

# **Using the Sharing Economy as an Innovative Marketing approach for Traditional Companies**

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<p>The emergence of the sharing economy phenomenon has posed a big threat to already existing companies who are not in the business sphere as this was made possible through the progression and innovation in Information technology.</p> <p>The research aimed to find which suitable sharing economy elements that could be jointly collaborated in a traditional company in the durable goods sector in Helsinki area of Finland and to find what consumers think of sharing practices of renting and swapping in order to get new insights that would be fundamental for marketing purposes in creating new value and propositions for customers.</p> <p>The scope of the thesis was first studied theoretically using desktop analysis to gain new insights on past academic and current sharing economy topics. Companies that are involved in the sharing economy in one way or another were compared.</p> <p>Furthermore, the study includes a theoretical structure as well as sections on desktop and empirical research. The sharing economy, collaborative consumption, sharing economy models, traditional economy, and the product-service economy are all discussed in the theory section.</p> <p>Secondly, a survey containing 13 questionnaires was distributed among 150 consumers in the Helsinki city axis to learn about their views on sharing activities such as renting and swapping for consumer durables in the smart connected products (SCP) group. There were 52 responses, resulting in a 34.67 percent response rate, which were then analysed using descriptive analysis in accordance with the thesis objectives.</p> <p>The desktop study's key findings and observations revealed that the sharing economy and the traditional economy are similar, and both can use product-service models to meet consumer needs. Information technology has been a key innovation driver of this consumer upshot and has fostered the utilization of smart product service systems (SPSS) as a vital sharing economy element for traditional companies to utilize in mitigating the threats of the sharing economy.</p> <p>Furthermore, the findings of a consumer study on renting and swapping revealed that consumers find renting to be much more familiar and appealing, and that they place a high value on imperatives on economic factors such as price when making rental decisions.</p> <p>The author suggests that the thesis study results be focused on recommendations of the outcomes rather than universalizing them to the whole population because they may differ based on a larger sample and the use of other variables and factors.</p>	
<b>Keywords</b> Sharing economy, Traditional companies, Consumer durables, Product-Service Model, Smart product-service systems	

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## Abbreviations

<b>CES:</b>	Consumer Electronic Show
<b>PSS:</b>	Product Service Systems
<b>SCP:</b>	Smart &, Connected Products.
<b>SPSS:</b>	Smart Product Service Systems

# 1. Introduction

This is a non-commissioned bachelor's research thesis for the Haaga- Helia University of Applied Sciences' international business degree program. This segment presents the research subject and provides an outline of the research propositions as well as further explanations of the research hallmark. This is accompanied by the research methodology, which briefly describes the research methods used in this research process, as well as the study aims, objectives, scope, and demarcation. The structure of the thesis subdivisions, risk analysis, and key concepts concludes the introduction part of this thesis research.

Since the emergence of the sharing economic model, it has posed a great challenge to not just traditional companies but to consumers, government, and policy makers on how best to utilize and harness its benefits (Brookings India 2017). During the mid-2000s, there was recognition of a huge paradigm shift on consumer behaviour because of unsustainable hyper-consumption on the part of consumers. This created an avenue for the emergence of companies that can offer new kinds of business solutions for the changed consumer problem.

The phrases "sharing economy," "The Mesh," "Gig economy," and "access economy" have all been coined to explain this type of business phenomenon. From 2009 to 2010, the word "sharing economy" soared to the top of the vocabulary used to characterize companies of this calibre, such as Airbnb, Uber, and Blablacar. With the passage of time, these businesses have risen to become major players in the industry.

According to Gansky (2010), the shared economy is the business of the future, and it represents a paradigm change from the conventional business model to a sharing business network model whose network is referred to as "the Mesh." This is due to customers' mistrust of older brands and models because of the global financial crisis of 2008.

Moreover, Consumers on the other hand are trying to sort out new businesses that deliver value at a lower cost. They do so by rethinking what is more valuable in their lives because of the economic impact of past crises. The world's rapid population increase, wasteful use of resources and climate change have raised the cost of doing business the old traditional way and companies, cities and countries that are able to harness the potential it has, could amicably define the 21<sup>st</sup> century business landscape (Gansky 2010).

Physical assets are being exchanged as commodities in an economy that is evolving (Brookings India, 2017). The sharing economy is here to stay, as it will be the backbone of tomorrow's industries, bridging the gap between old and new business models as a source of innovation, value development, and competitive advantage for businesses (IBM 2018).

The need for conventional companies with a focus on the consumer durable goods industry to use and mitigate the challenge of the sharing economic model to innovate and bring new value to customers is recognized by this research. It will also serve as a new platform for businesses to escape resource depletion, combat climate change, and create strong social capital by sharing. The thesis writer is a student of marketing aiming for a bachelor's degree and wishes to continue to upgrade his experience, knowledge, and career during the research process.

## 1.1 Research Methodology

The sharing economy provides new ways to start and run a business. This study investigates and addresses questions about how conventional businesses can integrate shared economy fundamentals into their business models and provide a new value proposition to their customers.

Switching from a conventional business model to a sharing economy business model has been a difficult task for traditional companies because sharing economic models have several features that are different from the traditional model but can be beneficial when properly harnessed.

Also, it aimed to help traditional companies learn from best practices and evolve by leveraging the advantages of the sharing economy by making responsible and effective use of a company's resources to increase productivity and create a better value proposition for customers.

This research question was worded as - How can traditional companies in the consumer durable goods sector in Helsinki region use the sharing economy as an innovative marketing approach to add value to existing customers and attract new ones?? The Research question are further divided into three (3) investigative questions (IQ) as follows:

IQ 1. What sharing economy model could be applied in a traditional company in the consumer durables industry in Helsinki region?

IQ 2. What are consumer attitudes regarding product renting in the consumer electronic durables industry in Helsinki region?

IQ 3. What are consumer attitudes regarding product swapping in the consumer electronic durables industry in Helsinki region?

The below table presents the theoretical framework, research methods and results chapters for each investigative question.

Table 1. Research structure and Overlay matrix.

Investigative question	Theoretical Framework*	Number of Survey questions	Research Methods**	Results (chapter)
IQ 1. What sharing economy model could be applied in a traditional company in the consumer durables industry in the Helsinki region?	<ul style="list-style-type: none"><li>• Sharing Economy models</li><li>• Collaborative Economy</li><li>• Traditional Companies</li><li>• Marketing processes</li></ul>	None	Desktop study	4.1

IQ 2. What are consumer attitudes regarding product renting in the consumer electronic durables sector in Helsinki region?	<ul style="list-style-type: none"> <li>• Sharing Practices</li> <li>• Traditional Company</li> <li>• Consumer durables</li> <li>• (Consumer Electronics Show – CES 2021)</li> <li>• Smart connected products (SCP)</li> </ul>	4 questions for the quantitatively oriented research survey	Empirical research: Quantitative research Survey	4.2.
IQ 3 What are consumer attitudes regarding product swapping in the consumer electronic durables sector in Helsinki region?	<ul style="list-style-type: none"> <li>• Sharing practices</li> <li>• Traditional economy</li> <li>• Consumer durable</li> <li>• (Consumer Electronics Show – CES 2021)</li> <li>• Smart connected products (SCP)</li> </ul>	5 questions for the quantitatively oriented research survey	Empirical research: Quantitative research Survey	4.3

\* Knowledge base is an equally good term. Choose which you will use throughout the thesis.

\*\* Examples of research methods: Quantitative survey of existing and potential B2C customers, qualitative interviews of suppliers' representatives, observation of sales staff in front-desk activities, qualitative analysis of company's HRM-related websites

## 1.2 Demarkation

To begin with, the sharing economy presents a significant challenge and threat not only to conventional businesses in various industries, but also to consumers, policymakers, and regulators. The study focused on an old capitalist model of traditional durable goods companies in Helsinki, Finland, to pinpoint firms that have successfully used sharing economy fundamentals to build new consumer value.

The study centred on studying the sharing economy from the lens of technology, and tangible assets as the point of convergence. The study investigated the business growth and marketing opportunities for conventional businesses in the consumer durable goods sector in relation to value creation and value proposition for customers (consumer durable goods).

Similarly, other facets of the sharing economy such as co-working, the gig economy, and the labour market were left out. The difficulties, risks, and advantages they pose to regulators and policymakers was as well excluded from the research.



Additionally, the research focal point's aim was to identify research best practices. In this fashion, other industry sectors were omitted from the study, which instead concentrated on B2C conventional companies in the durable goods market. The research inquiry's second phase centred on using consumer respondents in the Helsinki axis to address the research question. Thus, consumers from other Finnish municipalities are excluded.

To sum up, a crucial lookout cue was finding organizations that had effectively incorporated shared economy elements in a variety of ways. In this manner, other firms may benefit from it by learning from best practices to overcome the obstacles provided by sharing economy enterprises by developing new marketing categories to attract new clients and keep existing ones.

### **1.3 International Aspect**

The sharing economy is both a global problem and a global trend. The thesis aims to provide valuable insight into how to better address the challenge and problems raised by the sharing economy phenomenon, especially for conventional consumer durable goods companies around the world.

The thesis author comes from a diverse cultural context and will be researching conventional consumer durable goods firms. This will be in terms of marketing reach, with an emphasis on the Finnish consumer durable goods industry. The subject fits into GLOBBA's international perspective since it seeks to investigate a global business phenomenon.

### **1.4 Benefit**

The research aims to see how other innovations in hungry traditional companies, whether within the framework of the consumer durable goods industry or outside of it, could leap the benefits of the sharing economy. They could utilize it to create new value through innovative product marketing and to achieve a higher economics of scale. The sharing economy has been about asset sharing and prevention of wasteful forms of consumption. Its co-tails so many increasing powerful propositions for individuals, companies and the society when harnessed.

This research was delimited to traditional companies in the consumer durable goods sphere in Helsinki, Finland. At same time, sharing economy still encloses so many other economic, environmental, and social benefits as it enhances choice and convenience. When society shares rather than letting consumers own, it helps them save money, practice sustainability and could help increase social capital in society.

Sharing is fuelled by high trust among individuals. This helps reduce the carbon footprints of humans on the planet, and boost community relations. On the contrary, it will also help companies to utilize their assets base by been more environmentally cautious in their dealings while increasing output.

On a personal note, I benefitted from this research as it has broadened my knowledge as I gained new insights and expertise in business development, marketing, and value creation for future strategy utilization for companies. This will be vital in my self-actualisation goals as I could be able to utilize it in any field of my future endeavour.

## 1.5 Risk Analysis

In research processes, risks do arise when trying to manage and make the research processes viable. Taking adequate measures requires thinking and planning, so that the resources and time invested in the thesis project do not get undermined (San Miguel 2019, 41).

The table below projects the risk that emerged during the thesis planning process and what measures and parameters were considered and taken to actualise its success. It had helped in mitigating the roadblocks that could have been detrimental to the research aims.

Table 2. Risk analysis and management tool

Risk source	Risk	Level of risk*	Manageability of risk**	Risk management needed***	Risk management activities
Access	Obtaining access to people, organisation, and documentations	1	1	2	Search through public reports and expert data.
Researcher	Competence and skills to conduct research. Motivation and time.	2	1	2	Study of research literature and books. Appropriate time management
Higher education institution	Resources and tools made available for research.	3	2	3	Workshops from the library and Thesis advisors
Lack of prior publication in the field	Availability of theoretical knowledge for the concept studied.	2	1	2	Extensive search of theoretical literature, particularly in internet sources.
Research ethics and legislation	Data protection	3	1	3	Informed consent and non-disclosure of personal information

\* 1 High: Must be managed to keep the project viable, 2 Intermediate: Should be managed, 3 Low Unlikely to arise; does not need to be managed.

\*\* 1 Manageable by researcher, 2 Manageable by partner or another accessible party, 3 Not manageable by 1 or 2 Abandon projects.

\*\*\* 1 High priority, 2 Medium priority, 3 Low priority

## 1.6 Key Concepts

**The sharing economy** is - “ the value in taking underutilized assets and making them accessible online to a community, leading to a reduced need for ownership of those assets ” (Stephany 2015).

**Collaborative consumption** is an economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership. It is reinventing not just what we consume but how we consume (Botsman & Rogers 2010).

**Peer to peer platform:** Internet-based networks and platforms increasingly mediate interactions and transactions among peers typically coordinated by trust relationships and personal reputation (e.g., buying second-hand goods on eBay). This development is also called a peer-to-peer economy (Constantinou et al 2017. 234).

**Traditional companies** refer to existing companies originally uninvolved in any form of collaborative consumption. They include retailers, distributors, manufacturers, and producers operating by the dictates of the linear commercial system. Seizing upon the potential of the collaborative consumption phenomenon, many such businesses have developed specific branches or product lines dedicated to collaborative consumption (Ertz et al., 2016).

**Marketing mix:** Marketing is the process of creating value for the customer and capturing those values in return with marketing mix (the set of tactical marketing tools- product, price, place, and promotion) that the firm blends to produce the response it wants in the target market. (Kotler et al. 2017,77)

**Innovation:** is a process of turning opportunity into new ideas and of putting these into widely used practice (Tidd et al 2005. 66).

**Consumer durable goods** constitute products that are usually a bit costly for households on average and are expected to last within the duration of up to 2 - 3 years (Pande & Srivastava 2013).

**Smart Product Service systems** are business models providing an integrated mix of tangible and intangible services that can fulfil final customer needs (Lu, Lai & Liu 2019).

## 2. Using Sharing Economy Elements as an Innovative Marketing Approach for Traditional Companies in the Consumer Durable Goods Sector in Helsinki Region

As previously stated, the sharing economy poses a threat not only to traditional companies (conventional businesses), but also to customers, regulators, and policymakers. The theoretical examination started with a basic description and debunking of various assumptions and theories about the words associated with the sharing economy.

This provides a basic understanding of the research scope. The opportunities of sharing economy from the traditional companies' point of view and how it affects their business model were discussed and elaborated. It has been cited that each year some parts of the tangible world get intertwined with the silicone world as they are now beginning to get smart due to innovations in technology.

The ability of businesses and corporations to fend off the challenges of the shared economy will be determined by how well they were able to take advantage of the opportunities that the sharing economy creates by addressing the issues that it has generated. Even though there have been many reports on its value for customers and the challenges it presents for regulators and policymakers in terms of human resource management. The literature reviewed & summarized the major findings and concluded the research topic on the use of the shared economy by traditional companies in the consumer durable goods sector.

The study addressed the sharing economy in the perspective of technology and theoretical framework was more focused on collaborative consumption, market models, and how to creatively propose a new value proposition to customers. The study's hallmark was a comparative review of research best practices in the consumer durable goods market that had successfully adopted shared economy elements and concepts.

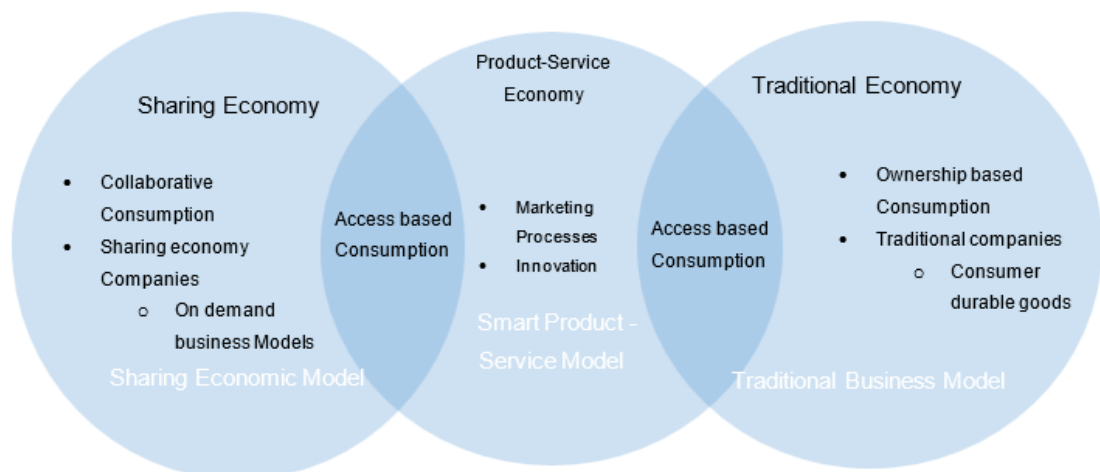


Figure 1. Theoretical Framework.

The research design concept for the study were divided into three scopes of traditional model, sharing economic model and product service model since they are the focus that was used in the research. The focus was on the consumer durable goods industry and sharing economy fundamentals that can be adopted to cater for new consumer needs and demands. Lastly, useful keywords in the study are:

- Sharing economy
- Collaborative consumption
- Traditional business model
- Traditional companies
- Sharing economy model
- Innovation
- Consumer durable goods
- Smart product service systems

## 2.1 Sharing Economy

Firstly, the sharing economy has been among the remarkable trends that have shaped the modern business landscape in the past decade. Since the Stone Age and transgressions of the industrial advancements and revolutions that have shaped human consumption patterns then and now, the concept of sharing has been part of human activities and does not seem new to us.

The notion of sharing has taken effect in different forms in past societies in the form of co-operatives, mutual associations, trade by barter, volunteering etc. This same human sharing essence has been the reciprocity that led to a regeneration and emergence of a new kind of sharing with the aid of technological tools (Belk 2013).

The emergence of a new kind of sharing which has not been witnessed before due to the pattern and style it followed to emerge has been pinpointed in the past decades. Past literatures of some notable schools of thought have been pioneers in trying to describe the emergence of this new kind of social & economic phenomenon.

According to an earlier description of the sharing economy by Gansky - described the emergence of a new business thriving on the growth of social media, the internet, wireless networks, and smart phones. They were able to flourish by making use of collected data derived from astute sources which enables them to administer high quality goods and services to people at their convenience and needs (Gansky 2010). The sharing economy is fostered and nurtured by big data, algorithms, and digital platforms, in this regard, all its viability would not have been possible or utilized without those elements (Marr.2016).

Eckhardt, Houston, Jiang, Lamberton, Rindfleisch, Zerva (2019) describes the sharing economy as *“a information communication technology enabled social economic structure with five main characteristics (i.e., short term access, asset transfer, platform interaction, broadened consumer role, and web mediated supply)”*.

Furthermore, according to (Sedkaoui & Khelfaoui 2020, chapter 1), *the sharing economy encompasses a novel social and economic system involving the exchange of merchandise (passenger cars, accommodation, equipment, and others) and services (carpooling, takeback, and others) among members of society.*" It could include profit-oriented commercial ventures that involve monetary benefits or ventures that do not involve monetary benefits, such as gift giving, exchange of goods, or charitable events.

According to Stephany (2015. 9), - "The importance of the sharing economy lies in taking underutilized assets and making them available online to a group, resulting in a decreased demand for acquisition of those assets."

Constantinou, Marton & Tuunainen (2017) described sharing economy as - "the convergence of three broad socio-economic developments which are: the allocation of idle resources, offering access over ownership and use of peer-to-peer networks."

Finally, Winterhalter, Wecht, and Krieg (2015) described sharing economy as "the quest for improved productivity on use of resources with the goal of lowering costs / creating new value through the medium of shared consumption." while attempting to draw on the underlying concepts of sharing economy in order to push a new concept into its paradigm.

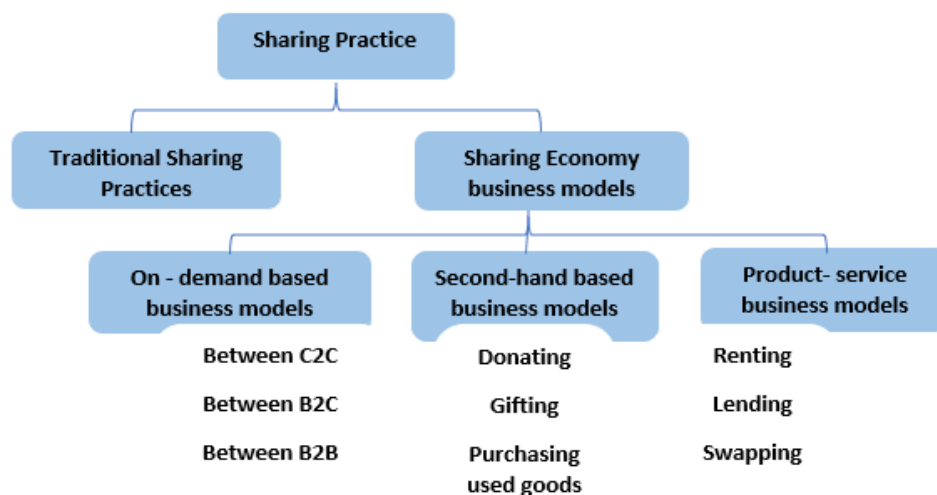


Figure 2. Classifications of basic sharing practices (adapted from Soltysova & Modrak 2020).

### 2.1.1 Sharing Economy Dimensions

According to Howard (2015, 4 –7), The sharing economy movement was sparked by the redemptive deconstruction of the global financial crisis of 2008, which revealed not only the weaknesses of the old model and individuals, but also the need to reinvent the old way of doing business by incorporating new concepts, models, and services. This new mode entails establishing a brand culture or community based on the principles of trust, sharing, and getting out of the way by allowing members to connect and trade goods and services in a communal setting.

