Aalto University
School of Business

21ST CENTURY COTTAGE INDUSTRY

A cross-case synthesis of freelancer intermediary platforms

Master's Thesis
Sampsa Suvivuo
Aalto University School of Business
Information and Service Management
Fall 2018

Aalto University
School of Business

Aalto University, P.O. BOX 11000, 00076 AALTO
www.aalto.fi

Abstract of master's thesis

Author Sampsa Suvivuo

Title of thesis 21st Century Cottage Industry – A cross-case synthesis of freelancer intermediary platforms

Degree Master of Science in Economics and Business Administration

Degree programme Information and Service Management

Thesis advisor(s) Virpi Tuunainen

Year of approval 2018 **Number of pages** 112 **Language** English

Abstract

The purpose of this study was to identify possible archetypes of freelancer intermediary platforms. Though there is growing interest towards platforms, classification of platforms stops when it is classified as a transaction, innovation, integrated or some other platform. However, this approach doesn't account for the variation within these categories. Given the young population's interest towards freelancing and the estimated size of the platform economy as a whole ($4300 Bn.) and the number of freelancer intermediaries (250-300), attempting to identify the subtypes of freelancer intermediary platforms was deemed a worthy endeavor.

Finding these subtypes of intermediary platforms or archetypes of freelancer intermediaries has both academic and practical implications. For academics, these archetypes will contribute to the growing body of platform literature by giving it new units of analysis and by creating reasonable categorization. For people interested in utilizing a freelancer intermediary platform either as a seller or a buyer, this thesis offers solid knowledge of the intermediary platforms functions and features as well as what to expect when joining one.

The research design is built on principles of embedded and flexible multiple-case study and cross-case synthesis. When describing a contemporary phenomenon, a multiple-case study produces more robust results when the weight of one case decreases. The cross-case synthesis was one of the few viable options given the study's lack of dependent and independent variables. These variables were unavailable because no beforehand information on what the archetypes could be was available. For this reason, this study adapted analytical methods of grounded theory.

The study identified four archetypes of freelancer intermediary platforms: the locals, two for the price of one, the middle child and the global juggernauts. Locals focus on physical services that are dependent on freelancers' location. Two for the price of one are small platforms that charge only one side be it, seller or buyer. The middle child is very similar to global juggernauts in other aspects but the size and is a necessary phase in the platform's maturation. Global juggernauts are the biggest platforms and the industry leaders that have significant network and trust management systems in place. Archetypes form a solid foundation on which future research on freelancer intermediaries can be based on.

Keywords on-demand economy, 1099, precariat, platform economy, gig, sharing, freelancer, intermediary, platform, archetype, cottage industry

Tekijä Sampsa Suvivuo

Työn nimi 2010-luvun kotiteollisuus – freelancer-välitysalustojen vertaileva tapaustutkimus

Tutkinto Kauppatieteiden maisteri

Koulutusohjelma Tieto- ja palvelujohtaminen

Työn ohjaaja(t) Virpi Tuunainen

Hyväksymisvuosi 2018 **Sivumäärä** 112 **Kieli** Englanti

Tiivistelmä

Tutkimuksen tarkoituksena oli tunnistaa mahdollisia freelancer-välitysalustojen arkkityyppejä. Huolimatta kasvavasta kiinnostuksesta alustoja kohtaan, niiden luokittelu pysähtyy ylätasolle, kun alusta on tunnistettu esimerkiksi transaktio-, innovaatio- tai integraatioalustaksi. Tämä jättää kuitenkin kategorioiden sisäisen vaihtelun huomiotta. Kun huomioidaan nuorison kiinnostus yrittäjyyttä kohtaan sekä arviot alustatalouden koosta (4 300 mrd. $) ja freelancer-alustojen määrästä globaalisti (250-300 kpl), arkkityyppien tunnistaminen koettiin tavoittelemisen arvoiseksi.

Arkkityyppien tunnistamisella on sekä akateemista että käytännönläheistä merkitystä. Tunnistetut arkkityypit toimivat uusina tutkimuskohteina ja mahdollistavat mielekkään luokittelun alustojen välillä. Niille, jotka ovat kiinnostuneita välitysalustojen hyödyntämisestä joko lisätulojen tai palveluiden hankkimisessa, tutkimus tarjoaa kattavan kuvauksen alustojen taustalla vaikuttavista toimintamekanismeista ja ominaisuuksista, sekä mitä on odotettavissa.

Tutkimus suoritettiin sulautettuna (embedded) monitapaustutkimuksena, jossa tapauksia verrattiin keskenään. Tutkimusasetelma jätettiin joustavaksi (flexible), mikä mahdollisti tutkittavien muuttujien lisäämisen ja yhdistelyn tutkimuksen aikana. Tutkittaessa ajankohtaisia ilmiöitä monitapaustutkimus tuottaa yksittäistä tapaustutkimusta luotettavampia tuloksia yksittäisen tapauksen painoarvon laskiessa. Vertailevaan lähestymistapaan päädyttiin rippuvan muuttujan puuttuessa. Koska mahdollisista arkkityypeistä ei ollut tutkimustietoa saatavilla, tutkimus sovelsi ankkuroidun teorian (grounded theory) menetelmää luokittelun luomiseksi.

Tutkimus tunnisti neljä freelancer-välitysalustojen arkkityyppiä: paikalliset, kaksi yhden hinnalla, keskimmäiset lapset ja globaalit jättiläiset. Nimensä mukaisesti paikalliset välittäjät keskittyvät fyysisiin palveluihin, joissa sijainnilla on merkitystä työn tekemisen kannalta. Kaksi yhden hinnalla -välittäjät ovat kooltaan pieniä ja laskuttavat ylläpitomaksun vain yhdeltä käyttäjäryhmältä, ostajilta tai myyjiltä. Keskimmäiset lapset -välittäjät ovat hyvin samankaltaisia globaalien jättien kanssa kaikissa muissa suhteissa kuin koossa. Arkkityyppi toimii myös tärkeänä välipisteenä välitysalustojen elinkaaressa. Globaalit jätit -arkkityypin edustajat ovat toimialan suurimpia ja johtavia alustoja, jotka ovat panostaneet merkittävästi verkoston ja luottamuksen hallinnan ratkaisuihin. Arkkityypit luovat vahvan perustan freelancer-välitysalustojen myöhemmälle tutkimuksille.

Avainsanat tarvetalous, 1099, prekariaatti, alustatalous, keikkatalous, jakamistalous, freelancer, välittäjä, alusta, arkkityyppi, kotiteollisuus

Acknowledgements

I want to express my thanks to my supervising professor Virpi Tuunainen for introducing me to the wonderful world of platforms and network effects and for the guidance she provided for this thesis. I also want to thank my darling Vanessa Virtanen for the love and support during the writing of this thesis.

Table of Contents

List of Figures

List of Tables

1 Introduction

This work was inspired by two recently emerged megatrends. First being predicted fragmentation or transformation of the future's work life due to automation and digitalization, where lifelong careers are expected to be much rarer than on previous decades (Siltala 2016, 2017). This means that people have to change careers more readily than before or have several employers at the same time or operate as an entrepreneur on the side. The other trend is the increased importance of platforms. 60 of the world's 100 largest companies (by market value in 2007) earned most of their revenue through platform-mediated networks (Eisenmann 2010, 2). The size of the platform economy as a whole was estimated to be around $4 300 billion in 2016 (Evans & Gawer 2016, 10). Those interested in platforms have without a doubt heard the phrase "Today's biggest taxi company and hotel chain own no cars or hotels" many times or some other variation of it. When discussing companies such as Apple, Microsoft, Google or Amazon the term "War of the platforms" occasionally surfaces. In short, these companies among others are vying for supremacy on whose infrastructure is going to be used for everyday business and operations. While there are many kinds of platforms, the focus will be given for market intermediary or matching platforms. Classic everyday examples of these include online auction houses as well as job hunting and dating portals whereas more modern examples would be peer-to-peer lending sites and sharing economy companies such as Lyft and Airbnb.

While platforms and transformation of working life create the overall structure for the thesis, this work also touches upon the themes such as out-, crowd- as well as micro-outsourcing and sharing economy. An example of sharing economy could be Airbnb that allows people easily to find and rent empty rooms for travelers or platforms that make it easy to rent out your lawnmower when you don't need it yourself. The idea is that you share for a fee a resource that you own when you don't need it yourself. A common example of the gig economy, where you work for the company when you choose to, would be Uber or Lyft where people who own a car act as a taxi when they choose to. Examples like above are often seen in news articles as well as in academic journals. None of the above would function as well as they currently do without digital platforms. Judging from the Google trends search terms such as "side hustle", "additional income" and "gig economy" have been increasingly popular in recent years. Internet Labour Index that measures the number of open projects and tasks in English-speaking platforms has seen 27,4 index points increase since its inception on May 30th, 2016 (Internet Labour Index 2018). This goes hand in hand with increased writings about gig economy. People are looking for various ways to supplement their income with easy and convenient ways.

Crowdfunding and -sourcing are increasing in popularity for both businesses and private citizens alike. Crowdfunding makes every person a small-scale venture capitalist allowing them to invest into a product they want themselves or otherwise believe in before it is commercially available supporting the entrepreneur. Crowdsourcing is essentially outsourcing something for the crowd. An example would be Indiegogo. This is not a new phenomenon. In the 18th century the British navy already offered a considerable sum of money to the person who invents a clock accurate enough to be used at seas for navigation (Encyclopædia Britannica 2018). Modern day example of crowdsourcing would be Kaggle where companies can submit their data for everyone to see and study to gain insights into their own operations. At the biggest crowdsourced task can be coming up with novel ways to locate gold mines (case Goldcorp). News agencies operate in smaller scale collecting pictures from the field with platforms e.g. Scoopshoot that allow them to notify users that something has happened near them and if the user takes a picture of the scene they'll be monetarily compensated.

While digitalization and automatization decrease the price of commodities and services they at the same time take jobs from the middle class that has traditionally occupied positions in knowledge-intensive fields. This merits serious thinking since large and wellbeing middle class is seen as an integral part for public order and stable society. The middle class also carriers most of the tax burden and thus diminishing middle class will result in diminishing tax income. In this light, Bill Gates has suggested that robots should be taxed as if they were human employees (Morris 2017) while others are keen to point out that new technology creates new occupations to substitute for the ones it replaced.

In Finland, Juha Siltala has written about the diminishing middle class and in abroad Kenney and Zysman among others have voiced their concerns. They see that we're going towards the society of 19th century that is divided into owning class and working class. Their reasoning being that since machines work better and for cheaper than humans, the ones who own these machines or algorithms will become the owning class while others will be employed at service industry in occupations not too far from 19th century butlers, valets and servants. (Siltala 2016, 2017; Kenney & Zysman 2015, 2016).

In the everyday news, we see that in Finland there is a growing interest towards entrepreneurship among the younger population (Suomalainen 2016, 48-51). While the "Slush-phenomenon" is credited with much influence on the subject in Finland, other people theorize that since lifelong careers are no longer available in previously accustomed quantity, the young see self-employment as a better choice. Also, the traditional attitude of working for the sake of working is diminishing and

people want to do things that support their values or generate a positive impact on the world around them. (Greenstone-Miller & Miller 2012, Elance 2013, PWC 2014, Pew Research 2016). To cater to these needs, services such as OP-Kevytyrittäjä, Ukko.fi and eezy.fi have sprung up in recent years. These are so-called "lightweight entrepreneur services" where the company handles the necessary bureaucracy required to run a business such as VAT and pension payments. Essentially, they are a service for people who want to work for themselves but are not interested in or capable of running the necessary bureaucracy required of the company.

While it would be somewhat arrogant to state that platforms enable all the above, we can assuredly say that platforms facilitate it. Thus, this thesis will serve those interested in platforms that connect buyers and sellers of knowledge-intensive services. It will also give insight for those interested in supplementing their income or generating a portfolio for themselves in the freelance economy or who are interested in the implications for the society.

1.1 Research objective

The objective of this thesis is to find out what are the **archetypes of platforms that act as an intermediaries between freelancers and buyers.** Essentially, the study aims to identify clearly defined subgroups of intermediary platforms brokering freelancer services on labor platforms. As a byproduct this will create information that will help to recognize the most appealing platform for both buyers and sellers, which might be the same or two different platforms.

To answer the question, three auxiliary questions were set. Firstly, the internal workings of platforms had to be understood to compare working mechanisms and strategies of different market intermediary platforms:

How freelance market intermediary platforms operate and create value for all sides?

To answer this, I'm taking a look at platforms and platform economy as well as the emerging industry of connecting freelancers. Helpful questions will be, are there differences in business models or strategies and are the platforms even competing against each other and if so what is their competitive advantage? General practices and policies of these platforms will also be of interest. The other question I'm seeking an answer to is:

What drives people into becoming freelancers in the on-demand economy?

This will be examined mainly in literature review since lots of both academic and journal writings on the matter are available. However, I'll supplement the presented literature with my own findings regarding the platforms. The helpful question will be, is there clear demography or educational background in either buyers or seller side. From this we can also try to infer, does the supply of freelancers influence the demand or vice versa (which services are in demand). Thirdly I'm aiming to find out:

Are there winner-take-all dynamics in place?

Because of the conditions necessary for winner-take-all -dynamics, its presence or absence with freelancer intermediary platforms serves as a good measure for quantifying the different type of platforms. Are there platforms that seem to be exempt from these dynamics or do they affect all equally? Ascertaining presence of the winner-take-all -dynamics has also meaning for the secondary objective. For both sellers and buyers, it makes sense to evaluate if the platform will lose and disappear. This is because many platforms have rating systems in place. Thus, it requires time to create trust, recurring customers and reputation. This is important as some platforms require the freelancer to start with smaller, easier and less well-paid gigs. To answer this, I'll resort to the basic theory of winner-take-all -dynamics such as multi-homing costs.

1.2 Research Gap

Though there is currently lots of interest towards platforms, I was unable to find a study comparing different freelancer intermediary platforms (ProQuest database yields only 33 hits with 'freelancer'). Also, currently it seems that we are happy to classify something as an intermediary platform and stop there (Llewelllyn et al. 2014; Hálen et al. 2016; Evans & Gawer 2016). I wanted to go deeper and find if there are subcategories within market intermediary platforms. Given the young population's interest towards freelance work, I deemed it beneficial to study these in greater detail.

Freelancer platforms have not had very much of attention from academics and the studies are either single case studies or overall takes on the emerging industry (Evans & Gawer 2016; Pew Research 2016) losing sight of the details. This study positions itself at the middle, considering more than one platform but still limiting itself within one aspect of the platform economy. Estimates on the number of various freelancer or workforce platforms range between 250 (Wald 2016) and 300 (Evans &

Gawer 2016, 10-11). However, how they do business has not been studied and comparisons between them have not been done save for news portals and blogs.

1.3 Structure of the thesis

The structure of the thesis is following. In chapter two, key trends, concepts and theories for this thesis will be presented. The chapter is divided into two parts. The first part will familiarize the reader with the basics of the platform economy, platforms' functionalities, features and strategies. At the same time, the reader will be introduced to the works of some of the most prominent authors in the field. The second part will go through how robots, automatization and digitalization disrupt the work life and the perceived shift in the attitudes towards working of the young population. The part is based on articles from journals such as Harvard Business Review and Forbes, as well as census statistics, national surveys and companies' white papers.

Chapter three focuses on the methodology and presents the reader with the rationale behind the selection of cases and chosen methods for gathering and analyzing the data. The chapter will also include a description of the study's phases and any commentary on issues that arose during the research. Chapter four is reserved for analyzing findings and results while final conclusions and evaluation of the study's pros and cons, as well as evaluation of reliability and practical implications and need for further research, are given in chapter five.

2 Literature review

In this chapter, I'll present the reader with the two main themes of this study. Features of a platform and disruption of work. The first half is reserved for the basics of platforms such as their components as well as forces and mechanisms affecting their function. Market intermediary platforms will be given the main focus. Finally, the platform economy is explained and then supplemented by various platform and multisided market strategies including winner-take-all dynamics.

By 2018, it can be taken at face value that digitalization and automatization, in addition to globalization, are transforming the nature of work. Thus, these will be discussed only briefly and more space will be given for other megatrends such as the shift in the attitudes towards work and its meaning for the young and the forces that drive people into participating in the freelance economy. The first half will also include some critique towards platform hype and on-demand economics

implications for society. Whether for good or bad, term cottage industry seems to describe the future quite well.

In popular literature, machines making people redundant has been present for quite some time. For example, Kurt Vonnegut's first novel "Player Piano" published in 1952 envisioned a future where everything was abundant, but also a steep class divide between creative elite and the underclass. A more management style approach has been taken by Bill Davidow with his book "What Happens to Society When Robots Replace Workers?" One important aspect of the 4th industrial revolution is left outside the scope of this thesis. What will the humans do if machines do everything?

2.1 How platforms differ from pipelines

There are many definitions for a platform be it digital or more traditional like Visa. To put it simply: a platform is a meeting place for two or more groups. In their report, Evans and Gawer approximate the size of the platform economy to be $4 300 billion (2016, 10). However, this number includes platforms outside of the scope of this project such as computer operating systems and platforms such as General Electric's Predics that connects their 40 different products or IBM's Bluemix. However, in 2014 nine USA based platforms (Google, Apple, Intel, Amazon, Yahoo!, Facebook, eBay and Salesforce) were awarded 11 585 patents (Evans & Gawer 2016, 4). Accenture's report from 2017 also notes that 70 % of the so-called unicorn companies are platform businesses (Accenture 2017,37). In short, platforms capture value by decreasing search and/or transaction costs (Hagiu 2014, 72). Already in the 2010 paper, Eisenmann states that 60 out of the 100 world's largest companies earned half of their revenue from platform markets (2010, 2). Hálen et al. (2016, 14) have defined *digital platform* the following way:

> *"Digital platforms mean information systems and their common principles which allow different agents – users, providers and other interest groups – together generate added value over the organizational boundaries. It is typical for the platforms that different agents create, offer and maintain products and services that complement each other's offerings in different channels and markets within common rules and user experience. Platforms typical feature is to indent and attract different actors by the economic benefits of network effects"*

When discussing companies utilizing platforms and traditional companies, the later are described as pipeline companies. This means that they operate as a part of a linear value chain that goes one direction from start to finish e.g. they either receive or buy resources from an agent earlier in the chain, create value and sell it to the next agent in the chain or for the consumer. Unlike traditional pipeline businesses that operate on supply-side of economies of scale, platforms utilize demand-side economies of scale. This means that instead of benefits being derived from the size of the company the utility increases as the number of users increases, in other words, demand. (Parker et al. 2016, 14-17). The main difference between pipeline and platform companies has been depicted in figure 1 below.

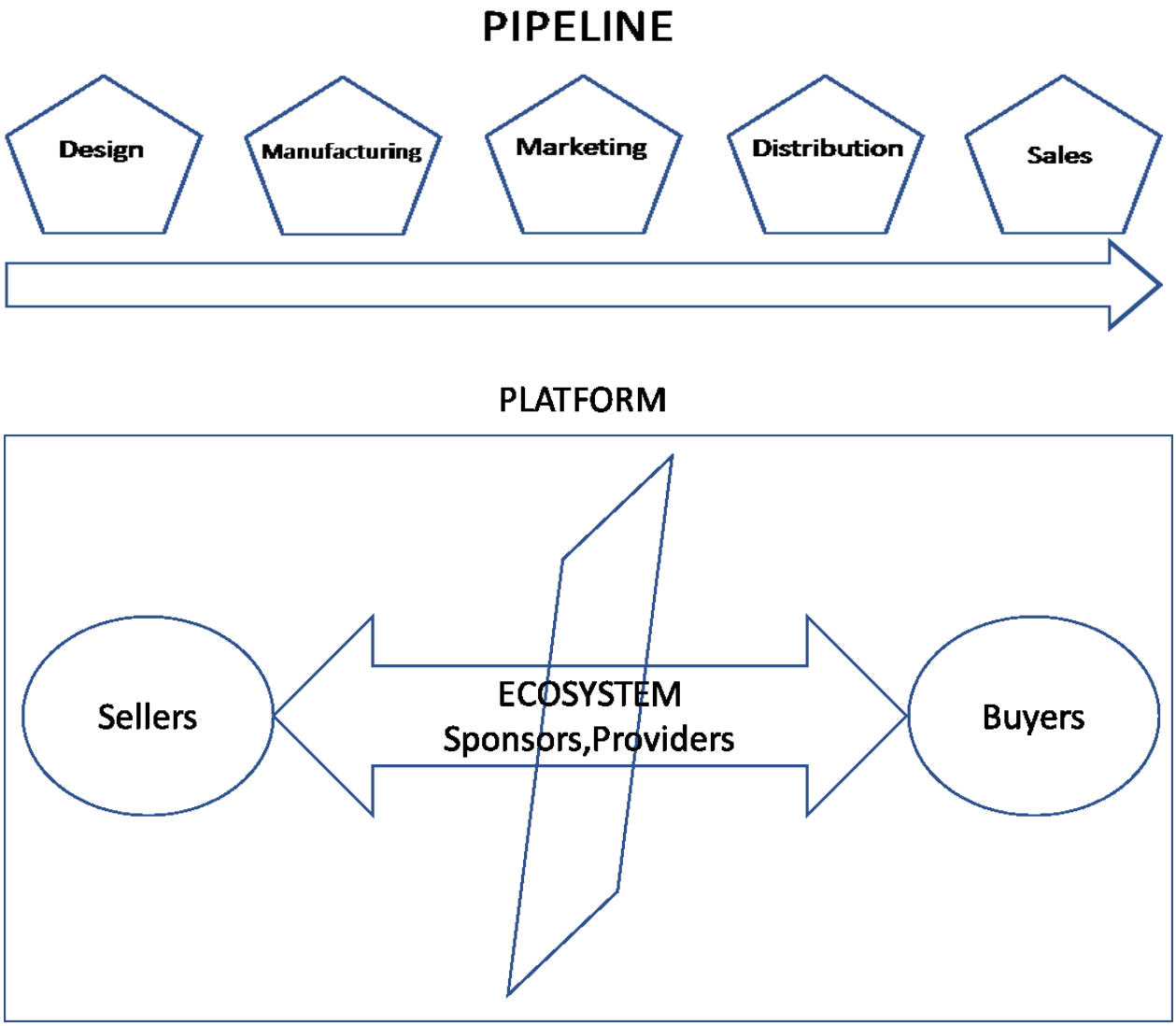

Figure 1 Pipeline and platform

In her graduate thesis, Sorri presented 10 differences between pipelines and platforms. Platform ecosystems' must be tolerant to change whereas pipelines are described as parts of the supply chain and are thus more rigid. Platforms can outcompete their traditional competitors with their better data. Pipeline businesses have had CRMs in place for years, yet still struggle to understand their customers, while platforms can utilize tools such as multisided network analysis. Platforms often target overlooked products or service segments where incumbent companies are slow to react. Monetization and capturing value are also very different. A pipeline company must price its services above its costs, but a platform must often subsidize one side and accept having a loss-leader. The number of market sides is also different. Pipelines are concerned with lean processes and just-in-time –inventories and the process usually flows in one direction. Platforms de-link ownership lowering barriers of entry and prices. Roles remain often unchanged in pipelines; one produces value and other consumes it. Within platforms, this role can change many times within a single day. Pipelines succeed by optimizing the economies of scale while platforms succeed by optimizing demand-side economies of scale. The structure is also very different between the two. Pipelines create value in the linear process, step-by-step. Platforms create value in the value matrix. Trust is more important for platforms than pipelines because platforms connect parties that may have never met each other. Value creation and consumption are the final differences. Pipelines want maximum value for themselves whereas platforms create and share value with all participants. (Sorri, 2016, 10 - 20).

Table 1 Platforms vs pipelines (adapted from Sorri 2016, 10)

Feature	Platforms	Pipelines
Change tolerance	Tolerant	Rigid
Data reliance	Shine	Struggle
Disruption	Fast	Slow
Monetization	Subsidize	Cost prizing
Number of sides	Many	One
Roles	Shifting	Rigid
Scale	Demand-side	Economies
Structure	Matrix	Linear process
Trust	More important	Less important
Value creation and capture	Share	For itself

As always with generalizations like these, I believe that the listing above (table 1) is not 100 % accurate but gives the reader an overall idea about the key differences between platforms and pipelines.

According to Parker et al. research, platforms tend to emerge where: products are information-intensive, non-scalable gatekeepers are present, industries are highly fragmented and information asymmetry is extreme. As an example of non-scalable gatekeeper, authors use retailing and publishing (buyers, inventory managers, editors). For fragmented industries platforms provide a single source to sell and buy saving both parties' time. (Parker et al. 2016, 283-284). Even if the platform serves several different groups, there are only four principal segments within a platform.

- end users (buyers)
- complementors (sellers)
- providers (infrastructure)
- sponsors (rules). (Eisenmann et al. 2008,1).

The first two are easy to grasp. End users are the ones to make a purchase through a platform while complementor is the one doing the selling. This can be labor, crafts or digital applications, for example. The provider is the party responsible for the technology i.e. the infrastructure of the platform. Sponsor is in charge of developing the platform and its governance policies. Sponsor and provider are often the one and the same entity, but not always. According to Eisenmann et al., the sponsor will prefer proprietary systems to seek rent and will change the system only when there is significant pressure from competitors or users side wanting to avoid lock-in or when the platform is being commoditized. (Eisenmann 2008, 10). If we think in terms of "historical interconnection agreements" the roles would be the sender, sender's carrier, recipient's carrier and the recipient. (Shapiro & Varian 1999, 246).

