# Service design in health care: digital service concept for reducing heavy alcohol consumption

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The purpose of this thesis was to develop a new service concept for the early individual level intervention of heavy or risky alcohol consumption in health care setting. The concept that was developed is called 'Hyvis'. It provides a technology based, virtual and interactive environment for those who want to reduce their alcohol consumption. By incremental, easy to follow step-by-step process, customers are able to reduce their consumption of alcohol. Hyvis makes it easy by enabling users to relate to others in similar situations. One is able to decide the activities to engage to, consult an expert and decide how the persuasive service supports them.

In theoretical part for achieving understanding, alcohol related information, health promotion theories and service and customer dominant logic were the main themes relevant for this thesis with a constructive research approach. Service design methods were applied, and the chosen methods were The Five Whys, Customer Journeys of Mini-intervention, Self-help program, Expert lead virtual program, Iterative concept and individual service concepts. Due to sensitivity of the issue, design sessions were kept individually instead of a group form.

By the service design process (exploration, creation, reflection) four critical phases related to early intervention of risky or heavy alcohol consumption services were detected; Opportunity, access, experience and usability. These themes emerged from unawareness of existing services, perceived challenges of accessing services, the wish to avoid unnecessary emotions related to stigma effect and the lack of social support in the early phase, before any addiction has been formed. Expectations towards services were portrayed as Customer Journeys. The discovered critical phases were taken into account in the construction of Hyvis.

It would be strategically wise to intervene heavy or risky alcohol consumption, considering the relative effortlessness compared to a situation where an addiction has been already formed and the effort is vast compared to the expected outcomes. However more services could be developed and be available for the public in the early phase, when heavy consumption is the issue and moderate consumption is the goal, not total abstinence as in addiction. Also health care staff's capabilities of utilising health care service networks should be strengthened. This would require attitude chance enabled by increased understanding of customer oriented thinking, where all actions should have customer emphasis, which should comprehend the whole service ecosystem, not only own organisation as single piece. Also the possibilities of seeing customers as resources could contribute to better services as peer support in the form co-production in social networks. Such actions are also supported by the social cognitive therapy and system persuasion, which understands individual's social surroundings as fundamental part of learning process in behaviour change.

From health promotion perspective service design is able to empower customers as co-designers and developers by detaching them from the unequal power positioning of professional and customer, not needing to worry how their comments might affect their care. Service design and customer dominant logic combined with resource based health definition provide good premises for developing health care services and increasing functional quality  by the experience from this research. Providing such information enables customer have information to base their choices on.

Keywords: Alcohol, intervention, health promotion, service design, service concept

Content

# 1    Introduction

Alcohol is at the moment hot topic, since a proposal for new legislation which is supposed to loosen the existing strict regulations concerning licence to serve alcohol and permission to sell and promote restaurant business in Finland. The new legislation would permit selling drinks  containing 5.5% alcohol (currently 4,7%) in grocery stores. Also small breweries and vineyards could sell directly small amounts to visitors. Also Alko's (Finnish monopoly of selling alcohol) would be opened until 21 (currently 9-20). The proposition would permit serving rights concerning all alcoholic drinks, now the existing legislation defines staggered rights (A=Including liquor, B=vines and C=drinks up to 4,7%). Also loosenings to who can serve alcohol and where are included to the proposal. Comprehensive reform of Alcohol Act would come into effect earliest on 1.1.2018. (STM, 2017)

What we have learned so far, is that regulation is the most effective way to reduce consumption. In 2004 alcohol taxation was cut and made alcohol relatively cheaper, next year deaths by liver cirrhosis' increased 30% and after two years 50% compared to the time before price was reduced. It is indicated that those who already drink much, will drink more. While for example there are some indications of possible health benefits, the harmful effects are mostly targeted towards for e.g. long term unemployed. (Mäkelä, Mustonen, and Tigerstedt, 2010; 195-206;Herttua, 2010)

There are various statements, that alcohol consumption should be intervened, before it becomes a problem. The common procedure is screening in health care, which is conducted by a questionnaire and combined with Mini-intervention where one is guided accordingly to their results of alcohol consumption. This is not problem free though, and stirs negative emotions in customers and professionals. In my daily work as an occupational nurse I've noticed the threshold for customers being high to seek help, even in the case that they self-recognise the need. Stigma is considered as negative label and the fear of it is behind dishonesty about alcohol consumption and reluctance to get help. If we look at the services in the next picture, we see offering concentrating to the very late stages, when the damage is already done by getting addicted. From health promotion point of view, the early intervention should be secondary prevention, where the intervention should happen. In the next picture, one is able to see approximately how these phases align in the services and alcohol consumption

**Primary prevention | Secondary prevention | Tertiary prevention**

| | | | | | Harmful Pattern | |
|---|---|---|---|---|---|---|
| 👤 | 0-1 / day | 0-7 / week | 8-11 / week | 12-16 / week | >16 /week | | Obsessive drinking |
| 👤 | 0-2 / day | 0-14 / week | 15-22 / week | 23-24 / week | >24 /week | | Obsessive drinking |

| Low risk - Moderate risk | Moderately high risk - High risk | Alcohol abuse F10.1 | Alcohol dependence F10.2 |
|---|---|---|---|

**Basic services**
Health center    Examinations    Mini- intervention protocol, psychiatric nurse etc.
Occupational health    Appointments    Referrals to : A-clinics services, specialised services
Institutionalised services; detoxification etc

**Specialised health care**
Psychiatric clinics
Institutionalised psychiatric services

**Spec. substance care**
Open form rehabilitation
Institutionalised services

**3rd sector, private, other**
A-Clinic services; general treatment, detoxification etc
AA-groups, Al- anon, A-Kilta
Group form support
Rehabilitation; institutionalised, open form

Figure 1: Health promotion levels, recommendations for consumption and substance abuse services

In this thesis the purpose is to create a concept for people in this early stage to improve service offering. Not only our public health would benefit, but also massive savings to public economy by reduced costs due to absence at work place and specialised health care costs etc. Something that one cannot measure in form of money is the suffering to the families and of course to individuals who do not get help in time. Essential for creating a concept is to understand what are the factors from customers perspective that hinder them, also see the opportunities in practice, how to reduce the negativity behind such an important activity. These issues are examined together with customers, with a hands on approach, since health promotion has been criticised for too science oriented approach, contributing less to the practical work that is being done with people. Who would know better than the ones who would use the service.

Constructive research approach is used in the thesis, since the purpose is to create customer oriented concept for early intervention of heavy or risky alcohol consumption based on technology. The research methods are from the field of service design, which give the possibility to work closely with customers and to create profound empathy. Besides improving understanding of customers, such methods can contribute to the service concept through this type of creative work. The theoretical part of this thesis explores statistics and research literature relevant for designing health care services in this context. Alcohol related information includes statistics, medical perspective, examination of who are the people who drink, and what is the stigma effect. Health promotion theories in general are shortly discussed, as well

as health promotion and technology in the context of alcohol consumption. Values and ethical principles of health promotion and evaluation of effectiveness are shortly discussed as relevant issues for developing health care services. Customer position and autonomy are important subjects in developing health services, because in healthcare set-up they differ quite a bit from commercial marketing.

Basic terms of services and service and customer dominant logic are important for forming an understanding in general level, as well as defining the terms value creation and service experience, while services with customer orientation are being developed. Because healthcare surroundings have special features that shape that value creation, understanding the basics of this service environment and how technology transforms it, creates basis for developing a service concept.

Research questions

1. Customer insights and expectations towards services concerning early intervention of heavy or risky alcohol consumption in health care
2. How does the current service system responds to these insights and expectations
3. What would be the ideal service concept based on these customer insights and expectations
4. How do service design methods fit planning health promotion interventions

In the service design process, services that customers value are can be created in cooperation, with methods including The Five Whys, Service staging and as by different Customer Journeys and prototypes. The understanding of customer insights and expectations formed in these sessions, and as desktop research and the process is reflected from health promotion, service and customer dominant logic perspective and the concept is then evaluated.

Delimitations of this thesis are that the service design process (Stickdorn, M. 2011) includes only three first stages of exploration, creation, reflection (not implementation) meaning that the service is not implemented in practice, but instead presented as a concept. Service providers, designers, technological or economical experts that would ideally be involved, were not included, since the nature of this project is mainly for learning and main emphasis is how to create value from customer's perspective. So visualisation as an art form and business model accuracy are just to give one the idea.

The most important work towards diminishing public health risks related to alcohol is general level preventive and promotive actions in multiple surroundings and contexts, also regulation of access to alcohol, these are not examined. The focus is individual level intervention in health care context. Any health promotion program is not formally followed, the emphasis is

service design and the scope does not include implementation phase. However the concept is still justified by health promotion theories (social cognitive theory and persuasion technology mainly) that it would achieve such scientific determinants, that one is able to foresee probability of results in behaviour change to some degree. This reflection is continued throughout the process, still the final discussion from health promotion perspective concerning the results, mainly concentrates reflecting the experience of service design as a participatory method in general level and the possibilities that such a method can offer for shifting the focus towards practice." If we want more evidence based practice-we need more practice based evidence" (Green, 2017).

## 2    Alcohol and the Finns

In the next paragraphs alcohol consumption is examined in form of recommendations and consumption. Medical perspective helps to understand how alcohol forms pathologies and what differentiates alcohol abuse and dependence.  How addictive is alcohol compared to other substances is examined. The role of genetics is recognised and an overview of discoveries is gathered. Are there defining features among heavy drinkers and what type of harm, other than severe health related can be combined to heavy drinking? The stigma effect is crucial to understand in the context of early intervention.

### 2.1    Recommendations vs consumption: How much is enough and for whom?

Preparation of alcoholic drinks in the history of mankind goes back in time there is convincing evidence that the development of agriculture, nowadays regarded as the foundation of civilization, was based on the cultivation of grain for fermenting beer, as much as for bread. Alcohol has played a central role in almost all human cultures since Neolithic times, ca. 4000 BC. (SIRC, 1998, 6)

Alcohol consumption in Finland has increased almost continuously since the repeal of Prohibition. The fastest change took place after the altered legislation that permitted to sell beer in grocery stores at the end of the 1960's. Growth was cut off for a short time during the recession of the 1990's and soon after, but continued to increase soon again. It peaked in 2006-2008, after which consumption has dropped slightly. The trend among Finnish youth shows change in attitude towards drinking – this has resulted in decline of alcohol consumption among boys and girls. The amount of alcohol consumed, has a direct correlation to the impairments it causes (THL, 2015)
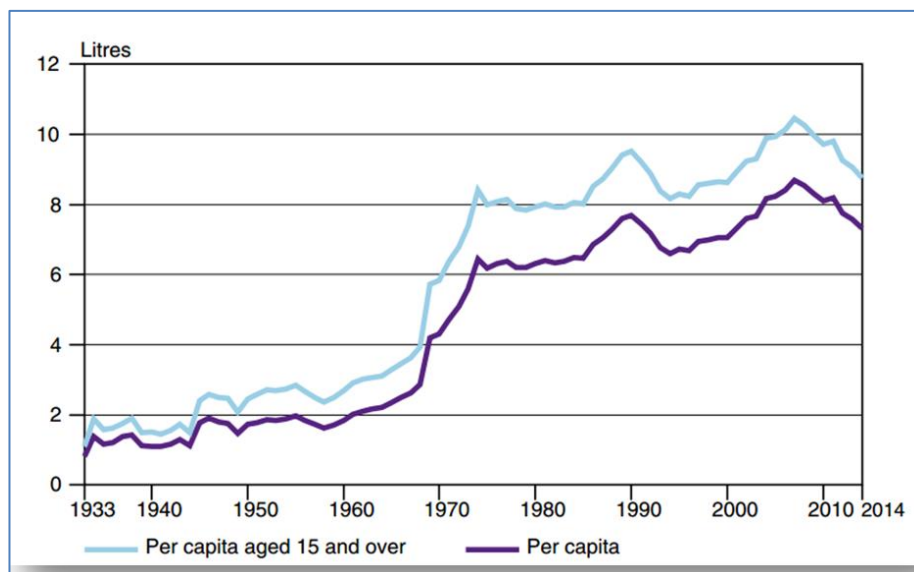
Figure 2: Recorded alcohol consumption in Finland 1933-2014, 100%alcohol. (OSF, THL and Valvira)

Compared to other European countries, our consumption as a nation falls into the middle category measured by total amount, but binge drinking (drinking to achieve heavy intoxication) continues to be more common in Finland.(Mäkelä & al 2010, 195-206) Tigerstedt and Österberg. (2007,330–332) have stated:" the Finnish defects of alcohol consumption have remained and in addition transformed as French". By that they make notion that besides the binge drinking, we are now facing defects linked to higher total consumption. A board set up by the Finnish Medical Society Duodecim and the Finnish Society of Addiction Medicine came up with new recommendations for the risk levels of alcohol consumption (4.11.2015). Compared to the previous safety levels, the amount of alcohol that is considered still within the limits of normal consumption, (men up to 24 servings per week and women 16 servings / week) are now set to a category of moderately high risk level. As a public health nurse, I considered the earlier recommendations quite high and welcome the new recommendations of weekly portions of moderate risk; for men 14 portions per week at the most and for women 7 portions for week at the most. (THL, 2016; Duodecim, 2016)

The new recommendations are now also internationally equal, for example to American standards (NIAAA, 2016). Based on my professional experience working with customers, I argue that some individuals experience harmful effects even with consumption that was considered appropriate within earlier levels (men up to 24 servings per week and women 16 servings / week). Those earlier levels of risky consumption were based on international research estimates based on argument, that for most individuals on average they do not cause harm. (Mäkelä, Mustonen and Tigerstedt, 2010, 195-206) Since there is no data available, which makes it impossible to use the new limits, in this thesis the previous ones are used.

Estimation of prevalence of alcohol users in Finland, to whom the level of consumption of alcohol is risky is around 500 000. The division of persons whose alcohol use can be considered risky is dominated by male sex. 20% of male patients in health care are risk users and 10% of women. (Halme, Seppä, Alho & al 2008,15-22 ) One man in four reported drinking at least six units of alcohol on one occasion weekly, and one woman in eight at least four units on one occasion weekly. One man out of six, but only one woman out of twenty, reported being heavily intoxicated at least once a month during the previous year (Mäkelä, 2003; THL 2015) Still these renewed recommendations mean that the number of people in Finland exceeding limits of moderate consumption, which is now considered moderately risky in nature, are far higher. There still is no current estimation after publishing 4.11.2015 of renewed recommendations for moderate alcohol consumption. (Duodecim, 2016) Observations of current alcohol related websites available or published statistics imply that these 2015 released recommendations at this point are not yet widely spread. The relevant statistics available at this point follow the earlier recommendations - those will be used in this thesis.

According to Mäkelä, Mustonen and Tigerstedt (2010, 113-117) who describe alcohol consumption in the lifeline of individuals, youth is a time where alcohol consumption in general is quite heavy and related to social gatherings and seeking for a partner. Once partners are found and families formed, along with having children the alcohol consumption declines. The decline of consumption in women happens a little earlier, which is explained that they tend to find partners and start families somewhat earlier than men.  (Mäkelä & al. 2010, 113-117)

The overall consumption of alcohol stays low when children are small, but when parents get more spare time as children grow and the financial situation gets better, alcohol consumption starts to increase. Among men, this starts after 35 years of age and the peak of total alcohol consumption is just before men turn to 50, around 47 years, where after the amount starts to decline. In women a pretty similar pattern is discovered, however having family seems to put more strain to women's consumption of alcohol than men's.(Mäkelä & al. 2010, 113-117). Halme (2009) has stated in her dissertation that even more than third of fathers of small children are risk consumers of alcohol though.
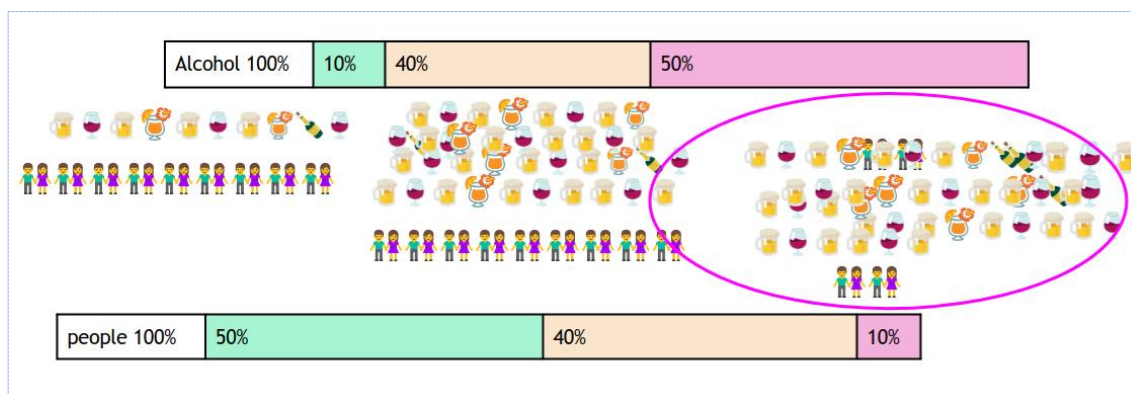
Figure 3: Division of alcohol consumption in population

The average estimates are somewhat inadequate to give a good idea of Finns as an alcohol consuming population. Mäkelä & al (2010, 195-206) point out that according to 2008 statistics concerning Finnish drinking behaviour, the division of alcohol consumption is uneven; 50% of all alcohol consumed in Finland is conducted by a group of heavily consuming drinkers consisting of 10% of our total adult population. An interesting factor is also that 50% of our least drinking population consumes only 10% of all the alcohol. It might seem that the harm might be limited concerning a small group, on the contrary. Harm linked to alcohol consumption (besides the other physical harm) can be categorised concerning intoxication and problems concerning the control one has over their drinking and these harmful factors do not only seem to concern those included to the 10% that consume the most alcohol. Since consumption can be categorised as risky while exceeding the safety limits for total consumption in a week (men up to 24 servings per week and women 16 servings per week) or by the number of servings consumed at a time; for men more than 8 and for women more than 5. Actually "purely" moderate alcohol consumers who do not exceed either one of those limits, in Finnish population (2008) this group consists of 25% of men and 33% of women.

| Alcohol consumption profile | Men | Women | = Both % |
|---|---|---|---|
| No alcohol in last 12 month | 10 | 10 | 10 |
| "Purely" moderate use | 25 | 35 | 30 |
| Occasionally drunk | 31 | 36 | 34 |
| At least once a month  drunk | 25 | 14 | 20 |
| Consumption exceeds both limits | 8 | 5 | 7% |

Table 1:The percent based division of alcohol consumption in categories and between the genders.(Based on Mäkelä, Mustonen and Tigerstedt (2010, 199)

Recommendations (old and new) are combined to the table, where new recommendations define a category of moderately high risk use too. Since the inconsistency regarding the new

and old recommendations, the moderately high risk levels are adjusted to the matrix by acknowledging the renewed scale of risks classification but it is not accurate due to inconsistencies between these recommendations.

| Level of risk | Description of risk level |
|---|---|
| Low risk level | Consumption of alcohol, which is not likely to risk to healthy people of working age, in women 0-1 servings and in men 0-2 servings per day. |
| Moderate risk level | The level of moderate risk for men is max 14 and for women max 7 drinks per week. |
| Moderately high risk level | The level of moderate risk for men are 15-24 and for women 8-16 drinks per week. |
| High level of risk | Hazardous Drinking: High level of risk for males is >24 and for females >16 servings per week. This can be considered as an alarm limit, in which case the use of alcohol at the latest should be addressed and the behaviour intervened. |
| Harmful drinking, alcohol abuse F10.1 | Significant physical or mental harm related to alcohol consumption which can be already clearly observed, still no addiction has yet formed. |
| Alcohol dependence F10.2 | A syndrome that is characterized by compulsive drinking, withdrawal symptoms and increased tolerance, where drinking is continued despite the obvious disadvantages. The continuous use of alcohol has led to physical and psychological dependency. |

Table 2: Matrix of alcohol related risk level and descriptions

In Finnish political level programs alcohol related issues have been recognised important. The legislation was updated 1.12.2015 concerning preventive substance abuse work. Same time renewed action plan of preventive work was released. In these recommendations tobacco use and gambling are also acknowledged, and the emphasis is pointed towards cooperation and early intervening.(STM, 2015; THL,2015) The deficits alcohol consumption might have on others, not only to the drinker are known. Alcohol use increases the risk of many social defects in a portion dependent manner. And it's pointed that there is no threshold: the higher the consumption is, the higher are the risks too. The harm caused by the drinker to others is described that they vary from little discomfort, marital problems, child abuse, crime, violence, and at worst can actualize as homicides. The more serious the crime or injury, the more likely it is that usually alcohol is involved. Harm caused to others by drinking are a strong reason to intervene the risk of use of alcohol. (THL, 2013, 26-39; STM, 2015.)

These factors are recognized in our society and even if they all cannot be measured by their economical impact, the emotional or psychological suffering to communities is at least as significant as the financial burden in my opinion. The social effects of harmful alcohol consump-

tion to families in my professional experience are as devastating to the family members, spouses, children and parents making their life sometimes difficult too.

The total amount of alcohol related cost (direct and indirect) is estimated 6-7 billion euros (THL by EHYT, 2014) Even numbers as high as 13-14,5 billion euros have been suggested, EHYT, 2014) Total budget of government costs is 55 billion (MOF, 2017) Majority of direct costs are formed by social services (child protection, penitentiary etc. services) 223-270 million every year. (THL, 2016) Besides alcoholism, alcohol causes injuries, mental and behavioural disorders, gastrointestinal disorders, cancers, cardiovascular diseases, immunological disorders, skeletal-related diseases, infertility and problems to the unborn child's health. (Duodecim, 2016) These effects can be difficult to calculate from the economical point of view, since not all alcohol abuse create such problems nor is alcohol involved in the aetiology of all of these illnesses or symptoms.

## 2.2 Alcohol from medical perspective; the fine line in between

Next paragraphs explain alcohol abuse as non-specific state and define what alcohol addiction is. In practice it can be difficult to explicitly see when the abuse turns alcohol dependence.

### 2.2.1 F 10.1 Alcohol abuse

General criteria for alcohol abuse by International Classification of Disease (ICD) of the World Health Organization (WHO) includes both physical and mental harm. The diagnosis requires that the person with alcohol abuse disorder has acquired physical or mental health symptoms or illness due to excess use of alcohol. An example of this could be a period of depression after a heavy drinking period. Even if harmful for the abuser, social defects such as marital distress or arrests are not a true criteria, not even when alcohol abuse has caused these problems. Neither is acute intoxication or "hangover" (alcohol withdrawal syndrome) such a health defect referred in the definition of alcohol abuse. (Duodecim,2016; WHO, 2016)

The diagnostic criteria requires clear observed connection that alcohol has caused or has had a clear effect to the origin of physical or mental harm. Mental harm includes impaired judgement, disturbed behaviour, which can cause inability to perform in social relations and cause harmful consequences. Secondly, the harm can be obviously discovered and defined. Third criteria requires that alcohol abuse has lasted at least one month or it has happened repeatedly during twelve months' time. Finally, there has to be certainty, that no other disturbance or harm in mental health or other alcohol related disturbances fits this criteria. An exception is a state of acute intoxication, which can be diagnosed at the same time. (International Classification of Disease (ICD) of the World Health Organization (WHO)) Clinically a phase of abuse

is normally observed to precede and predict the forming of an actual dependence (WHO, 2016).

### 2.2.2    F10.2 Alcohol dependence

Diagnosis requires at least three of the following terms from at least a one month's time, or in the case of shorter duration occurring repeatedly during the past year.

1.Strong urge or compulsory need to use alcohol
2.Impaired ability to control when to start or finish using alcohol and the amounts of portions consumed
3.Withdrawal symptoms while diminishing the use or stopping the use of alcohol
4.Proof of creating a tolerance towards alcohol
5.Focus to solely alcohol whereas other sources of joy and interest yield, time is used mainly for consuming alcohol and recovering from the use
6.The excess use of alcohol continues despite the harm it causes
(International Classification of Disease , WHO, 2016)

### 2.3    Alcohol as an addictive substance

Alcohol as an intoxicant is less addictive than many other substances, such as nicotine, opioids and cocaine, which are considered much more addictive. Substances including cannabis, caffeine and hallucinogenes, poses a smaller risk for addiction than alcohol. So we can come into the conclusion that alcohol is an addictive substance totally comparable to other intoxicants, such as drugs, nicotine and some medicines. All of these substances hold  similar characteristics of being able to influence primary mechanisms in the brain linked to experiencing pleasure. (WHO, 2004, 67-124)

Alcohol as an addictive substance is relatively similar when compared with sedatives as benzodiazepines and barbiturates (WHO, 2004, 67-124). The effects of alcohol in the brain are considered non-specific, and in animal studies acute alcohol administration has been found to increase the action of the neurotransmitters such as *GABA (gamma-aminobutyric acid), glutamate, dopamine, serotonin and opioid peptides*. Neurotransmitters are also called chemical messengers (bringing information along nerve pathways) and they are part of all everyday activities through our peripheral and central nervous system (brain and spinal cord) by neurobiological pathways. The ways these neurotransmitters function in our pathways are slightly different between individuals, setting some to a greater risk for developing addictions, among other psychiatric illnesses. Those neurobiological pathways that are connected to alcohol dependency/addiction include the ones that modulate psychological reward, behavioural control and the anxiety or stress response (Goldman, Oroszi and Ducci, 2005).

According to Goldman, Oroszi and Ducci (2005) addictions are psychiatric disorders that are associated with maladaptive and destructive behaviours, and that have in common the persis-

tent, compulsive and uncontrolled use of a drug or an activity. Addictive agents induce adaptive changes in brain function; these changes are the basis for tolerance and for the establishment of *craving, withdrawal and affective disturbances* (disturbances of mood, as depression, anxiety, etc.) which persist long after consumption ceases. This is self-maintaining and progressive neurobiology of addiction.

## 2.4    Genetics play a role but do not determine

When people go through the physiological and mental changes, from childhood to youth, they become curious of experimenting new things. From Finnish youth, 15-20% has experienced alcohol intoxication or in other words been drunk in the age of 13 or younger (Latvala 2015 (34-35)) in  Aalto, Alho, Kiianmaa, & Lindroos, 2015) Experimenting intoxicating substances, like alcohol happens typically in group of friends and are often justified by young people by statement, 'since others do too' (Sirola 2004, 19). From European 15-16 years old 90% has had alcohol at least once. What makes these experiments problematic for becoming problems is the lack of adults present and the goal of drinking alcohol is to get intoxicated, as the physiology is not yet fully developed to handle alcohol (Latvala 2015 (34-35) in Aalto & al 2015). Even if the early starting age of drinking alcohol is connected to genetic tendency of developing alcohol problems, the genetics do not have such a fundamental role in early youth as it has later on in life in the most prevalent type of alcoholism. Once a person moves away from his parents in early adulthood the role of genetics concerning alcohol use is estimated to be the same than later in life, around 40-50% (Kiianmaa, 2015, in Aalto & Ripatti 2015).

According to Goldman, Oroszi and Ducci (2005) addictions are moderately to highly heritable. Studies have suggested that genetic and environmental factors are equally important in determining the risk for alcoholism (50-50%) but this probability only actualises if alcohol is ever used (Goldman, Oroszi and Ducci, 2005). Around 10-15 % of men suffer from alcohol dependency at some point of their life. Even if alcohol dependency or addiction is far more common among men, lately it has become apparently more common among women too. (Huttunen, 2015)

Two subtypes of alcoholism were found in the 1980s: socially-behaving type 1, where alcoholism starts in the beginning of adulthood and the impulsive and violent type 2 starting in adolescence and can be characterized by the difficulty to adapt the norms of society. It is estimated that 80 percent of alcoholics represent type 1 (Hallikainen, 2009).

Previous research evidence, as mentioned earlier, has referred to the neurobiological disturbances and their nature in the brain including the function of dopamine and serotonin transmitters, predicting the type of alcoholism. These subgroups differ from each other and from healthy subjects on the part of activity of neurotransmitter regulation defined in genetics.

COMT gene regulates dopamine effects in the brain. Type 1 alcoholics were found more likely to possess a gene that prolongs the effect of dopamine and reflects to drinking related pleasure. On the other hand other research evidence suggests that the same gene variant increases the tendency for anxiety, which is one type of alcoholism basic characteristic. The connection between the COMT gene and type 1 alcoholism can be explained by the self-care attempts if the anxiety was alleviated by drinking. (Hallikainen, 2009)

5-HTTLPR gene encoding the serotonin metabolism regulates impulse control. One of the variants of this gene is associated with violent type 2 alcoholism and it is likely to weaken serotonin effect in the brain and the control one has over their behaviour. Here too, a connection of genetics linked into early, impulsive behaviuor disorder, where alcoholism is being developed as just one part of a diverse adaptation disorder. (Hallikainen, Saito, Lachman, Volavka, Pohjalainen, Ryynänen, Kauhanen, Syvälahti, Hietala, and Tiihonen, 1999. 385–388)

Finnish researchers discovered that in eastern Finnish men, genes known as COMT and TaqI A 900, regulating the dopamine system, had an effect to their use of alcohol, even though alcoholics were excluded from the group. Of these men, the most drank those whose genetics referred to more efficient dopamine effect, also they potentially experienced a stronger pleasure from consuming alcohol (Hallikainen, Hietala, Kauhanen, Pohjalainen, Syvälahti, Salonen and Tiihonen 2003,152–155)

Although alcoholism is clearly inherited (50%), but it actualizes only if an individual ever does use alcohol, so to be accurate and precise; only the risk of developing addiction is inherited. The risk transmits through several genes, not through only one or two genes. Environmental impact is always a share (50%) in dependence on the disease pathogenesis, in varying degrees depending on the type of alcoholism. Once there will be more clarity in addiction linked background genetic factors, more effective treatment can be developed. Current knowledge achieved through research concerning drug or alcohol addiction has revealed that the risk of relapse (going back to substance abusing behaviour) is very high during the first year after treatment, regardless of sobering form. It also remains high for years. This emphasizes the preventive measures towards person before forming an addiction, and the strategy which maximises participation of regular or heavy users who have not yet developed alcoholism. Alcohol is not a good drug for anxiety or melancholy, even if it relieves it temporarily. (Hallikainen, 2009)

**2.5**   Who are the people who drink - profiles formed by drinking habits

Let's first examine what type harm alcohol consumption might cause. Then socio-economical feutures are examined to give an overview and see what kind of factors combine risky consumption and how these people perceive well-being health and social relations. Consumption

in this context is categorised as risky while exceeding the safety limits for total consumption in a week and at a time. In the consumption profiles (Mäkelä, Mustonen and Tigerstedt, 2010, 199) for men up to 24 servings per week and women 12 servings per week or by the number of servings consumed at a time; for men more than 8 and for women more than 5.

### 2.5.1 Harm of drinking too much at once and control issues of drinking

Mäkelä & al. (2010 195-206) have studied how harm (other than severe health related) caused by alcohol consumption activities is divided between categories of drinking profiles. First of all they defined harm related to getting drunk (intoxication) and harm related to control concerning alcohol consumption. They asked if the individual had some of the following consequences due to being drunk; argument; struggle or fight; accident or injury; losing things, wallet etc; damaging of clothes or other belongings; driving under the influence; being a passenger while driver was drunk; a sexual intercourse one regrets. The option for answers were: on no occasion, from 1 to 2 times, 3 or more times. These alternatives were given points:0, 1 and 2. The division of issues is described between consumption profiles in the table.

| | Men | Reported | Women | Reported |
| --- | --- | --- | --- | --- |
| **Alcohol consumption profile** | **N%** | **harm %** | **N%** | **harm %** |
| No alcohol in last 12 month | 10 | 0 | 10 | 0 |
| "Purely" moderate use | 25 | 10 | 35 | 11 |
| Occasionally drunk | 31 | 27 | 36 | 41 |
| At least once a month  drunk | 25 | 40 | 14 | 36 |
| Consumption exceeds both limits | 8 | 22 | 5 | 12 |

Table 3: Intoxication issues by drinking profile and gender (Mäkelä & al. 2010,202 )

The same study examined problems concerning control over one's use of alcohol. The questions in this category were: Does one use alcohol more often than one actually would like to; Does one use more servings of alcohol than one actually would like to; Does one have difficulties in quitting drinking once has started to. The options were given points from:0,1,2 and 3. According to results, men and younger individuals reported almost more often harm in almost all of the above categories than women or older individuals. Especially high was the harm of getting intoxicated combined with young age. Risky alcohol consumers did not report most control issues in  alcohol and intoxication, it seems that significant share of these problems concern also those who are drunk at least once a month or even occasionally.Please see the division of harm related to controlling issues in drinking in the next table (Mäkelä & al. 2010, 195-206 )

| | Men | Reported | Women | Reported |
|---|---|---|---|---|
| **Alcohol consumption profile** | N% | harm % | N% | harm % |
| No alcohol in last 12 month | 10 | 0 | 10 | 0 |
| "Purely" moderate use | 25 | 9 | 35 | 13 |
| Occasionally drunk | 31 | 29 | 36 | 40 |
| At least once a month  drunk | 25 | 40 | 14 | 31 |
| Consumption exceeds both limits | 8 | 22 | 5 | 16 |
| Total | 100 | 100 | 100 | 100 |

Table 4: Control issues between gender and consumption profiles concerning alcohol use

The milder type of harm related to consumption might lack individuals who represent the riskiest group do to drop out from the study. The researchers continue that these questions concerned only mild harm compared to serious defects such as liver damage, domestic violence or deaths. Still combined with mortality and illness statistics, it seems that the riskiest group accounts for third of the most serious consequences. However experts conducting the study emphasize that the riskiest group is still quite small, whose problems have escalated and who show as the drop out of the sample implied by changes in total response rates, estimation is that it only concerns just percent or two, so it does not have radical impact on the general results. Longitudinal examination also indicates that those who have been in the less risky consuming groups might have shifted to the risky group since alcohol consumption is dynamic. Based on the results, experts recommend a strategy of targeting health care resources on wider group with still less serious problems and perhaps better probabilities of changing their lifestyle than the smaller group with severe problems that are much more demanding to treat. (Mäkelä & al. 2010, 195-206)

What is relevant also is that the probability of achieving lifestyle change of those who have reached severe addiction, but the problem lies in the fact that their life and social environment have adapted to the lifestyle, and people who are part of their social world affects their decisions often to continue on that path. Culture within social communities has a strong effect on what kind of decisions it supports. While people still have elements and social connections that are not dictated by the alcohol problem, resources and capabilities for change are stronger. (Mäkelä & al. 2010 195-206; Warpenius, Tigerstedt & Holmila, 2013, 26-39)

### 2.5.2   The Socio-economic factors and alcohol consumption

The socio-economic status of the division of alcohol consumption in a population is disseminated between different groups. Those who report no consumption of alcohol have smaller income and level of education, not riskiest group with heavy alcohol consumption.  This indicates that the heaviest users might not be in a worst position from all aspects. But once the consumption of those who consume moderately increases to those who are occasionally drunk, ultimately to  those who are often drunk level of income and education decreases. The proportion of lower education level and income might be partially explained by the proportion of young and  those who are former risk users of alcohol and have  managed to become sober.

