Love, Growth together
Service design for a sustainable lifestyle

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Abstract

Nowadays, millennials living in megacities are facing numerous issues. Most of them are currently experiencing an unsustainable lifestyle. Since this social group is destined to grow in number in the future years, its living status will strongly affect the development of sustainable cities. High frequency relocation, limited savings and lack of time are some of the Millennials’ main issues. Create appropriate solutions to their problems is therefore crucial for a sustainable development. The project aims to investigate Millennials daily life conditions through a human-needs approach performing and, at the same time analyze the possible business-based services that can help this social group to live more sustainable. This has been done through three needs-based service design methodologies that allowed to identify the reasons behind this social phenomenon: a day in life, questionnaires and phone interviews. Furthermore, a co-creation workshop allowed to investigate possible interactions between businesses realities and millennials.

This project results demonstrate that there is a need of Business to Customers services which can contribute at the same time to create a sustainable lifestyle and to reduce the environmental impact of the contemporary consumerism-based society. Finally a concept of a product-based reuse service is for this reason developed considering the role of product life cycle in contemporary sustainable issues. To conclude, the importance of a needs-base approach to generate innovative solutions within the topic of service design is highlighted.
Key words
Millennials  Megacity  Service Design  Reuse

Needs-based approach
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1. Introduction

1.1. Background

Nowadays more than half of the world’s population have moved to big cities and, according to the United Nations Population Fund, by 2030 this number will increase to about 5 billion. Much of this urbanization will unfold in Africa and Asia (Allizan, 2015).

This fast urbanisation strongly affects the conditions needed for a sustainable development thus the ecologic, economic and social impact are all affected by this phenomenon. The urbanization process brings huge social, economic and environmental challenges and China is among the most affected country in the world.

The most consistent part of this phenomena is taking place in a rather new urban reality called megacity. “Megacities” are defined as metropolitan agglomerations which concentrate more than 10 millions of inhabitants (Mega city paper-MgC- January2013). A urban agglomeration is an area (usually a municipality) formed by extension of cities or towns, or several suburbs. Also a mega-city is
defined as areas of continuous urban development (Kotkin, 2013). China has more megacities than any other country: four (Shanghai, Beijing, Guangzhou, Shenzhen) (Kotkin, 2013)

Among the population moving to megacities, large number is constituted by youth often defined as millennials. Millennials are known also as the Millennial Generation or Generation Y (Willam S. 2013). Most researchers and commentators use birth years ranging from the early 1980s to the early 2000s to give the definition to this word.

Looking into the future it is clear that a large number of young people will choose to move to mega cities (Dent, 2014). Most of millennials live an unsustainable life in megacities. Even if the life conditions are often strongly menacing both their mental and their physical health, millions of people are moving there following their dreams of a better life. Some of them can rapidly change their living conditions since new job’s opportunities can provide them with better economic conditions. For many other achievement of better life conditions can take years of hard work.
The policy has a big role and responsibility for providing easier solutions that can help young people to live a more sustainable life. Also business and companies have the chance to contribute to the creation of a better and more sustainable life for millennials.

This study assesses the social living conditions of millennials living in Chinese megacities.

1.1.1 Social mobility

As an outcome of China’s economic strategy (Gordon M. & Cecilia T 2006), at the beginning of the 80’s, Chinese population start spurring to the coastline cities in China, reflecting the decreasing restrictions on population mobility. The high speed city development and large population mobility brought a series of social, economic and environmental problems. In May 2014, Fergus Green and Nicholas Stern, researchers and climate policy consultants (London School of Economics & Political Science), pointed out: “China need to shift to more advanced industrial development with high-tech, low carbon emissions with better allocation of national resource to innovation for
sustainable economic of growth in order to reduce the impact of China’s heavy industry”. China is experiencing new industry transitions, the new policy directions and technologies application require well educated people instead of basic workers (ILO, 2010). These working and study opportunities will attract large number of well educated young people to megacities. Due to this second wave of population increment, housing conditions, traffic jams and air pollutions become main obstacles that influence the achievement of a sustainable daily life. （GlobeScan and MRC Mclean Haze, Megacity challenges a stakeholder perspective）

1.2. Problems identification and discussion

In the past years, in China megacities, houses deficiency has been a huge issue in the past years. （Megacities, 2011） Due to the constant population growth, this issue is becoming worse, especially in central areas of big cities. Due to the high living expenses, the majority of new coming millennials struggle to afford their renting fee (Li, 2010a: 55-83), most of them have to live in a cheap room far
away from their working places or have to share a small apartment in a relatively more convenient location.

They experience the traffic jam, long commuting time, an intense working day, and lack of social life and leisure time. At the same time, they can not avoid to be exposed to air pollution their living conditions are not healthy. Due to their complicated living conditions, millennials generate big amount of waste and they acquire unsustainable pattern of consumption. There is a need is to provide them with solutions that not only solve temporary problems but also educate them to act with responsibility and take care the future with a sustainable approach.

1.3. **Purpose and statement**

In order to achieve a sustainable development, there is great need of solutions that can help millennials to easily afford their life expenses and to meet their social needs.
One of the main problems to face is how to create a beneficial connection between millennials and businesses. Companies need to develop more close relationship with their customers in order to contribute to a sustainable development as well as changing their approach to sustainability.

This project aims to create an innovative service, based on millennials’ needs and provided by organizations, that can help to improve the megacities sustainable development, reusing, recycling products in order to extend their lifespan and at the same time preserve the environment through reducing the amounts of waste generated by the contemporary consumerism living status.

In order to develop a concrete outcome that contribute to the sustainable development of megacities, I cooperated and took IKEA as case study for my project. Since IKEA’s vision “create a better everyday life for the many people” fitted the purpose for this project. The company provided me with related research data which helped me to better understand and analyze my research from a global point of view.
In my process, firstly I investigated my target group living statues, their everyday life main problems and theirs causes. Secondly, starting from a holistic overview of these problems, I developed ideas that can help them to live a better, easier and more sustainable life.

The idea set up is based on second-hand and leasing system. The service developed in the project not only can meet the needs of my target group, but also can help to extended products life cycle. Furthermore, the solution can facilitate an urban sustainable development and at same time reduce the request of new products, and consequentially save resources, protect the environment and build a healthier consumption system.

The solution shows how enterprises, such as IKEA, could create new connections with their customers. To this end, the connection system would solve the contemporary conflicts based on reality in order to reach the long term goal, sustainable development.

1.4. Research Questions
• What are the problems that millennials living in mega cities are facing at home? What are their needs?
• How can second-hand furniture and leasing services done by furniture industry (IKEA) satisfy the millennials’ living condition needs?

2. Theory

2.1. Sustainable development

‘Sustainable development’ the current social debate roots in much older general principle of sustainability. As a global idea, the principle sustainability was set up through the debates on the finiteness of natural systems. (Meadows 1972). Its principle was not exclusively a normative, but an initially economic principle. With the time, discussions took part considering social, economic and ecological aspects, shifting from short-term economic development to a instead long-term one. (Zink, Steimle, and Fischer 2008) However with theory development, the definition of sustainable development comes from the World Commission on Environment and Development(WCED)1987.
It stated that: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED World Commission on Environment and Development, 1987, p.43)

The world megacities will take 70% of the population by 2050 (United Nations, 2008), at the same time they are responsible for almost 75% of world-wide resource consumption (Madlener and Sunak, 2011). Four megacities and other main cities in China are facing air pollution, source shortage, security and some other problems. It is necessary to transform the city development in a sustainable way, since megacities represent undertaking largest source of greenhouse gas emission and facing biggest resource consumers (Primoz, 2016).

2.2 Sustainability and human factors

It is often fail to transit to sustainable, resource efficient cities, if only by seeking the way of dealing with economic or technological efficiency concerns. The human activities, behaviors and contextual socio-cultural and economic factors together play an important role in realizing sustainability interventions (UNEP, 2012).
When we heard the word “sustainability”, the environment and nature are a few words that come to mind. According to Pilar (2009) the sustainability principles are relevant to other parts of our lives, like our health, happiness and collective well-being.

The human factors are useful for project analysis, since social, economic and ecological objectives are integrated in human factors (Gesellschaft fur Arbeitswissenschaft, GfA 1999). Besides, ‘human factors are the scientific discipline concerned with the interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimise human well being and overall system performance.’ (International Ergonomics Association definition in 2000). So the reality is that, since the nineteenth century, the basic understanding of human factors as central principles has been taken into sustainable development discipline (Klaus J. Z Klaus F. 2013). Simultaneously, the organisation WCED (1987) pointed out sustainable development is consistent with meeting satisfaction of human needs and a balance between the “human well-being” and “overall system performance”. The knowledge of satisfaction of human needs is the foundation in
order to develop an appropriate solution toward sustainability.