2.2 History of platforms

Platforms are, by no means, a new thing. Instead, they are one of the oldest things in human history. This applies especially to market intermediary platforms. Think about traditional markets that have existed since ancient times and before. Both market and a platform bring sellers and buyers into the same space. Even if the process is nowadays mostly digital, the principle is the same. Buying and selling is easier and more efficient where more buyers and sellers gather. Many of these markets were

controlled, and still are, by cities or other authorities, thus furthering people's confidence in fair pricing and quality of goods. The fact that the nature of markets (platforms) has stayed the same until today can be seen as a testament to the importance of the markets.

For the most part of the last millennia in Europe, town privileges or city rights played an important role in commerce. Being juridically separated from the rest of the countryside, towns enjoyed special rights such as the right to hold a market, to engage in international trade and to establish guilds. Towns could control, who could sell wares at the market while guilds often strictly controlled who could practice trade governed by them. Towns could have (and still do) various specialized markets such as fishers market governing many different platforms. Thus, towns have acted as sponsors i.e. as those who decide how the platform is governed for a millennium.

According to Hálen et al. literacy on platforms and platform economy has evolved in three waves during the 20th century. In the first wave "platforms" or "product platforms" were terms used to describe new product and service families that served as a foundation for further product development. This kind of thinking has not really vanished as BMW's UKL platforms shows. The UKL is basically a modular frame on which many different models can be built upon. During the second wave, platform as a term evolved into describing a control point for an industrial value network such as Windows operating system. Finally, in the third wave, we arrive into the definition used in this thesis as platforms are seen as intermediaries and marketplaces between various interest groups for trading services, commodities and forwarding payments. (Hálen et al. 2016, 12).

2.3 Platform components

In this subsection, the standard features, sections and dynamics that can be found in platforms are presented. Intermediary platforms don't create the goods and services but enable the exchange of them via their network. Platform ecosystem canvas below (figure 2) by Technical Research Centre of Finland illustrates the eight fundamental components of a platform.

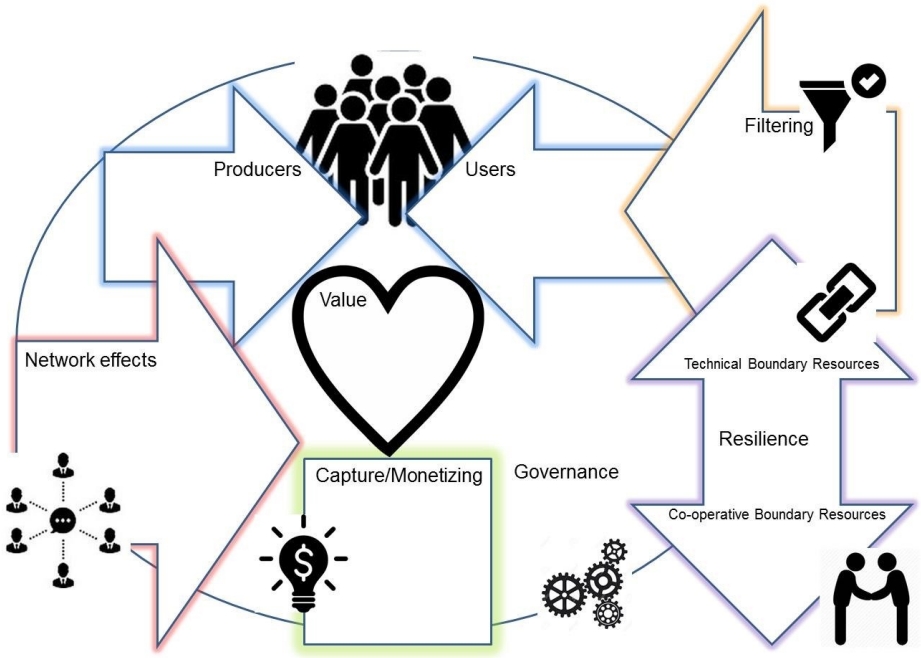

Figure 2 Platform ecosystem canvas (VTT 2017).

Following subsections will examine network effects, multisided markets (producers, users, value and its capture), boundary resources, governance and openness. When talking about content curation, this study is referring to filtering.

2.3.1 Network effects

Network effects are not new in the field of economics and have in fact been present since the telephone began to spread. The idea is that the more there are agents participating in the network, the more useful the network is. For example, being able to call 200 people has more utility than being able to call six. There are two sides in network effects, same-side (direct) and cross-side (indirect), which results in both positive and negative effects. Quite intuitively, same-side effects are the benefits that are caused by having lots of users belonging in the same group as you. Likewise, the cross-side effects describe how people on the other group(s) influences the other group(s). (Parker et al. 2016, 29; Hagiu 2014, 72). More services and complementary products become available when groups grow. In short, participants can expect more gain or utility, the more there are participants on the other side (Caillaud & Jullien 2003, 309-310).

A popular example in the literature of positive same-side effects are the gaming consoles. The more there are players, the more interesting the console i.e. the platform will be for the developers. However, there are instances when having too many individuals in a group can have adverse effects for the group and maybe for the whole platform. Having too many agents in one group will make it difficult to find the right match for either group thus decreasing value for everyone. This is similar to the situation where you have a too wide selection of yogurt at the supermarket and become confused and end up making a perhaps suboptimal choice because you have limited time.

Cross-side effects follow the same logic. The more there are people on the other side i.e. buyers, if you are selling, the more attractive the platform will be for you. As one can infer, negative effects is the opposite situation, where groups are unbalanced, and enough connections cannot be made between them or the search cost is very high. Positioning the platform just right between these effects is a constant balancing act. Same- and cross-side network effects are summarized in the table 2 below.

Table 2 Network effects

	Positive	**Negative**
Same-side (direct)	Increasing users will ensure that other parties will also show up	Increasing users will decrease the appeal for same side users
Cross-side (indirect)	Increasing users in one of the groups create value for other groups	Increasing users in one of the groups decrease value for the other groups

Shapiro and Varian noted in their 1999 book that driving force behind information economy is the economics of networks and positive feedback. In short, positive feedback means that success breeds more success (making strong stronger and weak weaker) while the value of the network depends on how many people already belong to it. They also note that network externalities were not a new thing in the 1990's but instead were used in communication and transportation industries by companies such as postal service, railroads, airlines, telephones and courier services. (Shapiro & Varian 1999, 173 – 175).

To be put succinctly, network externalities mean that a larger network is more attractive than a small one. Shapiro and Varian differentiate between real networks such as transportation and virtual networks such as "mac users". Externalities themselves manifest when an individual or a company

affects others without any payment being made. A popular example of an externality is pollution. Sewage from one factory can spoil the whole community's water reservoir or pollution cause the air quality to drop. However, externalities can, and often are, be positive. The spread of telephones or fax machines are classical examples. When one buys either of the former, he grows the network thus increasing its value.

When assessing the value of a network, Metcalfe's law (or a rule of thumb as per authors) can be used. It states that networks value is proportional to the number of other users. From this, network's total value for all users can be derived as following: n * (n-1) = n^2-1. Going by this rule, increasing networks size tenfold yields hundredfold increase in value. (Shapiro & Varian 1999, 183 - 184).

Metcalfe's law is but a one attempt to quantify network's value. It can be criticized for its straightforwardness as it doesn't consider issues such as language barrier that might prevent the nodes from associating with each other. It is, however, good in evaluating the value of technical machines such as telephones and faxes. Other attempts with different emphasis are Reed's, Sarnoff's and Beckstrom's laws. However, these are just mentioned here as a comparison between these four would constitute a thesis of its own. Here I believe that it suffices to say that value of *relevant* i.e. people I personally know on Facebook and *aggregate* (all users of Facebook) network are two different issues (Boudreau & Hagiu 2009, 9).

2.3.2 Multi-sided markets

Commonly the case with the platform is that it serves different (distinctive) groups of people i.e. is multisided. There are three main characteristics describing multisided networks according to Hálen et al. (2016, 13).

1) It serves two or more groups or customer segments
2) There are same-side (direct) and cross-side (indirect) network effects between segments
3) The market is controlled by a third party

Thus, the distinction between one- or two-sided markets is tied to roles and platform is multisided if there are more than two different groups. For example, participants in the stock market or an auction site, change between roles of a seller and a buyer and form a homogenous user group i.e. one-sided market. (Eisenmann et al. 2008, 3). If one only buys or sells, sends or receives i.e. credit cards (merchants and cardholders) or video games (developers and consumers), we are talking about the

two-sided market. Very short yet useful description of the two-sided market is offered by Anderson and Coate (2015, 4) who state that market is two-sided if participants care about the number of participants on the other side and bilateral network externalities are in place.

Parker and van Alstyne state in their 2005 article that Coase theorem, which states that buyers and sellers will bargain their way to efficient trading volume as long as property rights are clearly defined and there are no transaction costs or information asymmetry, does not apply in the case of two-sided markets. This is because user groups themselves create value for the other group. (Parker & van Alstyne 2005, 4). However, Rochet and Tirole have shown that even if Coase theorem doesn't apply, it doesn't automatically mean that the market is two-sided (Rochet & Tirole 2009, 646). Rochet and Tirole have defined two-sided market more mathematically. By their definition market is two-sided if:

1. Platform charges buyers a^b and sellers a^s.
2. The market is one-sided if transaction volume depends only on an aggregate level $a = a^b + a^s$
3. In other words, is insensitive to reallocations between buyer and seller.
4. The market is two-sided if transaction volume varies when changing one argument and keeping the other constant.
5. In other words, the market is two-sided if the platform can affect the volume of transactions by charging more on one side and giving an equal discount to other. (Rochet & Tirole 2009, 648 - 665).

Networks generate three kinds of value: curated content, access to value and community/market and low search cost (Parker et al. 2016, 129,138). Curating content has three tasks: keeping connection within network active and useful, minimizing negative interaction i.e. in case of social networks and finally making sure that platform's participants find each other. In a case study of Facebook, restricting access in the early days of the company, proved to be an effective way to ensure relevant connections. (Boudreau & Hagiu 2009, 11-10).

2.3.3 Boundary resources

Like the name implies, "Boundary resources" are resources such as regulations and tools that operate on the boundaries of the platform and enable third parties to interact with it (Ghazawneh & Henfridsson 2012, 175). These resources allow third parties to produce content for the platform or to

utilize the platform's content thus promoting it, expanding its reach and generating more revenue. Software tools are generally referred to as software development kits (SDK) and application programming interfaces (API).

As an example, SDKs are vital for the game industry as these allow various independent vendors to develop products for various consoles. Game companies can also publish SDKs for their own games enabling the community to create their own modifications to the game. APIs are as important but serve a different function. Unlike SDKs that allow one to build complete applications, API "only" enables interaction between other systems. For example, showing weather reports or stock quotes on your own webpage or application. When talking about platform's architecture, APIs are important in mediating between platform's core and its complements. For example, at first Apple tried to produce enough content (apps) for the iPhone and Apple Store itself, but soon realized that opening its API for third parties would result in wider product range.

APIs, licenses and other software tools and rules are a way for a sponsor to control the platform and an integral part of the platform economy. However, they are of limited importance for this thesis. The reason being that studied market intermediary platforms hardly seem to utilize them at all.

It should be noted that boundary resources are not always within platform's control but owned by ecosystem's participants. Boundary resources also include design and architectural decisions as well as choosing used standards. (Karhu 2016, 18).

In their article, "Value Creation in digital Application Marketplaces" Ghazawneh and Mansour reported that payment handling plays a critical role in the selection of the platforms. Even if the platform was trustworthy and processed payments accurately, but if this is done only once a month or not on time developers tend to avoid that platform. (Ghazawneh & Mansour 2015, 9). While they studied developers, it agrees with common sense that sellers/freelancers will also put great emphasis on how the payments are handled and if the platform is trustworthy.

2.3.4 Governance and openness

Platform's openness refers to how accessible it is for the third parties. When making decisions regarding openness, the sponsor must consider the trade-off between adoption and appropriability. When the platform is opened, it eases users' anxiety of lock-in and thus stimulates the production of different goods. In other words, users adopt the platform. However, opening the platform also means that switching costs become lower thus fostering inter-platform competition, which will the make

rent-seeking more challenging. The platform may be called “open” when there are no restrictions in place to prevent participation, development or use. This is an ideal situation, but when restrictions are reasonable and non-discriminatory, the platform can also be called open. It should be noted, that various roles such as provider (infrastructure) and complementor (seller) can be either closed or open. (Eisenmann et al. 2008, 1).

Governance rules fall into two categories. Rules that regulate access to platform i.e. who is allowed in and rules that regulate interaction within the platform i.e. what sides can do with each other. (Hagiu 2014, 76). Eisenmann et al. conclude in their article that both proprietary and shared platforms will be pushed towards a hybrid model where platform technology falls under central control, but responsibility for serving customers is shared (2008, 23).

Table 3 Models for platform governance (adapted from Eisenmann et al. 2008, 5)

		Provider role, technology/infrastructure	
		One company	**Several companies**
Sponsor role, controls	**One company**	Proprietary Game consoles	Licensing Palm OS
	Several companies	Joint Venture CareerBuilder	Shared Linux

The 2x2 table 3 above adapted from Eisenmann et al. describes the four possible combinations of openness a platform can have. In proprietary platforms such as eBay or Nintendo Wii, one company acts as a sponsor and a provider whereas in the shared platform (e.g. DVD, barcode, Wi-Fi) there are several companies acting as sponsor and/or provider competing with each other with different products and services that all conform to the same standard. Between the proprietary and shared platforms lie the hybrid models of the joint venture and licensing. The joint venture has one provider but many sponsors whereas licensing platform have many providers but one sponsor. (Eisenmann et al. 2008, 4-5).

Kimmo Karhu presents more rudimentary categorization into openness. Giving access to complementors and giving up the control. The first one is an API approach described previously. The other is open sourcing the platform or its parts. (Karhu 2016, 18). Balancing between control and

openness is often difficult. Openness increases platforms' attractiveness for third parties, thus fostering innovation and design capabilities, while controlling ensures platforms compatibility and reduces the least common nominator issue. (Ghazawneh & Henfridsson 2013, 185; Eisenmann et al. 2008, 9).

Strategic issue for open platforms is free-riding. For example, in online open-software communities, there are users who benefit from other people's work but don't themselves contribute their own work or otherwise help others. Behavior like this can be categorized as commensalistic or parasitic depending on its harmfulness. (Karhu 2016, 19).

2.4 Types of platforms

Platforms can be categorized in many ways and saying which way is better than the others, is a vain effort as these categorizations serve different needs. A common way to approach the matter is to divide platforms into categories depending on to whom or what for the category is made for i.e. by their function or structure. Perhaps the simplest classification I came across in my research was in Pew Research's report. In this report, they simply classified platforms as either labor or capital platforms. In labor platforms, users sell their time and skills whereas in capital platform users either sell their possessions or rent them (Pew Research 2016, 4).

Another simple yet powerful distinction we can make is to look at the governance structure of the platform. For example, shared platforms such as Wi-Fi, DVD or barcode are open to anyone to utilize in their own products. Sharing has many benefits as others can adopt technology easier thus growing the ecosystem. It also helps to avoid costly winner-take-all standards battle. The benefit of the proprietary platform is being a big fish in a small bond and enjoying greater profits and control. Naturally achieving this position requires outcompeting others or being one of the few companies as is with the game console business. Differences between platform governance models were considered in greater detail in previous subsection Governance and openness.

Hálen et al. classified platforms (table 4) based on their number of sides and whether or not they operate on push or pull basis (2016, 18).

Table 4 Platform classification by Halen et al. (adapted from Hálen et al. 206, 18)

Pull **Free competition**	Open platforms Alibaba	Innovation platforms Apple Store
Push **Customer monopoly**	Intermediary platforms Airbnb	Integrative platforms Travel industry
	Two-sided market	**Multisided-market**

According to Hálen et al., open platforms operate in an environment that is closest to open market economy. Any party is free to utilize free resources and capital to create new products and services. In these platforms, no one "owns" the customer. Innovation platforms aim to attract and to indent many different actors by offering network effects, common rules and user experience. An example of this is the Apple Store which was founded after Apple realized it couldn't satisfy the demand by itself or utilize the iPhone to its fullest extent alone. (2016, 19).

Integrative platforms are aptly named. These platforms create packages by collecting products and services provided and maintained by other parties to offer packages for its own customers. Travel agencies offering package deals are a simple example of this. A package might include flights, accommodation, logistics at the destination and some entertainment. This example already integrates services from four different companies and if we add insurance and various other things, the amount of companies included grows quickly. Intermediary platforms are quite simple in Hálen et al. report. They are helping the buyer and seller find each other more easily thus increasing market effectiveness and in Airbnb's case help to tap into under- or unutilized resources. These are the platforms that are of interest to this thesis.

In their book "Platform Revolution" Parker et al. refer to Deloitte's fairly recent categorization of companies into asset builders that develop and deliver physical goods, service providers, tech creators that create and sell all kinds of intellectual property from software to biotechnology and finally into network orchestrators where companies and people create value together (in essence, a platform) (Parker et al. 2016, 44). This classification doesn't go as much into detail with platforms as other examples shown in this chapter but showcases that platform companies are now regarded as one of the major company types.

Perhaps the most extensive work on classification has been done by Llewellyn et al. (2014). They categorize the platforms based on their literature analysis into four "streams." These streams were labeled as platform ecosystems, market intermediaries, product families and organizational. They also recognized a fifth platform that they named "General technology stream". However, they didn't develop it further as it doesn't directly fit into the notion of the platform. By general technology, they mean general-purpose technologies where new designs are built on core technologies that both foster and inhibit innovation. An example of this would be a 4G communication standard that is a basis for many applications. It began with 1G and 5G is next in line. Because the technologies used to build and maintain platforms are outside of this thesis's scope I will not look further into this stream.

According to the organization stream, an organization is a platform that consists of core competencies, organizational knowledge and dynamics capabilities that can be either lower order (routines that support day-to-day operations) or higher-order (reorganization of lower-order) capabilities. Thus, a platform is operating by combining capabilities and resources rapidly and flexibly, to address changing situations. (Llewellyn et al. 2014, 201-202). Product family stream has its roots in engineering and is the oldest of the streams. Its domains are product development and innovation, modularity, mass customization and architectural innovations. It has three different platforms: scalable, generational and modular, out of which the modular is most popular. (Llewellyn et al. 2014, 202-203).

The focus of this thesis is on market intermediary platforms that connect two or more groups of producers and sellers. It has its roots in the credit card industry where researchers were interested in multi-sided markets, network externalities and competition. These platforms don't claim ownership of the products but act only as a bottleneck removing intermediary. (Llewellyn et al. 2014, 203-204). Final of the four major streams is the platform ecosystem. Here a platform is either a bundle of components, separate pieces of technology or subsystem of evolving technology. This stream puts a lot of emphasis on architecture design, interface and modularity. (Llewellyn et al. 2014, 204-205). Four streams have been collected in the table 5 below.

Table 5 Platform literature streams (Llewellyn et al. 2014)

Organizational	Product family
Intermediary	Ecosystem

Evans and Gawer separate platforms in a way shown in table 6 below. Transaction platforms are essentially identical to intermediary platforms presented above. Authors define them as technologies, products or services that act as intermediaries between buyers and suppliers. Innovation platforms are loosely organized around one product or technology and operate by developing complementary technologies. Their definition of integrative platforms matches Hálen et al. definition in a sense that integrative platform is a mixture of transaction and innovation platform. Investment platforms act as holding companies and possibly active investor as well. Their operations are centered around the platform portfolio strategy. (Evans & Gawer 2016, 9).

Table 6 Platform categories by Evans & Gawer (Evans & Gawer, 2016)

Transaction	Innovation
Investment	Integrated

As we can see from classifications above, there is not "the right way" to categorize platforms, but even still certain types emerge time and time again. One being the intermediary/transaction type that this thesis is interested in.

2.5 Platform economy

Even if there is growing interest towards platforms, the terminology is not yet established. Because of this, there are several terms that are easily mixed. Sharing economy, on-demand economy, gig economy, 1099-economy, precariat or creative economy (Hálen et al. 2016, 15; Kenney & Zysman 2016, 62) are frequently used terms that have a different meaning, often serving the users agenda. To keep the structure clear, term on-demand economy is preferred when referring to the phenomenon. This is because I feel that this term describes the phenomenon the best while being devoid of emotional charge. The whole idea of workforce marketplaces is buying the skills and labor when you need it i.e." on-demand." Precariat or gig economy have somewhat negative connotations.

In their survey, Evans and Gawer noticed that biggest platforms are mainly found in Asia and USA when selection criterion was 800 $ million-dollar net worth, China taking the lead in numbers with 64 platforms (N. American listing consists of 63 USA, 1 Canada). While most platforms are private, public platforms are often remarkably bigger than private. (Evans & Gawer 2016, 10-11). It should

be noted that the over $ 4 300 billion estimate of the size of the platform economy is based on companies that have over $ 800 million net worth and thus excludes smaller companies. The estimate also includes platforms such as Windows or iOS that are not intermediary platforms. Estimates of number of companies and their market cap are shown in table 7 below.

Table 7 Platform companies by region (Evans & Gawer 2016, 10).

	Number of platforms	**Company market cap (Bn)**	**Employees, FY**
N. America	64	$ 3 123	820 000
Asia	82	$ 930	352 000
Europe	27	$ 181	109 000
Africa & L. America	3	$ 69	27 000
Grand total	176	$ 4 303,00	1 308 000

Pew Research report from 2016 states that 24 % of Americans earned money in "digital platform economy" during 2015. These results are not directly applicable to this thesis as only 8 % earned money in the on-demand economy while 18 % earned money by selling items online. (Pew Research 2016, 10). There is, however, a stark distinction between two groups identified by the report. While extra income earned on platforms is a good supplement for one group's income or "a luxury" as the report puts it, it is a necessity for the other group (Pew Research 2016, 1).

A further indication that freelancing economy is gaining traction can be seen in Forbes' article stating that "Freelancer Management Systems" are becoming more popular alongside with vendor management systems. The article also notes that there are currently over 250 unique marketplaces for freelancers as of the end of 2016, so this is not surprising. (Wald 2016). Some other sources have estimated that the number is already as big as 300 (Evans & Gawer 2016, 10-11).

2.6 Platform strategies

Maybe the most pervasive and pressing strategic issue for intermediary platforms is the chicken-or-egg problem. You can't attract buyers without sellers and vice versa, but to attract the one group the other has to be in place already (Hálen et al. 2016, 17). Because of this, platforms often subsidize one side of the market. Or it might be that using the platform is free, but the platform takes a commission

of every transaction. A classic example of this is the credit card industry. This has also been called a "divide-and-conquer" approach. However, if the platforms are nonexclusive, dividing is easy but conquering is hard (Caillaud & Jullien 2003, 310). In the literature "Ladies night" used by bars is a popular example of subsidizing one part of the network. In this case, the underlying logic is that if there are lots of women, then there will be lots of males willing to pay premium for their own drinks. After the platform has been mobilized, maintaining balance and appropriate size between groups in respect to each other is a constant balancing act.

According to Hagiu, the four basic units of platform strategy analysis are: number of sides required, design choices, pricing and governance. While it is easy to think that having more sides or groups equals with increased network effects and thus increased revenue and diversified products, the risk lies in increased complexity. When the number of groups increases, accommodating various interests becomes increasingly difficult. It is also possible that groups cannot exist independently in an economic sense. (Hagiu 2014, 72). Often used example of this is the symbiosis between game console manufacturers and game developers as producing consoles alone is not profitable.

Part of the chicken-or-egg problem and overall platform management is to decide which side(s) to subsidize and which not. Rochet and Tirole wrote in 2003 that quite often one side makes the profit while the other acts as a loss leader or is at best neutral (2003, 991). Bertrand price competition is where both firms lower the profit of one segment to zero because they can use the group to make money on the other side. In their paper, Van Alstyne and Parker state that it is profitable for companies to give products for free i.e., in this case, let one user group in for free, if increased demand in premium group covers the cost. (Parker & van Alstyne 2005, 10).

According to Boudreau and Hagiu, platforms' strategic scope is wider than pipeline companies'. Technology, pricing and product design are not enough to formulate a strategy as what happens and doesn't happen in the network is also important because intermediary platforms are about interaction. By controlling access, the sponsor acts as a de facto bouncer exercising "power of exclusion" and by controlling what can occur within the platform, the sponsor also controls interactions. (Boudreau & Hagiu 2009, 7). Boudreau and Hagiu propose a simple two-step approach as a framework to start building a platform: 1) maximizing value created for the ecosystem and 2) maximizing extracted value. (2009, 26).

In addition to price instruments, multi-sided platforms can also combine legal, technological, informational, design and various other instruments to implement their strategies. Technology and design used by platforms can also be seen as a way to implement "laws" and design rules. According

to Boudreau and Hagiu, platforms regulate access to the platform and interactions within the platform and recognize four non-price levers: firm boundaries, internal organization, product technology, and relationship with participants (2009, 2). They also note that succeeding in pricing correctly does not guarantee the platform's proper functioning. Because platforms act as a focal point and a private regulator and have asymmetric one-to-many relationships with its sides, issues such as technical standards and interfaces, rules and procedures, provided support and documentation, to name a few, have an impact on the sides. (2009, 4).

