Employment Impacts of the Digital Platform Economy in the SME Sector

A Pre-Study

digiole

Helsinki-Uusimaa Regional Council

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Introduction

Background and objectives

This pre-study investigates the employment impacts and opportunities of the digital platform economy, with a specific focus on the Helsinki-Uusimaa region in Finland. The study aims to understand the effects of the platform economy on employment, explore the transformative changes taking place in the work environment, and identified the challenges faced by companies operating within this ecosystem.

Additionally, the pre-study sought to provide clarity and simplicity to discussions surrounding platform business models by introducing a new concept to help segment different platform business model types into different categories. This segmentation approach aims to help facilitate a clearer assessment of their business potential and larger societal impact. By understanding and analyzing the diverse landscape of platform businesses from various key perspectives, policymakers and stakeholders could gain valuable insights into their unique characteristics. And doing so, to help different actors have a broader understanding of the types of platforms and their relevance to different topical discussions.

Moreover, the pre-study aims to support small and medium-sized enterprises (SMEs) in strategically transitioning toward the digital platform ecosystems. As such one of the deliverables included as part of this pre-study, is a 'Digital Business Design' -concept that is made openly available under Creative Commons as a practical toolkit. This toolkit is designed to assist SME businesses in designing and developing their business and operations strategically in the digital platform economy and navigating the shift from traditional business models and optimization to platform business models and ecosystem-based value creation.

Project timeline

The pre-study project was initially scheduled to conclude in February 2023. However, due to some initial adjustments, but more importantly the subsequent unprecedented and transformative impact potential of the ChatGPT by OpenAI, as well as its global adoption pace in the digital field, the active timeline of the project was extended until the end of June 2023, allowing for some of the initial key

developments in the field of new AI models to be included into this report and the toolkit, providing more relevant and timely information upon release.

It is important to note, however, that while efforts have been made to address the potential impact of ChatGPT and related new generative AI technologies, the broader understanding of the positive and negative potential of these newly released AI models, as well as their real market impacts globally, are still in their early stages. Therefore, this study only provides a high-level snapshot assessment, aiming to recognize the ongoing evolution and challenges associated with these new 'Large Language Model' (LLM)-based AI technologies.

Research objective and key questions

The primary objective of this pre-study was to examine the employment impacts and potential of the digital platform economy in the Helsinki-Uusimaa region. To address the research problem, the study aimed to answer the following aspects with several questions and subquestions..

1. **Employment in the Digital Platform Economy**
2. **Challenges Faced by Platform Companies and Potential Solutions**
3. **Transitioning of SMEs into the Digital Platform Economy**
4. **Categorization and Assessment of Platform Business Models**

Related previous studies and resources

At the beginning of the pre-study, a comprehensive literature review was conducted to gather information on the digital platform economy from a variety of reliable sources. These sources included reports, research papers, publications, and online materials. The aim of the literature review was to gain a thorough understanding of the digital platform economy, its underlying business model, and the potential for existing small and medium-sized enterprises (SMEs) to transition from traditional business models to the digital platform economy while leveraging their core competencies.

Most notable background resources being the National Roadmap for the Digital Platform Economy - Published by Business Finland on Oct 23, 2017. The follow-up report 'Gaining a competitive advantage from platforms: A strengthening symbiosis between digital platforms and the data economy on the horizon' Published by The Ministry of Economic Affairs and Employment on Mar 29, 2022 and the Platform Economy website (www.alustatalous.fi) website analytics. A more complete list of sources is listed in the appendix.

The literature review process involved studying insights and knowledge derived from these sources, technical expertise, and business acumen. This multidimensional approach allowed for a comprehensive exploration of the functioning and dynamics of the digital platform economy. It also provided valuable insights into the challenges and opportunities that SMEs may encounter as they navigate the transition to the platform economy.

The implementation team of the pre-study project brings significant added value through their platform economy expertise and in three related key areas: innovation, entrepreneurship, and digitization. Each of these areas is independently complex and encompasses various perspectives and considerations. The team members collectively possess decades of practical and research expertise at the intersection of these domains on an international scale. They have been actively involved in the development and consultation of projects and innovation ecosystems across multiple cities and countries, enabling them to provide valuable insights and guidance to SMEs in their digital platform journey.

Digital platform economy

Definition and principles of the platform economy

The key concept to grasp in the context of the platform economy is the platform business model, which solely describes how a company operates its business without referring to any specific industry it operates in. Just like the terms "tech company" or "startup company" describe a particular type of company from one perspective, they do not define the industry in which the company operates. Similarly, the term "platform company" only describes the business model employed by the company, without specifying the industry it operates in.

In Finnish public conversation, platform companies are often only associated with companies like Wolt or Uber, but not for example in Supercell, which is primarily referred to as a gaming company. However, when comparing the business models of the two most well-known Finnish gaming companies from recent years, Rovio and Supercell, it becomes apparent that the Angry Birds game was not based on a platform business model but rather a typical game with a single-player experience and a fixed number of levels, after which the game ended. On the other hand, games like Hay Day and Clash of Clans are never-ending multiplayer games where players can build worlds, interact with others, and purchase digital goods. Most popular global games such as Minecraft, Overwatch, and many others operate with platform business models.

Categorizing platform companies solely based on the industries they operate in, particularly the latest platform models that focus on orchestrating physical world assets (like Wolt, Uber, Airbnb, etc.), greatly limits our collective ability to fully recognize the immense potential and benefits of platform economy business models and their applicability to any industry or business. In addition, with the assistance of new AI models, where AI can now also act as an independent agent or participant in two-sided (or multi-sided) platforms with single or multiple roles, enabling new methods and approaches.