*Needs-based approach to research and design*

The *needs approach* developed by Max-Neef et al. (1989), is an alternative to the monetary and utilitarian well-being assessment framework. This needs-based approach provides a more positive individual social action perspective for identifying situation and strategies, which contribute to creating more sustainable solutions to meet the needs of current and future generations (Jolibert, et al 2013).

The knowledge of needs-based approach highlights the benefits of creating interactions and optimizing connections between stakeholders involved in service designing. Not only the framework assists to identify individual values and lead individual behaviors and trends research toward sustainable environment-friendly directions, but also, it helps to create and develop a collective and integrated solution (Jolibert, et al 2013) based on reducing conflicts anchored in understanding of individuals’ differences and strengthening empathy integrated in people’s similarities (Hards, 2011).
2.3 Life-cycle approach and the concept of reuse

According to Fritz B. (Head, production & Consumption Branch UNEP Division of Technology, Industry and Economics) Life-Cycle Initiative concept has been launch by UNEP (United Nations Environment Programme) and SETAC (Society of Environmental Toxicology and Chemistry) in 2002. The concept Life-Cycle Initiative focus on putting life cycle thinking into practice within globally cooperation range. It is an approach, ‘raising awareness among executives and managers in industry, governments, and civil society, contributes to make decisions on sustainable consumption and production patterns’ (UNEP, 2004). The concept shows possibilities that greenhouse gas emission reducing toward environment-friendly could be reached by providing new consumption choices to consumer.

The life cycle tells us ‘What the materials and energy flow is and where the impacts occur’ (Fritz B. 2004).
The picture above represents a generic lifecycle of products. If we choose a product, for instance a table. What is the raw material? Where does the wood come from? How to transform the wood material into a table? How can the table reach the customers and what will happen to the table when the owner wants to get rid of it? The life-cycle analysis focus on the environment impact and the energy need requirements related to the process mentioned above.
In order to take environment impacts into decision making, there should be a scientific management based on theory of life-cycle, which can address the impacts in a holistic way (Fritz B. 2004).

Figure 2. (documents/10192/755a4c1d-152a-4cfd-885b-c9d2c1d21ef1)

The figure above shows the difference between the traditional approach and the life-cycle approach. The traditional approach focused on production efficiency improvement towards reducing a company's environmental impact (Daniel, 2010). The life-cycle approach requires a cross-functional cooperation system towards to
environmental sustainability. For example, in the disposal process (see in figure), the reuse, recycle, recovery are efficiency solutions for reduce the environment impacts by prolonging the products’ lives from product material and resources aspects instead of disposal directly (Daniel. 2010).

**End-of-life reuse, what and why**

End-of-life reuse is one type of design reuse concept, focused on reusing and recycling the products or components in order to maximize the value of the designed artefacts with minimal resources. The end-of-life reuse help to save natural resource and reduce the environmental impacts (Hata et al., 1997; Kimura et al., 1998).
As stated in the end-of-life hierarchy (Lee et al. 2011), reusing, refurbishing products and remanufacturing products are superior options to recycling, where the products or the materials will be reused into “good as new” condition (Ijomah et al. 2007).

The high effectiveness of reuse can be seen in the improvements in key factors of production. Reuse helps reduce the complicated production process starting from scratch. The shorter manufacturing process of a product, the less environment impacts. In addition, the prerequisite of reusing products is the products that are designed to
be reusable (Andrew Y.C., J.-H. Chun, 2008), which means the end-of-life reuse will promote the effectiveness of production (Duffy and Ferns, 1999).

3. **Methodology and operationalisation**

3.1. **Service Design Thinking**

}*What is service design*

Service design stems from the development and expansion of industrial products design, “which has taken on an increasingly larger scope, from giving form to shaping strategies, not as the output of individual designers but as a practice that claims to be relevant for more and more new areas” (Valtonen, 2007).

Service design also connects some close concepts like social innovation (e.g., Blyth & kimbell, 2011; Hillgren, Seravalli & Emilson, 2011), and transformation design (e.g. Burns, Cottam, Vanstone & Winhall, 2006; sangiorgi, 2011)

}*Service Design Thinking*
Marc, S. and Jakob S., (2011) define service design as an interdisciplinary approach that combines different methods and tools from various disciplines. Service design thinking focuses more on humans than other factors such as organisations (Lucy K. 2011). It is human-center method help organization and stakeholders co-create through understanding and energising human behaviors (Fergus B. 2011). A series of tools such as stakeholder maps, personas and service role-play are implanted in the research process from the service design perspective. Service design help to create new or improve existing services (Stefan morita, 2005), to make them more useful, high efficient and effective for both clients and organisations from a new holistic, multi-disciplinary, integrative perspective. Service design could help a business to gain a comprehensive understanding of customer needs (Frontier service design,2010) and help to establish an appropriate design process (LIVE WORK,2010).

In this project instead of focusing on furniture life-cycle or on service structures in isolation, human factors are considered the key units for studying the service system. The fundamental human behavioral science principles can be translated into service design (Cook, 2002)
With the service design thinking, two basic human factors are emphasized. First, the second-hand and leasing service design concept cannot be build without supports of customers (millennials) because the millennials lives’ issues can be transformed into related service requirements. Collecting millennials lives’ issues data is the base step for service design. Second, for designing an interaction prototype between the server (IKEA) and the served it needs to look specific customers (millennials) attitudes and behavior within a living context. Co-creation workshops underlying the servicing design thinking help to collect the ideas of service experience (what is happening and how it works) (Cook, 2002).

3.1.1 **Stakeholder map** is a visual or physical representation of the various groups involved with a particular service. The method is used at the beginning of this project to highlight the living issues concerning each stakeholder group (Products, customers, service provider and megacities) and is also help service provider(IKEA) to deploy the resource more effectively by studying the different interests (Marc, S. and Jakob S. 2011).
3.1.2 **A day in the life** can be defined as life activities collating research which takes place independently of geography. It is used for a particular type of customer; the data could be used to support the method Persona. This tool was used by millennials who write down their schedule (what is happen in the life?) and the feelings about a normal working day in their life. The data provides an overview of a typical day including customers’ thoughts and behavior (Marc S. & Jakob S. 2011 pp.174-175). This method could help service designer to understand the touch point within a service by analyzing the large number of information collected from customers (Marc S. & Jakob S. 2011). Briefly, the data (thoughts and feelings) got from ‘a day in the life’ combined with the issue they are facing, provided a far more holistic view (Marc S. & Jakob S. 2011) to understand touch points - - what kinds of service that millennials needs for their home life and how can service provider (IKEA) interact with them.

3.1.3 **Personas** are fictional profiles, often used as a way of presenting a particular group based on their shared information (Marc, S. and Jakob S. 2011). Personas are used the ideation phase to gain clean understanding of a specific category of people,
highlighting its experiences and problems (Martin, Bella, Hanington, Bruce M. 2012).

**3.1.4 Service Roleplay** is a method used to explore and generate ideas. The goal of using roleplay is to collect detailed leasing and second-hand service ideas generated by participants combining the needs of millennials and their own thoughts. The participant act the role of the user in realistic scenarios and forge of empathy and highlight challenge, finding opportunities that can be met by design (Bella, M. Bruce, H. 2012).

**3.1.5 Storytelling** method used for inside knowledge and new service concepts. The project uses a visual narrative showing how the outcome service platform helps millennials live in a sustainable way and what kinds of detailed services can be accessed. Since telling a story can reconnect the insights and ideas with context, which make a service more forcible (Marc S. & Jakob S. 2011). Furthermore, the method is used to check the service prototype plausibility, storytelling can be used to build insight for end users, reassess the multichannel touch points, and take possibilities into consideration in
the early design process (Martin, Bella, Hanington, Bruce M. 2012 pp.170-171). Third, telling a story in the presentation make people easy to follow the project, even if they are not familiar with the context, and at the same time it is a good strategy to help the main stakeholder (IKEA) to review their business plan. (What are tools for service design, in Marc S. & Jakob S. 2011)

3.1.6 Co-creation

The core aspect of service design thinking is Co-creation (Marc S. & Jakob S. 2011). The aim of co-creation is to test and innovate a service by creating a working collaborative environment and involving anyone such as stakeholders. According to Marc S. & Jakob S., the co-creative exercise would support strongly a “group decision” for second-hand leasing service designing process in the project, since it is a way to integrate an open-source development philosophy. Also, the aim of the co-creation is to explore the potential possibilities, involving millennials and entrepreneurs. These two stakeholders in a co-creative exercise would provide a comprehensive perspective assisting the suggestion generated. Co-
creation as a principle can be used in combination with many other tools (Marc S. & Jakob S. 2011).