Like Bourdeau and Hagiu, Shapiro and Varian also state that traditional strategic tools are of little use due to the positive feedback loop of networked markets (Shapiro & Varian 1999, 261). They name seven key assets in a standards war, but not all of them are relevant for this thesis: 1) size of user base, 2) intellectual property rights, 3) ability to innovate, 4) first mover advantage, 5) manufacturing abilities, 6) strength in complements and 7) brand name and reputation (Shapiro & Varian 1999, 270 - 272). They name pre-emption or "vaporware" as a means of preventing others from expanding or moving in on one's market share. It means announcing a willingness to enter into price war should the other party enter the market or that you have plans for a similar product or service. If this makes the other party drop its plans and the company making the announcement never releases the said product, it is called vaporware. (Shapiro & Varian, 1999, 273 – 276). For example, IBM got itself into trouble with regulators in the past due to excessive use of announcements that didn't materialize.

Multi-homing costs are costs incurred by the user when several products that serve the same purpose are used in parallel e.g. paying two gym memberships at a time. These costs are not only monetary but often have to do with increased complexity and redundancy e.g. having a personal and a work phone, having to learn to use iOS after transitioning from Windows. (Hálen et al. 2016, 18). Multi-homing also creates price competition as platform sponsors attempt to grow their user base to achieve the threshold where they're the only viable choice. Rochet and Tirole also found that multi-homing on buyers' side makes it easier to for sellers to gain favorable prices. (Rochet & Tirole 2003, 14). They also state that users decide to multi-home to gain access to externalities offered by non-interconnected platforms.

Eisenmann et al. propose two basic strategies for platforms. Horizontal and vertical. These are very common strategies in management and strategy literature. However, they rise platform specific topics that should be considered. In the case of horizontal strategy, the market share, after establishing interoperations, will depend on how differentiated the platforms, switching costs, multi-homing costs

and converter costs are. In vertical strategy, the make-or-buy problem arises, but the three main issues are whether or not the platforms should offer backward compatibility, exclusive access and arguments against and for absorbing complements or not. (Eisenmann et al. 2008, 6-17). Note that these strategies are not mutually exclusive as units of analysis in horizontal strategy arise from environment whereas vertical strategy is a chain of decisions a platform must make.

Caillaud and Jullien state that transaction fees are a powerful tool in gaining market share. However, if the services are non-exclusive, an unbalanced equilibrium might arise where one side can multi-home while other(s) are single-homing. (Caillaud & Jullien 2003, 2). In the table 8 below, units of analysis for platform strategies as well as the decision that the platform must make have been collected.

Table 8 Strategic units of analysis and decisions of a platform

Unit of Analysis	Strategic Decision
Hagiu's 4 basic units of analysis • Number of sides • Design choices • Pricing • Governance	Chicken and egg -problem • Which side to subsidize? • Access, who can join? • Interaction, what are parties allowed to do?
Shapiro and Varian ANALYTICS • size of the user base • intellectual property rights • ability to innovate • first mover advantage • manufacturing abilities • strength in complements • brand name and reputation	Interaction • What happens and doesn't happen within the platform
Horizontal strategy	• Differentiated platforms • Switching costs • Converter costs
Vertical strategy - Make or buy	• Backward compatibility • Exclusive access • Absorbing complements
Multi-homing	• Technical standards • Interfaces • Rules and procedures • Support • Documentation
Boudreau and Hagiu, Price levers • Firm boundaries • internal organization • product technology • relationship with the participants.	

There are three potential market failures that might cause the fall of the platform. Lemon stand market failure, too much competition on one side and lack of governance. In lemon stand scenario market is flooded with poor-quality products. Combined with equally poor transparency and information about the product (it is okay to buy a poor product if you know what you're buying) people begin to associate certain platform with poor quality and after some time possibly every platform. When there is too much competition on one side, there is no more incentive to create new high-quality products. Thirdly, if there are no governance rules that ensure the emergence of positive complementaries, the platform will fail because it cannot provide users with value. (Hagiu 2014, 7-8).

2.7 Competition among platforms

Winner-take-all -dynamics are often referred to as ABBA dynamics after the band's hit song "Winner takes it all". These dynamics describe a situation where there can be only one platform or actor in the field. Popular examples of cases like these are VHS versus Betamax where VHS proved to be better but then lost to the DVD. Other examples such as LP vs CD and broadcast vs cable vs IPTV are plenty. Another term associated with ABBA-dynamics is "platform envelopment" which essentially means siphoning users from competing for the platform and is similar to entering competitors market. Many companies vie for the position of platform leadership because then the company owns the foundations that others build on (Gawer & Cusumano 2014, 1).

2.7.1 Winner-take-all dynamics

In a case where it is unlikely that all the players will survive, economists describe the industry as "tippy" meaning that it can tip in favor of any player (Shapiro & Varian, 1999, 176). Requirements are presented in table 9 below. This is also known as winner-take-all dynamics. There are four forces or dynamics that contribute to the WTA-situation. Multi-homing costs are high, there are strong and positive network effects in place, there is no demand for differentiated features or the dominant agent can offer these features at a premium (supply economies of scale) (Parker et al. 2016, 243; Eisenmann et al 2008, 6). Natural monopoly must, of course, also be considered.

Table 9 Likelihood of market "tipping" in favor of one technology (adapted from Shapiro & Varian, 1999, 188)

	Low economies of scale	**High economies of scale**
Low demand for variety	Unlikely	High
High demand for variety	Low	Depends

Kenney & Zysman note that at the center of many platforms' operating model are the winner-take-all dynamics and after winning the initial competition the winner becomes a monopolist. (2015, 15). In his World Economic Forum article Stephen Collins notes that while network effects enable dynamic environments, they also create solid positions as quickly. Because of this, there are often only a few or just one platform standing at the end. However, while competition between platforms leaves only one standing, competition within the platform still continues. (Collins 2016).

As mentioned in the previous chapter, WTA doesn't really differ from a standards war. According to Shapiro and Varian, there are three options how standards war can play out. 1) head on battle, 2) "a game of chicken" where both parties show good fighting spirit but will rather forfeit than fight and 3) unbalanced battle between those who are willing to fight and those who would rather negotiate. These battles can end in a truce (as with modems), duo- or oligopoly (game consoles) or fight to the death (VCR vs Betamax). (Shaprio & Varian 1999, 249, 261).

Caillaud and Jullien point out that if intermediation platforms are providing undifferentiated services, a monopoly will likely arise. However, they also note that ineffective equilibrium might arise where some are able to multi-home. (Caillaud & Jullien 2003, 21).

2.7.2 Envelopment

A popular example of the envelopment is how Microsoft swallowed Real Audio's market share. Back in 1998, RealNetworks had had 90 % market share in streaming media. The two-sided market company had given its media player for free to consumers and charged content providers for server software. Microsoft decided to offer its Windows Media Player for free but also provided the server software free of charge as a part of Windows NT Server. Though Window's version offered little to none improvements to Real, the user bases overlapped heavily which resulted in Real networks quickly losing its market share and position. Other examples of envelopment by Microsoft are Netscape and Adobe Flash. Other examples of envelopment are the eBays acquisition of PayPal and

smartphones that enveloped platforms such as digital assistants (e.g. Palm Pilot), handheld gaming devices and eBook readers. (Eisenmann et al. 2010, 1-2). Eisenmann et al. also dub Microsoft, Google and Apple, "serial envelopers" (2010, 17).

As network effects and switching costs often protect companies in the platform economy, the new entrant must offer revolutionary benefits and functionality. Because of this, it is seen that platform markets develop through a series of winner-take-all battles. However, in their working paper Eisenmann et al. examined another approach instead of this Schumpeterian innovation. Platform envelopment. While incumbent companies might be safe from completely new entrants, an entrant from an adjacent sector that already shares a customer base with the company can be a threat. By bundling its functionality with another platform, the new entrant can leverage infrastructure build by the incumbent. (Eisenmann et al. 2010, 1).

In envelopment, the provider connects its platform with the adjacent provider by combining its functionality with another one, sharing the customers. This is portrayed in the figure 3 below. Value is captured by snatching the incumbent company's access to the users and taking away the network effects that had previously protected the incumbent. Because envelopment demands entering into competitor's market or market share, it is sometimes also described as cross-layer competition. In a sense, the side doing the enveloping adds more layers into itself. (Eisenmann et al. 2008, 16). It can also be tough as sort of a vertical integration.

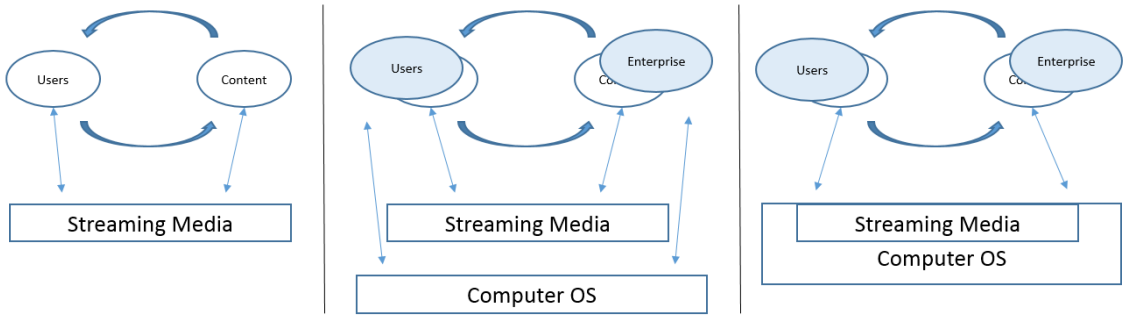

Figure 3 Microsoft's envelopment of RealNetwork. (adapted from Eisenmann et al. 2010, 2)

Eisenmann et al. list various methods to achieve envelopment. The main component in foreclosure/envelopment attack is bundling competitor's product and/or service with your own as Microsoft did with RealNetworks. If simple tying of services is not enough, price discrimination can be used to add leverage. This comes down to making the bundle less expensive than buying the two things separately. If products use similar components economies of scope might also help an attacker.

For example, video game consoles and DVD players both require optical disk reader, microcircuits and various other similar components. Finally, overlap in user bases is important for bundles profitability. (Eisenmann et al. 2010 7-12). Enveloping also requires dynamic capability and high-level inter-unit coordination from the enveloper. Bundling requires recombining resources and new strategies for value creation as well as integrating platforms functionalities. (Eisenmann et al. 2010, 17-18).

Eisenmann et al. propose following typology for envelopment attacks: envelopment of complements, envelopment of weak substitutes and envelopment of unrelated platforms. An example of complementing platforms is eBay and PayPal where a lot of eBay users also use PayPal and vice versa. Authors propose that significant overlap in users is the most important factor in whether or not envelopment of complementary platform succeeds. In the case of weak substitutes platforms serve the same need but different way and different audiences. As an example, the authors used Blockbuster and Netflix that back in the day operated on different models. Using Blockbuster's brick-and-mortar stores was faster, but Netflix could offer a larger selection with its mail-delivery service. For winning envelopment against a weak substitute, the authors propose that significant economies of scope are the most important factor. According to winning envelopment of unrelated platforms both economies of scope and user overlap are needed. Unrelated platforms serve different purposes, but their solutions are quite similar. As an example, Eisenmann et al. use handheld gaming devices and smartphones that both need a display, buttons for input, battery etc. (Eisenmann et al. 2010, 12-16). The most important factors for winning an envelopment according to authors have been summarized in the table 10 below.

Table 10 Benefits of bundling per platform relationships (adapted from Eisenmann et al. 2010, 16).

	Complements	**Weak substitutes**	**Functionally unrelated**
Opportunity to bundle at an attractive price due to userbase overlap.	High for reciprocally specific complements.	Typically minimal; stronger when many users multi-home.	High, if platforms are mature and adopted by similar users.
Price discrimination benefits	Minimal	Minimal	High
Economies of scope	Minimal	Moderate	Typically minimal

There are some ways to combat against the enveloper. Firstly, Eisenmann et al. note that envelopment might not be profitable if the other side has similar skill-set and resources to enter attackers core market and warn that bundle-vs-bundle competitions are exceptionally fierce. Thus, the risk of counterattack or reciprocity can deter envelopment attack. (2010, 10-11). Defenders ability to counterattack at least partly hinges on the possible presence of intellectual property rights, high switching costs and strengths of the network effects. Authors note that in some situations accommodating might be more profitable than matching the entrant's bundle. (Eisenmann et al. 2010, 17).

Another way is to attract new allies by opening or even transforming proprietary platform into a shared platform. The more parties invest in the platform the more they are willing to fight for it and use the other platform. Compatible versions by allies will result in reduced switching costs, better ability to compete with price and differentiated versions of the product for previously under-served customer segments. All of this should translate into new users.

Parker et al. list various means that platforms use to compete and to defend against envelopment: discouraging multihoming, fostering innovation, leveraging data, mergers and acquisitions and enhanced platform design. Intuitively, if users have no reason to multi-home, the platform has fewer potential competitors. If the platform is constantly one or two steps ahead (innovation), it is hard to envelop. Due to platforms digital nature, they have a lot of metrics in their disposal and vast amounts of historical data. For example, LinkedIn managed to grow despite Monster, because monster as only interested in active job seekers whereas LinkedIn collected more information on its users. To grow platforms need fewer M&A’s than pipeline companies because they don’t have to own assets but to have an access to the ecosystem. When threatened with envelopment, partnering with an industry giant might also deter the enveloper. As an example of enhanced platform design Parker et al. use Airbnb versus Craigslist. Even if Craigslist had more users, in the beginning, Airbnb offered better functionality. (Parker et al. 2016, 230-243).

2.8 Work-life transformation

Automation, robots, digitalization, artificial intelligence and globalization are among the driving forces shaping the 21st century. Be it academic papers, professional journals or newspapers with anecdotes, the evidence is abundant that these trends have already changed the economic landscape and will transform it even further. Authors tend to emphasize the speed and magnitude of the

phenomenon by opting to speak of revolution instead of evolution. Currently, we are going through the fourth industrial revolution. Previous revolutions being a steam engine, internal combustion engine, and globalization/outsourcing to Asia. There is also an ongoing discussion in Finland, as well as in other countries, whether or not people will survive in the future with their income or do we need something such as unconditional or universal basic income such as "citizens' salary" or helicopter money from EU central bank.

Younger generations have always rebelled in some way against older generations and coupled up with megatrends such as climate change, population growth and technology, it is no wonder that attitude towards work is changing. Platforms and cloud-based systems are seen as having such a huge impact on the world economy that they will reconfigure the globalization itself. This has been referred to as "Third globalization" (Kenney & Zysman, 2016, 61). The young who are skeptical whether or not they will be able to enjoy state-paid pensions want more from work than just nine to five schedule. Especially when long careers with good job security seem to be available only for a few.

2.8.1 Disrupting megatrends

The platforms have also garnered the interest of the World Economic Forum. In her article, Laura Tyson states that digital workforce platforms can improve productivity by generating better matches and by reducing "formality" i.e. bureaucracy and having to conduct interviews etc. These mechanics would also mean that current part-timers would get more work as jobs are easier to find and to offer. She also notes that this might attract more people (such as students, elderly, stay-at-home-parents) into joining the work-force. Like other authors, Tyson refers to the lack of "social contract" as a downside of these platforms. By this, she means the fact that while traditional employers pay social security fees, offer healthcare, insurance, pensions and other benefits, these platforms do not pay those as most of the people who find work through these platforms are independent contractors. Contractors might be 30 % cheaper than standard full- or part-timer thus there is a big incentive to hire a contractor. Regulation arbitrage is another issue Tyson put forward as a downside. Tyson also refers to a McKinsey report that states that digital labor platforms might increase the GDP of the United States by 2,3 % and employment comparable to full-time employment by 2,7 % by 2025. (Tyson 2015).

In her 2016 World Economic Forum article, Zahidi describes three major forces that are transforming the workforce. She refers to technology that is making many occupations redundant as well as socio-economic issues that arise when platforms connect companies and contractors. This also raises the

issue of required skill-sets changing rapidly. She also notes that freelance work in itself is nothing new and in fact, 13 % of the US workforce was freelancing before these platforms began emerging. Freelance work is a natural state for example to many writers and musicians. (Zahidi 2016).

World Economic Forum has collected global data regarding gig economy and platforms for their 2016 Human capital report. The figure 4 below shows the percentage of freelancers in selected industries. WEF calculated the percentages based on LinkedIn data. Freelancers are quite evenly spread across industries, but most of the freelancer are within media, entertainment and information sector. This agrees with other observations in this thesis as these services can be easily distributed online.

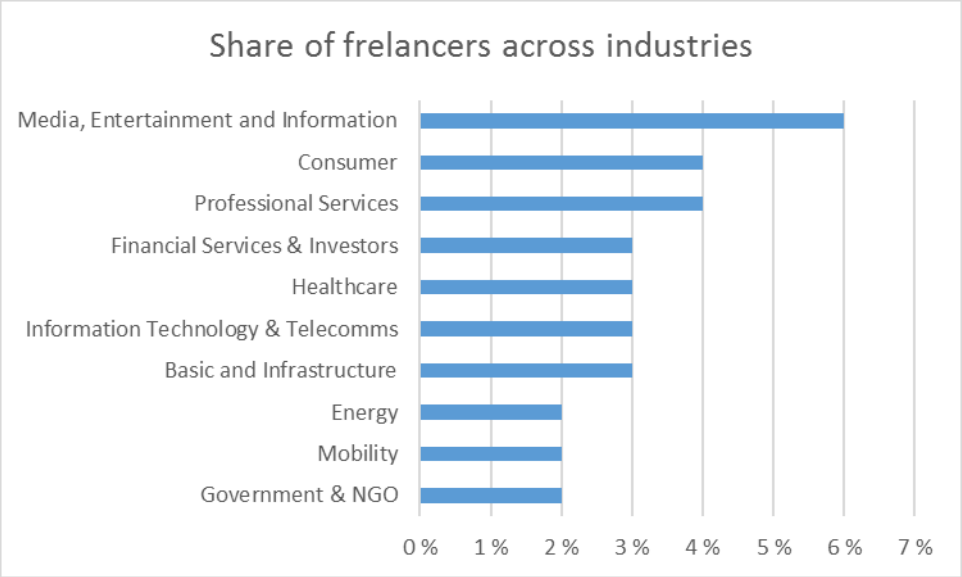

Figure 4 Share of freelancers across industries (adapted from WEF Human Capital 2016 p. 26)

According to KPMG's study from 2016, US-based CEO's expect that the next three years will transform the business more than the previous five decades. Technology is seen as the second most important growth driver after the economic climate. While the majority of CEOs expect to increase their headcount they also noted that skill gaps are emerging. (KPMG 2016). As freelancer mediating platforms excel at delivering talent on-demand, the notion of skill gaps is relevant for the future of talent intermediaries.

For their scenario analysis "The Future of Work – A Journey to 2022", the consultancy company PWC interviewed 10 000 individuals in China, India, UK, Germany and US. They were able to recognize an "Orange World" -scenario, where global business is fragmented, as one of three possible scenarios. The driving force behind the scenario is companies trying to maximize their operational

flexibility with lean staffing and partnerships while minimizing the costs at the same time. In a sense, the scenario is based on a thought that in the future, portfolio careers and hiring specialists on-demand basis is a viable strategy for companies. For employees and freelancers, this will offer a chance to be flexible and autonomous with ones' work. The orange scenario seems especially alluring to Chinese respondents. (PWC 2014). However, it will also likely lead to a situation where more people are forced to become self-employed and responsible for their own professional improvement.

In her 2013 article Pagani wrote that to cope with increasingly complex and networked environment, companies are now transforming their organizational intelligence into relational intelligence. In other words, previous operating models were created to centralize intelligence (or talent, know-how etc.) within a company, but not to maximize it. It is virtually impossible that the best talent works at the same company – the fact that has sprung many crowdsourcing campaigns – and as Pagani points out it is better for business to be a part of the orchestra rather than an outstanding individual. (Pagani 2013, 627). This trend observed by Pagani seems to align with PWC's Orange scenario quite well.

The differences between these scenarios move in two axels. Individualism versus collectivism and corporate integration versus business fragmentation. In their report, PWC notes that most companies will likely be a mix of all the three scenarios. Unfortunately, the report makes no attempt to determine the most likely scenario. However, two out of three (Orange, Green) scenarios seem to support the thought that freelancing will increase in the future. Scenarios are presented in the figure 5 next page and in the text below.

The blue world scenario has the most in common with fears presented by Siltala and Kenney & Zysman. Big companies, if not rule, at least have significant pull in the world and societies are divided into haves and have-nots depending on are they able to secure an employment within said companies. Governments might be scaling back their pensions making companies even more important for the employees. While stable employment is increasingly rare, the high-flyers will be compensated in a lavish manner. Opening one's personal data for the company in exchange for employment is also one characteristic of this scenario.

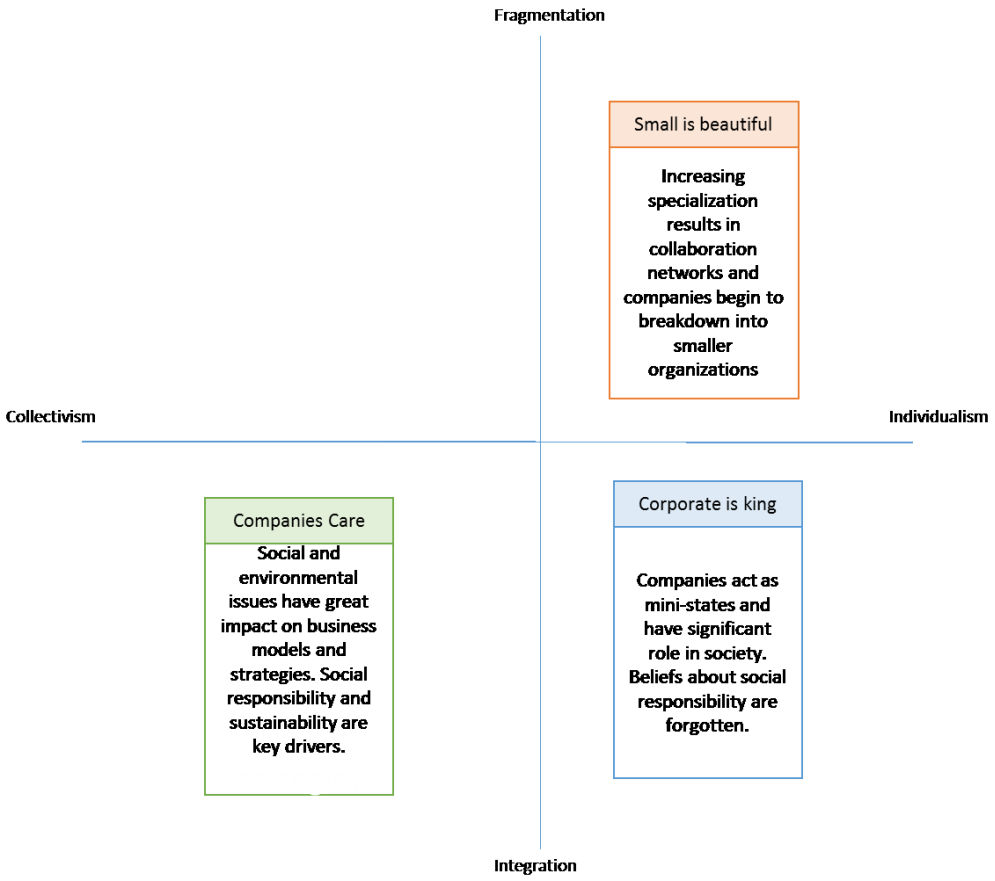

Figure 5 PWC's Future of Work Scenarios

Green World –scenario is the almost complete opposite for its blue counterpart. In order for their loyalty, both consumers and employees demand a commitment to social responsibility and environmental protection. In their study, PWC found that 65 % of respondents want to work for a company with a powerful social conscience (PWC 2015, 15). As green firms are seen avoiding hierarchies opting for more flexible, flat and fluid structures instead, this scenario promotes increased use of freelancers.

Figure 6 below shows that respondents feel that technology will transform the work the most while resource scarcity and climate change come second. This is coherent with observations that platforms i.e. technology has made acquiring and doing freelancer work easier.