Current statistics show that there is no longer difference if one lives in a city or country side. It used to be more prevalent that heavy consumers of alcohol lived in the rural areas (Simpura, 1979). The more one drinks, the more likely one is to rent instead of owning an appartment, even less seldom an own house. Binge drinking is common among younger individuals. People who are single or divorced, tend to drink more than those in a relationship. .( Kauppinen in Mäkela & al. 2010, 207-218) The majority (85%) of risky alcohol consumers are involved in the working life, even from those who have become addicted 70% have a job. On average individuals who were referred to treatment fulfilled criteria of alcohol addiction as long as 7 years prior.(Pylkkänen, 2012)

Perceived wellbeing in the form of economical situation, the more alcohol is consumed the less economical well being is perceived. However in proportion in heavy consumers of alcohol the proportion of those who consider themselves well off is relatively large and on the other hand those who consider them selves having economical difficulties are most in the category of who do not use alcohol. Binge drinking and low economical status is explained through the habit being more common among young people. .( Kauppinen in Mäkela & al. 2010, 207-218)

Perceived wellbeing in the context of perceived health in the study based on 2008 statistics describe that those who consume most, risky consumers, perceive their health less often good, and more often not being good, just as those who have also used alcohol earlier, but then have quitted. Also in this group the increasing age has a role, as in those who are sober and have not used alcohol and have the best perceived health, they are represented by larger proportion of younger generations.  Purely moderate drinkers, occasionally getting intoxicated and those who often get intoxicated have very little differences, however those who often get drunk are also represented by younger individuals. Perceived loneliness is far more common among risky consuming men (44%) than among women(29%).( Kauppinen in Mäkela & al. 2010, 207-218)

Problems in social relationships were more common among risky consumers (13%) as the frequency of particular problems was 1-6% among other groups. General perceived wellbeing measured satisfaction towards one's life. The proportion of those who were very satisfied with their life was highest among those who do not use alcohol at all (43%) and steadily declined as more alcohol was consumed, of risky consumers of alcohol, very satisfied were less than half (20%) of the number of the most satisfied group who do not use alcohol at all. The more dissatisfied with their lives, the more alcohol was consumed. Former users who had stopped using alcohol were still more dissatisfied than risky alcohol consumers.  The conclusion is that those who are satisfied, tend to drink less and who are not, drink more. It's not easy to say, does one drink when they become dissatisfied, or do people become more dissatisfied because they drink. But the most significant finding is related to the clear the link between loneliness and alcohol consumption.( Kauppinen in Mäkela & al. 2010, 207-218)

Political level decisions have important role in regulating the consumption, for example in 2004 the alcohol taxation was decreased, deaths by liver cirrhosis' increased 30% and after two years 50% compared to time before the power to consume was increased due to lowering tax making alcohol cheaper. It indicates that those who already consume much will consume more. Emphasis should concern holistic approach, procedures include regulation and intervention programs should target whole population having the emphasis with less risky profile of consuming alcohol, not only the riskiest group but also on the other hand this group should not be excluded from the intervention programs. (Mäkelä, Mustonen and Tigerstedt, 2010, 195-206) Also Chief Medical Officer at A-clinic Foundation has stated that from societal perspective for the sake of maximising the benefit of intervention programs, a more effective and sustainable approach is to focus on those who necessarily have not developed such a serious problem yet, and instead of total abstinence from alcohol (as in severe problems), this group should be learning how to use alcohol in moderation. In relation this group is relatively much larger than those who have very difficult problem (Simojoki, 2014)

2.6    Not in my backyard: the stigma effect

Lappalainen (2016) lists several possible reasons why people do not seek help in the context of mental health issues; because of fear of labelling and stigma, not realising the benefit of some form of help, lack of time, people are not willing to share their problems with others, lack of knowledge of existing services and of perception of how effective they are. (Lappalainen, 2016) For this thesis, it is very important to understand phenomena of stigma and labelling and how does it effect on people.

Stigmatizing diseases and illnesses are generally health problems that are considered less-dignified, showing moral weakness and create guilt in the sufferer. The level of stigmatization between illnesses differs between cultures. Besides in social encounters, stigma of disease

can be experienced as individuals own experience, the fear of being stigmatised, one facing discrimination and being ashamed or embarrassed. The feeling of shame is often experienced particularly with those diseases that the community finds disgraceful and negative or inadequate in some terms. (Kaltiala-Heino, Poutanen and Välimäki, 2010, 563-570)

The psychodynamics of how shame is being formed is the same as in the situation of a baby having a need and making a move to approach the mother with expectation of reciprocal response. Once mother ignores the attempt, baby feels ashamed and collapses. Baby is sending a message which (s)he expects to be responded to. A collapse in this context means an in-turned psychological reaction that turns to paralysing the baby with shame of expecting something that fails to be delivered. Even in adults, being abandoned, rejected or turned down leads to loss of self-esteem, the enthusiasm fades and powerlessness takes over. Person starts to withdraw and wants to hide. (Ikonen & Rechardt, 1994)

What makes understanding shame often difficult is that it is confused with guilt. In literature there are examples where a person fails to reach their goal and feels ashamed. As a matter a fact, guilt can be combined with single actions of individual, whereas shame is something that affects the whole essence of a person and makes it harder to manage with. Instead of failing in practical goals, shame is aroused by not receiving the reciprocal reaction that was expected, person feels that they might not be good enough as they are, or that they need to be different in order to receive this reciprocal reaction as a sign of acceptance. How one deals with this collapse (shame rage) in their inner world effects to their behaviour. If a person turns their shame reaction more within one self, thoughts of "not being worthy enough, not have any value to others, who would care about me, I'm good for nothing " can turn into depression. (Ikonen & Rechardt, 1994)

A reaction of shame can also be at some extend targeted towards others," those who don't find me good enough", and this type of depression has also agitated and frustrated characters. Besides initial responses and feelings brought up by shame, it exhibits individually in all of our lives to differing extent. As an example some try to over-compensate their shame by accomplishing several outer rewards, some might become extra careful by overthinking how to avoid shameful situations and some might even turn to behave shameless. Like they "couldn't care less how they were responded to by others". (Ikonen & Rechardt, 1994) Ikonen and Rechardt argue that victims of crimes, those have been tortured, in concentration camps, bullied at school or victims of domestic violence (or otherwise traumatised) might develop a remaining shame of not being able to arouse the willingness to accept of those whose mercy they were at those situations. Shame is considered to be a hidden key element behind such problems as panic attacks, phobias, obsessive-compulsive disorders and depression. (Ikonen ja Rechardt, 1994)

Besides the individual level, stigma manifests in social surroundings as negative attitudes. Link, Phelan, Bresnahan, Stueve, and Pescosolido (1999) asked from their research participants (n = 1444) about 6 possible causes of the mental illness (schizophrenia, major depressive disorder, alcohol dependence, and drug dependence and a "troubled person" with subclinical problems and worries). People described the causes for different conditions to be "*the person's own bad character, a chemical imbalance in the brain, the way the person was raised, stressful circumstances in the person's life, a genetic or inherited problem, and "God's will"*". In this study, alcoholism was considered as a mental illness by only 29% of the respondents. 71% of the respondents believed that violence is somewhat or very likely to occur in social encounter with alcoholics, this was combined with unwillingness to interact with such people. The general public connects mental disorders with violence and this creates attitudinal social distance making the mentally ill affected by rejection. Because of that mentally ill can also be reluctant to seek professional help for fear of stigmatization. Through the fear-based exclusion by processes such as the "not in my backyard" response they are shut out of the community. (Link, Phelan, Bresnahan, Stueve and Pescosolido, 1999)

The prominent role of *labelling* and *stigma* are considered factors that impair the social and psychological functioning of people who are "officially labelled" mentally ill. But what if some of those stigma induced problems (social awkwardness, demoralization and unemployment) could be avoided by (1.) hiding the history of their treatment, (2.) educating others of their situations properly or (3.) avoiding situations where discrimination can occur? This research showed that none of the earlier mentioned strategies had any effect, since the cultural influence of the community and how the negative labelling attitudes effects on how these people see themselves which has a greater impact than any of the mechanisms to prevent actual harm in practice by stigma and labelling. In fact, the three coping strategies show consistent effects in the direction of producing more harm than good, inducing withdrawal and avoidance behaviour of mentally ill significantly. C. Wright Mills's (1967) conclusion of labelling and stigma is; they are "social problems" not "individual troubles." (Link, Mirotznik & Cullen, 1991)

2.7   Summary

Alcohol consumption in Finland is not evenly divided, there is a large number of people who consume alcohol much (500 000).Among this group is on estimate 1-2% people, who are addicted.  There are some factors that can be related to this group, but should not define those people too much. Also in the lifeline consumption varies. As a substance, alcohol is not particularly addictive, but its harmful for public health since it is so widely used.    50% of factors are related to our genetics, some carry such sets of genes that besides makes them get more pleasure from alcohol also predispose them for developing an addiction.

Loneliness or lack of meaningful social relations are a factors that are more common the more alcohol is consumed, difficulty is to determine the relation and order of these two, it should be more of a question how to support social relations. How can alcohol consumption be so common at the same time when stigma is perceived so often? About stigma one can think that it is a process where person is excluded from social encounters, but truly understanding the damaging side of it is that those people actually isolate themselves, since the harsh belief of being judged by others (self-stigma).

## 3 Health; absence of disease or holistic wellbeing

The most well-known definition for health is the World Health Organisations (WHO): Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (WHO, 1948) Later on the same organisation extended their definition (Ottawa Charter, 1986) that health was seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well-being. (WHO 1986) Before we can start talking about health promotion in the context of welfare society, we need to acknowledge the basic fundamental conditions and resources for health to create the foundation; peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice, and equity. Improvement in health requires a secure foundation in these basic prerequisites. The fundamental health promotion that is done for example in developing countries is to enable individuals and communities to achieve minimal standards. (WHO,1948;WHO, 1986)

### 3.1 Making sense of health promotion and disease prevention

Health promotion as a definition is a multidimensional: it can be defined by based on values, activity, targets or goals, and in the context of level it is carried out (Savola, E., & Koskinen-Ollonqvist, P. 2005,10-38). WHO health promotion definition: Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond the focus on individual behaviour towards a wide range of social and environmental interventions.(WHO, 1986) The WHO definition describes empowerment, increasing capabilities and resources, and takes the focus out of individual and health sector.

The terms of health prevention and health promotion can be seen used as synonyms very often. However there are some differences. Disease prevention, it is claimed, has its roots in the ''medical model'', which means that it uses a negative definition of health, as the absence of disease. It is reductionistic and mechanistic, it focuses on disease preventive efforts

for risk-groups, and on early detection and treatment, and it (supposedly) represents a political status quo, bringing people back to ''normal life''. (Tengland, 2010, 204) Health promotion, on the other hand, is seen as using a ''positive'' conception of health, where Aaron Antonovsky's theory of salutogenesis (1979) can be seen as the origin of resource and health based theories.

Health promotion as a definition emphasizes a ''holistic'' model, taking the whole individual in their context into account. It focuses on the whole population, healthy ones too, but also includes marginalized and vulnerable groups, groups with social and economic determinants of ill health and aims giving tools to these groups to have a change to be achieve health. Empowerment can be described as a bottom-up strategy aiming at providing the tools for people to seize control of the determinants of their own health and lives. (Laverack, 2004, 33-42).

Tengland (2010) states that the concept of health promotion refers to specific approaches, e.g. bottom-up, or participatory approaches and that what is called disease prevention refers to other kinds of approaches, namely top-down ones. Despite many similarities in what is achieved by health promotion and disease prevention, the strategies can be seen to be partly different, the major difference being that health promotion targets healthy populations, while disease prevention often targets ''risk groups'', either those who have some disease at an early stage, or those who run a higher risk than others of developing a disease. Tengland (2010, 2019) concludes that while health promotion and disease prevention can be distinguished conceptually, they can hardly be distinguished in practice.

| Health promotion | Prevention of Disease |
|---|---|
| HEALTH = positive, multifactorial conception | HEALTH = absence of disease |
| Model of health relies on human empowerment and capacities | Medical model, defined by illness or absence of it |
| Promotion is directed towards whole society and its environment | It is mainly directed to high risk groups of the population |
| Concerns broad variety of problems | Concerns specific pathology |
| People are active part of implementation, Indirect effect through resource building | Happens in practice through direct professional driven measures |
| Used widely by also other than medical organizations, civil groups | Approach is adopted by medical specialists from different specialties |

Table 5: Based on Stachenko & Jenicek, 1990; Savola & Koskinen-Ollonqvist, 2005, 13-16;Tengland (2010, 2019)

The emphasis of health promotion shifting from the earlier remediates to hinder spread of disease has led to promoting basic elements of well-being and to provide public health care.

Still in planning public health care interventions a prevention aspect is often emphasized as it is important to target specific groups who are at risk of developing disease, or whose health can deteriorate due to a certain type of behaviour or lifestyle. Epidemiology is a study of distribution of determinants of health and illness in a population. Epidemiology offers information sometimes of the reasons that promote illness or deterioration of health and can help us to evaluate whether or not some type of preventive intervention has had an impact on health behaviour. (Rodham, 2010, 6-7) Still the emphasis of health promotion as a holistic intervention is that the outcomes are expected to happen through indirect actions too. Such are for example empowerment or building capacity to health through fortifying resources, which in turn demands different measurements because of the complexity and diversity of determinants involved in the intervention instead of just measuring the changes in specific problem (Tilford, 2000).

### 3.1.1  Salotogenesis and sense of coherence  explaining health

Aaron Antonovsky could be called as the "father of all positive or resource based health theories". The basis for his research in the late 1970's was his amazement of a group of elderly women who survived concentration camps in the second world war. Despite the horrific events and extreme stress they were faced within their life, they were doing just fine and had a good personal and working life and social networks making their lives seem normal, unlike the lives of most survivors. Most concentration camp survivors presented with such serious health problems, psychological and physiological, that you can hardly talk about their quality of life.  What Antonowsky found that these women had one thing in common, the attitude towards life. With that even in the most difficult situations, the thought that there will be a solution and perceiving the trouble they faced as challenges and, were also able to find meaningfulness even in the most hopeless phases, and in general while facing such obstacles they were able to take advantage of those resources of theirs and the ones available in general in their environment. Antonowsky named these resources as generalised resistance resources (GRR). The ability that makes people to be able to use these resources was named as sense of coherence (SOC). (Lindström & Eriksson in Pietilä, 2010, 32-40., Antonovsky, 1996, 11-18)
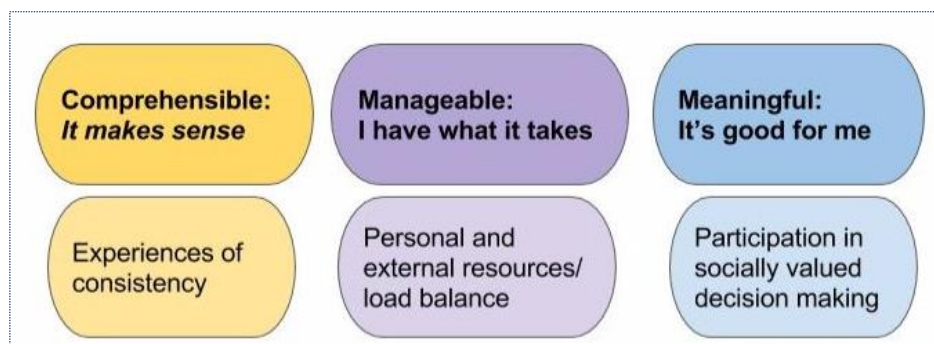


Figure 4:Antonowsky's Generalised Resistance Resources (GRR)

The sense of coherence forming of the three factors, SOC can be defined as: "The extent to which one has a pervasive, enduring though dynamic, feeling of confidence that one's environment is predictable and that things will work out as well as can reasonably be expected." In other words, it's a mixture of optimism and control. In comparison to pathogenesis (were stress and disease eats away health) Antonowsky created the term salutogenesis, acknowledging the resources and factors a person has that support human health and well-being. According to salutogenic model, health can be seen as a continuum (compare dichotomous division; healthy or ill), where an individual shifts back and forth towards Antonowsky's (1979) Health continuum theory. It consists mainly of three factors of generalized resistance resources (GRR) that help us to move towards better health in the battle with stressors: how *comprehensible, meaningful and manageable* issues are. In order to help clients, we need to help them to make sense of their problems, understand them by giving a meaning to them and support their resources to manage them. (Antonovsky, 1996,11-18)

Epistemologically, salutogenesis can be conceived as a constant learning process supporting movement toward health (and other desired aspects of one's existence) by not only through health literacy but by combining our knowledge to it to relate to one's world. The learning process relating to others produces learning, and the knowledge gained from practice expands one's area of knowledge. In the course of daily life, this integrated learning process is continuous (Eriksson, 2016, 92-93). It is possible that people develop their SOC through the whole lifespan, but mainly in the first decades of life when people learn how to deal with life in general. However conceptually salutogenesis is a dynamic and flexible approach that holds a persistent focus on ability and capacity to manage. In comparison with concepts like coping or resilience (where the conditions and mechanisms are more rigid and contextual) the salutogenesis has its strength of adaptability and universal use. It is a major life orientation always focusing on problem solving. (Eriksson & Lindström, 2005A)

According to a systematic review conducted including 458 scientific publications and 13 doctoral theses (1992-2003) by Eriksson & Lindström (2005B), SOC has a major, moderating or mediating role in the explanation of health. SOC is also strongly related to perceived health, especially mental health. The stronger the SOC, the better the perceived health in general, at least for those with an initial high SOC. This relation is manifested in study populations regardless of variables like age, initial health status, health behaviour, leisure time activities, income, education, marital status, and social support. Furthermore, the SOC seems to be able to predict health. SOC is an important contributor for the development and maintenance of people's health but does not alone explain the overall health. SOC seems to be a health promoting resource, which strengthens resilience and develops a positive subjective state of health. Salutogenesis is a valuable approach for health promotion and would be worth to im-

plement in practice much more than to date. (Eriksson & Lindström, 2006;Eriksson & Lindström, 2005B)

### 3.1.2 Stages of health promotion

Health promotion can be seen as an umbrella, that includes interventions being done at any stage, before or after symptoms or disease appear. Gorgon (1983) proposed a threefold classification of prevention, based on the costs and benefits of delivering the intervention to the targeted population that is widely used in the context of health promotion. Universal (primary) prevention includes strategies that can be offered to the full population, based on the evidence that it is likely to provide some benefit to all (reduce the probability of disorder), which clearly outweighs the costs and risks of negative consequences. Selective prevention refers to strategies that are targeted to subpopulations identified having an elevated risk for a disorder. Indicated prevention includes strategies that are targeted to individuals who are identified (or individually screened) as having an increased vulnerability for a disorder based on some individual assessment but who are currently asymptomatic. Secondary prevention stands for early recognition (and treatment) of symptoms, disorders or illnesses. Tertiary prevention includes the treatment, rehabilitation and ensuring the quality of life among those chronically ill. (Gordon, 1983, 107-109; Savola, & Koskinen-Ollonqvistm, 2005, 13-16; Koivu & Haatainen in Pietilä & al, 2010, 77-78) In this thesis the form of health promotion is selective primary prevention or secondary prevention.

### 3.2 Health promotion theories

Levels of Health promotion models can be divided into categories, not only by the point of action taken, but also based on the scope of intervention. Interventions can concentrate on individual levels (learning and information processing theories), or proceed to interpersonal level (Social cognitive theory) even take environmental / systems perspective (Community based or organisational theories, societal and governmental theories). It's common that holistic type of interventions have a holistic take on the phenomena and use multiple theories along the course of intervention. The argument for justifying the use of multiple theories is that some theories are explanatory, while others are based on change and actions. Explanatory theories serve the purpose of gaining deep understanding of the factors and individuals and the connections behind issues, while change based theories provide methods for initiating the desired outcomes in the interventions (Bartholomew, Parcel, Kok, Gottlieb, and Fernendez, 2011, 52-59, 114, 166.)

### 3.2.1 Intrapersonal theories

Intrapersonal theories can be also categorised as cognitive behavioural theories. Three key concepts cut across these theories: 1. Cognitions results as Behaviours; that is what people know and think affects how they act. 2. One needs information for behaviour change but it is usually not enough 3. Perceptions, motivations, skills, and the social environment are key influences on behaviour. A Few of well-known intrapersonal theories are described below. Health Belief Model (HBM) addresses the individual's perceptions of the threat posed by a health problem (susceptibility, severity), the benefits of avoiding the threat, and factors influencing the decision to act (barriers, cues to action, and self-efficacy). The Stages of Change (Transtheoretical) Model describes individuals' motivation and readiness to change a behaviour. The Theory of Planned Behaviour (TPB) examines the relations between an individual's beliefs, attitudes, intentions, behaviour, and perceived control over that behaviour. (Bartholomew & al 2011, 55-59, 67,71-78, 86-89)

### 3.2.2 Interpersonal theories - Social cognitive theory

At the interpersonal level, theories of health behaviour assume that individuals exist in social environment and are also greatly influenced by social environment. The opinions, thoughts, behaviour, advice, and support of the people surrounding an individual influence his or her feelings and behaviour, and the individual has a reciprocal effect on other people too. The social environment includes for example family members, co-workers, friends, health professionals, and others. Because it affects behaviour, the social environment also impacts health, this being particularly important in the context of alcohol consumption. Many theories focus at the interpersonal level, but probably one of the most well-known is Social Cognitive Theory (SCT) by Bandura (1986). SCT focuses on how people learn from individual experiences, the actions of others, and their interaction with their environment. Health habits are not changed by will, instead motivational and self-regulatory skills are required. Behaviour change is operated through a set of psychological factors. People need to learn to monitor their health behaviour and acknowledge the circumstances under which particularly this behaviour occurs, and how to use incremental  goals to motivate themselves and guide their behaviour. They also need to learn how to create incentives for themselves and to recognise social support that can help them to sustain their efforts (Bandura, 2004, 159. Bandura, 1986 in Bartholomew et al. 55-59, 67,71-78, 86-89; Bandura, 1986 in Rimer. & Glanz 2005,19-22).
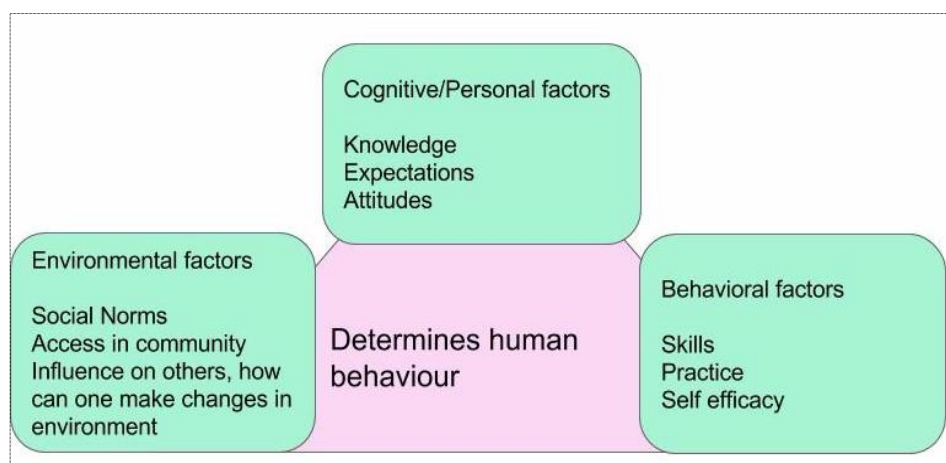
Figure 5: components of social cognitive theories

**Essential terms in social cognitive theories:**

**Self-efficacy:** Individual feels (s)he has control over and is able to change their behaviour

**Behavioural capability:** Understanding how to and have the skills to perform in different situations

**Expectations:** Seeing the outcomes of changing behaviour, what kind of results can one expect

**Self-control:** Knowing how to regulate and monitor own behaviour

**Observational learning:** Watching and observing others behaving as one wishes to

**Reinforcements:** rewards encourage to behaviour change

(Bandura, 2004, 143-164; Bandura, 1986 in Rimer & Glanz, 2005,19-22)


According to SCT, three main factors affect the likelihood that a person will change health behaviour: (1) self-efficacy, (2) goals, and (3) outcome expectancies. If individuals have a sense of self-efficacy, they can change behaviours even when faced with obstacles. If they do not feel that they can gain or practice control over their health behaviour, they are not motivated to act or to persist through challenges. As a person adopts new behaviours, this causes changes in both the environment and in the person. In the social environment, people are part of social networks and communities. Besides as sources of observational learning from others, social networks and communities offer personalized guidance, encouragement, and social support (Bandura, 2001; Bandura, 1986 in Rimer. & Glanz, 2005,19-22)


Universally in individual level almost all models of health promotion include the concept of self-efficacy. In short an example of ways to increasing self-efficacy in practice could include following ways: setting incremental goals (for example increasing the number of days in a week when alcohol is not consumed at all, reducing portions of alcohol consumed daily, or setting maximum limit to how many drinks to have at a party). Such small changes increase the self-efficacy and encourage to continue. Behavioural contracting (encouraging person to make a formal contract having specific goals, and reward, for example if the total of alcohol

consumption in a week stays under 16 portions I will reward myself with...) Monitoring can also be combined with reinforcement (feedback from self-monitoring of one's alcohol consumption). (Rimer & Glanz, 2005,19-22)

### 3.2.3    Community and ecological perspective theories

In community level theories, the focus is the key for success and for that one has to identify specific features related to a certain community with special health needs. In early intervention of heavy or risky alcohol consumption the group is specified by mainly age, but from other aspects group cannot be targeted to such specifics what is referred, since as described earlier this group is large and heterogenous in nature. Community organizing is a process in which community groups are helped to identify common problems, mobilize resources, and develop and implement strategies to reach collective goals. (Rimer & Glanz, 2005, 22-25)

An ecological perspective recognizes multiple levels of a health problem. In alcohol consumption harm related programs for example by Finnish National agency of Health and Wellbeing, provide guiding principles, which formulate the action in local and practical level interventions, for example in the context of political level decision making, how to effect in educational systems, work places or health and social care system context, and act as an umbrella for the work done in various levels. The most effective way of reducing alcohol consumption is through regulation that is based on political level decision making, by reducing access. However also interpersonal theories can be applied in multiple community approach levels, where individuals are seen as part of communities. (Wold & Samdal, 2012, 12-15)

### 3.2.4    Reducing complexity – planning models in health promotion

Precede-proceed and Intervention mapping approach are a planning models, not theories. They do not predict or explain factors linked to the outcomes of interest, but offer a framework for identifying intervention strategies to address factors that are relevant for the outcomes. Developed in the 1980's by Green, Kreuter, and associates, Precede-proceed provides a roadmap for designing health promotion programs. It guides planners through a process that starts with desired outcomes and works backwards to identify a mix of strategies for achieving objectives. Similarly Bartholomew, Parcel and Kok (1998) created a theory of intervention mapping (IM). It is a practical tool to create effective health promotion programs and ensure critical elements are taken into consideration while planning interventions. Just as Precede-proceed model, IM relies on multitude of theories and does not exclude  any type of interventions from following it. (Green & Tones, 2010, 155-162; Bartholomew & al, 2011, 8-48; Rimer. & Glanz 2005, 36, 39-42)

The six steps and related tasks of the IM process are:

> 1. Conduct a needs assessment or problem analysis, identifying what, if anything, needs to be changed and for whom
> 2. Create matrices of change objectives by combining (sub-)behaviours (performance objectives) with behavioural determinants, identifying which beliefs should be targeted by the intervention
> 3. Select theory-based intervention methods that match the determinants into which the identified beliefs aggregate, and translate these into practical applications that satisfy the parameters for effectiveness of the selected methods
> 4. Integrate methods and the practical applications into an organized program
> 5. Plan for adoption, implementation and sustainability of the program in real-life contexts
> 6. Generate an evaluation plan to conduct effect and process evaluations

(Intervention Mapping, 2017; Bartholomew, Parcel, Kok, Gottlieb, and Fernendez, 2011, 8-48)

Precede-proceed steps:

**Precede** (Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation) provide the structure for analysing and planning the development of targeted and focused public health programs.

> **Social assessment:** Determine the social problems and needs of a given population and identify desired results.
> **Epidemiological assessment**: Identify the health determinants of the identified problems and set priorities and goals.
> **Ecological assessment:** Analyse behavioural and environmental determinants that predispose, reinforce, and enable the behaviours and lifestyles are identified.
> **Identify administrative and policy factors** that influence implementation and match appropriate interventions that encourage desired and expected changes. Implementation of interventions.

**Proceed** (Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development) assists with the implementation and evaluation of these programs. These include:

> **Implementation:** Design intervention and assess availability of resources and implement program.
> **Process Evaluation:** Determine if program is reaching the targeted population and achieving desired goals.
> **Impact Evaluation:** Evaluate the change in behavior.
> **Outcome Evaluation**: Identify if there is a decrease in the incidence or prevalence of the identified negative behavior or an increase in identified positive behavior.

(Green & Kreuter, 1991 in Gielen, McDonald, Gary, and Bone, 2008, 408-433)

### 3.3 Promotion and prevention of alcohol consumption related health

By the recommendations of Finnish Ministry of Social Affairs and Health, substance abuse services can be divided by the phase of the problem. Health promotion and primary prevention, prevention of early on drug or alcohol related harm (secondary prevention), and treatment or rehabilitation services. (tertiary prevention) (STM, 2002, 50). According to the Constitution of Finland (11.6.1999/731) government officials are responsible for ensuring that everyone has access to sufficient social and health services and demands that health is being promoted. The responsibility of organizing these services is aligned to municipalities. (MSAH, 2002, 26). Based on the Act on Welfare for Substance Abusers 523/2015, municipalities have to ensure that substance abuse services are being organized by in contents and extent as the need or demand in municipality required.

| | |
|---|---|
| Primary Health Care (66/1972) | Preventive substance work (2015/523) |
| Social Welfare Act (910/1982) | Temperance Work Decree (233/1983), |
| Act on Welfare for Substance Abusers (41/1986) | Medicines Act (395/1987), |
| Mental Health Act (1116/1990) | Penal Code (39/1889), |
| Police Act (493/1995) | Child Welfare Act (417/2007), |
| Health Care Act (1326/2010) | Constitution of Finland (11.6.1999/731) |

Council Directive on Driving on Driving Licences (91/439/EEC), with provisions on the granting of a driving licence to persons addicted to psychotropic substances,
Public Order Act (612/2003). (THL, 2015, 184)

Table 6: Legislation concerning substance abuse

The treatment of alcohol problems, can be started in several different ways, even in emergency clinics. Treatment may also be sought in any stage and circumstances of life and any time. One should start the treatment as early as possible, but it is never too late. (Mäkelä & Simojoki 2015, in Aalto & Ripatti, 2015) In primary health care early intervention of heavy alcohol consumption takes place in the context of visits to health centers, maternity clinics, occupational health services and maternity clinics. Also social care institutions have an important role. (Anderson, Colom & Seppä, 2006) Overview of the service system is presented in the context of service dominant logic.

Laajasalo and Pirkola (2012) have gathered a guide for the development of mental health promotion and prevention services. They emphasize that the actions should be targeted exceeding the whole population, or to seek for risk groups that should be focused on. There are arguments for both approaches; general promotion and prevention should both be used. Also notion based on Terveys 2000 study revealed that and every fifth person, with alcohol addiction has simultaneously some other mental health disorder. Alcohol increases risk for other

mental health problems, but also mental health problems might lead to problematic use of alcohol consumption.(Laajasalo and Pirkola, 2012, 63-65)

### 3.3.1 Mini-intervention

Based on several meta analyses, mini-intervention (brief intervention) is an effective way to reduce the consumption of risky alcohol consumers before forming of addiction. Every tenth person reduces to healthy level or stops their consumption of alcohol for 1-2 years after mini-intervention (Aalto, 2009). This protocol includes conversation of alcohol consumption, the amounts and patterns of drinking, recognising risky consumption and explaining health related issues as consequences, supported by guidance to reducing. What is important is that professionals have supportive attitude and ability to motivate. This intervention can be conducted in basic health care, and it does not demand more than 5-20 minutes and consist of 1 or more visits. (Aalto, 2009, Laajasalo and Pirkola, 2012, 63-65) Audit questionnaire is one of the most used screening tests, it is presented below.

AUDIT, Alcohol Use Disorder Identification Test

Choose the closest alternative regarding your personal situation.

| 1. How often do you have beer, wine or other drinks containing alcohol?<br>0      never<br>1      monthly or less<br>2      2-4 times a month<br>3      2-3 times a week<br>4      times a week or more | 6. How often during the past year have you needed a first drink in the morning to get yourself going after a heavy drinking session?<br>0      never<br>1      less than monthly<br>2      monthly<br>3      weekly<br>4      daily or almost daily |
| --- | --- |
| 2. How many drinks containing alcohol do you have on a typical day when you are drinking?<br>0      1-2 drinks<br>1      3-4 drinks<br>2      5-6 drinks<br>3      7-9 drinks<br>4      10 drinks or more | 7. How often during the last year have you had a feeling of guilt or remorse after drinking?<br>0      never<br>1      less than monthly<br>2      monthly<br>3      weekly<br>4      daily or almost daily |
| 3. How often do you have 6 or more drinks on an occasion when you are drinking?<br>0      never<br>1      less than monthly<br>3      monthly weekly<br>4      daily or almost daily | 8. How often during the past year have you been unable to remember what happened the night before because you had been drinking?<br>0      never<br>1      less than monthly<br>2      monthly<br>3      weekly<br>4      daily or almost daily |
| 4. How often during the past year have you found that you were not able to stop drinking once you had started?<br>0      never | 9. Have you or has someone else been injured as a result of your drinking?<br>0      no<br>2      yes, but not in the past year |

| 1 | less than monthly | 4 | yes, during the past year |
|---|---|---|---|
| 2 | monthly | | |
| 3 | weekly | | |
| 4 | daily or almost daily | | |
| 5. How often during the past year have you failed to do what was normally expected of you because of drinking? | | 10. Has a relative, friend, or a doctor or other health care worker been concerned about your drinking or suggested you cut down? | |
| 0 | never | 0 never | |
| 1 | less than monthly | 2 yes, but not in the past year | |
| 2 | monthly | 4 yes, during the past year | |
| 3 | weekly | | |
| 4 | daily or almost daily | | |

The points are counted together to evaluate the risk level
Total score
0 - 7: risk is low
8 - 10: moderately increased risk
11 - 14 : risk has increased
15 - 19 : risk is significant
20 - 40: risk is severe

Question 1 examines how often one drinks,
Question 2 examines how much one drinks,
Question 3 examines how often one binge drinks,
Question 4-6 examines if one has any dependency symptoms,
Question 7-10 examines the harm related to the use of alcohol

(THL, 2016)

Alho (2017) studied early intervention in basic health services. She discovered that customers found it useful that they were confronted of their consumption of alcohol. 3 out of 5 respondents (n=175) were categorised as risky users based on Audit questionnaire used. More than half of participants reported, that they had been asked of their alcohol consumption while visiting health or social care institutions during the last year. (In the study, for the sake of avoiding effect modification concerning the interaction the research and implementation of intervention itself, it would have been useful to rule out the appointment after which they received the form. Also in context of preventive services as health examination the mini-intervention is standard procedure.) Among the important findings though, those who used alcohol in moderation, had more positive attitude towards intervention and gave more honest answers, as the ones who identified as risky users. Why early intervention is very important is because independent seeking of help for problems concerning alcohol use has been so far rare (Berends & al, 2013 by Alho 2017). ( Alho, 2017)

Mäkelä, Havio &  Seppä (2011, 1239-1248) discovered  that 33.3% of health care customers had been asked about their alcohol use  in the 12 months before the survey. However, 50% of heavy drinkers who had been asked about their alcohol use had not been advised about it. In Finland, the frequency of health-care professionals asking and giving advice on alcohol is rela-

tively low, even it seems that public opinion towards these discussions is positive (More than 90% of respondents had positive attitude). (Mäkelä, Havio & Seppä, 2011, 1239-1248) Behm's (2015) qualitative study indicated that people in early intervention context expected, pertinence, discretion, calmness and wish of not judging or being mean, since the situation of early intervention was experienced in general as a sensitive subject, arousing feelings of nervousness and anxiety. (Behm, 2015, 82-83)

Despite effort put to identify risky alcohol consumption, according to Vandermause (2009) many women meeting the criteria for alcohol use disorders are unseen, misunderstood, misdiagnosed, or ignored. (Vandermause, 2009) Also the remark from working life, employees who were referred to treatment by their workplace had fulfilled the criteria for addiction on average already for 7 years before. Those who have been referred to treatment, experience that intervention concerning their risky alcohol consumption should have been done much earlier. (Pylkkänen, 2012)

Behm (2015) studied early intervention of alcohol abuse from the perspective of values and ethical aspects in the context of emergency unit. Her research revealed that early intervention of alcohol abuse, was considered important in general, but the staff members and substance abuse experts in the study groups identified a number of challenges related to it. Firstly employees in the emergency units did not have a uniform idea of early-stage substance abuse work, and primarily the emotions that it brought up were negative. These situations were experienced difficult, awkward, challenging and embarrassing. Workers felt frustration, irritation, annoyance and anger. Also sadness, pity and hopelessness were experienced by employees, as well as feelings of incompetence, helplessness, powerlessness and failure as well as anxiety and fear. One of the reasons for having such feeling were related to the lack of patient's capabilities, inability to intervene, presumption of such activity being useless, ineffective and waste of time. (Behm, 2015, 68-69)

The substance abuse experts also expressed a concern regarding employees' attitudes and competence. The profound ethical principles named by the experts were to respect human dignity, respect autonomy, equity, privacy, honesty and professionalism. They discovered issues related to every aspect, despite honesty in practice of emergency room employees conducting these interventions for patients (Behm, 2015, 83-85)

## 3.4 Persuasion technology

Technology has been considered as one solution to the ever growing costs of healthcare and treating the aging population. ICT has been seen enabling shortening of customer's paths in health care institutions, improving information transfer between actors resulting in better cooperation and also believed to save costs in health care. (Hyysalo, Lehenkari, Hasu & Miet-

tinen, 2003). With technology utilising services it is possible to enable people's possibilities of taking care of their health and well-being, such technologies also enables new type of services in health and social care, and ensure also access for those who live in remote areas (Salminen., Hiekkala, Stenberg, & Hiekkala, 2016).