3.2. Case Study

Case Study is a qualitative research approach that in-depth investigate a phenomenon in context by using multiple data evidence (Bella, M. Bruce, H. 2012 pp.28-29). “The case study is used for understanding existing phenomena comparison, information, or inspiration, but can also used to study the effects of change, new programs, or innovations.” In design area, the designer is required by case studies to find a problem and make initial hypotheses. Then, designers (researcher) revise the hypotheses and theory by using a series of information gathering tools and a story with vivid details can be told for showing a memorable case (Breslin, M. and Richard B. 2008 PP.36-40).

The study is focused on furniture second-hand furniture and leasing service research strategies. First, furniture second-hand furniture and leasing service are of relevance in furniture industry (IKEA) because it impacts of products life-cycle in terms of sustainability. Second,
millennials will benefit from this service since it can ease their lives and improve their life status. Third, study the latest relevant practical reuse methods for second-hand and leasing service example since it can provide information how related furniture industry working in this area.

A multilevel case study has been performed in order to provide the second-hand furniture consumption market and leasing service with an overview of the scenario both from a human needs and a product life-cycle perspective. Based on the reviewed literature and the information gathered during the process, the design process has been developed highlighting firstly the furniture industry (IKEA) case and its interrelations with product life-cycle concept and secondly the implementability related to the project target group from a human-needs access perspective. Furthermore, other companies’ case has been selected during the study in order to understand the extension of products life-cycle by combination among different stakeholders and to find inspiration and possible approach to the second-hand and leasing service.
**Phone Interview**, it is a direct contact method with the target group. As a basic research method, it will collect firsthand individual information, ideas, attitudes. It is efficient to get contacts with the millennials form long geographic distance. Also the phone interview builds a trustful and relaxing atmosphere between interviewer and interviewee. Furthermore, phone interviews can verify and humanized data collected by integrating other tools perceptions (Breslin, M. and Richard B. 2008 PP.102-103). In this project, to understand the inner causality between the millennials’ lives problems and reasons were the phone interview target. The collected data can be used for structure a setting questionnaire.

**Questionnaire** is a primary information collection tool (Breslin, M. and Richard B. pp.140-141) used to collect the target group personal information, issues about their lives and the attitudes towards second-hand and leasing service. As a quantitative research tool, the data from questionnaire are high level of reliability and it is more objective for backing the result (Robert C. Design thinking 2013 pp.43-44). A questionnaire was used in the project for finding
similarities in millennials’ living status and their attitudes towards the second-hand and leasing services.

4. Context

4.1. The Millennials’ Living standards in megacities

After the financial crisis of 2008, seven million graduates in 2013 (Xinhua 25 June 2013) in megacities can not find a job (Lin & Sun 2010: 217). This situation was regarded as an urgent social issue in China. Soon the appearance phenomenon caused by the financial crisis of 2008 was “ants” (yizhu 蚂蚁族) and “house slaves” (fangnu 房奴) which popped up on Chinese internet forums (Sun & Kang, 2011; Cheng & Cheng, 2013), the young social group are in the central of this topic. This topic reveals the reality about affording housing resources for low-income urbanites (Chen(2011a)).
According to Photoblog.hk, (2013) there are thousands of people living in unspeakable -small rooms. This phenomenon is not only happening in Hong Kong, but also in mainland China like Shanghai, Beijing and other urban area, known as the “ant tribe” phenomenon.

From the figure1 and figure2 (Sign China "ant" is forced to narrow dwelling), young people live in a narrow gloomy room in which only the basic living functions can be seen (the place for sleep or personal hygiene). The place where the “ant” lives is a house sub-divided into a number of small rooms which are at basement or windowless.
Another situation describes relative facilitated suite shared by many people.

“Ants” this word is used to describe the group who are working hard, gregarious, weak, though they have high education background, but they are still in a quiet crowded environments and struggle to survive.

The reason of the “Ant” situation appearance in Beijing, Shanghai, Wuhan, etc. is that the “Ants” do not have enough income. In order to seek job development opportunities and personal economic growth
in the cities mentioned above, they have to choose to live in the narrow dwelling such conditions (Nok, 2013).

Another phenomenon is ‘fangnu’ which “is a term for people who constantly struggle financially and work overtime to payoff their loans for urban flats” (Kimiko S. 2014). It is the Chinese middle class. The attention from political leadership, academics and scholars may emphasize the determination of importance of middle class (David S. 2013). The Chinese middle class has been encouraged to consumption, and an improving standards of living, and causing economic growth. Most of millennials consider themselves either as middle class or middle class with aspiration (Li. H. 2003). Values of middle class are improvement in higher education and having private housing (David S. 2013), owning their own apartments a trend. Besides, another reason is that it is the quickest way to have same welfare with local citizens. An own an apartment can provide someone with sense of social identity and belongings. The investigation from ‘Wangyi’ a Chinese news platform shows 69.9% of the Chinese people believes that “the necessity of family wellbeing is owning a flat”. Furthermore, in the culture context, the
economical capability of affording an apartment is a proof of one’s success in working (economy condition). However, owing one’s own flats in an urban area results in many social issues, like stress. An example from the Kimiko survey, the owner of an apartment in Guangzhou said that before receiving the apartment (He bought forward delivery housing), he lived in a 10 m² room with a tiny bathroom and just needed to pay 500 RMB rent fee per month. Now he still gets a day off per week but hardly goes out in order to save money.

According to Kimiko (2014), the five descriptions of young people living status can be put in context. The first three are describing their living condition issues.

1. Sleep and wake in a 10–15 m² room which may not have air conditioner or windows.
2. Do not have personal space if share the room is shared with others.
3. Commuting in crowded public transport.

Also, this young people regarded as highly educated generation than their parents’ have a strong idea about relying on oneself (kao ziji) to
create idea life in urban area. This generation (born since 1980s) with their education background strongly believe that the not satisfied living situation are temporary which can be improved by their own hard working. Relying on oneself (kao ziji 靠自己) cultivate the new urban culture penetrating in new migration. This group of young people are facing another two issues in urban area (Kimiko S. 2014).

(4) The lack of sense of belonging since poor living condition and their basic negative attitudes to the room.

(5) The pressure both from economic physical and mental towards their idea life in urban area.

Millennials in other countries have a similar situation. As the state in Magazine Urban furfure 21, some countries in Eastern Asia which they provide basic public apartments to the people who need it, even though they may encourage the citizens to get loan from the bank and buy their own homes when they live in a relatively prosperous situation.

In American, the US Census data declared 13 cities completely unaffordable for millennials based on their predicted earning to live there (Alissa Walker, 2016). Jerry Schmitt, a 29 years old IT Engineer
chose to move out from New York to Seattle because he felt both physically and mentally exhausted trying to afford the high price of housing (International Finance, 2015).

Large amounts of millennials are living in an unsustainable living conditions, experiencing high levels of anxiety and depression than previous generations, and facing stress-related health consequences (Mazda A, 2011). The situations on millennials are against the sustainable lifestyle.

4.2. Consumer attitudes towards Second-hand market

There are heated debates emerged from International environmental policy about if the people’s choices, behaviors and lifestyles would affect sustainable development. The related circular consumption researches are typically narrower aiming to specific purpose (marketing purpose of policies making) instead of sustainable consumption. (Qian L., Hui-ming L., Xiao-li Z., Fei-fei Z., Lei W., 2008). Whilst, the literature resources on alternative consumer attitudes (second-hand and leasing market) are limited (Emma,).
As reported by Qian, the attitudes of Chinese people towards shared products is related to their economic status. A better economic situation leads to the habits of owning new things and avoiding to share. As described by respondents, the biggest obstacle for accepting the used stuffs is the hygiene of used products. From the report, it shows that the people between 26 to 55 with higher education and income want to own the important goods. However, unlike the Western countries, Chinese share some goods with relatives, like furniture, electronic products, electric apparatus, and kitchenware.

Another finding from Qian is that 26.9% of respondents reused the packing, and more than half have the habit of collecting and selling the goods that they want to get rid of. The attitudes towards repairing the machines to extend the products’ life are highly positive too.

The lack of second-hand business both public and private can be one reason that affects the Chinese people attitudes towards to used products. The second reason could be the confusion in the concept of second-hand goods, seen as old products, waste. Third, the lack of management results in supply can not meet demands. Fourth,
inefficient operation, like deficiency of quality and price assessment standards (Dong-hong Y., Hong-yan X., 2010).

Chinese second-hand and leasing platform samples

The first example (figure 6) is a city service platform (online market), which focus on make citizens’ lives easier in the city they live. The platform provides the multiple services, like entertainment recommend, job resource, housing information, education, information, etc. Second-hand sale and related service is a small part of this platform. Basically, second-hand leasing articles or service can be classified into housing, car, electric devices, and furniture. There is even a specialized list for IKEA furniture (see figure6).
The information on this platform makes easier for the local people’s lives by integrating all kinds of resources. Also, the platform provides B2C and C2C business opportunities for small business and customers. Not only the individual would benefits by finding the information, service or products through the platform, but also from a life-cycle perspective, the second-hand market helps to prolong articles lives, which reduces consumption of natural resources and environmental impacts (Hata et al., 1997; Kimura et al., 1998).
Fig. 7.: Classification on service platform. http://sh.58.com/

However, from this platform, in term of furniture second-hand furniture market, the moving service and markets are independent from each other.