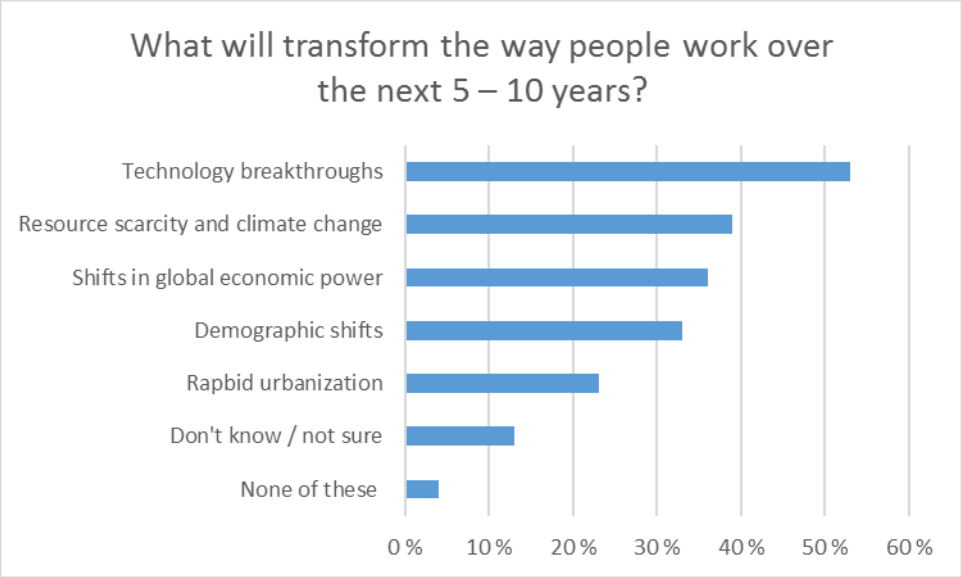

Figure 6 PWC Future Work 2022

For the past few years, Accenture's Technology Vision reports (table 11) have addressed the same phenomenon as this thesis. Reports from 2014 to 2017 all contain trends that are related to market intermediary platforms, gig economy and platforms in general. While headlines are somewhat self-explanatory, each will be examined briefly. Because these reports present the reader with the five most important trends per year in technology (according to Accenture), it is noteworthy that topics related to the theme of this thesis have been present each year since 2014 clearly showcasing the importance of market intermediary platforms and transformation of work-life.

Table 11 Accenture's Technology Vision Reports 2014 - 2017

2014	2015	2016	2017
From Workforce to Crowdsource	Platform (R)evolution	Liquid Workforce	Ecosystem Power Plays
	Workforce Reimagined	Platform Economy	Workforce Marketplace

In their 2014 report, Accenture revises key benefits of crowdsourcing: it grants companies an access to an agile pool of human resources that can be better suited to solve certain problems than the companies' own employees. The reason Accenture put crowdsourcing in their 2014 report was that

online services such as Amazon's Mechanical Turk, Elance and oDesk (that have by now fused together forming Upwork) and Kaggle have matured making crowdsourcing easier than before. Three common uses for crowdsourcing are innovation, market insight and need for the specialized workforce. Out of these three, the last one is the most interesting for the purpose of this thesis. However, these distinctions are not mutually exclusive. Local Motors' created a car based on the crowdsourced input. This fulfills both innovation and specialized workforce categories. An example of market insight would be collecting information from consumers online rather than running several focus groups. This is both less expensive and yields more respondents. The results can also be seen as more accurate because the presence of the interviewer or other people doesn't impact responses. (Accenture 2014, 28-42).

In their 2015 report, Accenture highlights platform revolution as one of the big five trends of that year. Their reasoning is that at that time, six interconnected issues supported the statement that platform revolution was here. Application Programming Interfaces (APIs) had become more popular, which in turn meant that platforms were available for others than just high-tech companies. Cloud services had also matured to the extent where they had become commonplace thus lowering costs. In 2013 MIT already saw that 14 out of 30 world's leading brands were platform-oriented. In addition, since 2000, 52 % of Fortune 500 companies had ceased to exist due to being acquired or bankruptcy for being unable to revise their business model. Finally, at that point, Accenture saw that the digital economy was outpacing GNP. 53 % of respondents also told that they have adopted open innovation enabling others to innovate for them. (Accenture 2015[1], 50-69).

Many are concerned about losing their job, and thus their income and maybe even status in the society, to machines. In their 2015 report, Accenture sees a trend in "Reimagined Workforce." This is essentially the same as McAfee's and Brynjolfsson's thought about running with the machines rather than running against them. Report sees that increasingly smarter machines, natural interfaces and wearable technology enable mixing strongpoints of humans and technology like never before. Working together there is potential to produce better outputs than working separately. Maybe the most important issues they point at is the democratization of skills. This means that assisted with technology "ordinary" employee can do tasks that have thus far been reserved for specialists. Examples given include high-level programming language Google Go and drag-and-drop visual interfaces in many professional software. (Accenture 2015[1], 88-103).

Already in 2015, 81 % of executives answering Accenture's Technology Vision 2015 –survey stated that they believe that platforms will reshape industries and connect ecosystems. (Accenture 2016 p.

2). The same survey also states that customers are less willing to buy end-to-end products and instead expect "bundled or composite experiences." Instead of one-to-one transactions where seller controls almost every aspect of the product (excluding customization), customers want something that they can combine with other sellers' products. In an interview, Bill Lesieur develops this thought further stating, "Anyone can be a bank", drawing attention to the idea that industry boundaries are becoming blurred. The rationalization behind the thought is that API's, cloud services and mobile development platforms have toppled barriers of entry and these tools are available to others than just tech companies. (Accenture 2015[2], 3).

Platforms were also present in Accenture's 2016 and 2017 Techvision reports. Ecosystem Power Plays emphasizes that companies are integrating their core functions with third parties and their platforms and that every company requires an ecosystem strategy. Because of this portfolio/partner management is increasingly important and short-term benefits must be forfeited for a more holistic look at things. The third trend in 2017's report is especially significant for this thesis since it is the Workforce Marketplace. The report states that due to "open talent marketplaces" that have been created by the on-demand economy, old models and hierarchies for doing business are crumbling. As written by Siltala and other authors presented in this thesis, Accenture's Report also notes that breaking the traditional employment also fundamentally rewrites social contract between employers, employees, societies and even governments. (Accenture 2017, 45-57)

By "liquid workforce" Accenture means transforming employees, projects and the organizations themselves into adaptable and ready for change form. The report sees the workplaces of 2016 as siloed places where training is ad hoc, level of collaboration is low and tools are fragmented. As result of automation and the fact that millennials are about to form the majority of the workforce, Accenture predicts that roles will vanish and within ten years there will be a new Global 2000 company that has no other permanent employees than the C-suite. (Accenture 2016, 26-35).

They also note that having a strategy for platforms and having the business know-how on how to utilize platforms, is more important than just owning a platform. 83 % of respondents believed that the digital economy changes the emphasis from supply-side economics into the demand-side economics of scale (network effects) (Accenture 2016, 41-42). In short, demand-side economics mean that companies can create value by tapping into resources and capacity they don't own. Application stores are one example of this.

Accenture also predicts that traditional legacy models for hiring and managing workforce will vanish due to workforce marketplaces. For example, Automatic, parent company of popular WordPress, has

a staff of only 450 while operating in 45 countries. Incumbent companies such as Procter & Gamble have also started experimenting with freelancers and results attained by Upwork's Enterprise service were faster and cheaper 60 % of the time. This also has an effect on innovation as 73 % of respondents claimed that corporate bureaucracy is slowing innovation and production. Management models born in industrial era are no longer as effective as they used to be. This is because companies need a liquid workforce and rigid roles fit poorly in this model. Two key forces behind transformation, according to Accenture, are the online management of work and on-demand labor force. In short, products such as Google Hangouts or Slack and platforms such as Upwork and its peers, are what 100 out of 500 Fortune companies are already using hire freelancers. However, like many authors also Accenture notes that the social contract is changing. What will be the relationships and responsibilities between employer and employee in the future? (Accenture 2017, 45-57).

2.8.2 Transformation of work in Finland

The Finnish government published the first part of their "Government Report on the Future Part. A shared understanding of the transformation of work" in June 2017. The report by Kaisa Oksanen states that while the transformation of work will be slow, it is a reality. Driving forces behind in addition to earlier mentioned robotization, globalization, digitalization and automation, are also changes in population structure, urbanization and climate change. Sharing and platform economics are also seen as critical drivers. The report also notes that it is possible that in the future employees will get a smaller portion of the wealth produced by the companies as is with Uber, Amazon or Wolt for example. (Oksanen 2017, 12). At the same time, personnel lease companies are ranking among the biggest of Finnish companies and the number of people working as a freelancer has increased (Talouselämä, 2017).

The same report also notes that currently there are two discussions about the Finnish economy. The first being productivity and competitive advantage and the second being meaningfulness of work/employment. (Oksanen 2017, 16). Out of these, the second one is more interesting for this thesis. It is stated that in the future the categorization between employer and employee is more difficult and maybe even meaningless. The income will be generated from several streams and manufacturing is left for machines while people focus on problem-solving. (Oksanen 2017, 18).

Later the report states that if the traditional employer-employee relationship is abolished, it will cause pressure to change society's structures such as tax policies, social security, labor laws and unions. If a person employs him-/herself by doing gigs for several employers, is that person an entrepreneur, a

temp worker, self-employed, working on the side or what is the definition? Even the term employer is not clear in the future as it might be a customer, community or a blockchain platform to name a few. (Oksanen 2017, 26).

The Upwork's report (on US-based freelancers) raises the same issue as Oksanen by drawing a distinction between five types of freelancers and illuminating the difficulties in classifying freelancers. This is because the term "freelancer" has been hard to define. However, these distinctions are not airtight and seem to overlap with each other to some extent. Upwork's typology of freelancers can be seen in the table 12 below. (Upwork 2016).

Table 12 Types of Freelancers (adapted from Upwork 2016)

Types of Freelancers	
Independent Contractors	These people are the traditional freelancers as we have learned to know them. They work on a project-to-project basis.
Moonlighters	These people are fulltime employees, but they also work on other jobs after hours for NGOs for example.
Diversified Workers	People falling into this category have multiple sources of income. They might be employed as a part-timer and generate rest of the income by driving Uber or doing other gigs.
Temporary Workers	Traditional temp-workers.
Freelancing Business Owners	Some people identify as freelancer despite owning a business and having some (1 – 5) employees. An example would be a skilled professional who moves from project to project and hires a few people to help with the work when required.

When determining whether someone is a freelancer or not, the first question should be: does the person have multiple employers or jobs. To answer the question: who the gig workers are (based on Pew Research's data on US-based freelancers) 23 % are students, 44 % are employed fulltime, 24 % are part-timers while 32 % describes themselves as unemployed. This underlines the problem of categorizing freelancers. When other perceives himself as unemployed, the other one sees himself as a freelancer. (PewResearch 2016, 13). When we add Oksanen's notion that in the future the employers

might be a blockchain platform, officials will face difficulties in policy setting due to the inability to properly identify the two sides.

The report by the Finnish government shares the fear of Siltala (by citing Siltala directly) and Kenney & Zysman in stating that in the darkest scenarios there will be very small elite and lots of low-wage jobs. A society of few peaks and many dropouts. (Oksanen 2017, 28). The report also raises the question, how people will attach to the society in the future? Traditionally this attachment has been through work. The disjointed gig economy also hides the possibility of social exclusion (Oksanen 2017, 33).

Siltala notes in his book that already one-third of Finnish workforce is employed "unconventionally" as independent contractors, temp workers, leased workforce, part-timers or by gigs. (Siltala 2017, 349). However, as Siltalta states in his report from 2016, that statistics cannot be fully trusted. This is because of how they are collected. One group might be a subgroup of another group etc. (Siltala 2016, 7).

Figure 7 below depicts the number of fixed-term and part-time contracts in Finland from 1997 to H1/2018 based on data collected by Statistics Finland, a public authority responsible for official statistics in Finland. Judging from the statistics we see that fixed-term and part-time contracts correlate (within gender) with each other. When the number of part-time contracts increases, the number of fixed-term contracts decreases and vice versa. All four lines are higher after the first half of 2018 than at the beginning of 1997. Especially part-time contracts have increased for men and women alike.

The figure 7 below is consistent with this thesis's message that traditional permanent employment has been decreasing in recent years. Instead, employers opt to purchase labor in smaller and more flexible quantities. This does not only feed the incumbent temp-agencies but also freelancer intermediary platforms. All of the domestic platforms included in this study have been established after 2010 and Finnish business journal Talouselämä reported in 2017 that 25 out of 100 biggest private employers in Finland were offering personnel services such as agency workers, outsourcing, subcontracting and recruiting services (Talouselämä 2017).

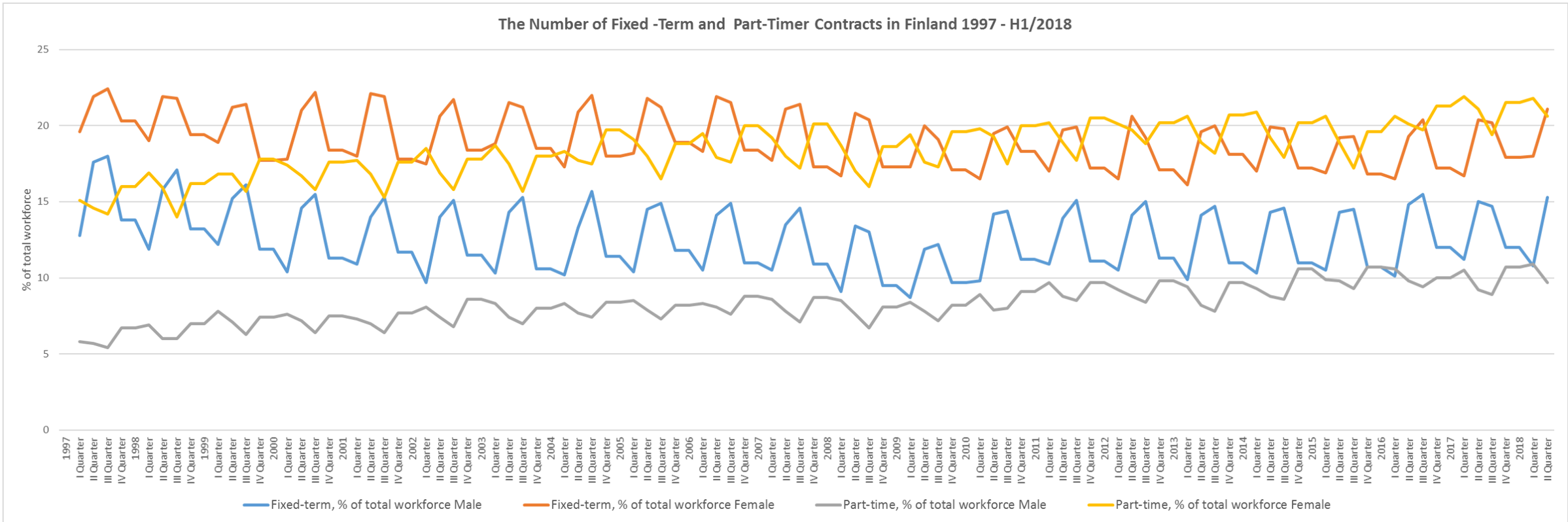

Figure 7 Amount of fixed-term and part-time contracts in Finland 1997 – 2017
(http://www.findikaattori.fi/fi/53#_ga=2.132579021.251240783.1504782413-224083435.1504782413)

2.8.3 Reasons to begin freelancing

Opinions differ in academia and press on, do people become freelancers because they want to or because they have to? A study by Upwork and Freelancers Union in 2016 found that 68 % began freelancing to earn extra money and flexible schedules were important for 42 %. Millennials are also more likely to search for work that is either "exciting" or has "positive impact on the world." However, 50 % stated that unstable income, explained by difficulties in finding gigs, was a problem. (Upwork 2016).

Another report by Upwork (back then Elance) was conducted in the United Kingdom during 2013 with over 1 000 graduates aged between 20 and 33. The study found that gig work is more attractive the more educated the person is (it might also be because knowledge-intensive fields are well presented within platforms). 21% of students had already decided to work as freelancers while 29 % say freelancing will be part of their career strategy for the next five years. 69% reported that perceived flexibility of gig work offers them the best work-life balance and 38 % states that the possibility to work across sectors has significant pull. 38% also feel that they can earn more by freelancing. They don't see that freelance work would make them stay inside their houses but instead, 31 % associate freelancing with shared workplaces and 29 % said that they want to meet new persons for many different groups and organizations. (Elance 2013).

The report also notes that the effect of programs such as Dragons Den (Shark Tank) and the success stories of the young entrepreneur such as Mark Zuckerberg, David Karp etc. have created entrepreneurialism boom in the UK. 28% of respondents told that being a freelancer is a way to fulfill the dream of being their own boss. The economic crisis has also left young graduates without employment; thus freelancing is also an option for unemployment. However, 41 % of students' parents see freelancing as a risky option and are especially worried about the absence of benefits. (Elance 2013)

2.8.4 Change in attitudes

Studies such as such as Nuorisobarometri (Youth Barometer) 2016 in Finland have found that the young feel that they will not exceed the standard of living of their parents. In 2006 when asked if they feel that their age group will exceed the previous group in the standard of living, 46 % answered yes. In 2016 only 27 % believe that their age group will surpass the previous group. In 2016 survey the young expressed their concern for both their employment prospects as well as their ability to answer changing requirements. (Nuorisobarometri 2016). The Youth Barometer has been concluded annually since 1994 and it targets age groups from 15 to 29 years. 1901 answered the interview. The reader should note that the standard of living could already be so high that it is difficult for today's children to "surpass" the standard of living as their parents did.

In Finland Juha Siltala among other people has written about the transformation of work where steady employment is available to continuously fewer people and is instead replaced with fixed-duration or gig type employment. He has also stated in (Pohjanpalo 2016) that in the platform economy the employers don't take care of the employees in the same way. This arrangement makes it difficult to distinguish between those who are employed by someone else and those who employ themselves with various fixed-term contracts and gigs. In a sense, Siltala describes this phenomenon as turning back the time to the 1930s where people gathered in harbors, factories etc. every morning to see if work was available. However, he states that some professions (such as healthcare that can be automated only so much) will still offer steady employment.

Kenney and Zysman note the juxtaposition between outlooks to the phenomenon. On the one hand, people are seen as treasuring their flexible schedules and that platforms can unlock the commercial value of unused assets. On the other hand, people are seen as de facto entrepreneurs who have fragmented working hours without employment benefits. (Kenney Zysman 2015, 8). What also worries these authors is that in the 19th and 20th centuries the companies carried the responsibility of their employees. Platform companies don't do that as they have only a few employees and maybe millions of contractors. The weight these companies have in the economy is also quite big for their size. Google has just about 50 000 employees where traditional global companies could have hundreds of thousands.

Report by Pew Research center yields similar results. Those utilizing digital platforms cite freedom and flexibility to work without being tied to a certain location as important benefits. Turning a hobby into a

source of income is also alluring to many. The same report also identified two user groups. The casual users who are mostly doing online tasks for modest compensation on their spare time. For the power users, income from the platforms is very important and this group tends to work on physical tasks such as shopping or caretaking. Motivations for these groups have been presented in the table 13 below. (PewResearch, 2016, 2).

Table 13 Motivations for two gig worker groups (PewResearch 2016)

	Casual users	**Power users**
Need to control own schedule	45 %	11 %
Just for fun or something to do	28 %	62 %
Lack of other jobs where they live	25 %	12 %
To gain work experience	24 %	12 %

While far away from students building their portfolios, the Harvard Business Review published an article called "The rise of the supertemp" in 2012 describing former executives of companies such as IBM, PWC and General Electric that belonged to the "free agent nation" popularized by Daniel Pink. The article stated that while the use of contractual work has caused the people new to the workforce to get stuck at entry level positions, contract work bears no stigma at higher echelons and quite many prefer contracts over a steady job. (Greenstone-Miller & Miller, 2012). A trend that that also been featured in many journals such as Kauppalehti in Finland and Forbes on abroad.

The article states that project-based work has become a more attractive option. Technology has made it easier to gain work with companies while job security is decreasing and 80-hour work weeks are commonplace in high placed positions. The financial crisis resulted in layoffs and cutting costs and this has made companies think of the workforce in modular ways. It makes more economic sense to hire talent when needed than to keep it in the headcount. The article also notes that Europe's labor laws make it potentially dangerous for companies to hire permanent employees. The article goes into lengths to say that in the future running a company or dealing with specialized talent is not possible without

understanding freelancers. Freelancer interviewed for the article states that she is able to take a breather between jobs, thus decreasing the possibility of burnout. Something that is not available for full-time employees. While many worry about developing their skills as a freelancer, another interviewee marks that working with multiple employers is an education in itself. However, the same person also notes that freelance work is suitable for those with already well-polished skills. (Greenstone-Miller & Miller, 2012).

The downside of being a "supertemp" is the lack of social networks within companies and without a team, it can be difficult to tackle bigger projects. The article also points at "Theory of the firm" by Ronald Coase, Oliver Williamson, and Oliver Hart. In short, the theory states that it is less expensive to have talent within the organization than buy it outside because of transaction costs. However, technology is changing this rapidly. In their article about "supertemps" Harvard Business Review notes that though steady jobs within one employer are today thought as the norm, this state of affairs has only lasted for the last 60 to 70 years. This is in line, with Siltala's thought about going back to the 30's. (Greenstone-Miller & Miller, 2012).

2.9 Freelance economy

While academic articles are hard to come by, the so-called "freelance economy" has gained visibility in headlines of economic journals such as Forbes that stated in 2016 that freelancers made up 35 % of US workforce (Pofeldt, 2016). An argument often put against platforms is that while driving the costs down they make it difficult for professionals working on the field to maintain their income level. This is partly because some of the tasks can be done by people who are working on a side and can be more flexible with their pricing.

To capture the size of the gig economy, Oxford's Internet Institute created in 2016 an Online Labor Index. It measures usage of online labor and works by counting projects and tasks in real time from five biggest English-speaking platforms. It shows a steep increase of 30,6 % in gig work from just May 30th, 2016 to 10th of October 2018. OLI's algorithm doesn't follow every platform there is but focuses on 5 platforms (English language) that have most visits based on Alexa rating thus the platforms included will vary. Platforms offering local services such as Airbnb and Uber are excluded. (Kässi & Lehdonvirta, 2016).

In Finland over 800 000 are employed "outside of the standard contracts." Over 300 000 are employed as temporary works while a bit fewer than that work as part-timers. There are over 160 000 self-employed individuals and the majority are the only person in the company. Over 50 000 are employed through various workforce leasing companies. (Hasu & Alasoini, 2016).

According to "Freelancing in America" study conducted by Upwork and Freelancers Union in 2016 with more than 6 000 responses, 55 million individuals (35 % of workforce) were freelancing and more than 63 % act as freelancers by choice rather than by necessity. Another important info is that 32 % reported earning less than in their full-time occupation while 54 % reported increased earnings. On more softer values, freelancers reported that they feel more respected, empowered and eager at the start of business day. (Upwork 2016).

The same report (Upwork 2016) states that while gradual, shift away from traditional 5-to-9 work with benefits started two decades ago, this change is on the same level with the industrial revolution. The report acknowledges the fact that like previous revolutions that had an effect on social contracts, the structure of society and even the political system, this cycle will also affect society as deeply. As a positive side of gig work, the report emphasizes flexible workforce being able to pursue more meaningful lives and businesses being able to tap into a pool of talent where they can take just what they need. Overall, they are talking about a nimbler economy that is able to answer the needs of a fluctuating economy better.

The financial crisis of 2008 has changed the perception of full-time employment with one employer as a secure life-long career. The layoffs naturally bolstered the ranks of the freelancers. When coupled up with the facts that white-collar work (in addition to blue collar) is facing global competition and that many millennials have only experienced project work and employment from project-to-project see this as a natural state of things, it is no wonder that freelancing platforms are doing well. According to the report, 80 % of Americans would consider moonlighting to increase income level. (Upwork 2016).

As stated in the introduction, several services have sprung up for people who like to work as a freelancer, but don't have it in them to establish and run a company. While working on this thesis, the rules and regulations for these services changed underlining that the regulators are just beginning to address issues regarding new types of work and employment. Rigid pension systems where entrepreneur pays a monthly fee simply won't work if the entrepreneur works for five months in a year.

2.10 Cottage Industry

Merriam-Webster dictionary defines cottage industry following way:

- "an industry whose labor force consists of family units or individuals working at home with their own equipment
- a small and often informally organized industry
- a limited but enthusiastically pursued activity or subject" (Merriam-Webster, 2017).

The first two definitions fit platforms quite well while the third one depends on the motivation and reasons for working through a platform. For some, participating in the on-demand economy might be just another way to make a living while for others it might be a way to travel and do things when they want to. Those in gig economy might not work from home (e.g. Uber drivers and food couriers) but nevertheless, work with their own equipment. Especially when knowledge work is required. People working via platforms can rarely be called organized as in having hierarchies or relationships, thus the second point is also very fitting.

Traditionally term "cottage industry" has also described work that is done with hands such as small-scale arts and crafts production. However, I do not see a reason why knowledge work wouldn't fit the criteria, as well as graphical design, data entry and data wrangling tasks, can be quite a labor intensive. Nevertheless, I feel that the cottage industry as a term describes phenomenon very well and for this reason I've included it in the thesis's headline. In a sense, it is close to the term "distributed generation" which means that instead of one power plant, the power is generated across the grid in various smaller scale sources such as solar panels and wind turbines. The same way we might be going after skilled individuals rather than companies in the future. Lawrence Katz, a professor of labour economics in Harvard, has commented on the freelancers: "You could have a new workforce that's a lot more like the artisans of the 19th century", while Peter Drucker, when pitched the idea of company mediating freelancers in 1995 said: "This is the future of outsourcing. Intellectual capital on-demand." (Greenstone-Miller & Miller, 2012).

2.11 Critique towards the on-demand economy

Critique presented towards on-demand economy has three main pillars. It transfers financial risk from company to individual which in turn leads to eroding of the social contract (companies taking care of their employees) while at the same time exploits regulatory arbitrage and utilizing draconian management by algorithms. Critics have also raised concerns on society being split into classes of owners and workers. Platforms' ability to create actual jobs is doubted by Siltala as he sees them utilizing existing resources (Siltala 2017, 356).