Demary (2015) claimed that the emergence of the sharing economy is in accord with the 2008 global financial crisis as the first search for the term "Sharing economy "appeared on google trend in 2009. The redemptive deconstruction of the crisis widened the hole in distrust between old companies and consumers. Consumer feelings and attitudes towards

older brands were changed as they started to patronize new brands which created the value they sort for at a lesser cost (Gansky 2015).

The success of the sharing economy was paved by the development of IT tools and mobile technology (smart phones and tablets), globalization of the world's economy, 2008 global financial crises and the rise of environmental awareness which is fuelled by the negative impact of capitalism. (Sedkaoui & Khelfaoui 2020, chapter 1).

This new business phenomenon was able to flourish based on these four characteristics and essential elements - Sharing, advanced use of the internet and mobile infrastructural networks, a sharp focus on physical goods and materials and engagement with customers through those social networks (Gansky 2010).

Sharing economy's key characteristics (elements) and attributes (Web 1.0) are not considered new but through their evolving existence paved the way for sharing economies' relevance. The emergence of digital technology like internet and smartphones helped pioneered the mass increase of its users. This early adopter were able to utilize platforms by acting as intermediaries, gatekeepers and matchmakers through risk mitigation, cost reduction and trust building among users (Constantinou et al. 2017, 234).

In addition, standing from Stephany's sharing economy's point of view and to narrow down this research focus which was based on five cues and elements: value, underutilized assets, online accessibility, community, and reduced need for ownership (Stephany 2015, 9 -11).

On the other hand, Gansky (2010, chapter 1) identified four elements and cues which depicts the whole concept of the Mesh business when describing the new business phenomenon as characterizing: (a core product or service offering) which can be shared within a community, market or value chain, the (use of web and mobile data) to analyze and interpret customer behavior and the focus is on (shareable physical goods) using social networks as an (interactive tool within the medium).

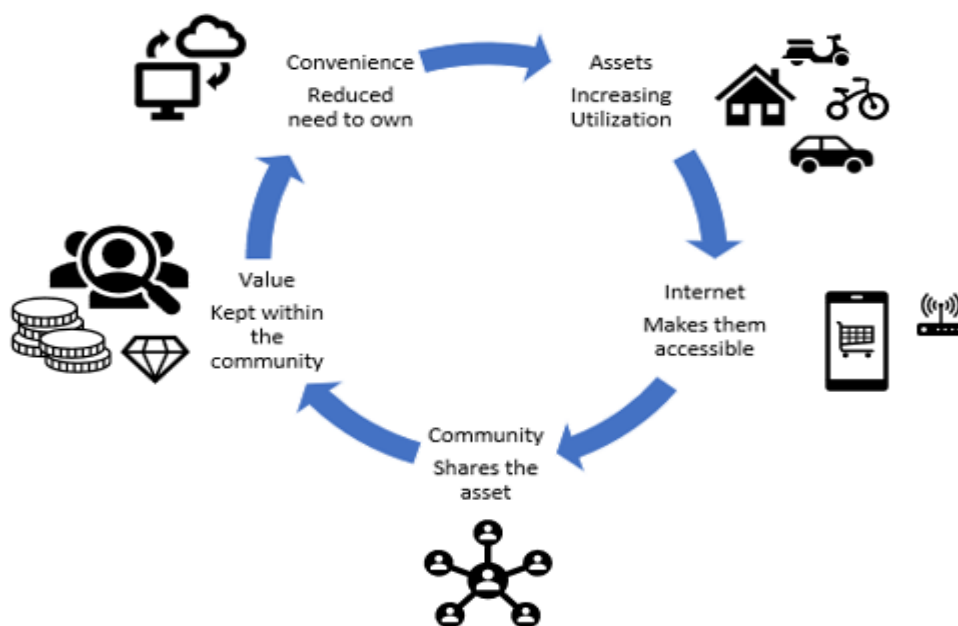


Figure 3. Increase in asset utilization in the sharing economy (Adapted from Stephany 2015.12)

According to Botsman (2015), the sharing economy still lacks a good description because its advantages and drawbacks are not well established. Another reason is the plethora of terms and phrases used to try to describe this modern socioeconomic phenomenon, such as "the mesh market," "peer to peer network," "collaborative consumption," "access economy," and "platform economy."

Conclusively, sharing economy is the most widely used designation in describing this global social economic phenomenon; it has been ascertained to be the new economic model that could compete with the traditional capitalist economic model due to the multidimensional nature of the crisis (global financial crises) that unfolded – economic (financial), ecological (environmental) and social (Sedkaoui & Khelfaoui 2020).

### **2.1.2 Sharing Economy Embodiments**

To begin with, the sharing economy embraces two types of business model for companies namely: Business to consumer (B2C) and Peer to peer Platform (P2P). This helps to establish the distinction between the obtainer and the provider within the confines of the sharing economy (Stephany 2015,12; Demary 2015).

The sharing economy embodies three foundations even though its theoretical framework is yet to be implemented. The three foundations are identified as collaborative practices which are – P2P economy, gift economy and service economy (Sedkaoui & Khelfaoui 2020).

Similarly, Constantiou et al. (2017) stressed that the shared economy supports archetypal platforms, implying that two-sided markets or multi-sided platforms (MSP) models are supported. They promote peer-to-peer commercial business interactions for temporary access to products and services, in addition to allowing for the purchase and sale of goods.

Furthermore, the internet age gave birth to the shared economy and the phenomenon of collaborative consumption (Belk 2013). Starting with Web 2.0, which boasted its rise, information technology has been the facilitator of all digital platforms that the sharing economy embodies. The sharing economy has progressed, and big data, networks, and algorithms are now bolstering and encouraging it (Marr 2016; John 2013).

The baby boomers and generation X (Gen X), who were born before the internet bubble / dot com boom (1995-2000) and saw ownership of products as a status symbol, were known for owning items. The internet bubble contributed to a shift in thought among millennials and generation Z (Gen Z), who rose to popularity following the bubble and seem to own less and are minimalist in nature (Naughton 2016; Marr 2016; John 2013).

To sum up, the future sharing economy would most likely vary from the one we have now (Wallenstein & Shelat, Sept 2017). As we progress forward into the future through generational transgressions, the comfort provided by information technology components such as big data, platforms, and algorithms will become increasingly important. As the sharing



economy develops, it is likely that we could own less and share more (Sedkaoui & Khelfaoui 2020, sub chapter 1.4).

## 2.2 Collaborative Consumption

Collaborative consumption is an economic model whereby consumers make use of online tools to collaborate on sharing, renting, owning, trading goods and services (John 2013). The actors / players in a collaborative economy comprise of stakeholders (consumers, governments, traditional companies, entrepreneurs etc.) that can be in parallel or in distinct which could be based on their motives and interests- social, political, environmental, economic (Dredge & Gyimothy 2017, 9).

Also, sharing economy and collaborative consumption practices has two things in common which is the use of a non-permanent and non-ownership models in utilizing consumer goods / services and a huge reliance on the web to bring it to life. It was the web 2.0 version of the internet that pioneered both phenomena and helped it become prominent (Belk 2013). Both practices have evolved and has now been fuelled by web 3.0 version of the internet which are big data, algorithms, and platforms (Marr 2016).

Furthermore, the multidimensional crisis (economic, ecological, and social) that fueled the sharing economic phenomenon consists of both the social and economic aspects, while collaborative consumption only involves the economic dimension scope, which involves monetary gain and benefits (Sedkaoui & Khelfaoui 2020).

Belk (2013) specified that - "collaborative consumption is people coordinating the acquisition and distribution of a resource for a fee or other compensation". In contrast, Sedkaoui & Khelfaoui (2020) described sharing economy as a socio-economic phenomenon thereby specifying two-dimensional scope of social & economic which contrasts with (Botsman 2010) description of the sharing economy as an economic model with no inclusion of the social aspect of it -

*According to Botsman & Rogers (2010), Sharing economy is an economic system that focuses on sharing, exchanging, distributing, or renting goods and services, allowing access over possession. In that regard, it is redefining not only what we absorb as consumers but rather the mode of our spending during consumption.*

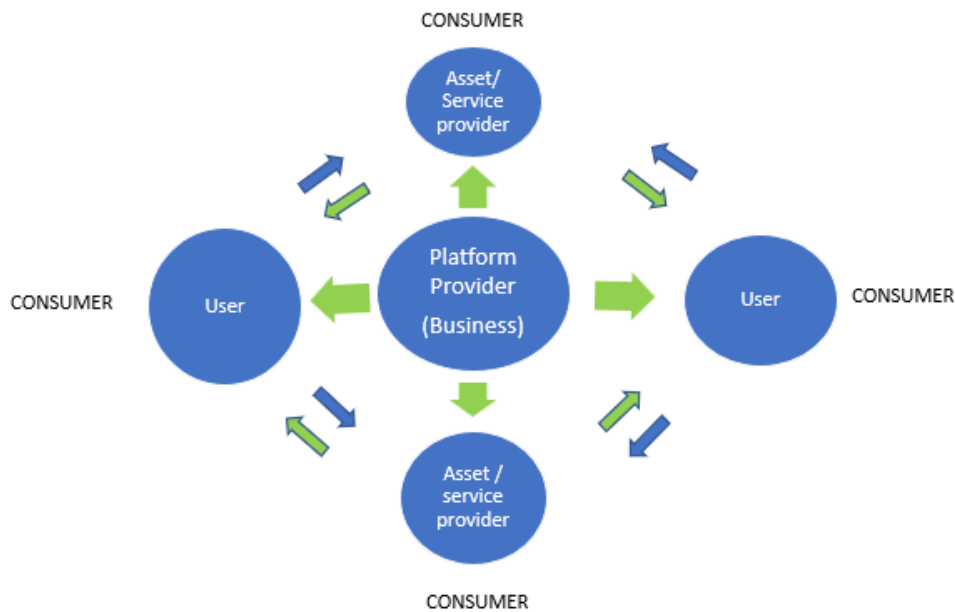
Comparably, sharing economy here involves both the social and economic dimensions while collaborative consumption only involves the economic dimension scope which involves monetary gain and benefits.

Collaboration has also been identified to be an enabler of the circular economy (ecological) phenomenon and the experience economy encompasses the social part of the phenomenon. Therefore, the circular economy can be considered as the ecological (i.e., environmental) dimension part of the multidimensional crisis which unfolded (Mishra, Chiwenga & Ali 2019; Stephany 2015, 16).

Collaborative consumption is considerably phenomenal due to the number of intermediaries and variation of stakeholders that it involves, which includes consumers, third parties

with platforms which includes consumers, third parties with platforms ecosystems and traditional companies (Ertz, Durif & Arcand 2016).

## Peer- to - Peer (P2P) Model



## Business to Consumer (B2C) Model

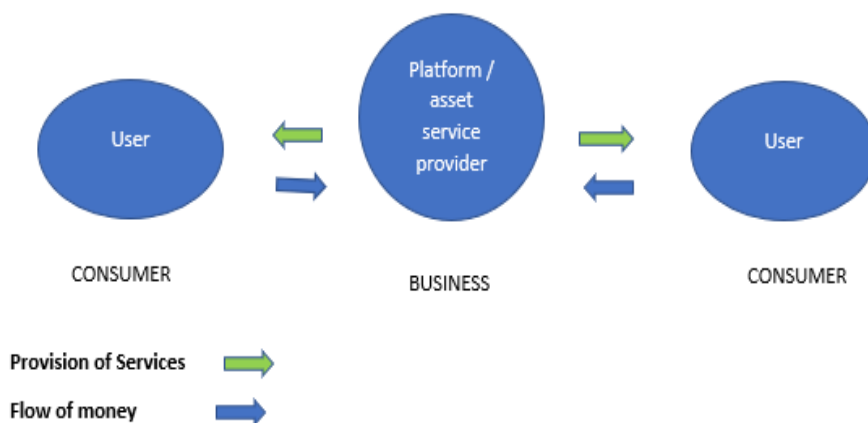


Figure 4. Sharing economy business model comparisons. (Source: Pwc 2015)

It comprises of a multidimensional aspect (free vs monetary, temporary access vs permanent ownership, online vs offline) depicting different resource distribution systems that has given rise to a two-sided consumer (prosumers) (Ertz et al. 2016). Codagnone & Martens (2016) inferred through a conceptual framework that collaborative economy platforms can

be classified whether they are for commercial purposes (profit vs nonprofit) and the ownership and nature of sharing facilitate by the platform (peer to peer vs B2C).

Simultaneously, collaborative consumption is within the dimensions of the multidimensional crisis which sharing economy embodies and does not operate within the realms of conventional capitalism. This multidimensional phenomenon has opened a new business landscape and new world order (John, 2013, 4; Sedkaoui & Khelfaoui 2020).

When old ways of doing business appear incompatible with the new order of business, new world orders signal the need for new rules and modes of operation. Traditional businesses/traditional capitalist companies can use innovation as an adaptive tool and backbone to navigate and retain the best of their old model of activity (Howard 2015,6).

The sudden growth of the internet coupled with the decline of its marginal costs (The 3 core digital building blocks) and platform ecosystems are the main enablers of the sharing economy phenomenon (Winterhalter et al. 2015). John (2013) Stipulated two views of the notion of collaborative consumption – “technology as an enabler of collaborative consumption and collaborative consumption driven by technology “.

Digital technology infrastructure deployment and public interest towards economic liberalization are the two fundamental trends that has transformed the global business landscape in the past decades due to the size of pull and push approaches companies shown towards it to create value for customers (Hagel 2015).

The convergence of collaborative consumption and technology appears to be cutting-edge and innovative. This makes it more appealing to the younger generation (millennials and Gen Z), who are digital natives (they grew up using recent technologies). contrasted opposed to their parents' generation (baby boomers and Gen X), who are digital migrants (born prior to the internet bubble and did not grow up using the web) (Jarrahi & Eshraghi 2019).

Conclusively, the younger generation seems to share more and are digital quotients, by their use of social networks, they enable technological, environmental, and economic sound activities (John 2013). Thus, the sharing economy is driven by social, technological and economic factors (Sommers, Dewit & Baelus 2018 ).

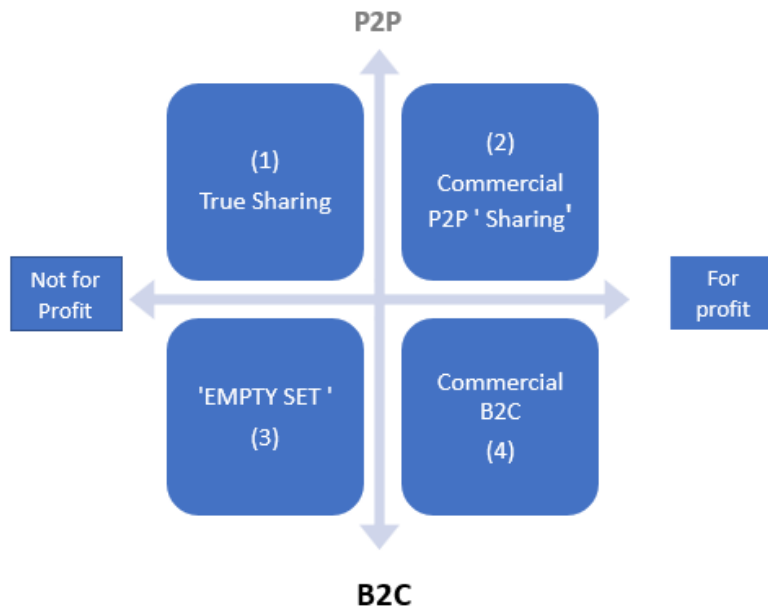


Figure 5. Collaborative economy platforms conceptual matrix (Adapted from Codagnone & Martens 2016)

### 2.2.1 Collaborative Consumption Driven by Technology.

Initially, the distrust of old companies because of the impact of the global financial crises led to a new foundation of trust (i.e., the emergence of new businesses in a new paradigm which was fostered by technology and built on trust). With the use of online profiles, verifications and rating systems which have been enabled by platforms, consumers and businesses are able to rate each other after transactions. This in the end helps to foster transparency and trust, which is vital in the sharing economy business landscape (Demary 2015; Botsman 2016).

Ertz et al (2016), portrayed online and offline sharing activities as part of the multidimensional aspect of resource distribution system which collaborative consumption entails. Technology as a driver of collaborative consumption is an indication of how online sharing has fostered offline sharing activities due to human tendency to share. Trust has been the bridge which connected and fostered both online and offline activities. This offline collaborative consumption was fostered by trust created firstly in social networks when sharing (John, 2013, 12).

Furthermore, Demary (2015), suggested that technology is the crucial driver of the sharing economy as the cost and complexity of engaging in economic sound activities (business and consumer relation) have been reduced and minimised with the help of new technological advancements. (i.e., smart- phones, internet). Technology has been able to enable human interactions that seemed impossible in the past years.

Finally, Howard (2015,6) proposed a rhetoric for creating and collaborating in the shared economy, People are now much more interested in collective experiences in the we-commerce economy than in individual experiences or personal possessions they can enjoy privately.

It conveys technology as a driver of collaborative consumption. This has also nullified and reversed the old traditional wisdom of "users are what they possess" to "users are what

they exchange," and it is the evidence of our transition to a post-ownership economic system (Belk 2013).

### **2.2.2 Collaborative Consumption Enabled by Technology.**

Technology enabled collaborative consumption in relation to the multidimension scope of the sharing economy enables processes that are driven by the social, economic, and environmental concerns of consumers. The social signifies that technology enables processes that manifest human behavioural tendencies that are strongly human nature. These tendencies are considered as old as time itself. Therefore, they are the medium through which it comes about. Social networks enable collaborative consumption by helping us reinstate old human behaviours which is - communication and interaction with one another. The reason for participation varies but specifically being economic and environmental concerns (John 2013, 12; Meelen & Böcker 2017; Eckhardt et al., 2019).

On another note, John (2013, 12) argues that collaborative consumption is in strong affinity with technology as its first entrants and enterprises where start-ups which are coherently similar in the high-tech world, and it is supported by peer-to-peer computing network and therefore consider it a technological phenomenon. The sharing economy's similar identity with technology firms provided them with quick access to funds in a similar squabble with IT start-ups and venture capitalists, resulting in the success and growth of the collaborative consumption phenomenon.

To conclude, Stephany (2015,13) stated that new businesses and start-ups are attracted to the sharing economy because of the strong ethical implications it entails in terms of collaboration, community relations, and sustainability. This appears to appeal to the public, especially young people, and serves as a good public relations tool for start-ups and small businesses seeking new customers.

## **2.3 Sharing Economy Elements**

According to the Oxford Learners Dictionary, the noun "element" is defined as - "a necessary or typical part of something and one of the several parts that something contains" (OLD 2020a). Brügger (2010, 31-41) in trying to map out a framework and study of past web history through website studies postulated that elements are mediums which can be human (Individuals or groups) and non-human (technological artefacts, physical resources) entities. This element can be parallel to each other through relationships and can also be a component of distinct relationships. Thus, elements can be a node in a network of relationships.

Additionally, Reutschl, Bouncken & Laudien (2017,34), ascertained that the sharing economy is primarily about creating and sustaining networks. The networks consist of two forms - actors (i.e., the players in the sharing economy) and linkages (the technological interconnections within the networks). Interconnections in networks are formed to facilitate the distribution of information and the exchange of physical goods among players within the networks. Thus, sharing economy craves interaction and connection within the interconnected networks that has been facilitated by Information technology (IT) and web-based (internet) platforms.

In this context, Elements of the sharing economy are the fundamentals and attributes that it relates to and makes it possible for it to thrive. Gansky (2015), postulated that the mesh (sharing economy) provides new medium for creating new businesses and renovating the old ones. It also provides the next big opportunities for companies, communities, and our

planet to harness, as it forces us to rethink how we make use of our personal assets in a sustainable and effective way.

In conclusion, the sharing economy is a major competitor of the traditional economy because of the effects it has on the traditional economy supply and distribution channel. This is considered disruptive as a novice company in sharing economy with little resources has the power to sabotage the market of a traditional company. Adoption of the sharing economy by traditional companies depends on proper analysis of its challenges and the flexibility of adopting the elements used by existing firms (Sedkaoui & Khelfaoui 2020, chapter 2).

### **2.3.1 Value**

Value from a marketing perspective is the benefits and superior attributes which consist of market offerings – (i.e., products, services, experiences, information) offered to a customer or a market to satisfy a need or want. Delivering these market offerings results in creating value for the customer. Thus, this results in finding out the kind of customers to serve and the best medium to serve them better. Marketing is about creating value for customers and then capturing those values from customers in return. (Kotler, Armstrong, Opresnik 2017, 31-34).

Sharing economy offers a top-notch perceived value of goods and services, as with the use of web-based technologies (i.e., Information technology) which enables the sharing economy phenomenon, goods (products) and services are made available, directly, and immediately for customers at the right time and convenience (Reuschl et al., 2017, 35).