The second example (see figure3), is a furniture rental platform which provides a furniture leasing system to customers. The target group of this platform is people with relative high economic conditions and at same time have requests of furnishing changing
Another aim of setting this platform is to saving the environment resource (timber) by providing the consumers alternative consumption models. The channel of this company’s market is mainly focus on B2B, like hotel chains. The one obstacle of B2C business model for this company is Chinese consumer behavior (Fnag L., 2013). The life cycle of the raw material is their main research target related to the circular consumption aspects. In this company, the human factors are only limitedly involved.

Fig. 8.: Furniture leasing platform. http://www.weyou360.com/zulin.html
Compared to the Chinese used products consumption attitudes, some similarities and differences can be seen from people in Western countries. The similarities and differences will help understand opportunities and obstacles towards service design from global view.

**Similarities:**

(1) The main motives of this consuming markets are identified as economic and practical reasons. (Williams and Paddock, 2003; Clausen et al., 2010; Joung and Park-Poaps, 2013). From the Emma G. E., Matthias L. and Oksana M. consumer attitudes statistic analysis, 47% of respondents agree that they buy second-hand products because they want to save money. (Emma E., Matthias L., Oksana M. 2015).

(2) Second-hand products are becoming largely acceptable among young people in Sweden (Emma E., 2015). From the observation of second-hand platform, Chinese young people are more interested in second-hand electric devices and cars.

(3) Desire to own and, concern for hygiene are two main obstacles for
consumption. People want to own the products instead of renting. They believe renting is a loss deal for long-term goods (Emma E., 2015). Mont (2004), mentioned renting is indeed a more expensive option in the long term. The same reason can be seen from Qian’s report above.

(4) Another obstacle towards reusing market is the lack of knowledge of how to renting furniture could work in practice (Emma E., 2015). Even though, the attitude towards renting furnishing in people between age 20-35 is positive. Through the observation, the B2C furniture renting resources are limited in Chinese market.

**Difference**

(1) The feeling of being unique at home is a motivation for the reusing market. The Emma G., report also show that 25% of the people enjoy the second-hand furniture shop for furniture because of desire of being unique at home, as well as like high quality, non-availability, specific design and fun are also the factors when consumers choose second-hand shop. (Emma E., Matthias L., Oksana M. 2015) This reason do not have data strong support from Chinese investigation.
(2) Temporary situation is a motivation to second-hand market. Bardhi and Eckhardt (2012) mentioned the effects of temporary nature of involvement in forming access-based consumption. Someone will show an interest of furniture renting service if they are living somewhere temporary (Emma E., Matthias L., Oksana M. 2015).

(3) Environmental reasons towards access-based consumption will be mentioned when consumers think about the products that need to update quickly. For example, products related to children (a crib), a case study show that people will think about the environment aspect when the product is not used for a too long time. (Emma E., 2015)

(4) Also people feel that they need to be more careful about the products they do not own themselves (Bardhi, Eckhardt and Catulli 2012). Consumers do not feel free and relaxed when using the rented furniture.

4.3 International second-hand leasing services examples
The goal of Steelcase, a furniture company, is approaching sustainability by designing human-based service. In order to approach environment-friendly, Steelcase strives to measure the impacts of their products and services at every step from design, manufacture, delivery, use and reduce, recycling and end of use (Steelcase, 2015).

Fig. 9. Steelcase recycle + reuse. https://www.steelcase.com/services/#recycle-reuse_overview
This company take people as the heart of their business. Based on the end users’ needs, they are designing products and solutions to benefits people.

The company provides reuse, resale and recycling service to help customers solving furniture dispose or provide related consultant to help customers reach their sustainability.

For example, the company assist the customers to develop the market price for their used furniture to the open market, or find possibilities as the credits to exchange the new furniture from Steelcase.

Moreover, except giving the reusing consult, the company also provide the recycle and refurbish service. The Steelcase identify materials from used furniture, and help to determine the feasibility and value for the customers, like adding new components to the existed furniture or Making into new products by reclaiming the material.
Steelcase also provide connection channel (communication service) for sales requests, career information, career information, or general questions, which will help, facilitate, optimize sustainable development from multichannel aspects (Figure 11.).
From observation, Steelcase mainly provide service on office furniture industry.

**Sample2**

The Furnishare is a furnish renting agency in NewYork, which provide information and service for two kinds of customer, one having lease request and another one have spare furniture to share.
(1) This example explains how can a needs-base service benefit the environment also from product-life-cycle aspect.

By providing the delivery service the Furnishare company successfully build the connection between the people with two different kinds of needs. The delivery service facilitates C2C furniture market. The company ease the people’s life by providing customized furniture renting solutions and free delivery service. High delivery fee is a big obstacle of furniture moving or disposal. Also furniture provider can be benefit from sharing spare furniture. Whilst, the process of needs-based service optimizes the resource allocation helping prolong the products’ lives by reusing.

(2) The example also shows how service work in second-hand and leasing market in reality.
**Fig. 12.** Furnishare Renting [https://www.furnishare.it/how-it-works/renting/](https://www.furnishare.it/how-it-works/renting/)

**Fig. 13.** Furnishare Providing [https://www.furnishare.it/how-it-works/providing/](https://www.furnishare.it/how-it-works/providing/)
The two pictures above show how Furnishare platform through online website provide two kinds of service. Figure 12 shows the customers when they have a furniture renting requirement; they only need to browse the products from the website and following the renting minimum subscription, then they can have the furniture and enjoy the delivering and picking up service for free. The similar service can be provided to the customers who have spare furniture to share and at the same time the furniture provider can get 50% revenue of the items when is rented (figure 12. Figure 13.).

Fig. 14. Furnishare furniture choose page [https://www.furnishare.it/shop-all/](https://www.furnishare.it/shop-all/)
The furniture classification on Figure 14. show the options of furniture that customers can choose. The classification depends on the function of products like sofa chair etc. This is the first information when a customer wants to rent furniture. Based on the categories, customers can check the detailed product by click the bottom.

![Furniture Classification](https://www.furnishare.it/product-category/dressers/)

**Fig. 15.** Products options and status

https://www.furnishare.it/product-category/dressers/

Figure 15 shows the products pictures and status (available/rented)
Based on the information, customers can check all the similar products. If they find some interesting items, the detailed information can be read by click the item.

![Furnishare product example choose](image)

**Fig.16.** Furnishare product example choose

The webpage shows detailed information, the price and the length of leasing. It is clear and easy for customers to make decision.
Fig. 17. Furnishare products that customers have chosen.

The webpage shows the items information that customers put in the shopping cart (see figure 17.).
After confirming the order, by filling the necessary information customers can complete the ordering service and wait for the delivery (see figure 18.).

The page flow also shows how second-hand leasing service interact with the customers and makes the process easier to understand and accessible.

5. **Empirical investigation and analysis**

5.1. **A day in life**
The aim of using the tool ‘a day in life’ in this project was to gather information about the young people in megacities to have a detailed understanding of their lives realities and feelings. The collected information will be used as the context for questionnaire design and used to support the touch points design in the service design point.

In order to get more detailed daily activities and feelings from the participants, an attentive sample was designed as an example for participants. Besides, because it is an anonymous table filling form, with the permission got from the previous participants, the real ‘a day in life’ records were sharing within following participants, which attracts larger interests and attention from the participants. High quality ‘a day in life’ records were collected for this reason. The recording process lasted 20 days, for getting a holistic view about lives in megacities, the participants were chosen from global area.

A total of 26 participants were involved, thirteen females and thirteen males between 23 to 32 years old. All the participants were chosen deliberately considering their ages and locations. They were working in megacities or have the living experience in urban area, Chinese
cities (Shanghai, Beijing, Wuhan, Hangzhou, Wuxi), US cities (New York, Boston) and a place in New Zealand. A detailed preparation can improve the data efficiency.