Persuasion is defined as the action or process of persuading someone or of being persuaded to do or believe something, instead of trying force to take action. A simple example of persuasion, is marketing. The advertising we come across every day try lour us to buy something, in a subtle manner. Persuasive technologies are designed to induce and influence people to change their attitudes and behaviours. Behind persuasive technology, the same principles and understanding of how people are affected applies. Persuasion technologies are based on social cognitive theories, which are formed based on understanding of processes of social psychology, cognition, attitude and motivations. (Fogg, 2002, 23-121). Oinas-Kukkonen & Harjumaa (2009) have suggested a framework for designing persuasive technologies (based on mainly Fogg's work) as they argue that most earlier research has concentrated on people's attitudes and capabilities toward adopting technologies. The 7 key principles are explained, and a categorisation of features divided into domains that can be applied in design of persuasion systems are presented. (Oinas-Kukkonen & Harjumaa, 2009)

**1.Information technology is never neutral.**
Information technology is present at all times, it is always on and it helps us to perform in various contexts', to various tasks which all have some goal (motivation).
**2. People like their views about the world to be organized and consistent**
In behaviour change context, for example in early intervention of heavy alcohol consumption if one has never questioned their consumption of alcohol and considers it as being average but at healthcare appointment hears that instead it is considered risky. First of all they might have reaction to that, but maybe later they make changes to either to their thinking of behaviour to fix this inconsistency.
**3. Direct and indirect routes are key persuasion strategies**
Persuasion strategies might be direct or more discrete one not noticing perhaps unless carefully examines.
**4. Persuasion is often incremental**
This is a principle that is present for example is programs for addictive behaviours (the steps), since it is difficult to make major change at once, instead change is a process, not an event.
**5. Persuasion through persuasive systems should always be open**
One should be able to recognise motivations of persuasion, and that it is based on truthful information.
**6. Persuasive systems should aim at unobtrusiveness.**

One should be able to perform their daily tasks without reminders that are received too often or on appropriate occasions.

**7. Persuasive systems should aim at being both useful and easy to use**

People do not want to use system if they think it does not respond to their needs, nor will they return or want to bother to learn to use too complicated technologies.

In this thesis, the idea is to use persuasive technology categorisation as a task list, and reading this to people (in Finnish) offer hints concerning their design for ideal service. The categorisation is described below.

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**Persuasive systems approach categories by Oinas-Kukkonen & Harjumaa (2009)**

**Primary task support**

**Reduction**-simplify complex behaviour by reducing effort (test for seeing how much potential calories one skips by reducing alcohol intake)
**Tunneling**-system guiding trough process, it provides opportunities to persuade. (for example presenting the steps in a self-help program)
**Tailoring**-information provided that is tailored to the potential needs, interests, personality, usage context, tailoring requires decisions making from user
**Personalisation**, personalised content automatically offered by system that is based on previous choices
**Self-monitoring**- Provide possibility to track performance status in relation to goals
Rehearsal- Possibility to rehearse target behaviour

**Dialogue support**

**Praise**- positive feedback for reaching goal
**Reward**- virtual reward for performing target behaviour
**Reminder**s- to remind users of target behaviour to keep goals
**Suggestion** -offering of fitting suggestions for alternative behaviour etc.
**Similarity**-systems should imitate the users in some way, "speak the same language"
**Liking**- a system that is visually attractive appeals to its users
**Social role**-support communication

**System Credibility support**

**Expertise**- information showing, knowledge, experience and competence
**Surface credibility**- Competent look and feel
**Real world feel**- information of people / organisation behind system content and service
**Authority**- Referring to people with authority
**Third party endorsements**- endorsements from respected sources
**Verifiability**- provide means to verify system content via outside sources
**Trustworthiness** - truthful fair and unbiased information

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| Social support |
| --- |
| **Social learning**- Possibility to observe others performing target behaviour<br>**Social comparison**- one is able to compare their performance with other users<br>**Normative influence**- create societal or peer pressure of changing behaviour<br>**Social facilitation**- Making users aware of how many users are also performing the same task or intervention<br>**Cooperation**- System should provide means for cooperation<br>**Competition**- Means to compete with other user<br>**Recognition**- public recognition for those who have been successful, for example "performer of the month" |

Table 7: Persuasive sytem approach categorisation

From health promotion point of view, there are some promising examples indicating an effective way to intervene alcohol use by technology. MinderDrinken is an interactive Dutch self-help intervention for problem drinkers, based on cognitive-behavioural and self-control principles. The program is structured into 4 steps: 1. preparing for action; 2. goal setting; 3. behavioural change; and 4. maintenance of gains and relapse prevention. The site also provides information on alcohol and treatment services and a moderated peer-to-peer discussion forum. The recommended treatment period is six weeks.

In a randomised trial, intervention was shown to be effective in reducing problem drinking. Participants in the trial were randomised to either the MinderDrinken program (intervention group) or to a psychoeducation condition. At follow-up, compared to the control group, significantly more of the intervention group had reduced their drinking to within the guideline norms (17.2% of the intervention group participants versus 5.4% of control group). The intervention group also showed a greater reduction in alcohol use, with a mean decrease in weekly alcohol consumption of 15 units, compared to a decrease of 2.9 units in the control group. An uncontrolled study of the effectiveness of MinderDrinken in a real world setting found that the impact of the program was similar to that seen in the initial study in terms of improvements in drinking outcomes. Results of these two studies provides evidence that the MinderDrinken site might work in helping to address problem drinking and that web-based self-help without therapeutic guidance is feasible, well accepted, and effective for curbing adult problem drinking in the community. (Riper, Kramer, Conijn, Smit, Schippers & Cuijpers. 2009, 1401-1408; Riper, Kramer, Conijn, Smit, Schippers & Cuijpers, 2008, 218-227)

**3.5**   Values and ethical principles of health promotion

The values or ethical principles should be taken into consideration when health interventions are put together. They are presented in the picture below, also other aspect vital for this particular health promotion context are examined.

Figure 6:Ethical values and principles in health promotion by Pietilä, Länsimies-Antikainen, Vähäkangas, and Pirttilä (2010, 19)

The first ethical problem in the early intervention of excess alcohol consumption is that it should not interfere with the person's rights to have autonomy over their behaviour concerning alcohol consumption. Pietilä, Länsimies-Antikainen, Vähäkangas, and Pirttilä (2010, 15-20) state that in democratic society, a freedom of choice is a principle as long as these actions don't harm others. For example expecting mothers can be treated against their will since their substance abuse might harm the unborn child. With the freedom of choice comes the responsibility for a citizen to carry the consequences of their actions. Still it is clear that the health care system cannot abandon those who became ill as a results of their health behaviour.

Blaming individuals for resulting a self-inflicted disease for themselves is dangerous, since the prerequisites, psychological or physiological - childhood that does not give the best basis for life, being poor or excluded from the society, or of the genetics that predict some individuals being more predisposed to develop diseases, might affect the ability to take responsibility from their actions and therefore should not be left on their own. Since while individuals make decisions concerning their health, they are driven by strive to have a good life. Who defines what is considered as a good life, depends on the values, as the motivation behind the choices for good life; to be healthy, to be "a good citizen" or to be happy. Being healthy is not a demand for achieving a good and happy life, and disease or illness does not always limit perceived happiness. Pietilä, Liimatainen, Ryttyläinen, Pietilä, Eriksson, and Honkanen (2010)

3.6    Effectiveness of health promotion

According to Pietilä, Länsimies-Antikainen, Vähäkangas, and Pirttilä (2010, 23-24) One of the ethical requirements in health promotion (responsible) is that the activity must be based on scientific evidence. Why this is problematic is that we need to admit that our knowledge is even right now very limited and those "truths" that we rely on are just small pieces of evidence at this point. Why health promotion theories exist, is due to the demand for having scientific evidence. But what makes health promotion planning challenging, is that whenever a new intervention is put together, there is no evidence for that particular intervention suc-

cess, since the new approach is still at its' first trying-out stage (Ollila 2005, 14 in Koskinen-Ollonqvist, Pelto-Huikko and Rouvinen –Wilenius, 2005, 14).

The distinction between health promotion and prevention lies in their targeted outcomes as explained earlier. For example mental health promotion aims to promote positive mental health by increasing psychological well-being, competence and resilience, and by creating supporting living conditions and environments. Mental disorder prevention has as its target the reduction of symptoms and ultimately of mental disorders. In the context of mental health promotion, promotive actions are to protect the factors that protect mental health by strengthening them. Fundamental difference, even if not that relevant for the practice, is to acknowledge promotion as positive conception of health and concentrating on resources, as prevention being more problem based driven approach to avoid developing an illness. (WHO 2004, 15-18)

If the outcomes for prevention and promotion are defined differently, so is their measurement. The measurements of the health promotion outcome, improved health is demanding, if the goal is to measure effectiveness it means is to seek for changes in multitude of variants, for e.g. such as health behaviour, health status (clinical or perceived), and health care utilization, or improvements in determinants meaningful for achieving desired health. (Lorig, Stewart, Ritter, Gonzalez, Laurent, and Lynch, 1996, 2). The disease preventions often epidemiological approach can rely to measurement of disease prevalence in the context of new treatment, happening in a specific clinical context often taking place in laboratory environment. In such a specified exclusive context, one can count percentages accurately and compare them with similarly carefully chosen control group. These type of interventions are often questioned because the homogeneity of target group often not comparable with real populations, where an extensive excluding category does not apply to. Nor do these type of clinical trials perhaps emphasize perceived well-being. Efficacy can be defined as the performance of an intervention under ideal and controlled circumstances, whereas effectiveness refers to its performance under 'real-world' conditions (Singal, Higgins and Waljee, 2014).

According to Rychetnik, Frommer, and Hawe et al. (2002) public health interventions tend to be complex, programmatic, and context dependent and therefore they examined how different recommendations of evidence level defining criteria for interventions were constructed. Without going to specifics, Randomised trials (RCTs) were described as unable to serve the complexity and instead perceived as being feasible for evaluating relatively simple interventions (they also are good in revealing causalities). Because of how demanding they are to implement, it is claimed that they seldom are executed well. Observational studies have shown to be able to achieve similar level of evidence, more empirical data is needed still. The main message though is that relatively high weight is given to study design compared to other as-

pects of quality. They stated regardless of study design, for example in situation where interventions fail, the evidence should help to determine whether the intervention was inherently faulty (that is, failure of intervention concept or theory), or badly delivered (failure of implementation). (Rychetnik, Frommer, and Hawe et al., 2002, 119-127)

Proper interpretation of the evidence depends upon the availability of adequate descriptive information on the intervention and its context, so that the transferability of the evidence can be determined. Since public health interventions hardly ever are a standard package, assessment of transferability information is needed on the multiple components of an intervention details about the design, development and delivery of the various intervention strategies, also knowledge of factors that influence its sustainability and dissemination will also be important. Contextual factors that influence the generalisability include literacy, income, cultural values and access to media and services, still many public health interventions do not include description of contextual variables or assess their impact on measures of effect. We should note that the lack of contextual information is also a weakness of evidence on medical interventions. Information is also needed on the characteristics of people for whom the intervention was effective, and the characteristics of those for whom it was less effective or even harmful. (Rychetnik, Frommer and Hawe et al., 2002, 119-127)

Contextual factors often interact with interventions, even in simple interventions. Effect modification may arise from components of an intervention (for example, the skill and experience of the professional public health personnel responsible for the intervention), and/or the context (for example, cultural characteristics of the community in which the intervention was studied). Interactions between interventional and contextual components can have two implications. Firstly, they are likely to affect the transferability of the intervention and they also make an assessment of its transferability more difficult. Secondly, interactions greatly complicate attempts to pool the results of different studies. Criteria for assessing evidence on public health interventions should therefore determine whether interactions have been sought, understood and explained. (Rychetnik, Frommer and Hawe et al., 2002, 119-127)

As stated earlier context dependency of health promotion limits the utilisation of results in future interventions and can make it difficult to transfer interventions to other setting, especially if contextual factors or intervention details are not described. However the assessment of the quality of interventions has become popular in the form of program evaluation, where the intervention is broken into sections and each section contains descriptive criteria for evaluation (see for example Nikula, 2011). With such evaluation methods, one is able to create interventions, that reach to high standards and conduction of such descriptive criteria can increase transferability on health intervention to other contexts. As stated by Rychetnik, Frommer and Hawe et al. (2002) regardless of study design the main problem in outcome is

the form of the results, one is not able to determine exactly what has led to results; the intervention concept or theories, or the implementation itself.

## 3.7 A Customer, a client or a patient?

Definitions by Oxford Dictionary (17.5.2016)

Consumer = A person who purchases goods and services for personal use

Customer = A person who buys goods or services from a shop or business

Client= A person or organization using the services of a lawyer or other professional person or company. A person being dealt with by social or medical services

Patient= A person receiving or registered to receive medical treatment

Table 8: Definitions decribing actor's position

The word 'patient' has its origin in the Latin 'pati' – to undergo, suffer, or bear. Dictionaries reflect this origin when providing the following definitions and synonyms for 'patient': 'bearing, enduring pain quietly without complaint', 'a capacity of endurance', 'suffering', 'victim', 'tolerant', 'understanding', 'calmness', or 'that which undergoes some action'. These definitions reflect the qualities attached by language to the noun. (Shevell, 2009) The word patient implies a passivity, seen as an object of an action. It does not include responsibility and it can be considered stigmatizing as a term, highlighting the perceived disability and impairment. This diminishes the intrinsic autonomy of the individual to which the label is applied to. It is thus best suited for use within a paternalistic model of healthcare relationships focusing on the acute recognition of disease and its management (Mclaughlin, 2009).

McLaughlin studied the terms in a service relationship in a context of social work. He challenged the term 'client' both from within his profession, his concern being that the notion of a 'client' represented an objectification of the social work relationship. He argued that the term withheld an assumed power laid with the professional to identify what the passive client needed. The ideal client for such power positioning was one who accepted the social worker to assess their needs and willingly acted on what they were asked to without a question. (McLaughlin, 2009) From semi-scientific sources, as blogs and columns by physicians as health care represents, the differentiation of the use of terms, between clients, patients and customers, is based on argumentation, that a customer is someone, who has a choice. And what comes to patient, health care providers decide what is best and tell the patient what should be done (Pies, 2015; Ratnapalan, 2009). Assumptions of these arguments could have a paternalistic echo. By Gerald Dworkin's well known definition of paternalism, it means such interfering to individuals (thinking, will or action) freedom, that is justified by the forced individ-

ual's own good, well-being, happiness, needs, advantages or values. (Dworkin, 1988 by Launis, 2010, 136) According to Launis (2010) formal interpretation of autonomy or self-determination is not naturally easy or problem free. For example it is unclear how much information for one is enough to make own decisions as a patient, for making decision process autonomous. However in this sense, the medical professionals competence in this situation is inferior to patients considerations, since professionals have much more and deeper knowledge of the patient's pathological condition of health than the patient of tend to do. (Launis, 2010, 136).

In "life and death" emergency situations, it would be ridiculous for physicians to ask what customer wants, but for example in the context health promotion work, such as lifestyle change management, the actual power and responsibility lies in the hands of individuals who decide to make those changes (or decide not to). It has been stated, that *a patient* is an inappropriate term to refer to a healthy individual engaged in activities related to either illness prevention or health maintenance, or perhaps even rehabilitation that emphasizes function over 'normality' (Covell, McCorkle and Weissman, 2007). The term client was introduced to health care terminology from the point of a view of empowerment. However the origin of the word 'client', is the Latin, 'cliens' meaning 'follower, retainer'. Thus dictionaries provide such definitions and synonyms for 'client' as, 'customer', 'patron', 'one who depends on the protection of others', 'source who pays for goods and ∕or services', and 'dependent'. (Shevell, 2009)

The right to self-determination and autonomy is a moral right of an adult individual to make free choices and decisions related to their own lives and for implementing them. The right for self-determination is currently regarded as such an essential, that in order to protect it, number of legal norms exists. Law of the patient's status and rights (1992/785) and The Medical Research Act (1999/488) are to secure the attainment of self-determination in medical care, and medical connection in research. Autonomy or Self-determination is natural to be interpreted having a meaning that it obliges the other parties (for example, the patient's relatives or nursing staff) to maintain and develop a person's capacity to form independent perceptions, act and interact independently. Understood in this way, self-determination is a philosophical way of expressing the right to security, rather than the right to freedom: a person is not only free to carry out himself, but is entitled to receive active assistance from others in this process. (Launis, 2010, 136)

By examining healthcare publications for example ICF (International Classification of functioning, Disability and Health) by WHO, the terms used vary from the perspective we look at it. General instructions that this document includes, describe the target group of professionals work as people, person or individual, even human being, which in my opinion is neutral from

every perspective. But when the target group in the release has an active role in the process described, term *consumer* making self-evaluation is introduced. The term client is used in the context, where health care service quality is being developed or improved. This shows that the words do hold different nuance and exhibit power positioning. (WHO, 2002)

3.8    Summary

What is essential to acknowledge from health and health promotion is that they have very different approach. When we had infectious deceases which were fatal, the emphasis was to prevent them to spread and different methods were studied. Still even in preventive work today  we have to point out the health issue we want to prevent, even if in practice the work done in lifestyle change management is highly promotive and should be based on resource building. I have come to the conclusion that all health care work, no matter, preventive or heavy treatment, the people are just in different situations in their dynamic health continuum and resources. In all situations people come to health care, they should be assisted in their health continuum, even if a diagnosis could not be set something can be often done to relieve discomfort and prevent it from getting worse.

Alcohol consumption related health promotion work is much more than individual level intervention, however in this context it often becomes personal. One has maybe not really thought about their consumption and even remotely related themselves in the context from problematic basis. However also the right to lead such life as one wants, but also part of that autonomy in health care settings is the right to have information to make the decision concerning their health even if it arouses negative feelings. Resource based approach does not need to focus to the heavy consumption but to support and help the persons to utilise resources to start working on, when they have the resources to. Understanding change as a process, where it might take time to ingest before starting to act.

 By asking people what do they self think of their situation, might help people to articulate why they do what they do. Behaviour change is not easy in most cases and sometimes person might feel they don't have the resources and that's ok, even planting the idea of considering some changes, while some stressful situation is over might result in something good later according to my experience. Self-efficacy is usually enough alone  to lead to change, arousing self-worth in my opinion is as important, it can be seen as  Antonowsky's meaningfulness. However to point to person's self-wort requires trust and knowing the persons and their situation to some extent, otherwise it might come across cheesy.  Persuasion technology is based on understanding that behaviour change is not an event, and with the help of digital surroundings including even fun features and incremental change, one is able to get support for behaviour change. In such service the person feels self-efficacy by tackling small steps at a time and their belief in their own skills grows by every successful step.

Values and ethical principles are important to acknowledge, since health is very personal subject. "If there is a will there is away" describes the situation that the profound meaning of any health care actions, the will, is to help the customer some way. However considering the way this is done requires special attention and communications is an essential, how well is customer included to the decision making process, is there mutual understanding, is it understood by customer why decisions that concern them are as they are, are all examples that could reflect the values of health promotion. The ethical principles are respect human dignity and autonomy, equity, resource and capacity building, participatory and responsible.

Effectiveness is related to approach being preventive or promotive however both exist in every intervention to some extent. But measuring such complex determinants and outcomes is demanding. Even if the theory and the chosen concept to implement were right in the first place, necessarily the effectives as health outcomes would not be that good if the implementation where the action happens with the target group does not reach the intention with customers, the whole intervention might suffer from the point of view of outcomes and is very hard to tell which part of the process contributed to the results. That is why implementation quality is so important. Also attention should be pointed towards describing the target group and factors related to the study, since these enable others to fully use such intervention in the future.

Customer position was though of because at least earlier in healthcare there was this demand of authority by which people do as they are told. Today many health care professionals work with relatively healthy people, who have got vast of information of their health and illness for example through the net. This changes the position of customers, narrowing the gap of informational imbalance. People might have come across with something that could effect their health and come up with questions or suggestion. For health care this requires communication skills, for help them to make sense of the information and how it relates to their situation. Also individuals' increased information related to taking care of their health has increased, so they might need more motivational skills from health care staff rather than just information. This gap of power positioning seems to get smaller by improved health and understanding of own situation which I think is good, since the people themselves can do more for themselves than any professional, whose role is more than a guide, or agent.

4    The service business

In these becoming paragraphs, basic terminology of services is described and the service dominant logic is explained through four axioms by Vargo and Lusch (2014). In these four axioms, eight foundational premises are included and explained. In the end of this chapter, service

ecosystems, aspects of value creation, customer-dominant logic and service experience are enlightened, ecosystem perspective as well as service system of health care.

## 4.1    Basic terminologia of Services

Services are processes that offer solutions to a problem or respond to a need. The solution that is created is the end result of a service that should create value to customer. (Grönroos, 2000). Service package describes the expected end result that is offered to the customer. Core service is to respond to the primary need of the customer. Supporting services enable the use of the core service, besides that additional services contribute to value creation and differentiate the service provider in relation to competitive service providers. So service is not considered excellent, if you only receive friendly empathetic doctors appointment (since this is what you paid for!) but besides that thanks to the additional services, you had a refreshing moment at the waiting area; there you were served coffee and seated to comfortable chairs. Extensive or holistic service offering includes joint processes, since for e.g. business to business consultation services are tailored to respond to specific customer needs and the service process is reciprocal between service provider and the customer to understand customer's goals and business. Accessibility of a service is defined by factors that influence the customer experience; how easy or difficult it is to purchase or use the service. These factors include besides others, the amount and capabilities of personnel, the office hours services are provided, location service office (Miettinen & Koivisto in Miettinen, Koivisto, Hämäläinen, Vilkka, Mattelmäki, Vaajakallio, Kalliomäki, Ruuska & Vaahtojärvi, 2011, 35-43)

Concepts are service offers, which are often visualised to make intangible parts of services visible. Service concept can describe a service touchpoints, customer journey or other structures related to the production of a service. Concepts in services are often created in service design phases, since in visual form they give essential information for all who participate in service design process. A concepts act as prototypes in the design phase. Concepts may not always portray everything that the service includes, but essential factor concerning a concept is that one could be able to understand customer and their needs. Before building a concept or during it, designer should strive to get as much understanding of customers' needs, activities and solution, disruptive factors, the existing services and goals for the new service as well as business opportunities. In concept design, there are often experts in multiple fields taking part of the process, since for example technical and business aspects capabilities are needed in to plan the production. (Miettinen, Kalliomäki and Ruuska in Miettinen & al, 2011, 106-117)

## 4.2    Customer expectations and insights

When developing services it is important to understand what is meant by different terms, such as customer expectation and insights. The definition of customer expectation according to Parasuraman, Zeithaml and Berry is:" the ideas and feelings that a customer has about a product or service, based on what he or she needs from it and expects it to do." And customer satisfaction is an appraisal of how goods and services supplied by a company meet with customer expectation (Parasuraman, Zeithaml and Berry, by Ukessays, 2017)

What separates customer insights and information is that in order to create customer insights, one must analyse information of customer's that can be collected from several sources by various means. Customer insights as a resource for service providers business means one is able to use this knowledge for making business decisions. Businesses often talk about customer needs and how to fill the customer's needs to reach customer-orientation, however need-based thinking leads to reactive actions. If the customer speaks of his needs, he has already identified himself and is able to pick services to match their preferences. However, the customer does not always know the existing solutions, since customers are not even able always to identify or express their needs. The proactive service provide'rs task in such situations is to come up with a solution. Clayton Christensen has described the need, the challenge and the difference between the solution by using the term "job-to-be-done". What is the benefit or task that customers need? The question set-up helps the company to detect those options that the customer has available for a solution. (Arantola & Simonen, 2009, 3-32)

Customer-oriented service business development requires that in the starting point there's enough information of customer's activities and whether the service idea has a market. To have fundamental customer insight one has to have understanding of what customers' value in a service. Besides understanding customers' value creation in a context, it is important to understand their situations that can be defined in different levels. Personal situations, situations in functions, service provider's situation, branch situation and societal situation. Also strategic understanding of customer instead of a general group is essential, who are the ones who offer the best return of investment (ROI). An important element of economic value of customers to service providers is customer profitability. Management literature has often referred to the 20/80 rule, according to which 20% of customers produce 80% of the result, but the truth may be even more dramatic. Customers can be segmented based on their ROI, and the emphasis is to concentrate the ones (usually smaller group) who creates most profits. (Arantola & Simonen, 2009, 3-32).

## 4.3    Service dominant logic

Service dominant logic (S-D) over the goods dominant (G-D) logic expands the understanding of value, how it is formed, exchanged and in what forms it exists. Instead of understanding services as a niche part of traditional selling of goods Vargo and Lusch (2004, 2014) emphasize the role of intangible (operant) resources in S-D logic, namely skills and knowledge, that are applied in the process, often specialised in nature, and the role of goods (if included) being merely means to service division. G-D logic leans on two principles. Firstly, the units of output correlate to the value and secondly, the value is embedded to the good (or unit of output) by the production and represents the unit of exchange. S-D logic specifies the service being application of specialised competencies through deeds, processes and performances, for the benefit of an entity, as well as for benefit of the exchange. The division into goods and service, is questioned by Vargo and Lusch, since besides tangible good, service in some form is always present in the exchange, and they see products more as a channel for services. (Vargo & Lusch, 2014A)

### 4.3.1    Axiom I : Service is fundamental basis of exchange

Vargo and Lusch argue that four axioms define the nature of service dominant logic. Firstly, service is the fundamental basis of exchange. The concept of service as previously introduced being the application of operant resources (knowledge and skills) for the benefit of another actor. The term actor is used by Vargo and Lusch to emphasize the equal positioning of the service provider and the customer in service as well as cocreating the value. Recognising the customer as an active participant possessing resources of expertise and knowledge (operant resources), as opposed to traditional economics, which give customers quite a passive role and handles them as operand resources. In this thesis those traditional terms of customer and service provider are used (instead of actors) for the sake of clarity, still the active role and the capabilities of customer are recognised with Vargo's and Lusch's definition. (Vargo & Lusch, 2014B, 53-57,101-117)

General types of exchange include restricted exchange, general exchange and complex exchange. The first mentioned exchange, also known as dyadic exchange. A produces services and actor B is the beneficiary, value is exchanged in the process. The highly specialised skills and knowledge in our society have led to the situation that even the smallest companies tend to outsource some of their resources contributing to service beneficiary, the customer in some way. Lusch and Vargo continue that this setup rarely exists, because we are somehow part of institutions and societal systems, but the setup has been important for the development for the disciplines of economics, such as consumer behaviour, strategic marketing, services marketing, business to business (B2B) marketing and international marketing. (Vargo & Lusch 2014B, 104-107)

Generalised exchange involves at least three actors, but happens in chains, for example actor A gives to actor B, actor B gives to C, and finally Actor C gives to A. These types of chains are often presents in organisations, behind the scenes of actual encounter with the customer by activity, which in the end turns to benefit the customer even if all the actors are not present in the interface. Complex exchange happens when at least three actors are part of the exchange, where direct exchange happens at least once between the actors. The complex exchange system is organised by an interconnecting web of relationships, in traditional economics comparable to distribution channels, marketing channels or supply chains. By the vocabulary of S-D logic these type of exchange systems are referred to value constellations, or service ecosystems. (Vargo & Lusch, 2014B, 107-108)

Exchange institutions include three types of primary institutions for exchange. Firstly reciprocity could possibly be the oldest form of exchange, based on exchange of obligations. Helping others had not that much to do with altruistic gesture, but the expectation of receiving some form of help in the future was embedded to it. Much of S-D logic and its view of relationship is built on the idea that when actors treat each other appropriately, they will reciprocate and the relationship between actors will become one of solidarity and mutuality. The reciprocity also emphasises the fact that interactions and exchange happen repeatedly. Redistribution as an institution occurs when an authority or central actor collects goods and service capacity (money) for redistribution, taxation being the best example. The redistribution does not often happen equally among receiving actors but might be based on a need by some criteria for eg. social welfare. Public services (or non-profit organisations) can be seen as a classic example of redistribution, where value is redistributed by services such as education system, public health and social services. Market exchange enables service exchange. Money can be seen as potential to receive services for exchange, named as service rights in S-D logic. By paying wages, employer receives services from employees - skills and competencies as service potential and employees receive service rights. Hybrid exchange systems combine the earlier mentioned and variety of institutions for exchange takes place. (Vargo & Lusch, 2014B, 109-111)

If according to S-D logic, as earlier stated goods are appliances for service provision, all businesses are in the end service businesses and all economies in the end are service economies. By producing goods, a lot of knowledge and skill are embedded to the product, by engineering, design, market research etc. The indirect exchange might mask the fundamental basis of exchange, taking place in multiple organisations and through variable institutions, making the long chains between multiple actors complex. Operand resources are physical goods and tangible resources which are important, but even more the value lies in operant resources (knowledge and skills), which are always needed for making advantage of operand resources,

such as natural resources. In order to gain advantage from bulk, operant resources are need-ed for sustainable market creation. (Vargo & Lusch, 2014B, 15, 58-64, 64-68)

### 4.3.2    Axiom II: customer is always cocreator of value

The second axiom by Vargo and Lusch, (2014B) states that in S-D logic, customer is always cocreator of value. In contrast to G-D logic, where firm as a producer of services or goods, creates the value to the services or products in their internal processes. Criticism of firms using the term 'value added' when companies enhance their services or goods by its form, time, place and possession  might be described by "value added", even if in these processes company resources are used excessively, the value actualises only when customers use these offerings. So when products weight in the shelf to be picked up, by G-D logic they have value, since producer has used their resources for making them, and when customer buys and uses them, they destroy this value. (Vargo & Lusch, 2014B, 15, 68-71)


According to Grönroos (2000), value for customer is created through a relationship by the cus-tomer and part of this value is created in interactions with customer and service provider. The focus is not in the products or service but on the customer, where value emerges for cus-tomers and is perceived by them. He continues that focus of marketing is value creation ra-ther than value distribution, facilitation of value-creating processes, rather than distributing the ready-made value to customers. Vargo and Lusch summarise  that all value creation hap-pens in connections with our environment and resources; Value cocreation being a process that actors go through of increasing viability of a system via the development of specialised and applied knowledge and skills, service exchange, and resource integration. System viability is portrayed as broader concept than well-being and it includes system adaptability, flexibil-ity and resiliency in addition to well-being  (Grönroos, 2000, by Vargo and Lusch, 2014B, 69; Vargo & Lusch, 2014B, 15, 68-71)


According to S-D logic, service producers can only make value propositions, since as earlier explained, the value is not embedded to the product or service but created and perceived by the beneficiary. Value propositions can be seen as promised benefit and invitation to engage with the firm to get the benefit. Also the expected cost of the service (not always portrayed as economic form). The value proposition of a company forms the base for traditional market-ing, directly or indirectly. Value propositions includes product, price, marketing communica-tion (promotion), distribution (place) and branding. All of the elements though should be fo-cused to the perspective of beneficiary, even if the value is being cocreated with communi-ties formed by branding expert, supply chain partners and even government, since eventually this contributes to the perceived service quality and value. (Vargo & Lusch,2014B, 71-72)

Service centred view is always customer oriented and relational. Why this is not always the case in G-D logic, is because service producers seem to give customers position, that excludes them from the value creation process. G-D logic also has had more focus to seeing the exchange of value as events, whereas S-D logic encourages to create relational settings, and continuity. How does this adoption of having a long term perspective is carried out, is often in the form of customer relations management (CRM) software and the estimations of customer's lifetime value (CLV). Sadly these technologies (CRM and CLV) tend to give quite a passive role to the customer, seeing them merely as operand object. Vargo and Lusch continue that the service producer oriented production is unable to meet the needs of certain group, such as B2B actors, instead this has created subdisciplines of B2B marketing and service marketing. Customer originated view of service emphasises that the customer orientation is present in all sequences taking place in the chains of service productions networks since eventually customer is the beneficiary. Another point of view is that instead of producing services for the customers, the goal should be shifted towards building a valued relationship. (Vargo & Lusch, 2014B, 72-74)

### 4.3.3    Axiom III: all economic and social actors are resource integrators

The third axiom of S –D logic states that all economic and social actors are resource integrators. Building on the inherent relational and customer orientation, it is crucial to see that the relationship is the joint, interactive, collaborative, unfolding of these reciprocal roles in value cocreation, that is required to gain the broadened value creation perspective. Vargo and Lusch describe both actors (service provider and customer) having a complex networks of resources affecting them in forms of market, private and public. Actors can thus be called as resource integrators, which form new resources in the integration process. Market resources are those created in the market place. Private resources are formed by the tangible and intangible resources. The private resources are formed in social networks where exchange happens, for eg. friend and family making favours and giving gifts, advises etc. and can be market facing or non-market-facing. Public non-market-facing resources are for example national defence, roadways and laws that regulate traffic, which are funded by tax money enabling the exchange for these service rights. Vargo and Lusch argue that service producers should see beyond the narrow scope of understanding direct use of services and doing consumer research. In marketing and planning services, there are several factors that impact the choices made. Tangled complex networks formed of operand and operant resources and the service exchange, market or non-market-facing ones, that should form the basis of service offerings. (Vargo & Lusch, 2014B, 74-78)

### 4.3.4 Axiom IV: value is always uniquely & phenomenologically determined

The fourth axiom of S-D logic by Vargo and Lusch define that the value is always uniquely and phenomenologically determined (experienced) by the beneficiary. Every incidence of service exchange creates a different experience that is unique for the beneficiary as instance and from the point of assessing value. This is because each instance takes place in different contexts that involves availability, integration and combination of resources and actors. Companies and government agencies might try to assess value, but it is done from their own perspective in contrast to their own goals, objectives and contexts, in the form of economic efficiency or productivity, but only customers or beneficiary actors can assess the actual value. (Vargo & Lusch, 2014B, 78)

### 4.4 Service ecosystems

It is crucial to include the term ecosystem to the context of service design, since the multi-layered network of actors and the resources involved directly or indirectly to the exchange of value is such a complex phenomenon. Vargo and Lusch argue that the outcome of this complex value exchange and its manifestations results as a society. Taking a broader perspective instead of looking at the actor to actor is that of a service ecosystem that helps us to understand the several factors that affect the value moving in these complex networks or an ecosystem. Ecosystem defined by S –D logic include four defining characteristics: They are relatively self-contained, they are self-adjusting resource integrating actors, share institutional logic and withhold a mutual value creation through service exchange. (Vargo & Lusch, 2014B, 158-161)

By self-containing, Vargo and Lusch refer to new actors, adapting to their position and concentrating on solving the challenge of their local survival, rather than trying to get to the best position in the ecosystem. The survival is always context dependent, what might work in some location might fail in other. Self-adjusting means in this context that service providers are able to adapt to the changing circumstances by regulating  actions and the agility that they transform might be crucial to them. The emerging circumstances for e.g. technology, creates opportunities even for the niche actors once they dynamically emerge, and that dominant institutions who wish to destabilise their actions might be in trouble if they are not ready to change their course. Sharing an institutionalised logic (rules) is essential for cooperation  and coordination of activities among actors in service ecosystem to create a structure. The communication failures are one type of institutional problem in service ecosystem operations by the language seen as an institution. Health and social care system is another example of institution that is created to take care of those individuals who have challenges with their well-being. What makes service ecosystems challenging for actors is that they are part several institutions, and the norms and how to interpret them, varies in different contexts from im-

plicit to explicit. Mutual value creation through service exchange calls for actors to invite and engage other actors by value propositions to get transactions. Since the actors in service ecosystem are loosely coupled and nested, emphasis on relationships is pointed out; it exists even before transactions take place. The invitations to involve in a relationship might be subtle, but the effort put in analysing and interpreting evolving context, based on that formulating an identity, leading to a vision (or new institutional logic), and putting those ideas into action, will pay of. (Vargo, & Lusch, 2014B, 161-167)

According to Vargo and Lusch (2014) Service ecosystem can be seen as a system of processes, where before and after the service exchange itself exist a process involving multiple actors with their individual processes. The value cocreation processes continue throughout the service ecosystem by every input, action, service exchange, creating a system of processes. Processes can be resources, but when actor can package the service performance of a process, service proposition can be made. The processes that start and continue beyond the customer interface, including resource providing and resource using actors are called process networks. Vargo and Lusch emphasize that in organisations, a customer process perspective should be more often observed while often organising the work force by production orientation (silos for every unit). Also more attention should be pointed to managing customer/supplier relationship process, since when challenges occur to customers, it might be difficult to determine who should start fixing the problem. (Vargo & Lusch, 2014B, 169-172)

## 4.5    Customers as value creators

Looking into service design methods, I was a bit irritated by the fact that many of them seldom had any definitions of value creation, co-creation and codesign, and these terms seem to be used quite loosely in different contexts. Grönroos and Voima (2012) have analysed the basic terms essential to service design, in order to define the roles of customer and a firm taking place in value forming and created defined spheres to gain concrete understanding. The value in general has also being assessed as the trade off, between benefits and sacrifices, but recently value perspective has shifted towards more holistic and experience based perspective, regarding value in the context of customer experience and part of social systems. (Grönroos & Voima, 2012). The value from customer perspective is defined that as customers increased well-being or as customers being better of some way (Vargo & Lusch, 2014B; Grönroos & Voima, 2012). Still as a downside, acknowledging that the customer might also be worse off, explained as service or some part of it is destructing value (Echeverri & Skålen, 2011). The terminology of value being created is widely used, and therefore used in this thesis too, but to be more accurate, the value for the customer emerges or forms while using the service or product, instead of value creation being any separate action (Heinonen, Strandvik and Voima, 2013; Echeverri & Skålen, 2011).