Pew Research report indicated that people are worried that more burden is being placed on freelancers or gigers as 21 % said that on-demand economy places a too much financial burden on workers, 23 % think that platform companies are taking advantage of users while only 16 % felt that one can build a career out of gigging. 29 % of the respondents have also not been paid for the work done. The same report also found out that giggers fall behind fulltime employed persons in almost every category. 77 % of platform earners are covered by some kind of a health insurance (10 lower than on average), only 27 % have a retirement account and only 8 % have some kind of a pension plan while 56 % rent their homes rather than own them. (Pew Research 2016, 6)

Evans and Gawer noted a regulatory controversy in their survey. As many platforms capitalize on regulatory arbitrage to their incumbent competitors, they can avoid tax and insurance obligations. Scalability of digital technology also means that they can quickly corner market and undermine competition. Since these platforms see workers as independent contractors, they can drive the price and benefits down. (Evans & Gawer 2016, 4).

However, Boudreau and Hagiu state in their 2009 article that public governance has its own problems. Not only is there a risk of decreased innovation and information-sharing, but regulation may also be costly with little return on investment either on the company's or government's side. Lastly, Boudreau and Hagiu note the potential risk of "regulatory capture" by private interests. Meaning that those who are to be regulated have too much power on the regulating side either by information asymmetry or by some other force. (Boudrea & Hagiu 2009, 5-8).

Another example of the regulation is the opposition that Uber faced from Finnish and other countries' governments. Kenney and Zysman note that competitive advantage enjoyed by the platforms is often based on arbitrage between practices and regulations. Regular hotel is legally prohibited from

discriminating its clients, Airbnb host is not. Another issue is how the neighbors react to a hotel in their stairway. News articles about neighbors complaining about excessive traffic in rented apartments are not hard to come by. Taxi companies have insurance for the driver, car and the passengers but platform companies don't, leaving the customer vulnerable in case of an accident. (Kenney & Zysman 2015, 18). However, they admit that new technology breeds new professions.

Juha Siltala (2016, 3) and Kenney & Zysman (2016, 2) have expressed their worry that western world will travel back in time to 1930's and before to the era where people lined in front of factories in mornings. The fear they share is that going back to the model where most people have to find employment every day is stressful, makes planning the future hard and slowly drives the prices down which will have adverse effects for the economy, middle class and result in a bipolar society of working and owning class. Kenney and Zysman also criticize the term "sharing economy." In their opinion, companies such as Uber and Airbnb are in reality resembling putting out system (also known as a workshop or domestic system) of the 19th century rather than sharing in the sense of Wikipedia or open source software sites do. (Kenney & Zysman 2015, 7)

In addition to issues presented above, those participating in the on-demand economy criticize the management by an algorithm. Financial Times published an article in 2016 about gig workers gone on strike. Reason being that at first people doing deliveries were paid 20 £ in an hour and when the demand increased the pay was lowered. Though they are free to choose when they work and how they work, how much they're paid is not for them to decide. In some services, the courier is expected to answer within 30 seconds and can only accept the gig without knowing the final destination. The same algorithm also monitors how fast the delivery is. If a driver misses three trip requests in a row, they're logged out of the system for 2 minutes. Companies can also deactivate i.e. exclude people from its network if the performance is not up to their criteria. It is noted in the article that algorithmic management resembles very much Taylor's teaching from the early 20th century. (O'Connor 2016).

One of the interviewees feels that the companies treat them either employees or contractors whichever suits them the best. It is, however, true that many services are not designed to be fulltime jobs rather than gigs. While the app is so controlling many feel they're employees, companies refuse this stating that they don't have to log in in the first place, as they are not employees. The financial risk is given to the employee instead of the company. Flexibility for one side means insecurity for the other, as these companies don't pay for the time spent idle. (O'Connor 2016).

3 Methods and data

The study was carried out as a multiple case study setting since analyzing multiple cases is better for describing a phenomenon than a single case study as results are more robust (Yin 2009, 53). An exploratory approach was selected due to the lack of previous data on freelancer intermediary archetypes. Naturally, one could imagine that platforms of different sizes and price ranges exist, but ascertaining just this wouldn't have been interesting nor very enlightening. The aim was to establish units of analysis for further use. Data was collected from public sources. Mainly through observing platforms and reading Terms of Service agreements based on the observation matrix.

13 platforms were studied. As stated in the Robert Stake's book, the optimal size for multiple case study is somewhere between four and ten (2006, 22). Less than four and the study will most likely just portray differences between cases rather than their common issues, whereas more than ten units of analysis will result in a convoluted and complex description of the phenomena that is hard for the researcher to grasp and summarize. Because compiling 100 % perfect dataset from public data was not possible, more than 10 platforms suggested by Stake were studied. The study has a netnographic component as getting access to all the necessary info often required registering on the platform and spectating at least community's discussion forums.

3.1 Methods

According to Yin, if the study doesn't require control over subject(s) behavior and if the focus is on contemporary events, a case study is a good fit for a methodology (2009, 8-13). Since platforms were only observed and the on-demand economy is a fairly recent phenomenon, a case study is a good fit for the study.

Analysis of the observations is conducted as cross-case synthesis by adapting grounded theory's analytical tools where findings emerge from the data rather than from testing a hypothesis. Cross-case synthesis is examined in more detail in chapter 4.

3.1.1 Case study design

According to Yin, case studies fall under one of the four categories presented in the figure 8 below.

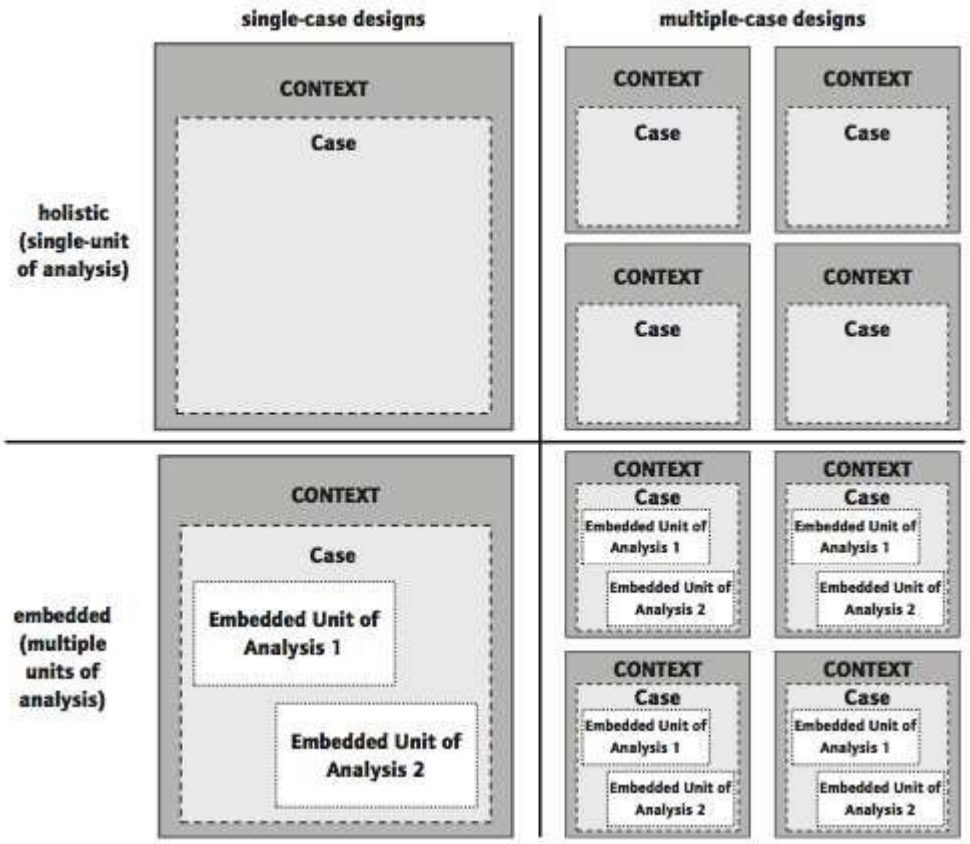

Figure 8 Basic Types of Designs for Case Studies (Yin, 2009, 46)

Both a single- and a multiple-case design can be embedded, meaning that the case contains multiple units of analysis. The embedded multiple-case design was chosen because multiple platforms are studied according to 27 different variables. These are examined more thoroughly in the "Observation Matrix" chapter. Multiple-case designs' advantage over single-case design is the data and conclusions that don't come from just one source and thus results are generally regarded more robust. (Yin 2009, 53).

A major way to increase the reliability of a case study according to Yin, is to establish a case study protocol. This is a guide for collecting information (procedures and protocols) and is especially important if there are several people collecting data. (Yin 2009, 79). The protocol will be examined in more detail in "Collection of data" chapter.

Yin lists six sources for evidence: documentation, archival records, interviews, direct observation, participant observation and physical artifact (2009, 102). This study uses two of them; Archival records and direct observation. Because documentation refers to letters, memos and news clippings among other things categorizing Terms of Service agreements as archival records seemed the right thing to do. Platforms were directly observed in a sense, that their websites, interfaces and offerings were observed.

Finally, results will be analyzed with cross-case synthesis technique which is essentially searching for similar platforms. This approach was selected because it applies especially on multiple-case studies and requirements for other options such as pattern analysis (dependable and independent variables) or logic model (matching observed and theoretical events) were not fulfilled. (Yin 2009, 136-137, 149, 156). However, Yin doesn't describe in detail how this synthesis should be carried out. Practicalities are left for the reader to decide while Yin explains the context where this approach is viable. Study's use of cross-case synthesis is explained in detail in chapter 4.

A case study design can either be closed or flexible either forbidding or allowing the design to be modified by new data or discoveries during data collection (2009, 62). This bears resemblance to the process of the grounded theory described by Strauss and Corbin where researcher moves back and forth between various phases allowing new information to influence the research (1990, 23). Based on these two sources the research design was made flexible. This was seen reasonable and warranted because being unable to use some interesting yet unexpected discovery during data collection would have led in to suboptimal study. This decision proved to be correct when "visits to the website" -variable was introduced later in the study to triangulate the size of the platforms.

3.1.2 Critique towards multiple-case study method

Yin lists four "traditional prejudices" that are often used to critique case studies: lack of rigor, little basis for scientific generalization, taking too long and lack of causality. Lack of rigor is partly explained by the fact that case studies lack rigid guidelines and textbook methods that other methods have. The other part is that researchers might have been careless in collecting data. When talking about generalization, it is often heard that one cannot generalize from a single case. This is partly alleviated with multiple-case studies, but also because case studies aim at analytic generalization rather than statistical generalization. When talking about the argument of case studies taking too long, Yin passes this as a mistake where

people think that all case studies are ethnographic studies that do take long for a good reason. Because case studies often lack statistical methods, their ability to establish causality can be weak. (Yin 2009, 14-16).

In several parts of his book, Yin reiterates that case studies are not about statistical generalizability but analytic generalizability. In a statistical model, the inference is done by taking a sample of a population and researcher has access to many quantitative formulas to study the matter at hand. However, Yin thinks that case study results should not be generalized based on statistics because cases are not "sampling units". Instead, Yin presents a thought that empirical results should be compared to outcome dictated by selected theory. (Yin 2009, 38-39). As this study lacks both statistics and preceding theory, generalizability is somewhat limited within other markets than freelancer intermediary markets. This is examined more thoroughly in "Assessing reliability and validity" chapter.

To alleviate concerns presented above, Yin urges researchers to triangulate observations by using multiple sources of evidence to bring more credibility and robustness to the results. (2009, 114). This was done where possible. When it turned out that user numbers are not available in required quantity, web traffic measurement was brought in to help triangulate the size of the platform. Likewise, Google Play store was used to ascertain whether platforms have an app(s) and how many users they have.

Another way to improve the reliability of the findings is to establish a case study database containing notes, documents and tabular data. This way reader has an easy access to data used by the researcher and doesn't have to wonder if the researcher has shared all of his data. (Yin 2009, 118). In this study, the observation matrix will act as a database as it is an aggregate of both observations from platform sites as well as Terms of Service agreements. Terms of Service agreements are readily available online.

Finally, Yin proposes establishing a chain of evidence to increase reliability. By this chain, Yin means that reader should be able to trace the researcher's steps to find out how he came to that decision or got the result. Yin draws a comparison between this chain of evidence and the one used in a criminal investigation. Hence, researcher's steps should be traceable but "evidence" shouldn't be lost either by carelessness or bias. (Yin 2009, 122-123). This chain of evidence becomes clearer in "Findings" chapter.

3.1.3 Grounded theory element

Because at the beginning of the study there wasn't any idea what the archetypes might be like and thus there were no hypothesis or theories to test. As the study's aim is to establish what archetypes could be like, it should be classified as exploratory rather than explanatory or descriptive. The study also lacks the statistical and causal arguments required of the two later types. Developed in the late 60's by Anselm Strauss and Barney Glaser, the grounded theory is an inductive method where the aim is not to begin with a theory (hypothesis) and then prove /or disprove it. Rather conclusions are allowed to emerge from the data. While often seen as a qualitative method, the grounded theory also functions as a quantitative method (Straus & Corbin 1990, 17-18).

Strauss and Glaser are fearful that beforehand set categories might get in the way of discovery. (Straus & Corbin, 1990, 49 – 50). The question of beforehand set categories is tricky as earlier in their book Basics of Qualitative Research, Strauss and Corbin (1990, 41) state that while being too familiar with the subject matter might backfire, leading into tunnel vision and box-thinking, they emphasize the importance of "Theoretical Sensitivity". The researcher should have rich background information of the subject that "sensitizes" him to what is going on and what he is seeing thus enabling him/her to give meaning to data. This sensitivity can be gained through literature, as well as professional and personal experience (Straus & Corbin, 1990, 43 – 43). Yin shares the thought that researchers should have "a firm grasp of the issues" to know when the deviation is acceptable or even desirable (2009, 71).

As only limited personal experience was gained during this study, the sensitivity will mostly stem from literature. Strauss and Corbin divide the literature into two parts, technical (research studies, theoretical papers etc.) and non-technical (reports, catalogues etc.) (1990, 48). In this study, the former is fulfilled by academic journals on platforms in general while the latter consists of service agreements and articles. Reading through technical literature is important because it helps the researcher to pinpoint meaningful variables and for the most part, researchers are interested in testing relationships among these variables and studying how they cluster (1990, 49).

3.2 Search and selection of the platforms

Currently, there are many websites and platforms that broker freelance services. Sometimes these are referred to as out- or crowdsourcing platforms and specialization varies from one particular subject to a broader range of services. While short query online yields easily dozens of platforms, some types of platforms have been excluded. The criteria are given in the next subsection. This was done partly in order to prune down the list of potential platforms and partly because it is easier to compare platforms brokering similar services rather than trying to make a meaningful comparison between separate platforms that focus on coders, writers and designers. However, straight comparisons are still difficult as platforms differentiate by targeting different audiences such as recent graduates or giggers or more seasoned workforce and bona fide freelancers.

While the study focuses on platforms that offer a broad range of services, there are categories that are common for almost every platform. Namely arts & design, virtual assistants, web developers, writers & content producers, accountants & consultants and sales and marketing. The pie chart (figure 9) below shows the top industries of people who identify as freelances in Linkedin on March 2018. The platforms' main categories consist of similar topics.

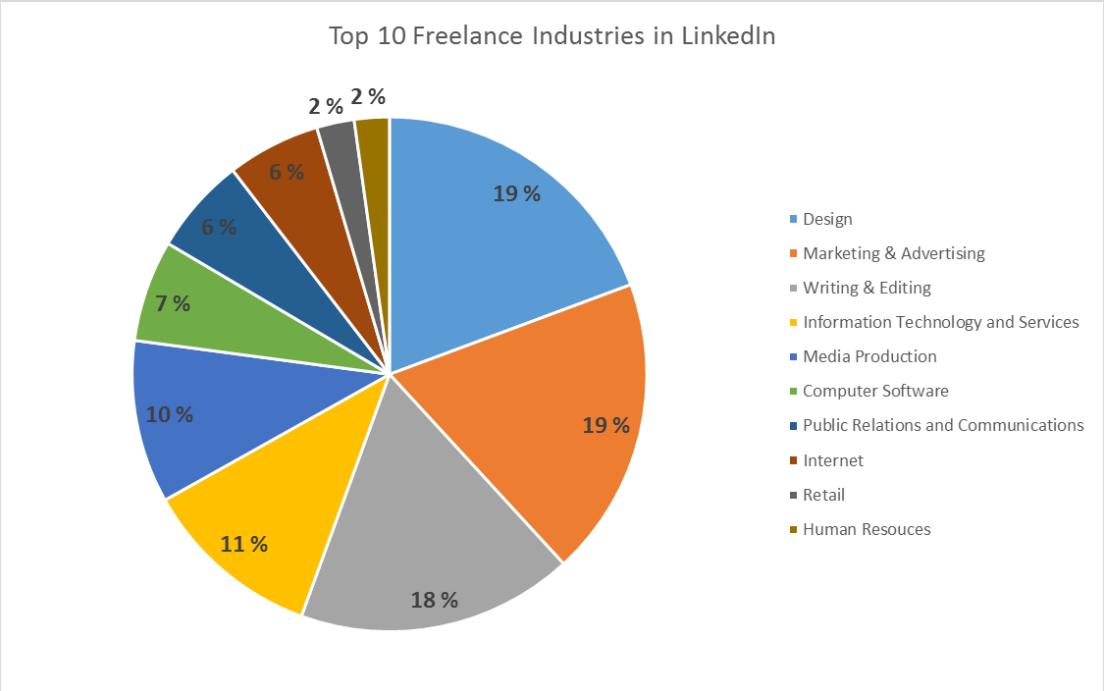

Figure 9 Top 10 Freelancer Industries (according to LinkedIn https://www.linkedin.com/title/freelance)

While there are over dozens of platforms operating just in Asia, these were excluded due to the language barrier. Also, the OLI-metric presented earlier considers only English-speaking platforms. Criteria for selected platforms are given below. The platform must:

- act as an intermediary between freelancers and buyers
- be two- or multi-sided
- offer a broad range of services without focusing on one topic
- operate in the western world due to a language barrier
- have enough public information available

As mentioned earlier, finding these platforms is not a difficult task. Search words "Freelancer platforms" already bring results that cover almost every global platform in the study. Because the subject is fairly new, "TOP10 gig platforms" -style sources are easy to find. After this, it was a question of whether or not the platform fulfills the criteria above. Finding domestic platforms was more difficult. News articles and blog posts about earning additional income and "side hustles" proved a good source. However, quite often these blogs would lead to various billing services such as Ukko.fi, Eezy.fi and OP-kevytyrittäjä. These services offer to take care of the paperwork required to run a business such as taxes and pension payments but do not act as an intermediary for freelancers.

Identified platforms are of different sizes, emphasis and lifecycles. While some of the platforms have very few active users, this study is more interested in the infrastructure than the number of active users. By infrastructure, this study means the categories, services and regulation that the platforms offer.

3.2.1 Excluded from the study

Three groups were excluded from this study: traditional employment brokering companies, platforms that specialize in one type of services and capital platforms. This is done to avoid the "plain obvious" differences from the study. Instead of having to go through that platforms having 150 and 10 categories are somewhat different, these were excluded from the study. After all, the purpose of this study is to find

fundamental differences between intermediaries and there was a concern that these fundamentals might be buried below these “plain obvious differences”.

Traditional staff brokering companies were excluded because of several reasons. They are not born digital nor operate globally so comparing them to companies that are born global and digital might have again given us some plain obvious differences between groups of companies. While these differences are interesting, they fall outside the scope of this thesis. Secondly, many platforms underline and emphasize the fact that they are only a mediator between buyer and seller, not an employer (out of studied platforms there is a contract between freelancer and platform only on Work Pilots). With traditional companies “seller” is employed by the brokerage company and has a contract with it. This is a fundamental difference between these types of companies. Excluded staffing companies also focus heavily on jobs where the worker has to be physically present such as logistics and retail. Because of the aforementioned reasons domestic and other companies such as Oikotie, VMP, Staffpoint and Opteam were excluded from the study.

I also chose to exclude platforms that broker only single category of freelancer services be it graphics and design, programming, writing or something else. Once again, the purpose was to avoid the situation where it must be said that platforms offering services in many categories to many freelancer types are different from those offering just one category of service. Another reason is that the more categories the platform has, the more complex it becomes thus leading into more governance rules and research material. While it seems counterintuitive to start studying more complex entities before simple ones, it is my belief that comparing more complex platforms will yield more meaningful categorization of the platforms.

Finally, capital platforms where people are either willing to rent or sell their possessions such as eBay and Airbnb have been excluded. While people are making at least additional income through platforms like these, selling and renting one’s capital (as in possessions, not in intellectual capital) instead of labor is quite a different endeavor. Thus, I concluded that these capital platforms don’t describe the same phenomenon as labor platforms.

3.2.2 Descriptions of selected platforms

Upwork

Quite possibly the leading freelancer site and industry standard due to a number of users, time of operation and amount of money paid through it. To ensure quality the platform takes 24 hours to review applications. It also offers various tools to ensure that the freelancer is working such as work diaries and a system that counts keystrokes and takes pictures of the screen. Keeps eight main categories: web developers, mobile developers, designer & creatives, writers, virtual assistants, customer service agents, sales & marketing experts, accountants & consultants. Upwork is one of the three platforms included in the study that is clearly multisided as it has different buyer groups. Private persons and companies.

Fiverr

A platform that started as a place where you could by services for five dollars. However, the fixed pricing has been disregarded due to various issues and now sellers can have three different versions of the same service. The roots in the creative industry are still visible as the user will quickly stumble upon products that can be characterized as unorthodox or plainly weird. Examples include offering to play a video game with some, dancing in a banana suit while showing a customized message and many more. Fiverr has eight categories for services: graphics and design, digital marketing, writing & translation, video & animation, music & audio, programming & tech, business, fun & lifestyle

Freelancer

At first, Freelancer was the only platform in this study registered in the stock market but during the fall 2018 Upwork launched its IPO. Australian based platform has acquired over ten other freelancer platforms during its history. Like other big peers, it tries to ensure that the customer is happy with results with a milestone payment system. The account that has not been logged in, in 6 months is deemed inactive and will incur 10 $ maintenance fee every month. Offers exams for freelancers to quantify and show their skills. These certificates also authorize the seller for the buyer and work as marketing material and a way to stand apart from the crowd. The only platform that allows XXX rated content on its site. Has 12 main

categories: websites, IT & software, writing & content, product sourcing & manufacturing, business services, mobile phones & computing, data entry & admin, translation & language, local jobs & services, design, media & architecture, sales & marketing, engineering & science, other.

Guru.com

While considerably bigger than many platforms, Guru.com falls short of the biggest agents with its 1,5 million users and over a million jobs completed. Money paid through the platform is fifth of the Upwork. However, Guru.com is also a younger platform. One of the two studied platforms that have mixed value capture model of commission and subscription. Has eight main categories: programmers & developers, designers & artists, writers & translators, sales & marketing gurus, admin & secretaries, engineers & architects, business & finance gurus, lawyers.

Twago

Twago claims to be the largest platform for freelance work in Europe. However, the metrics behind this claim are unclear. Another platform based in Europe, PeoplePerHour, is bigger in website visits which could indicate a bigger user base. Other than that, Twago is very similar to any other medium or big platform. Still, it is one of the two platforms that have mixed value capture model in this study. Twago has following main categories: web & software development, mobile app, design & video, sales & marketing, translation & writing, other.

Outsourcerly

Outsourcely narrowly made it into the study. The reason is that the platform is geared towards small businesses, start-ups and on people who instead of gigs, seek long-term contracts (hence the name). In a sense, Outsourcely functions very much like a traditional job portal. However, the outlook of the site and the working mechanisms are identical to freelancing sites. The only differentiating factor is the length of the contract. The one-off gigs are also present on the platform. Outsourcely has the following main categories: design & multimedia, web development, mobile applications, writing & content, administrative support, customer service, sales & marketing, business services.

PeoplePerHour

PeoplePerHour doesn't really stand out of its bigger counterparts like Upwork, Fiverr and Freelancer. It essentially is them in miniaturized size. Like other big platforms, PeoplePerHour offers tools for secure payments and workflow control. Despite its size, PeoplePerHour has the largest number of skills and subcategories in this study. Yet the number of categories (things you can sell or buy on the platform) has not manifested as a bigger platform. Some of the bigger platforms are some years younger than the PeoplePerHour. The platform has the following main categories: design, web & mobile development, writing & translation, video & photo & audio, business support, admin, marketing & social media, software development.

iFreelance

iFreelance seems to have matured some years ago and is now gradually waning. Site's layout is clearly outdated. It is, however, the only platform where business and administration services make the emphasis of the platform based on a number of subcategories. On a global perspective, monthly visits to the site are on the smaller end of the scale. Compared to domestic Finnish platforms, it is a giant. iFreelance is a part of Internet Brands portfolio, a company that operates in the fields of e-commerce, vertical markets and online media. The company might have been testing the waters with iFreelance in the new freelancer economy. Quite spectacularly, iFreelance is the only one of the studied platforms that allows communication outside of their system. The platform is able to take this approach because it also wants to double as a marketing tool for freelancers that are already paying a monthly subscription fee.