Figure 19. shows a template of an average weekday schedule of a person that belong to the project target group. She wakes up early in the morning and hushes out for a whole day of busy working and studying life.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:10am</td>
<td>get up</td>
<td>omg! Is the alarm clock working? Is it? Is it not? Works, great...</td>
</tr>
<tr>
<td>6:10 - 7:00am</td>
<td>eat breakfast and heat lunch to bring with me</td>
<td>god, give me more time!</td>
</tr>
<tr>
<td>7:00-7:20am</td>
<td>heat the engine, drive to coworker's place (we car pool, Boston's parking is dxxx expensive!)</td>
<td>god, don't freeze up my car...</td>
</tr>
<tr>
<td>7:20-8:25am</td>
<td>breakfast in the car and study for CPA exam on subway train</td>
<td>MBTA, if you DARE to die in the snow!</td>
</tr>
<tr>
<td>8:25-8:30am</td>
<td>get prepared for work</td>
<td>ready to take shit from managers, but it's ok because I AM GREAT AND YOU ARE ALL EXCUSED!</td>
</tr>
<tr>
<td>8:30-5:30pm</td>
<td>work my ass off, even using my lunch hour</td>
<td>I AM THE BEST, SO WHAT PEOPLE!</td>
</tr>
<tr>
<td>5:30-5:45pm</td>
<td>walk to subway station</td>
<td>no snow no ice please</td>
</tr>
<tr>
<td>5:45-6:50pm</td>
<td>on the subway, reply texts, messages and emails in the car</td>
<td>like a nice person. I AM but I need to study, so fxxx off</td>
</tr>
<tr>
<td>6:50-7:10pm</td>
<td>drive home</td>
<td>dxxx, I should ask my coworker to drive to my place in the morning...but she joined the company earlier than me, I'd better behave...</td>
</tr>
<tr>
<td>7:10-8:30pm</td>
<td>wash dishes, eat dinner, wash dishes, cook</td>
<td>bubble bubble bubble</td>
</tr>
<tr>
<td>8:30-10:30pm</td>
<td>homework or CPA or monkey around if brain is too foxxed up</td>
<td>concentrate please!!!</td>
</tr>
<tr>
<td>7:10-7:30pm</td>
<td>eat dinner, get ready for evening class</td>
<td>more time please!!!</td>
</tr>
<tr>
<td>7:30-9:50pm</td>
<td>evening class</td>
<td>professor, don't cold call...I'll raise my hand... thanks!</td>
</tr>
<tr>
<td>10:30pm-6:10am</td>
<td>sleep</td>
<td>oh yea yea, oh yea yea yea yea</td>
</tr>
</tbody>
</table>

Fig. 19. A day in life sample
The template shows the three kinds of information provides by the participants, time activities and state. The three information together give a clear picture of millennials’ lives.

Based on the data during the weekdays, 14 participants wake up around 6.00-7.00 o’clock in the morning, 10 people wake around 7.30 o’clock, and 2 people wake around 8.30. Through the data, the similar situation can be seen that the participants who need to go to the working place after getting up are hurry in a 30mins hurry to prepared themselves and eat breakfast. The average for commuting time is 45mins to 1hour.

The time of backing home is different. Except for the 4 people arriving at home around 17.30, 12 people are going home between 18.30 and 19.00. Other participants will go back home 21.00 or 22.00 due to some of them need to meet friends, have to work more in the office or take some courses after working.

Compared to the variation in time in arriving home, millennials’ times for sleep are similar. The data shows that the average time for sleeping is 23.00 at night, 2 participants will go to bed earlier around
22.00. However, 3 more people will go to bed even 1 hour or 2 later than the average.

Besides, the “a day in life” method also presents the situation about the people daily activities in weekdays. 92% of people have tight schedule when they are working, for example one participant show that she needs to visit 4 customers in 4 different place far away from each other and has a meeting in the night. 35% of the participants said they feel tired and sometimes a little bit stressed during the day time. The most relaxing periods for them are showering time or sleeping time.

The findings of ‘a day in life’ display the millennials’ life details, which strengthen the project research background from literature review to scene reconstruction. Since options settings are related to millennials’ daily life situation, the findings can be used for supporting the questionnaire designing. Besides, the ‘A day in life’ visualize the people’ activities which can be regards as common knowledge for preparing the methods Persona.
5.2. **Phone Interview.**

The empirical material of this project was collected in a qualitative phone interviews. The goal of the interview was to identify authentic reasons that millennials’ dreams about life at home and frustration at home.

In order to detect the inherent relation between the human attitudes and human life conditions, five questions were design for the phone interview.

- How do you live today?
- What do you do when you are at home?
- What frustrate you when you are at home?
- What are your wishes and dreams about the life at home?
- Why do you have this wishes and dreams? (Why, why, why)

Demographic information such as age, education background, salary and living conditions were also included in the interview process. Even when the guide questions were prepared for the interviewees, the process allows the interviewee diverge from the structure in order
to find the distinction which will not affect the interview guide (Bryman, 2008).

Ten interviews were conducted, the phone interview process started from the 20th Feb to the 5th March, each interview lasted forty minutes to one hour. For gathering more accurate feedback, the interviewees were chosen deliberately account on their ages and the city where they are living. Eight of the interviewees also participated to the ‘a day in life’ activities performed in this project. With the familiar knowledge of project research background, the respondents could provide highly related answers (Nigel M., Nick F., Amanda H., 1998).

For a better and relaxing phone call atmosphere, an appointment has been arranged with each respondent, explaining the goal of the interview (Nigel M., Nick F., Amanda H., 1998).

To investigate millennials’ needs towards life at home, the respondents were asked about what will frustrates them when they are at home. Since the dissatisfaction are related to their living conditions, I decided to discover their driving force on the basis of
pre-determine living conditions identified in context and the data collected both from ‘a day in life’ and the demographic questions. After respondents described their troubles at home, I started a discussion about ‘what is the reason that you have this kind of dissatisfaction’ with interviewee in order to understand related needs.

It is of efficiency to repeat the given personal opinions in the interview (Nigel M., Nick F., Amanda H., 1998). The question ‘What are your wishes and dreams about the life at home?’ take the same aim with questions mentioned above. Through the discussion around their dreams and wishes I try to understand what kinds of needs (furniture, function, etc.) or feeling (cosy, relax etc.) they want to create towards home life to dig what kinds of problem respondents are facing in their lives.

5.2.1 Feedback from interview:

As shown in the data, the average room size is 49.5 m². One respond said that he was living in a 10 m² room. Within ten interviewees, two of them have already married. They were living with his/her wife or husband. One couple lived in an 80m² apartment. A couple lived in an
20m² apartment in Shanghai. The popular activities at home were reading, showering, watching TV, and working.

5.2.2 Dissatisfaction about life at home and why

As data shown, the dissatisfactions feedback can be categorized into two. One is about the furniture and electric device, respectively bed, sofa, dinner table, electric device, hoods. Another one is based the function, like space division and items classification.

The responders show some reasons that they were not happy about their furniture at home. The first reason is more specific. Respondents do not like the products, the reason is connected to size feelings, etc. For example, interview 1 “The bed is too small for sleep”. Interviewee 4 said, the dining table is too old and looks dirty. Interviewee 2 said that she does not like the sofa because it is too big for her room. The second reason is related to function of electric devices. “The fridge, air conditioner and TV set almost can not work”, said Interviewee 5, and 7 said, “hoods in kitchen has been used more than ten years and it is too big and do not work good”
Whilst, some other respondents highlighted the unconvinced function when they are at home. The mentioned most Space division. Four interviewees highlighted they the unclear function would bring their lives to a break down. “Sometimes, I need to work during night when I am at home.” The room is too small, and my wife always complains about disturbing” said interviewee 4 who lives with his wife. “I want to have a place to have personal phone call during night” said interviewee 8 who shares room with a colleague. The second trouble at home is storage, it is hard to find items. “I always struggle to find something when I am at home, for example, the socks or the bag” said interviewee 9.

After discussion about why they have these feelings, the reasons were simple. “Because I am tired of daytime working, a decent bed could provide me with a high quality sleep.” “I am busy during the work, with functional electric devices I could more enjoy my cooking and separate my mind from work.” To sum up, tired and busy are the two main reasons that they are not satisfied of their living at home.
Then interviewees had also asked why they did not make some changes. Three of them said, because they were living in a temporary room, then did not want to invest money on furniture. Other people told me the that they had already moved three times since they moved to the city two months ago, they decided to accept what they had. Other two people told me economic was the obstacle when they wanted to change furniture. One of them said another reason is she does not know how to deal with the old furniture.

5.2.3 Dreams and wishes about home

In comparison with dissatisfaction at home, there are more similarities in the dreams and wishes. The first key word about home is it has to be cosy. Almost all the interviewee mentioned this word. Some of them said the bed and mattress need to be conformable, other said the yellow needs to be the main color when decorating home, because this color can bring the sense of a calm place. The second word is style, interviewee 3 and 4 said, the style is really crucial for them. They want the home are totally different from the world outside. The third word is convenience. “Finding the things easily is a priority before other functions” said interviewee9. The last
words were multifunction and intelligent furniture. “I want some robot to take the book for me” Interviewee 1. “I hope I have a tatami that I can use both sofa and bed” was mentioned by interviewee 8.