Kotler et al (2017, 38) emphasized that consumers have a bad judgement of benefits (value) and costs as they base it on perceived value. Customer value and satisfaction come from the perceived value of a market offering; a customer perceived value of a market offering is their evaluation of the difference in benefits and costs of a market offering in relation to other marketing offers (i.e., products, services, experience etc.).

According to a 2016 Euromonitor report, consumers have redefined their priorities by figuring out what they truly value which had led to the birth of new consumerism. These new priorities are based on preference of experience, sustainability, and convenience (time) over ownership and wasteful consumerism. Consumers are now ascertained to be prudent in nature as they want to achieve more with less, which is because of the multi-dimensional crisis that fostered the sharing economy phenomenon. (Euromonitor 2016).

Eckhardt et al., (2019) suggests that the success of a firm is determined by their effective management of the 4 marketing processes- branding, customer experience, innovation, and value appropriation; Marketing and innovation are the 2 key vital duties of a company. Thus, innovation is the building block of all marketing developments.

Creation of new value and lower cost exploitation are among people's motives of participation in the sharing economy (Winterhalter et al. 2015). Digital platforms which enable the sharing economy phenomenon help to create complementary monetary benefits for platform providers, as they could potentially foster interactions for commercial purposes among consumers (Stephany 2015,9). Value is created by the utilization of platforms but could be a risky endeavor if the platform is not owned and managed by the company; thus, it could result in them not capturing their fair share of already created value (Hagel 2015).

### **2.3.2 Assets / Core Product Offering**

From a marketing point of view, a product is considered a component part of the 4Ps (product, price, place, promotion) of marketing and consists of market offerings (goods & services) a company offers to a market to satisfy a need or want. Products are categorized as assets. Therefore, assets are considered a valuable property of a company utilized in delivering customer value and capturing value in return through customer engagement. A product is a market offering created to cater for the needs and wants of the consumer (Kotler et al., 2017, 77).

Moreover, Gansky (2010) described product offering as shareable physical goods (products, services, and raw materials) that could be shareable within a market, value chain or community. Sharing contrasts with asset ownership which makes it more viable for sharing economy companies to convert physical goods to service. (Demary 2015). The internet of things will enable product (device/ gadgets) connectivity with others through the web which will be of good benefit to sharing economy (Worth 2018).

Winterhalter et al. (2015) inferred that primarily, sharing economy is in parallel to traditional business redistribution market (lenders and second-hand resellers) but distinct and much more advanced as it has a strong global scope with the help of the internet and users in the sharing economy share their products within the products lifecycle (parallel sharing) which is in opposition to traditional business products end cycle (sequential sharing) use.

The value of assets in the sharing economy is determined by its idling capacity - (which is the ability to make money or cultivate an assets dormancy period into revenue). Assets on the sharing economy platforms can comprise of any physical goods like yachts, animals, or baby apparel. This can also include services like lawn mowing, goods delivery, software maintenance as it is based on intangible assets like time and intellectual expertise (Stephany 2015,10; Codagnone & Martens 2016).

### **2.3.3 Assets Idling Capacity.**

Private individuals take part uniformly in commercial activities by turning to other privately owned assets which is usually underutilized by their owners to satisfy their individual wants. Thus, brings into the limelight the notion of collaborative consumption as the allocation of idle resources (Constantiou et al., 2017).

Idling capacity is the unexploited social, economic, and environmental value of underutilized assets (Bostman 2015). This definition emphasized the multidimensional scope of the crisis (social, economic, environmental) that fostered the sharing economy phenomenon as postulated by (Sedkaoui & Khelfaoui 2020).

Dredge & Gyimothy (2017, 34) inferred that businesses operating in the confines of the collaborative economy create and capture value through revitalization of idle assets (empty rooms, spaces, consumer durables and excess intellectual capital ) to create new capital streams and benefits.

Furthermore, the notion of idling capacity was first deliberately studied and explored within the industrial processes setting as the same logic is now applied to sharing economy of

how best to utilize all underutilized assets to generate more revenue and income (Stephany 2015.10). The internet has helped to foster the sharing of unused assets, thereby helping to maximize the utility of those assets. This has also led to collaborative (peer to peer) consumption of those assets for a fee or monetary gains (Reuschl et al., 2017).

John (2013) stipulated that the idea of idling capacity is parallel to peer-to-peer computing network notion of redundancy; (in a computing network) – redundancy depicts the notion that if one node fails, an underutilized back up (node) resource or reserved system can step in as replacement, and this furthers the goals of peer-to-peer computing technology as an enabler of redundancy and peer to peer lending the minimizer. This is due to the certainty that backup resources are not meant to be used if everything is working properly.

To conclude, Reuschl et al. (2017. 35) inferred that consumer seldom lose interest in asset ownership with preference on exclusive access rights of assets that will allow them to make use of it within its utilization span (convenience and time), Therefore, this has impacted the relationships in B2C and B2B companies of how best they can connect, integrate, and transform production capacities into sharing schemes. Harnessing these sharing schemes will require insight and comprehension of how value is created, delivered, and captured within the sharing economy.

## **2.4 Information Technology Tools / Infrastructure**

To begin, the modern-day rapid spread of the sharing economy may be linked to developments in information technology and mobile technological capabilities. The usage of mobile tools and websites in business development aided in the convenience of commercial and business transactions (Sedkaoui & Khelfaoui 2020 chapter 1). As a result, the sharing economy got its start with a lot of technological support (Gansky 2010).

According to Constantinou et al. (2017. 234), the concept of sharing is not fresh, and the internet (web 1.0) has been around for a while. Sharing economy was first fueled by the web 2.0 version of the internet and is now fueled by the web 3.0 version (Big data, algorithms, and platforms) (Belk 2013). This is due to mass implementation of global digital infrastructure due to exponential innovation in the tech world (Hagel 2015, iv).

Furthermore, John (2013, 3) had argued that collaborative consumption had a strong correlation with contemporary technology landscape (Internet, social networks, and web 2.0) and seem to portray it as a high-tech phenomenon. This argument is based on the rhetoric that technology is both an enabler and driver of collaborative consumption and coupled that the terms used in depicting collaborative consumption are obviously derived and in parallel with high tech startups (Uber, Airbnb).

The advancement of Information technology helped spurred a complex fabric of connections between individual's, industries and communications domains leading to the emergence of new business models (Airbnb, Uber) that is delivering value with the power of choice, empowerment, and collaborative tendencies (King 2016).

### **2.4.1 Computing Cellular Network Technology**

Initially, Reuschl et al. (2017) presumed that Information technology has been the ultimate driver of innovation in the business world in the last decade. Information technology was able to spur innovation in the business landscape because of exponential improvements and advances of the three core digital building blocks (computing power, storage, and bandwidths) (Hagel III, Brown & Lui 2013).



Simultaneously, information technology essentially has changed the way products and services are perceived as using platforms enables outside collaboration, new value propositions, opportunities, and revenue streams for companies (Hagel III et al. 2013; Hagel 2015). The transgressional changes of the internet and mobile technology were patterned by critical changes of how people use and interact with it and was fostered by the infra-structural network that has evolved to cope with those changes (Naughton 2016).

According to latest Consumer Electronics Show (CES), new innovations in consumer durables are tremendous, As the Covid-19 pandemic triggered the deployment of smart devices ranging from robots, autonomous systems (delivery drones and self-driving cars), AI (artificial intelligence) and AR (augmented reality) enabled devices in airports, homes, factories to help diminish the negative impact of the health crises (Pelé 2021).

Besides, every decade new computing cellular networks emerge to replace incumbent networks in a transgressional way, improving the utilization and experience of the web. First and second generational networks (1G and 2G) were replaced by third generational network (3G) that was a lot quicker and incredible. The fourth generational organization (4G) in turn dislodged the third generational network with a lot quicker exactness and un-wavering quality (Chen 2020).

Also, most of the ICT tools and infrastructure we use daily across every sector of human endeavours are powered by the improved versions of the three core digital building blocks of computing power, storage, and bandwidth. Digital platforms have been progressively sustained and supported by global digital technology infrastructure that encourages participation and collaboration. This pinpoints technology as an enabler of collaborative consumption and not pre-requisite (Hagel 2015).

This exponential growth in innovation in the three core digital building blocks of information technology was a result of an exponential decrease in their costs compared to their performance. This sudden decrease in the cost of the 3 core digital buildings accelerated innovation much faster than the age-old technological innovations of electricity and telephone (Hagel III et al. 2013).

According to the latest New York Times report 2020, the world is experiencing a major technological shift from 4th generational computing cellular network (4G) to the 5<sup>th</sup> generational cellular computing network (5G) which will change the information technology and business landscape as the year unfolds (Chen 2020). Massive 5G networks have been readily started to emerge around the globe (Pelé 2021).

The 5<sup>th</sup> generational network embodies huge economic potential in the area of job creation and new capacity development. Huge investments and R&D have enabled its utilization in industrial processes especially in the use of IOT systems. It will offer so many tremendous opportunities as it will support and enhance consumers life (Pelé 2021).

To conclude, James (2020) stipulated that the new emerging 5<sup>th</sup> generational computing network (5G) network will enable smart devices, appliances, and equipment's. Thus, it will utilize data as its main ideal component. It will foster computing speed much faster than the incumbent 4G with the enablement of smart and connected technological devices with sensors and IOT solutions. The new 5G will be able to offer distinct and varied experiences and new solutions for consumers as devices will be able to interact with other devices and with individuals.

#### **2.4.2 Mobile Technology (Smart phones, Tablets & PC)**

Firstly, Hagel III et al. (2013) professed that the decreased cost of the 3 core digital building blocks (computing power, storage, and bandwidth) hastened the affordability of digital technologies (wireless networks and mobile devices) which helped make it ubiquitous and a convenient communication medium. These 3 digital foundations have infiltrated all industries and sectors in the business world, diminishing all the connections between individuals, organizations, and networks. as even non-tech industries find it a useful tool to innovate, improve and create competitive tendencies in their respective markets. The sharpen advancement of the 3 core digital blocks altered the tech competitive landscape in a manner that stimulated disruptive innovation.

Simultaneously, the smart phone was the most remarkable gadget (product) that shaped the digital landscape both within, beyond and managed to transform human lives into ways we cannot seem to imagine (Sedkaoui & Khelfaoui 2020, chapter 4). The convenience brought by this gadget allowed users to embrace new ways of doing things that previously did not give room for flexibility and mobility. The multi functionality of this gadget allows it the capability of performing the same task as a PC (personal computer) (Manjoo 2019).

Smartphones have overshadowed other gadgets from desktops, cameras, and portable electronic music players, making it the most remarkable tech product of the past decades. The dominance of the smart phone was made possible by Apple Inc which disrupted the business landscape of the tech world and exterminated other top brands (Nokia, Sony, Motorola, Blackberry, etc.) by churning out gadgets (smartphones, tablets & PC) and mobile applications (App Store) that dominated the computer hardware business for decades. It was the smartphone that made the notion of social platforms (Instagram, Facebook, Snapchat,) and sharing economy platforms (Uber, Airbnb) possible (Manjoo 2019).

According to Stat Counter report 2016, Mobile devices (smartphones and tablet) internet usage passed PC (personal computer) for the first time in October 2016 (Stat counter 2016); and the world's number of smartphone users passed 3 billion as of 2020 and it is still projected to grow further in the years to come (Statista 2020). Smartphone use in Finland has risen from 83% (2019) to 87% (2020) (Statistics Finland 2021).

Moreover, smartphones, internet connections and cloud has made it possible for consumers to easily get access to their desired goods and services and engage in commercial activities at ease. This easiness was a result of fast information processing and a decrease in transaction costs related to it. This prompted an increase in new social and digital platforms that connect users (buyer and seller) to engage in commercial activities which fueled the sharing economy (Wallenstein & Shelat Sept 2017; Hagel III et al. 2013).

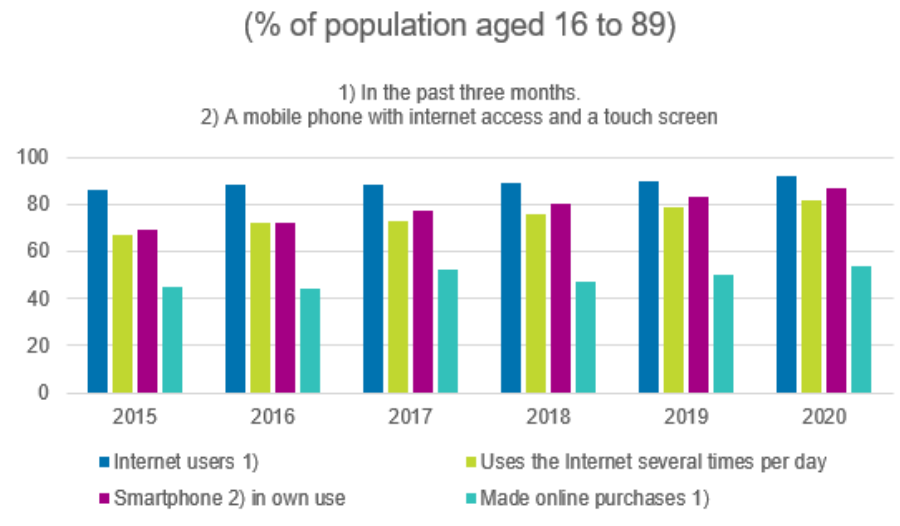


Figure 6. Use of Smartphone by individuals in Finland, (Source: Statistics Finland 2021, Science, Technology, and Information Society Finland Figures)

The PC (personal computer) has been the primary mode of accessing the internet; Smartphones, unlike tablets and personal computers are used to surf the web (internet) and for digital interactions, smartphones have become more prominent and more increasingly appealing to the consumer populace (Manjoo 2019). The emergence of smartphones in 2007 was the most significant moment in the present-day history of the internet, which helped increase the number of web users (Naughton 2016).

In conclusion, the advent of social networks coupled with the geo-located smartphones helped foster the sharing economy phenomenon which was already gaining momentum due to the global financial crisis impact. People were already collaborating and interacting with reasons that had nothing to do with technology but for environmental and economic reasons (global crises). The advancement and upgrade of these technologies (Web 2.0 and smartphones) boosted the sharing economy and pushed it to unimaginable heights (John 2013).

## 2.5 Information Communications Technology (Internet / Web)

Initially, the internet we use today started as military research (ARPANET) in 1973 and has now transgressed to multi-purpose technology. Its transition from military use to civilian use (1983–1995) and later advanced to commercial use with the dotcom boom / internet bubble (1995–2000) (Naughton 2016).

The web is a system of interconnected hyperlinked documents holding webpages with texts, images and videos that can be accessed on the internet with a web browser. It was Tim Berners Lee, a British computer scientist that made the proposal that later eventually created the World Wide Web in 1989 (Khanzode & Sarode 2016). It has been reckoned that that hyperlinking is the foundation of the web and just like synapses in the brain, they are confined to web structures by users through interactions and linkages (O'Reilly 2007).

Moreover, the web in its first conception was an interconnected computer network that was specifically designed for scientists and military to share information. It was later outshined and predominated by digital service providers (Yahoo, Netscape, CompuServe, AOL etc.). These digital firms were the gateway to the first generational web that fostered

users from individuals, businesses, and governments to constantly collaborate and generate content over the web (Silver 2020).

Web 1.0 was the first edition of the internet, and it ran from 1989 to 2005. It had very little interaction and allowed for very little material contribution (Khanzode & Sarode 2016). It was a static read-only site with the primary purpose of establishing an online presence and making information available to everyone at any time. Its main protocols were HTTP, HTML, and URL (Salisah 2019). The user can only read information as it fosters low interaction on the web (Nath, Dhar & Bashishtha 2014).

Simultaneously, the early web did not provide the medium to share images and it did not foster interaction between readers and publishers and that made it inappropriate for e-commerce purposes. Low user interaction and collaboration in web 1.0 version of the internet was because of static HTML pages that are not dynamic due to weak linked structures. Users were not able to personalise their webpages, talk back to other users and therefore, did not provide room to share or collaborate on the web (Naughton 2016; Salisah 2019).

Web 1.0 was later superseded by a new and better version which is web 2.0. The term web 2.0 was first coined by Tim O'Reilly and it depicts the internet that preceded the web 1.0 and fostered characteristics like collaboration, interaction, and individual participation on the web. The emergency of blogging has been touted to be the most vital feature of web 2.0 which fostered the harnessing of collective intelligence (O'Reilly 2007). The rhetoric of web 2.0 has been confined based on three distinct characteristics - technology centric, business centric and user centric embodiments (Khanzode & Sarode 2016).

Additionally, the technological progress of the internet and web 2.0 helped facilitate new forms of sharing and helped foster other older forms of sharing on an unprecedented scale in what was term the "sharing turn". It led to the rise of individual collaboration and new consumer instituted exchange forms (Belk 2013; Ertz et al 2016).

The 2<sup>nd</sup> generation web (web 2.0) altered business and customer relationships as it enabled consumers to become participants in shaping products and services through social network interactions. This is usually done through recommendations, complaints and requests during platform interactions which ends up forming valuable data and information for companies (Gansky 2010).

Silver (2020) postulated that the new businesses that use web 2.0 depend heavily on user generated content and capturing value from those data to be sold to third parties for marketing purposes. This is due to the centralization and exploitation of data and helped spur the emergence of big tech behemoths (Facebook, Amazon, Google) that profits from it.

The important feature of web 2.0 is embracing collective intelligence (Google page rank and Wikipedia) and value capturing from commercial interactions of web users (Amazon Product review) resulting to its transgression to what Tim Berners lee called read write web (Naughton 2016).

Also, O'Reilly (2007) depicted web 2.0 as the platform web when pushing the rhetoric of its emergence as its orchestration of software with businesses led to a business revolution in the digital world. It led to the emergence of new platform businesses (Yahoo, eBay, Wikipedia, Google) that fostered collaboration and collective intelligence sharing (Khanzode & Sarode 2016; Salisah 2019).

Furthermore, Web 2.0 is also dubbed the people centric / read write web as it fostered platform for blogging, podcasts, wikis, and the use of RSS feeds which depicted its technology centric character. RSS (read only syndication) was the technology that made all the difference and has been touted as the vital advancement of the web architecture from web 1.0 to web 2.0 (Salisah 2019).

It allows web users not just to be linked to a web page but to subscribe to it and they are bound to get notification of its changes. This helped to foster the rise to flexible web design, modification, creativity, and collaborative content creations that promoted sharing and networking (O'Reilly 2007).

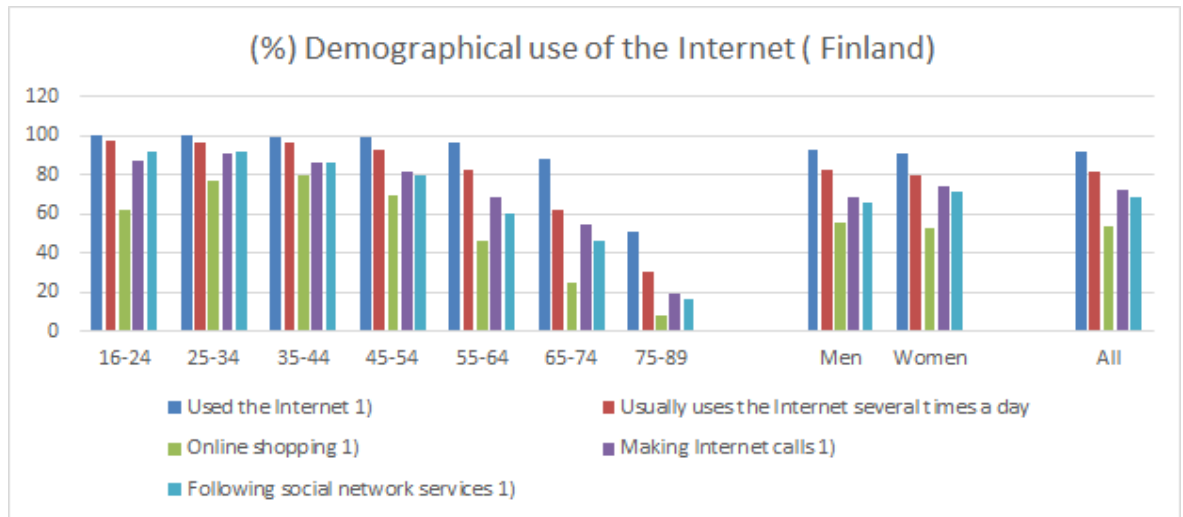


Figure 7. Percentage use of the internet in Finland (Source: Statistics Finland 2020b)

Web 2.0 was in turn succeeded by a new version of the internet dubbed the third-generation web and first coined by John Madoff of the New York Times in 2006 as a transgression from the emeritus web 2.0. Web 3.0 helped to foster linkages, integration, and analysis of data from various internet sources to create current information flow. This fostered creativity and innovation in the use of the web as it has helped improve data management, good user experience and pioneered the use of mobile technology in web accessibility and in turn encouraged collaboration on the web (Salisah 2019).