Freelanced

Freelanced has misleadingly similar layout as iFreelance and has the same outdated feel despite of being some years younger. The site is still receiving some job offers where one offer can easily garner attention from 40 to 70 freelancers. Many of these offers are about music illustration and the price of the project is often in hundreds, sometimes-exceeding 1000 dollars. Freelanced introduces itself as "The Freelancer

Social Network" allowing freelancer to tag each other as friends, but otherwise, the platform seems to fall short in this aspect.

Tinki

A domestic platform that is still in beta phase. Due to this, the platform operates completely without a cost for neither side. While most of the platforms try to make the match as quickly as possible and allowing chatting with freelances, Tinki works at considerably slower pace. The platform's promise is to provide the best pre-screened quotes within seven days. Also, due to the size of the Finnish market, the offered projects tend to lean more into low-tech services such as music teachers and other services that have traditionally been marketed via billboards. Has six main categories: home/living, events, education, leisure, wellbeing and business.

Work Pilots

There are two things that make Work Pilots stand out of the rest. The company has a social agenda as they target the young as young as 14 to 15 years old as their main user group i.e. those that may be struggling to gain their first work experience. Because of this, the platform mediates mainly simple physical tasks such as mowing lawn, window washing, moving furniture etc. Another thing that makes this platform unique is that a contract is formed between the seller and the platform. Sellers are also insured to some extent. This is most likely due to the young age of the sellers. The platform is also noticeably multi-sided. Many platforms welcome both private people and companies as buyers but only few address these groups separately.

Treamer

Treamer is very similar to Tinki and Work Pilots. It is mainly offering physical tasks at the moment. However, the company mediates the jobs only through its application. The application works by giving the freelancer gigs within a certain radius. This makes browsing for gigs difficult. Like Work Pilots, it also addresses private people and companies as buyers separately.

Suoratyö

The final domestic platform included in the study has various unique aspects. This is the only platform that is not acting as a provider. This is because many big companies such as Oikotie (big recruitment portal), Ilmarinen (an insurance company), Fennia (an insurance company) and Lenovo have teamed up together to support the service. Suoratyö is also using the strongest possible identifying technique available. The TUPAS system that is used to log on in Finnish banks. Of course, this system excludes any foreign freelancer. Finally, the platform has the lowest commission of 1 %. The payment is at minimum 2,95 € and maxed at 9.95 € VAT included. It is quite possible that Suoratyö is able to offer these rates because it receives logistical and other support from various established companies. These companies, in turn, are either testing the freelancer marketplace or creating an ecosystem of their own and wish to attract as many users as possible with low rates.

3.3 Collection of data

After identifying the interesting platforms to be examined closer, data collection on and of them began. The collection took place in February 2018 in two weeks' time. The number of website visits for February was checked in March to capture all visits during February. First, I familiarized myself briefly with sites and did a cursory reading of their headlines and content. Web pages were the primary source of information on number and nature of users the platform has. In some occasions, such as iFreelance, if any data about buyers was not written anywhere on the site, a number of open job offers were calculated. After this, I downloaded platforms' Terms of Service documents which together come to 192 pages. These documents go in greater detail in explaining governance rules, how money transfer works and here it could be seen which side (if any) was subsidized. Reading about the payment system also allows inferring if the platforms are clearly geared towards buyers or sellers. After Terms of Service, I read FAQ's for additional info.

After document review, the number and type of the categories and their subcategories/skills were recorded. These can be found as the appendix A: Platforms emphasis. Compiling this data was often quite straightforward (copy-pasting the subcategories into Excel and counting cells) but, in some instances, subcategories had to be counted by hand from the computer screen. Categories that are displayed on the main web page i.e. upwork.com, were deemed to be the main categories the platform

offers. All categories and their subcategories could often be found behind “See all skills” etc. links. In some instances, gaining access to all categories or documents required registration with a platform which was done.

At first, the idea was to purge the subcategory data of duplicates per platform, but since one subcategory can be under various main categories, it was decided against purging the data because it would have had an effect on the category sizes even if small. For example, on PeoplePerHour platform “Composer” -subcategory can be found in both “Creative Arts” and “Photography” categories. In addition to just categories and subcategories, an attempt was made to count also the number of freelancers and open jobs per category/subcategory, but this couldn’t be done reliably for every platform and was dropped. LinkedIn was also tried but resulted in just tens of thousands of sellers even with platforms that claim to have millions of users so this approach was likewise dropped. However, this was the only choice with Twago and thus, a number of open jobs were counted instead of subcategories.

To augment network effects section, SimilarWeb -tool was used to measure the web traffic. One of the tool’s free features is a monthly level web traffic counter. This information was used to make decisions about the size of the platforms. Without a doubt, many visits are one time only from someone who is neither buyer nor seller. However, the same applies to every platform and they should receive these visitors in proportion to their size and popularity. Google Play store was also used to collect information on application platforms might or might not have. Because the Apple Store doesn’t disclose the number of downloads it wasn’t used as a source. Downloads are marked in the matrix as millions. An observation matrix was updated during the research as questions for the platform could be answered. The matrix is described in greater detail in the next section.

3.3.1 Observation matrix

In their book Basics of Qualitative Research, Strauss and Corbin (1990, 41 - 42) state that while being too familiar with the subject matter might backfire leading into tunnel vision and box-thinking, they emphasize the importance of “Theoretical Sensitivity”. By this, they mean that researcher should have rich background information of the subject that “sensitizes” him to what is going on and what he is seeing. Based on the literature review, a matrix was created prior to studying chosen platforms in more detail.

There are six main categories in the matrix: network effects, value capture, offering, boundary resources, quality control and support services. In addition to these, basic information on platforms such as when it was established, where it operates and if the platform is a provider, a sponsor or both, is provided. All in all, these main categories contain 27 subsections. A full listing of sections and their subcategories with explanations can be found in the table 14 below.

Table 14 Observation matrix structure

Section	Subcategories	Information
Basics	Founded Based Sponsor Provider	When founded and where located? Does the platform act both provider and sponsor?
Network effects	Total number of users Number of sellers Number of buyers Number of sides Countries Visits to the site in February 2018	Size of the platform, composition and nature of the platform operated network. In how many countries does the platform operate and how much web traffic the platforms sites attracted in February 2018?
Value capture	Monetization Pricing Which side pays Loss leader	How the platform captures value and which side is subsidizes if any?
Offering	Main categories Number of subcategories Emphasis Biggest category	What is the emphasis of offered services, how many categories does the platform have?
Boundary resources	API App(s) App downloads (Google Play) Outside communication	Does the platform have any API's to interact with third parties or app(s)? Is outside communication allowed?
Quality control	Vetting Testing Grading/rating	What measures have been taken to ensure the quality of service?
Support services	Dispute resolution FAQ	Does the platform offer any additional services such as dispute resolution?

In the matrix, one column contains one platform and rows contain various sections with respective sub-sections. The matrix contains qualitative, quantitative and binary (yes/no) data. To make comparing easier, some of the data was classified into different categories. It is to be noted that a certain amount of information is lost when doing classifications but seeing as the aim was to identify fundamental differences, it wasn't seen as a problem. A foundation or special characteristic should be strong enough to show, even if the variables are classified.

There are some caveats to consider. Provider means the party that is responsible for the infrastructure. Many platforms use various payment services such as PayPal. Hence, the criteria of being a provider was loosened a bit. If the platform uses some other party's payment system but is otherwise responsible for technology, it was marked down as a provider. After all, it is the technology that enables them to act as intermediaries that is the interest of this thesis.

Network effects section contains many empty cells. The smaller the platform is, the less information there is available. The platforms are not forthcoming with the number and nature of the users they have. This is emphasized especially with Guru.com, Freelancer and iFreelance where a number of buyers seems small compared to platforms size. Since some platforms don't give any information, network effects section contains many blanks. All in all, much of the data in the network effects section is at best a "guestimate". Somewhere between a question and an estimate.

While being among the biggest platforms both Guru.com and Upwork get a low number of countries because these were the biggest numbers that could be ascertained. In reality, the truth is without a doubt closer to numbers of Fiverr, Freelancer and PeoplePerHour. For the same reason Fiverr gets a very low number of in subcategories/skill even when compared to smaller platforms. In reality, the number is certainly bigger, but again it was biggest that could be ascertained. Another factor might be that many gigs seem to fall under "other" category.

At first sight, most gigs on Work pilots seem to be related to marketing, but at a closer look, these are gigs posted by the platform sponsor to market the platform. Hence, in the study, it seems that the platform is geared towards marketing services, but in reality, this is not the case. The situation might have changed since it was recorded.

3.3.2 Dataset and coding

The result of information gathering was 27 by 13 matrix of 351 cells. There are some blanks in the data (mainly in the network effects section), as all information was not available or discernable for every platform. Rather than drop these platforms, having more units of analysis was deemed to be more beneficial even if the data is not complete. The observation matrix before coding can be seen below in table 15. “N / A” stands for not applicable. If the platform doesn’t have an application it cannot have downloads, hence N / A instead of an empty cell. In case of Tinki that is in open beta and not accepting payments, value capture section is not applicable. “-“ means that data couldn’t be found i.e. section is blank.

Table 15 Observation Matrix

		Upwork	Fiverr	Guru	Freelancer	PeoplePerHour	Twago	iFreelance	Outsourcely	Freelanced	Suoratyö	Treamer	Work Pilots	Tinki
Basics	Founded	1999	2010	1998	2009	2007	2009	2005	2014	2010	2011	2015	2015	2016
	Based	USA	Israel	USA	Australia	UK	Germany	USA	USA	USA	Finland	Finland	Finland	Finland
	Sponsor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Provider	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Network effects	Users:	17 000 000	-	3 000 000	27 518 914	1 500 000	-	369	325 000	-	-	-	-	-
	sellers	12 000 000	13 678	1221934	1 185 997	68 275	618 796	319	300 000	525	2645	9651	10000	-
	buyers	5 000 000	11 000 000	3454*	232 575*	-	-	50*	25 000	-	-	-	-	-
	Number of sides	3	2	2	2	2	2	2	2	2	2	3	3	2
	Countries	125*	196	35*	247	189	200	-	180	1	1	1	1	1
	Site visits (Feb '18)	36 300 000	35 800 000	2 250 000	16 130 000	4 350 000	385 000	65 000	240 000	59 730	-	-	-	-
Value capture	Monetization	Commission	Commission	Mixed	Commission	Commission	Mixed	Subscription	Subscription	Subscription	Commission	Commission	Commission	N /A
	Pricing	20% - 5 %	20 %	$8.95 - $39.9 4,94 % - 8,95 %	3 % /$3 10% / $5	3,5 % - 20 %	10 % 29 € - 99 €	$6.25 - $9	$19 -$229	$3.0 - $7.0	1% min 2,95€ max 9,95€	30 %	18,00 %	N /A
	Payer	Both	Both	Both	Both	Both	Both	Seller	Buyer	Seller	Buyer	Buyer	Buyer	N /A
	Loss leader	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller	Buyer	Seller	Seller	Seller	N /A
Offering	Main categories	6	8	8	12	8	5	13	15	13	41	-	14	6
	Number of subcategories	2076	258*	2662	1011	7251	669	279	1325	304	41	-	-	160
	Emphasis	Science	Creative	Science	Science	Creative	Science	Business	Science	Creative	Physical	Physical	Physical	Physical
	Biggest category	Programmers & Developers	Graphics & Design	Programming	Websites, IT & Software	Design	Web & Programming	Writing	Programming & IT	Writing	-	-	Marketing*	Housing
Boundary Resources	API	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No
	App(s)	Yes	Yes	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No
	App downloads	1.0 - 5.0	1.0 - 5.0	N / A	1.0 - 5.0	N / A	0,005 - 0,01	N / A	N / A	N / A	N / A	0,001 - 0,005	0,005 - 0,01	N / A
	Outside Communication	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Allowed	-	-	-	-	Prohibited	-
Quality control	Vetting	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	No
	Testing	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No
	Grading / Rating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes
Support services	Dispute resolution	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No
	FAQ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Monetization was coded as "Commission", "Subscription" or "Mixed" depending on the value capture model of the platform. The decision was made based on Terms of Service agreements that explain in detail how money changes hands within the platform. While most platforms take either a commission of each transaction or take a fixed fee, some combine both models.

Pricing is the most complicated variable of the study because of various plans and tiers in place for both sides. For clarity's sake, pricing shows the price for the side paying more for the use based on the *which side pays* and *loss leader* variables. These variables track which side pays more for the use of the platform. Which side pays is coded as "Buyer", "Seller" or "Both" depending on which side pays for the service. Of course, the buyer always pays for the work done, but sometimes sellers finance the ecosystems with subscription payments or some other similar arrangement.

Outside communication is marked as "prohibited" if the platform doesn't give tools for it or if it is explicitly forbidden in the rules. Naturally, platforms won't take responsibility for gigs that have been agreed to outside of their ecosystem.

The *emphasis* of the platform was calculated by counting the number of skills or subcategories (appendix A) under categories science, creative, business and physical which are explained below. From the observation matrix, we can see that most of the platforms have between 6 – 12 main categories that have countless subcategories. These main categories are about the same no matter which platform. Thus, I ended up creating four main categories introduced below and then calculating which category had most subcategories. The number of active cases per category or freelancers would have given a more accurate image, but the data wasn't available. However, the number of subcategories tell us about the platforms' infrastructure i.e. what demand it seeks to fulfill. Below is a non-exhaustive list of examples of what kind of subcategories are under which emphasis:

- Science: engineering, programming, CAD, websites.
- Creative: writing, illustration, design, photo- and videography, entertainment, voice acting.
- Business: accounting and finance, sales and marketing, administrative services.
- Physical: anything that requires physical work from freelancer such as gardening, babysitting, promotion work, cleaning, warehouse logistics etc.

From the table, we can already make some preliminary observations regarding the size, emphasis, value capture and their connection. However, I wanted to make the pattern clearer and elected to categorize pricing variable and to create one new for the platform's size.

Size of the platform can be determined by supplementing the userbase data with a number of visits to the website in February 2018. After experimenting with a different number of categories, three seemed the best compromise between exclusivity between groups and accuracy. Variable can get values: small, medium or big.

- Small, visits to the website < 100 000, userbase < 100 000
- Medium, visits to the website 100 000 – 5 000 000, userbase 100 000 – 5 000 000
- Big, visits to the website > 5 000 000, userbase > 5 000 000

Pricing is the most complex variable due to various plans and tier systems for both sides. Additional service fees such as enhanced visibility for your project and money withdrawal costs are excluded from this variable. To simplify comparing the plans, the variable was categorized into three groups: low, medium and high. All subscriptions are monthly subscriptions.

- Low, commission <= 10 %, subscription <= 10 €
- Medium, commission 10 % - 15 %, subscription 10 - 15 €
- High, commission > 15 %, subscription > 15 €

After coding and categorization of all available observations search for similar platforms began. During information gathering, it became abundantly clear that size varies between platforms considerably and this was a natural place to begin grouping observed intermediaries. Size variable also ties in all variables in network effects subsection.

From the value capture section, three variables rise: value capture, pricing and payer. First, just by looking at the monetization model, it's clear that commission and subscription models are popular and mixed model is uncommon. This observation divides intermediaries into three categories. After categorization of the price variable, pricing also acts as a good way to find similar or different companies. Finally, who pays the commission or subscription or is a loss-leader helps to understand platforms business model and also hints about its strategy. Final variable from offering section is encapsulated in the emphasis variable.

Observations in boundary resources, quality control and support services sections are so universally spread that they didn't yield meaningful differences or tools to identify archetypes.

Had they been collected in some other form than binary this might have changed. Even big platforms might not have an app and those that do, have about the same number of users. However, the presence of an app or at least testing services seems to be more likely with a big platform. The table 16 containing the variables that can be used to tell the platform apart i.e. with most sensibility, and thus subject for further analysis, can be found below. This table serves as the foundation that next chapter and findings are built upon.

Table 16 Variables for further analysis

Platform	**Size**	**Value capture**	**Pricing**	**Payer**	**Emphasis**
Upwork	Big	Commission	High	Both	Science
Fiverr	Big	Commission	High	Both	Creative
Freelancer	Big	Commission	Low	Both	Science
Guru	Medium	Mixed	Low	Both	Science
Twago	Medium	Mixed	High	Both	Science
PeoplePerHour	Medium	Commission	High	Both	Creative
Outsourcely	Medium	Subscription	High	Buyer	Science
iFreelance	Small	Subscription	Low	Seller	Business
Freelanced	Small	Subscription	Low	Seller	Creative
Suoratyö	Small	Commission	Low	Buyer	Physical
Treamer	Small	Commission	High	Buyer	Physical
Work Pilots	Small	Commission	High	Buyer	Physical
Tinki	Small	-	-	-	Physical

4 Findings

This chapter explains in detail how the cross-case synthesis was conducted and lists minor observations accumulated during the study. For the cross-case synthesis, a series of cross-tabulations as well as scoring of the cohesion of the groups were utilized.

Presented minor observations don't always help to identify archetypes but are relevant for understanding the working mechanisms of the platforms. These observations are drawn directly from the observation matrix and as such don't include categorizations of the cross-case synthesis.

4.1 Cross-case synthesis

At a cursory examination, the observation matrix hints that certain categories or archetypes might exist, but the nature of the categories is not explicit. This gave a great starting point for cross-case synthesis that aims at identifying similar cases. Organizing the data according to the five variables, described in the methods chapter, also serve as a "word table" described by Yin. Word table from the methods chapter can be seen again below (table 17). Remember that due to Tinki being free for all during beta-phase, variables about monetization are not available for this platform.

Table 17 Word table

Platform	Size	Value capture	Pricing	Payer	Emphasis
Upwork	Big	Commission	High	Both	Science
Fiverr	Big	Commission	High	Both	Creative
Freelancer	Big	Commission	Low	Both	Science
Guru	Medium	Mixed	Low	Both	Science
Twago	Medium	Mixed	High	Both	Science
PeoplePerHour	Medium	Commission	High	Both	Creative
Outsourcely	Medium	Subscription	High	Buyer	Science
iFreelance	Small	Subscription	Low	Seller	Business

Freelanced	Small	Subscription	Low	Seller	Creative
Suoratyö	Small	Commission	Low	Buyer	Physical
Treamer	Small	Commission	High	Buyer	Physical
Work Pilots	Small	Commission	High	Buyer	Physical
Tinki	Small	-	-	-	Physical

From the word table above, we can see that platforms could be categorized or organized based on any of the variables. At first, it was done with Excel's Pivot tables but was soon done manually because results were easier to interpret. Five of these cross-tabulations are shown below. In the tables, the empty slots are as important as filled slots. Some combinations simply don't exist. Because Tinki lacks three out of five variables it was dropped at this point of analysis.

Table 18 Platform cross-tabulations: size vs payer

		Size		
		Small	Medium	Big
Payer	Both		Guru, PPH, Twago	Upwork, Fiverr, Freelancer
	Buyer	Suoratyö, Treamer, Work Pilots	Outsourcely	
	Seller	iFreelance, Freelanced		

Table 19 Platform cross-tabulations: payer vs monetization

		Payer		
		Seller	Buyer	Both
Monetization	Commission		Treamer, Work Pilots	Upwork, Fiverr, Freelancer, PeoplePerHour
	Subscription	iFreelance, Freelanced	Outsourcely, Suoratyö	
	Mixed			Guru, Twago

Table 20 Platform cross-tabulations: monetization vs size

		Size		
		Small	Medium	Big
Monetization	Commission	Suoratyö, Treamer, Work Pilots	PPH	Upwork, Fiverr, Freelancer
	Subscription	iFreelance, Freelanced	Outsourcely	
	Mixed		Guru, Twago	

In table 18 noteworthy is that none of the small platforms are able or willing to charge both sides whereas big platforms do this consistently. Being able to charge both sides seems to be linked with size. Charging both or a buyer is a more common strategy than making the seller pay for the whole system. What we see next in the table 19 agrees with common sense. If money is made entirely on the sellers, they should be sold subscriptions because freelancers ability to win gigs and get paid (commission) is not guaranteed like subscriptions are. Other than that, we see mixing commission and subscription to be rare and in this case, the platform is charging both sides. For example, Twago offers its sellers "free" option without subscription and 10 % service fee and ads but bids are limited. Next tier costs 29 € monthly but removes ads and gives more bids and so forth. For buyers, posting a project is free (after all they're already paying the seller) but for hourly projects, there is a 12,5 % commission. Finally based on observations, if both sides are paying, a subscription is not used. Whether or not this has to do with this particular selection of platforms or business logic is unclear. It could be that with enough users, platforms can count on enough deals being made so they don't have to charge subscription that could potentially irk the less active users. Cross-tabulation of monetization and size in table 20 confirms what is said above. Big platforms charge commission leaving subscriptions for smaller platforms and medium-sized platforms utilize all the monetization options.

Table 21 Platform cross-tabulations: pricing vs emphasis

	Pricing	
	Low	High
Science	Guru, Freelancer	Upwork, Outsourcerly, Twago
Creative	Freelanced	Fiverr, PeoplePerHour
Business	iFreelance	
Physical	Suoratyö	Treamer, Work Pilots

So far platforms' emphases have not had any attention. The first observation from table 21 is that there is only one platform classified as having a business focus. It might be that there is no market for a premium priced option or again due to selected platforms. However, many platforms have vast business categories as 2nd or 3rd biggest category, but not large enough to count as an emphasis in this study. Not including the business emphasis, other platforms are divided evenly between low- and high-priced platforms. This can be interpreted as that there is a demand for both because table 22 below doesn't support the conclusion that only big platforms are high-priced.

Table 22 Platform cross-tabulations: size vs pricing

		Size		
		Small	Medium	Big
Pricing	Low	iFreelance, Freelanced, Suoratyö,	Guru,	Freelancer
	High	Treamer, Work Pilots	PPH, Outsourcely, Twago	Upwork, Fiverr

Because showing all 20 possible cross-tabulations separately would be cumbersome table 23 below contains all five variables. Value capture model and platform size have been allocated as column and row variables while remaining variables have been noted after the platforms' names. The emphasis in black, payer in blue and price in red. This is the final presentation of the data.

Table 23 Cross-case synthesis

		VALUE CAPTURE MODEL		
		COMMISSION	SUBSCRIPTION	MIX
SIZE OF THE PLATFORM	SMALL	Suoratyö (**PHYSICAL**, BUYER, LOW) Treamer (**PHYSICAL**, BUYER, HIGH) Work Pilots (**PHYSICAL**, BUYER, HIGH)	iFreelance (**BUSINESS**, SELLER, LOW) Freelanced (**CREATIVE**, SELLER, LOW)	
	MEDIUM	PPH (**CREATIVE**, BOTH, HIGH)	Outsourcely (**SCIENCE**, BUYER, HIGH)	Twago (**SCIENCE**, BOTH, HIGH) Guru (**SCIENCE**, BOTH, LOW)
	BIG	Upwork (**SCIENCE**, BOTH, HIGH) Fiverr (**CREATIVE**, BOTH, HIGH) Freelancer (**SCIENCE**, BOTH, LOW)		

Looking at the table above only Treamer and Work Pilots are 100 % similar while other platforms achieve, at best, 4/5 similarity with each other. If we allow the 4/5 difference Suoratyö will join the same group with Treamer and Work Pilots. While groups are not equally strong (amount of difference within a set), they are certainly distinguishable from one another. If the platforms were to be divided allowing only one difference within the group result would be 7 "groups" with one group of three, three pairs and three singles. Looking at table 24 below, the average platform seems to be small (5/12), capture value by commission (6/12), high priced (7/12) charging both sides (6/12) and has science emphasis (5/12). However, like often with average somethings, a platform like this doesn't exist in the collected data.

Table 24 Number of observation per variable

Size		**Value capture**		**Pricing**		**Payer**		**Emphasis**	
Small	5	Commission	6	High	7	Both	6	Science	5
Medium	4	Subscription	3	Low	5	Buyer	4	Creative	3
Big	3	Mixed	2			Seller	2	Physical	3
								Business	1

Looking at the table 23 above, first, we have small, commission charging physical platforms that are almost identical sharing 14/15 variables (3 platforms * 5 variables). Almost as strong is the pair of small subscription-based platforms (8/10). Together these sets form archetypes described in more detail in conclusions chapter. Set of medium platforms is the weakest group (15/20), but again a pair of mixed platforms is 9/10 compatible. A question arises couldn't this group be disseminated and incorporated into other groups? After all, they share many variables with other groups excluding the platform size. Disregarding the size, all the platforms in this category would join the big platforms as they share more common variables with them. However, because these platforms are precursors to the final category, as will be explained later below, they've been organized as one group. The final group of platforms is a collection of big commission platforms and is almost as strong as the small commission platforms sharing 13 out of the 15 variables.

4.2 Minor observations

This chapter presents various minor observations from the data that don't necessarily help to identify archetypes but are nevertheless interesting. These observations are made directly from the observation matrix and not from processed data.

The platforms and "workforce marketplaces" have garnered the publics' attention just in recent years, but the first platforms were established before the turn of the millennia. However, the majority of the studied platforms have been founded during or after 2010. All but one of the 13 studied platforms, act both as a sponsor and the provider. The only exception being Suoratyö that has various partners both in tech and in attracting users. Most of the platforms are actually two-sided. While many welcome both freelancers and companies into seller-side and individuals and associations into buyer-side, only a few platforms address these parties' needs separately.

Platforms are either fiercely global having users from over a hundred nations or being local and serving the domestic market. It seems that local platforms specialize in physical labour where sellers must be present i.e. gardening, childcare, cleaning, relocation etc. On the other hand, platforms acting as an intermediary on knowledge-intensive fields are global. This makes sense as digital goods can be "transported" effortlessly, while buyer needing a gardening services doesn't benefit from a global audience.