After discussion about why they have these dreams when they are at home, basically only tree reasons were mentioned. They are busy, too tired and have no time. Busy was mentioned by interviewee 9 “I never find things because I am seldom at home except for sleeping, I rarely put things in the right place.” Too busy was mentioned by interviewee 4 “I work too much during the day, I want a different style in my living place because the environment can help my mind to separate from the daily work”. No time was mentioned by interviewee 10 “I always forget to close the stove, because I do something else at the same time”.

5.2.4 Summary

In conclusion, the main problems that millennials face can be divided into two aspects. First, economic reasons, second, life conditions. Besides these two reasons, the lack of product repairing recycling
and system could be another restriction when millennials try to improve their homes.

5.3. Questionnaire

Semi-structured questionnaires are composed in this project, with fixed alternative questions in which respondents not only can follow the questions but also can contribute to alternatives (C.R. Kothari 2004). The first goal of the questionnaires is to text the universality of findings defined in phone interview. The second goal is to discover the inner relation between the problems (needs) and behaviors in human life conditions.

In order to reach the goal, the questionnaire was divided into three parts.

First part focuses on the demographic question: age, gender, education background, the living city, salary, marital status, etc. The second part focuses on millennials’ living status, with questions like how many times have you move? How long do you stay at home per day? The third part focuses on the problems in their daily life at home and their attitudes towards reuse.
In order to get a precise and effective feedback, ‘questionnaire’ should be attentively formulated (C.R.Kothari 2004 pp.101). Exploration of millennials lives’ problems and their living context review (mentioned above) are implemented in questions. The findings in previous method are developed into options to the questions, such as tired and busy can be regarded as options for the questions “What is the reason that you are not satisfied with the function?” Also, followed by the data from ‘a day in life’, a clear question instruction related to personal information can be determined.

Furthermore, question-sequence needs to be paid attention to receive the effective data (C.R.Kothari 2004 pp.102). The questionnaire started with a demographic questions, followed by questions about living conditions, problems at home, reasons related to problems and attitudes towards reusing business model. The relation among questions enhanced the respondents’ understanding of the questionnaire topic, increasing the results’ quality.
Last but not least, designing different kind of options for different types of questions was important. Even if every question is related to each other, the questions are relatively independent. For example, the millennials’ attitudes toward second-hand shop and leasing system questions, ranking options will allow respondents to make their choice.

5.3.1 Data analysis
A total 79 participants have filled the questionnaire. The analysis followed the project problem definition structure and contained the open data from participants. In the following part, millennials’ living situation, home dissatisfaction and reasons are illustrated.

5.3.1.1 The common living situations among millennials age20-35
The data from the demographic questions describe respondents’ life experience and living conditions.
Fig. 20. Education Background identified in the valid 79 questionnaires (Source: Tencent questionnaire)

Fig. 20 shows that 80% of the respondents lived in urban area and have a bachelor or higher education background.
Fig. 21. Marital Status identified in the valid 79 questionnaires (Source: Tencent questionnaire)

Fig. 21 states the situation that 70% of the respondents have their core family during their 20 to 35 years old, 30% of the respondents also have the next generation.
As it can be seen from the pie chart 22, to own an apartment is a trend. Even when almost 40% of the people live in a rented apartment or shared room with someone, 59% of respondents have already had their own apartment.
Fig. 23. Average saving identified in the valid 79 questionnaires (Source: Tencent questionnaire)

From the fig.23, over 50% of the respondents who just have 2000 China yuan or less, 60% of them have even less savings, 1000 China yuan or less per month. Besides, this pie chart also depicts another phenomenon. Only 10% of the people manage to save more than 5000 yuan per month.
Fig. 24. Time spent at home identified in the valid 79 questionnaires

(Source: Tencent questionnaire)

People do not have a lot of time to stay. Only 8% of selected people answer having more than 13 hours at home. People having less than 8 hours takes 33% share of total respondents.
All the respondents have at least one experience in home moving since they moved into urban area. People who have experience of moving twice or third times take 50%. Even 18% of the respondents state that they have moved more than three times.
Summary

From the analysis shown above, people aged between 20 -35 have some similarities. Most of them have good education background. This fifteen-year in millennials’ lives will witness the lifestyle changes from living alone to having their core family. However, there are also some common issues, such as less time to spend at home, the high frequency relocations and the less savings. In the meantime, a large number of people still want to own an apartment in the future. According to the data, 90% of respondents age between 30 and 35 have already had their own apartment.

5.3.1.2 Life issues and attitudes regarding solutions

In this section, data show respondents’ home issues and their corresponding reasons. Also the questionnaire has received the information about attitudes towards the second-hand leasing platform. The following paragraph are focusing on life problem definitions which is situated on inner relationship among respondents’ attitudes, lives’ troubles and desired home feelings.
Fig. 26. Dissatisfactions at home identified in the valid 79 questionnaires (Source: Tencent questionnaire)

From the column, the most dissatisfaction at home is not having smart furniture followed by not having space division, storage space, and order. The satisfaction level of these four options are lower than average. The attitudes in terms of light, clean and safety are around average satisfactions level.
Fig. 27. Attitudes towards home feelings identified in the valid 79 questionnaires

(Source: Tencent questionnaire)

The Column shows all the respondents want to their home to feel free, relax, comfortable and cosy. No matter what kind of problems happen to respondents’ life, the dream and wishes related to home are all similar.
Reasons of dissatisfactions at home

Fig. 28. Reasons of dissatisfactions at home identified in the valid 79 questionnaires
(Source: Tencent questionnaire)

Too tired and too busy to take care of home, lazy, do not want to investigate in rented room, these four situations result in dissatisfaction at home.
Attitudes towards leasing service and second-hand market

<table>
<thead>
<tr>
<th></th>
<th>Number of case</th>
<th>Average Value</th>
<th>Standard deviation</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leasing service platform</td>
<td>79</td>
<td>2.90</td>
<td>1.383</td>
<td>-.147</td>
<td>.884</td>
</tr>
<tr>
<td>Second-hand market</td>
<td>79</td>
<td>2.92</td>
<td>1.338</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 29.** Attitudes towards leasing service and second-hand mark identified in the valid 79 questionnaires (Source: Tencent questionnaire)

Based on the information from the table, lower medium attitudes were displayed by respondents. From the observation, there are two initial obstacles. The market perspective reason shows the obstacle could be the scarcity of knowledge of how does a leasing platform work. The other barrier is coming from consumers who have negative view about second-hand products.
Summary

To sum up, Millennials’ lives in urban areas are facing seven main problems. There are low savings, lack of time, lack of energy, do not want to investigate money to rented apartment, lazy, don’t have a lot of time to spend at home, high frequency relocations.

5.4. Co-creation Workshop

Why use co-creation for this particular project?

At the beginning of this project, the target group was not easy to access since geographical distances. By observation, there are a lots of friends around me coming from megacities and some of them have even working experience in megacities. These people could be regarded as the project’s target group. It is a good opportunity to work together with potential target group in a relative real scenarios as co-creation highlights the importance of engagement (Lee, Olson and Trimi, 2012). Co-creation will lead group brain storming processes, which help to collect practical data or ideas related to end
users experience in order to understand needs and consumption attitudes from a target group. The wide range resource from co-creation process will be an inspiration to refine and develop in further design stage (Co-creation, in Marc S. & Jakob S. 2011 pp.198-199). Furthermore, there is a chance to collaborate with a colleague. Expertise in co-creation combined with the workshop method can promote the innovation process from an organization’s perspective (Nambisan, 2002). The participants provided wide perspective of innovative ideas, especially suggestions about building the second-hand and leasing platform from an organisation perspective, which benefit for creating solutions from IKEA perspective.

**Co-creation workshop preparation**

To get in contact with people as target group in co-creation workshop the first thing is to understand their working and studying background. Secondly, inform potential participants by phone about the schedule, sent formal invitation and at the same time, inform people by an email about the content of activities. Third, the
preparation of materials like documents, snacks, drinks and speaker, in order to create a cosy environment for participants. Fourth, participants received a message a day before the activities for being reminded the time and location. The aim was to submit the invitations to friends with different academic, working and hometown cities backgrounds. The reason of inviting people with different experiences was to get both individual opinions from possible organisations and presumptive customers perspectives.

**Workshop process and analysis**

In the process of organizing the co-creation workshop, the connection between the theoretical framework and the context were strongly considered. The participants in the specific co-creation workshop has been customers, designers, entrepreneurs and millennials. However, the target group is the Chinese people and it was complicated to invite the proper participants since the workshop has been held in Sweden. In order to get the information high valid, the roleplay method is integrated into workshop process.

Based on the questionnaire empirical results, four typical cases are
extracted to formulate real living conditions in Chinese mega cities. Combined with the phone interview data analysis related to common consumption attitudes, millennials’ dreams and aspiration mentioned in context, and ideas from questionnaires respondents, four extremely real scenarios have been built for roleplay (Table 1-4). In table one, the information provided is covered by theories (human-need approach) that are related to the targets of the workshop both in specific and general aspects. It shows a couple living status, their economy and ecology information, but also their dreams about their life at home and their plans for future can be seen clearly from the table. In each scenario an emphasis on different descriptions of unique life aspirations has been put which could be seen as the basis of the brain storming process of generating second-hand and leasing ideas.