For this thesis, understanding value from the customer perspective is essential. Value from the provider's side obviously means receiving money as exchange of the service from the customer. Service providers have the opportunity in the encounters with the customer to co-produce, co-design, co-develop the service in mostly these interactions. Cocreation means that the customer is taken as an active part of service production, so that it will match their needs the best. In this process service provider gets important information for the production of their service through interaction with the customer. The customer perceived value is actually created only by the terms of the customers', they are the ones who determine the value from their perspective as value created in interactions and value-in-use of the service. (Grönroos & Voima, 2012)

Value creation as an all-encompassing process can be seen as chronologically continuing line, where in the provider sphere value creation happens in the exchange taking place between "back office resources", such as design, development, manufacturing. The front office is called the resources facing the customer as service delivery. The sequence continues as customer's sphere, as value creation in use, but in between these spheres exists a joint sphere, where value exchange between service provider and customer takes place as the interaction and encounter. Value-in-use defined value creation continues exceeding the providers sphere reaching all the way to the customer sphere, where the value creations is not seen that much as a single event of value exchange between actors, but to phrase it simply according to Grönroos & Voima (2012), customer is in charge of deciding how much interaction and in what form with the service provider exists at this stage. Even if by production oriented logic, co-creation is presented as providers dominating the process and participating the client to the value creation (Strandvik, 2013). The service providers' role is just to offer channels to participate themselves to customers value creation, even if any interaction at this point with service provider no longer takes place and the service usage and value creation could at this stage seen as happening independently, or at least by the terms of the customer, since service provider has not always opportunity directly to influence this process. This type of approach expands the understanding of value-in-use-view where the use is no longer seen as behavioural activity only, but also as individuals mental processes extending beyond the interactive process (Heinonen & al. 2010; Voima et al. 2011; Helkkula & al 2012; Grönroos & Voima, 2012)

### 4.5.1 Customer dominant logic

As an extension to service management research and S-D logic, recently a customer-dominant logic (C-D logic) has been proposed by Heinonen, Strandvik, Mickelsson, Edvardsson, Sundström, and Andersson (2010) as the original S-D logic, is seen more as a provider-dominant logic. As stated earlier, customer dominant logic expands the potential value imbedded in service or extended resource frame of a service. As earlier approach understood

value creation to be mutual, Heinonen, Strandvik and Voima (2013) argue that namely three aspects exists of value creation, first one of them stating that value is created by either the company, by the company and the customer together, or the customer alone. Grönroos & Voima (2012) state that potential value for the customer can be created by the firm alone and the firm is seen as the facilitator of value for the customer. However customers can be involved as co-designers or co-developers for the production of service in the back office functions and customers can influence these functions indirectly by giving feedback in joint sphere and in customers own value-in-use sphere if the customer decides to allow service provider to participate in their value creation processes. Depending on the form of the service, for e.g. open source technology or self-service, or digital community, customers might have a role of co-producers too (Grönroos & Voima, 2012).

Second aspect (Heinonen & al, 2013) takes into account that Value creation exists as the customer is being a passive or active actor. Customers role in this thesis is an active actor, defining value creation instead of the resource frame traditionally set by the company, being expanded to customers value formation in multiple tangible and intangible experiential spaces (biological, physical, mental, social, geographical and virtual), which reflect the customer's ecosystem and life sphere, uncontrollable by the service provider. (Heinonen & al, 2013) The third aspect by Heinonen & al, (2013) describe the ways how value creation can be seen as an activity based on an experience or on a mental experience. I argue that these do not exclude each other out in any ways, one can discuss matters in different levels. Still it is crucial to recognize the difference between these two approaches since in the earlier mentioned, value creation limited only to communication between customer and service provider and to the functionality of a service processor user experience. Instead it can comprehend expanded understanding of service as a meaningful factor in customers' life presenting in varying contexts' and part of their social networks. (Heinonen & al, 2013)

In this thesis service dominant logic's axioms and foundational premises by Lusch and Vargo (2014) apply. However Heinonen & al.(2010) and Heinonen & al. (2013)described customer dominant logic as an extension which emphasise customers position and role in value creation. They expand customer's position as definers and decision makers in value creation process, customers may choose their own role and level of participation and to which degree the service provider is taken into their value creation processes. From health promotion perspective, value creations aspect of beginning before the actual service encounter and continuing independently is important, since in the life line (or health continuum) of individuals, meanings, connections, resources are formed totally independently of service providers and contact to health care as the actual encounters can be relatively small parts in their own value creation processes towards increased well-being or good life .In other words in C-D logic customers have ownership in this process and service providers should be the ones who adapt to

customers life(value in use vs value in life). Value creation and formation aspects are understood by C-D logic, but other aspects of S-D logic by Vargo Lusch (2014B) are in line with C-D, such as resource integration and service ecosystem view, where actors are not defined but presented as generic .

## 4.6    Service as a multidimensional experience and a process

Helkkula (2011) has characterised the concept of service experience in order to gain ontological understanding of what is meant with this often undefined definition. She concluded that there were three categories depending on the context. Service experience can be characterized in phenomenological, process-based or outcome based sense. According to Helkkula (2011) the main focus of phenomenological characterization of the service experience is, that it is seen as an individual experience, which are usually internal, subjective, event-specific and content specific, and related to their social context. Vargo and Lusch (2014) referred to value being phenomenologically formed instead of experienced, with the notion of seeking broader understanding than just hedonistic pleasure. Helkkula (2011) continues that customers are often subject of the research but in addition, service providers representatives are experiencing the services well. In phenomenological characterisation the connection to the service can be direct or indirect (meaning in this context that the customer has not been in contact with the service provider or the customer has not used the service). Accordingly, service experience can be practical encounter or an imaginary one. (Helkkula, 2011, 371-376;  Vargo & Lusch, 2014, 78)

Helkkula (2011) continues to define service experience by process based emphasis, the main focus being on the architectural elements described as phases and stages, including often a time element and sometimes a chronological order. The subjects of the process approach studies are often customers, but other groups involved with the service are not ruled out. The outcome based approach emphasizes change or transformational element. Service can also be described as a process that affect customer's cognitive, emotional and behavioural responses, creating a mental mark; a memory. Helkkula explains outcome based characterisations of service experience as linking multiple variables or attributes to outcomes; such as pleasure variables, service quality, and quality, value, satisfaction, and relationship quality. Service experience in these studies is often measured through categories that might form the experience, and often might not be the main subject of the research. Experience in outcome-based terms often explores the immediate results, rather than seeing it as a longitudinal process. Also the focus is not on the individual using the service, and the service provider also might be seen as unit or organisation, instead of individuals in that are in charge of service encounter. This approach is used in research concerning B2B services, as well as customers. (Helkkula, 2011, 376-379)

## 4.7    Service productivity and value creation in health care

It's good to make notions concerning demand in health care, since in commercial marketing, the decision to buy something is based on individuals understanding of value, witch in this are defined by the benefits customer receive in relation to sacrifices, that besides the price include costs, that are being formed from the use, time and effort required in it. A need by the most known example might just be the Maslow's hierarchy of needs, where physiological needs lay the foundation and are followed by higher categories of safety, love/belonging, esteem/worth and self-actualisation. The need can be unclear for the customer to begin with, but customers have symptoms, which have led them to health care. In healthcare many of our needs might appear to be in the physiological level, but still exist also on other levels. Needs are present as social, psychological and situational dimensions just as the sides of our whole existence as humans being more than merely physiological. Desire is a wish for something that will satisfy some need. When desire or want is combined with ability to pay, demand has been created. (Lillrank & Venesmaa, 2010, 35-45).

Why in health care this type of commercial behaviour (consumerism) is fully not possible in public sector, is due to many reasons. First of all customers pay only fraction of production costs in public services. Information available for the customer to make such decisions, does not really exist in many occasions. For example in health centres, one is able to choose the place where one has a doctor dedicated to treat them, but there's often no information available, other than name to base the decision to. And also if the matter is perceived urgent, one wants to have the appointment as soon as possible and need to take what is offered. What comes to public preventive services, they can be seen as having a scope for customers not ending to a segment, where production costs are fundamentally higher in terms of treatments.

Lars Nordgren (2009) studied concept of service productivity in the context of health care. He found that values such as experienced health, quality of life, accessibility, trust, communication, avoidable suffering and avoidable deaths were areas that contribute to total value of a service, not only reduced costs, activities and outcomes. According to Nordgren (2009) "old" concept of productivity is misleading in health care, because it does not involve the contribution of the patient in value creation, just as Grönroos and Ojasalo (2004) argue in general about the traditional measuring of productivity in the service sector being misleading, because it does not involve the contribution of the customer.

Internal efficiency, as how to do, refers to volume measures, cost control and processes inside health care organisations. For example managing efficiency, this means that staff (which form on estimate at least 50% of production cost in health care) should treat as many patients in the shortest time that is possible, meaning that the amount of appointments per nurse or

doctor is maximised. But as Grönroos and Ojasalo (2004) stated, adjusting internal efficiency too much, will create changes in service quality (external value) in terms of total value of services (consisting of internal, external and capacity efficiency). From the customer's point of view, stretching the amount of patient per professional too far, might result in very short appointments during which professionals might not have enough time for them.

External efficiency, as doing the right things, refers to the experienced quality of the customer (Grönroos and Ojasalo, 2004). For example, a customer might before the appointment have expectations and plans to ask advice for many things that are bothering them. Once entering the appointment, they feel that nurse or doctor did not have enough time and they did not have the opportunity to discuss enough to make any sense and they go home confused and still unwell. Besides customer perceived quality, external efficiency also is linked to health outcomes of services contributing to public health. Accessibility is also important factor related to external efficiency in health care (Nordgren, 2009).

Capacity efficiency deals with how well the healthcare capacity is used. This is how well functions are coordinated and meets the demand (Grönroos and Ojasalo, 2004). In health care services this is challenging, for example in settings of an acute care where patients come unpredictably.(Nordgren, 2009)

Understanding health care as value creating service for creating external efficiency, concerns the interaction and roles between customer and service provider. Normann (2001, 126) in Nordgren 2009) sees that service provider should "approach customer's health-giving processes, instead of focusing on curing the disease". In these processes customers are subjectified into being active co-producers by becoming responsible for maintenance of their health, eating healthy foods, exercising and self-care (Nordgren, 2009). In lifestyle related diseases (for example type 2 diabetes, heart and circulatory system diseases and cancers) background factors such as obesity, lack of exercise, smoking and heavy consumption of alcohol have a significant role. In lifestyle or behaviour change, customer actually has overpowering role in relation to service provider, since they are the ones who make the decisions for healthier choices in their daily life. Norgren refers the role of service provider is more of being an agent, motivating and watching over (Nordgren, 2009). If one understands value creation and broader definition of health, health is not an absolute value or magnitude, rather enabler of well-being and capacity to function.

## 4.8 Health care as a service environment

Healthcare services create a complex network, in other words ecosystem, where service exchange happens between various service providers and customers. The main types of services

as business models are presented with examples. It is clear that each of the health care service units have probably features from more than one of them.

### 4.8.1   Common business models in health care

Christensen, Grossman & Hwang (2009) have described different types of service organizations with business models in health care, *Value adding process, Solution shop and Facilitated networks*. Value adding process describes highly specialised, targeted healthcare service, with a defined and often quite narrow focus. For example cataract surgery can be defined as a processes that is very similar between patients, and customers (for obvious reasons) have a very passive role in these services. (Christensen & al, 2009, 73-110) From the point of view of customers who are risky alcohol consumers, the vertical service selection with highly specialised skills possessing  staff is located in specialised addiction rehabilitation units (institutionalised) and for example in third sector as in  A-clinics, these do not contribute much to the early phases, the phase before becoming addicted.
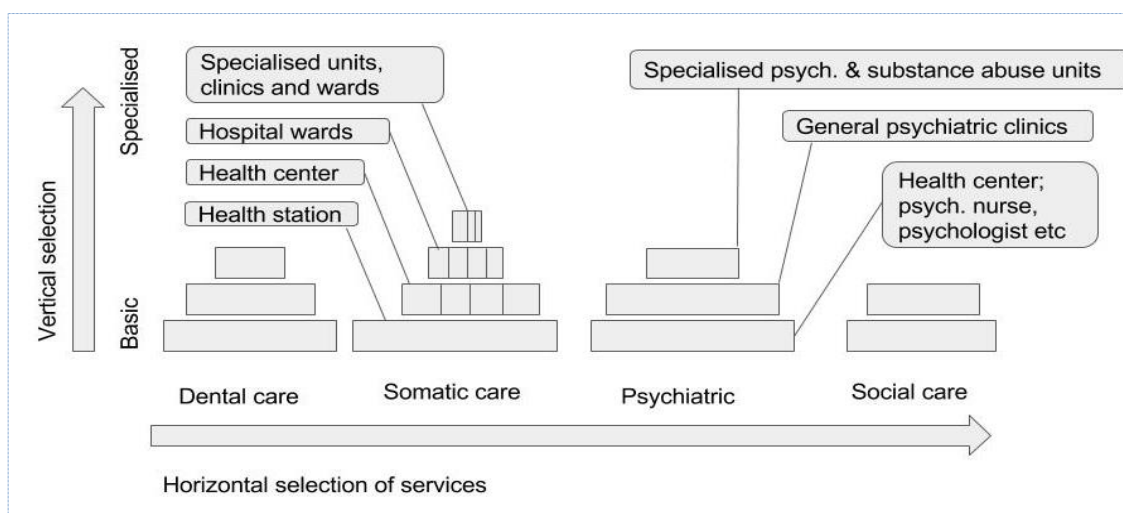


Figure 7:Vertical selection showing level of specialised skill and horizontal as orientations to specialisation

Solution shops can be seen as places where customers are diagnosed and treated. Customer's role is more active often in this context as in value creating processes and the cocreation of value is dependent on cooperation. Customers have to give information to provide opportunity to staff to come up with a solution. Health centres in the context of early intervention of alcohol abuse are in important role. (Christensen & al 2009, 73-110; Lillrank & Venesmaa, 2010, 35-45)

Facilitated networks are also Presented in Christensen's model and which is in their concept named as behavioural medicine (also one can understand life style dependent disease) Such methods often known as groups, are being used and have been used for decades in healthcare

context, for example weight management and other lifestyle change processes. Also publicly funded rehabilitation based on certain illness has a strong tradition of favouring group form activity, since besides the multi-professional group of experts, rehabilitation relies strongly on peer support offered by the group. Peer support accordingly to my professional experience, offers participants a level of such understanding and empathy on an emotional level that professional are probably not able to offer. (Lillrank & Venesmaa, 2010, 35-45; Christensen & al, 2009, 73-110) Also much of the value of peer support forms as shared knowledge in more detailed level and "in real life context" as practical advises contemporary to general level advice from experts. For example in the context of weight management and risky alcohol consumption, it's obvious that general level advises as "you need to reduce your calorie intake" or "drink less alcohol" are apparent to customers, but as advises do not contribute much in the practical level of learning how to manage.

### 4.9    Technology and digitalisation in healthcare

Technology has been considered as one solution to the ever growing costs of healthcare and treating the aging population. ICT has been seen enabling shortening of customer's paths in health care institutions, improving information transfer between actors resulting in better cooperation and is also believed to save costs in health care. (Hyysalo, Lehenkari, Hasu, & Miettinen, 2003). With technology utilising services it is possible to enhance people's possibilities of taking care of their own health and well-being. ICT also enables new type of services in health and social care, and ensure also access for those who live in remote areas (Salminen, Hiekkala, Stenberg & Hiekkala, 2016).

E-health or telemedicine in short stands for examining, monitoring, treating patients and educating healthcare staff with the help of information and communication technology. This in terms of traditional appointments wipes away the demand of physical existence in the same place, but also in some contexts where there is no urgency and demand for synchronised communication, it brakes the demands of time dimension, for example text messages and e-mail communication. In rural and remote destinations the demand for physical existence saves time for not needing to travel long distances. Also technology has a key role in inner consultations between specialists. For example video consultation between patient and physicians has had good results, only patient groups as demented elderly and mentally challenged did not accept them that well. Possibilities are endless, the ability to utilise specialised skills from a distance, equalise health care, since the access can be gained from anywhere with the help of technology. An extreme example is a robot, where with the help of video, surgeon is able to operate from distance by the information of the hand movements transferred to a location where the patient is. (Lillrank & Venesmaa, 2010, 185-193).

As an example, the value of incorporating technology, means that it can facilitate effective transfer of information between actors, enable communication and if other people are involved enable networking. Some examples of technology utilising services for heavy alcohol consumption are presented.

### 4.9.1  Examples of technology in substance care

Publicly funded national SADe-program (pacing incorporation of digitalisation and democracy in Finnish public sector, 2009-2015) supported the creation of innovations based on technologies also in health sector. Among other technology utilising creations, a self-help guide in early intervention of alcohol consumption called Gaining control over alcohol consumption. This self help guide was created originally by Koski-Jännes (1996) at A-clinic foundation. It was made available online and updated by additional technologies, such as videos in 2013 in cooperation with HUS (Hospital district of Helsinki and Uusimaa) and published in HUS Mielenterveystalo (The guide is available online: www.mielenterveystalo.fi/aikuiset/itsehoito-ja-oppaat/itsehoito/ juomisen_hallinnan_opas/Pages/default.aspx)

Jeppe juomapäiväkirja, a "drinking diary" is an individual program for reducing alcohol, stopping or monitoring one's alcohol consumption. It is recommended that one uses the program for at least six weeks. To use the program a registration required. Program is available in Finnish and as a mobile version also. The program will help one to evaluate and reflect on their drinking, decide goals; to reduce or stop, make one realise the situations and moments when more alcohol is taken than one wishes to, helps to change, maintain and monitor progress, get over relapses, monitor your progress with a professional. Program is provided by A-clinic Foundation. (It's available online: www.paihdelinkki.fi/fi/oma-apu/alkoholi/jeppe-juomapaivakirja)

MinderDrinken is an interactive Dutch self-help intervention for problem drinkers, based on cognitive-behavioural and self-control principles. The program is structured into 4 steps: 1. preparing for action; 2. goal setting; 3. behavioural change; and 4. maintenance of gains and relapse prevention. The site also provides information on alcohol and treatment services and a moderated peer-to-peer discussion forum. The recommended treatment period is six weeks. In a randomised trial, intervention was shown to be effective in reducing problem drinking. (www.minderdrinken.nl, 2017)

A-clinics' virtual rehabilitation (Verkkopohjainen päihdekuntoutus) was launched at 2016. The clients who have adopted this service include customers, to whom it is their first contact with substance abuse service system. Also those who live in remote areas and need to travel due to their work have found it useful for the sake of not needing to be physically present at the

appointments. A-clinic's virtual rehabilitation consist total of 7 appointments with a professional specialised in treatment of addictions. In the first meeting the focus is to assess the situation and come up with a treatment plan with goals.
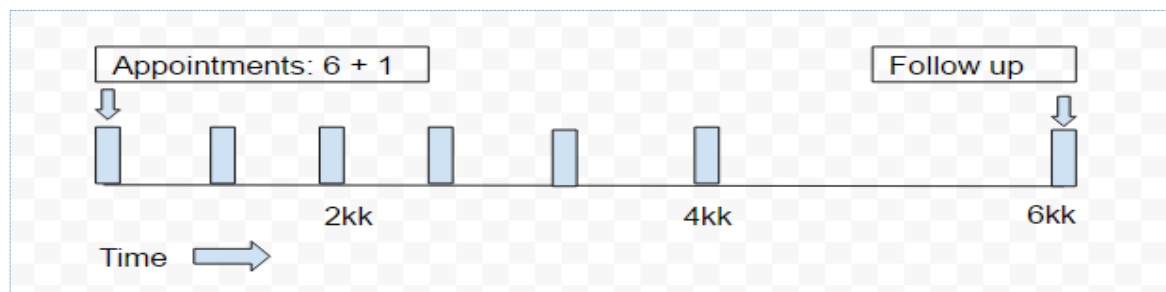


Figure 8: A-clinic Foundation's virtual rehabilitation process

Important part of this virtual intervention is cognitive therapy based exercises that client performs by themselves in between the meetings. From every individual exercise completed, customer receives feedback from the professional, the effort of independent work for the customer takes from 1 to 2 hours per week. The core program lasts 4 months and a follow-up appointment is arranged two months after the last meeting. All of the meetings in this process can be carried out as face to face meetings or throughout skype. (Ahjoniemi, 2017)

**4.10** Service design

Services have probably existed as long as humans have and have been planned, to some extend at least. The shift from agricultural to post-industrial society by globalization and technological development has turned the services to be the biggest branch of industry making service design an important area of expertise. Service design as we know it became a discipline in 1991 in Köln University. The roots of service design become from the world of design, where development methods and processes hold a strong position. Since the discipline of design always acknowledges the context, designers use methods and processes for example to understand the combination of cultural contexts of action, creative and analytic approaches, as well as prototyping and visualisation of intangible elements. (Polaine, Lovlie & Reason, 2013, 3-19; Tuulaniemi 2011, 24-25, 60-65)

Stickdorn (2011) describes service design being more of a way of thinking, a process or a toolbox compared to restricted area of competence. It's a combination of methods used in design, engineering, management and social sciences. These areas of expertise can use this mindset as a common language while developing successful services. Service design has also been referred to be a holistic way for a business to gain comprehensive, empathic understanding of customer needs (Stickdorn, 2010, 28-34) Service design is not an abstract design of customers' feelings and experiences, it's a concrete action that combines customer needs

and expectations with service providers' business goals to form services. With visualization and models the intangible parts of the service can be made concrete. Tuulaniemi (2011) continues that the services that are produced by service design are to be economically, socially and ecologically sustainable. (Stickdorn 2011, 2010, 28-34; Tuulaniemi, 2011, 24-25)

Applying the similar approach to designing services as to the design of products potentially leads to customer-hostile instead of user-friendly results. Since products are also discrete objects; making, marketing, and selling products tend to be separated in companies into departments that specialize in one function and have a vertical chain of command - they operate in silos. Every department is focused to increase the efficiency on their share in the value chain, resulting in possibly ignoring the complete service quality for customer. These departments are important for management purposes of the company, but do not contribute from the customer perspective, if essential parts of service diminish the experienced total value. Polaine & al (2016) describe product oriented design, experiences in bits which means that the entity of service has to work in order to create value, not just some division of it. The industrial legacy of treating services like products means that services often underperform and disappoint because they cannot be fixed in the same way as problems with products. Services are about interactions between people, and their motivations and behaviours. (Polaine & al, 2016, 18- 23)

### 4.10.1 New service development

The developing of new services varies by the purpose of the service and the existing situation in the service environment. Fitzsimmons & Fitzsimmons (2000) describe the typology of a new service, that was originally created by Lovelock (1984) based on Heany's (1983) category of product innovation. New services in new service development (NSD) can be divided into radical innovations and incremental innovation by their extent. Radical innovations include major innovations creating services for markets not yet defined and are often technology based. Start-ups bring new services most often to a market that is served already by existing services. Companies might also come up with new value proposal to their already existing customers. Incremental innovations include service line extensions based on augmentations of the existing service line such as adding new menu items, new routes and new courses. Service improvements create changes to the features of already existing services, for example customers self-service as cashiers. Style changes are the most common types of "new services", which can be described as modest forms of visible changes having an impact on customers perceptions, emotions and attitudes which do not change the service fundamentally, only its' appearance. (Fitzsimmons & Fitzsimmons, 2000, 3-5) The types of new services to be developed, do have an effect on the service design process, for e.g. assessing the starting point of service environment. New service development concerns all the activities involved in realizing new service opportunities, including product or service design, business model design,

and marketing. (Boundless, 2016) In this thesis the main focus is the service design crucial for developing a new service concept.

### 4.10.2 Service design process

Service design processes include approximately the same few core phases. According to Miettinen (2011, 35 in Miettinen & al, 2011) in service design projects, all parts of the process are rarely included to the project. In the beginning of the process and along, what is characteristic is the iterative nature of trials and enhancements. (Stickdorn, 2011, 122; Miettinen & al, 2011, 32-35)
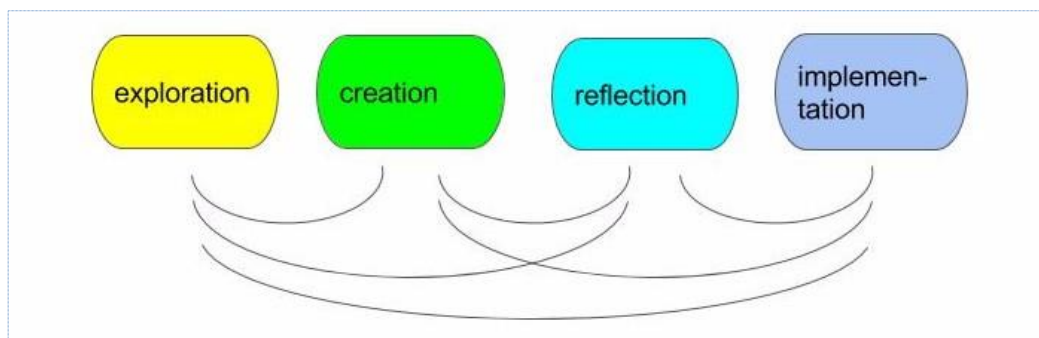


Figure 9: Stickdorn's (2011) service design process

Stickdorns (2011) process consist four separate phases; 1. Exploration, 2. creation,3. Reflection and 4. Implementation. In (1.) exploration phase the aim is to understand the business of service provider and discovering problems of customers (and potential customers as well). Stickdorn emphasises the importance of visualisation in order to tangibilize the results. (2.) Creation phase concentrates on ideas and concepts and is closely combined with the stage of reflection (3.), accordingly these stages are difficult to separate in reality. The crucial part of this phase is also making tangible those abstract elements that are included to the service. 4. The implementation phase includes the effort that is needed to get the service running both from the back office and front desk personnel, in the digital services, employee role might be less fundamental. Stickdorn adds, that even if this is the last phase, design process continues after this as seeing the whole entity of the service, and seeking how to improve continuously. (Stickdorn, 2011, 122)

Similarly to Stickdorn's approach, Moritz has divided the service design process into six separate stages, understanding, thinking, generating, filtering, explaining, realising. Moritz (2005, 149) visualises his own view of the process as a spiral or continuous form. The main emphasis of having six separate stages in the process for Moritz is to separate the service design process from general design process, to point out the context of services. Similarly the design process in general is characterised by the iterative nature, where stages might take place

several times, simultaneously, or after each other in no separate order. Moritz (2005) points out five key aspects of service design that differentiate the discipline from traditional service development. These five factors include: 1. Service design truly represents the client's perspective 2. Service design addresses the unique features of services 3. Service design integrates expertise from different disciplines 4. Service design is interactive 5.Service design is ongoing.
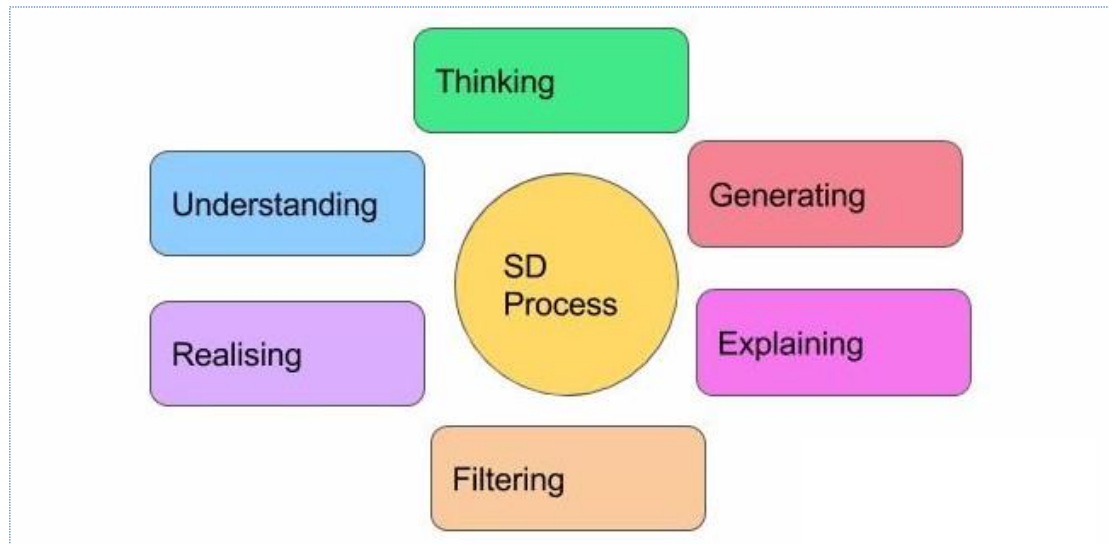


Picture 1: Moritz's (2005) process  as a spiral

Moritz's, (2005) process phases

1. Understanding  is about finding out and learning about clients, context, the service provider and providing insights. Identifying the essential knowledge, insights, resources.
2. Thinking is there to give strategic direction for the project.
3. Generating focuses to developing concepts that are relevant, innovative and provide solutions.
4. Filtering comprehends evaluating and selecting the best ideas, results and solution to combine.
5. Explaining is to make concepts, ideas and solutions, tangible, available to the senses, visualisations and mapping, demonstrate the future possibilities by giving an overview.
6. Realising, handles the final plans of implementation and delivery, it provides guidelines and plans. (Moritz, 2005)


4.11   Summary

To summarise the information in this chapter of service business is based on some aspects being more essential for the thesis  than others. For the thesis, the basic difference of G-D and S-D (C-D) logic is that in the latter, customer has an active role, which can be compared with promotive approach in health promotion. The active role recognises customers power in value creation, starting before and lasting beyond the event of interaction with service producer. also Value for customer is something that can various stages of process, also on multi-

ple levels, physical, mental, spatial etc.,not forgetting the social surroundings. Service experience is a multidimensional experience refer the last sentence of value creation. Besides individually and phenomelogically formed experience, service experience can be defined as a process too. Value can be created in some situation alone, but usually the process involves multiple actors and together with customers these form complex networks where exchange happens between several actors creating value in exchange, these are called service ecosystems. Besides complex exchange value creation has also to do with resource integration. Actors as private people or companies have resources as physical ones (tangible) and as knowledge and skills (intangible) and often the competitive value is created through knowledge and skills in these complex networks and different institutions.

The difference of customer insights and information is that in order to create true insights one has to understand challenges of the branch, market situation and usually get to know the customers so well that by analysing this information from various sources, one can come to such conclusion that might be hard to determine based on just one type of information alone. This differs from customer needs, because once need is expressed by customers, often there are already services available for that particular need. Expectations are also outspoken wishes or demands towards the service and how well those expectations are acknowledged, the better service provider can produce service that customers are satisfied with.

Service productivity in health care is often understood as traditional type of value (internal and capacity efficiency and sometimes technical value as external efficiency), where besides the customer is passive, and excluded from the value creation. Lately technology in health care has also been recognised in terms of customer's value creation, but perhaps even more could be done with digitalising services. In health care most of the costs are formed by the labour, we need people to take care of people. However while technology has improved the knowledge transfer between the actors in several forms, it could also facilitate forms of co-production and self-service more perhaps. Also health care as service surroundings differs from the commercial marketing, that the legislation defines quite far the actions and the roles in public sector. Also publicly funded care collects only minimal payments of the total costs of the service from customers since they are funded by taxes and other payments. Customer segmentation is challenging but not impossible, once acknowledged that the nature of help people need differs between citizens.

## 5  Constructive research approach

Constructive research belongs to the field of applied sciences, innovation construction utilises results of basic research; predictabilities, regularities and characters. In this thesis, even if the customers are the starting point for planning the new service concept, as a health care service, it has to follow to have theoretical grounds of health promotion. The constructive

approach presents questions of are we able to build a certain innovation and how useful is that innovation? (Järvinen & Järvinen, 2004, 103-127). Constructive approach does not exclude any methods as mixed methods approach, such as the methods of service design that are being used in the context of theory of service dominant logic and customer dominant logic as an extension to emphasis towards customers important role as a definer of the value. Why case design as a qualitative method was not applied, is a good question, but according to Kananen (2013, 29 ) the emphasis of case research is *understanding* rather than *change* itself, as in this thesis the aim is to create a new service concept. Planning something new, a service concept refers to that something will change.

Research questions:

1. Customer insights and expectations towards services concerning early intervention  of heavy or risky alcohol consumption in health care
2. How does the current service system responds to these insights and expectations
3. What would be the ideal service concept based on these customer insights and expectations
4. How do service design methods fit  planning  health promotion interventions

Another mixed methods approach namely action research does not fit this thesis, is because in action research approach, researcher has an active role in the research process, often being active part in practice of the core process or the organisation that is being developed. In this setting, this is not the case, even if I work in health sector and early intervention of alcohol consumption intervention is a part of my professional tasks as an occupational health nurse. This development work does not happen in the context of any organisation where I have any professional influence. In action research, one as a researcher, has to be able implement the change in practice (Kananen, 2013, 27) or act as a change agent. Since with the limited resources and implementation phase is not included in the new service concept. (Kananen, 2013, 27; Kananen, 2009)

From research applying multiple approaches, constructive research as an approach has been seen having quite a lot of similarities with innovation research and service design. Constructive research approach aims to get practical solutions that have theoretical basis. These solutions ought to serve business units and research communities by creating new knowledge. The abduction that separates multiple approaches research (applied research) has an essential role in constructive research, where the aim is to combine theoretical grounds to the problem and the solution. (Ojasalo, Moilanen & Ritalahti, 2014, 65-70) For example health promotion research has often been criticized for being having positivistic approach and contributing less to everyday complexity of human life.  (Ollila, 2005 in Koskinen-Ollonqvist, Pelto-Huikko & Rouvinen –Wilenius, 2005; Tones & Tilford,  2001; Kananen, 2009).

A constructive research approach produces innovative constructions, that are aimed to solve actual problems in real world, that are theoretically argumented, contributing value for the research in science. In this thesis the advantages of constructive research are manifested as gathering the preliminary understanding or starting point based on theories, research and statistics, practical empiric knowledge of current service systems and customer's expectations. Challenges and solutions that emerge during customer oriented development processes are likely to be practical and act as starting point for alternative service concepts. In this thesis, customer expectations and customer insight are the guiding lead for constructions, on the contrary to traditional approach in health and social care. The service networks should be shaped by meeting the needs of the customers instead of production oriented thinking, since according to customer dominant logic the value of the service actualises in the life of the service user (Helkkula, Kelleher and Pihlström, 2012;Kasanen, Lukka & Siitonen, 1993)

One of the challenges in constructive approach is the evaluation of the functionality of a construct. The iterative interviews with potential users of the service give some implications, though one has to admit, that this is a concept not to be implemented during the development project. (Ojasalo, Moilanen & Ritalahti, 2014, 65-70) Järvinen & Järvinen (2004) combine constructive approach with design science and suggest that concept, model, method and realisation as results of innovation can be evaluated by a separate scale and they continue by presenting that March and Smith (1995, 251-266 in Järvinen & Järvinen, 2004,103-127) have suggested an evaluation protocol. From their suggested scale, Järvinen and Järvinen see that for a concept, the most important criteria is that it is easy to use, since conceptualising or creating concepts in innovation can contribute to some functionalities and cooperation in the context of concept, there is no value for changing something for the sake of change.