Khanzode & Sarode (2016) postulated that the web 3.0 has some vital features which made it distinct from the earlier web versions. It supports a global database and web enabled architecture which was not possible in earlier stages of the internet. It fostered a multi-user environment, and therefore, did not just enable web pages or websites, but where data or information is shared instead of been owned and where web services show a dynamic view of the same web or data.

Furthermore, the third generational web is also referred to as - "the semantic web" as it was the idea conceived by Tim Berners lee. The semantic web main purpose is to make the web readable by machines and not only for humans. This will also require machines to process or produce content in a human way. It is a web of data in a global form (global database) and puts machines first before humans. Web 2.0, unlike web 3.0, targets the contents and creativity spurn out by users and producers during interactions, Web 3,0 targets on linked data sets (Silver 2020; Salisah 2019).

The third generational web could create a decentralization of the internet, which was not the case in web 2.0. With the use of ledgers and blockchain technologies which was the original idea conceived by Tim Berners lee when creating the internet. And could allow more transparent, opt in or out, peer to peer communication. Therefore, this will give individuals more control of their data and time. (Silver 2020)

Web 4.0 is known as the symbiotic web, and it is still an idea in progress as there is still no exact realization of how it would be as it is still evolving (Almeida 2017; Salisah 2019). The notion of it being symbiotic is that it would foster interaction between humans and machines in symbiosis. Web 4.0 is envisioned to be as powerful as the human brain; therefore, it could be comparable to the human brain and could entail a complex web of highly intelligent interactions. (Khanzode & Sarode 2016; Salisah 2019)

Recent technologies have fostered interactions between users on the web and have also given them immense experiences. The growth and emergence of wireless networks and smartphones have made the use of the internet more universal (Almeida 2017). Technological advancements in controlled interfaces used in nanotechnology and telecommunication tools progressions are now making use of web 4.0 (Khanzode & Sarode 2016).

Furthermore, Internet access is not exclusively only to humans but could be for physical objects (gadgets, houses, and vehicles) on web 4.0. The idea of the 4<sup>th</sup> generational web is still not yet concrete even though there is already a concluded definition of other generational webs (web 1.0, web 2.0, web 3.0) (Almeida 2017).

On other note, the latest trend from the Consumer electronics show (CES) indicates that consumer gadgets are getting smart and connected (James 2020). Web 4.0 can be said to cover several dimensions. thus, it is inferred that the web is moving to cover multiple technological dimensions (i.e., social networks, internet of things, big data, and artificial intelligence (Salisah 2019).

The digitalisation of products (gadgets) manufactured by hardware manufacturers will contribute to the creation of additional value. Devices, appliances, and equipment can become smart by connecting to the internet, using cloud computing, and using sensors. This will help them improve their processing capability, allowing customers to use products more efficiently. As a result, the internet of things will enable device-to-device interaction and device -to- human interaction. Devices will communicate to users and to other devices owned by other users to facilitate collaboration (Winterhalter et al.2015).

According to Statistics Finland, 82% of the Finnish populace make use of the internet (Statistics Finland 2020). The advancement of internet and mobile technologies led to the widespread changes and shift of consumer behavior towards sustainable consumption with the use of digital tools like the web and platforms (Sedkaoui & Khelfaoui 2020, chapter 7).

In addition, Stephany (2015, 10) inferred that for underutilized assets to be utilized, they need to be made accessible with online tools (Internet) for sharing and collaborative purposes. The web uniquely provides the medium for its plausibility as users can access it anytime and anywhere.

The act of sharing has been beckoned to be in the DNA of the internet (Stephany 2015,21). The web is largely recognized to be the most significant technological revolution

since the dawn of time. It has altered our lives and will continue to grow as the future unfolds, much like the automobile in its infancy in the early 1920s (Silver 2020).

Conclusively, earlier technological evolutions of the past (electricity, automobile combustion engines, and the telephone) experienced prompt innovation and then came to a period of stabilization. Unlike the internet, the decrease of cost of the 3 core digital building foundations has made its stabilization seem inevitable, prompting more innovation along the way and into the future (Hagel III et al. 2013).

### **2.5.1 Big Data & Algorithms**

Big data, platforms and algorithms are among the fundamentals that drive the sharing economy phenomenon. With the leverage of big data and platforms, it has caused sharing economy companies to spring up in all sorts of sectors from ridesharing, peer to peer lending, co working. These newly emerged companies do not only stand for a novel approach of doing business, but the best way to harness data efficiently and effectively (Marr 2016).

Similarly, utilization of big data and search algorithms are helpful vital elements that enable digital platforms to connect two sides of the users for easy interaction and collaboration (Codagnone & Martens 2016). Sedkaoui & Khelfaoui (2020) ascertained those huge opportunities and potential enabled by the power and analytics of data has changed the way data is perceived. Several companies have taken advantage of the huge opportunities it has offered due to the new consideration of data as a form of wealth. Therefore, data cannot be attained without acknowledging the processes that can lead to its accumulation.

Algorithm's help sharing economy companies like Uber and Airbnb in the coordination of market and organizational mechanism (standards and codified rules) to set prices of ride fares and recommendations; by considering the forces of demand and supply and other variables to facilitate easy interaction and transaction for users (Constantinou et al., 2017).

The improvement of the 3 core digital building blocks (computing power, storage, and bandwidth) did not only spur innovation within the tech sector but in varied sectors (non-tech niches) and has been utilized as an effective innovation tool by companies to create innovative technologies. Technologies developed with the three digital building blocks are an important innovation tool for staying competitive in the industry, developing new and innovative inventions, and improving business processes. As a result, it has aided in the creation of modern cloud storage, data collection, processing, and analytics mechanisms (Hagel III et al. 2013).

Furthermore, computing power and bandwidth is considered a source of competitive power for some companies. Big data has opened a new paradigm in the use of data as a vital tool for growth and profitability. It is distinct from analytics as been able to analyze collected data effectively is the recipe that gives firms a competitive advantage (Hagel III et al. 2013).

Zhu & Lansiti (2019) ascertained that the source of competitive advantage in a digital platform is based on vital elements – The strength of its network effects, nature of its network clusters, degree of connection to multiple networks, ability to reduce multi – homing (i.e., nature of connection with other networks).

Finally, algorithm's help in faster analysis and exploration of large clusters of data to generate value. It has helped users (individuals & companies) in understanding relationships between variables and strength of those relationships in web applications and networks. This has helped users in easy forecasting, deciding the price of commodities (houses, cars) and mastering correlations within a computer network and when using the web (Sedkaoui & Khelfaoui 2020, chapter 6 -11).

### **2.5.2 Digital Platform (Websites / Apps)**

Firstly, platforms have been in existence but in distinct form with reference to railway, phone, and global shipping systems and from an infrastructural point of view (Hagel 2015); The fascinating instinct of the post - 1993 web was its use by upcoming digital firms and enterprising services as their foundational programming platform. The early internet fostered the platform in which web1.0 was laid and, web 1.0 in turn fostered that of web 2.0, iconic services (Naughton 2016).

Platforms have become popular in the modern digital age due to the advancement of the internet (web 2.0- web 3.0) which brought about the emergence of electronic platforms to be conceived and brought a variety of forms for companies to harness. There was a scramble in attitude by companies to harness its benefits because of the tech bubble of the 90s. Different companies were utilizing individual platform strategies and taking advantage of their presence for personal gains to capture more value, innovate, improve performance, and leverage capacities that was not possible in the past (Hagel 2015).

Furthermore, platforms have become flourishing grounds where new business ecosystems are bred. The distinct feature between platforms used in the sharing economy and traditional marketplaces, supplier networks and third-party intermediaries is their method and combinational use of organizational and market protocols to foster platform interaction to create value (Hagel III et al., 2013; Constantinou et al., 2017).

Hagel (2015) inferred that platform are mediums that make people and resources more accessible to each other at their convenience and they are made possible by two platform key elements – a governance structure (code of behaviour that decides the roles of participants, mode of interaction and dispute resolution) and standards (guidelines designed to foster collaboration, coordination, and connection).

Stephany (2017, 12-13) stipulated that sharing in the notion of sharing economy is making goods accessible which is only convenient with the use of peer-to-peer enabled tools (platforms). Sharing economy is fostered by peer-to-peer platforms (Internet-based networks and platforms) that increasingly mediate interactions and transactions among peers typically coordinated by trust relationships and personal reputation (e.g., buying second-hand goods on eBay).

Peer-to-peer platforms have also been termed the peer-to-peer economy (Constantinou et al.,2017). It involves creating a platform or brand culture that facilitates trust among customers and getting out of the way and letting your consumers do the buying, talking, and selling without anyone really knowing you are present (Howard 2015,7).

Sharing economy companies are in varied patterns a branch extensions of social media platforms that facilitate ideas, resources, and information sharing (Cusumano 2015). Platforms have been classified into three categories (i.e., aggregate platforms, mobilization platforms and social platforms) based on how they facilitate participant interaction. These



platforms have been classified into three categories based on what they allow their participants or users to do (transact business, interact together, or mobilize them to collaborate more) (Hagel 2015).

The concept of the sharing economy is popularized by digital platforms and are used by innovation-hungry because of the ease in managing supply and demand relationships on platforms which has been fuelled by trust relationships already built up among users (Sedkaoui & Khelfaoui 2020).

Moreover, platforms have shown to be a useful tool for senior executives in capturing value and increasing profitability. This is due to its support for pull-based techniques in supply chain management (i.e., items are created depending on time and quantity required), as opposed to the push-based approach (i.e., items are pre-produced based on demand predictions) (Hagel 2015).

On the contrary, the concentration of activities (interactions) and relationships (connections) in a platform blossoms and facilitates influence points. As a result, the ultimate opportunity of capturing value in a platform lies in the awareness of influence points, as they appear where there is concentration of relationships and strong user activities (Hagel 2015).

Platforms are the core components and foundation of sharing economy business models. The advancement of the internet facilitated online platforms that are low cost and easy to access. It has the capability of matching demand and supply on an unprecedented scale even if it is intended to cater for a local or regional market. The web platforms facilitate the possibility of access to anyone from around the globe (Demary 2015; Zhu & Lansiti 2019).

## **2.6 Sharing Economy On - Demand Models / Companies**

According to an earlier research, people's motive for taking part or utilizing the sharing economy varies and differs between consumers, platform providers, and social demographic factions. This same motive applies to shared goods (cars, accommodation, tools, meals) due to their different distinctions. Platform providers' motives are more intertwined as they seem less motivated by financial gain but to foster a sense of community (relationships) while users and participants in the sharing economy are more economically motivated as they want to satisfy their basic needs (Meelen & Böcker 2017).

The sharing economy became prominent based on its enablement of new business models that foster easy access to goods and services that are shareable (Sedkaoui & Khelfaoui 2020). The higher perceived value of goods which was brought about by the sharing economy due to convenience (i.e., time and availability) and with the support of web-based solutions (platforms). It has fostered the emergence of innovative business models that coordinate sharing activities to satisfy consumer needs and wants (Reuschl et al., 2017).

Initially, Constantiou et al. (2017), acclaimed that the sharing economy business model is innovative and not disruptive in nature as it harnesses old methods in a modern and platformed way. The distinguishing factor between sharing economy models and traditional business models is the way they connect organisational structure and market structure to foster platform interaction which ends up creating value in the process. Four business models (franchisers, chaperones, gardeners, and principals) have been identified in the

sharing economy based on the degree of centralized control, the extent of monetary benefits, and how personal the use is. The two distinct factors of those models are – dimensions (how much control the platforms owner has over its users) and the strength of the rivalry (degree of user's interaction that has been fostered by platform owners).

Simultaneously, Dredge & Gyimothy (2017, 31-37) suggests that sharing economy (collaborative economy) fosters two kinds of model (corporate extractive and communitarian business models) based on whether they facilitate market enabled transaction in conjunction with rigid standardized control structure and coordination.

Demary (2015) inferred that the sharing economy's diverse nature is among its peculiar attributes due to its incorporation of various business models, products, markets and ascertains that in earlier attempt to define sharing economy, it requires identifying and setting apart the business models sharing economy entails based on the nature of their contract formation and trust development, or whether mediated transactions are for commercial or non-commercial purposes. Commercial or non-commercial mediated transactions could be between consumers only (peer to peer models) or could involve the third-party suppliers (B2C and B2B models).

Additionally, the advancement of information technology has provided building blocks for the development of platforms (models) which provides easy access and connection with individuals. Network effects (i.e., relationship between the users and the networks that connect them) are at the foundation of the sharing economy, business models and value proposition (Reuschl et al., 2017).

The intensity of their network effects determines how much value is created and captured. Value creation and capture in a platform depends on the strength of its network effects as sharing platforms vary (Constantiou et al., 2017; Zhu & Lansiti 2019).

The difference between shared economy and conventional business models is in the development of value in the context of information technology. Sharing economic models does not need huge capital investments to capture value from the network effects (Influence points) fostered by a platform which is contrary to traditional business model high entry barriers and first mover advantages (Reuschl et al., 2017).

Furthermore, Demary (2015) postulated that sharing economy business models are platform based and that B2C model is in parallel to traditional companies as both models harness a platform to facilitate interaction and demand but differs on access over ownership of goods by consumers. This is because interactions are mainly fostered by IT tools (smartphones, internet). The boundary between traditional companies and non-traditional companies is getting blurry in B2C companies. Therefore, sharing economy B2C companies hardly foster peer to peer interaction for customers which is unusual in traditional companies.

Constantiou et al. (2017) predicated that another reason sharing economy models (platforms) compete with or caress a higher competitive advantage over traditional companies; is because of their exploitation of the boundary fluidity – traditional business models once rigorous organizational and market boundaries (strong connate between producer and consumer, insourcing and outsourcing) are now becoming eclipsed and fluid.

Advancement of technologies (IT tools, big data, social networks) facilitated platforms that help foster participation, collaboration and interaction resulting in the exploitation of

those organizational and market boundary fluidities, sharing economy models (Airbnb, Uber, Blablacar, Couch surfing,) operate within those boundary fluidities, which makes it effortless to create value as they utilize it to their own advantage.

The notion of sharing is more economically, environmentally, and socially appealing to consumers and this can also be reckoned with companies that are progressive, innovative, and open minded; Platforms have been beckoned to be the vital foundation of all sharing economy models (Belk 2014; Demary 2015).

Stephany (2015, 13) ascertained that B2C sharing economy companies are lucrative, while P2P sharing economy companies are responsible for blurring the once static line (boundary fluidity) that connects businesses and customers, resulting in a transformation of the traditional business landscape.

The "On demand sharing business model" is used by most prominent sharing economy companies (such as Uber, Airbnb, Gomore, Couchsurfing, and so on). As with the use of platforms (i.e., apps and websites), they collaborate peer to peer embodiments with access-based consumption. What makes on demand sharing platforms like car sharing platforms - Uber or Lyft distinct from each other is the business model structure and mode of operation (Soltysova & Modrak 2020; George & Julsrud 2019, 14).

Furthermore, relationships are at the core of businesses operating with the platform business model as they create value in a distinct way from the traditional business models. The motives of users and participants (consumers and companies) in the sharing economy are to increase resource use, cost reduction and creation of new value (Papadopoulos 2019; Winterhalter et al., 2015).

Companies in the fabric of sharing economy are distinct based on content (shared resources) as it is considered an intrinsic feature of sharing economy models. Sharing economy models does not rely on new content creation but on the use of content (physical resources) in a flexible and detailed way than traditional companies through standardization and customization (i.e., ratings and reputation) methodologies. Customization can be based on integration of services and physical resources (Reuschl et al., 2017).

Winterhalter et al. (2015) postulated that in the sharing economy, companies create value either by exploration or exploitation and this depends on the nature of the goods or assets to be shared (physical or digital); exploitation depicts the offering and collaborative consumption of a product by users at a lower cost and exploration on the other hand is the creation of new value or new market from existing resources (assets) for collaborative use.

In addition, based on Stephany (2015), statement the importance of putting underutilized assets on a platform where they can be used, in relation to the exploration or exploitation of the goods or assets (digital or physical).

Physical products (rooms in Airbnb, free car seats in Uber) are in the category of tangible assets while digital products or resources (music, software, service rendering) can be in the category of intangible assets (Winterhalter et al. 2015).

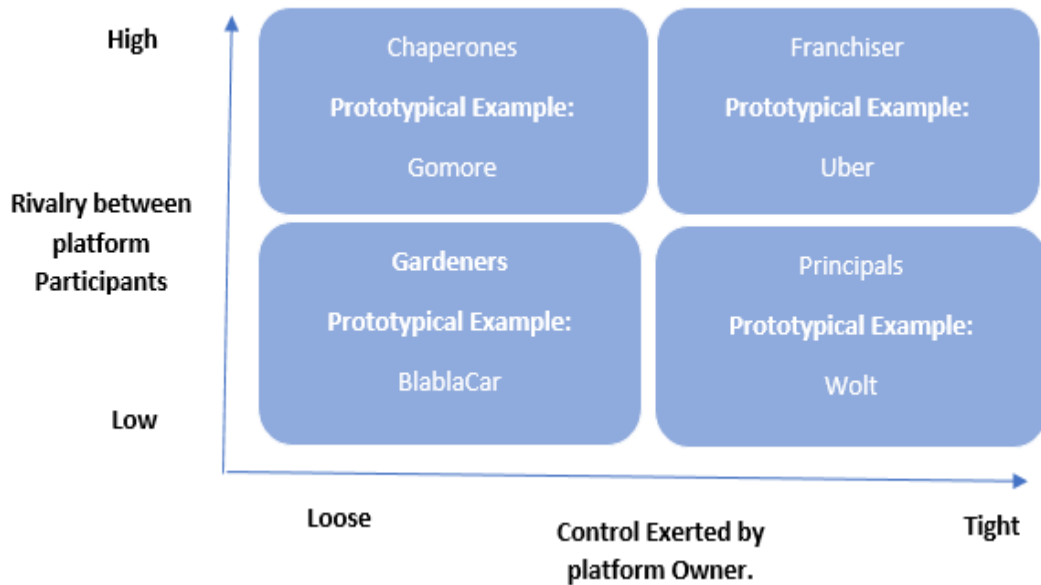


Figure 8. The four sharing economy business models archetypes. (Adapted from Constantiou, Marton & Tuunainen, 2017, MIS Quarterly Executive).

### 2.6.1 Sharing Economy Franchiser Model- Case Example: Uber

Uber is primarily a platform (app) that links drivers (automobile owners) with riders and not as exaggerated by the populace to be a taxi company or public transport; but facilitates the owners of the physical assets (free car / seats) to utilize the platform for sharing. When Travis Kalanick and Garrett Camp were stranded in Paris, France in 2008 and unable to find a cab on a freezing night, they came up with the concept and background of Uber ([www.uber.fi](http://www.uber.fi)). The feasibility and concept of being able to order a ride with a smartphone from your exact location laid the foundations for Uber's emergence, and the application (smartphone app) was launched shortly afterwards in March 2009 (Uber 2019; Uber 2021).

Simultaneously, it is a prototypical example of the sharing economy franchiser model and the largest mobility platform in the world. thus, in analyzing the interplay of the market and organizational mechanism (control and rivalry) coordination. The owner and provider of franchiser model or platform (Uber) exercise tight and superior control of the platform or organizational mechanisms (highly centralized and less personal for users) by coordination of the forces of demand and supply (price) for platform users (ride seekers vs car owners). The platform provider has complete control and absolute authority (less personal) over the service price and the algorithms that determine the price because they use standardization protocols (ratings, verification, profile, etc.) to coordinate what happens on the platform. (Constantiou et al., 2017).

Winterhalter et al. (2015) inferred that exploration and exploitation of value in the sharing economy is based on the nature of the goods to be shared (physical vs digital). Uber as a platform operates in the confines of the mobility industry, facilitating the utilization of vehicles (i.e., durable goods) by privately owned individuals for sharing purposes. The value proposition in the franchiser model (Uber) is based on low cost; while motives of participation are based on efficiency gains which lies in the confines of exploitation of value (Winterhalter et al. 2015; Constantiou et al. 2017).

### **2.6.2 Sharing Economy Chaperone Model - Case Example: Gomore**

Gomore is simply a car sharing platform (app) and a prototypical example of a chaperone sharing economy business model and operates within the confines (boundary fluidity) of the transportation / mobility industry and connects automobile owners (rentals) with people (riders) who want a vehicle on a short-term basis for their needs. The company does not own any physical assets (automobiles) but helps and facilitates car owners to share free or unutilized cars for monetary benefits. The model of the chaperone is built on trust and safety to facilitate a sense of community, connection and belonging (Gomore 2021; Constantiou et al., 2017).

The platform Gomore ([www.gomore.fi](http://www.gomore.fi)), was founded in 2005 by Matias Dalsgaard in Copenhagen, Denmark as a free carpooling platform and has grown to over a million users with operations in Sweden, Norway, Finland etc. It offers three services on the platforms – ride sharing, B2C car leasing and P2P car rental services. Shared listings on the platforms are free spaces on cars and car leasing (physical resources) and ranges from different models and brands of vehicles (underutilized assets) (Novoa 2015; Gomore 2021; Guyader & Piscicelli 2019).