In order to increase the data facticity and diversity, the participants for this workshop have been chosen by their living, working, age and academic background. Such as Participant1, a male 26 years’ old who have two years of working experience in Beijing.
The brain storming discussion was done between two different groups (9 participants divided into two groups, excluding the 2 student as hosts, and 1 student in charge of process recording). One group played the role of millennials, another group played the role of entrepreneurs. The mostly co-created aspects of platform during the co-creation workshop were like the following list:

- Millennials’ wants and needs based on the scenarios towards second-hand and leasing system business proposal.
- Entrepreneurs’ ideas about platform towards millennials’ life status.
- Expectations about this new business proposal from both sides.

According to the purpose of the workshop, three questions were generated to lead two group discuss in process:

1. What do you want to get / provide from the platform?
2. What is important points for the platform designing as participants from your role perspective?
3. What is your suggestion for facilitating the platform?
The different roles during the discussion can contribute to ideas from harmony but not uniformity perspectives. The concrete message and innovative suggestion are precious resource for develop first generation platform concept.

**Situation 1**

<table>
<thead>
<tr>
<th>Age</th>
<th>Living Status</th>
<th>Savings per Month</th>
<th>Function at home not satisty</th>
<th>Reasons</th>
<th>Dreams about home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple 20-30</td>
<td>Already bought an apartment Renting an apartment, 60 m² Need to live in the renting place for 2 more years</td>
<td>Around ¥2000</td>
<td>Storage Room</td>
<td>Don't have enough storage room</td>
<td>Multifunction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Don't have study space</td>
<td>Busy, don't have time and energy to clean</td>
<td>Cozy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not clean</td>
<td>Don't want to invest money to a renting room</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A little bit messy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wants:**
- We will move to the apartment in the future (in 3 years).
- We want to make the place now more cozy and more functional. While we do not want to invest too much money, because the furniture is really hard to move and maybe we will change the taste of home style.

**Fig. 30. Scenario One.**

**Situation 2**

<table>
<thead>
<tr>
<th>Age</th>
<th>Living Status</th>
<th>Savings per Month</th>
<th>Function at home not satisty</th>
<th>Reasons</th>
<th>Dreams about home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single 20-25</td>
<td>Live alone in his own apartment</td>
<td>Less than ¥1000</td>
<td>Storage Room</td>
<td>Don't have enough storage room</td>
<td>Relax, free</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not clean</td>
<td>Lazy</td>
<td>Cozy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A little bit messy</td>
<td>Busy</td>
<td>Multifunction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tired</td>
<td>Nature</td>
</tr>
</tbody>
</table>

**Wants:**
- I want to make my life better when at home while I don’t know how to do ( I am not a designer).
- I don’t have too much spare money.

**Fig. 31. Scenarios Two**
### Situation 3

<table>
<thead>
<tr>
<th>Age</th>
<th>Living Status</th>
<th>Savings per Month</th>
<th>Function at home not satisfy</th>
<th>Reasons</th>
<th>Dreams about home</th>
</tr>
</thead>
<tbody>
<tr>
<td>couple</td>
<td>30-35 Live in their own apartment</td>
<td>1000-2000</td>
<td>Messy</td>
<td>Relax, free</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Function not clear at home</td>
<td>Cozy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not clean</td>
<td>Multifunction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Security</td>
<td>Nature</td>
<td></td>
</tr>
</tbody>
</table>

Wants:

- We are too busy weekdays and don’t have time to make the home nice. During the spare time we used to play with the child.
- We hope we can enjoy the life at home. We hope in the future we can move to a bigger apartment.

**Fig.32. Scenarios Three**

### Situation 4

<table>
<thead>
<tr>
<th>Age</th>
<th>Living Status</th>
<th>Savings per Month</th>
<th>function at home not satisfy</th>
<th>Reasons</th>
<th>Dreams about home</th>
</tr>
</thead>
<tbody>
<tr>
<td>single</td>
<td>28-30 Share an apartment with friends</td>
<td>Less than 1000</td>
<td>Storage Room</td>
<td>Free</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Messy</td>
<td>Relax</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Not clean</td>
<td>Cozy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Don't have enough storage room</td>
<td>Multifunction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Don't have study space</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Space is small</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wants:

- I am enjoying the life sharing with my friends. While the room for myself is too small and it always messy.
- I have already moved twice since I find the job here. I hope I have a really nice, functional cozy space.
- I don’t know how long I will live in this small room. I am tired of moving. But if I can earn more I really want to move to a bigger and convenient apartment.

**Fig.33. Scenarios Four**
Feed back from the co-creation and service roleplay workshop.
The moderator of the workshop gives a brief introduction about the project “Love, growth together” and the target group in this project. After explaining the situation of the project and the status, the two groups of participants are given the prepared scenarios and start to discuss within the group. The group discussion is following three main questions mentioned above.

Fig.34. Content description (Source: Workshop)

1. What do you want to get/provide from the platform?
The participants from “millennial” group give following feedbacks:

Participant 1 and Participant 2 (Scenario 1): First, they want the platform to provide the products detailed information, such as brand, the previous own information. Second, to provide clear categories products or service information. Third, to provide special services, like pets, baby nursery and furniture logistics. Fourth, to give information about activities nearby. Fifth, to provide housing renting information and assessment. Six, give traveling or on-sale information.

“We want to save money for decoration of our own apartment in two years, but we still want to enjoy our lives in this small renting apartment. I want to find some good quality (maybe based on the brand information or information of previous owner) second-hand furniture like a table, a shelf or a room divider, also some information from someone who can help me to take care of them from this platform.” [participant 1&2] “We want to have a baby and have a small dog living with us in two years. We hope to find some information about activities like meeting families with children.”

Participant 1&2 added “It is also important that the dog can be taken
care when we need to go traveling. We would like to share the products that we want to get rid of as well as information about keeping dogs or educating kids”

Participant 3 (Scenario 2): First, Room decoration advices, like storage suggestions. Second, brand advice, based on the price range. Third, style advise. Fourth, cleaning service. “I want to get some information about how to arrange the room, especially how to storage stuffs. I hope the products have satisfactory quality and an affordable price.” [Participant 3] “The cleaning service is really helpful for me.”

Participate 4 (Scenario 3): First: exchange products situation. Second: difference kinds of services. Third: discount information. Fourth, clear pictures. “I want to share my spare products or furniture; it is more fun that I can change my room style by exchanging some furniture or having some nice but not expensive decorations” [Participate 4]

Participate 5 (Scenario 4): First: decoration suggestion or redesign service. Second: Flexible leasing or second-hand choice. Third:
clear and understandable information. “I am lazy but it doesn’t bother my nice home aspirations” [Participate 5] “I will try every kinds of service that can make my life easy and beautiful.”

The participants from “entrepreneurs” group give following feedbacks:

Participant 1,2, 3,4 together (Grouping discussion based on the scenarios): First, categorized products information for customers (product based price range, location). Second, activities. Thirds, decoration stories or design knowledge. Four, feedback communication online platform.

“As entrepreneurs, we hope we can solve the main problems that our customers met in their lives, like, moving three or four times when they are new in the megacities. We will focus on providing them various and easy solutions to meet their temporary needs. High quality products and leasing service is the main goal in this platform. The furniture and related products will be categorized by price, location factors. We hope enhance customers’ attention about importance of health life and low carbon emission at home by
meeting their obvious economical needs. An online service platform can be an easy communication system that contribute to attract more users”

2. What are important points for the platform designing as participants from your role perspective?

The participants from “millennial” group give following feedbacks: product reliability, quality of products, quality of services, information easy to understand, security, platform reliability, various information.

The participants from “entrepreneurs” group give following feedbacks:
Detailed clear and easy-access information, security of products and services, high efficiency feedback communication platform, information facility.

3. What is your suggestion for facilitating the platform?

The participants from “millennial” group give following feedbacks:
First, classifying the information by different needs could be attractive for the end users. Second, customers feedback visibility
would help to build a sense of reliance between the customers and platform. Third, distinct service information and reasonable prize are basic considerations for further interaction. Fourth, products diversification would enhance the competitiveness.

*The participants from “entrepreneurs” group give following feedbacks:*

Clear information updating is the first suggestion for sustaining the platform usability. Besides, it is a competitive factor to provide customized service towards different needs of end users.

Furthermore, both the C2C and B2C strategies has been suggested to creation of the platform.