They continue by arguing that a *model* that is not yet implemented, should be evaluated by the final construction, a realisation how it "ought to be". The more into detail the desired or ideal construct would be described in the context of practice on the behalf of general usefulness and other effects, the better one is able to evaluate it as if it would be implemented. *Method* can be brought as a side product for realisation of an innovation model, a means to be able to implement the innovation. A method can be seen as a utilising a technical, social, informative resources in a new way to implement the model. The steps of method, include instructions to solve problems and the criteria for evaluations is concerning the fact that it  supposed to be in some way better than the best of previous methods. (Ojasalo, Moilanen & Ritalahti, 2014, 65-70; Järvinen & Järvinen, 2004, 103-127; March and Smith 1995, 251-266 in Järvinen & Järvinen, 2004,103-127)

Constructive research process

1. Find a practically relevant problem which also has research potential.
2. Obtain a general and comprehensive understanding of the topic.
3. Innovate, i.e., construct a solution idea.
4. Demonstrate that the solution works.
5. Show the theoretical connections and the research contribution of the solution concept.
6. Examine the scope of applicability of the solution
(Kasanen, Lukka & Siitonen, 1991, 301-329)

The constructive research process in this thesis is combined with the process of service design and theory of customer (and service) dominant logic value creation and health promotion. The steps from 1 to 4 are conducted as service design process phases 1-3, explore, create, reflect. Step 5 where theoretical connections are presented and with service and customer dominant logic and value creation, also health promotion theory is presented from intervention planning perspective. Applicability of concept is presented as business model, as well as other paragraphs where practical aspects are described and finally the concept is assessed.
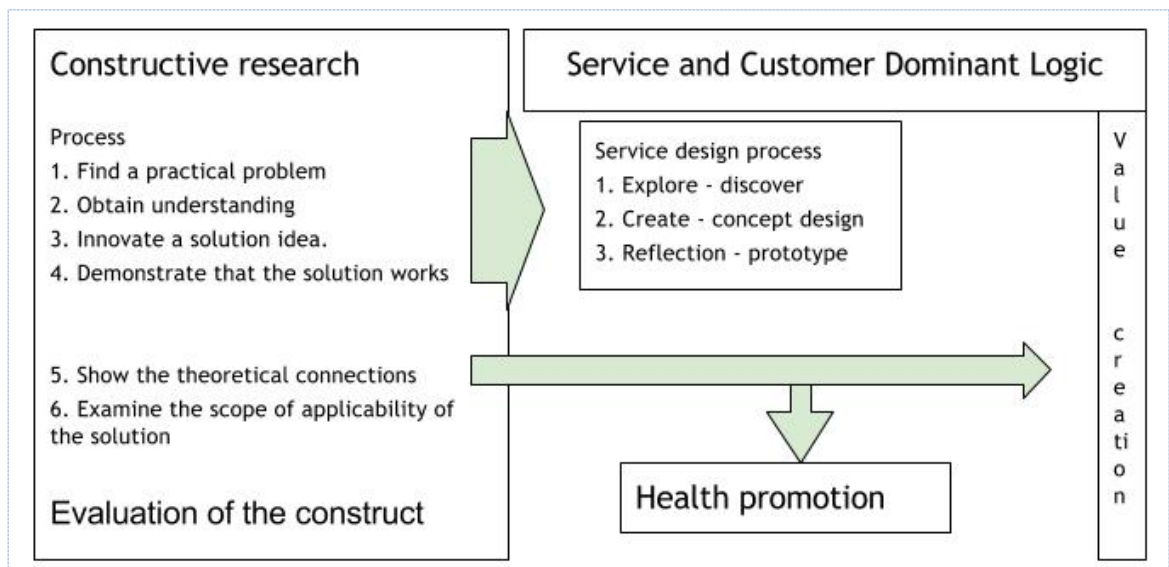


Figure 10: Theoretical frame & research process

**5.1**  Snowball sampling and service design methods

This thesis combines service dominant (S-D) logic and customer dominant (C-D) logic as the main definer and actor in value creatiom, as well as health promotion theories, but mainly emphasizes S-D and C-D logic by applying service design methods. However when developing health care services, special attention needs to be paid to ethical aspects as a principle of health promotion. As an ethical principle in health care, science or scientific approach is also characterised by the principles of utilisation of widely approved methods, such as best practices or "evidence based" methods. In this thesis chosen methods follow the principles of service design and such methods are applied that provide answers to research questions. Because of the sensitivity of the subject, as an ethical aspect to protect the target group and

get more "honest" description of their needs and wishes, it was essential to withhold from group based methods widely applied in service design and instead build customer insights and codesign through individual meetings. Constructive research has the characteristics that do not rule out or the define strictly the methods that are available.  As an approach it highlights more the practical aspects of the development work, and the methods serve the goal of creating new service concept.

As a consideration concerning this type of study is to recognise that (heavy) alcohol consumption is stigmatizing. By Heckathorn, (1997) "hidden populations" have two characteristics: firstly there might not be accurate sampling frame, since the size and bound of the population relies on estimates. From the perspective of this qualitative type of mission to reach expectations, wishes and thoughts for the development of service concept, the first characteristic of sampling frame size quantity is irrelevant. Secondly, strong privacy concerns exists, since the members of "hidden populations" are involved in activities that are considered stigmatizing and in order to protect their identity they might give unreliable answers. (D. Heckathorn, 1997, 74) Very good example concerning the research of alcohol consumption is Finnish national statistics. The Finnish alcohol consumptions statistics calculated based on the purchased and imported alcohol, are up to three times as high as the estimates that have been calculated based on interviewing individuals about their alcohol consumption (31–45 or 27–39%)  (Huttunen & Mäkelä in Mäkelä & al.2010, 27)

However in this thesis the alcohol consumption is not being researched, instead, information concerning expectations towards digital services developed to decrease alcohol consumptions is the issue. Group based methods are discarded not to offend anyone's rights for retaining privacy and to avoid causing awkward situations. Heckathorn (1997) describes alternative method, snowball sampling when traditional methods are unreliable and target group is hard to reach. In snowball sampling technique, existing study subjects recruit future subjects from among their acquaintances. (Heckathorn, 1997). The snowball sampling, also known as chain sampling, or respondent-driven sampling is used in this study to reach target group for the theme interview and service design sessions.

Also other strategies have been used and suggested in context of hidden populations, one of the most recent successful approaches have been internet based surveys (Duncan, White & Nicholson, 2003) in a case of non-abusive illicit drug users. Before the internet, and while doing historical research of hidden populations, researchers have been forced to investigate smallest clues of information from different type of archives, criminal records, patient records, child protection services records in order to get a grasp of the existence and form of phenomenon in the past (Häkkinen & Salasuo, 2015). However for the sake of developing a concept, in depth interview or service design session seems like the best alternative for

achieving needed understanding. And even if in this project the target group is not medically labelled to the category of stigmatised (people who are addicted to alcohol), the cautious approach ensures that unnecessary harm is caused, since individual attitudes might differ.

Since the idea is not to research any quantitative measures at this point of service design process, but to build deep insights of customers by gathering thoughts, needs and wants concerning services of early intervention of heavy alcohol consumption, at first a theme interview seemed a good method for that, the thought was later discarded. Hirsjärvi & Hurme (2008, 34) emphasize the interview as a method for encountering individuals as subjects, with a possibility to present information concerning themselves actively and freely. It is also possible for the interviewer to ask clarifying questions and confirm that understanding is shared. Even for creating deeper understanding asking for arguments is possible. The sensitivity is an issue, that divides researchers werther to use interview or not for achieving such a distance. (Hirsjärvi & Hurme, 2008, 110) Presumption is that a sample of 7-8 participants would start to give saturated data, but if not so, more can be recruited. The traditional type of alcoholism takes around 10 years to develop, so to rule out teenagers and people under 25 years old is possibly a reasonable choice. The target group between 25-65 would serve best the traditional type of alcoholism, the consumption increasing after 35 and peaking aroud 50 years of age.

The most important exclusion criteria is difficult dependency to alcohol, because this group likely needs more extensive and intensive services, at least in the beginning of their rehabilitation. What makes this concept to be early type of intervention is the principle that person has not yet developed alcoholism, since the goal of the treatment differs meaning they don't need to aim to sobriety. Also those who do not use alcohol at all, might find the interview disturbing and could not perhaps contribute so much.

5.2    The plan for the  service design sessions

Here is the plan for the service design sessions. The methods chosen are presented and explained why they have been chosen for this process. The Customer Journeys are examples of services that are some available to explore experiences associated to such services. As Helkkula (2011) described, service experience can be also imaginary. Also simulation of service surrounding and service staging of mini-intervention will help to create the experience.

**Stucture of service desing sessions**
(Background questions completed by Audit and alcohol consumption)
1.Discovering the problems and expectations: personas, 5 why's
2.Mini-intervention simulation: Service staging, Customer journey Map
3.Virtual self-help program: Customer Journey Map & simulation
4.Expert lead virtual program: Customer Journey Map

5.Service by people: Prototype as Customer Journey Map

6. My service:  Prototype as Customer Journey Map

(Persuasive systems approach features list  as hints)

Background questions are integrated to service design sessions, since they give information of readiness and capabilities of adopting technologies. Questions also orient to thinking virtual technologies in lifestyle or behaviour change context. Since service design is emphasized, the interview is kept short. To indicate that these people fit the target group their alcohol consumption, gathered in the context of service staging as the mini-intervention, is described in short, as are their concepts. Interviews and service design session are kept in Finnish and translated for presenting the concepts.

Background questions:

Age, is one in working life or studying etc.

Do you use a computer / tablet / mobile phone every day? When and where?

Are you using apps or social media weekly?

Do you know some wellness / health applications or internet services or sites?

Have you tried any lifestyle / health oriented applications and for what?

Why was it good / bad ?

Alcohol consumption Audit and total consumption

1.Discovering the difficulties and expectations of customers concerning early intervention of heavy alcohol consumption by Personas and The Five Whys

There are various service design methods presenting literature available. However since the discipline of service design has not existed that long, different sources of service design described pretty similar methods by slightly different names. Since the basic idea for codesign in the spirit of cocreation is quite similar, similar components of storytelling, presenting scenarios of sequences of services by visualisation, (role) playing are often present. For the clarity and to reduce confusion the design methods are chosen from one source, by Stickdorn (2011).

Personas were created in order to create such distance to which Hirsjärvi & Hurme (2008, 103, 34-35) refer, where people taking part of this interview could feel comfortable sharing their thoughts through these characters and avoiding putting themselves as targets, since alcohol consumption can be very sensitive and personal subject. Stickdorn (2011, 178-179) describes personas method as good tool for representing a certain group with shared interest. However as discovered earlier, the target group of heavy or risky alcohol consumers are a very heterogenous group consisting of regular people, only defined by their age as being

adults. For that sake Personas' story is kept relatively short not to give too specific definition, letting room for imagination of those being interviewed and able them to relate to these personas better, since for example their age is not defined. The story behind Maija and Matti, the Personas, is created to describe their situations for 5 whys and they are also intended to adventure through Customer Journey Storyboards for creating such distance where people feel comfortable sharing their thoughts through all phases. Stickdorn continues that even if  Personas are imaginary, they are a collation of research stage of project embodied into these customer profiles.

MATTI and MAIJA

The Five Whys are a chain of questions used for exploring deeper motivations than just user experiences that uncover the motivations related to a specific problem. (Stickdorn, 2011, 166-167) In alcohol related heavy consumption and risky use it seems that seeking help is difficult due to stigma among other things. The causal pathways formed by answers to questions might concern invisible steps of service and help service provider to classify these problems as internal or external. (Stickdorn, 2011, 166-167) The 5 questions were not defined too far, since they were supposed to reveal motivations of customers without setting any presumptions or leading them to any direction. Also a "success story" was described in order to seek understanding of expectations towards positive experiences concerning early intervention  of heavy alcohol consumption. The results will be displayed in visual form, hopefully forming themes related to the subjects.

THE FIVE WHYS

Maija
"For Maija things have been a little bit worse lately. Her employer is dissatisfied with the constant delays and the failure to do the agreed work. Maija has also received a warning at work after one Monday, since she showed up work smelling like alcohol and appeared to be drunk. Maija has financed her late night partying and taxi drives by taking quick loans and is now facing a circle of debt. The rent has not been paid for several months and last week she found an eviction notice among her mail. Ex-husband has tried to get Maija to get help several times. The couple's children no longer go to visit their mother, at all, after the kids said that "mother was acting funny".

Could you tell me a little about why do you think Maija has not sought any help? Specifying question, until 5 reasons are received

Figure 11: the Personas Maija and Matti

Matti

"Matti is now doing so much better than a few months ago. Earlier he had a tendency of getting himself into arguments and fights having a night out, even though he was also known as a funny guy to hang around and someone who could enlighten the whole atmosphere. In addition, earlier he often suffered from sleeping problems, feelings of depression and anxiety symptoms, which were associated with the heavy drinking."

FInally 3 months ago he got  help, and he was happy with the help he received. What might have been the factors behind Mattis successful experience in seeking help? Specifying question, until 5 reasons are received

2. Mini intervention: Service staging, Customer Journey Map

Service staging brings kinesthetics and emotions into the design process, it also brings understanding of real-world situations closer in which the service is delivered (Stickdorn, 2011, 166-167). In this section the people who participate to the service design sessions are being introduced to mini-intervention protocol as in real-world. This is also a way of retrieving background data from people taking part in service design sessions. I had to think if it is ethical to assess alcohol consumption, without going through the protocol of brief intervention with them if needed. Since part of my daily work for 10 years has been making health examinations (to which Hirsjärvi & Hurme (2008) refer as therapeutic interviews) where to whole point is to guide the situation and communicate in order to try to have an influence on customers so I had to concentrate forehand not to. I decided not to straight comment their alco-

hol consumption or Audit points, instead talk the alternatives through the Personas. Only if someone would have seriously alarming situation I would intervene their situation in person.

Service Staging: As a part of doctor's or nurse's appointment or in context of health examination, this is how Matti and Maija might be confronted of their use of alcohol.

Filling the Audit form with a person and short discussion of alcohol consumption. Informing of what is mini-intervention and possible alternatives based on Audit score and alcohol consumption Maija and Matti might be facing.

Mini-intervention
Assessing the alcohol consumption together and how it takes place in their life, informing of healthy amounts and health effects of risky consumption, asking if one is ready to reduce and coming up together with a goal and how to reach it in their daily lives. Agreeing on a meeting later to assess their progression and thoughts about the change.



Figure 12: Customer journey of Mini-intervention

Customer Journey Maps provide vivid but structured visualisation of service users experience. Identifying the touch points where users interact with the service is crucial. The touch points should be connected into a journey. Customer Journeys can be formed around Personas. Customer Journey Map is used to provide an overview of factors influencing service experience

from the perspective of the customer. Touchpoints can be formal or informal. The overview provided by Customer Journey Maps enables identifying the problem areas of a service and areas for innovations and this allows further analyses. Customer Journeys provide a way of comparing several service experiences and by using the same visual language, it is possible to compare between services. (Stickdorn, 2011, 158-159) The characters of Personas move along the Customer Journeys and people taking part in service design session are encouraged to express their thoughts, emotions, opinions, suggestions and ask questions at any stage.

The Customer Journeys will be all visualised in same manner, using Storyboards as cartoon type of sequences of service, which is the most used form for telling the story of service situations, either real life or imaginary. Storyboards are also a format for service prototypes. (Stickdorn, 2011, 186-187) The Customer Journeys are again travelled though Personas. Encouraging people taking part in service design session to express their thoughts, emotions, opinions, suggestions and ask questions at any stage creates data, which is important for creating empathy, but also points out the phases that are considered important for innovations.

3.Online self-help program: Customer Journey Map & simulation

Publicly funded national SADe-program (pacing incorporation of digitalisation and democracy in Finnish public sector, 2009-2015). Among other technology utilising creations, a self-help guide in early intervention of alcohol consumption called *Gaining control over alcohol consumption* was updated. This self help guide was created originally by Koski-Jännes in 1996 (A-clinic foundation) and it has been updated in 2013 in cooperation with HUS (Hospital district of Helsinki and Uusimaa) and published in HUS Mielenterveystalo (The guide is available online: www.mielenterveystalo.fi/aikuiset/itsehoito-ja-oppaat/itsehoito/juomisen_hallinnan_opas/Pages/default.aspx)

Customer journey map is used together with a short presentation of what is available online.
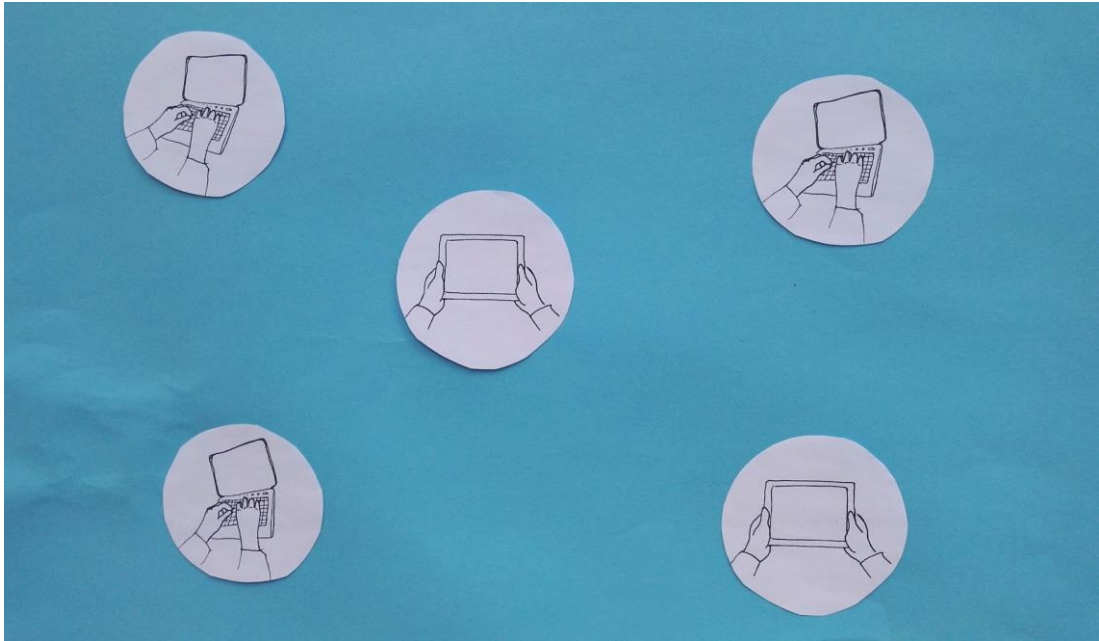
Figure 13:Customer Journey of Online self-help program

4.Expert lead virtual program: Customer Journey Map

In this service, customer meets regularly with a health care professional in virtual surroundings



Figure 14: Customer Journey of Expert lead virtual program

5.Service by people: Prototypes as Customer Journey Maps

The iterative nature of service design creates, tests, reflects and refines. The first person taking part in service design sessions will create basis for this service design process that is continued with the next person. Visualisation are presented similarly as in the other services.

6. My service: Prototypes as Customer Journey Maps
To fully give the power to customers they have a change to describe their own ideal service and will prototyped as a Customer Journey. In this context, the customers do not need to come up with a new treatment method for early intervention, but to how, where and when they would like the intervention to happen, since social cognitive approach has already proven method in life style change management. (Lappalainen, 2016)

(Persuasion technology list see in paragraph Technology in lifestyle and behaviour change management context.)

**6      Service design process: exploration, creation, reflection**

Description of this phase as a report is challenging, since new information formed along the way, in each sessions that contributed to entities of customer insights and expectations. First the basic understanding which of group we have is presented, as who they in general are. Background interview gives insights of people in service design sessions, their willingness and capabilities to use technology and alcohol consumption of these people are presented along the way in context of mini-intervention.

The results of 5 whys is described in the form of collase, and Customer Journeys of services are described as experiences linked to the journey. Exploration knowledge is formed when people present their thoughts and tell about their feelings, but also the examination of background factor in the theoretical part combined to this gave the insights for understanding challenges people confront in this service context. Reflection takes place during the sessions as the experiences are tried to be embodied to presentable forms and as well thinking how essential is this knowledge in the whole context. Creation is joint design with customers and creating the protos and final consept.

In exploration phase, the aim is to understand the business of the service provider and discovering problems of the customers (and potential customers as well). The potential customers are presented in the picture of how alcohol consumption is divided in the population.
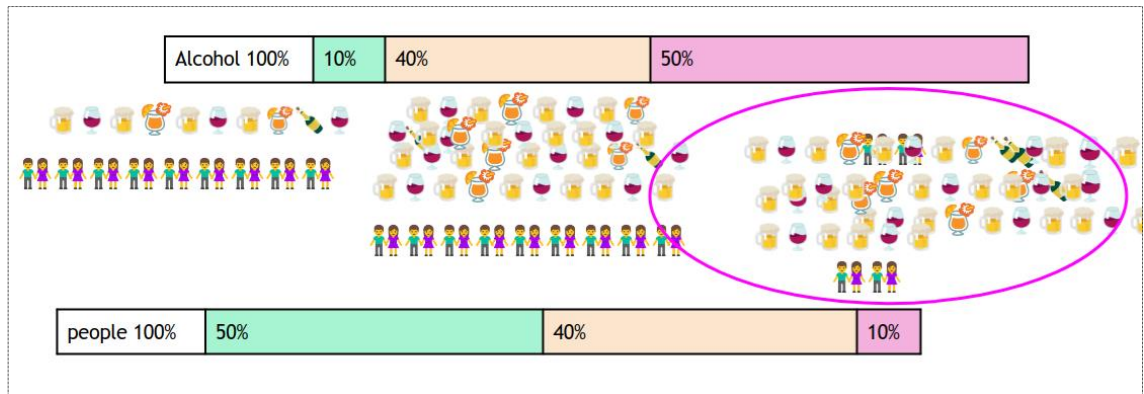
Figure 15: The customer segment of heavy consumers of alcohol

Customers and potential customers: 500 000, 25-65 years, men and women.

The heavy consumption was present in all socio-economic groups, but it became a severe problem more often for men in socio economic status defined by lower education. However in this context it is not relevant to highlight this, since it could be as well considered stigmatising, and make service concept less desirable for customers if the service would be delivered with such definition.

The designer should understand the culture and the goal of service provider.(Stickdorn, 2011, 128-129) Stakeholders are health sector as a service providers and heavy or risky alcohol consumers as the end customers. Goal is to get more individual level services in early intervention phase that customers want to use. To give an idea of how this insight was formed is presented with a picture in which different levels of customer insight are formed by situationality. What remains a mystery at the beginning stage of service design is the negativity around this context and besides practical expectations towards the service, essential is to understand how stigma affects in practice and are there other factors explaining the negativity. To avoid repetition the complete customer insight are in the end of Customer Journeys as a chapter.

People behind the concepts as summary of short interwiews

It was important to get the idea of what kind of capabilities and attitudes people had for using interactive services in the context of early intervention of heavy or risky alcohol consumption. Every respondent used computer, tablet and / or smartphone daily. Social media and applications were also used widely. Internet sites were visited for health information and also practical applications as calorie calculator were used often periodically, not if the issue is no longer relevant for them. What they gained and found to be useful was that they were available at all times, had new information, made the task relatively easy (weight management), and were easily incorporated to their daily life without taking too much effort. The shortcom-

ing were related to not being able to use for example mobile applications on computer or tablet or not including information that they wished for. A table of alcohol consumption is presented in the context of mini-intervention staging.

## 6.1   The Five Whys

Besides understanding the business providers point of view of a certain problem, It's argued that service designers task is to articulate that (organisational) problem from customer point of view (Stickdorn, 2011, 128-129) From customer point of view this problem concerns presumption of how they will be perceived; admitting heavy or risky consumption might be hard, since the fear of stigma. The data of 5 why's explores the effect of fear of stigma in practice to people's behaviour but also brings positive factors related to experiences in intervening substance abuse. Service design methods give such an understanding to what Stickdorn (2011) refers to. At the exploration phase, it is important to understand the problem, not to come up with a solution.  (Stickdorn, 2011, 128-129) The main findings related to Persona Maija's situation are presented below.



Individual related:

Does not acknowledge problem
What problem?
What's wrong with having fun

Does not want to admit a problem
This does not concern me
I'll deal with it next week
Fear of stigmatisation

Sees the problem
Fear of not being able to meet her children once exposed, shame, fear of stigma, guilt

Does not know where to seek help:
Where could I get help from?
A-clinic is for worse alcoholics

Doesn't have the resources for getting help:
Daily life is a struggle
I'll do it later
Stressful work

Institutions related:

Service system is unknown:
Where could I get help from?
A-clinic is for worse alcoholics

Professional related expectations:
Judging, preahcing, rude, condecending attitude
Not feeling comfortable talking with her own doctor or nurse

Past experience related to seeking help:

I ended up having pills for cholesterol but not helped with my drinking

Help received was only contemporary

Attitude was negative earlier

Figure 16:The main themes of not getting help early

Some causes behind Maija's story were themed into categories by to which actor they concerned (internal or external). Many reasons were concerning simply the unawareness of their own condition and of the services available, also misconception concerning what are the ser-

vices that are available. From clinical perspective Maija had at least alcohol abuse and maybe mental or physical dependency, so A-clinic would have been just the right place for her. Other seemed to be linked to personal resources, if a daily life is struggle, getting in to treatment is just another stress factor.

Also shame and guilt, were first mentioned and named by all people taking part in service design session. The prejudice Maija has towards the health professionals can also be the result of stigma. Link, Mirotznik & Cullen (1991) argued that cultural influence of the community and how the negative labelling attitudes effects on how people see themselves and that it has a greater impact than any of the mechanisms used in their study to prevent actual harm in practice by stigma and labelling. So actually these people become stigmatised by themself, because they automatically presume that everyone will have negative attitude towards them, if they expose themselves.

Lappalainen (2016) listed several possible reasons why people do not seek help in the context of mental health problems; because of fear of labelling and stigma, not realising one could benefit from some form of help, lack of time, people are not willing to share their problems with others, lack of knowledge of existing services and of perception of how effective they are. (Lappalainen, 2016) Those reasons are very similar, except the unawareness of how effective treatment is. In this session the experiences of received treatment were stories from real-world, something that had happened to a friend or relative of people taking part of service design sessions. To explore what is important for people in positive form, the next picture describes a successful service experience and related themes.



Institution related:

Personnel related:
They were not judging,
pushing, pressuring

Instead they were professional,
calm, tender, experienced,
understanding and they listened

Matti felt help was based on his free will
His privacy was respected
He trusted information would stay safe

He was given:
Information that motivated
Good advice
Made him understand himself

Individual related:

Motivation:
motivated by himself,
intrinsic motivation

Had the resources
He had acknowledged his
situation

Understood that I can not
continue this way

Figure 17:The main themes of positive service experience

The main feature of Matti story was that he had himself realised the problem. Some even mentioned that he had intrinsic motivation, which can be understood as higher motivation, where person act according to his own reasoning for seeing the benefits for his actions, instead extrinsic motivation in simplified means that they act according to someone else's expectations. Some of the ingredients related the positive attitudes of staff showing appreciation, tenderness, experience, which can be seen as opposite to stigma related negative characteristics. Also trust was a theme, regarding that the consequences of getting help, would not have negative results into his privacy or information going to wrong hands. My concern here is that even if the person who treated Matti, had a good attitude towards helping those with problems with alcohol, is that the notions in his records stay and might effect to how one is being encountered in the future relations in other context in which the professionals do not possess a such a mature attitude.

Also we can see that the process proceeded on Matti's own terms and he had the resources to manage the problem. This resource point of view can be seen as Antonowsky's (1996) salutogenes is resources, as it can be sometimes, that those resources as how manageable situations are, for example if someone has very stressful situation they might use alcohol to manage, since the other resources of managing might not be strong. Also meaning fullness point of the issues person might have in their life at times of crisis, that just to be able to hold on is what is meaning full in such difficult times and alcohol might help. Understanding people in lifestyle behaviour change based on my professional experience as a situational context sometimes this in life can be so overwhelming that weight loss or alcohol consumption reduction just is the last thing in mind. But one can present the suggestions as future form activity once there are resources again, such things have their time and place. To support autonomy it is professionals duty still to inform such health related information that the person has ability to make choices concerning their life based on truthful information, but the power to consider how to present them can effect to how the message is perceived.

6.2    Mini-intervention experience; Service staging and Customer Journey

I had some concerns related to staging the Mini-intervention situation for not making people taking part in service design session feeling as they were "targets". However I explained that this is how early intervention of risky or heavy alcohol consumption happens for Personas Matti and Maija once they are encountered in health care context. This oriented the people taking part in service design sessions to comment on the Customer Journey. I had concentrated forehand on not to focus on them, rather explaining the becoming visits of the Personas.  Audit-form is probably the most used evaluation method for risky alcohol consumption. However as in these sessions, but similarly by the experiences in my work as health care professional, the first two questions measuring consumption were found confusing. They criticized as if every time they'd have alcohol they'd have the same amount and the times would

enjoy their drinks would be the same every week. I have found it very useful to ask questions relating to people's lives how alcohol consumption takes place in their daily life, such as; what do you like to drink? do you drink during the week and how many portions? what about on weekends? Is it both on Friday and Saturday? Finally the portions are summed up together with customers. This was the case too in this session. Here are the results of Mini-interventions and total consumption

| Individual | Woman, 42, IT work, studying | Woman, 63, retail work, entrepreneur | woman, 33, social sector | Man, 45, white collar |
|---|---|---|---|---|
| Audit- points | 8 | 6 | 13 | 19 |
| risk level | moderately increased risk | Low risk | increased risk | risk is significant |
| total consumption | 6 | 17-27 | 21 | 18-24 |
| risk level | Low | high risk | high risk | high risk |

Table 9:Alcohol consumption and Audit score of participants

| Audit score: | Total consumption in week, men | Total consumption in week women |
|---|---|---|
| 0 - 7 risk is low<br>8 - 10 moderately increased risk<br>11 - 14 increased risk<br>15 - 19 risk is significant<br>20 - 40 risk is severe | 0-13 Low risk<br><14 Moderate risk<br>15-23 Moderately high risk<br>>24 High risk level | 0-7 Low risk<br><7 Moderate risk<br>8-16 Moderately high risk<br>>16 High risk level |

Table 10: Explanations of risk level

Audit measures, besides how often and much one drinks, also binge drinking, dependence symptoms and harm related to the use of alcohol. The group is such a small sample that no conclusion can be be drawn based on the result, but as a notion, one could think that Audit is not very accurate, since for those who drank during the week, the average Audit defined consumption was smaller regarding the question of how many portion one typically has while enjoys alcohol, since during the week portions consumed at once were significantly higher. While most of the consumption happened during weekends; the person who used alcohol only during the weekend had consistency between consuming in relation to Audit measurement of quantities. Audit questionnaire did not show any particularly harmful patterns, though the total consumption related risk was high for many. Could it be that as stated earlier in the thesis, that Finnish defects of alcohol consumption have remained and transformed to be as "French" as besides the binge drinking (weekends mostly), we are now facing defects linked to higher total consumption (daily consumption). (Tigerstedt and Österberg, 2007, 330-332)

The Stroryboard of Customer Journey was presented blank every time and the comments were collected to sticky notes as the story went on and the persona characters moved along. I was kind of surprised, in a positive way, how freely people taking part in the service sessions gave their frank and ernest comments. I decided to clear the board between each session, since Stickdorn (2011) commented on cocreation, that the point is not to bend in group pressure, but to encourage everyone to give their comments and have variable views.

During the Customer Journey Map, I detected a similar pattern in comments. People told how the appointment proceeds. Many said Persona is dishonest, silverplated their consumption, people had concern what te professional thought of them. Some felt ashamed, some became a little angry even. On the way home to do their alcohol diary, feelings of mutiny and rage arized and some of them even "stopped to the liquor store on the way home…" At that point people described Personas drinking even more and acting defiant, since some felt patronized, humiliated and ashamed. The diaries that they were given from the appointment were not filled at all points (or done reluctantly or dishonest), and alcohol was consumed as earlier. However all who took part in these design sessions described that before or shortly after the second appointment described in the customer journey, they made the decision to change and started to act.
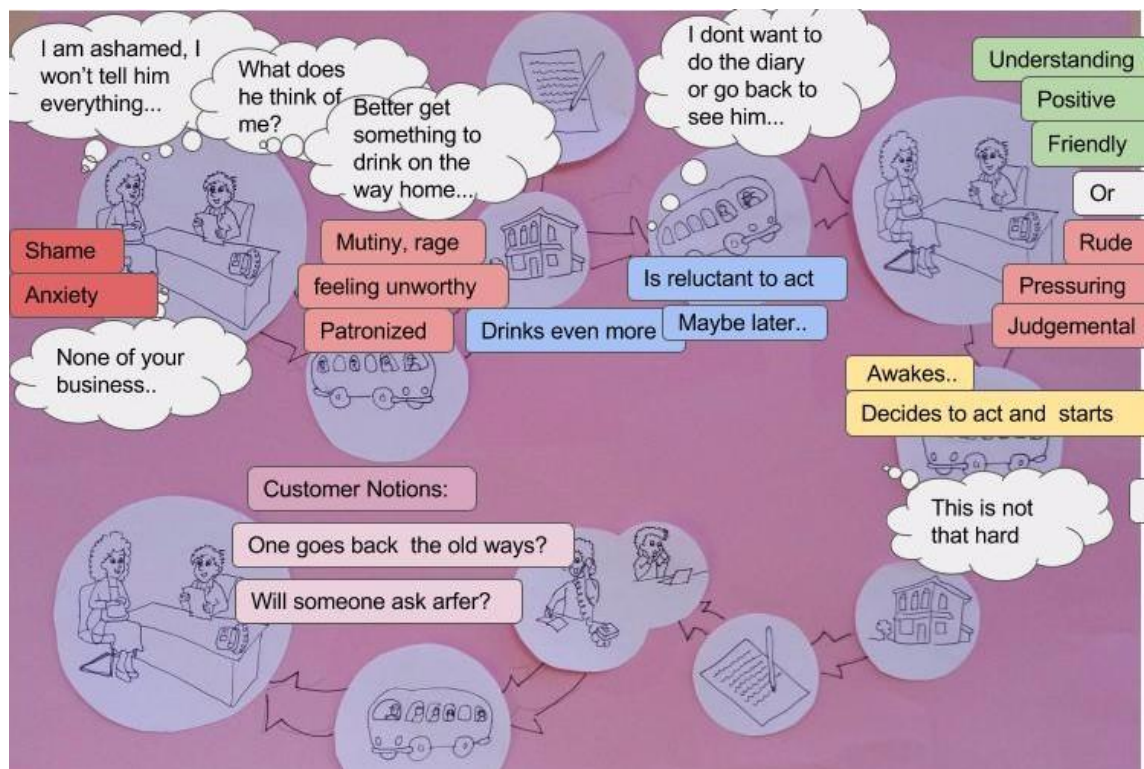


Figure 18:The Customer Journey of Mini-intervention as an experience

This reminded me of the theory of stages of behaviour change by Prochaska and DiClemente, (1992, 1102-1114). This model consists of four stages, precontemplation, contemplation, action and maintenance. At this particular phase of design process, this provides a useful framework for understanding that people seldom change their behaviour at once. The stages and processes by which people change, seem to be the same regardless of if people themselves are conducting the change or initiative comes from a professional and the model describes this natural process. The stages of change model can be used for understanding person's readiness to respond to information and change their substance use. In precontemplation phase, person is unaware of the problem and has no intention to change. This is the phase where most people are concerning alcohol consumption when intervened in health care settings. In this phase the information given by professionals clearly form reactions, it might irritate, make them angry, since they are not in the right mode to take in this information. They shift to contemplation phase, once they reach awareness, and understand how their behaviour might affect them in future. (By SCT to fix the inconsistency, change concerns either cognitions (thinking) or behaviour) This is the stage where they get motivated and start thinking and planning how to implement the change. In action phase the work is done for changing habits. In the maintenance phase one has fully adapted the changes. The stage of change readiness model has proven itself useful in treatment matching and predicting outcomes for addictive behavior treatment (Prochaska & DiClemente 1992)

Also the strong reactions in the beginning of the journey resemble the shame rage or some kind of reaction to an insult towards their autonomy. As people were quite worried in Mini-intervention settings of what the professional thinks of them, this complies with the feeling of shame. As Ikonen ja Rechardt (1994) described; shame is aroused by not receiving the reciprocal reaction that was expected, person feels that they might not be good enough as they are, or that they need to be different in order to receive this reciprocal reaction as a sign of acceptance. How one deals' with this collapse (shame rage) in their inner world effects to their behaviour. If a person turns their shame reaction more within one self, thoughts of "not being worthy enough, not have any value to others, who would care about me, I'm good for nothing " can turn into depression. A reaction of shame can also be at some extend targeted towards others," those who don't find me good enough", and this type of behaviour has also agitating and frustrating characters. (Ikonen & Rechardt, 1994)

 Besides initial responses and feelings brought up by shame, it exhibits individually in all of our lives to differing extend, as an example some try to overcompensate their shame by accomplishing several outer rewards, some might become extra careful by overthinking how to avoid shameful situations and some might even turn to behave shameless, like they "couldn't care less how they were responded to by others". (Ikonen & Rechardt, 1994) Both types of reactions, turned in as depressive, and pointed out as defiant behavior and shamelessness,

were present. As said partly these reactions can be also due to experience of being patronized, as formally paternalism means such interfering to individuals (thinking, will or action) freedom, that is justified by the forced individual's own good, well-being, happiness, needs, advantages or values. (Dworkin, 1988 by Launis, 2010, 47,  136–139.)

