knowledge. We can use the agricultural tools to do some Lav Förenining activities. And also we have the workshop to produce the lichen carpet, indoor garden or roof cover.

Workshops and classroom

- Actors: land owner, university and workshop, Boda glass
- Activities: Invite the person who is interested in handmade extraction. Invite the guide who is familiar with the experiment. Invite the Boda glass factory to offer the opportunity to make the perfume bottle by customer. Then we have some Lav Förening activities and made your own bottle. Use the lichen produced in your Lav Förening to extract essential oil and make perfume and aromatherapy products later. Package your perfume!

Creative market sales
- Actors: producers, sellers, charity organizations
- Activities: Invite the persons who are keen to charity to produce lichen handicrafts which is grown in their own Lav Förening. Then transport to the creative market sales. Sell them and donate the money to the local charity organizations.

Sightseeing tours
- Actors: citizens, guide
- Activities: Arrive there. Look around the farm and storage room. Games in the forest. Fika. Leave there.

Network Services Platform
- Actors: Lav Förening members, App IT team members
Activities: Application design to offer a service platform for the Lav Förening members. They can apply and rent the land, share knowledge, check the activities timetable and sell their products, etc.

The project needs a specific direction. According the process of target group definition, there are six programs coming out:

Knowledge sharing classroom
Workshop & Experience classroom
Children agriculture education
Creative market sales
Sightseeing tours
Network service platform
Experience prototype is a good choice to select the proposals. I invite participants and organize a workshop to simulate City Island and suburban areas and rural areas.

In the workshop, I invite five Swedish citizens with different ages and working backgrounds. I introduce the aims and activities of those six programs. Ask them how they think about
the proposals and let them give points on different programs based on themselves’ interests. Then document the results and figure out the most popular one as my final direction.

Figure 29_Experience prototype results

Thomas’ points:

<p>| Knowledge sharing classroom | 3 |</p>
<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
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<tr>
<td>Workshop &amp; Experience classroom</td>
<td>5</td>
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<tr>
<td>Children agriculture education</td>
<td>1</td>
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<tr>
<td>Creative market sales</td>
<td>4</td>
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<tr>
<td>Sightseeing tours</td>
<td>4</td>
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<tr>
<td>Network service platform</td>
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Figure 30_ Thomas’ points

Ann’s points:

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<tr>
<th>Activity</th>
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<tr>
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<tr>
<td>Workshop &amp; Experience classroom</td>
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<tr>
<td>Children agriculture education</td>
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<td>Creative market sales</td>
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<tr>
<td>Sightseeing tours</td>
<td>3</td>
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<tr>
<td>Network service platform</td>
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Figure 31_ Ann’s points

Jacob’s points:

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<tr>
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90
<table>
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<th>Service Type</th>
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<tbody>
<tr>
<td>Workshop &amp; Experience classroom</td>
<td>4</td>
</tr>
<tr>
<td>Children agriculture education</td>
<td>0</td>
</tr>
<tr>
<td>Creative market sales</td>
<td>3</td>
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<td>Network service platform</td>
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Figure 32. Jacob’s points

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Points</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Workshop &amp; Experience classroom</td>
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</tr>
<tr>
<td>Children agriculture education</td>
<td>2</td>
</tr>
<tr>
<td>Creative market sales</td>
<td>2</td>
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<tr>
<td>Sightseeing tours</td>
<td>4</td>
</tr>
<tr>
<td>Network service platform</td>
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Figure 33. Sofia’s points

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<td>Program</td>
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Figure 34. Ulla’s points

<table>
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<td>19</td>
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<tr>
<td>Network service platform</td>
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Figure 35. Total points of each program

The results show that the program Workshop & Experience classroom is the most popular one.
4.3.2 Roles of users in service framework

Typical roles description:

Following the previous workshop, I continue work with those five Swedes: Thomas, Ann, Jacob, Sofia and Ulla. Since they have already participated in the experience prototype workshop, they share their own experience related to rural areas. Several simple questions are aims to figure out the experience in common.