It is one of Europe's first car sharing platforms and currently among the few mobility platforms that operate more than two business models (ride sharing, B2C car leasing and P2P car rental services.). The operator of a chaperone sharing economy model (Gomore) recommends and advises on the platform as it exercises very little or soft control of activities that goes on in the platform (less centralized); but supports and coordinates the efforts of users (Car owners and ride seekers) with well-coordinated organisational and market mechanism. It provides insurance coverage as its standardization procedure (Guyader & Piscicelli 2019; Constantiou et al., 2017; Gomore 2021).

Users (Car owners) in the chaperone model are free to set their own prices (more personal) as the model facilitates and fosters strong relationships with the supply side platform users (Gomore vehicle owners). In the chaperone model, the close bond and relationship with the supply side participants fosters a high level of rivalry (competition), inspiring them to be creative and unleash their entrepreneurial spirit. As a result, value development is facilitated by differentiation in offering (different vehicle brands and models) and price (low vs medium) (Constantiou et al., 2017).

The value proposition in the chaperone model (Gomore) is based on service or product differentiation, by the offering of varieties and additional exclusive services. Free vehicles listed in platform recite as the exploitation of value, which is the utilization of existing physical resources (vehicles) to offer quality and varieties of car rides at a low cost (Gomore 2021; Winterhalter et al., 2015).

### **2.6.3 Sharing Economy Gardener Model - Case Example: BlablaCar**

BlablaCar is a peer-to-peer carpooling platform and a prototypical example of a gardener sharing economy business model. The provider and operator of the gardener model platform ([www.blablacar.co.uk](http://www.blablacar.co.uk)) facilitates collective consumption in a trusted ecosystem for compensation, thus it operates in the boundary fluidity of long-haul travel between cities and links drivers (car owners) and passengers who are going to similar destination to journey together and share the transport cost (Blablacar 2021, Constantiou et al., 2017).

Blablacar started in 2006 by 3 French founders (Fred Mazzella, Nicolas Brusson, Francis Nappéz) in France with the idea of carpooling sharing with strangers or what they literally termed “in trust we trust.” It has 35 million users and operations in 22 countries as of 2021. The platform helps to link travelers (passengers) and drivers with a community of

like-minded people who are complacent to share rides in boundless and distinct ways when travelling between cities (Blablacar 2021; Botsman 2016).

The provider of the sharing economy gardener model (Blablacar) breeds and nurture communities and drives its value proposition from community's active interaction (i.e., Network effect) and self-organization (i.e, voluntary actions) on the platform. It fosters moderate control (moderately centralized) through only standardization (profiles verification, ratings etc.) to coordinate what happens in the platform and it does not foster a strong relationship with the supply-side of the platform (Blablacar vehicle owners). Drivers share the cost of the commute with the passenger, thus there is little or no competition between supply-side (drivers vs drivers) (Constantiou et al., 2017).

The model fosters and facilitates the utilization of existing underutilized physical resources (tangible assets); and leaves the delivery of the service in the jurisdiction of the vehicle owners. Blablacar offerings moved beyond carpooling to a multi-modal service model (carpooling, bus service and electric scooters) with the acquisition of Ouibus to launch Blablabus in 2018 and joint venture with electric scooter company Voi Technology to launch Blablaride (Blablacar 2020).

Service and product differentiation is based on exploitation of value with the offering and utilization of varied physical resources (free seat in cars &buses; electric scooters) that are listed on the platform; to offer exclusivity in mode of movement - vehicles for long distance carpooling and electric scooter for short distance commute (Winterhalter et al., 2015, Blablacar 2019).

#### **2.6.4 Sharing Economy Principal Model Case Example: Wolt**

The company Wolt is in parity to the companies Handy ([www.handy.com](http://www.handy.com)) & Deliveroo ([www.deliveroo.co.uk](http://www.deliveroo.co.uk)) and are prototypical examples of the sharing economy principal model. Wolt is a peer-to-peer delivery service platform that facilitates the connection of restaurants and retailers with short haul courier delivery services. The company facilitates mobility owners (vehicles, motor bikes, bicycle owners) to utilize their idle physical resources (tangible assets) in their free and idle time to deliver a service. Thus, it fosters the use of both tangible assets (i.e., vehicles, motor bike, bicycle, electric scooters) and intangible assets (time and expertise) to offer a service (i.e., on demand peer to peer delivery) (Constantiou et al., 2017; Joshi 2021; Wolt 2021a).

Wolt ([www.wolt.com](http://www.wolt.com)) is a tech firm and platform that was founded and conceived in 2014 by Miiki Kuusi at Slush global startup event and was launched in Helsinki, Finland in 2015 with 10 restaurants and have expanded to about 129 cities and with operations in about 23 countries as in 2021. Wolt as a platform partner with restaurants by connecting them with customers craving for quick meals and retailers (grocery and local shops) for quick on demand delivery service; thus, it exploits the boundary fluidity of the domestic courier service delivery industry (Constantiou et al., 2017; Wolt 2021b).

The operator of the principal model (Wolt) supervises the activities on the platform by exerting strong and superior control (highly centralized) of what happens on the platform through coordination of the supply-side (deliverers) and demand-side (restaurant & retailers) users. It fosters a strong relationship with the supply-side (service deliverers) through standardizing and coordination of organizational and market mechanisms (verifications, ratings, incentives. etc) (Constantiou et al., 2017; Wolt 2021b).

It does not foster high competition among the supply-side (Wolt deliverers) as it facilitates minimal personal use but provides compensation for the costs incurred doing service unlike the chaperone model (Gomore) that competes for the demand side through differentiation in offering and price. The value proposition of the principal model is low cost which is the exploitation of value. The principal model (Wolt) facilitates utilization of idle physical resources/ tangible assets - vehicles, bicycles, motor bikes, electric scooters - to render a service (service delivery) in their free or idle time (Intangible assets) (Constantiou et al., 2017 Winterhalter et al., 2015; Stephany 2015,10).

## 2.7 Sharing Economy in Finland

Finland, with a population of 5.5 million, has been at the heart of the world's technology transgression as it was the home of Nokia (the mobile technology company). It flourishes on innovation and collaboration and the top-rated country in the area digitalization in the latest (DESI) digital economy and society index 2020. It offers an enabling environment and business ecosystem for startups to be able to thrive (Bergren 2015; Forbes 2018; European Commission 2020).

The sharing economy first emerged in the public spotlight in the Nordic countries (Denmark, Sweden, Finland, Norway, Iceland) in late 2014 by the entrant of Uber which caused a public uproar and debate in the labor sector. It has evolved and diverged into various sectors and in that regard has helped birthed novice firms which have blossomed under the auspices of the sharing economy (Dølvik & Jesnes 2018).

Saloniemi (2016) stipulated that the sharing economy trend has gained more popularity in public opinion in Finland since 2016 with the increase of the Finnish language search term that describes the sharing economy on google trends - "jakamistalous" (i.e., Sharing economy) and "alustatalous" (i.e., Platform economy) which amicably have been associated with sustainable consumption and lifestyle.

The sharing economy (Uber, Airbnb, etc.) is advancing, notably in Helsinki in accommodation, transportation, and food sectors (Santander Trade 2021). According to Eurostat report 2019, 8% of individuals on average in the EU used IT platforms (website or app) to arrange transport services from other people for their own use. Estonia at 29% had the highest proportion of individual use of this collaborative consumption among EU countries with Finland standing at 8 %. Parallely, the average Euro area countries use of IT tools (website or app) to arrange for accommodations from other individuals stands at 20 % with the highest being Luxembourg at 46%, Finland stands at 15% (Eurostat 2020).

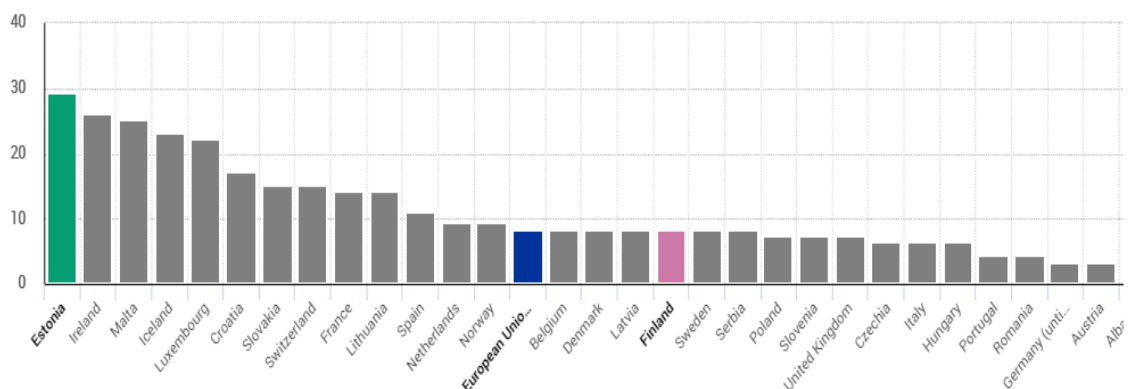


Figure 9. Percentage of Individual use of any website or app to arrange for a transport service from another individual among countries in the European Union. (Source: Eurostat 2021)

Formally, Finnish government have been a bit reluctant in supporting sharing economy initiatives due to impact on government policies since the Uber uproar in 2014, but the country has seen the growth of sharing economy platforms and initiatives sprang up in a variety of niches from startups, services, and social initiatives, whether for profit and non-profit bases like public saunas (i.e., Sompasauna) and online sharing market platforms (i.e., Sharetribe) (Bergren 2015).

Similarly, notable public policy and relations campaigns such as —"restaurant day," introduced in 2011 to encourage peer-to-peer collaborative consumption of second-hand recyclable durable consumer goods, and —"cleaning day," introduced in 2012 to encourage peer-to-peer collaborative consumption of second-hand recyclable durable consumer goods, have had an impact on Finnish social life (Bergren 2015). Finland enacted in 2020 a new tax initiative to tax income earned by private individuals utilizing the sharing economy to rent out their underutilized assets and services (Finnish Tax Administration 2021).

The city of Helsinki recently has made plans to leverage the benefits of sharing economy for sustainable growth, human resource empowerment and development with the inclusion of sharing economy and circular economy as part of its plan to go carbon neutral by 2035. Similarly, the City of Lahti has also launched an urban ski sharing initiatives for its residents, which is the first in the world (City of Helsinki 2020; Forbes 2021).

Today, many top sharing economy platforms, such as Wolt, Foodora, Airbnb, Sharetribe, and others, are thriving in the Finnish collaborative consumption landscape and peer to peer economy, especially in Helsinki and other cosmopolitan areas. The city of Rovaniemi ranks second after Helsinki in private accommodation arranged by private individual sharing as it has seen an increase in demand for Airbnb due to under supply of accommodation for tourists visiting northern Finland region (Joshi 2021; Yle News 2017).

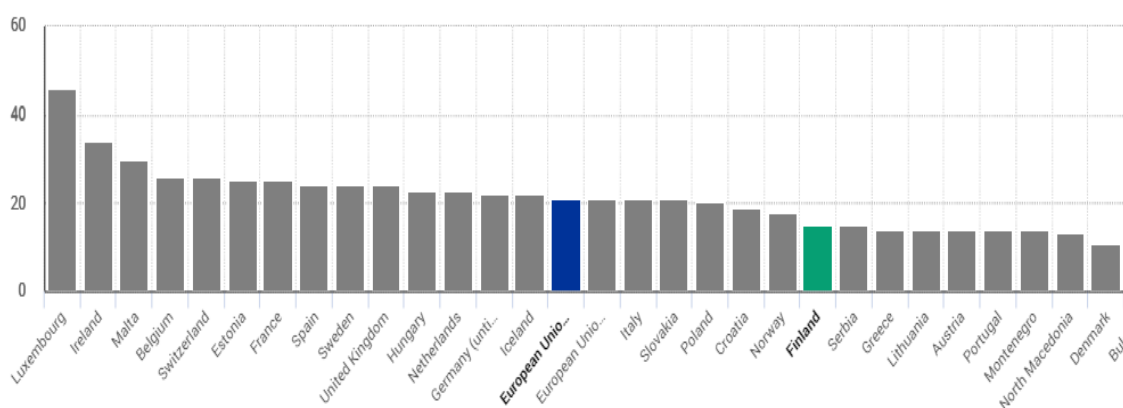


Figure 10: Percentage of Individual use of any website or app to arrange for accommodation from another individual among countries in the European Union. (Source: Eurostat 2021)



In the Finnish mobility sphere, bike and electric scooter sharing services has enveloped the landscape with the introduction of brand-new city bike sharing mobility schemes by different Finnish municipalities (Helsinki, Espoo, Vantaa, Turku, Tampere) and with other major cities (Kotka, Kemi, Kouvula)) to follow suit (Yle News 2019a).

Finally, new shared - use service companies / startups (Voi technology, Tier, Lime, Hoop etc.) with over 3,000 smart electric scooters has entered the Finnish collaborative consumption landscape to tap into the growing market of shared micro-mobility. Consumers have made over 2.5 million trips utilizing the smart e-scooters micro mobility schemes within the urban axis (Yle News 2020).

## **2.8 Traditional Business Model**

Traditional companies operating under the capitalist paradigm have been unable to comprehend and exploit value development in the sharing economy. This is because it necessitates the development of a completely new system of value proposition in the context of information technology (Reuschl et al. 2017).

The advancement of Information technology enabled a paradigm shift in consumer consumption pattern (i.e., non-permanent ownership of goods), It fostered preference of temporary access of a resource over permanent ownership which contrasts to the traditional business model (Eckhardt et.al 2019).

Traditional companies make use of traditional business models can be culled into the scope of both business to consumers (B2C) and business to business (B2B) models. Business to consumer (B2C) - describes a business transaction between a company and an end consumer while B2B is between a company and a company. The company operating in a traditional business model makes available a platform for transaction, interaction and supplies goods and services that will help the demand and supply processes (Demary 2015).

Moreover, B2C and B2B companies that are traditional business model in scope adopt the product to service sharing economy business model to create temporary access to its product instead of a permanent transfer of ownership and this is done through the implementation of a product service systems. This allows consumers to have access to both tangible and intangible resources within a specific period in return for monetary benefit (Soltysova & Modrak 2020).

The idea of sharing has become mainstream in the modern business landscape and seems to provide much greater value to consumers due to access over ownership. The notion of the sharing economy has grown incrementally and has been diffusing swiftly into B2C and B2B markets. (Reuschl et al. 2017).

Conclusively, during the global economic downturn which saw the emergence of the sharing economy, it caused a fall in demand for consumer durable goods which affected the B2C Companies in the consumer durable goods sector. Thus, consumers can usually defer the purchase of durable goods due to their level of income, purchasing power parity and in times of economic scarcity (Black & Cusbert 2010).

Table 3. Consumer consumption categorises & classifications (Source: Black & Cusbert 2010)

Consumption Component /Category	Type
Clothing's and Footwears	Durable goods
Household furnishings and equipment	Durable goods
Purchase of Vehicles	Durable goods
Food	Non- durable goods
Cigarettes & Tobacco	Non- durable goods
Alcoholic beverages	Non- durable goods
Electricity, gas, and other fuels	Service
Rent & other dwelling services.	Service
Health	Service
Operation of vehicles	Service
Transport services	Service
Communications	Service
Recreation and culture	Service
Education and services	Service
Hotels, cafes & restaurants	Service
Insurance and other financial services	Service
Other goods & services	Service

The intriguing part of the newly emerged collaborative consumption is the capacity of a consumer to become both the resource provider and obtainer (i.e., Prosumer) simultaneously thereby disrupting the traditional business model process (Ertz et al. 2015). Peer to peer model (P2P) contrasts to the traditional business model as it fosters sharing, swapping, trading, renting and constitutes the economic model and notion of the sharing economy that supports access over ownership (Demary 2015; Botsman & Rogers 2010).

### 2.8.1 Traditional Companies

Information technology (IT) has been considered the strongest driver of innovation in the modern business setting in the past decades. It is still going to bring more further surprises and disruptions for companies both now and in the future to come (Reutschl et al., 2017). The business implications for traditional companies (i.e., Incumbent industries) still using the old model are ridiculously huge as new progressive novice firms are likely to disrupt their old business model (Belk 2013).

*“ Traditional companies refer to existing companies originally uninvolved in any form of Collaborative Consumption. They include retailers, distributors, manufacturers, and producers operating by the dictates of the linear commercial system. Seizing upon the potential of the Collaborative Consumption phenomenon, many such businesses have developed specific branches or product lines dedicated to collaborative consumption.” (Ertz et al. 2016).*

Moreover, Incumbent firms now face immense competition, pressures, unequal government regulations as they now struggle to stay afloat and relevant; they can utilize the notion of the sharing economy by creating innovative platforms or collaborate with already established ones (Constantiou et al. 2017).

Similarly, Dredge & Gyimothy (2017, 9) postulated that traditional companies (i.e., incumbent operators) are primarily traditional B2C service providers (i.e., courier service, transport companies, manufacturers, hotels, and hospitality) whose business models and supply chains have been threatened by the emergence of the sharing economy.

Traditional companies who felt threatened by disruptive technologies tend to exhibit two reactive tendencies which are (fight) and (flight). Buying up a leading company offering disruptive technology, diversifying, invoking Intellectual property rights (IPR), and providing free content are some adaptive strategies utilized by companies who seem threatened by this new emerged disruptive technology and phenomenon (Belk 2013).

Finally, the key upshots of the consumer electronics show (CES 2020) was the notion of integration of consumer products with technological features and the utilization of data as the main procurement of creating smart devices and products (James 2020). The new 5<sup>th</sup> generational computing network (5G) which will support the Internet of things (IOT) will be of immense help to the sharing economy around location tracking, theft prevention and knowing the usage pattern of a device/gadget (Worth 2018).

### **2.8.2 Case Industry: Consumer Durable Goods**

According to the Oxford Learners Dictionary the noun “Consumer durable” are considered- “goods that are expected to last for a long time after they have been bought, such as cars, televisions, etc.” (OLD 2021b). Consumer durable goods constitute products that are usually a bit costly or of a high margin for households on average and are expected to last within the duration of 2 to 3 years (Pande & Srivastava 2013).

The consumer durable goods industry is comprised of manufacturers of consumer electronic gadgets for home use, toy manufacturers, small tools, sports equipment, jewelries, garden and lawn tools, and vehicle and parts manufacturers etc. (Technofunc 2012).

According to the latest trends in consumer electronics from CES 2021, There has been massive innovation in information technology landscape coupled with new smart consumer durables that will be of immense benefits to consumers and could change the economic outlook in the present and beyond. New innovative consumer durable products have emerged ranging from smart home products, wearables, transportation and robotics that will be able to cater to the needs and wants of the everyday consumer and could be able to operate and empowered by the 5<sup>th</sup> generational information technology network (5G) (Pelé 2021).

Similarly, the consumer durables industry is grouped into two categories – Consumer electronics and consumer appliances (White goods & Brown goods). White goods comprise of heavy-duty assets (i.e., refrigerators, washing machines, vehicles, dish washers) while brown goods comprise of light weight assets (i.e., smartphones, PC, tablets, Smart Tv) (Pande & Srivastava 2013; Technofunc 2012).

Durable goods companies do experience low demand for their products due to economic stagnation or low consumer affordability but with the help of government subsidies, the demand for the goods could be reinstated. On the other note, creating access to goods

ownership offers could be of good benefit to consumers as it could relate to their level of income (Black & Cusbert 2010).

The purchase of consumer durable goods is a good indicator and predictor of consumer consumption patterns. Durables provides long term value for the consumer and its subject to depreciation (European Central Bank 2021). The degree of ownership of durable goods is a fundamental factor in predicting the economic and social well-being of the populace (Dziechcarz & Dziechcarz -Duda 2017).

Moreover, Eckhardt et.al (2019) postulated that the shareability of an asset (durable goods) could depend on its degree of modularity (i.e., design and constitutes different parts that can be detachable, attachable, and parts are globally sourced). Thus, this depicts vehicles as one of the top consumer durable goods that is commonly shared.

Dziechcarz & Dziechcarz- Duda ( 2017) inferred that durable goods can be analysed based on there degree of ubiquity and ownership per households. Consumers are enticed to own more of a durable goods at a higher income, compared to owning less of it when having low income or affordability. This framework cites that standard goods (i.e, vehicles, washing machine, televisions) are ubiquitous in all households (50%), a higher standard goods (i.e. smartphones, house ) is owned by 10%- 50% of households and a durable goods in the rank of luxury( i.e. yacht, another property) are owned by 10% of households.