6.3     Online self help program  experience as a Customer Journey Map

Since people taking part in service design sessions became aware of the idea behind storyboards, one glims was enough for them to get the idea of sel- help program. Service environment was presented to them shortly in terms of overview of the content as well as a few exercises and videos. (available on  www.mielenterveystalo.fi ->aikuiset)
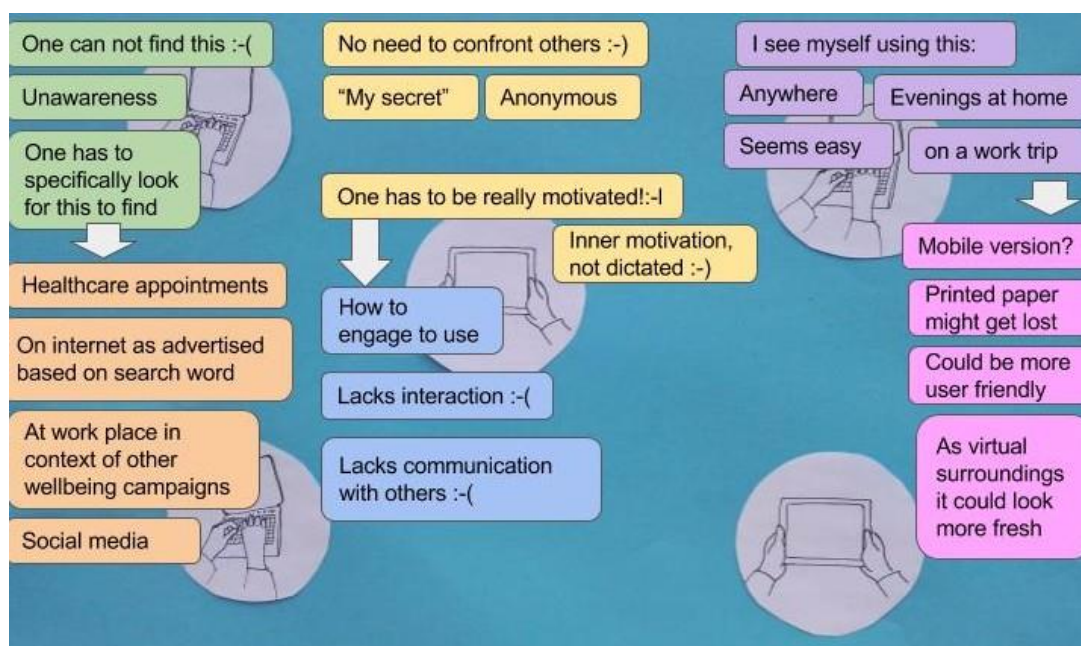


Figure 19: Online Self Help Program giving ideas to concept design

Some matters concerning this self-help service emerged from the sessions. First of all, none of them knew about this and encouraging them to tell how they could have heard about this, gave insights that can be used in marketing such services; healthcare appointments, internet advertising based on a search word, in the context of workplace well-being campaigns and social media. (the unawareness of services, is consistent with theme discovered by Personas) Customers liked the fact that this service to them was truly low threshold (they could avoid the shame related reactions). Also the ability to choose their preferred situation and place for use was good. Overall this was warmly welcomed. Still there were a few suggestions, such as mobile version, interactive system features (reminders), communication possibility with others, usability issues, the pdf-forms getting lost and wish for updating the visual appearance. Also comments of one needing to be quite motivated to follow through the program all

by themselves, and the wishes for interactive features and social dimensions also can be related to this.

## 6.4   Expert driven web based program experience as Customer Journey

This Customer Journey consisted of expert lead program that can be followed from any distance using skype or video call. The program starts by registration, where one needs to contact the service provider to get access. After accessing through registration, one will meet with a professional through skype or other systems to start a systematic program, where one does exercises independently and meets over virtual systems with the professional regularly. This service type was considered good, since one does not have to travel, to physically be anywhere and they had an expert leading their change process. Similarly as with the self-help program, getting to know the service was considered quite difficult since one would have to look for specifically something like this or by accident come across with it.
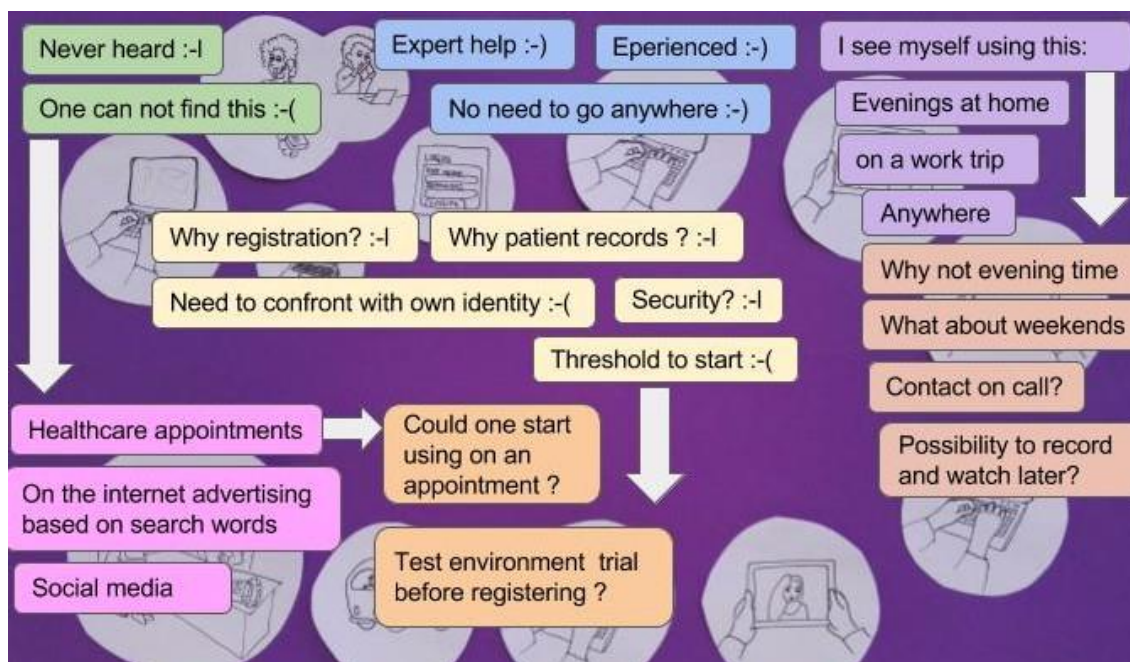


Figure 20: Service experience of expert lead program and ideas for new consept

Again marketing channels were described; healthcare appointments, internet advertising based on a search word and social media. Suggestions to increase accessibility were given, as could one start to use together with health care professional during an appointment. Also test environment was asked after, from where one could then access the program after trial period.This I thought would be excellent way, for example to get access to priciples and some exercises, still it is structured program where somekind assessment is done once one begins. People did not fully understand why one needs to register with their own name, but I explained that if patient data is collected, it is regulated by legislation, one must ensure that

users are who they say they are and also the service provider would need to cover the costs so service provider might need to refer proof of use in order to get compensations, even if the service for customer would be free. Since the service is based on professional employees time, there are more costs to cover, compared to a service where information and interaction are facilitated through technology. People taking part in service design session would have used the service anywhere, but they wished that the service would be available for communication with a professional during evening time and weekends, since some found it hard to skip work. Also a feature of shortly connecting with a professional "on call" 24/7 without an appointment, record the sessions was something they wanted to do. These were thoughts that oriented people towards their own take on the service concept.

**6.5** Prototype: Service by people

In the service design sessions I was surprised that people had so much to say about everything, which was positive, since I was afraid of not getting people to talk. I was really grateful how people shared details from their personal lives, experiences related to alcohol consumption which got out of hand, almost everyone had a story of someone they knew. I had thought that it would take about an hour to complete, but since people seemed to have a flow experience and some seemed to have fun, I tried too much not stop them from talking, some sessions lasting almost two hours.



Figure 21: Service by people being creted

The first person who took part in service design sessions contributed very much to the iterative model. The idea was to start with the first person and continue with the other. While constructing the prototype of shared customer journey, I became in to the conclusion, that

describing the model of first person (woman 42, ICT branch, also studying) is just not worth doing, since the iterative design after her was in a such complete state. I don't know if people were being polite, but there were hardly any negative comments relating to this concept. On the other hand it makes sense that the customer journey by people was pretty much what they wished for, since most of them had very similar wishes towards other customer journeys they would like to be developed, and those are all included to this.
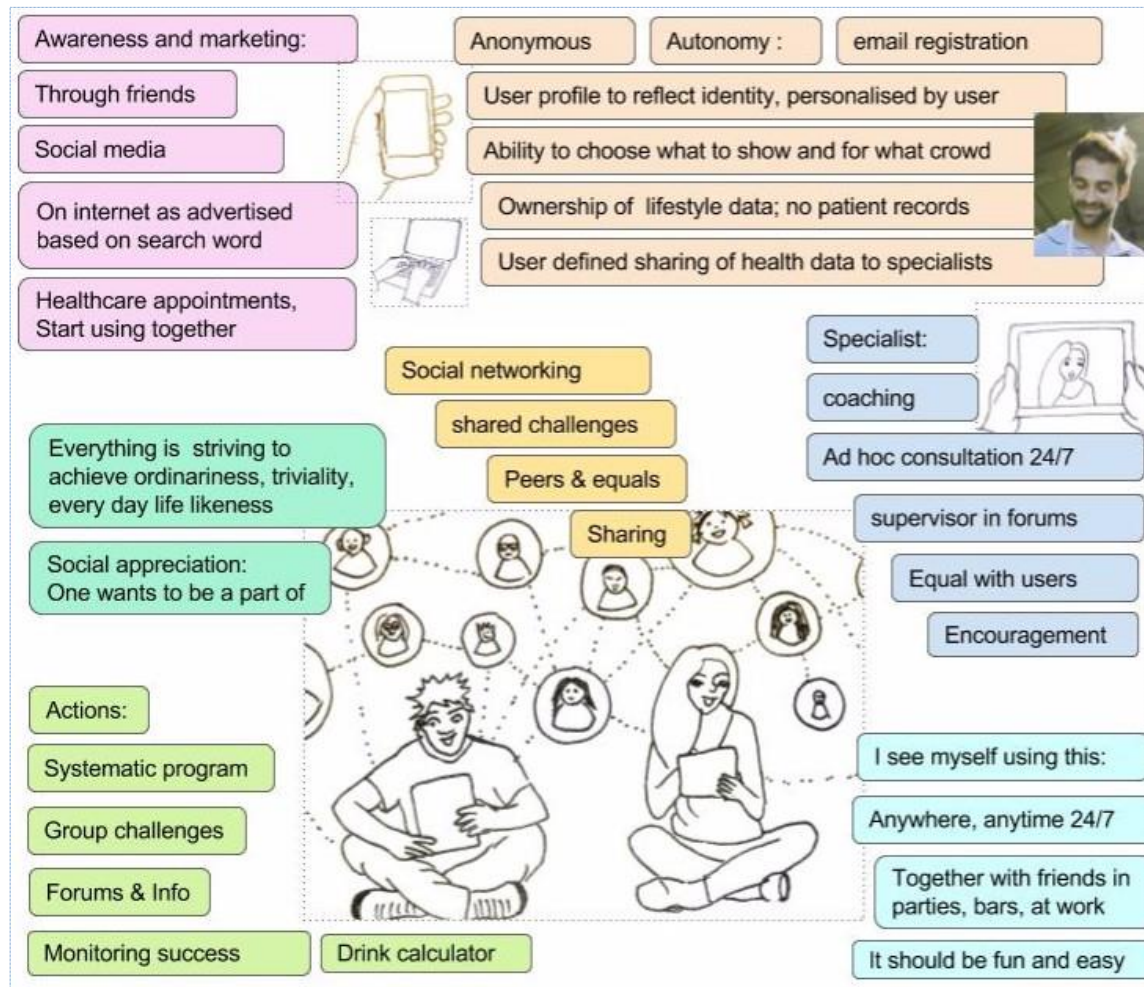


Figure 22:Service by people (My service, woman 42)

Service by people (My service, women, 42, ICT branch)

The core themes that were identified concerning online self-help program and Expert lead virtual rehabilitation and emphasized in Service by people were: Unawareness of such service, accessibility, anonymity or autonomy over personal data, need for interactive system features, social support, specialist available outside office hours, chancing societal atmosphere by bringing triviality. Comments relating to autonomy over one's health information and being equal with specialist, can be seen consistent with the motivation that is intrinsic, and from value creation position of service provider taking part in customers health process-

es, when needed and decided by them Normann (2001, 126) in Nordgren 2009). From service production orientation, we can mark that the specialist consultation should be available when customers need them, not at that point when service provider wants to offer them. Also notions of autonomy related to whom and how much of information one is willing to share describes the need for autonomy and being a subject instead of an object of deeds. Persuasion system categories were read as a hint list after each one had presented their fundamental features. The features were mostly considered as obvious: "off course these are important and should be taken inconsideration in the service" and did not really contribute much as arousing new ideas.

## 6.6    Prototype: Appointment of understanding

Customer journey (Woman, 63, retail, also an entrepreneur)



Figure 23: Appointment of understanding by woman 63 (Photos from http://absfreepic.com/)

In service design session one cannot predict sometimes how things proceed. Even if the thought of having technology based services served as a leading thought, still at the point where person taking part in service design session wished for something else, no pressure for this was put on her. She described a service that would be ideal for her, happening with a trustworthy person as meetings. Sometimes it can be hard to know or describe exactly what one specifically wants. In this case, construction of service started from describing what it should not be at least. There were quite much expectations related to the helper. Power positioning should be neutral, preferably not a health care worker (no informational imbalance between customer and service provider, no authority positioning). As she named the service as Appointment of Understanding, a wish towards helper having a deep understanding of the subject, either through personal experience or someone close has had issues with alcohol consumption. This could describe the highest level of empathy and ability to relate to customers world on an emotional level. Tenderness, acceptance, empathy were seeked among the characteristics of the helper.

The Appointment of Understanding was very much based on a holistic approach, where personal resources and well-being would be strengthened by healthy nutrition, and ability to have coaching for mental well-being, in the form of these sessions. This approach to intervention supports the finding that once a person is diagnosed with alcohol addiction, every fifth person among those have some mental disorder simultaneously (Laajasalo and Pirkola, 2012, 63-65). Also from the neurobiological point of view we know that addictive agents induce adaptive changes in brain function; these changes are the basis for tolerance and for the establishment disturbances of mood, as depression, anxiety, etc.)According to Goldman, Oroszi and Ducci (2005) if alcohol is consumed in risky quantities, they can alter brain functions and besides hangover, less subtle effect on the balance of neurotransmitters can have negative effects that result in emotional level slasting beyond the hang over.

## 6.7   Prototype: Fresh app

Customer Journey (Woman, 33, social sector)

The Fresh App was created following the same principles as in Customer Journey Service by People. Some points were emphasized more, as making the change concrete every day. Mostly for those who consume quite much alcohol as part of their daily life, it presents as a positive factor, related to relaxation and social events. Once one has to reduce consumption the sad thing is that you get nothing in return immediately, only the health effect you are warned will not happen in the future. Woman behind the Fresh App hoped for features, for getting the return of their investment in form of time, effort as concrete examples of also other than health related. For example one should recognise, how much money has been saved, feel

good about staying fit and looking good too. In Persuasion system design categories, this is called simulation as to show immediate link between cause and the effect. Also a category of reduction is involved, one does not need to count how much money is saved. (Oinas-Kukkonen & Harjumaa, 2009, 495-492) The features were explained in detail,for example wish for seeing how alcohol consumption would influence one's appearance in the future, money saved, calorie intake reduced. This would not be shared to other users (unless wanted).
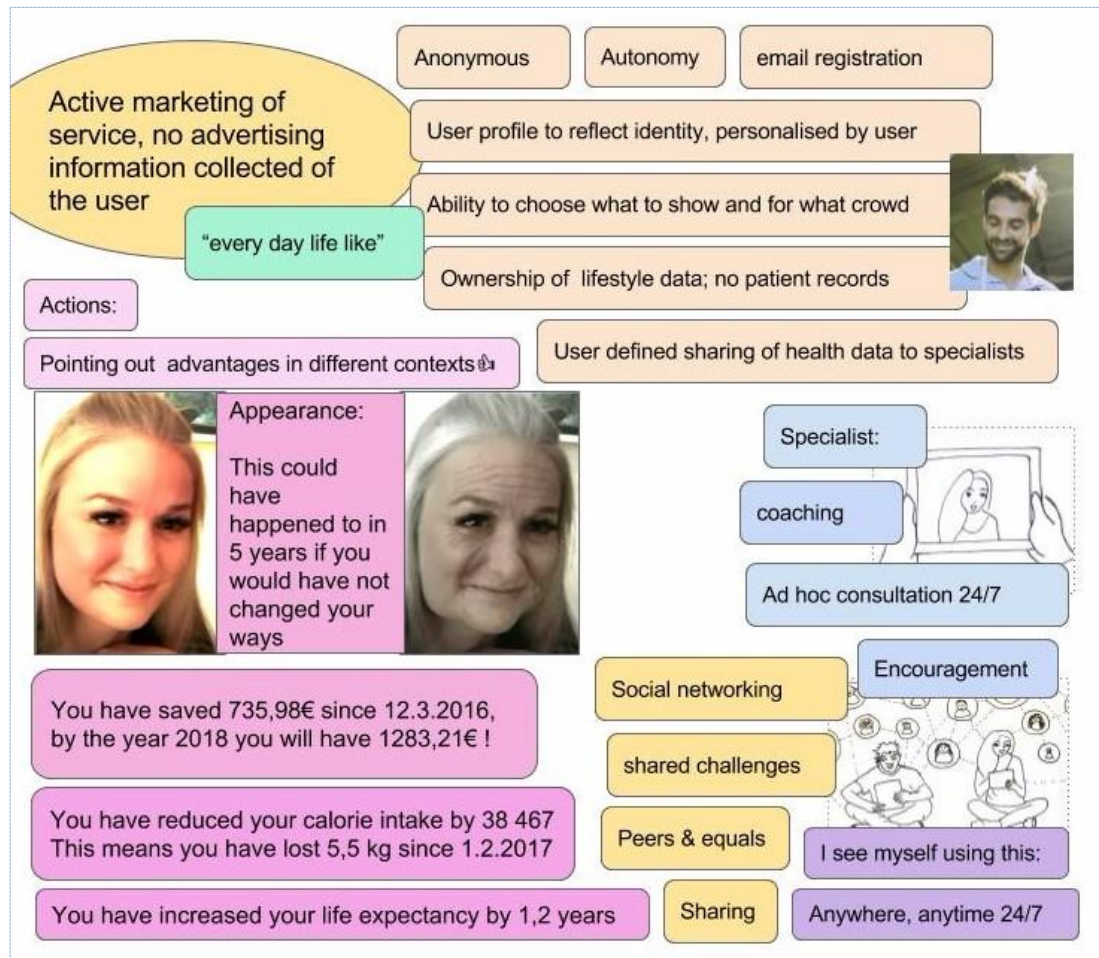


Figure 24: Fresh app and the desired feautures, woman 33,

Notion of being a "commercial advertise free zone", though one would like to have notifications of health related data. Also social features, as group challenges, and knowing how many users are in the system, the performer of the month and motivating stories of people who have succeeded were desired features.

**6.8    Prototype: My Change**

Customer Journey (man 45, white collar)

The basic principles were also adopted from iterative prototype concept Service by People. The person taking part in service design session emphasized that the service could become a social phenomenon.
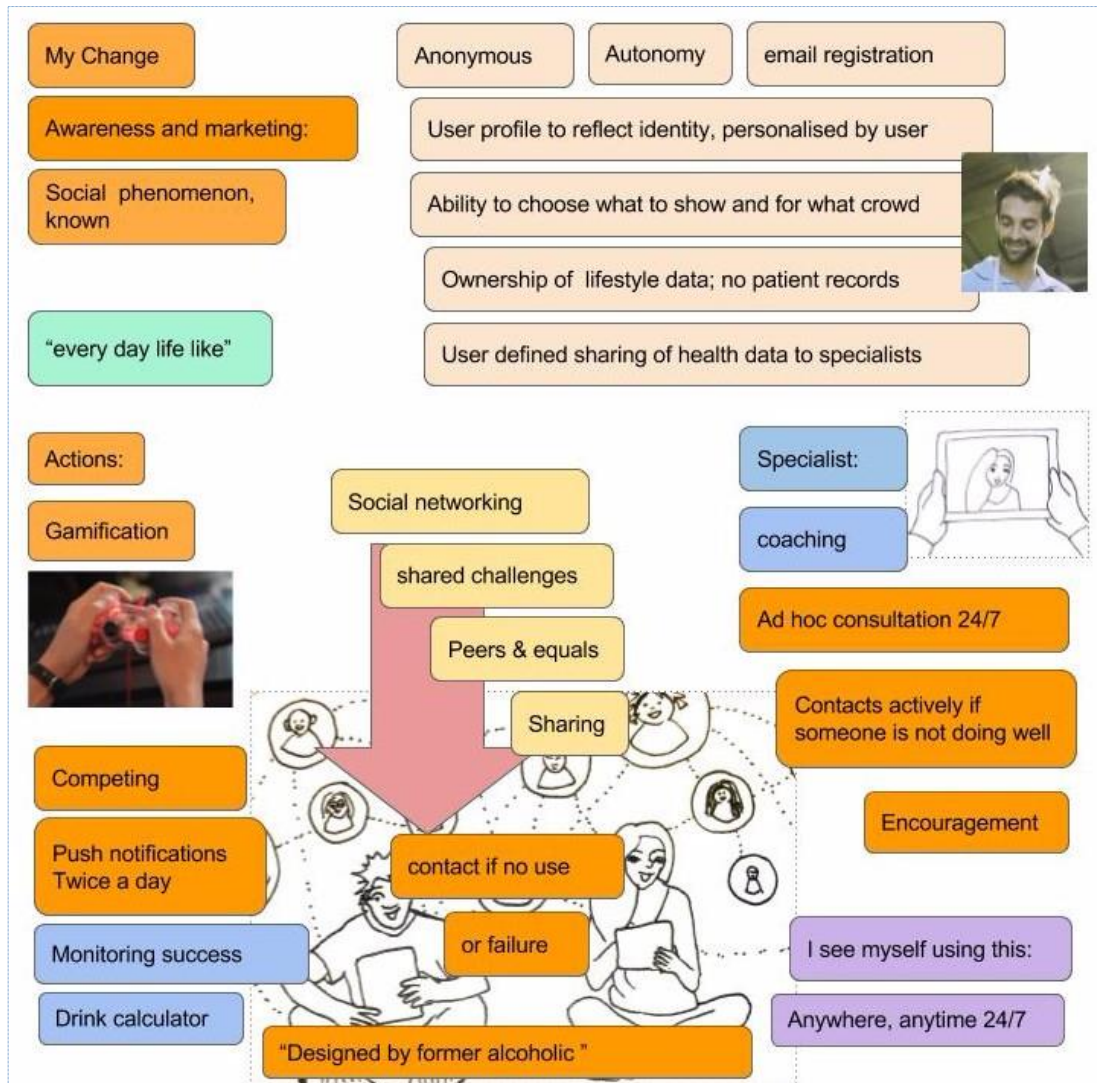
Figure 25: My Change, man 45

Questions concerning the situation of going back to old ways, or not using the service emerged, and the suggested pattern of action was that someone, other user or a service provider would ask after and express their concern. This from my perspective was important feature, since it is not easy to change behaviour, for example quitting smoking requires usually from 3-6 failed attempts before success. Similarly Alcohol as chemical relaxes and enhances feeling of pleasure, even if one is not addicted, still crawing for such positive states is understandable, especially if one has not so much meaningful social relations. The features wished after were gamification features, the possibility of competing with others in some way or taking part in group challenges were desired. Reminders as push notifications twice a day were expected and an idea of that the service could be marketed in the name of someone who had managed to tackle their problem; designed by "former alcoholic", were presented.

7     Results

As the service design process already resulted in several prototypes by people taking part in session, those can also be seen as type of results. But to summarise the information and see how it is connected to the theories, besides in the individual concepts, this information is described as results of service design sessions as expectations and insights. The  final construction, concept is presented. In constructive research the final step is to examine the scope of applicability, this is partly done in the critical phases and with a business model. Theoretical connections to service and customer dominant logic are incorporated to customer insights, but the discussion continues in conclusions . From health promotion perspective, one is only able to do theoretical level discussion of possibilities of concept  as digital services in mental health and substance use disorders, which are based most often to social cognitive theory . Therefore concentrating to the contribution that service design has in planning health promotion interventions implementation phase is emphasised.  Research questions are examined in the end and finally construction is evaluated.

7.1     Multidimensional customer insights

The challenge is how to present the information understandable to others from service design session and the background research, since after the sessions the amount was quite vast. Customer insights are presented as situational multilevel figure, that maybe could hep to understand the multitude of factors that influence services in the context of heavy alcohol consumption.
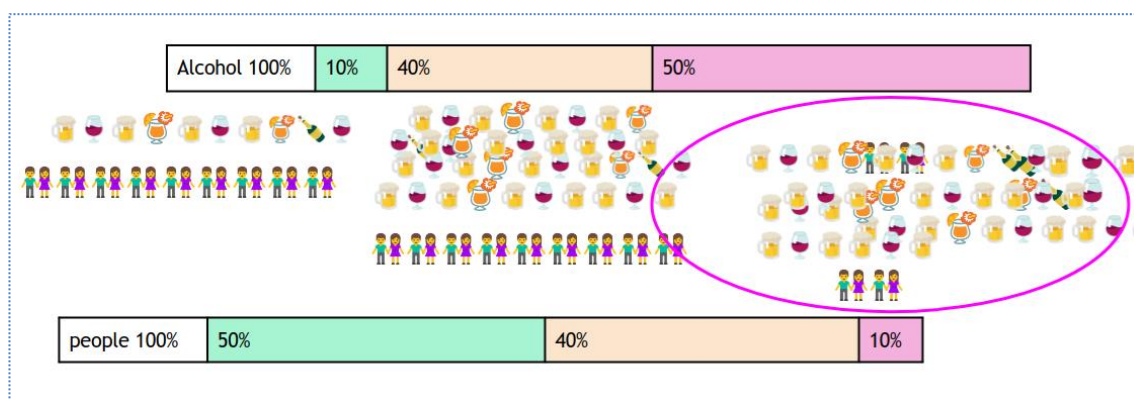


Figure 26: Customer segment

Customers and potential customers: 500 000, 25-65 years, men and women.
20% of male and 10% of women, however the number of women has seen to increase during the last years(Halme, Seppä, Alho & al 2008,1615-22:Huttunen, 2015)

In the lifeline of individuals youth is time when alcohol is consumed quite much as social habits and once families are form it decreases. Consumption starts to increase again after 35

years of age and the peak of total alcohol consumption is just before men and women turn to 50, around 47 years  where after it decrease. (Mäkelä & al., 2010, 113-117).

The heavy consumption was present in all socio-economic groups, but it became a severe problem more often for men in socio economic status defined by lower education. However in this context it is not relevant to highlight this, since it could be as well considered stigmatising, and make service concept less desirable for customers if the service would be delivered with such definition. Risky consumers though perceived loneliness more often, the more alcohol was consumed, the less satisfyied people were with their lives. ( Kauppinen in Mäkela & al. 2010, 207-218);Mäkelä & al 2010, 195-206;Herttua, 2010) So the group is large enough to have many kind of people and risky alcohol consumption is often connected to perceived wellbeing issues and loneliness.

To have some kind of understanding of how situationality affects the  customer insight in multiple levels they are combined in the picture and explained. In societal level, in healthcare as brach, and in functional level, as te service takes place and on personal levelas the factors that concern how the person potentially using the service.

### 7.1.1    Societal and health services level situationality

The possible changes in legislation (2018) come to improve the access and as in theoretical part, we understood that when alcohol prizes sunk, those who already consumed much and had already harmful pattern, their situation became even worse off. Since behind the context of legislation where the change is sought for viability off restaurant and catering business, small breweries vineyards, it might affect those who are not the worse off, since using such services one has to have relatively good financial situation.
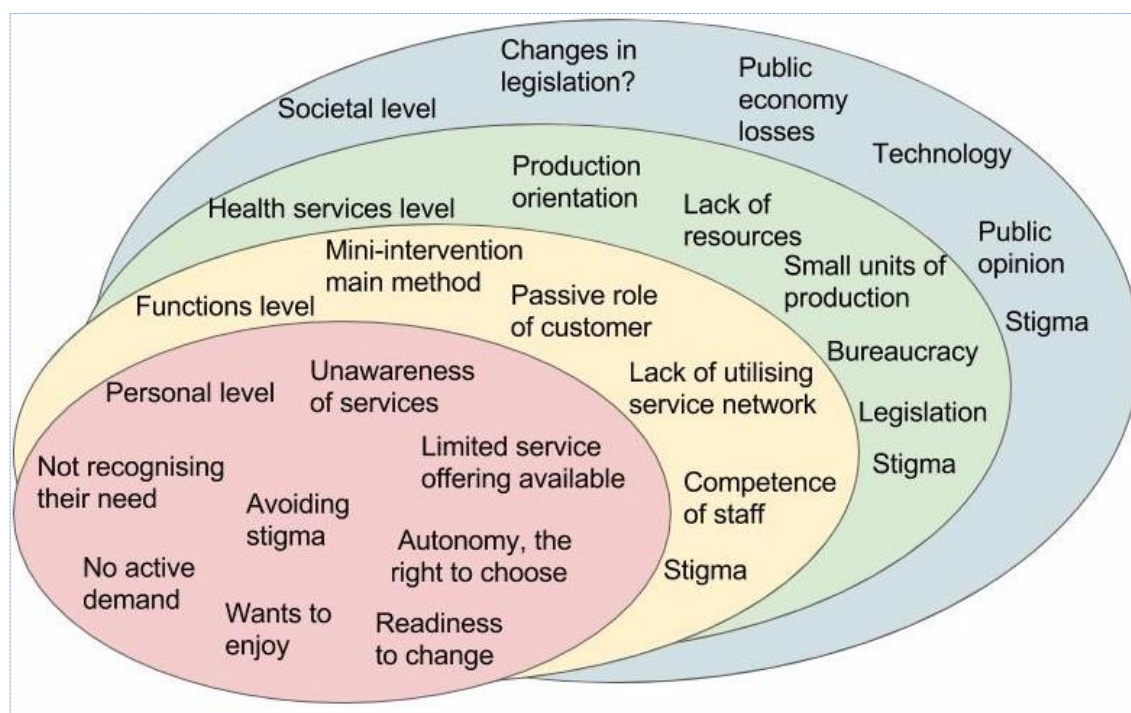
Figure 27: Situational customer insights on multiple levels

**In societal level** the losses due to alcohol consumption as alcohol related cost (direct and indirect) per year of 6-7 billion euro, (EHYT, 2014).It is a subject that is considered important as well as lot of work is done in multiple levels already. Still alcohol is part of this populations life;10% does not drink at all, purely moderate users are 25% of men and 33% of women, so most of Finn's use alcohol more than recommended, at least occasionally. The adaptation of technology in our daily life has become tremendous during the last few decades, for example banking and insurance has shifted to online environments and it is rare that one needs to physically go anywhere. Mäkelä, Havio &  Seppä (2011, 1239-1248) state that in Finland public opinion towards the discussions concerning alcohol consumption in health care are positive (more than 90% of respondents had positive attitude) Still the stigma is present everywhere, C. Wright Mills's (1967) conclusion of  labelling and stigma is;  they are "social problems" not "individual troubles." ( C. Wright Mills's (1967) by Link, Mirotznik & Cullen, 1991: Mäkelä & al. (2010 195-206)

In public health  services level it has been declared that a strategical approach would be tar-geting wider population at earlier phase in terms of the effort being low in relation to bene-fits. (Mäkelä, Mustonen and Tigerstedt, 2010, 195-206; Simojoki, 2014)
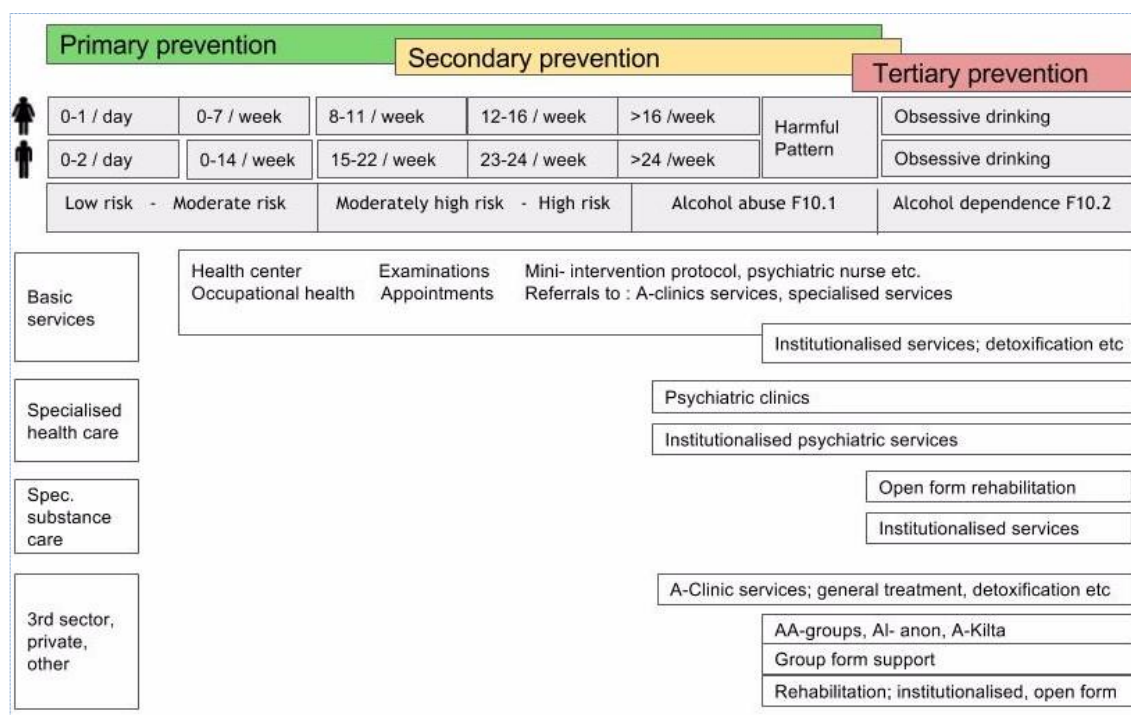
**Primary prevention** | **Secondary prevention** | **Tertiary prevention**

| ♀ | 0-1 / day | 0-7 / week | 8-11 / week | 12-16 / week | >16 /week | Harmful Pattern | Obsessive drinking |
| ♂ | 0-2 / day | 0-14 / week | 15-22 / week | 23-24 / week | >24 /week | | Obsessive drinking |

| Low risk - Moderate risk | Moderately high risk - High risk | Alcohol abuse F10.1 | Alcohol dependence F10.2 |

**Basic services**
Health center     Examinations     Mini- intervention protocol, psychiatric nurse etc.
Occupational health     Appointments     Referrals to : A-clinics services, specialised services

Institutionalised services; detoxification etc

**Specialised health care**

Psychiatric clinics

Institutionalised psychiatric services

**Spec. substance care**

Open form rehabilitation

Institutionalised services

**3rd sector, private, other**

A-Clinic services; general treatment, detoxification etc

AA-groups, Al- anon, A-Kilta

Group form support

Rehabilitation; institutionalised, open form

Figure 28: Service landscape of stable actors in substance services

However the focus of activity in health services what comes to service offering, the most highly specialised skills are used for treating those who have severe problems. However there are actors, private ones for example, and the share that these actors have in substance abuse is unclear, I wonder if those who are able to purchase services, turn to these actors to avoid stigma. Since the problems become more severe for those men who are in working in manual labour, is it about that they do not seek help, their social surroundings  support heavy alcohol consumption or does our system somehow ignore them?  This would be interesting to re-search. Also there are some technology based applications, which of some are presented in this thesis but I was not able to find data of their use, so the service environment mostly is formed by stable actors, public services and 3.r sector actors.