There are the basic situations from different participants:

- Thomas, 67 years old. He live in Växjö city over 40 years.
He retired. Walking in forest is hid routine. He own a summer house and spend summer time there.

- Ann is 42 years old. She lives in Växjö for 6 years. She is a curator and own a gallery in city centum, PLAN B. She just bought a new summer house.

- Jacob study in Kalmar. He is 30 years old and he come form Stockholm. He loves sports and science. Not usually go to countryside

- Sofia, 33, lives in Stockholm. She is a designer and works on rural sustainable development and communication

- Ulla is a 15 years’ girl and also lives in Stockholm. She is a student. She likes the experience lecture in nature.

During the research and the interviews on the local cultural context, there is a phenomenon caught my attention. When I ask them about the activities which happen in rural areas, all of them mention that they will spend their summer vacation in the summer house. The research shows that there are 20% of Swedes, or 1.8 million people, owning a summer house. The
most popular areas to buy summer houses are the Stockholm archipelago, Skåne, islands Öland and Gotland, the West Coast and Småland.

Each swedes are eager to own a summer house around the west coast. In summer, drive the yacht in the sea and spend a one-month vacation comfortably. The red wooden house looks new, but it usually has a long history with hundred years. It was remained from grandfather's grandfather.

Figure 37_Summer house
4.4 Service visualization

4.4.1 Mood board

Figure 39_Mood board

4.4.2 Identity
PROJECT & PROCESS

Figure 40_log

Figure 41_Poster
Figure 43_Member cards
Who are we

Lav Förening is a community-driven group that promotes social and environmental issues through various projects. We believe in cooperation and sharing experiences. Our goal is to create a positive impact on society and our environment.

Why do we exist

The purpose of Lav Förening is to provide a platform for people who share a common interest in social and environmental issues. We organize events, workshops, and discussions to raise awareness and promote action towards creating a more sustainable future.

What can you do

In the Lav Förening community, we work on various projects related to social and environmental issues. Whether it's cleaning up a park or studying a particular topic, we encourage everyone to participate and contribute to our collective efforts.

Where can you find us

Lav Förening meets regularly in different locations, depending on the project or event. We also organize events at educational institutions and community centers. Check our website or social media pages for upcoming activities and meetings.
4.4.3 Service system map

Figure 45_System map
Who are we?
Lav Förening is a community involving lichen study trip and rural cultural landscape re-active programs. We are designers, farmers and socially conscious. We come from different fields, age even different nationalities. However, all of us want do something by hand and do it from very beginning.

Why should we do this?
The problem of abandonment and depopulation of rural areas has been addressed globally. Statistics show that by year 2050 approximately 70% of humanity will live in urban areas, which creates discussions of whether rural areas are decline and slowly die out.

Varshult is one of many places that has transformed, from being an active village into a village where only two houses now are inhabited. The meadows and the buildings have been maintained due to cultural value and is now protected as cultural heritage. Varshult now is seeking ideas for new use.
of the land and the buildings. Lav Förening emerge at this moment.

Lav Förening is going to create participation in different events and set up market and producing process to create an attractive image for the potential residents to reactive the cultural landscape in rural areas.

4.4.4 Service journey

What will we do?
In this phase, we will make friends with Oak moss and Reindeer moss. Learn to take care of their lives. Then there will be some exciting activities on extraction. With the products (essential oil or tincture) we can make our own soap, candle and perfume! There are six programs on lichen
journey:

Varshult visiting & lichen planting
Bottles making
Lichen collection
Essential oil extraction & tincture making
Handmade workshop
Market & exhibition

Figure 47_Map

Where will it happen?

Varshult is the main stage in our programs. Lichen planting, collection and handmade workshop will happen there. When it turns to bottle making, we will go to Boda Glass Factory to
participate the glass workshop. Prepare for your liquid. In order to get oak moss essential oil, we need vacuum distillation method. This will happen in Linnaeus University Laboratory. Finally the market and exhibition will be held in Växjö city.