The commission is the most popular way to capture value followed by subscription. Only a few of the studied platforms use a mix of the two. The biggest platforms charge both sides but make the buyer a loss leader. This is understandable as the buyer already pays for the projects. Platforms subsidizing the sellers seem to be from the smaller end of the spectrum. Standard service fee for sellers seems to be around 20 %. Of course, this varies between platforms and platforms have several different plans and stages. For example, in Upwork, if one earns more than 500 € in a month, the service fee will drop to 5 %. Monthly subscription fees can be as little as 3 € per month to tens of euros. The usual fee seems to be around 10 and 20 euros.

Regardless of the platform's size, it seems to have around 6 to 12 main categories such as writing, technology, design and translation. However, these categories have several subcategories or skills that can amount to thousands.

All platforms, save for one, prohibit discussions outside of the platform. They have a dual interest to do this. As a matchmaker, they want compensation for making the match in the first place. The second reason concerns quality. To ensure the quality of the service and fair dispute resolution, the sponsor must be able to monitor what is happening within the platform. Only a few platforms have their own app and even fewer have their own API. Having an app doesn't seem to correlate with platforms size, but only the biggest actors have an API.

Virtually every platform utilizes some sort of feedback mechanism as a means of quality control. This can range from simple star rating from 1 to 5, to mandatory written reviews to endorsements. Most platforms also do at least rudimentary vetting of freelancers to ensure they're who they claim to be. Basic measures are verifying email and phone while some take it as far as requiring identifying with banking information and checking with previous employers and accreditation agencies. To further improve quality, some platforms offer their own tests for example in languages and ICT-related issues. However, only a few of the biggest platforms have resources to do this. In terms of support services every studied platform offers at least a FAQ section and often has a contact form for support.

Most of the studied platforms also have dispute resolution services. While every platform urges both sides to reach a settlement in their Terms of Service agreements, not every platform offer to resolve the matter. Means to do this often involves keeping the payment in an escrow account until a verdict is made. To ensure quality, the biggest platforms utilize a number of software ranging from milestone payment and checking the final product (not done systematically but platforms reserve the right to do this) to software that takes pictures of seller's screen to ensure that he or she is actually working.

5 Conclusions

This chapter addresses the main question on the nature of intermediary platform archetypes. After that, three auxiliary questions are covered before limitations of the study, its validity and generalizability, as well as implications for both practice and theory, are evaluated and results examined against the backdrop of the literature review.

Before questions for further research are represented, time is taken to go back to the headline and why I think that cottage industry describes freelancer economy quite well and what it might mean. Questions for further research constitute the final part of this work.

5.1 The archetypes of freelancer intermediary platforms

Based on the study I've come to the conclusion that four archetypes of freelancer intermediary platforms exist. When reading the results, one must remember that only platforms that are not focused around a single theme were studied. Even if emphasis has been calculated for the platforms this doesn't mean that they are doing only that. It also looks like that these archetypes serve as stages the platform moves through while maturing. The amount of time maturation takes is not clear based on data.

Upwork and Fiverr, which are both among the most successful platforms, were founded in 1999 and 2010 respectively. However, in the beginning, Upwork's (or the two companies' that merged) operational environment was quite different compared to Fiverr due to the lack of smartphones and effective e-commerce that Fiverr has enjoyed from the beginning. Only the big generalist platforms seem to be able to charge both sides and the science emphasis doesn't emerge until on medium sized platforms. However, a more thorough examination of stages of maturation is left for the other works. Four identified archetypes are displayed below in table 25.

Table 25 Archetypes of freelancer intermediary platforms

		VALUE CAPTURE MODEL		
		COMMISSION	SUBSCRIPTION	MIX
SIZE OF THE PLATFORM	SMALL	Suoratyö (**PHYSICAL**, BUYER, LOW) Treamer (**PHYSICAL**, BUYER, HIGH) Workpilots (**PHYSICAL**, BUYER, HIGH)	iFreelance (**BUSINESS**, SELLER, LOW) Freelanced (**CREATIVE**, SELLER, LOW)	
	MEDIUM	PPH (**CREATIVE**, BOTH, HIGH)	Outsourcely (**SCIENCE**, BUYER, HIGH)	Twago (**SCIENCE**, BOTH, HIGH) Guru (**SCIENCE**, BOTH, LOW)
	BIG	Upwork (**SCIENCE**, BOTH, HIGH) Fiverr (**CREATIVE**, BOTH, HIGH) Freelancer (**SCIENCE**, BOTH, LOW)		1. The Locals 2. Two for the Price of One 3. The Middle Child 4. Juggernauts

Two for the Price of One. These are the small platforms that are characterized by charging only one side, be it a commission or a subscription, seller or buyer. Whether or not they charge only one side willingly or because they don't have enough bargaining power is unclear. Likely these platforms decided to subsidize the other party to grow their network faster by making it more attractive to the other side. Lack of bargaining power or a goal to grow the network might also explain why the majority of studied platforms under this archetype are low priced. Naturally, these platforms upsell various services for both sides such as increased visibility and platforms' own currencies.

There is not a platform with science emphasis which might be due to the number of cases studied but the possibility cannot be ruled out that science focus is something that occurs only with bigger platforms. Keeping in mind that in this study science emphasis includes software skills and other services where both buyers and sellers benefit greatly from large audiences, this seems plausible. Based on the collected data, platforms like these are among the youngest studied, hence the small size, but some bigger industry players have been founded at the same time or even later. In terms of network and trust management, this archetype has fewer tools than bigger counterparts, due to their smaller size. They simply don't have as much need for them or resources to create and run them.

Notable features of this archetype are:

- Small size
- Fairly young
- One side pays for both
- Often low priced
- No science emphasis

This archetype can be broken down for smaller entities as it has a subgroup.

The Locals. A subgroup of "Two for the price of one" -archetype. Small platforms that operate within one country or even just in the biggest cities. Because global competition is fierce in knowledge-intensive services, these platforms forfeit this category to bigger players who have the upper hand in terms of users, resources and established a name. Instead, these platforms opt to fulfill the need for services that require physical work, often at a location determined by the customer. The global scale won't help to fill this niche. On the contrary, size could backfire as meaningful connections get lost in the throng of people offering similar services around the world. Naturally, content curation can combat the complexity, but sellers of physical services might not benefit from being a part of the big international platform. The sponsor could be equally unwilling to include too many countries if accommodating all groups' interests together is not easy.

These platforms appear to be the youngest among the ones studied. However, they're all from Finland which might be an indication that these types of platforms have been embraced later in Finland than in other countries. Another feature is that the buyer pays for both sides i.e. for the seller and the platform. Two of the platforms in this group pay the seller a fixed amount of 10 € per hour. Finnish law doesn't have a set minimum wage and these 10 €/h rates make it easy for the sellers to decide if they want to accept one, three, five hours or even few days gig. It also ensures that there are enough willing sellers when payment is stable from project to project. However, on the flip side, the payment will not, at least currently, increase from the 10 €/h depending on how challenging the project is. Buyers' needs might be so sporadic that charging commission is the only viable option for the platforms. These platforms target both individuals and companies as buyers and while companies might have regular need for logistics, promotional or other work, private customer doesn't.

Out of the three platforms, Work Pilots aims to help the young to accumulate vital work-experience and as such it makes sense for it to charge platform maintenance fees from the buyer.

Notable features of this archetype are:

- Small
- Young
- One side pays for both
- Operates locally
- Services are physical
- Charges commission

The Middle Child. Medium sized platforms that are often expensive and charge both sides. Smaller versions of the global juggernauts and as presented earlier, if size variable were to be discarded these would join global juggernaut archetype rather than the smaller archetypes. However, the size variable is important and not to be discarded. Size of the platform influences many features from its bargaining power and attractiveness to design choices. It is probable that platforms belonging into this archetype either keep growing, get bought out, wither away or face bankruptcy. In a sense, these platforms are similar to global juggernauts in all the other aspects but the size and are looking ways to close the gap to bigger players. Hence the name.

Having hundreds of thousands to some millions of users, the middle child archetype is not a small operator, but compared to bigger counterparts it is still relatively small. Science focus that was absent from the previous two archetypes emerges here be it due to size or chance. Differences in value capture model make this archetype the most inconsistent as value capture is done either by commission or subscription or by a mixture of the two. Reason for mixing two models is not clear but it is most likely an attempt to monetize the network to the fullest by offering both sides payment methods that suit them the best. For example, the guru.com is free for buyers excluding the 2,5 % handling fee (or commission) per invoice whereas seller pays a fee from 4,95 % to 8,95 % (free plan) depending on the plan. These plans also influence the number of bids that can be made, how much skill tests cost etc. When these platforms mature it is possible that they will switch into commission model and charging both sides.

Notable features of this archetype are:

- Medium sized
- Often expensive
- Value capture style varies and includes mixed
- Often charges both sides

Global Juggernauts. These platforms are "the bold and the beautiful" of the freelancer intermediary platforms. They're big, well established and can offer various support services such as testing to increase quality. These are the platforms that show up first in search queries and are likely to buy smaller competitors as they've already done so in the past. However, even this archetype is susceptible to envelopment by actors such as Google and Facebook that have billions of users.

Over ten million users mean that these global juggernauts have lots of buyer needs to be fulfilled but also lots of sellers to fulfill them. This essentially means that network management such as curation services, vetting of people wanting to join the site and other trust mechanics are emphasized. While the middle child may or may not have escrow accounts and freelancer surveillance software readily available, global juggernauts do. Global juggernauts have the bargaining power to charge both sides due to their size because they're acting as a bouncer to lots of customer or talent depending on the point of view.

Notable features of this archetype are:

- Big
- Charge commission
- Charge both sides
- Often expensive
- A significant number of categories
- Significant trust mechanics in place

In figure 10 next page, the four archetypes with their distinctive features have been put into a coordinate system that has size as a horizontal axis and both price and the number sides paying as the vertical axis. Price can either be low or high and a number of sides paying can either be both-sides if both sides are charged or one-side if only one side pays for the use of the platform. The order and position remain the same no matter which vertical axel is being examined. When looking at the figure, it is important to remember that archetypes represent

the big picture; a global juggernaut might have a low-cost case among platforms, but overall juggernauts are expensive etc.

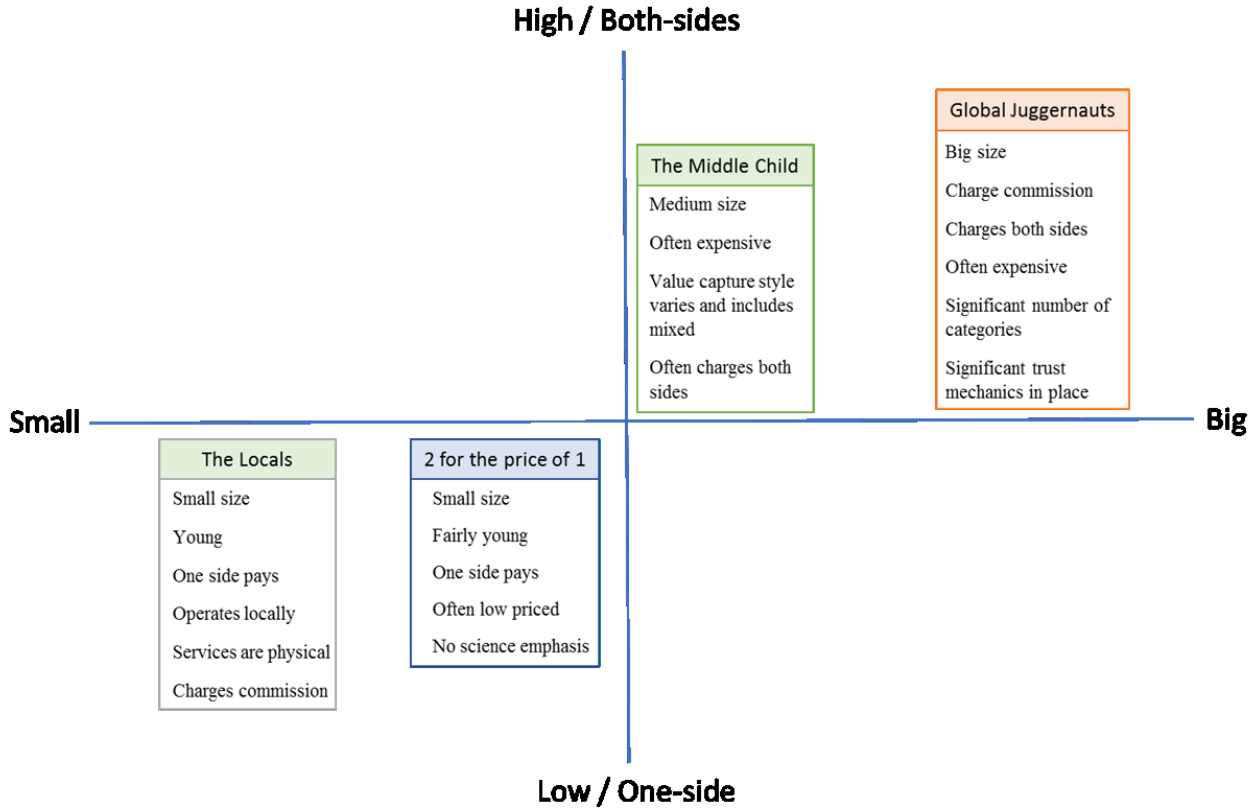

Figure 10 Archetypes. Arranged by Small-Big – High-Low / Both-sides-One-side -axis

Once again it is important to examine empty spaces. Based on the selected case platforms, a small, expensive platform that charges both sides, doesn't exist within generalist platforms that offer a multitude of services. There is neither a big, inexpensive platform charging only one side among the ones studied. This could be due to the bargaining power of a big platform that acts as a gatekeeper for a huge pool of buyers and sellers or some other factor.

5.2 How platforms generate value

Intermediary platform's most important function is acting as a matchmaker between a buyer and a seller. Value is created when the platform decreases both parties search and transaction costs, helps to determine the quality of the offered service and ascertains trustworthiness of both sides. In a sense, they reduce formality required in hiring someone. Trust did not emerge

in the literature review of this thesis (except for Sorri), but many platforms either buy or have invested directly in various escrow-services, milestone payment and billing systems of their own. If the platform is big, various tests can also be taken by sellers to prove their skills and software tools can be used to ascertain that freelancer working on an hourly wage has actually been working as many hours as billed. If there are disagreements about whether or not the contract has been fulfilled or some other issue, many platforms offer dispute resolution services. These trust mechanics also help to ensure that parties stay within the platform after initial contact. While mechanics above depend on the platform's size and capabilities, collecting feedback and ratings of both sellers and buyers is universal practice and one of the first steps or even the minimum requirement to establish trust.

Platforms take time to review applications which can take few days and being able to join the platform is not guaranteed. This vetting can be as simple as asking a potential candidate for working phone number and email or as thorough as asking for references from previous employers and schools. Naturally, this helps to maintain the quality and standards of sellers and buyers but controlling access to the market/community also increases the platform's bargaining power and allows balancing of sides. From earlier parts of this thesis, we remember that positive network effects are crucial for platforms. However, this effect can also be negative. For example, buyers might become overcome with substandard quotes if there are too many sellers per buyer (in the respective category or skill).

Users' search cost already decrease when they find the market (Here I can find the help I need) but it can be further improved with matchmaking i.e. showing buyer curated content. Curation itself builds on mechanics presented above as well as design choices. As we remember from chapter two's Facebook example, more important than the size of the network (aggregate) is the size of the relevant network (whom I want to do business with). The network must be active and useful and negative interactions must be minimized. In freelancer context, negative interactions are substandard quotes, poor quality of work and customers that don't pay. For example, to counter inactivate users, Australian based "Freelancer" has a fine for accounts that have been inactive for six months.

5.3 Reasons for freelancing

Reports from various freelancing platforms and Pew Research have some common themes. Freedom or flexibility of schedules and possibility to earn at least additional income are the most recurring themes. Flexibility doesn't mean just being able to set working hours and place as a way to achieve work-life balance. Ability to work across sectors, in shared workplaces and meeting new groups and organizations also show up when talking about flexibility. Ability to choose projects is also mentioned, but there might be a difference between full-time and part-time freelancers. Full-time freelancers might be financially obliged to take projects they are not particularly interested in. Earning more motive has various components. It can just mean gaining little extra income to supplement earnings doing whatever tasks are available or it might be monetization of a hobby. Some freelancers believe (and live up to their belief) that they can earn more by freelancing than by working (consistently) for one employer.

Freelancing can also be a way to decrease financial uncertainty by reducing dependence on one income source. However, in Upwork's study, only 53 % of freelancers felt what having multiple clients is more secure than having one employer. At the same time, the main reason preventing people with full-time employment from switching over to freelancing is concerns about income predictability. The same report notes that millennials and generation Z (1990's and forward) are the most active freelancers. The financial crisis of 2008 might influence this as many traditional and prestigious companies had layoffs making it hard to find employment.

For those dreaming of being one's own boss, freelancing fulfills this dream at least partially if freelancing is a side-job. Freelancers also report in Upwork's survey feeling more respected, empowered and eager to start the day. In other words, for some, freelancing is a way to control one's own destiny. 79 % of freelancers in Upwork's survey state that freelancing is better than traditional employment. When talking about reasons for freelancing, one must keep in mind that in addition to these lofty ideals, some freelance because they don't have any other choice or it's traditional for the profession.

Pew Research divided freelancers into casual and power users. For casuals freelancing income is a luxury or a nice supplement but for power users freelancing income is significant income source if not the only one.

5.4 Is there winner-take-all -dynamics in place?

It seems that there are no winner-take-all -dynamics in place for this kind of platforms. At least not in the most extreme form. Rather the situation reminds of that with operating systems where Windows, Linux, Android and iOS are vying for supremacy. From the literature review, we remember that one platform is likely to serve the whole market when multi-homing costs are high, there are strong and positive network effects in place and there is no demand for differentiated features or the dominant agent can offer these features at a premium (supply economies of scale). Another option is that the platform is a natural monopoly.

The market will accommodate few agents with significant influence on the industry because there is a demand for differentiated products. Someone might appreciate a marketplace focused around a single theme (graphics, programming etc.) while others might want a marketplace that contains professionals from all fields. There are differentiated needs on nature of freelancers. Hiring a seasoned developer to do data input is not cost-effective while hiring a student wanting additional income might not bring desired results in more demanding tasks. Location of a freelancer is also an issue with physical services. While economies of scope are available to the market that contains all freelancers, the buyer is only interested in sellers within a certain radius. Other sellers just add complexity and search costs. Of course, this can be alleviated with various filters, but they add to platform's complexity and costs. For the same reason, it is hard to see a platform within a platform where both programmers and graphic artists would buy and sell on their own platforms under an umbrella platform. Even if the field has been consolidating, the challenge of accommodating the interest of various groups will prove difficult because these groups will not accept other groups having better conditions on commission or other aspects.

With freelancer intermediaries, there are multi-homing costs for buyers and sellers alike. However, whether or not they can be called high or not depends. If the seller or buyer operates through many platforms that charge a subscription, the arrangement becomes expensive very quickly. Even if platforms only charge commission, upholding a profile and reputation on multiple sites would be time-consuming and potentially mentally taxing. If additional services are bought i.e. visibility for the project or other marketing actions, these expenses would be shared among platforms decreasing their efficiency or cost would be multiplied by the number of platforms. Finally, there is the complexity that arises from using multiple platforms with different user interfaces, rules and having customers scattered at multiple platforms. For

buyer's complexity is the main issue as one of the bigger platforms might be able to supply all the needed talent. Considering all the above, I argue that multi-homing costs accumulate quickly and become prohibitive for the average user

It should be noted that seller might multi-home to decrease risk i.e. avoid putting all the eggs in one basket. Platforms can change their pricing or other policies quickly or the transactions might not go through because of technical issues or something else. In this sense working through multiple platforms decreases dependency on one channel.

Presence of strong and positive network effects is questionable. This is the same challenge that famous companies have with their job openings. Each opening gets hundreds of applicants. While the scale is smaller for buyers of freelancer services, a number of offers can be insurmountable leading into the suboptimal decision. On general level platforms also face quality issues on both sides. Buyers who don't pay or sellers who don't finish a product or who give false information about their skills and abilities. Because of this, more people on the other side doesn't automatically result in a more positive outlook for the other nor the same side.

In addition to what is presented above, there is no natural monopoly present. Freelancer intermediary platforms are basically employment agencies which there are plenty. Both privately and publicly owned. Unlike infrastructures such as railways, water pipes and electrical grid, intermediary service is easy to establish. The field has been consolidating for years when larger platforms have bought smaller ones or expanded into new markets by the acquisition of the local strong player. Platforms have also acquired companies that were working on safe mobile/internet payment and escrow systems. Especially the latter is something of a moat, but still a far cry natural monopoly or even a monopoly.

The literature review also examined platform envelopment. However, this is a tactic used to battle one opponent at a time and as such a means to win the winner-take-all battle over time. Should someone of the "serial envelopers" such as Microsoft, Apple or Google want to get into the on-demand economy they have the technical and commercial skills to pull it off on their own, but in my opinion, would rather either buy one of the current operators or partner up with it. Of course, the partnership might eventually end in the assimilation of the platform though this doesn't fit the description of envelopment.

Eisenmann et al. divided envelopment attacks into three. Complements, weak substitutes and functionally unrelated and as stated in the literature review, bundling services is the main avenue of attack. The underlying assumption being that the customer is already buying your

and the platform's product or service. If enveloper can make it more alluring for the customer to buy its bundle rather than separately envelopment has a change of success. Freelancer intermediary platforms have possible threats in all categories. PayPal is widely used by platforms and as such shares userbase with them. Traditional employment agencies are filling almost the same need as intermediaries and workforce brokerage companies already act as a weak complement. If incumbent brokerage companies forfeit their emphasis on physical services, they can become a freelancer platform studied in this thesis almost overnight. Finally, the aforementioned serial envelopers already share "components" and know-how with platforms. Facebook has already approached banks to strengthen its marketplace of physical items and for Facebook move from there into freelancer intermediary business is a short one. Google is launching its own "job search engine" Google for Jobs. Thus, envelopment attack on the intermediary platforms is not unthinkable.

5.5 Research evaluation

The study identified four archetypes of intermediary freelancer platforms and a host of smaller findings. Both have practical and theoretical implications are examined below. The study paints a similar picture to that painted by literature review material.

However, when generalizing results, one must remember, that a subgroup (freelancer intermediaries) of a subgroup (intermediary platforms) was studied which influences how much can be speculated on other platforms other than freelancer intermediaries based on this study.

5.5.1 Practical implications

A manager wishing to hire freelancer might have difficulties if the task is not well defined. The project might gain no attention at all or garner the interest of hundreds of freelancers. The quality of work can be an issue, but the biggest platforms have various tools to ensure that the quality is satisfactory in a form of escrow accounts and payment milestones. At least, this work explores and describes various trust mechanics that might encourage a potential buyer to try freelancer services via an intermediary.

A potential freelancer has to be ready for the option that he or she is not paid for the work. Of course, this also applies to "physical world" as well, but on platforms, this seems to be more

of a problem because parties communicate only through the platform and often live on different continents. At the moment, platforms seem more interested in the vetting of the sellers than the buyers. After reading this study, the potential freelancer should be more informed about existing platforms, their pros and cons as well as multi-homing issues and his or her options in general.

Like practically all platforms state in their FAQ's, a well-composed profile is a necessity for a freelancer. Though some platforms allow freelancers to operate behind a nickname, it seems advisable to use either company's name or one own name to bolster trust.

5.5.2 Implications for theory

The study achieved its main goal of finding archetypes between intermediary platforms. These archetypes, in turn, can become units of analysis for later allowing meaningful comparisons between various groups or act as act as an interesting subgroup to be studied further in its own right. The study also raises a question about the development stages and the way these platforms mature.

This study was an exploratory due to the lack of previous research. Hence, the proposals for causality are weak. However, the next study could build on findings of this study to ascertain these archetypes by pattern analysis or some other way that utilizes target variables.

The results imply that the size of the platform allows the sponsor to collect payments from both sides. The expense of running a big platform is a factor requiring more income, but the size also means more bargaining power for the sponsor as it acts as a gatekeeper to a huge pool of talent and work. A generalization could be made that small platforms welcome new users whereas bigger platforms shall allow new users to join.

While the knowledge-intensive fields populate global platforms, the local platforms seem to fill with physical tasks that require freelancer's presence. However, this might be due to how many Finnish companies were selected. Be it as it may, this study proposes that local physical platforms can live in the ecosystem otherwise dominated by global giants.

5.5.3 Assessing the reliability and validity of the study

Some of the data in the observation matrix such as the total number of users vary from day to day, while other data is slower to change. It must be noted that given enough time, matrix's data will become completely obsolete due to updates in Terms of Service, number of categories and the industry's consolidation among other things. Some of the companies studied here might even be missing few years down the line.

Keeping this in mind, the main source of information for this study are the Terms of Service agreements. Thus, the person that reads the same agreements gets the same data. However, the number of skills or subcategories is constantly shifting, and the given emphasis might change. I see no problem in that since they're businesses that evolve to answer demand and to stay alive and the data provides a snapshot of the industry players during the early 2018.