Lot of funds have been invested in creating healthy environments where alcohol consumption is intervened, for example workplaces having important role in early intervention (in order to receive reimbursement for occupational costs, they need to have substance abuse action plan). The debate of how much resources should be put into preventive work and treating ill is ongoing, and probably more could be invested if the situation with funding would be differ-ent. Now we have large aging population in relation to the size of our workforce, and what is evident, that taking funds for treating severely ill is unethical.

Health care is very much regulated by legislation, which for example defines minimum stand-ards for arranging services. The law on public health is originally from 1972 and the main re-

sponsibility of organising health care services is laid upon municipalities, which can be quite small units, to whom the development work would require just too much resources. Healthcare also is based on specialised professional knowledge, and these tend to form silos and bureaucracy (Koivuniemi and Simonen 2011, 38-40). For example developing basic level services, it would be useful to have experts from the substance abuse units and basic health care, but cross sectional work can be challenging.

The "traditional" type of measuring value, which sometimes has very little to do with the value creation from the customer's perspective if the total productivity of services is not understood as external efficiency as customers perceived value is important for the outcome of health services (Grönroos & Ojasalo, 2004) The new public management (NPM) is an orientation, that started to reform the way public services were governed in the late 80's. The basic idea is to create a quasi-market in public sector and by mimicking the market patients are seen more customers and by business orientation management, it is believed to be able to improve efficiency, economy and effectiveness in public services (see more in Lähdesmäki, 2003). However are services are understood as G-D logic, and the internal efficiency and capacity are the only measures that are being used for assessing efficiency, this might potentially lead to situation where we have tired staff and unsatisfied citizens. What happened to the customers? For creating or measuring value creation in services, external value as quality perceived by customers is important factor for businesses which compete in service markets.

Technological development has brought many improvements to health care, however they are mainly driven from service providers interest of making production more efficient (back office functions) and until quite recently we have seen the emerging of such applications which contribute straight to customer driven value creation in public health services. The only problem is that in health care, often vast amount of evidence is required before any protocol changes are done. (for example it takes 10-15 years for a new drug to come to market). However in lifestyle change management, there is not such risk really, if they are based on well-known theories and designed customer friendly. At stake is only wasting time, if they fail to deliver. There are some technology based applications presented in this thesis but I was not able to find data of their use, or effectiveness. Technology is though been utilised in studying hidden populations for decades already since the low threshold and anonymity. It would be only natural that technology would be utilised more in early alcohol consumption issues.

 Stigma related to alcohol consumption also has an influence on health care staff. Challenges were discovered by Behm (2015) concerning regarding employees' attitudes and competence in early intervention context. Firstly employees in the emergency units did not have a uniform idea of early-stage substance abuse work, and primarily the emotions that it brought of were negative. These situations were experienced difficult, awkward, challenging and embar-

rassing. Workers felt frustration, irritation, annoyance and anger. Also sadness, pity and hopelessness were experienced by employees, as well as feelings of incompetence, helplessness, powerlessness and failure as well as anxiety and fear. One of the reasons for having such feelings were related to the lack of patient's capabilities, inability to intervene, presumption of such activity being useless, ineffective and waste of time. (Behm, 2015, 68-69)

### 7.1.2 Functional and individual level situationality

The functional level describes the functions that are related to the service and can be understood concerning Mini-intervention procedure, and other ways to perform intervention the context of heavy or risky alcohol consumption. This section is difficult to separate from health care since these actions happen in health care, so those factors apply in this context too. Early intervention of risky or heavy alcohol consumption is at the moment integrated into our basic health care system. The common procedure is that professionals ask when they think is necessary from people about their use of alcohol who seek help for any problems in physicians practices or emergency rooms, or as a common procedure from people who are participating in preventive service system, such as health maternity clinics, occupational health examinations, etc.. Audit-form and Mini-intervention are typical methods.

Mini-intervention is kept as cost-effective method to influence individual's alcohol consumption in several meta-analyses. Every tenth person reduces their alcohol consumption for 1-2 years after intervention. What brings practical challenge that in other context than purely preventive services (health examinations) it can be seen as an additional service and the reason that the person is brought to the person to health care services can be seen as the core service. By such example I like to point out that it can be sometimes for example due to lack of time not to take place and short appointments might last only 10-15 minutes, as mini-intervention is to take 5-20minutes. (Aalto, 2009, Laajasalo and Pirkola, 2012, 63-65)

The issue that has been recognised is that when confronted with issues concerning their alcohol consumption, is that according to statistics, not all are that honest because of the fear of stigma. (Only third of all alcohol imported, sold or served in this country is reported in studies relying on customer self reports concerning consumption, (Huttunen & Mäkelä in Mäkelä & al.(2010, 27). Alho (2017) studied early intervention in basic health and social services. Among the important findings she discovered, those who used alcohol in moderation, had more positive attitude towards intervention and gave more honest answers, as the ones who identified as risky users. Why early intervention is very important is because independent seeking of help for problems concerning alcohol use has been so far rare. (Berends & al., 2013 by, Alho 2017; Alho, 2017) Since there is no active demand, but besides individuals also from the public health point of view we can state that there is a need, and the demand is

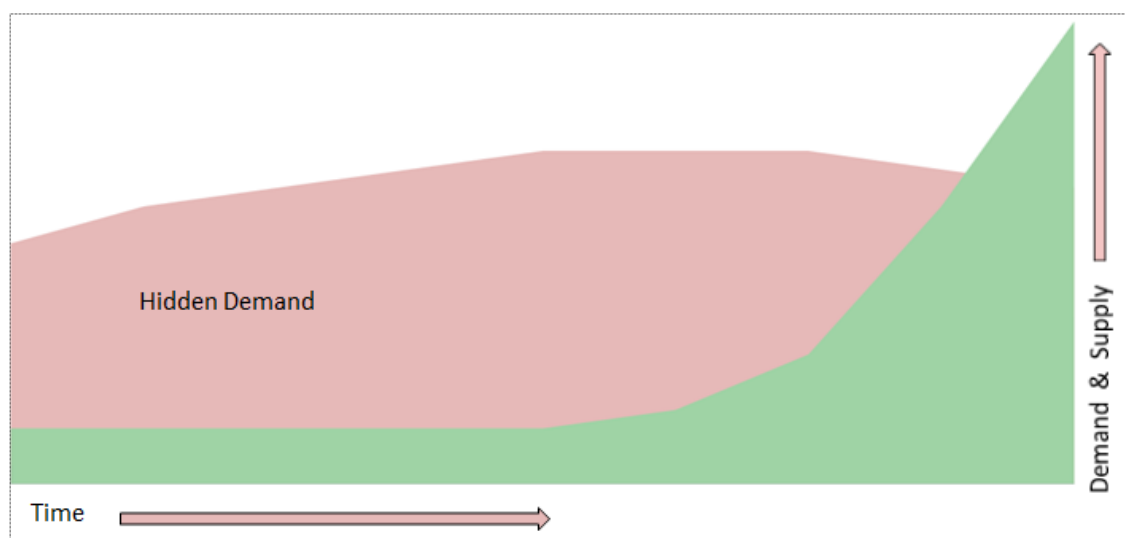hidden and passive; unrecognised by customers and sometimes kept in secret from health care staff.



Figure 29: Hidden demand of substance services

Also factor concerning the delivery of Mini-intervention or any life style change is that there is no quick fix, the intervention as an event itself does not contribute to the health outcome, it is the process that the person starts after the service encounter. According to S-D logic, service producers can only make value propositions, and the customer decides to engage to them, if they see it contributing to their wellbeing. Value propositions include product, price, marketing communication (promotion), distribution (place) and branding (Vargo & Lusch,2014B, 71-72). Al of these factors concern communication and its quality someway. The " brand" of health care in early intervention is not good since the partly false beliefs due to self-stigma that people might have.

In individual level off situationality from customers value creation perspective it is essential that heavy or risky alcohol consumption is intervened, or in other words health care becomes part of customer's value creation process (Normann 2001, 126 by Nordgren, 2009) before it becomes an addiction and individual is driven by addiction. At this stage the addiction is dictating the actions of a person and from their point of view such value destruction happens that is hard to put a price tag on. People might lose their families, homes, and often finally work places too and become socially excluded.

Referring to my professional experience with people whose trust I've managed to gain and worked on this issue, it often seems that threshold to seek into specialised substance abuse services, such as A-clinics appears to be surprisingly high. Also the groups (AA, and Al Anon for e.g.) are aimed towards the latter phase of problem and that type of social support is not

really available at early stage. In early stage the goal also differs, being moderate consumption instead of total abstinence. The existing groups are mainly serving those who have developed addiction and recovered and the goal for them is total sobriety. There are also some virtual services online which help people to recognise their level of alcohol consumption, encourage and guide how to reduce their consumption if necessary. However data of their use is not publicly available and unfortunately such services were not known by people in service design sessions. Also customers service insight (customers awareness and understanding of services) were quite weak, which makes marketing an important factor.

The understanding of stigma effect gained through service design methods, implies really quite surprisingly how strongly it is present, even when total consumption was highly risky, but harm related to it (according to Audit) was presenting more moderate level risk. The emotional reactions of shame rage are described in the context of service design process in as a Customer Journey of mini-intervention. (Also stages of change model in the context helps to understand the ability for changing behaviour might take time.) However some of that emotional reaction can also be a reacting to perceived insult towards person's autonomy. After all people make their own choices and want to enjoy life, so the readiness to change doing something that they combine to positive social events and relaxation is low. Customer expectations are crucial for the entity for insights, but for trying to minimize repetition, they are examined in the context of concepts to in which those expectations are presented as they would actualise as service features.

The situationality becomes important in individual level, has a person the resources to manage the problem. This resource point of view can be seen as Antonowsky's (1996) salutogenesis as resources, as it can be sometimes, that those resources as how manageable situations are, for example if someone has very stressful situation they might use alcohol to manage, since the other resources of managing might not be strong. Also meaning fullness point of the issues person might have in their life at times of crisis, that just to be able to hold on, is what is meaningful in such difficult times and alcohol might help. Understanding people in lifestyle behaviour change based on my professional experience as a situational context sometimes this in life can be so overwhelming that weight loss or alcohol consumption reduction just is the last thing in mind. But one can present the suggestions as future form activity once there are resources again, such things have their time and place. To support autonomy it is professional's duty to communicate such health related information, but the power to consider how to present them can effect to how the message is perceived.

The stages of change( Prochaska & DiClemente 1992) suggest that most people are not even thinking that they need any kind of change, they can be seen as happily consuming alcohol. Prochaska & DiClemente describe that person in this stage intervention might result in reac-

tions , irritate, make them angry, but might then shift to contemplation phase once they have internalised the situation and feel the need to change. Understanding that change is a process, that might not start immediately is a realistic approach, if the person does not see the need, but in intervention one can still bring up that inconsistency of thoughts towards the behaviour and recommendations, when person has to adjust either one - thinking or actions. Also incremental steps with any kind of life style change are important for self-efficacy.

## 7.2   Service concept  Hyvis

Service concept Hyvis is presented at this stage, since the critical phases as explaining customer expectations combined with the insights and scope of applicability can be combined to the concept to receive a better picture as an entity. The concept of Hyvis for the early intervention for excessive alcohol consumption is described as Customer Journey.
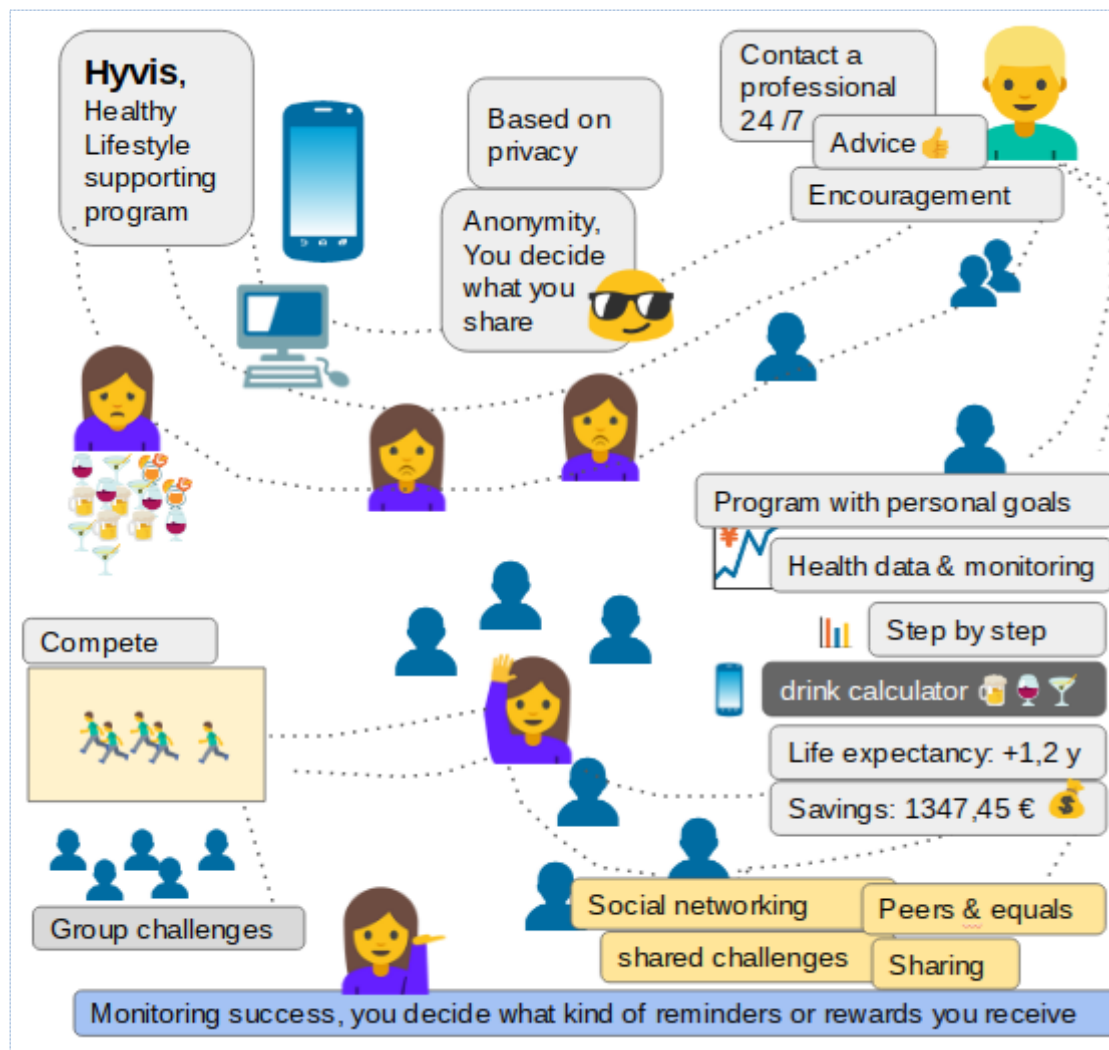


Figure 30: Service consept Hyvis as Customer Journey

The service is used through mobile phone or computer. Registration by email. Users have user identity and they are anonym throughout the service and decide what information they want to share and with whom. There is no patient records system, since the approach is positive health conception. In the beginning one would need to use drink calculator by which their recommended program for reducing alcohol would be based on. Expert help is available, but not compulsory and available on call. The basis is social networking approach and persuasive technology. Gamification features and proof of new behaviour being useful, not only a promise of better help in the future. Ideally such a service would be provided in the context of some other service, for example with weight loss program etc.

### 7.2.1 Customer expectations form the critical phases in service

During the Customer Journeys in service design sessions, there were key points that customers found challenging. As a result for sharing these points they were made a matrix of. In the matrix, service experience can be understood as Helkkula (2011) described as phenomenological experience forming in individual personal life in various levels, as physical, emotional, situational spatial etc., but also as a process. Mostly here in the context we point to emotional level experiences, since early intervention to one's risky or heavy alcohol consumption is sensitive subject, stirring emotions both in the service providers and customers.(Behm, 2015) For example Customer Journey of Mini-intervention clearly provoked feelings, mostly negative related to stigmatisation, shame or insult toward one's autonomy.
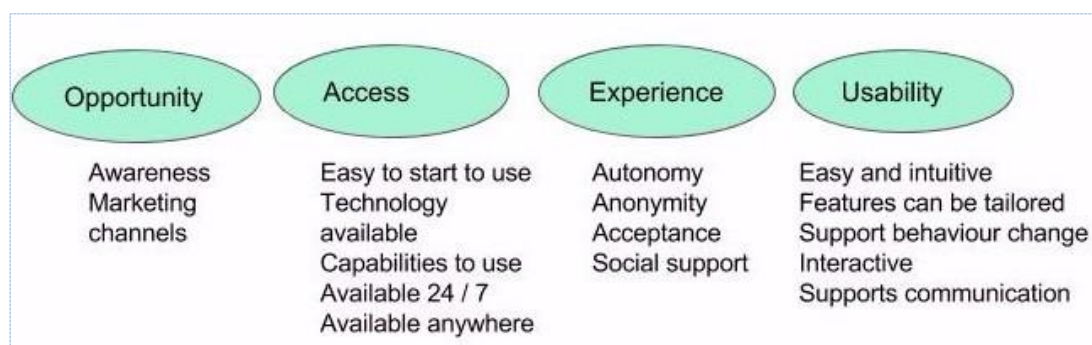


Figure 31:Critical phases giving insights and presenting expectations towards services

**Opportunity**
Opportunity is related to the  factors of not getting people to use the service, if they would not acknowledge such service existed and by which channels they think they would get the information best.

**Awareness** was a theme with the existing services, no one knew about them. Public sector services are not often probably actively marketed, since they are produced with limited resources and instead of barking people, service providers staff might have a gatekeeper's role.

However this service should be marketed actively, since it is supposed to lean on social support, so it is essential, that there are other people that are using the service in order to provide networking and social aspects of Social cognitive therapy (SCT). Learning from others by observing and seeing them making changes, would motivate. From value creation perspective, the value in services is only created when they are used. This kind of service would be strategically wise to support, since the problem for public economy caused by alcohol is significant, and using the service would hopefully result in behaviour change and reduce these costs. The context is though difficult since the need for such service is hidden partly, and help is seldom sought in alcohol related issues(Berends, 2013, by Alho) But if the help is not sought because of stigma, this type of service, where one does need to fear stigma, would be good.

**Marketing channels** would ideally be such that reach people, for example in social media and online searches based on words. That way probably healthcare professionals would also be informed. A strategy for implementation would include informing healthcare professionals, so they could recommend the service. It would be wise for example in health examination context; in maternity clinics, health centres and occupational health care, instead of sending papers (including Audit questionnaire) to guide customers to Hyvis to do the screening before these examinations. However this would require lean data transfers between systems to which the customer could send (only) their Audit-results to and they could be easily transferred to existing patient record system for collecting health related statistics. If the customers already had been in the system, it would be easy for them to start using it. Also the possibility to see the service surroundings and try it in some  limited form, would probably ease the engagement to towards the service.

**Access**

in this context presents how easy, effortless it is to engage to the service. Using the service is presented in the category of usability, since customers had quite much requirements for that. **Easy to start to use** is fundamental. For the expert lead program, it was difficult for people to understand why registration is required. In this new service concept, one can be identified by email, if they want to use all the features that collect data , utilise system persuasion and enable social networking. System has tunneling functions that lead people to make the screening and by the results, they received incremental steps based plan when they enter the service (Oinas-Kukkonen & Harjumaa, 2009).

**Technology available** for the use. Smartphone penetration in Finland is high. We have approximately 3.5 million people in the age group 15-65 years, and 3.4 million smart phones. This service could be used also from computer and tablet. (OSF, 2015; Statista, 2017)

**Capabilities to use** Approximately 90% of Finns used internet daily, in the age group 15-65 years, number getting closer to hundred within the younger age groups (OSF, 2015)Also in the service design session, most people had used lifestyle apps on their mobile, mostly calorie counter for weight management.

**Available 24 / 7** Technology is always on. From customer point of view, serving them when they are at work, is a production oriented way. There was a comment of Mini-intervention as a service that one would need to come up an excuse to go there during the day. However some said they would use the mobile concept at work too. Using the drink calculator would happen during the consumption of alcohol simultaneously. For this concept to work, one should have it available all times, and often people carry their phones with them every where

**Available anywhere** and according to this there was a comment of Mini-intervention as a service that one would need to come up an excuse to go there during the day. The customers said they would use the service mainly on evenings at home, but also on work trips and bars and restaurants, since it has the drink calculator. Access would be easy from all places one has their phone with.

**Experience**

**Autonomy** was a very consistent theme, people do not want to feel like they are paternalised. In this system, they would only be accountable to them self. Also the system which is based on persuasive technology would still gently persuade.  As what comes to their personal data, they would like to be the ones who control it. The type of health related data is not what legislation related to patient record concerns. They would make the decisions concerning their process, and health care professional would help, when and if customers needed them, without requirement of making an appointments that are scheduled ahead.

**Anonymity** is something that was wished after, since the threshold should be kept low. That's why only email is required for registering to use the service in full. However a feature, that one could publish something for example in Facebook was wished, and in the context one would not need to reveal their user identity they use in the concept. This activity could potentially act as a marketing channel on the other hand. People could come up with their own user identity by creating user identity names. Pictures would not need to show their face.

**Acceptance** is related to a positive and capacity building and empowering approach instead of concentrating only on the problem. Triviality was an important factor for customers and in medical settings the language can be difficult to the public. The language should bring triviality to the issue, so this particular part would be concentrated and payed special attention to. This was something that was emphasized by people taking part in service design sessions by

coming up with names for their concepts. In persuasive technology (Fogg, 2002, 23-121; Oinas-Kukkonen & Harjumaa, 2009), this is known similarity. As a feature, it is easier to relate to and to use, if service features are named with similar terms that customers would use and understand. Every life likeness would reduce the negativity and stigma connection by normalising the whole subject.

**Social support** was important feature and by the SCT, it has a prominent role in life style change. The role of social facilitation enables learning from others behaviour and being able to compare. The business model is leaning towards social networking, system persuasion and self- service or coproduction. When examining people who use alcohol, the factor which was causal was that the more people drank, more lonely they were. In this sense supporting social relations, even if it is hard to determine, if one becomes lonely because of drinking or drinks because (s)he is lonely is irrelevant, since meaningful social relations can be seen as protecting factor in any case.

**Easy and intuitive** Everyone said: "if it is not good enough, they will not use it". The user experience should be developed together with customers by following principles of persuasive technology design. The technology should be developed together with users to be truly easy to use.

**Features can be tailored**

People should be able to choose what kind of activities they could take part in. The expectations varied, while some wanted gaming features, others were focused more on seeing concrete differences of behaviour change. Everyone should though have the screening done, and receive a suggestion for an incremental action plan. In the beginning, at least, one should use drink calculator as a diary, so the person could recognise the occasions alcohol is consumed. By the data covered from diary, system could make suggestions for example where one could consider taking one drink less . There could exist forums based on the stage of their project and one could identify which stage users were from user profiles. The knowledge of how many are performing the same activity or are at similar stage could motivate. Unobtrusiveness is a principle of persuasion technologies (Fogg, 2002) and the ability to adjust how often and what time reminders etc. are received is important to avoid annoyance and that they would turn against their initial idea.

**Support behaviour change**

Motivational elements by SCT can be related to emotional and practical advice support offered by the community, but also by learning from others' behaviour. The customers wanted to receive evidence of positive results as motivators (saved money, appearance, calories) instead of relying on health consequences that can realise possibly in the future. Data would be

gathered automatically, for proving the effectiveness of the service, and such data could also maybe recognise later particular segments or patterns, where alternative functions could be developed or the one which seem to work particularly well, persuade users to adopt. Lappalainen, (2016) besides the other reasons for not using services in mental health care, is that people are unaware of their effectiveness, so this type of data could be used in marketing the service too. Also while registering or otherwise using, some kind of screening would be done with incremental goals. Praises, rewards and positive feed back would support self-efficacy.

**Interactive** the Customer Journeys from existing services were commented by lacking interaction. Self-monitoring by calculator is important for analysing the alcohol consumption and point out and suggest potential occasions when one could reduce their consumption of alcohol. Rewards, praise and feedback related to their performance from the system were wished for. Feedback is important especially for achieving something, since it builds self-efficacy. Also customer considered reminders as push notifications and suggestions of such features that could be useful for them. Customers found usefulness in the features of the system which utilised persuasive technologies.

**Supports communication** The facilitating role of the system integrates social surroundings to become part of users resources. As Vargo and Lusch (2014B) argue in third axiom of S –D logic that all economic and social actors are resource integrators and to understand value creation based not only to relations between service provider and customer, but also as part of people's other resources, social ones. Social aspect is vital from SCT perspective and communication supports this. Also the notion of those who consume much alcohol, perceive themselves more often lonely. Different forum could be available for different stages. Gamification features and group challenges would make it easy to start communicating with others.

7.2.2   Business model canvas

The canvas is not in canvas shape, since presenting the information was more clear in this way. It's not accurate but can give the idea of one possibility.

**Infrastructure**
**Key Activities:** Efficient early  intervention to risky or heavy alcohol consumption based on social networks and enabling persuasion  technology.
**Key Resources:**  Intellectual capital: Experts of substance abuse and health promotion, technologies & economical experts. Technology needed to run the service.( People who use the service!)
**Partner Network:** Social and health care system, substance abuse units. Other health based applications producing companies.

**Offering**

**Value proposition**: A positive environment for those who want to reduce their alcohol consumption anynomously. Easy to follow step by step process, with proven results. An easy way to increase your well-being with others in the same situation. Possibility to decide the activities to engage to, consult an expert and decide how the service supports you. All that is needed is smartphone and on is  ready to go. Fun and easy, 24/7 available.

**Customer segments:** Service is meant for those heavy or risky consumers of alcohol, for reducing alcohol consumption. People need to have smartphones and capabilities using them.  It is not necessarily sufficient alone if one has developed an addiction. Estimately 500 000 people in Finland belong to the target group.

**Channels:**

Social and health care system, Internet and social media, users as word of mouth.
Customer relationship: System persuasion (self-service), facilitation of social network community, on call consultations with expert when needed.

**Finances:**

**Cost structure:** Personnel and technology, advertising
**Fixed costs:** Experts of substance abuse and health promotion, technological & economical experts. Technology needed to run the service. Advertising.
**Variable costs:** Development of new features, designers and experts from various backgrounds.

**Revenue Streams:** Non-profit, free for customer
Financing could be sought after, for example from committee set by  Ministry of Social Affairs and Health (IVM, OKM, TEM, Tekes, Sitra, RAY, Kela, THL, TTL and Kuntaliitto) for reforming services and promoting health.
Evidence should be collected of health outcomes to ensure financing.

**Resources:**

People forming social community (social networking, crowd sourcing)
Experts of substance abuse and health promotion, technological & economical experts. Technology needed to run the service. (Osterwalder, 2010)

### 7.2.3   Health promotion planning perspective

The use of technology for life style change management was considered as a good option in the context of early alcohol consumption by customers. However since the emphasis was service design, no accurate plan was made for health promotion intervention. Still some indications of SCT in and  persuasive technology were made in this context to justify social networking approach as not only cost effective, but also in theory  suitable from health promotion perspective.  One can note that According to Lappalainen (2016) digital  health services are effective way support especially in stigmatising problems as mental health. He continues that there are 17 random controlled trials that have proven their effectiveness. Besides self-help or professional driven approach, the concept is strongly relying on social aspects. These type of interventions as described in the concept will probably become popular, and from the

public health perspective they are cost effective form of health and lifestyle management and in the context of chronic disease, by people with shared interest and common goal helping each others. I would not be too worried for health care staff having to be worried about their jobs, since there probably are people who will not use such services, and the health care capacity to offer care for those is improved.

Health promotion perspective will focus on to reflect how service design can act in planning better health intervention implementation concepts and how ethical principles were met by using such methods. The design process in this study implies that service design could help us to move towards more effective interventions, since at the moment one of the problems lies in the fact that when we evaluate the outcomes of such interventions, it's almost impossible to determine which part of the intervention contributed to outcome. Where the outcomes of intervention due to intervention concept or theories behind or more concerning the delivery as implementation. (Rychetnik, Frommer and Hawe, & al., 2002, 119-127)

Referring to the last paragraph, from the point of view of health promotion models Intervention Mapping and Precede Proceed models are created to guide intervention planners to create cost efficient programs with positive outcomes and to reduce the complexity of intervention planning. (Bartholomew & al 2011, 8-48; Green, Kreuter, Deeds, and Partridge, 1980; Green & Kreuter, 1991). From both of the models there are clear points of action, one is able to use service design methods.

**Intervention Mapping** step 5. Plan for adoption, implementation and sustainability of the program in real-life contexts.

**Precede-proceed** in the action phase (proceed), the step of implementation: Design intervention and assess availability of resources and implement program.

Still it was recognised during the design process, that understanding  and empathy were created that would also contribute to the earlier steps of both programs. For example the precede stage  "**Social assessment:** Determine the social problems and needs of a given population and identify desired results. Räsänen (2010) states that this stage should include participatory methods, that enable community members in target groups to examine their problems, needs, wishes, resources and obstacles related to the outcome of the intervention, and to be recognised the determining factors in the intervention. (for example 5 whys that examined why it is so hard to seek help in alcohol consumption related issues) Community members should not only help planners of interventions to recognise but to give social factor's value, how important they are. (Räsänen in  Pietilä, Länsimies-Antikainen , Vähäkangas,  Pirttilä, 2010, 100-116)

Similarly in intervention mapping one can identify step three where potential influence of service design could be useful: step 3. *"Select theory-based intervention methods that match the determinants into which the identified beliefs aggregate, and translate these into practical applications that satisfy the parameters for effectiveness of the selected methods"* it would be useful to assess the practical applications with people who are part of target group, even if careful needs assessment would have been done. Of course if similar interventions have been applied successfully and information is enough available of contextual factors as income, cultural values and access to media and services, concerning target group, then it is not necessary. However this is often not the case in public health interventions. If the aim is to produce new information to back up decision making, could it be possible to choose earlier interventions that have proved effective and with a group of people and service design to adjust intervention concepts implementation for ensuring the match. If such process which would build customer orientation would be described in detail this would result in good transferability too for further interventions.(Rychetnik, Frommer and Hawe & al., 2002, 119-127).

Service design could help to choose the implementation concept and I argue that if we for example look at health interventions in the context of chronic illnesses where lifestyle factors are relevant determinants, giving the customers an active role since they are main actors in creation of the outcome (unless research concerns only medication) would be just a logic thing to do. Customers should be involved in the making these decisions, by any methods, since the implementation contributes as much to the outcomes as other elements combined.

Virtanen, Suoheimo, Lamminmäki, Ahonen, & Suokas, (2011, 18-19) argue that the difference of customer originated and customer centred approach is, that in customer originated development, customer is participated to the development project from the gecko and seen as a subject, not only asked what they like of some detail of service that is developed for them.

Reflecting to this experience, I wonder if some of health promotion intervention models could find the iterative working order useful. As Tillford and Tones (2011) argue, health promotion studies have been criticised for long for positivism, that relies on strict use of theories for producing science and acknowledging only information that is technically produced, by predictable, controllable and can be testified, does not accept conceptualisation or interpretation. For example natural sciences are a good example, where science is made in laboratories, observations are specific, and the science as the result has no room for interpretation. The tradition is seen widely in the health promotion field still, where outcomes are measured in numbers, but in the end also financing for interventions requires evidence. Ollila (2005) criticises such positivistic approach and remarks that irregularities are often ignored and by following such research agenda, it takes time before these irregularities are observed, only

when they emerge continuously, making paradigm change evidently a slow and time consuming process. Also argument that the meaning of studies concerning intervention outcomes, is not to find the "truth" but rather help in developing programs in practice and offering information to back decision making I can relate to.

The iterative working order still intrigues; could it be used in health promotion interventions to adjust concept to fit practice. To clarify, I don't mean that research evidence and theories should be discarded in any situations, but could we still highlight the interventions implementation and concept as practice based orientation. The problem with qualitative studies is that they are often small groups, and if evidence is sought they should be taken as basis for medium scale and from there larger interventions. Laurence Green has expressed the dilemma;" if we want more evidence-based practice, we need more practice-based evidence". (Green, 2017)

I think if some form of feedback is asked from target group concerning generally health intervention along the process, it happens in a context of power positioning of patient (customer) and professional. And from a customer's point of view, one has to evaluate if they considered the intervention quality good? yes, compared to what? compared to no activity? in such a context it can be difficult for customers to contribute that much if they are in the role of an object. In traditional interventions it is not probably possible to alter intervention plan at that point where implementation is in action, when settings are predetermined and the nature of produced information defined by the hypotheses.

I think service design could contribute much as an approach, especially if it enables customers to have such distance to from the roles that they have in healthcare settings. That way they could freely express their thoughts about how interventions should take place. This would be a good method when intervention implementations are planned.
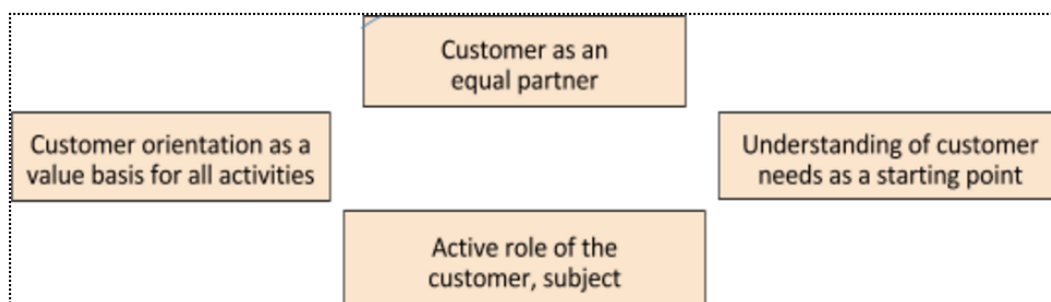


Picture 2:Customer orientation as as value basis Virtanen & al. (2011, 19).