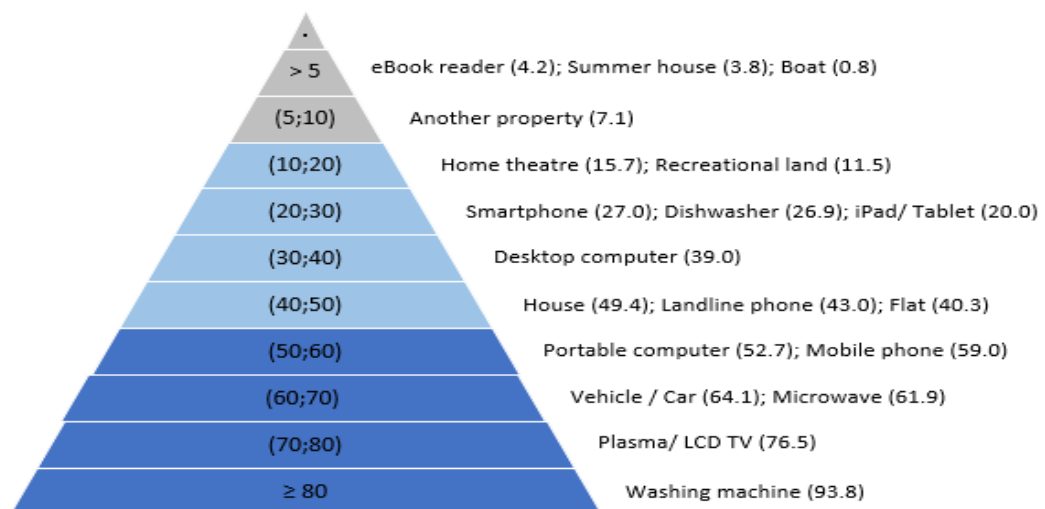


Figure 11: Analysis and classification of durable goods based on its degree (%) of endowment / ubiquity in households (Source: Dziechcarz & Dziechcarz- Duda 2017).

### 2.8.3 Consumer durable goods best practices: Vehicles

The Oxford Learners Dictionary defines the noun “vehicle”. as a “thing that is used for transporting people or goods from one place to another, such as a car or a lorry” (OLD 2021c). From an economic point of view, Vehicles (i.e. Cars, trucks, motorcycles) make up the most vital peripheral of the durable goods sector as they comprise of 40 % of the aggregate consumer spending and its periodic alterations define the business cycles.

Consumer durable goods rate of purchase by consumers helps to determine the rate of consumption, income, and expenditure in the economy (European Central Bank 2021).

The consumers of today have already been living digitally. This was made possible by the internet ecosystem that has been designed by big tech firms like – Google, Amazon, Apple. Etc. and has become the norm of everyday consumer lifestyle and vehicles seem to be getting to be part of that ecosystem (Automobilwoche 2019; Pwc 2021).

Similarly, the purchase and use of vehicles/ automobiles by consumer conveys the satisfaction of their social needs and wants and at the same time has a huge impact on community and environment that enables its consumption. Studies from experts and governments policy findings have been able to realize and ascertain that the impact of mobility on the social, economic and environment especially in urban landscape is too high to bear and reducing the cost will require adequate adjustments to the present-day transportation mode and effective government policies (George & Julsrud 2019, 12).

Digitalization of vehicles has now become prominent and has started to transform the automobility industry as vehicle manufacturers are starting to delve into the future trends that will shape the transportation niche with the inclusion of information technology to achieve less accident prone and emission free vehicles (Automobilwoche 2019).

According to a McKinsey report on consumer trends during the Covid-19 pandemic on new developments and shift on consumer preferences towards mobility durables. This new shift was because of consumers' priority on their safety, health and wellbeing during the pandemic and prompted them to find digital systems and sustainability more appealing and convenient (McKinsey 2020).

Comparably, this new shift in consumer behavior has enacted the interest of companies and made them to align their strategy to envision and plan the mobility of tomorrow new shift and development in consumer preference. Thus, this has paved the way to the emergence of ACES - autonomous driving, connected vehicles, electric vehicles, and shared mobility (McKinsey 2020).

The impact of the Covid-19 pandemic on transportation is widespread as it induced great creative destruction causing the development of micro mobility initiatives by the deployment of light weight vehicles like bicycles, e-scooters, and mopeds (McKinsey 2020; George & Julsrud 2019).

Moreover, With the merger and partnering of information technology firms and automotive manufacturing to create new value propositions for customers in the niches of autonomous mobility vehicles, electro mobility vehicles, and connected vehicles, vehicles have begun to become digitalized (Automobilwoche 2019).

Since the development of the sharing economy phenomenon which has been about asset utilization and sharing, it has fundamentally spurred and enabled unusual patterns of mobility that was not in existence in the past. With the use of automobiles and other mobility durables and coupled with the convenience brought by digital platforms, consumers are able to take part in sharing practices in a variety of forms like example - ridesharing, ride-sourcing, and car sharing (George & Julsrud 2019).

On the contrary, the notion of the sharing economy has been primarily about physical assets (George & Julsrud 2019, 12). Consumers utilize their personal durable goods assets in dynamic ways for sharing purposes for monetary benefits as facilitated by new on-demand digital platforms to exploit its idling capacity. Conventionally, Vehicles remain among the most widely utilized consumer durable goods in the on-demand sharing economy models (i.e., Uber, Gomore, Blabacar) ( Uber 2021 ; Blablacar 2021;Gomore 2021).

Correspondingly, vehicles can also be utilized to offer services as can be seen with users of the on-demand platform Wolt ([www.wolt.fi](http://www.wolt.fi)) who make use of both their tangible (vehicles) and intangible assets (free time) to perform a service for monetary benefits (Wolt 2021).

Big vehicle manufacturers such as Volkswagen, BMW, Tesla, and General Motors are reaping the benefits of the digital economy through alliances and collaborations with tech companies in the use of data, clouds, and apps to better serve customers through a combination of hardware, software, and services to create smart mobilities (Pwc 2021; George & Julsrud 2019).

#### **2.8.4 Consumer Durable Goods Consumption Finland**

Durable goods have been the major determinant and mover of the consumption patterns of consumers in the EU as consumers spend more on durables in times of stable business cycle. The same similarity perceived in times of the global crises of 2008 can be seen in the emergence of the Covid-19 Pandemic in 2020 which prompted economies to fall into recession due to lockdowns. Consumer spending on durable goods will likely fall as consumers usually suspend the purchase of high valuable goods because of huge financial strain on their source of income (European Central Bank 2021).

Finland as a country has undergone transformative changes from a forest-based economy to technological based and now has been phasing out into a service domain economy (Vesikansa 2008). It has been in the group of the most effective economies in the Euro area before the emergence of the global crises before 2009 and its financial institution managed the aftermath of the crises effectively after low global demand and export caused its economy to shrink between 2012 to 2014 and later picked up again in 2016 (Forbes 2018).

Similarly, it is a free market and industrialized country with GDP as high and comparable to that of Austria and the Netherlands and with key GDP contributors coming from manufacturing especially in wood, telecommunications, engineering, metals, and electronics industries. It is a global leader in technology transfer and encourages startups around information and communications technology, cleantech, gaming and bio technological industries (Forbes 2018).

Finland has a savor consumption culture where quality is the mere primarily determinant of a good purchase with secondary conditions being product origin, brand image, security, and compliance with European standards. The average Finnish consumer finds technology complacent even if it is in the use of computers or smartphone for online shopping and finds companies with good customer services and good buying experiences more appealing during consumption (Santander Trade 2021; Statistics Finland 2020).

In Finland, new consumer trends are focused on sustainability and progressive values. Shopping malls and online shopping dominate the Finnish consumer landscape, as Finns

are technologically savvy and internationally minded (Santander 2021; Finnish Council of Shopping Centers 2018).

The final consumption expenditure of Finland stood at 75 % of GDP in the national account as of 2019. Final consumption expenditure of households for transport including the purchase of transport equipment, operations and services stood at 13.9 million in 2018 and for durables, it was at 9.7 million in 2020 (OECD 2020a; Statista 2020b)

According to Statistics Finland, the endowment of notable consumer durables in Finnish households has changed drastically in the past few years as old and incumbent gadgets are being replaced and outpaced by much better and newer versions. (Statistics Finland 2021a). The total sum of new registered motor vehicles in Finland stands at 6,926,137 vehicles as of 2020 ending of which 5,172,173 was intended for use in traffic, this indicates an increase of 2.1 percent compared to the previous year 2019 (Statistics Finland 2021b).

A Finnish consumer's average shopping basket is larger than that of the rest of Europe, because of Finland's high cost of living, Credit and debit cards are prevalent in the Finnish consumption landscape and are widely used by consumers to finance cars and other consumer durable purchases (Santander 2021). Household debts have seen an increase and between 2016–2017, Finnish household consumption outpaced disposable income. parallelly, the bulk of household consumer credit authorized and leased by financial institutions has been increasing drastically since previous years and has helped foster the increase in car sales (Bank of Finland 2019; Silvo 2019).

The national consumer confidence index fell at the height of the Covid-19 pandemic which plunged the Finnish economy into recession in 2020. Consumer confidence in the economy fell slightly even though Consumers signaled great confidence in their own personal economy, with the circumstance good for saving yet not for buying durables or acquiring new credit. Notwithstanding the impact of the Covid-19 pandemic situation, an expanding number of individuals said they were going to apply for a new line of credit, with many planning to purchase or revamp a home or buy a vehicle (YLE News 2020b; Statistics Finland 2020; OECD 2020b).

Many governments planned macro-economic policies have been useful in supporting recovery from the impact of the pandemic and new pumped in liquidation from ECB. This aims to increase consumer consumption, slow increasing household debts especially in mortgage loans and boost exports, which will in turn help to foster economic recovery from the impact of the pandemic that has caused a lot of bankruptcies and unemployment's (OECD 2020b).

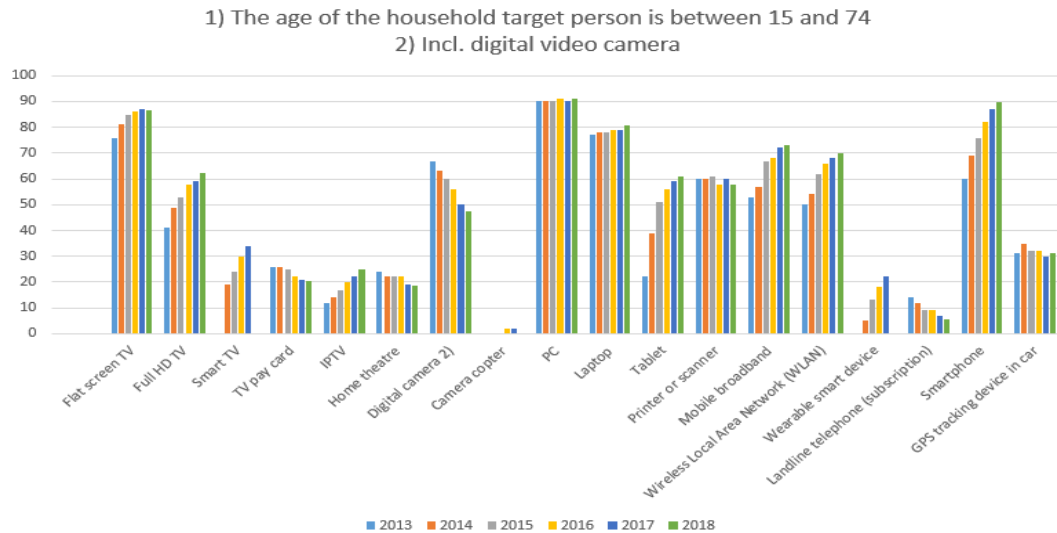


Figure 12: Prevalence (Ubiquity) of equipment's and connections (consumer durables) in Finnish households. Source: Consumer Survey Finland in Figures (Statistics Finland 2021a).

## 2.9 Research: Product-Service Business Models

Initially, the sharing economy has a varied definition and comprises of different business models that are based on the sharing of services, short term on demand jobs, and peer to peer (P2P/C2C) rentals of which some of the most popular are Airbnb(accommodation), Uber (transportation), Ebay (multiple goods sharing), Handy and Task Rabbit (Short term on demand services) (Vaskelainen & Tura 2018).

According to Lu, Lai & Liu (2019), product service systems (PSS)/ models are - *"business models providing an integrated mix of tangible products and intangible services that are able to fulfil final customer needs "*.

Comparably, sharing economy is still a term in discord as there has be diverse definitions describing this economic phenomenon and which are unparallel to each other. This is so because experts, academia, and researchers are in opposition to which firms or companies make up this new business phenomenon and which are not. Sharing economy happens to have relatives and it is in close affinity to its relatives and will be useful in resolving the disagreements on the part of scholars and getting the best of the term by comparing it in relation to its close relatives (Vaskelainen & Tura 2018; George & Julsrud 2019).

George & Julsrud (2019, 10-12) & Winterhalter et al. (2015) stipulated that the close relatives (cousins) of the sharing economy comprises of "secondhand economy" and "product- service economy" and are in parallel to the on-demand economy (sharing economy model).

The sharing economy term has been about constituting the three elements of: peer-to-peer relations, temporary access, and the use of physical assets which the other relatives (secondhand & product service economy) seem to contradict. But they are considered to the concept of sharing economy as they are driven by similar technology and social norms and in strong affinity with one another. Moreover, the borderline between these relatives will remain unchanged in the long run (George & Julsrud 2019, 10-12).



Furthermore, Botsman and Rogers (2010) categorized the sharing economy to three sections: product service systems (where a product is offered as a service, for example Share Now, Zip car, Car2go), collaborative consumption (sharing of tangible and intangible assets, for example in on-demand economy platforms like Uber, Airbnb.) and resource redistribution ecosystems (pro longing a product life cycle via looking for new potential users, for example eBay),

Product-service sharing business models relies solely on the renting or leasing goods/ products to a consumer via a business-to-consumer (B2C)/consumer-to-business (C2B) bases in place of peer-to-peer (P2P)/ consumer-to-consumer (C2C) relationship and market. Using this business model, a consumer gains temporary access to a product while the company still maintain the products ownership. Car rentals from Hertz, Zipcar, and Share now are typical examples (Soltyssova & Modrak 2020).

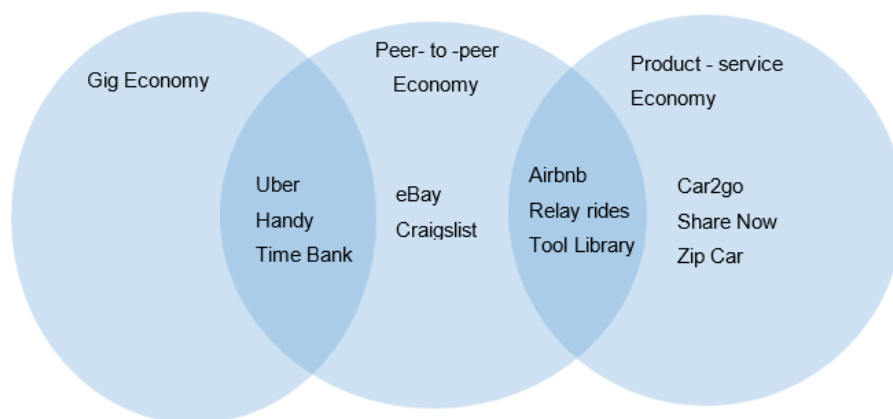


Figure 13: Three categories within the Sharing economy (Source: Vaskelainen & Tura, 2018)

Product service models are further categorized into 3 – result oriented, product oriented and use oriented PSS. Result oriented PSS focuses on the sale of intellectual services (intangible assets/ services) rather than tangible assets (Tukker 2004; Lu et al.,2019).

A product-oriented PSS focuses on tangible assets (products). During commercial transaction /purchase of a product by a consumer, its ownership is transferred from the company to the consumer and additional services are offered through maintenance, repair, and periodic performance check to guarantee customer satisfaction (Tukker 2004; Lu et al.,2019).

The core components of product-oriented PSS comprise of physical products, maintenance, and repair and this could vary depending on the contractual relationship between a company and customer and the product offering (Standard product adopted for PSS vs Standard product not adopted for PSS) (Lindahl et al., 2009).

According to Lindahl et al., (2009) customer satisfaction was one of the major influences of adoption of PSS (Product oriented PSS) by companies with the intent of building close

and long-lasting relationships with their customers. And its contrary to being environmentally motivated as it has facilitated new market offerings like making product available for use on the grounds for paying per performance and pay per use (Zheng et al., 2019)

The use-oriented PSS is in parallel to access-based consumption in use for the sharing economy. The service provider grants access to the product but still retain its ownership and its responsible for the periodic maintenance, performance analysis and repair (Lu et al., 2019).

Access-based services have risen as an optional /or substitute to conventional traditional ownership-based service model since the advancement of the sharing economy. Access-based services grant consumers access to tangible assets like product, place, or intangible assets like intellectual expertise, etc. within a specific time in return for monetary benefits/payment. whilst the company still maintain the ownership of the product (Botsman & Rogers 2010; Stephany 2015).

### **2.9.1 Best Practices: Mobility Industry**

Sharing economy by nature gratifies purely peer-to-peer (P2P)/ consumer-to-consumer (C2C) exchanges but in a way obscures the B2C consumer relationships. This concernment cannot be neglected envisaging the cravings of some traditional companies to characterize themselves of being part of the sharing economy cause its modernistic, popular, and progressive (George & Julsrud 2019; Stephany 2015,13).

Many of this traditional companies longing to be part of the sharing economy are now part of the “product service economy” which is in strong affinity and parallel to the sharing economy. A notable example is BMW, the German car maker which developed product service model named “Drivenow” and joined forces with Daimler's subsidiary car sharing platform Car2go. They developed a product service model called “Sharenow” to grant temporary access to its tangible assets(products) to consumers (George & Julsrud 2019).

Sharenow (Drivenow) which use to operate in Helsinki since 2017 pulled out in February 2020 due to some inconveniences with the Finnish market but has operations in other 8 European countries: Austria, Denmark, France, Germany, Hungary, Italy, Netherlands and Spain and grants access to 150 of latest BMW and Mini model smart vehicles (cars) to consumers (ShareNow 2021; Makela 2020).

However, new product – service firms have entered the Finnish mobility market to tap from the mobility market potential. A notable example is the Company “Greenmobility” which operates in up to six cities within Europe (i.e., Copenhagen, Aarhus, Malmo, Helsinki, Gothenburg, Antwerp) expanded into Finland with focus on Helsinki region in December 2020, its market offering includes access to over 900 fleet of electric vehicles that offers sustainable transportation medium that is shared within a community (Greenmobility 2021).

Moreover, Since the appearance of the sharing economy in the past decades to its growth in popularity, it has influenced consumer consumption patterns and lifestyles. The metropolitan scene in urban communities especially in the Helsinki urban landscape have seem to be impacted by its emergence. It has seen the materialization of varied collaborative consumption models whether in public and private sectors in niches like mobility and accommodation.

As of January 2021, service providers in mobility include Uber, Gomore. etc and new shared - use service companies / startups from different country of origin have been in the Finnish micro mobility landscape: Voi (Sweden), Tier (Germany), Lime (USA), Hoop (Finland)etc. They offer up to 300 rental e-scooters that consumers can unlock and use with a smartphone. (Joshi 2021; Yle News 2017; Yle News 2019b; Yle News 2020).

In the public sector, Finnish cities, and municipalities (Helsinki, Vantaa, Oulu, Turku) has made plans to embrace the product service economy with the establishment of their own shared use service rentals (Alepa Fillari bikes) to support already established public transport infrastructure (Yle News 2019a).

The municipalities of Helsinki, Espoo, rolled out new city bikes, with supporting digital platforms as part of its infrastructural adjustments to be able to support the schemes like Whim- ([www.whimapp.com](http://www.whimapp.com)), open docking stations and City fillarit ([www.cityfillarit.fi](http://www.cityfillarit.fi)) for checking the availability of bikes in your nearest location (City Fillarit 2021, HSL 2021).

To conclude, public sector and private sector joint ventures have been in place to support the progress of sustainable modes of transportation especially in product-service business ecosystems. In the same approach of establishment of city bikes, the city of Helsinki aims to dispatch its own fleet of electric scooters (Ylenews 2019c).

Its working in collaboration with the Russian company - "Samocat Sharing "which won the Ideal lab contest organized by the municipality in 2018. The novice stage of the initiatives requires the use of digital platforms (app) and the proposed service aims to incorporate traditional and electric scooters (HSL 2019; Samocat 2021).

### **2.9.2 Innovative Approach Utilized: Smart Product - Service Systems.**

Firstly, since so many factors like technology, social and economic have been the driving factors of the sharing economy phenomenon, and since the last decade, Information technology (technology) has played a significant role as the top innovation driver in the business world.

Innovation is regarded as the *"process of turning opportunity into new ideas and of putting these into widely used practice"* (Tidd et al 2005. 66). Innovation and marketing are important elements in a company's strategy. However, Innovation is used to create all marketing processes. A firm's effectiveness could be estimated by its successful management of four marketing processes: branding, customer experience, innovation, and value creation (Eckhardt et al., 2019).

The exponential advancement of information and communication technologies (ICT) has helped fostered sweeping innovation in digitisation, where physical products can be conveniently digitised and intertwined with the web / cyber sphere and logically interconnected. This in turn has helped fostered a new business paradigm and created a niche market for data enabled products i.e., smart, connected products (SCP) that has the propensity to communicate, collect and process data in variety of ways (Zheng, Wang, Chen, & Khoo ,2019).