<table>
<thead>
<tr>
<th>SECOND-HAND</th>
<th>LEASING</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUSTOMERS</td>
<td>ENTREPRENEURS</td>
<td></td>
</tr>
<tr>
<td>PRODUCTS</td>
<td>Quality, Sanitation,Green material Factivity information of both products and providers Brand information Full categories</td>
<td>Information iteration, Category clear, Easy understand, Easy communication</td>
</tr>
<tr>
<td>SERVICE</td>
<td>Leasing system + Delivery information Interior design(plan) consultant, Product consultant Extra service (Room cleaning, Child or Pets nurse) Activities, Life service Informationiteration</td>
<td>Information iteration, Category clear, Easy understand, Easy communication</td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>B2C C2C</td>
<td>Open, Easy-access, Diversity</td>
</tr>
</tbody>
</table>

*Fig.35. Feed back from ‘customers’ and ‘entrepreneurs’ (Source: Workshop)*
5.5. **Findings Summary**

Based on the findings from the methods used the reasons behind millennials living phenomenon can be classified into three.

- **Economic reasons**
  
  Less savings
  
  Not wanting to invest money in rented apartment

- **Life condition reasons**
  
  Little time to take care where they live
  
  High frequency relocations
  
  Lack of energy
  
  Lazy, unmotivated
  
  Limited time spent at home

- **Service related to products are limited (Exchange, recycling, reusing, repairing)**

According to workshop, there are wishes and aspirations for leasing second-hand platform. Key words described from participants:

Quality services  Quality products  Security platform

Affordable price
Function required by participants

- Clear and detailed products information
- Accessible and intuitive information
- Furnishing consultant service
- Knowledge sharing platform

6. Result

The literature review has been used through the whole project in order to understand the relations between the target group and the reuse service.

The findings from this project reveal that the deep reasons connected to this relationship have to be investigated from a human needs perspective.

The example showing in context, the global company Steelcase, is showing how to design business model based on meeting customers’ needs. From a product-life-cycle perspective, this company provides maximized products’ lives service for customers to approach the
environment-friendly. However, this company just has office furniture business and most of its customers are companies.

Another example shows how a needs-based second hand leasing company find the solutions to ease customers’ lives. The solutions provided by Furnishare are based on solving obvious social problems. This is a good B2C business example. But the solutions can meet only a limited group of people and their needs.

According to the findings motivated by different analysis, I find the needs for satisfying millennials are different.

I use the findings of my research to create a service concept. The service concept is based on learnings from context examples, but I will add the value information from my findings through methodologies.

6.1. Service introduction Video

In order to explain how a sustainable lifestyle can be approached by needs-based service design, a video also has been designed in this project. Its goal is to visualize how through the needs-based designed
service is possible to solve the millennials lives’ problems. In the video the service touch points will be clarified by combining the method persona and story telling, a vivid role in a story made on basis of findings from method ‘a day in life’ and ‘phone interview’. The video will also show a story of a millennia’s life assisted by a B2C furniture renting second-hand business model. The customized solutions to this millennial life’s problems simplify his/her life and help him/her to live in a sustainable way in his/her different ages.

**Fig. 36.** Roles and story preparation

**Video scenario:**
'This is Lee, 25 years old. He is moving to Shanghai for a new job opportunity. He finds a 15m$^2$ meter unfurnished room. Lee needs some furniture, but new furniture is too much expensive and he do not have enough time to find solutions. A service provides new options. He can furnish his apartment by renting the furniture and just by paying a little amount of money per month. Lee chooses products and signs contract. The furniture leasing company transforms the furniture to Lee’s room. Lee now has a new room in Shanghai. Lee now starts his working life and he has to commute three hours per day to his office.

One year later, Lee’s salary increased. He decides to move to a bigger apartment close to the office. But moving furniture is not an easy job to do by himself, and he also needs different kinds of furniture for the new room. The furniture leasing platform give him suggestions, and Lee makes his new order. The service company bring back the furniture from his old room and transport the one he ordered to the new apartment.

One day he meets a girl. They fall in love and decide to live together. Lee needs to rearrange the room but he doesn’t know how to do it. A designer comes to Lee’s room and give him suggestions. With the help
from room service company, Lee and his girlfriend can soon live a happy life in the room that fits their needs.’

6.2. Service Web-page Concept.
The biggest problem while trying to make millennials live a sustainable life is the lack of correspondent needs-based services. Millennials can not find suitable solutions to build a satisfying home solution in an urban area. The key is to help them find a quick, easy, and sustainable way of living while they are facing these problems.

Reuse is the most effective operation to reduce product environmental impact. There is a need of reusing service that consider human needs highlighted in this project. The service platform concept below shows how a design of a service based on the needs could solve the problems and at the mean time could promote the product reusing. FIG.35- 38 show information about the service and second-hand furniture market.
Fig. 37. Website Front Page Furniture renting, second-hand classification

From fig. 37. the three easy classified options, rent, second-hand, and solutions, could help users understand what kinds of service and products information they can get from the website.
Renting service

![Renting Options Menu](image1.png)

**Fig. 38. Renting options**

![Renting Customized Options](image2.png)

**Fig. 39. Renting customized options**

Through the menu shown in Fig. 38 and Fig. 39, customers could make decision on how to rent the furniture. The different furniture renting type can satisfy the various renting needs of customers by
piece, by room or by a suit of basic furniture. Also the customized options could let customers to find the flexible solutions related to renting periods.

Second-hand furniture

Fig.40. Different room options
In fig.40 and fig.41 second-hand furniture information has been classified by room and product attributes in order to meet customers’ accessible and intuitive information request and help customers find what they want in the quickest way.
Service consultant

**Fig. 42.** Online service consultant

**Fig. 43.** Online service suggestion
The information on Fig. 42 and 43 show customers’ possibilities of online consultant. Online service can not only give quick customized suggestion, but also the home design service can help to solve individual problems at home. The easier life can be reach by just communicating. This service can save customers’ time and at same time it is good way to build platform reliability which can promote products reusing markets.
Renting service Introduction

**HOW IT WORKS**

**STEP 1: Choose Location & Duration**

**STEP 2: Select Your Furnishing**

**STEP 3: Check out**

**STEP 4: Schedule Delivery**

**STEP 5: Schedule Pick up**

**Fig. 44 Service introduction**
The clear service flow is designed to show the knowledge of renting service. In the meantime, the easy information could attract more potential customers into the product reusing market.

7. Conclusion and future research

The project has been identified a lacking of a service to meet the basic needs of Millennials and to support furniture reusing. The result is a needs-based service B2C business model that can help all the stakeholders, so the Millennials can find customized solutions for their lives and the products can be used in their lives while being reused by Millennials. The needs-based service system connects products lifecycle and human’s lives together contributing to sustainable development. The technical platform will work through the internet and will connect the consumer to the furniture. I present the service by showing technical platform through a computer as an example to illustrate how this can work in the practice.

The second finding identified is the service design necessity to use a needs-base approach since it can help to discover the real reasons behind a phenomenon and to generate innovative solutions.

The third finding in project is the service design can reduce human attitude obstacles towards buying second-hand furniture. Compared to the new products, the second-hand products have a few defects.
Some of them are real while some just in consumers’ awareness. Reuse, refurbish and remanufacture concept implemented in service design could offer consumers same price but higher quality products which modify the second-hand prejudice.

Product reusing service design are efficiency for facilitating the products’ quality instead of quantity, consequentially reducing the environmental impacts. Furthermore, service design can also promote new products producing process. Since the prerequisite of a reused product is the product quality allow the product can be used again or the product can be refurbished or remanufactured. Under reusing consumption market needs, In order to be refurbished or resource remanufactured, the products will be asked for designing to be reusable, which will change the products producing.

While conducting the second-hand leasing service, several knowledge and practical texting need to do in the future. Based on the Chinese market, People attitudes and barriers towards consuming second-hand products can be pay a attention. The obstacle between human consumption behavior and their attitudes is worth to investigate. It would be useful to get inspiration to start service design from understand the reasons of nowadays pop consumption factors and its related Consumer Psychology. The consumption diversities between cities or regions is a interesting topic, the culture habits etc. effects on consumptions may provide suggestion for customized service design. And the relationship between education backgrounds and second-hands attitudes might provide the ideas about product reusing knowledge spreading. From service design
perspective, different kinds of co-creation testing could help check knowledge based service hypnosis.
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HELLO YOU!

We are Summer and Juliana. We are both students from the Innovation Master at LNU, and as you might now, we are now writing our thesis projects. We are working in different thesis but we have decided to jon resources and co-create together...

BUT, to do this, **WE NEED YOU**, your ideas, energy and creativity.

Summer is working with design services while targeting people who live in big cities and Juliana is trying to find the way of creating better spaces for co-creation and creativity.

Will you joing us? It is very easy!, just...

**COME NEXT SUNDAY 10TH OF APRIL**
from 10:30 - 12:00
OUTSIDE M1097A (our studio)
& share some of your ideas with all of us!
THANK YOU!