Developing social and health services includes a multi-layered, complex, specialised and divided entities, including public, private and third sector actors. But in the end, what com-

bines all these services is that they would not exist without customers in a need. Customer orientation can be seen as a value basis in social and healthcare, where everyone ideally gets encountered as dignified individuals, no matter what kind of health issues they have. The service itself should begin from issues and questions arising from the customer, and it should be reciprocal. This requires from a services providers side to have the ability to have dialogue with customer (I do not know to what extent this really happens in the power positioning). Customer and service provider should create a mutual understanding of the best solution (The right for self-determination). It should also seek continuity, which can be seen as a requirement for mutual understanding. (Virtanen & al, 2011, 11-17)

Persuasion technology in the designing process of service concept or plan for health intervention has proved useful. It does not only help as a task list to ensure that all components of technology based intervention are taken into consideration, but it also combines the customers wishes in theories of health promotion by helping to reveal causalities of desired features and their relevance in behaviour change theories. As checklist they are almost a necessity, since for example system credibility features, among other things were such an obvious demand, customers commented that they expect that "off-course these are important and nothing less can be expected from such a service".
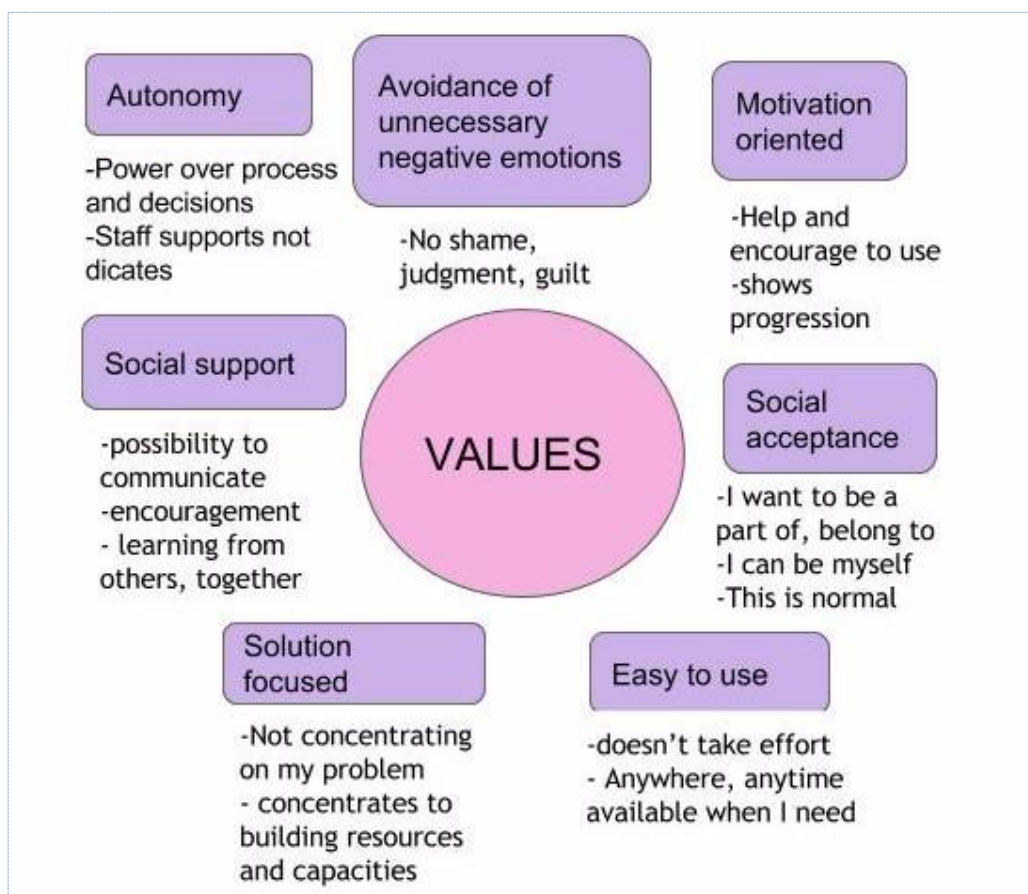


Figure 32: Customers values in early intervention services

What comes to ethics of the concept developed together with customers, I looked the principles presented, in 5 Whys, and customers own creations as well as the feedback from existing services, the mind map of customers values was created. For my surprise I noticed that those seemed to be very similar with values and ethical principles of health promotion.

Looking at the value map, one is able to detect how these values are similar with the ethical values of health promotion: Respect human dignity, respect autonomy, equity, resource building, responsible, participatory. Human dignity from health promotion resonates with avoiding unnecessary negative emotions and social acceptance, regardless of problem. Autonomy rose as an important need, meaning that people are taken as active partners in decision making processes. Equity in health promotion is related to social acceptance, in this concept the equity is ensured by not delivering it to a stigmatised crowd, and for those who need more help, there are channels. In planning health promotion interventions, it is important to acknowledge that some people might not want or have the ability to use technology, so in health care context, there is a place for traditional services too in this context. (Pietilä & al 2010, 15-20)

Resource building as a health promotion value is categorised in customer based values as solution focused (not concentrating on the problem, building resources) and motivation oriented. In relation to responsible, one has to evaluate is the service effective and deliver the outcomes in health related behaviour too. Taking action to prevent cyberbullying or other negative behaviours is important. Actively marketing other more intensive services for increasing the awareness of those to whom the help is insufficient. Participatory, this as a value is related to customer position and how active role they have in the process. It is a bit hard to explain how this happens, since in the context life style change management customer is the main contributor of outcomes. One can conclude that people who took part of planning the new service and produced this information, wished to have ethical services (Pietilä & al 2010, 15-31).

From the perspective of health promotion, I was able to learn quite much from the people taking part in service design sessions, I also developed my sense of empathy, since I got practical understanding of, what they expect from services in the context of their lives. From customer dominant logic perspective, the external value of the service concept as customer perceived quality is determined by the customers. Such knowledge, that emerges from service design processes, as what people value, could contribute as health outcomes in interventions. For example customers emphasized the fact that they could realise the value of their behaviour change (money saved, reduced calorie intake, effects to the appearance). This could well be used in marketing these services to get more people engaged with service. Even if in

health promotion concentrates measuring health related outcomes and seeks determinants which contribute to them, it would be maybe useful to collect some kind of data, what customers have valued in the intervention processes to gain understanding of increasing desirability. After all health is not an absolute value, but enabler of well-being, and what kind of value individuals get from being healthy should be important too. For example in the marketing of these services, these are factors that can be useful for engaging people, for example "since I have started to use service, I've reduced my drinking to half what it was and I've developed better relations with my family, saved 2453€ and feel great!"

**7.3**    Evaluation of the concept by constructive research

One of the challenges in constructive approach is the evaluation of the functionality of the construct. The service design sessions, gave enough information of constructing a model that was presented as a concept called Hyvis. Though this group of four people is too small to draw any conclusions from, but for example looking at the data that was collected from the people, and creating the critical themes, as a case study it is "true" in this particular context. However I argue that ideally, presenting the comments that were received during each session would add up by giving a chance to readers of this study to understand forming of key themes and also let them give their own interpretations to them. The sessions were in Finnish, and the amount of post-it notes was hundreds, for that reason, they are not presented in the thesis. The aim was to build a concept for early intervention of alcohol heavy alcohol consumption based on technologies. Three persons went to the direction for the technology based concepts, though the customer Journeys oriented them to.

This concept is shortly evaluated by the scale of  March and Smith (1995) suggested evaluation protocol. From their suggested scale, Järvinen and Järvinen (2004, 103-127) see that for a concept as a term, the most important criteria is that it is easy to use. Since conceptualising or creating concepts in innovation can contribute to some functionalities and cooperation in the context of concept, there is no value for changing something for the sake of change. By the word concept March & Smith (1995) refer to the language or terms. Findings in this study indicate, that what comes to terminology used in healthcare, one should be consider its context dependency, when instead of pathologies, one could address resources. Pathology focused approach can be perceived stigmatising. The model, Hyvis, named accordingly to the findings of customer expectations related to the triviality and everyday life likeness. Also from health promotion perspective, this name in Finnish has a positive echo and reflects taking a positive angle. The language that should be used in interactive environment in Hyvis, should be easy to understand, and not contain any kind of medical pathologies or terms that can indicate negative stigma. The language was considered profound factor among customers

for bringing triviality to heavy drinking, and findings indicate that some kind of societal atmosphere change was desired.

Järvinen and Järvinen continue about evaluation of construction, that a *model* that is not yet implemented, should be evaluated by the final construction, a realisation how it "ought to be". The model for customer oriented early phase intervention service to heavy or risky alcohol consumption is presented as concept, in form of Customer Journey Map and as a business model. However the business model should be calculated carefully to determine in which capacity it would have to be used for achieving the economic benefits to the society that results as behaviour change outcome. It would be important for the sake of seeking financing. Also the model named Hyvis, should be tested with more people, perhaps continue service design and in order this to become such a social phenomenon that people would like to use, this should be done properly acknowledging the features in persuasion categorization, since customers had such high expectations towards the system features, they would not even start to use this if it was not good enough. Also acknowledging the stages of change and understanding that it is a process and the readiness to change is not probably immediate, regardless of the manner that behaviour change is conducted.

According to Järvinen & Järvinen *Method* can be brought as a side product for realisation of an innovation model, a means to be able to implement the innovation. A method can be seen as a utilising a technical, social, informative resources in a new way to implement the model. The steps of method, include instructions to solve problems and the criteria for evaluations is concerning the fact that it is supposed to be in some way better than the best of previous methods. (Järvinen & Järvinen) The method of the concept, technology based interaction that facilitates social networking, addresses also people as active resources. The system it self interacts with users, helping them to change their alcohol consumption related behaviour, step by step. The method also helps in the issues related to reducing stigma, since such encounters, where one can think of being stigmatised, do not exist. The fact is that what comes to early intervention of alcohol social support utilising / offering services are presently underestimated resource in our current service system. (Järvinen & Järvinen, 2004, 103-127)

The information produced in this research contributes to planning services for early intervention of heavy drinking, as customer insight information that pinpointed the critical phases in services and enlightened how fear of stigma is present in the process. The understanding also of practical level demands and wishes towards services, points out the lack of services relying on social support, which from the perspective of social cognitive theory (Bandura, 2001) has an important role in behaviour change. Also in this particular case, service design contributed for creation of highly ethical service from health promotion ethics perspective (Pietilä, Länsimies-Antikainen, Vähäkangas, and Pirttilä, 2010, 15-31). From total value of service per-

spective (Grönroos & Ojasalo, 2004), service providers are able to offer services, that have high value for customer value creation and if the expectations are correct, they result in satisfied customers. From service providers perspective, also inner efficiency can be improved by providing services that recognise customers as resources, through technology that facilitates customer value creation as service exchange, reducing the personnel costs. This might result also to improved capacity in health care, if this type of intervention would work in practice and the need for services that are available in the later phase of substance abuse services and specialised health care would be reduced.

Besides that an implication of service design methods from health promotion perspective being able to release people from their oppressive position in customer caregiver relationship empowers them to contribute for developing better services. Also service design methods, that use role play, for example Personas can possibly help to create such distance that they felt more free to share their thoughts of sensitive subjects (Hirsjärvi & Hurme, 2011, 115).

## 8    Conclusions

The purpose of this thesis was to develop a new service concept for the early individual level intervention of heavy or risky alcohol consumption in health care setting. Research approach was constructive research, and methods of service design (5 whys, Personas, Service Staging, Customer Journeys of Mini-intervention, Self-help program, Expert lead virtual program, iterative model and one's own concept were worked on. Snowball sampling (Heckathorn, 1997) was used to gather participants (age 25-65), which was proven to be far more challenging than expected. The total of four people took part in these sessions, (Woman 42, woman 63, woman 33 and man 45) instead of 7-8 which was the initial plan. However this sample showed surprisingly high saturation in the data and this was enough to provide information to fulfil the purpose of this thesis by being able to  create a consept.

Main managerial implications that resulted from this research are presented. The importance of understanding customer dominant value creation and service dominant logic over goods dominant logic in health services support creating  customer oriented services with positive health definition. Adding low threshold services (defined by customers) to offering in the early phase , for example by the principles  of Hyvis model. Technology can decrease treshold and support behaviour change in this context. Social  support & networking (peer support) are used in many other context, not with heavy drinking yet. Importance of customer orientation-suggests that service insights of customers are quite weak and health care service providers could utilise service networks more often to customers benefit. Theoretical contribution is the practical customer originated model Hyvis for early intervention itself, based on theories. Also by this research process, one can argue that service design can contribute to health pro-

motion by increasing total value of interventions as better external efficiency as quality. Service design can help reduce powerpositioning in healthcare and contribute customers active role in development. Customers created services that mathced well with ethical values of health promotion. The research questions are examined and followed by discussion.

1. *Customer insights and expectations towards services concerning early tion of heavy or risky alcohol consumption in health care*

   Customer insights are described thoroughly trough picture and picture of customer values. In short the insights revealed a heterogenous group (25-65) whose situation was affected by self stigma and through that misconceptions of services and the providing staff. Also weak service insight of existing services was noted. The hidden demand is problematic, alcohol is widely used, need is not recognised and if is, help is rarely sought and the fear of stigma makes it more difficult for health care staff to recognise. The expectations were described in Customer Journey examples and in ideal concept forming the critical phases in service. Out spoken expectations towards existing and ideal (imaginery) services formed category of values describing character of service to reduce heavy drinking; respect autonomy, avoidance of unnecessary negative emotions, motivation orientation, social support and acceptance, solution focused, motivation orientation and easy to use.

2. *How does the current service system responds to these insights and expectations*

   See figure of service landscape. That figure includes only steady actors, even if there are promising amount of specialised private actors and also some new digital forms available, unfortunately there was no data available of the extent of their use, so they were not included. Mini-intervention is not a problem free concept, since the fear of stigma and also some service provider related issues can be recognised in attitudes and in practical aspects as the lack of time. The critical phases of early intervention services formed as results of this study should be better acknowledged, since current services hold some production oriented features. *Opportunity* is lost if customers are unaware of service. *Access* and availability outside office hours, starting to use the service should be truly low threshold, defined by customers, also understanding the service besides a process also as a mental *experience*, anonymity, autonomy, acceptance, social support are highlighted and for example patient record system was considered stigmatising. Readiness to use technology and accept help other than health care staff, as social networks as co-production could be considered in this context as meeting customer insights and expectations, as well as increasing capabilities of staff in utilising service networks for customers benefit, rather than solely focusing on own service production.

3. *What would be the ideal service concept based on these customer insights and expectations*

   I refer to question two, where alternative approach in service production was presented. Based on customer insights and expectations formed in this thesis as principles of critical phases in service and collage of customer values, as well as social cog-

nitive theory and persuasive technology, concept of Hyvis is presented as the ideal service.

4. *How do service design methods fit  planning  health promotion interventions*

Service design can help to increase the total value of services by increasing external efficiency as customer perceived value, since quality of implementation is at least as important as study design as theories for the effectiveness. Service design in this process was able to empower customers as co-designers and developers quite freely by releasing the power positioning where customers might act cautious concerned by their future care. By this research and context, one is able to say that customers developed and wished for ethical services consistent with values of health promotion.

Ethical questions though have to be considered along the service design process, for example in this process, because of the sensitivity of the subject, those group based methods favoured in service design, were ruled out to protect the identity of participants. I also think that even if one is able to have participants to group methods in sensitive subjects, people might not be so open. In a sensitive issue one is able to create distance through the use of Personas, one is able to tell story through Persona, and the story might reveal their thoughts. Keeping the atmosphere light is important, and acknowledging the purpose of service design, by forgetting the professional's role, and encountering people as equals is I think is important.

The holistic understanding of customers' emotions and attitudes revealed how profound the stigma effect is, at least for this small group. The implication of shame related emotions or insult towards one's autonomy, how much they were present in our sessions was surprising, regarding how many of Finns enjoy alcohol over the such limits which can be considered as risky consumption. Even if we only explored imaginary service experience and the service staging was a simulation reactions were lively. Depending on the definition, 20% of male (>24 servings per week) patients in health care are risk users and 10% of women (>16 servings per week) (Halme, Seppä, Alho & al., 2008, 1615-22) It is not hard to imagine the amount of risk users by 2015 released recommendations (men >14 servings per week and for women <7 servings).

For understanding the negative emotions that are connected to Mini-intervention and the dual-moralistic situation in our society where people consume alcohol quite much and still consider talking about it stigmatizing in health care context. I argue that more attention should be pointed towards trivialising such phenomena. Stigmatizing diseases and illnesses show moral weakness or other false and negative characters, and ultimately defines person's whole identity. As a result, the person starts to withdraw and avoid situations where one could be exposed. Goffman (1963) created a term of beginning *a moral career* once one becomes aware of their stigma. The career continues by the person trying to develop strategies for hiding this character from others. Since stigma is part of the cause of not getting help, strat-

egies should be developed in healthcare that help to diminish this. More research could be done how to reduce the stigma in the context of heavy alcohol consumption.

Different campaigns have had some positive results among public (Livingston, Milne, Fang, and Amari, 2012, 39-50). They compared an educational fact sheet, a motivational interview campaign and a leaflet in which positive attributes were communicated of people with substance use disorder. The one including positive depictions was far more effective than other strategies. (Luty, Umoh, Sessay, Sarkhel. 2007; 31: 377-81) Still in practice, every professional can think how they contribute to the reduction of stigma in health care context, in which stigma is is called as structured stigma. In my work as occupational health nurse, I have noticed the impact that language might have as empowering people.

 It is not irrelevant how we describe person's situation in descriptive statements, especially in this study people were so concerned what the health care person thought of them in the context of Mini-intervention.  Do we have any focus to their capabilities or strengths, even if we need to bring up their challenges. In my work I have come across with such a negative statements about people's situation and I cannot stop to wonder would the person who wrote that like to read similar statement of them-selves. In every person there are resources too, and since people have better access to their personal health record, this is something that should be addressed since defining their situation effects to how these people see themselves too. Writing patient records and informative health related material should be considered as important part of communication between professionals and customers.

In January 2017 a suggestion (based on a study  by Botticelli & Koh, 2016) by the use of correct terminology in substance abuse disorders, was released by US Office of the National Drug Control Policy. A study by van Boekel, Brouwers, van Weeghel and Garretsen (2013) found that even mental health professionals judged an individual identified as a "substance abuser" more harshly than an individual identified as having a "substance use disorder." This is an example how language matters, the substance abuser reflects that the substance abuser disorder defines person's whole identity, while a person with a substance abuse has one such character.

Customers wanted the concept Hyvis to bring triviality to alcohol consumption related behaviour change, and importance of language was recognised by them. It is known in persuasive technology design as Similarity and it means speaking the same language. Creating the concept with clients, a finding that was discovered was that people wanted ethical services in early stage intervention. It is understandable for being such a sensitive subject and a low threshold (easy access) was found important. Service providers should consider do the services they provide fulfil such criteria to contribute to external efficiency or quality perceived

by customer. It is problematic, since low threshold service providers define the low-threshold them-selves, meaning access to the service has less requirements as than entering the so-called normal services. On the other hand, this is not exclusive to definition of a low threshold, instead customers' experience and the activity of using such service defines how low the threshold really is. According to customer dominant logic value creation, customer defines the value of a service. Also a value of a service does not exist if it is not being used. (Oinas-Kukkonen, & Harjumaa, 2009; Leemann & Hämäläinen,2015; Grönroos &  Ojasalo, 2004; Grönroos & Voima, 2012)

Also it is good to see that in national level, we are acknowledging the shift of healthcare moving towards the management of chronic disease management, where lifestyle choices play a remarkable role. Significant share of chronic diseases can be prevented and treated with healthy diet, exercise, avoiding smoking and heavy alcohol consumption, as well as obesity. But the shift from infectious disease where treatment was more like a single event has still probably an effect on our health care system and culture. Christensen & al (2009) describes lifestyle management oriented context as *behavioral medicine*. It is a describing term for management of chronic disease (even if medicine has little to do with the self-management). Changing the culture in healthcare towards seeing beyond the single deeds done in appointment also requires different orientation. For customers such diseases are usually lifelong challenges (THL, 2015; OECD/EU, 2016)

Normann (2001, 126) in Nordgren (2009) sees that service provider should "approach customer's health-giving processes, instead of focusing on curing the disease". This sentence summarises the fact that in health care customers should be seen as main actors contributing in chronic disease (which account in developed countries of 60-85% of deaths) but more importantly, they have an effect to quality of life. In new type of orientation the skills that are highlighted are in connection to the role of healthcare as facilitators, agents and coaches who support the resources of people to start to and continue to manage their health. G-D logic also has had more focus on seeing the exchange of value as events, whereas S-D logic encourages to create relational settings, and continuity. (Vargo & Lusch, 2014B, 72-74) Communication in building continuity in relations is essential, and understanding that value creation healthy choices are done in customers life extending far beyond the encounter in healthcare as an event. In service design sessions in this thesis there were lot of expectations regarding to the quality of communication.

The EU suggests that diminishing the losses that chronic disease cost to society, preventive care should be emphasized. I argue that for example facilitating social networks and recognising the potential that people have to coproduce such preventive services are probably under-rated form of prevention work in individual level. From service providers side such services

that can utilise technology would have also high internal efficiency contributing to the total value of such services. From the point of view of early intervention for heavy or risky alcohol consumption (which is chronic disease prevention), this form was emphasized by customers. I wonder whose best interest is not to invest in such economical form of producing services that could decrease heavy drinking. Such services in health care would demand change in attitude as gatekeepers towards barkers (Chalamonin, Chouk & Heilbrunn, 2009). (EU, 2016; Christensen & al, 2009)

What became evident was the weakness of service insights (the understanding of services available in the context of early intervention) that customers had. They were unaware of the existing services, which naturally diminish their opportunities to access such services and health care personnel could take more responsibility of guiding the customers in this system. Koivuniemi and Simonen criticise our healthcare system for lack of coordination of individual customers. They assume that this lack of responsibility of the individual customer can be due to lack of skills of utilizing health care networks after basic training to be a health care professional (Parvinen, Lillrank and Iivonen, 2005). (Koivuniemi and Simonen, 2011, 40-47)

The education based competence issues among health care staffs capabilities of utilising health care networks can also be due to long tradition of healthcare combined with traditional perception of expertise is based on individualism, where expertise is focused to an individual (Engeström, 2006). The latest research of being an expert is targeted towards cooperation, community, horizontal development and change management. In these themes the basis for unity or community discovered by the fact recognised that no one can master the complexity of the targets of experts work alone. Crossing such boundaries and combining knowledge is critical. (Engeström 2006, 13; Virtanen & al, 12).

Arantola and Simonen emphasise that besides understanding customer's value creation in a context, it is important to understand their situations, that can be defined in different levels. Personal situations, situations in functions, service providers situation, branch situation and societal situation. This approach is similar in ecologic perspective of health promotion, contributing to holistic understanding. WHO's health declaration does not include situationality, but addresses social roles of individual. I think that situationality as a part of human existence, seen as a circumstances of life is important aspect for healthcare personnel to understand since situationality is always unique for individual. It consist for example from the terms and atmosphere of society, geographical and climate circumstances, culture, habits and preferences, values and norms, religious atmosphere. Spouses, children, home, our position in work community unique for each individual and one of a kind components of our situation in life. This research implied that personal resources, (or lack of them) had role in seeking help. (Rauhala, 2005, 31-47)

Developing services with service design is not opposite to service productivity in health care, if we concentrate on understanding total value of services also as customers perceived quality and recognising their active role in it. Similarly ideally in health services active position recognises customers as main contributors of their well-being. Health care service production understood from customer dominant logic perspective and increasing health and perceived well-being do not collide. If still in healthcare a G-D logic is emphasised (internal efficiency and capacity efficiency focused), developing of customer orientation could be considered as wasting resources. (Arantola, Simonen: Grönroos, Ojasalo, 2004; Vargo & Lusch, 2014B) It would be interesting to examine how health care service providers measure the value of their services in, this would be good research topic in the future.

To have some definition to the results of this study, some new aspects are presented to achieve better understanding of how to relate the results into theory in the context of service quality, to which earlier pointed out mainly as external efficiency. There are many ways for assessing quality of a service. In the context of healthcare a habit is to use quality management measurements (such as ISO, EFQM and CAF). The challenge of using such measurement is that they are mainly based on self-assessment (or external auditing) of defined areas of quality fulfilled by available data (THL, 2017). Areas can be described how they affect patient, personnel and management, and then organisations describe how they perform. Such self-assessment is important for improving services, assuring that they fill legislation and that quality is steady throughout the organisation. However customer perceived quality should be addressed as systematic collection of customer satisfaction for developing services.

Grönroos (1984) identifies two forms of service quality: technical and functional. Technical quality refers to technical outcome of the production process, in this context of early intervention, understanding their situation, receiving guidance and motivation to perform the change in behaviour. Functional quality means how the technical quality gets transferred to the customer, in manner that it relates to their satisfaction of the experience or process of the service. In health services informational imbalance makes it almost impossible for customers to assess technical quality, so besides quality certificates, functional quality from customer's perspective have important role in services. Parasuraman, Berry, and Zeithaml (1991) have created assessment tool (Servqual) to measure quality or customer satisfaction by measuring how expectations meet with the delivery of a service. There are five categories, reliability, assurance, tangibles, empathy and responsiveness for assessing functional quality.

The Model of Service Quality Gaps is originally created by Parasuraman, Zeithaml, Berry(1985)as four gaps, but has been added by Curry (1999) and finally by Luk & Layton, (2002) by two more gaps, consisting now total of seven gaps relating to service producers perception

of service quality, and tasks associated with service delivery to customers. The following gaps are presented with the findings and theory of this thesis.

Gap1: Customers' expectations versus management perceptions:

In early intervention to heavy or risky alcohol consumption this could mean, that if the strategy in public health is intervening at early stage to alcohol consumption, the investments as service offering in individual level is focused to the later stages. Offering alternative ways besides Mini-intervention should be sought more actively, since there are recognised challenges as negative emotions related to stigma (in this thesis, and for example Behm, 2015).

Also understanding access to early phase services, how low is the threshold from customer perspective might differ from service providers, according to findings, customers would not like to reveal their identity in fear of stigma. It is rare, that customers seek help from health care them selves for alcohol related issues. (Berends & al., 2013 by, Alho, 2017) This point is further examined in the context of becoming gaps.

A service producer oriented thinking leads to such thinking where customer is not identified as an active resource for value creation and a heavy treatment system is the way forward. Ultimately the challenge is to reduce public's heavy alcohol consumption, which is not a disease state and does not require a patient record system to "get the job done". When customers are identified as resources and  their potential as managing their health, also providing services that are based on coproduction in social networks might be considered as one way to get the job done, particularly if there are implications that this would be a form emphasized by customers.  (Lillrank & Venesmaa, 2010, 35-45; Christensen & al, 2009, 73-110).  Such emerging situation might attract dynamic new actors, where existing ones fail to correspond to such situational aspects(Vargo, & Lusch, 2014B, 161-167).

Gap2: Management perceptions versus service specifications:
Mini-intervention is the chosen strategy and there are number of studies of how many have been asked of their alcohol consumption. But it might be wise to educate staff, since according to Mäkelä, Havio &  Seppä (2011, 1239-1248) discovered that 33.3% of health care customers had been asked about their alcohol use  in the 12 months before the survey. However, 50% of heavy drinkers who had been asked about their alcohol use had not been advised about it. Incorporating intervention to basic health care functions is a good strategy for reaching the target group widely, however as an additional service, it is vulnerable for example in the limited time frame of healthcare appointments, that there is no time. The lack of time was given as one reason why sometimes these interventions are not carried out (Behm, 2015)

Gap3: Service specifications versus service delivery:

Mini-intervention is considered as a basic task in health care. However Behm (2015, 68-69) studied early intervention in the emergency unit context, and employee related challenges were recognised. Firstly employees did not have a uniform idea of early-stage substance abuse work, and primarily the emotions that it brought up were negative. These situations were experienced difficult, awkward, challenging and embarrassing. Workers felt frustration, irritation, annoyance and anger. Also sadness, pity and hopelessness were experienced by employees. Feelings of incompetence, helplessness, powerlessness and failure as well as anxiety and fear. One of the reasons for having such feelings were related to the lack of patient's capabilities, inability to intervene, presumption of such activity being useless, ineffective and waste of time. According to Helkkula (2011) service experience happens also to the service provider and interaction in the service event is crucial for customer value creation. Customers had expectations concerning communication with professionals, wishing to have calm, tender and understanding attitude and according to Behm's (2015)study this is not always the case.

Mini-intervention is recognised as an effective way to reduce alcohol consumption, however I think that understanding stigma and acknowledging how it affects this procedure by the dishonesty, I think alternative ways could be considered, results in this study imply that people might adopt for example interactive systems and anonym social networking. According to findings low threshold services would be such where customers would not need to reveal their identity. It is rare so far, that customers seek help from health care them selves for alcohol related issues. (Berends & al., 2013 by, Alho, 2017) This situation could be seen as to what Vargo and Lusch (2014B, 161-167)refer to as emerging circumstances which creates opportunities even for the niche dynamic actors, since recognised mismatch between expectations and supply. However in the context of public health as redistribution institution the aim is common benefit. Instead of competition, cooperation and coordination of activities in strategic partnerships with actors in service ecosystem should be sought, that would be able to develop and offer low threshold services (Not forgetting to bring the customers as end users to the table)

Gap4: Service delivery versus external communication:

The service insights of customer's were weak of existing services and misconceptions, for example towards A-clinic's services, were common. Services are not marketed actively enough in health care, but essentially this gap is meant to describe the aspect towards giving too high expectations, and not delivering. The lack of active value propositions is a challenge in this context, since the demand is hidden, help is rarely sought and the opportunity to engage

should be important. The value of a service doesn't exist to customer  unless they are being used and the lack of service insights does not help to say the least. (Vargo & Lusch,2014B, 71-72)

Gap5: The discrepancy between customer expectations and their perceptions of the service delivered:

This is a difficult area, since there is no active demand, customers might not understand that they could benefit from an intervention, do not want to reveal it to staff, and do not tend to seek help even if aware of the problem. Unawareness of services means lost opportunity for customers. The lack of skills of health care staff in utilising the networks of health services (Koivuniemi and Simonen, 2011, 40-47) does not contribute to customer's benefit. The best solution for customer's to receive service for their problem might be sometimes outside or-ganisation, for example in third sector services. As all actors are resource integrators, so are health care employees as well (Vargo & Lusch, 2014B, 74-78). There are already good alterna-tives available, for example by A-Clinic Foundation's  Jeppe Drinking diary, Virtual rehabilita-tion program, Online self-help program, besides Mini-intervention in health care, but the challenge is that how well these are utilised for customer's benefit? All in all I wonder how the substance services are divided, since there are so many different actors in the field, it would be interesting to know for example how many seek help from smaller and niche private actors' in comparison to public and 3. sector. Could part of the explanation of why particular-ly men in manual labour proceed more often to severe alcohol related health issues besides other lifestyle factors?

Awareness over of such services and ability to utilise them for customer's benefit can be seen as a part of health care staff's competence in early intervention context. Since according to Vargo and Lusch (2014B, 104-107) the nature of exchange in services is complex, they prefer service ecosystem point of view. What makes service ecosystems challenging for actors is that they are part several institutions, and the norms and how to interpret them, varies in differ-ent contexts from implicit to explicit. Mutual value creation through service exchange calls for actors to invite and engage other actors to make value propositions to their services to get transactions (Vargo, & Lusch, 2014B, 161-167) So in order to contribute to customer's wellbeing, acknowledging the service ecosystem around them and recognising their own roles as just one part  such systems and as customers resource integrators, it  could help to make value propositions to engage to other service providers services. This could indicate to also to the challenge caused by working in silos, as Vargo and Lusch (2014B) and Koivuniemi & Simo-nen(2011) refer to it, where actions are organised from the point of view of service provider, not customers.

Is the threshold actually low for entering the services should be considered from customer perspective. The wish for not needing to reveal their identity was an important factor in the study. At the moment in the early phase, there are very limited services which fulfil this criteria. Still people who took part in service design sessions would like to have support that does not necessarily need to be a health care employee. This situation could also be seen as to what Vargo and Lusch (2014B, 161-167)refer to as emerging circumstances which creates opportunities even for the niche dynamic actors. In the situation where dominant institutions who wish to destabilise their actions might be in trouble if they are not ready to change their course. Sharing an institutionalised logic (rules) is essential for cooperation and coordination of activities among actors in service ecosystem to create a structure. However the context of public health, as redistribution institution, there should not be competition, since the aim is common benefit, rather to sit down together and plan which services should be emphasized and forming strategic alliances between service providers. (Not forgetting to bring the customers as end users to the table)

Also what emerged from this study was that services that are available only during office hours limit customer's possibilities of entering them. This is an example of production orientation over customer. There were some negative experiences concerning getting help from healthcare to alcohol related issues that were heard as word of mouth. These obviously are not such service experiences that customers wish for and the word of mouth as building brand for health care is important to recognise.

Gap6: The discrepancy between customer expectations and employees' perceptions:

To give a holistic understanding, service expectation in this context might be partly lower than what actually is delivered in existing services. The prejudice of health care personnel labelling people if they have excess alcohol consumption, is perhaps not as common than in this study and actually it rather is a matter of self-stigma. But because this type of thinking, the result is that help is not sought. It would be interesting to further research this area with practical approach for developing this area instead only increasing understanding. Even if the service provider is not the cause such prejudice, understanding of their position of this service economy and the atmosphere, maybe some activities for proving such prejudice false should be organised or developing services which acknowledge the stigma effect.

Gap7: The discrepancy between employee's perceptions and management perceptions
Here I refer to Behm's (2015) study results which implied that some of the employees did not believe that Mini-intervention was usefull. Educating them about substance abuse disorders that those who are concerned can learn to manage their situation. Or perhaps taking them to develop the concept is an option too.

The use of service design methods enable healthcare providers ability to increase external efficiency and contribute to the total value of services produced or health interventions implementations quality. In this study it did turn out that the customers originated concept would probably lead to better internal efficiency too. In Health promotion intervention outcomes are affected by the quality of implementation and this external quality could perhaps similarly effect to health outcomes of all healthcare activity. Service design enabled to create deep customer insight and empathy in the context of early intervention of heavy or risky alcohol consumption. It also was able to point out the critical phases of early intervention services and in which parts the services were production oriented and not truly contributing to customer's value creation and give ideas for new concepts. If customer orientation is considered one of the most important health care quality areas, I think that service design could contribute much in developing the services. Since the quality for customer in a service is not something that one is able to point easily out, but instead perceptions might turn to concern any stage or phase when they use the service.

Persuasion technology design approach, was brought up in the context of lifestyle change management. Oinas-Kukkonen & Harjumaa (2009) have suggested a framework for designing persuasive technologies. During the service design process in this theses, the categories were used as a check list, and by customers were all proven important or significant for an interactive system design for behavioral change. Only one which raised questions in the early intervention context was the *normative influence*. Some pointed it out as it should be taken care that it does not mean such pressure of not wanting to relate to a group that is based on fear of stigma. Rather as a positive norm as a group one wishes to relate to by holding on to a positive identity. Persuasion system technology features guide the planning process work but do not contribute alone in creating content to such systems.

In Finland we are in the middle of significant reform of health care services where customer's ability to make choices is seen as it would challenge service providers to create better services. However in this study, it became clear how weak the service insights were and also making choices in health care is difficult since people's ability to estimate the technical value of such services is very limited. Also in health care, customer is not always right, since the informational imbalance and the understanding between what they want and what actually is needed might differ. This study implies that we need more transparency of services production, and besides technical value more attention should be started to pay towards functional quality from customers perspective, I think it might not be enough to have certificate hanging on the wall. Perhaps this is another opportunity for new actors to start collecting such information of service providers that customers find useful if the providing organisations are unable to. Or perhaps this challenge is acknowledged among decision makers of this reform and

they will create a system that starts producing such knowledge to support customer's decision making.

Also what worries me is that how will this reform effect preventive activities in other contexts than purely preventive services. For example in other appointments than preventive ones, Mini-intervention can be seen as additional service and as a concept holding some negativity too. Could the competition over customers effect to the fundamentals of our basic tasks as health professionals. I did not in the thesis bring out the value destruction point of view, since we have to communicate in health care also such messages to the customers that are unpleasant for them to receive. Even if they are not something customers would like to hear, but according to definition of autonomy they should have truthful information of their health that can support their decision making. Mini-intervention process in organisations could be monitored not only from the point of frequency and behaviour change, but also as customer perceived quality assessment to help understand how this potential value destruction affects the total value of the service.

Also lifestyle change from service perspective acknowledges the active role of customers, but on the other hand it also demands much from customers, since they are long processes for them and there is no quick fix. One could again develop this particular area that would contribute to measuring how well in service provider organisations health promotion or prevention is conducted. For example besides the challenge of situationality of being unemployed, also access and level of prevention in services received among those who have and do not have access to occupational health services were acknowledged by government. In 2013, municipalities were directed to conduct prevention as health examinations to unemployed, since the growing health differences when unemployment continued (STM, 2013). The level of prevention or maintaining health could obligate service producers some way or even act as a factor that affect customers choices between service providers. This type effectiveness is measured for example blood sugar and cholesterol, but in my opinion it should also separate the results that are due to use of medicine and lifestyle change. This type of measuring shuold concern alcohol consumption, smoking and weight management too, which are demanding life style processes for customers and also service producers.

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Figures

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