There are missing variables within the matrix but the majority of them are within the network effects section. Sometimes getting even the total user amount proved to be difficult as platforms are not very open about the number and the nature of their users, size of sides or the number of active users. As the final analysis focuses on results from value capture and offering sections of the matrix while network effects section is combined under size variable, I believe that the missing variables, while regrettable, are not fatal for the study.

My biggest concern with the data and whether someone else will reach the same conclusions as I did, is the categorization and coding of the variables. To someone else the threshold of expensive might be lower or higher etc. which will in return results in a different matrix. However, as the coding has been disclosed, how results were obtained should be clear. Given these three points about coding, missing variables and life-span of the data, I don't' see why the results wouldn't be consistent irrespective of who is doing the study. Hence results should be both robust and reliable.

Internal validity means that relationships between variables are well reasoned, but Yin states that internal validity is not directly applicable to exploratory study since these studies are not concerned with causality i.e. proving that y happens because of x. While the research implies that being inexpensive and charging one side are variables describing a small generalist platform, it cannot be said for sure. Another study using pattern analysis or some other method is required to ascertain these findings. However, Yin states that when something cannot be directly observed and is inferred instead, problems might arise. Was the inference correct? This caveat mainly concerns the network effects section which has many blanks and other values

are often “guestimates”. As said previously while exact numbers are often missing, we can deduce the size of the platform and categorize them into three classes. For the purpose of this study, knowing the range is enough. (Yin 2009, 42-43).

Yin also points out that people critical of case studies are saying that construct validity (does the variable measure the right thing) of case studies is poor because operational measures are not sufficient and what is collected is based on subjective judgment. To alleviate this Yin suggests using multiple sources and establishing a chain of evidence during data collection. (Yin 2009, 41-42). As stated above and earlier, the observation matrix’s sections were not selected at random, but are based on the platform literature. Where possible, multiple sources have been used such as SimilarWeb-tool and Google Play’s statistics as well as white papers and business press.

When talking about whether or not study’s findings are generalizable to other platforms or as Yin puts it “beyond the immediate case study” Yin uses the term “External Validity” (2009, 43) and Stauss & Corbin talk about generalizability (1990, 249-250) both sources are describing the same issue. While studied sections are based on platform literature (filling the theory-observation compatibility requirement) one should remember that a subset (freelancer marketplace) of a subset (intermediary platforms) was studied when making generalizations based on this study’s results.

Because of this, results should be transferable to other workforce platforms, but not necessarily into other intermediary platforms. Of course, freelancer intermediary platforms share components with other types of intermediary platforms, such as support features, value capture and network effects, but they’d utilize them the way that best suits them. Hence, four archetypes should be identifiable in other freelancer platforms not included in this study.

While I’d have loved to study the network effects section more deeply, the data didn’t allow to go further.

5.5.4 Results in the light of literature review material

The study did not yield findings that would challenge the material presented in the literature review. However, it does supplement it by highlighting the importance of trust management mechanisms that received little attention in the literature review.

Eisenmann et al. stated that one company can fill both roles of a sponsor and a provider (2008, 4). This also applies to studied platforms where only one platform opens the door for other providers. Please note that in the study platform was still seen as both the sponsor and the provider if it used other companies' products such as Paypal for transactions. It would make little sense economically or otherwise to invest resources for creating a safe payment system that users are willing to trust if it is already available on the market.

While the material in the literature review covers a lot of ground it doesn't really cover the matter of trust. The user must be able to trust the service to provide quality gigs and work and to handle payments appropriately. Else a lemon stand market failure demonstrated by Hagiu will take place (2014, 7-8).

Studied platforms are a very good example of a two-sided market depicted by Anderson and Coates where one side cares about the number of participants on the other side (Anderson & Coate, 2005, 950). Sellers are interested in the number buyers and vice versa. However, having too many or too little can cause negative network effects undermining platforms position as a value hub described by Llewelyn et al. (2014, 207). Reading the platforms' discussion board also showcased the fact described by Hagiu (2014, 74) that attracting too many sides or even users creates too much complexity. Users were complaining about having too many users per gigs, untrustworthy users etc.

These issues come down to the basic questions of networks. How to minimize negative interactions and keep the relevant connections active described by Boudreau and Hagiu (2008, 9). These are also linked to the trust mechanics mentioned above. Hagiu also noted that platforms' governance rules serve two purposes: controlling access to the platform and controlling interaction within (2014, 76). Especially the former notion of a platform as a gatekeeper was an integral part when thought experimenting with platforms bargaining power and power of exclusion.

When talking about subsidizing, Parker and van Alstyne say that the market that contributes more to the demand is the one to offer free goods or otherwise subsidized (Parker, van Alstyne 2005, 1503). These platforms follow this rule even if doesn't seem so at the first glance. After all, platforms are charging, seller, buyer or both. Even in the case of charging both, the other party usually pays less in terms of service fees. Often this is the buyer but not always. Subsidizing can also be used as a way to identify two-sided market as Rochet and Tirole state

that effective cross-subsidizing as a sign of a two-sided market (2003, 1017). This agrees with findings of this thesis as many platforms seem to treat one side as loss-leader.

5.5.5 Cottage industry

As per Merriam-Webster's definition, term cottage industry describes the decentralized production of goods and services in small-scale units often not bigger than one family. The term appears to describe the freelancing industry well. Quite often freelancers work alone from their homes. The point has also been raised that modern intermediary platforms resemble a putting-out system of the old, which is almost the same as a cottage industry.

While this thesis has represented the reader with the critique that platforms will revert society into 1910's – 1930's society where people must find employment again every day as a day worker, I tend to disagree. Likely, freelancing will increase to some extent be it willingly or not, but one must remember that companies cannot function properly if they have to guess every day if they have enough employees/contractors for the current day. While freelancers are a very flexible asset to use in one-off projects, overflow situations and seasonal demand spikes, it is my personal opinion that continuous work is better left for regular employees. Simply put, and by its very definition, a cottage industry has a low economic impact on a large scale for not being able to compete with mass-produced goods.

Of course, the cottage industry is often spoken in the context of physical goods and artisanal crafts, which is but a fraction of today's freelancers. In popular freelancer categories such as programming and graphic design, mass-production is not a viable approach. Thus, freelancers will be able to compete in some projects with bigger companies where agility is the key. The big question is, if decentralized production of services increases? What it means for companies' transaction costs, peoples' earning potential and by extension governments' tax income? However, this falls outside of the scope of this study.

5.6 Suggestions for further research

When we compare the archetypes and the years they were founded, it seems that these archetypes represent stages in platforms evolution. A theory where platform starts small being able to charge only one side due to the chicken-or-egg dilemma matures into a medium sized actor that either withers away, gets bought or grows big, seems to agree with common sense.

However, this study did not investigate this idea further. Thus, studying the stages of intermediary platform maturation seems warranted.

These platforms are available everywhere which leads us to the next interesting question. Can platforms decrease global income disparity? By common sense, the extreme values of highest and lowest hourly pay should approach each other to some degree. The range should definitely shrink as westerners cannot keep their current prices and freelancer from other continents are able to increase their prices because they'll still be cheaper than their western counterparts. The issue is, however, how much they can increase their price before they begin to lose their advantage?

In the chapter above a question was presented how much decentralized production of services can increase before it loses its advantage of flexibility. If too many choose on-demand freelancing, will we face a problem of not having enough regular workers? Note that this is fundamentally different to the situation where a company cannot fill empty vacancies. Rather, will companies face a situation where they don't have enough people who are willing to commit to a single employer?

In this thesis, the question of why people become freelancers was answered based on global surveys. The number of Finnish freelancers on domestic or global platforms and their motives for freelancing are unknown. Answering these questions could give new information about the Finnish labor market and the state of the society. It is still unclear whether or not the majority of users can gain a sustainable living from these platforms in addition to a few superstars.

Quite often freelancers state that the ability to choose their own hours is an important factor for their reasoning. Thus, to what extent they are able to choose their hours is an important question. Could it be that in reality, to make sustainable living freelancer must be constantly on-call because buyers buy when they want to, not when freelancers are ready to sell?

While browsing various platforms' forums and blog posts the issue of trust and quality rose again and again. Freelancers complained about not being paid for the work done and buyers complained about difficulties in finding freelancers with suitable or good enough skills. There are various tools to ensure that freelancers get paid and buyers get quality products. Example of these are escrow accounts administrated by the platforms and milestone payment systems. However, a deeper study into how platforms foster trust between partners and how they curate content is an interesting question. Currently, the rule of the thumb for finding a trustworthy person seems to be finding someone who has good reviews and a long history on the platform.

This is problematic if one has just joined the platform. To ensure quality service, some platforms have elected to create their own tests to test freelancer's skills. This is a heavy system and available only for the biggest platforms.

Managing trust in the networks and network management, in general, raises another question. How much surveillance are the freelancers willing to put up with? Nowadays, when talking about trust blockchain technology often surfaces. At a glance, it would seem that blockchain doesn't threaten intermediaries even if it becomes the most important trust factor because there still has to be market where buyers and sellers can find each other. Still, blockchains influence towards freelancer intermediaries merits serious pondering.

Comparing platforms against traditional employment brokers or "lease" companies such as Staffpoint, Mol and Opteam was outside of the scope of the study. As always, the emergence of platforms poses a threat for incumbent companies and whether or not these companies are going to change their business model and if yes how, remains an open question. In essence, this would be a study of the industry's future.

Positioning between local and global freelancer platforms is interesting. As we can see from the archetypes, platforms where physical services form the biggest category are local. It agrees with common sense that buyer seeking physical labor would use the local platform. After all, having over a thousand gardeners available doesn't really help if most of them are located far away. The first question would be ascertaining that this is indeed the case. The second question being which search radius is profitable for both parties i.e. how far a gardener is willing to travel for the gig. Signing-in in international platform might not do the seller any good if he is an electrician in Finland and someone needs an electrician in Germany. While global platforms have physical tasks as well, they focus more on services and products where location doesn't matter, and the results can be delivered by courier services.

As an exploratory study, this research hints that certain causalities exist. For example, inexpensive and charging one side could be dominant features of small generalist freelancer intermediaries, but this should be ascertained by another study.

References

Books and reports

Accenture 2014. Accenture Technology Vision 2014. From Digitally Disrupted to Digital Disrupter. https://investor.accenture.com/~/media/Files/A/Accenture-IR/events-and-presentations/Accenture-Technology-Vision-2014.pdf

Accenture 2015[1]. Accenture Technology Vision 2015. Digital Business Era: Stretch Your Boundaries. https://www.accenture.com/us-en/it-technology-trends-2015

Accenture 2016. Value Unchained. Linking into the network effect of digital platforms. By Miguel Custodio. https://www.accenture.com/_acnmedia/PDF-5/Accenture-Strategy-TS-Digital-Platforms.pdf

Accenture 2017. Technology Vision 2017. Amplifyou. Technology for people The Era of the Intelligent Enterprise. https://www.accenture.com/us-en/insight-disruptive-technology-trends-2017

Carl Shapiro and Hal R. Varian 1999. Information Rules. Harvard Business School Press. *ISBN 0-87584-863-X*.

Elance 2013. Generation Y and the Gigging Economy.

https://www.csd.org.uk/content/uploads/2015/07/gen-y-and-the-gigging-economy.pdf

Evans P, Gawer A, 2016. The rise of the platform enterprise. A Global Survey. The emerging platform economy series no.1. The Center for Global Enterprise

Halen et al 2016. Marco Ailisto, Heikki; Collin, Jari; Juhanko, Jari; Mäntylä, Martti; Ruutu, Sampsa; Seppälä, Timo; Halén, Marco; Hiekkanen, Kari; Hyytinen, Kirsi; Kiuru, Eeva; Korhonen, Heidi; Kääriäinen, Jukka; Parviainen, Päivi; Talvitie, Jaakko ’Onko Suomi jäämässä alustatalouden junasta’ Published 20.4.2016. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 19/2016 ISBN PDF 978-952-287-253-1

Juha Siltala, 2016. ’Työnantajan alaisena ilman työsuhdetta. Uuden talouden keikka- ja silpputyö paluuna entiseen.’ Kalevi Sorsa säätiö. Published 09/2016

Juha Siltala, 2017. *Keskiluokan nousu ja tuho*. Otava. Published 01/2017.

ISBN: 9789511314189

KPMG 2016. ‘U.S. CEOs Say Next Three Years Will Be More Critical For Their Industries Than The Previous 50’ KPMG Study Published 29.6.2016

Oksanen Kaisa, 2017. ‘Government Report on the Future Part 1. A shared understanding of the transformation of work.’ Prime Minister’s Office Publications 13a/2017 Published 8.6.2017.

Parker, G, van Alstyne, M., & Choudary, S. 2016, ‘Platform Revolution: How Networked Markets Are Transforming the Economy – And How to Make Them Work for You’. W. W. Norton & Company Ltd, New York.

Pew Research, 2016. ‘Gig Work, Online Selling and Home Sharing.’ PewResearch Center. Published in 17.11.2016. http://www.pewinternet.org/2016/11/17/gig-work-online-selling-and-home-sharing/.

Straus Anselm, Corbin Juliet 1990. ‘Basics of Qualitative Research: Grounded theory procedures and techniques.’ Sage, USA.

Stake E. Robert 2006. ‘Multiple Case Study Analysis.’ The Guilford Press. New York, USA.

Suomalainen Sanna, Stenholm Pekka, Kovalainen Anne, Heinonen Jarna, Pukkinen, Tommi 2016. Global Entrepreneurship Monitor. Finnish report 2015. The University of Turku, school of economics.

PWC 2014. ‘The Future of Work. A Journey to 2022’ Published 2014.

https://www.pwc.com/gx/en/issues/talent/future-of-work/journey-to-2022.html.

Tyson Laura, 2015. ‘How can we protect workers in the gig economy?’ Online. Available at https://www.weforum.org/agenda/2015/11/how-can-we-protect-workers-in-the-gig-economy/. Published 30.11.2015 Read 10.7.2017

Upwork 2016. ‘Freelancing in America: A National Survey of the New Workforce’ Available at https://www.upwork.com/i/freelancing-in-america/2016/.

Yin, R., 2009. ‘*Case study research*.’ 4th ed. Los Angeles, California, Sage.

Articles

Anderson, S. P., & Coate, S. (2005). Market provision of broadcasting: A welfare analysis. Review of Economic Studies, 72(4), 947–972.

Boudreau, Kevin J., and Andrei Hagiu 2009. "Platform Rules: Multi-Sided Platforms As Regulators." In Platforms, Markets and Innovation, edited by Annabelle Gawer. Cheltenham, UK: Edward Elgar Publishing, 2009.

Caillaud, B., & Jullien, B. (2003). Chicken and egg: Competition among intermediation service providers. RAND Journal of Economics, 34(2), 309–328.

Eisenmann Thomas R., Parker Geoffrey, Van Alstyne Marshall, 2008. Opening Platforms: How, When and Why? Working paper. Harvard Business School. Published 31.8.2008

Eisenmann Thomas, Parker Geoffrey, Van Alstyne Marshall, 2010. Platform Envelopment. Working paper. Harvard Business School. Revised 27.7.2010

Gawer Annabelle, Cusumano A. Michael, 2002. Platform Leadership How Intel, Microsoft, and Cisco Drive Industry Innovation. HBSP http://hbswk.hbs.edu/archive/2984.html

Gawer, A. (2009). Platform dynamics and strategies: From products to services. In A. Gawer (Ed.), *Platforms, markets and innovation* (pp. 45–76). Cheltenham, UK: Edward Elgar.

Ghazawneh, A. & Mansour, O. (2015), *Value Creation in Digital Marketplaces: Developers Perspective*, Thirty Sixth International Conference on Information Systems, Fort Worth 2015.

Ghazawneh, A., Henfridsson, O. 2013. *Balancing platform control and external contribution in third-party development: the boundary resources model.* Information Systems Journal 23, 173–192.

Hagiu, Andrei, 2014. Strategic Decisions for Multisided Platforms. *MIT Sloan Management Review*, 7, Vol. 55(2), pp. 71–80.

Rochet, J. C., & Tirole, J. 2002. 'Cooperation among competitors: Some economics of payment card associations.' RAND Journal of Economics, 33(4), 549–570.

Rochet, J. C., & Tirole, J. 2003. 'Platform competition in two-sided markets.' Journal of the European Economic Association, 1(4), 990–1029.

Rochet, J. C., & Tirole, J. 2006. 'Two-sided markets: A progress report.' RAND Journal of Economics, 37(3), 645–667.

Sorri Krista 2016. 'Establishing a platform ecosystem: a case study on early adopters.' Tampere University of Technology 5.10.2016

Karhu Kimmo 2016. Managing Competitive and Cooperative Strategizing in Open Platform Ecosystems using Boundary Resources. Doctoral dissertation. ISBN 978-952-60-7235-7. 14.1.2016 (pdf)

Kässi, O., Lehdonvirta, V. 2016 'Online Labour Index: Measuring the Online Gig Economy for Policy and Research'. Paper presented at *Internet, Politics & Policy 2016,* 22-23 September, Oxford, UK. http://ilabour.oii.ox.ac.uk/online-labour-index/

Kenney Martin, Zysman John, 2015. 'Choosing a Future in the Platform Economy: The Implications and Consequences of Digital Platforms.' Kauffman Foundation New Entrepreneurial Growth Conference, Discussion Paper Amelia Island Florida – June 18/19, 2015

Kenney Martin, Zysman John, 2016. 'The Rise of the Platform Economy. Issues in Science and technology.' Volume XXXII Issue 3, Spring 2016. http://issues.org/32-3/the-rise-of-the-platform-economy/

Llewellyn, Thomas D. W., Autio Erkko, Gann M. David 2014. 'ARCHITECTURAL LEVERAGE: PUTTING PLATFORMS IN CONTEXT.' The Academy of Management Perspectives. 2014, Vol. 28, No. 2, 198–219.

Pagani, Margherita 2013. 'Digital Business Strategy and Value Creation: Framing the Dynamic Cycle of Control Points.' MIS Quarterly Vol 37 No 2. Pp 617 – 632 / June 2013

Parker G. Geoffrey, Van Alstyne W. Marshall, 2005. 'Two-Sided Network Effects: A theory of Information Product Design.' Management Science. 51(10):1494-1504

Published May 2012.

van Alstyne, M., Parker, G. & Choudary, S. 2016, 'Pipelines, Platforms, and the New Rules of Strategy.' Harvard Business Review, April 2016, pp. 54–63.

Zahidi Saadia, 2016. 'The gig economy is changing the way we work. Now regulation must catch up' Available at https://www.weforum.org/agenda/2016/06/gig-economy-changing-work/. Published 28.6.2016. Read 10.7.2017

Interviews

Accenture 2015[2]. Technology Vision 2015—Platform (R)evolution. Podcast Transcript. https://www.accenture.com/t20150523T041522Z__w__/us-en/_acnmedia/Accenture/Conversion-Assets/Microsites/Documents15/Accenture-Tech-Vision-2015-Platform-Revolution-Podcast-Transcript.pdf

Internet-references

Encyclopædia Britannica 2018. John Harrison, British horologist. Published 17.3.2018 Available at https://www.britannica.com/biography/John-Harrison-British-horologist. Retrieved 7.10.2018.

Greenstone-Miller Jody, Matt Miller 2012. ‘The Rise of the Supertemp.’ Harvard Business Review. 05/2012.

Hasu Mervi, Alasoini Tuomo 2016. ’Alustatalous murtaa perinteiset työsuhteet’ Kauppalehti. Published 29.8.2016 https://www.kauppalehti.fi/uutiset/alustatalous-murtaa-perinteiset-tyosuhteet/6XiM6iGt.

Ian Morris 2017. 'Tax The Robots' Says Bill Gates. Forbes. Available at: https://www.forbes.com/sites/ianmorris/2017/02/17/tax-the-robots-says-bill-gates/#1a5653841096 Published 17.2.2017

Internet Labour Index 2018. Available at https://ilabour.oii.ox.ac.uk/online-labour-index/

Merriam-Webster 2017. https://www.merriam-webster.com/dictionary/cottage%20industry Read 3.5.2017

Morris Ian 2017. ‘'Tax The Robots' Says Bill Gates’, Forbes 17.2.2017.

Nuorisobarometri 2016. Published by Finnish State Youth Council

https://tietoanuorista.fi/wp-content/uploads/2017/03/nuorisobarometri2016-fin.pdf

O’Connor Sarah, 2016 ‘When your boss is an algorithm’ Financial Times 8.9.2016.

Pofeldt Elaine 2016 ‘Freelancers Now Make Up 35% Of U.S. Workforce’ Forbes 10.6.2016.

Pohjanpalo Laura 2016. ”Silppu- ja pätkätyö yhä useamman tulevaisuutta – Tutkija: ’Lakot eivät auta’" Available at https://www.helsinginuutiset.fi/artikkeli/442272-silppu-ja-

patkatyo-yha-useamman-tulevaisuutta-tutkija-lakot-eivat-auta. Helsingin Uutiset. Published 7.10.2016. Read 8.10.2016

Talouselämä 2016. ’Nuorten karu tulevaisuus: "Ensimmäistä kertaa historiassa..."’ Available at http://www.talouselama.fi/uutiset/nuorten-karu-tulevaisuus-ensimmaista-kertaa-historiassa-6602695. Published 28.11.2016. Read 2.3.2017.

Talouselämä 2017. ’Vuokratyöstä tuli kunnon työtä – henkilöstöpalveluala kasvaa hurjaa vauhtia.’ Available at https://www.talouselama.fi/uutiset/vuokratyosta-tuli-kunnon-tyota-henkilostopalveluala-kasvaa-hurjaa-vauhtia/28050718-60aa-3a8b-abe7-cbf2fb99f0c2. Published 30.5.2017 Read 30.5.2017

VTT 2017. ‘The platform ecosystem canvas defining the core elements of the new economy.’ Online. Available at https://vttblog.com/tag/alustatalous/ Published 17.2.2017. Read 3.4.2017.

Wald Jeff, 2016. ‘5 Predictions For The Freelance Economy In 2017‘ Forbes 12.1.2016.

Appendix A: Platforms' Emphasis

Platform	Main categories		Number of subcategories
Upwork	Designers & Creatives		266
	Programmers & Developers		1042
	Administrative Support Specialists		139
	Writers & Translators		387
	Finance Professionals		90
	Sales & Marketing Professionals		152
Total		6	2076
Fiverr	Graphics & Design		22
	Digital Marketing		55
	Writing & Translation		16
	Video & Animation		11
	Music & Audio		12
	Programming & Tech		77
	Business		25
	Fun & Lifestyle		40
Total		8	258
Guru.com	Legal		65
	Business & Finance		549
	Engineering & Architects		160
	Admins & Secretaries		133
	Sales & Marketing		211
	Writes & Translators		238
	Designers & Artists		473
	Programming		833
Total		8	2662
PeoplePerHour	ADMIN		244
	BUSINESS SUPPORT		766
	CREATIVE ARTS		1210
	DESIGN		1440
	EXTRAORDINARY		207
	MARKETING AND PR		361
	MOBILE		121
	SEARCH MARKETING		325
	SOCIAL MEDIA		212
	SOFTWARE DEVELOPER		225
	TRANSLATION		343
	TUTORIALS		123
	PHOTOGRAPHY, AUDIO, VIDEO		529
	WEB DEVELOPMENT		720
	WRITING		425
Total		15	7251

Platform	Main categories		Number of subcategories
Outsourcely			
	Design & Multimedia		163
	Web Development		31
	Software Development		14
	Web Hosting and server management		29
	Mobile Applications		24
	Writing		67
	Admin support		32
	Customer Service		6
	Sales & Marketing		86
	Business Services		14
	Engineering		134
	Translation		53
	General Computer Skills		15
Total		13	668
Twago			
	Web & Programming		4987
	Design & Media		836
	Business Services		204
	Translation		347
	Writing		477
Total		5	6851
Freelanced			
	Accounting & Finance		17
	Admin Support		20
	Business Consulting		12
	Engineering & Architecture		22
	Graphic Design & Multimedia		36
	Illustration & Painting		34
	Marketing & Advertising		22
	Networking & Hardware		15
	Photography & videography		24
	Programming & Database		28
	Recording & Production		16
	Sales & Telemarketing		10
	Writing & Translation		48
Total		13	304
iFreelance			
	Writing / Editing / Translation		29
	Traditional Art (Illustration / Painting)		26
	Legal		25
	Training / Education		25
	Marketing / Advertising / Sales		24
	Graphic Design / Multimedia		23
	Programming / Database Development		23

Platform	Main categories		Number of subcategories
	Accounting / Finance		21
	Engineering / Architecture		21
	Administrative Support		18
	Networking / Hardware / Telephony		17
	Photography / Videography		14
	Business Consulting		13
Total		13	279
Freelancer			
	Websites, IT & Software		477
	Mobile Phones & Computing		22
	Writing & Content		55
	Design, Media & Architecture		130
	Data Entry & Admin		34
	Engineering & Science		78
	Product Sourcing & Manufacturing		7
	Sales & Marketing		41
	Business, Accounting, Human Resources & Legal		50
	Translation & Languages		68
	Local Jobs & Services		107
	Other		32
Total		12	1101
Tinki			
	Home / living		45
	Events		26
	Education		25
	Leisure		21
	Well-being		14
	Business		29
Total		6	160
Suoratyö.fi			
	Other		41
Work Pilots			
	Other		14
Treamer			
	N/A		N/A