4.4.5 Service blueprint

The blueprint is an operational tool that describes the nature and the characteristics of the service interaction in enough detail to verify, implement and maintain it.

Figure 48_Service blueprint
Figure 49_Service blueprint day 1

Figure 50_Service blueprint day 2
Figure 51_Service blueprint day 3

Figure 52_Service blueprint day 4
4.4.6 Stakeholder’s motivation map

Figure 53_Service blueprint day 5

Figure 54_Stakeholder’s motivation map
4.4.7 Storyboard

Figure 55_Story board

4.4.8 Evidencing

PROJECT & PROCESS
Evidencing

Figure 56_Evidencing
5. Summary and Discussion

Figure 57: Exhibition
At the end of the project, we have and exhibition themed with FRAMEWORK to present and display the result. It was an exciting experience to arrange the exhibition and communicate with other colleagues. The lichen box create the atmosphere that a participant would experience. Posters, brochures and the service blueprint introduce my project with words and illustrations. While the bottles and liquid are the products that should be produced during the activity process.

Talking with the visitors is a good way to get the feedbacks. It is also an opportunity to detection the project. With the help of the descriptions in the brochures, most of the visitors could understand the project and show their interests on the programs. And they think Lav Förening is a lovely community which could be developed to a real project in Swedish society. There are also some person think the project is fuzzy and immature. Because on the exhibition, only part of the stuffs are displayed here. They cannot read the service blueprint and do not know what will happen during the activities process. I agree with this opinion. The service blueprint is a professional design
method that shows the schedule and touchpoints. It is a good way for designers to organize the steps and visualize the design. But it is not a good way to introduce the service to participants.

![Figure 58_ My position](image)

Except communicating with the visitors, I also talk to professor Lan Nicholls who is dean of chemistry faculty. During the design process, I realized I need the moss essential oil as one of the points to present my proposal. Then I need to extract moss essential oil and document the process. I wonder if I can borrow the distillation equipment or use the laboratory. Professor Lan Nicholls feels interested in the project. Then we discuss about the extraction protocol.
Oakmoss absolute

Preparation of Concrete

Concrete is prepared by extraction (benzene) with yield 2-4%. Product will be dark green in colour.

To improve yield, moss is immersed in water for 6 hours and dried before extraction

Preparation of absolute

Obtained via alcoholic extraction of concrete for 6 hrs. Yield is approximately 60% and the colour will be dark green.

The mixture was cooled down in iced water bath before vacuum filtration to remove all insoluble impurities. Mixture can be decolorized by adding activated charcoal powder followed by ashless powder before vacuum filtration. Ashless powder will aid in filtration.

Repeat Filtration as many times as needed (if the black particle is still around, filtration has to be repeated)

The liquid product was distilled under vacuum with high bp, odorless solvent and codistilled to give better color and yield of product.

Fenaroli's handbook of flavor ingredients
Oakmoss tincture

According to the classic German Perfumerbook H. Mann / F. Winter (Die Moderne Parfumerie = "The modern perfumery") an infusion = extract = lavage is made from a pommade. A pommade is the result of enfleurage. When you soak oakmoss in alcohol, you will not get an infusion, you will get a tincture.

The formula from this book for tincture of oakmoss is simple:

250 gram Oakmoss (dry, pulverised)

1.25 liter Alcohol

Extracting time: 14 days
eg: 250 gram oakmoss + 1.25 liter alcohol will yield about 1.25 liter tincture.

Social phenomenon study

New design perspective – service design

Methods and tools

Communication

Professor Lan Nicholls thinks his research group can help me. But considering the whole program, the extraction will happen in the public. There will be a safety risk for labor as well as the program organizers. And for the scale of the extraction, it is better to be a small group. All these challenge should be considered in the future study.
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