Furthermore, consumer, stakeholders, and firms (both in private and public sector) participation in the sharing economy are based on both interior motives (enjoyment & sustainability) and exterior motives (economic gains and reputation). With the notion of the sharing

economy in mind, the provision of a tangible asset (product) for sharing can be as well regarded as a service and will unequivocally make it indistinct or separate from each other (Sommers et al. 2018).

Smart product-service systems (SPSSs) provide access-based solutions by combining smart products and services into a unified offering for customers. It will aid in reducing customers' budget constraints during expenditures while also enhancing their standard of living (Lu et al., 2019).

This integration of tangible assets (smart products) and Intangible assets (service) has resulted in the emergence of a new IT-driven and enabled market model - "smart product-service systems" (Smart PSS). Companies in varied industries are gradually implementing product service market models (product-service) to deliver not only physical goods but also services as a consumer needs solution package to satisfy the demands of consumers (Zheng et al., 2019).

According to Lindahl, Sakao, Sundin and Shimomura (2009), Product Service Systems (PSS) are - *"tangible products and intangible services designed and combined so that they are jointly capable of fulfilling specific customer needs"*.

Furthermore, product service systems (smart, connected products) utilize the integration of digital platforms/ web (mobile apps), smart products (e.g., bike and e-scooters) and global positioned systems (GPS) sensors to facilitate access-based consumption. Bike and e-scooter are notable examples of smart product- service systems (SPSS) (Lu et al., 2019).

Aside from the sharing economy, customer relations and changing consumer expectations, and coupled with greater external threats from competitors have been top driving forces in PSS adoption especially in traditional economy. Product-service systems development may be overseen by a company's product, marketing, and after-sales departments (Lindahl et al., 2009).

According to Lu et al. (2019), for consumers to find a smart product service system (SPSS) more appealing, the nature of the design of a smart product service system is vital and highly essential, as they will only accept an SPSS if they find both the smart product and smart electronic service appealing at the same time, which will eventually lead to the success of the access-based model of consumption.

As a result, we might conclude that tangible assets (products) that are shared and utilized within the sharing economy can never be in isolation from the intangible assets (services). Product-service systems used in traditional economy by traditional companies are convenient in the sharing economy. Its success and easy adoption could depend and quantified by the relationships and impacts on its major stakeholders (consumers, platforms, governments and society) in relation to the degree of suitability, shareability, longevity, and recurrent modification of the product for numerous users (Sommers et al. 2018).

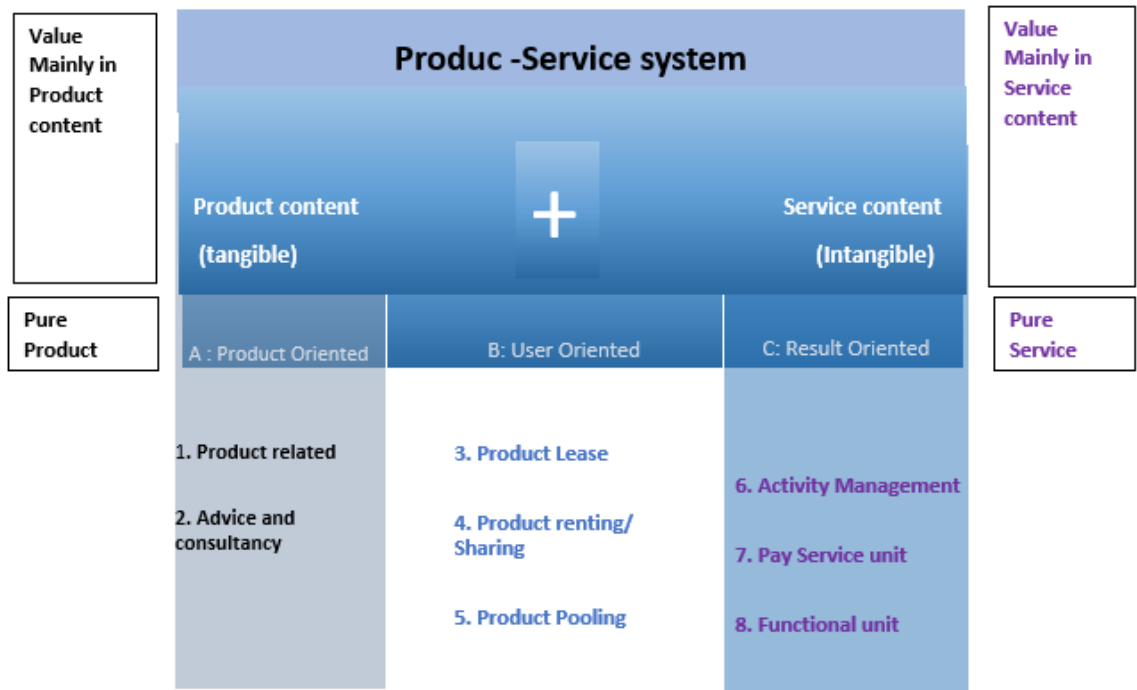


Figure 14: Main and subcategories of PSS (Product Service Systems) (Source: Tukker, 2004).

### 3. Research Methods & Data Collection

This chapter indicates the research methods used in the study and as well define the research phases in use accordingly. It also explains how the data used for the research has been collected and what are the justifications for the choices made as the research comprises of two phases: Phase 1 & 2.

The author used a mixture of both qualitative and quantitative (primary & secondary data) method of research to propagate a better research outcome. In the first phase, the thesis literature review was used to answer the Investigative question 1 (IQ1) which asks a general question regarding traditional companies in the durable goods sector and already existing research survey and secondary data used in the literature review was used as a focus to answer the investigative question (IQ1) through thematic and descriptive analysis.

According to Burns, Veeck & Bush (2017, 72), primary data and secondary data are two data collection sources and since the aim of a research project is to solve problems. Primary data is collected by the researcher to solve the research inquiry at hand and secondary information, or data can be sourced from already existing information or data sources.

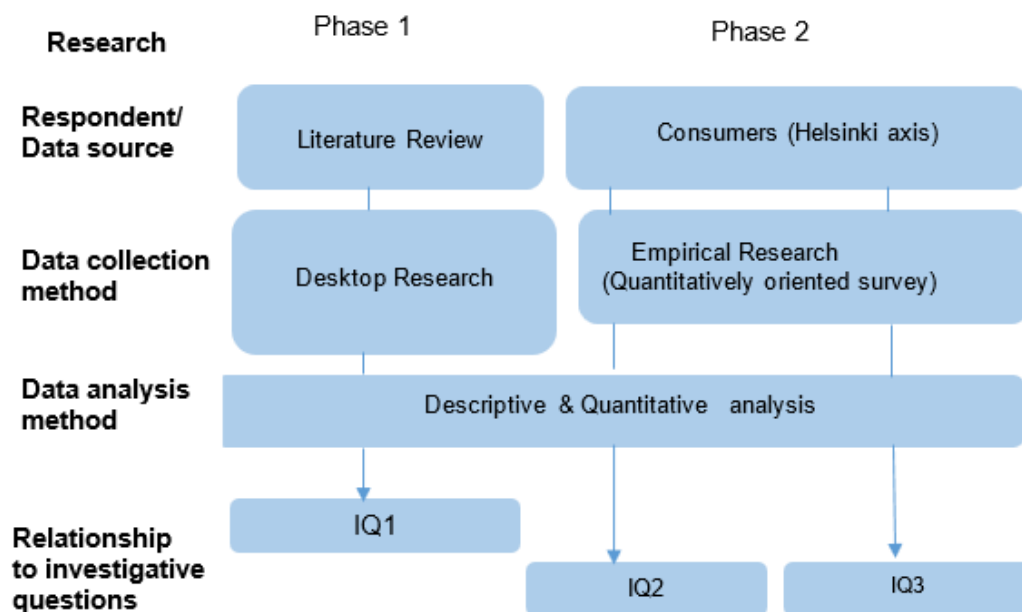


Figure 15: Research methods & data collection processes.

The source of the secondary data was from existing research and previous data surveys from research institutes, public archives, and top experts in the field. Data can be obtained both quantitatively or qualitatively or utilization of both for research process and analysis for example (e.g., from a company's annual reports, online sources, and already pre-existing past collected data. (San Miguel 2019, 23-24.)

Comparably, secondary data is easy to collect than primary data. Primary data has a lot of complexities and can be obtained through observations and monitoring online behaviours of consumers and using surveys (Burns et al., 2017, 73-74).

The effect of the Covid -19 pandemic, which resulted in lockdowns, school, and public library temporary closures in the Helsinki area, created some challenges in accessing libraries for easy access to secondary data and collection. The author prompted to use online resources as a viable alternative solution to the problem that had arisen.

For the second phase. survey questionnaire was used to answer both IQ2 and IQ3 questions. The research survey respondents were delimited to consumers of durables within the Helsinki region to find out their tendencies, altitudes, and preferences regarding the product service economy subcategories of product renting and swapping.

The number target sample for the respondents was over 100 consumer respondents within the Helsinki axis. A much higher response rate to the survey questionnaire could have in overall raise the reliability and validity of the research. Thus, it could be used to generalize for the whole population since the research sample covers the intended sample and research enquiry.

In addition, comparative and qualitative analysis were used to answer the second phase and research question of IQ 2 and IQ3 in other to create an inquisitive and descriptive analysis of consumer attitudes toward sharing practices (product renting & swapping) for the consumer durable goods industry.

#### 4. Results & Data Analysis

This chapter of the thesis research outlines the key findings relating to the thesis desktop research enquiry and survey data findings. The data collection analysis, method, and its relation to each investigative questions of the research are explained based on the research literature and data findings.

Secondary data are information's or data that have been collected by another person other than the author or in existence before as they have been utilized in other ways other than the research purpose at hand. (Burns et al., 2017, 116-118).

Moreover, secondary data was the main source of the data collection used to answer the first IQ of the research. The sources of the secondary data where from internet sources, articles, books, journals, research papers and public and agency data.

Research can be grouped into two based on the niche of the data collection process, Desktop research can be utilized in the process of data collection and analysis of collected materials to gain new insights, information, and knowledge for literature review. Descriptive analysis was employed to describe the intended phenomenon and important cues (San Miguel 2019, 56).

Comparably, to obtain new insights, information and to find about consumer attitudes regarding the sharing economy subcategories of product renting and product swapping for consumer electronic durables in Helsinki region. A survey was created to obtain primary data to answer the research enquiry.

The survey questionnaire was created using Google forms and in allocating the key outcomes. The thesis research questionnaire utilized the consumer electronic durable goods trend from the latest consumer electronics shows (CES 2020 & 2021) and latest mobility trends which cites that consumer durables are getting smart or becoming SCP (smart connected products) with the merging of technology. The consumer durables include vehicles (electric cars, scooters, bikes), smart wearables, robots, drones, virtual & augmented reality wearables.

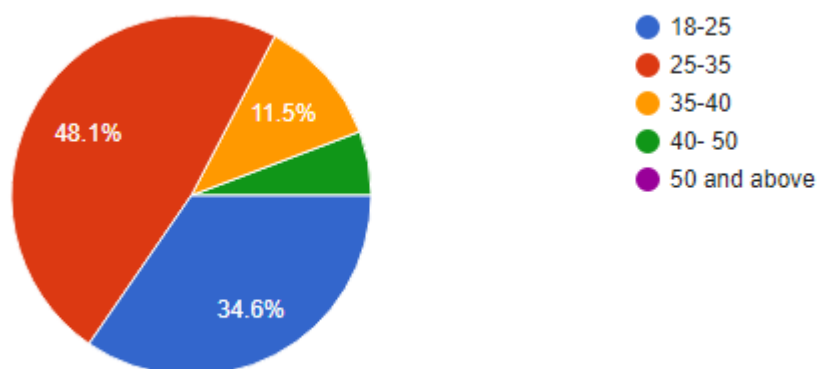


Figure 16: Demographics of consumer respondents:( n= 52)



Moreover, this consumer electronic durables are in the category of smart products / product service systems (SPSS), and were utilized in the survey questionnaires to be able to scale consumer attitudes towards product service models - product renting and product swapping in consumer electronic durables within the Helsinki region.

The consumer preference criteria used in the implementation of the survey questionnaire was based on economic, social, and information technological factors to help determine the degree of tendencies, priorities, and attitudes of consumers within Helsinki axis on renting or swapping consumer electronic durables in smart connected product (SCP) category.

The survey embodies 10 semi structured questions with a dynamism of both scale, category and multiple questions and later sub divided into two - 4 questions for product swapping and 5 for product renting regarding peer to peer (P2P) and B2C sharing economy market mechanism.

Comparably, the survey was sent to a group of 200 consumers within the Helsinki region axis through emails, and social media platforms - WhatsApp, Instagram, and LinkedIn. In addition, the author set aside one month (1<sup>st</sup> - 30<sup>th</sup> April 2021) for data collection as part of the plan objectives to increase the response rate and gather enough responses for the survey.

Data collection was a proven difficult task due to the impact of Covid-19 pandemic lockdowns and social distancing issues. The author managed to get 52 responses against near target of more than a hundred responses to the sent out online surveys and to reach the intended sample for the research and thus, it fell short of the expected target of nearly 100 responses.

To conclude, with a total of 52 respondents, consumers in the age group of 25-35 were more respondents, the second highest frequency is of 18- 25 age groups, and consumers in the age group of 50 and above has the least number of frequencies. The number of male (59.9%) consumer respondents is more than females (40.4%). The questionnaire findings were discussed and analysed descriptively.

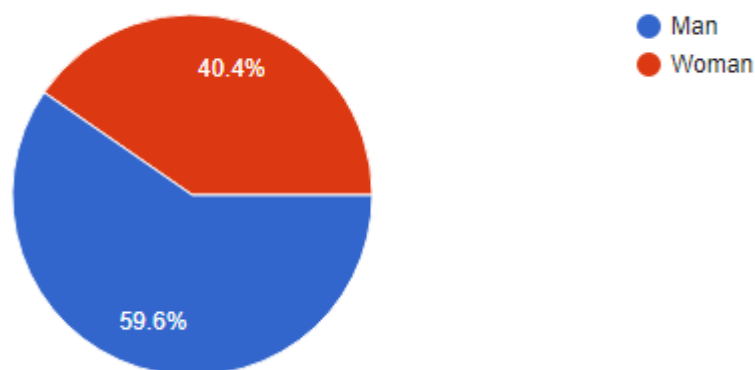


Figure 17: Gender of consumer respondents.

#### 4.1 What sharing economy model (element) could be applied in a traditional company in the consumer durable industry?

Initially, sharing economy has been a threat to traditional companies' existence. This research has fathomed based on research best practices that just like sharing economy on-demand models, like Uber, Airbnb, Couch surfing etc, product- service model utilized by most traditional companies in B2C are part of the sharing economy business models that facilitates product renting, swapping, and lending.

Research best practices indicates that traditional companies who are not sharing economy by birth have utilized/ applied sharing economy product - service model which have been further enhanced by information technology (IT) to foster the merging of technology with durable product in the form of smart product service systems (SPSS) to cater for consumer needs and create new value propositions for consumers.

Smart product service systems which facilitate the combination of both product and service enables has opened a new market targets and innovation in smart connected products (SCP) with the help of information technologies integration of digital platforms (web /apps), smart products and GPS sensors. This new smart connected product (SCP) enables user-oriented service systems that in turn foster access-based consumption in product renting, pooling, and leasing.

#### 4.2 Consumer attitudes towards product renting of consumer electronic durables

##### 4.2.1 Have you rented any product (consumer durable) from a company?

Most of the respondents (71.2%) have rented a consumer durable product in one way or the other from a company. 23.1% of respondents have not rented any consumer durable product previously.

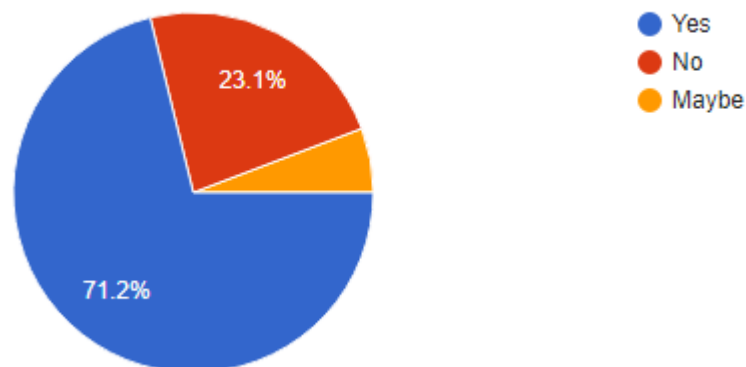


Figure 18: Percentage of consumer respondents engaging in consumer durable product renting.

##### 4.2.2 How likely will you be interested to rent the following consumer durable products?

Most of the respondents are likely to rent a vehicle (electric cars, bikes, and scooters).and somewhat likely to rent the remaining consumer durables (smart fitness and health wearables, robots, drones, VR and AR devices).

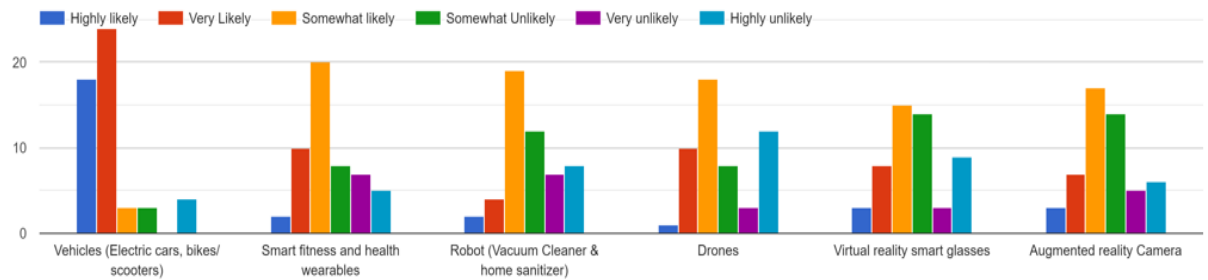


Figure 19: The likelihood of consumer respondents renting consumer durables in the category of smart connected products.

#### 4.2.3 Which following issues will likely affect your willingness to rent the following consumer durable in category of smart product?

65.4% of respondents indicated that price is an important issue that can impact their ability to rent a consumer durable from a company. Privacy concerns (11.6%) was the second highest frequency when considering renting a consumer durable and 9.6% of respondents are concerned about hygiene issues.

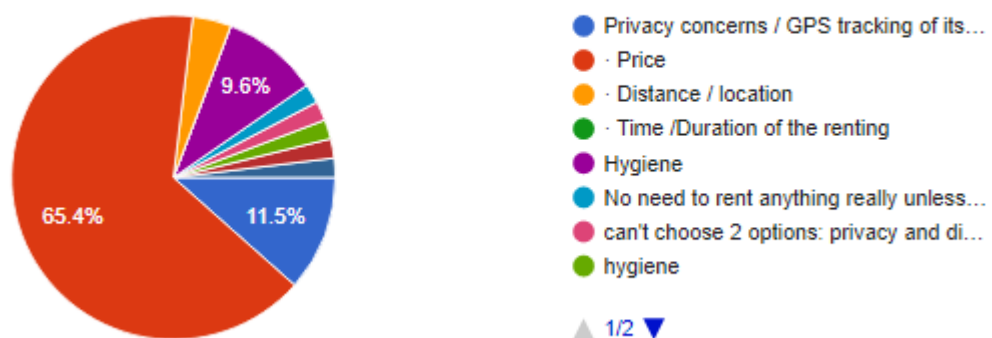


Figure 20: Consumer respondent's preference in renting of consumer electronic durable goods.

#### 4.2.4 How long respondents would be willing to rent the consumer durable product?

Out of the 52 respondents, 34.6% of respondents prefer to rent within day and weekly bases, and 25% prefer to rent more than 2 days.

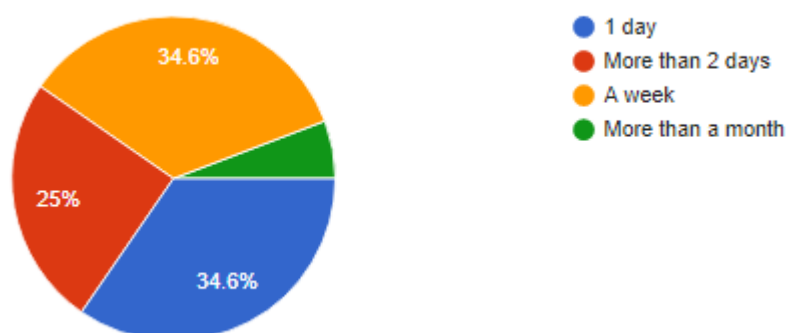


Figure 21: Consumer respondents preferred duration of renting a consumer electronic durable.

#### 4.3 Consumer attitudes towards product swapping of consumer electronic durables

##### 4.3.1 Have you swapped any consumer durable with a third party/ another person?

Most of the respondents (67.3%) have not engaged in consumer durable product swapping in one way or the other on a P2P bases. 21.2% of respondents have somewhat engaged in consumer durable product swapping previously. And 11.5% of respondents have highly likely engaged in product swapping in some form.

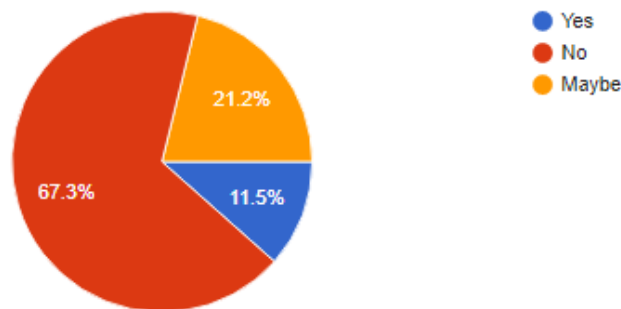


Figure 22: Percentage of consumer respondents engaging in product swapping.

##### 4.3.2 How likely are respondents to swap consumer electronic durable products?

Out of the 52 respondents, 36.5% would somewhat likely swap consumer durable on a peer-to-peer bases if they happen to own one. 23.1% says they would somewhat unlikely swap consumer durable product and 21.2 % cites that they will highly unlikely swap consumer durable product.

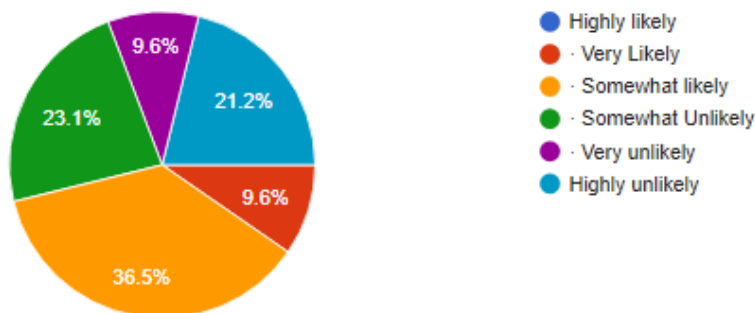


Figure 23: The likelihood of consumer respondents to swap their consumer durable products on a peer-to-peer bases.

##### 4.3.3 How long could you be willing to swap the consumer electronic durable product?

32.7% of respondents indicated that a day is enough for swapping of their consumer durable product. A week (23.1%) was the second highest frequency when considering swapping a consumer durable by respondents and 19.2% of respondents indicated they would be willing to swap for more than a month.

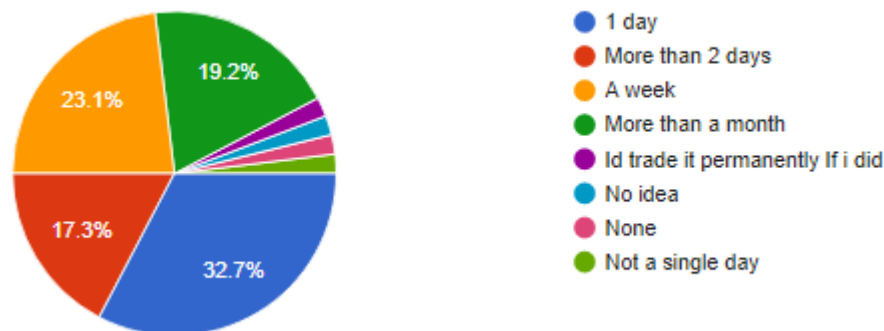


Figure 24: Consumer respondents preferred duration if happen to swap consumer electronic durable in the category of smart connected products (SCP) on peer to peer (P2P) bases.

#### 4.3.4 How likely would these factors likely affect consumer respondent's ability to swap consumer electronic durables?

For product swapping among respondents, a greater percentage of respondents indicated that location / distance is an important issue that can impact their ability to swap a consumer durable on a peer-to-peer bases. Time / duration were the second highest frequency when considering swapping a consumer durable and thirdly most of respondents are concerned economic issues or their unaffordability of a consumer durable will likely make them engage in swapping.

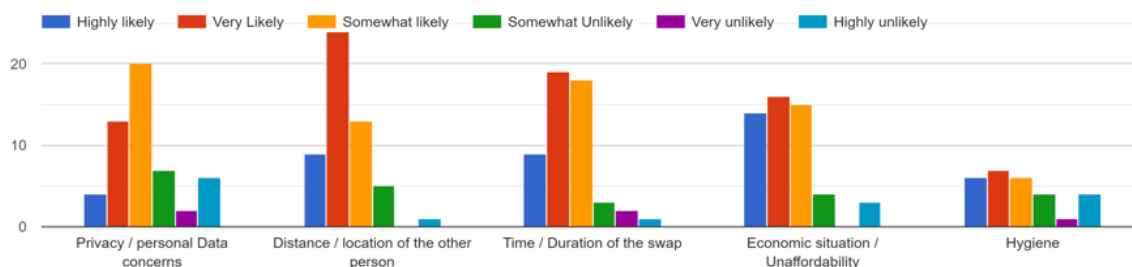


Figure 25: Consumer respondents concerns when swapping consumer electronic durable product on peer-to-peer bases.

## **5. Conclusion & Key Findings**

Firstly, the desktop research findings indicated that sharing economy seems to be growing in Finland especially within Helsinki region and data gathered indicated that on EU average. Sharing economy is becoming more prominent as the entrants of new firms /start-ups especially in mobility coupled with new government initiatives and policy could boost its advancement.

On the part of sharing economy elements and its application to traditional companies, Research findings indicated that traditional companies in B2C which happen to be firms that have not engaged in any form of sharing practices have been utilizing the similar siblings of the sharing economy which is the “product service economy” to create new value propositions and creating new market niches for consumers.

The threats of sharing economy on traditional companies in the consumer durable sector could be mitigated by the adoption of product- service models by traditional companies in B2C but this could be varied depending on the product, industry, and market niches.

Similarly, the advancement of information technology (IT) on the other hand have helped contributed immensely to the development of the product- service economy by merging of technology with consumer durable (smart connected products). This has helped foster the emergence of smart - product service systems by making it convenient to blend both tangible and intangible assets together with the aim of creating value and improving consumer experience.

The research also further indicated that product renting and product swapping are two common types of product service economy that conventional companies may use, according to the study. A survey was conducted to learn about customer behaviours and what their tendencies, desires, and expectations are when it comes to the use of smart products.

Conclusively, consumers place more emphasis on economic factors such as price when trying to rent a consumer durable product. Thus, this indicates that for a smart product to be utilized by the consumers, the price should be in the range of their affordability to be able to attract more users.

### **5.1 Sharing Economy Element Applications in Traditional Company**

Initially, the product service economy is part of sharing economy element and has been prevalent even before the advancement of the sharing economy phenomenon in the forms of product oriented & resulted oriented product service systems compared to use oriented product service systems. Information technology has enabled the use-oriented product service systems through the merging of technology and products (durables) to create smart connected products (SCP).

Moreover, information technology has helped enabled the merging of tangible (smart products) and intangible assets (service) to create new value propositions for consumer's needs. In addition, this has fostered the emergence of a new information technology

steered and capacitated market model that favors both sharing economy and traditional economy companies dubbed - “smart product service systems “.

To conclude, Notable companies who have managed to utilize sharing economy elements have done so through the implementation and use of smart product service systems (SPSS) and can be found in notable research best practices of consumer durables in mobility (smart electric cars, bikes & and e-scooters).

## **5.2 Product Renting**

Product renting is more familiar and popular among consumer respondents, and it also shows that product renting is a much-developed subcategory of the product service economy. More of the respondents have engaged in product renting and prefer to rent a smart connected product on daily and weekly duration.

Pricing is key for consumer respondents and just like the indication of the economic cycle on consumer expenditures that consumer can usually forgo the purchase of consumer durables in times of economic uncertainty. They would preferably try to find affordable alternative to satisfy their needs and considering their personal budget limitations.

Moreover, most respondents prefer daily (34.6%) and weekly (34.6%) duration to rent a consumer durable, while the second frequency (23.1%) believes that a week is the preferred period for swapping.

Data and privacy issues was another highest frequency in consumer tendencies during consumption as these are challenges and problems associated with the tech environment and user behavioral tendencies while using the internet, according to minor respondents (11.5 percent).

## **5.3 Product Swapping**

Product swapping is an underdeveloped business niche and a far less familiar form of the product service economy among consumer respondents. Consumers who have swapped products may have done so among friends, families, or trusted acquaintances rather than through an established consumer market ecosystem.

Ideally, in evaluating the chance of customers engaging in peer-to-peer swapping if a firm implements a platform ecosystem for the creation of value and new propositions via peer-to-peer swapping. Respondents are somewhat likely to engage in it citing distances, and duration of the swap to be an issue. Majority of consumer respondents (32.2%) cited that one day is enough to engage in product swapping.

Also, data and privacy are a hot topic and theme in the consumer consumption sphere these days, thanks to the sharing economy's use of technical elements and cues. When it comes to product swapping, most respondents said it would somewhat likely be a major concern to them.

The respondents also put an emphasis on their financial position, as they believe that their inability to afford a specific consumer durable product would lead them to trade an inexpensive asset for an unaffordable one. Most respondents (32.7%) believe that one day is

sufficient for swapping, while the second frequency (23.1%) believes that a week is the preferred period for swapping.

#### **5.4 Recommendations**

From the survey, the 52 responses gathered by the author to learn about consumer attitudes toward the product service economy subcategories of product renting and swapping in the Helsinki, Finland axis. The findings revealed that product renting was more appealing to respondents than product swapping, as most of them had rented rather than swapped, and companies could devote more resources.

Moreover, consumer respondents were more concerned of the price when trying to engage in product renting and similarly could prefer to rent on daily or weekly bases, thus could be an important cue for companies to consider if they want to attract huge consumer renters.

The survey also gathered the preference and familiarity of consumers in renting vehicles compared to other durables as respondents indicated they are likely to rent vehicles (electric cars, bikes, scooters).

The other consumer durables (smart fitness and health wearables, drones, home cleaning robots, VR / AR devices) is still a new market niche to be tapped around renting and respondent's highest frequencies indicated they could somewhat be likely to rent if the need arises. Market offers should be focused on weekly and regular bases when renting or trading time durations, as this is more attractive to customers.

Lastly, adequate measure should be taken to protect consumer data and privacy, as some respondents expressed that it could be a matter of concern when renting a consumer durable and would prefer to rent from a trusted organisation.

#### **5.5 Reliability, Validity and Relevance**

The reliability and validity of data used in a research process should be clarified and tended to in qualitative and quantitative research proceedings. Reliability and validity in research process can also be attributed to how credible, confirmable, paralleled, non-partisan and dependable the data collected in the research process could be (Lincoln & Guba 1985, 300).

In a research process, it is commendable to explain the impediments and hindrances encountered as no research can be attributed to be faultless. It is unprofessional to disguise and hide research shortcomings, deficiencies, and weaknesses. Research shortcomings like compulsion on time, sample size and makeup, and biases that may have found its way into the research should be outlined. In this regard, adequately explaining research weakness can add reliability and validity to your research (Burns et al., 2017, 443).

The author affirms that the thesis findings measured what it intended to: sharing economy application in traditional companies, consumer opinions, attitudes, priorities, and tendencies regarding sharing practices of product renting and swapping of consumer electronic durables and what kind of factors sways it.

Furthermore, the results of the desktop research do not quantify or indicate the cost of traditional companies transitioning to or implementing smart product service systems; instead, they seek to recommend the intended solution to the possible problem and threats



that traditional companies face, and they only commend smart product service systems as a convincing solution.

However, the survey response rate was lower than anticipated (52 respondents) and well below the targeted goal of over 150 consumer respondents, making it difficult to draw conclusions and make assumptions based on the gathered sample group of consumer respondents in the Helsinki axis. The survey group should have been much larger to properly acknowledge and administer the average views, behaviours, preferences, and tendencies in Helsinki axis about product renting and swapping.

In the survey process, the author only considered social, technological, and economic factors, leaving out psychological, consumer personal, and cultural factors. Because of the scope of the study, only a few demographics, segmentations, and consumers' electronic durables that could fall under the category of smart connected items (SCP) were included.

The reader should consider that the research study primary data is based on the survey of consumer opinions, attitudes, priorities, and tendencies regarding product swapping and renting of consumer electronic durable within Helsinki axis, adequate consideration could be taken not to universalize it to other populations. As a result, the author recommends that the study will not possibly produce the same result and outcome with a larger sample size and if conducted in a different period and in a different location with the inclusion or exclusion of the omitted variables. However, the obtained sample was, on average, standard and was interpreted in accordance with the thesis objectives.

## **5.6 Further Research**

Firstly, future research could be compelled to replicating the same on the same city or other municipalities by gathering enough large sample of respondents to be able to get the overall big picture in conducting an extended research. In this regard, the relevance, validity, and reliability of the new data can be commendable and universalizing it to other populations could be considered.

In the data from the survey results, consumer respondents indicated that they will somewhat likely rent other smart connected products - (Smart fitness and health wearables, home cleaning robots, drones, VR and AR devices). Future research could further try to find how best to create commendable value for likely new target consumer renters that could emerge from it.

Additionally, future research could also try to find consumer attitudes regarding product renting and swapping with inclusion of all considerable cues from cultural, social, economic, technology, psychological and personal factors. Furthermore, consumer respondents find product renting appealing or have engaged in more of it than product swapping, research could target new potential market segmentations that could be based on demographics to create new value for consumers.

To conclude, this study sought to identify and provide a viable alternative for traditional companies to mitigate the effects of the sharing economy on their business model, with the recommendation of using smart product service systems. Future study might look on the effects and costs of traditional companies implementing and switching to a smart product service system, as well as finding methods to better serve consumers in the event of a change in consumer preferences. Internal feasibility studies on a company's value and supply networks might make this achievable.

## **5.7 Reflection on Learning**

The author has learned the importance of having a plan and good time management especially when conducting a long-standing venture like a thesis project. Mapping out a plan and implementing a good strategy through effective time management was vital for the author in completing the research process as planned.

Furthermore, the author managed to gain new insights and knowledge of a whole lot of new topics and also have become self-aware of his own capabilities and limits. These new insights could be beneficial if he happens to embark on more long term intensive complex projects as the thesis research has equipped him with the necessary capabilities to withstand the everyday complexities and stresses associated with such.

The author is a marketing student, and thesis research has provided him with valuable knowledge even beyond his own field of specialization. Therefore, it was commendable to learn new topics relating to information technology, research enquiry and business development and how to structure and put the theoretical frameworks when conducting a research project.

To conclude and in overall, conducting this thesis has equipped the author with essential tools and knowledge that is valuable for the advancement of his career goals in self-actualization and lifelong learning goals. This would be beneficial if the author wants to continue his career progression to the master's level and in the pursuit of problem-based research initiatives in the future.

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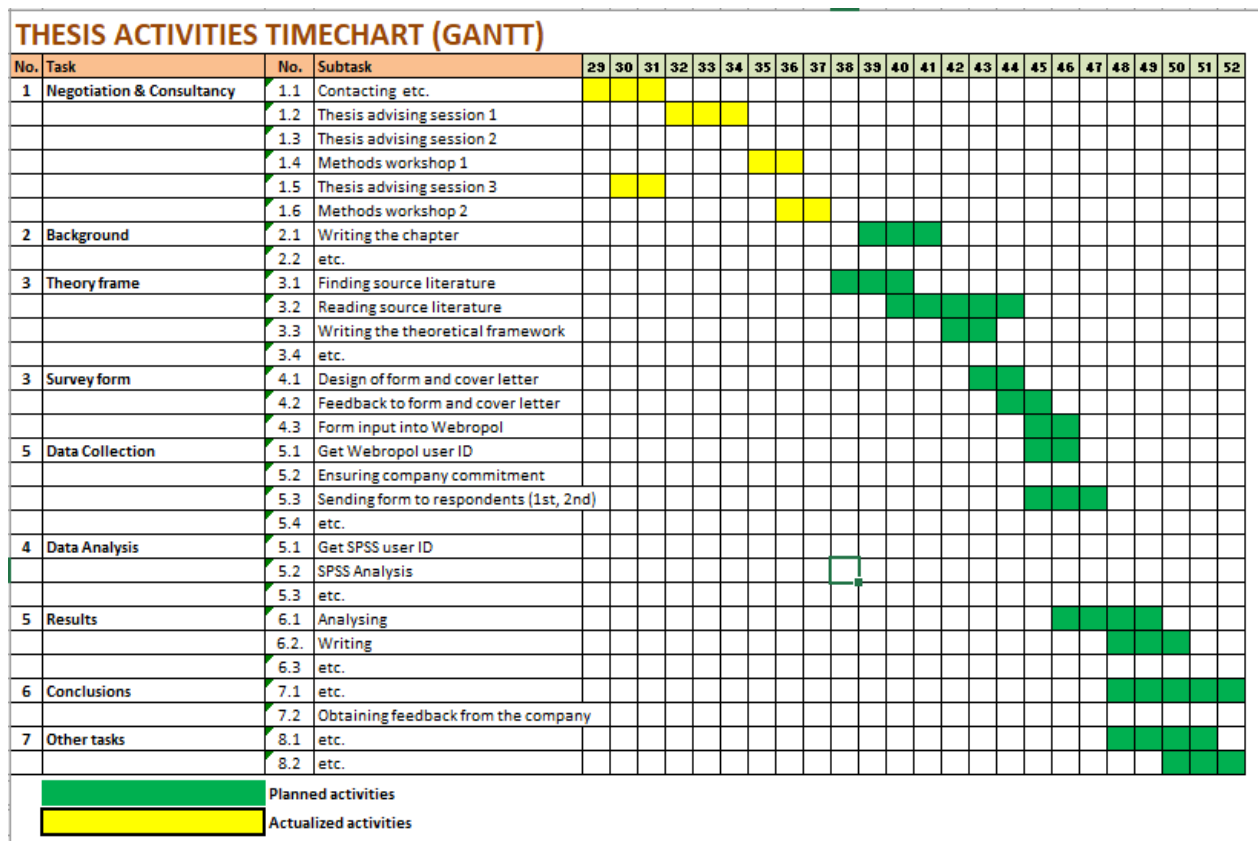
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## Attachments

### Attachment 1. Thesis activities timeline as a Gantt Chart



## **Attachment 2. Thesis Survey Questionnaire**

### **a. What is your Gender?**

- Male
- Female

### **b. What is your age range: (rated based on millennial, gen x and z categories)**

- 18 -25 years
- 25- 35 years
- 35 – 40 years
- 40- above

## **IQ 2: Product Renting**

### **1. Have you ever rented any consumers durable goods from a company**

- Yes
- No

### **2. How likely will you be interested to rent the following consumer durable products - (chosen based on the latest product features from - (Consumer Electronic Show - CES 2021 trends) and category of smart connected products (SCP)**

- o Bicycle / e- scooters
- o Vehicle (Electric)
- o Smart fitness wearables
- o Smart Health wearables
- o Robot (Vacuum Cleaner)
- o Robot (Home sanitizer)
- o Drones
- o Virtual reality smart glasses
- o Augmented reality Cameras

- Highly likely
- Very Likely
- Somewhat likely
- Somewhat Unlikely
- Very unlikely
- Highly unlikely

### **3. For how long would you be willing to rent the products?**

1. 1 day
2. More than 2 days
3. A week

4. More than a month

**4. Which following issues will likely affect your willingness to rent this consumer durable products**

- a. Vehicle (Electric cars, Bicycle / scooters)
  - b. Smart fitness and health wearables
  - c. Robot (Vacuum Cleaner)
  - d. Robot (Home sanitizer)
  - e. Drones
  - f. Virtual reality smart glasses
  - g. Augmented reality Cameras
- Privacy concerns / GPS tracking of its usage and activity on another smartphone
  - Price
  - Distance / location
  - Duration of the renting
  - Hygiene

**IQ 3: Product Swapping**

**1. How likely are you to swap your asset/ consumer product with an un-related asset (e.g., Robot for Drone, Smart wearables for home cleaning robot)**

- Highly likely
- Very Likely
- Somewhat likely
- Somewhat Unlikely
- Very unlikely
- Highly unlikely

**2. For how long could you be willing to swap the products?**

1. 1 day
2. More than 2 days
3. A week
4. More than a month

**To what extent will the following issues affect your willingness to swap the below consumer durable products.**

- a. Vehicle (Electric /hydrogen)
- b. Bicycle / e- scooters
- c. Smart fitness wearables
- d. Smart Health wearables

- e. Robot (Vacuum Cleaner)
- f. Robot (Home sanitizer)
- g. Drones
- h. Virtual reality smart glasses
- i. Augmented reality Cameras

**3. Privacy concerns / GPS tracking of its usage**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely
- o Highly unlikely

**4. Distance / location of the third party**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely
- o Highly unlikely

**5- Time / duration**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely
- o Highly unlikely

**4 Time / duration**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely
- o Highly unlikely

**6. Economic situation/ unaffordability of other durable**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely



- o Highly unlikely

## **7- Hygiene**

- o Highly likely
- o Very Likely
- o Somewhat likely
- o Somewhat Unlikely
- o Very unlikely
- o Highly unlikely