The essence is that the platform economy has transformed traditional business models, leading to disruptions across various sectors. The digital platform business model is the main driver of this transformation. It is a strategic approach where a company creates and operates a digital platform that facilitates interactions and

transactions between users. It creates value through network effects and enables the exchange of goods, services, or information. Platforms operate in any sector, ranging from globally recognized platforms to smaller, niche platforms catering to specific industries or communities. The platform itself can, but often does not, produce or own the goods or services being exchanged. Instead, it provides the infrastructure, technology, and tools (ie. a platform) that enables participants to interact, transact, and create value.

The platform economy has emerged as a transformative force in the modern business landscape, reshaping industries and creating new economic opportunities. And the new AI models will accelerate this development even further.

Understanding the principles that underpin the platform economy is essential for comprehending its impact on employment and society:

1. **Multi-sided Markets:** Platforms operate as intermediaries, facilitating transactions between multiple parties with related assets. They bring together providers and consumers, enabling interactions and value creation across different sides of the market. By connecting these participants, platforms unlock new economic possibilities and enhance efficiency in the allocation of resources.

2. **Digital Orchestration:** Platforms leverage digital technologies to orchestrate and coordinate resources. Through digital infrastructure, they facilitate the seamless matching of supply and demand, optimize resource allocation, and enable efficient transactions. Digital orchestration allows platforms to scale rapidly and operate in a globally interconnected manner.

3. **Network Effects:** Platforms thrive on network effects, where the value of the platform increases as more participants join and interact within the ecosystem. With each additional user or provider, the platform becomes more attractive, fostering a positive feedback loop. Network effects drive platform growth, creating virtuous cycles that can lead to significant market dominance.

4. **User-Generated Content and Participation:** The platform economy typically encourages user-generated content/assets and active user participation. Users often contribute to the platform by creating and sharing content or

other assets, collaborating, and providing feedback. This user involvement enriches the platform experience, enhances innovation, and fosters a sense of community. New generative AI models can now also function as producers in these platforms in a completely new way.

5. **Data-driven Insights:** Platforms rely on data as a strategic asset. They collect and analyze vast amounts of data generated by user interactions and transactions. These data-driven insights enable platforms to improve and automate their services, personalize user experiences, and develop targeted offerings. Data is both a valuable resource and asset that drives innovation and competitive advantage in the platform economy.

Understanding these principles helps all stakeholders grasp the dynamics and transformative potential of the platform economy, while limiting the focus only to specific types of platforms or industries does not. By recognizing the distinctive features of platform business models and their underlying principles, policymakers, businesses, and societies overall, can navigate the opportunities and challenges presented by this rapidly evolving economic paradigm.

Key actors in the digital platform economy

The digital platform economy encompasses a wide range of actors, each playing a distinct role in shaping the landscape of the digital economy. These actors include platform operators, service providers, users, and regulators. Together, they form a dynamic ecosystem that drives innovation, economic growth, and societal transformation.

Platform operators are the driving force behind the digital platform economy. They establish and manage the platforms that connect users and facilitate transactions. Examples of prominent platform operators include global giants like Amazon, Google, and Alibaba, as well as regional and specialized platforms such as Wolt, Supercell, and Ukko.fi. These platforms offer diverse services, from food delivery and gaming to freelance work and sharing economy platforms.

Service providers are an essential component of the digital platform economy. They comprise individuals or businesses that offer goods, services, or expertise through the platform. Service providers can range from restaurants, independent contractors

and freelancers to small and medium-sized enterprises. And now also AI agents can be developed to act as service providers.

Users are at the heart of the digital platform economy. **They are the consumers, buyers, or clients who utilize the platforms** to access goods, services, or information. Users benefit from the convenience, choice, and often cost-effective options provided by the platforms. These can include consumers purchasing products on e-commerce platforms, travelers booking accommodations on Airbnb, or individuals connecting with friends on social media platforms like Facebook or Instagram.

Regulators and Policy Makers (at different levels) play a crucial role in shaping the digital platform economy through policy frameworks and regulations. Their role is to ensure fair competition, consumer protection, data privacy, and other considerations in the digital ecosystem. Regulators may include government agencies, industry regulators, and legislative bodies at local, national, and international levels. They strive to strike a balance between enabling innovation and protecting the interests of stakeholders in the platform economy.

The digital platform economy and the related data economy and API economy as parts of it, encompass a vast array of actors, each contributing to its growth and evolution. It is through their interactions, collaborations, and innovations that the platform economy continues to shape industries, transform markets, and redefine traditional business models.

Employment in the digital platform economy

The main beneficiaries of employment opportunities

The employment impact and potential of the platform economy in the Helsinki-Uusimaa region are significant. The platform economy creates new job opportunities and influences the structure of traditional labor markets. It offers various types of employment through platforms and digital services, enabling flexible work arrangements.

The platform economy has diverse employment effects. Firstly, it directly generates new jobs related to platform development, maintenance, and management. This includes roles such as software development, technical support, marketing, and customer service. The platform economy also requires different types of experts, such as data analysts and business developers, who contribute to optimizing platform operations.

Secondly, the platform economy has employment impacts through the services provided by platforms. For example, food delivery platforms employ drivers and restaurant workers, while accommodation platforms offer job opportunities for accommodation providers and cleaners. The growth in demand for these services can create new jobs and provide additional income for individual workers.

Where are new job opportunities being created?

The Helsinki-Uusimaa region has a strong technology and innovation ecosystem, which provides favorable conditions for the development of the platform economy. Additionally, the region has a well-recognized level of expertise and skilled professionals from various industries, enabling the development of new platforms and digital services. The platform economy contributes to the region's economic growth and creates new job opportunities for different professional groups. However, there is a growing shortage of these skilled professionals within the Uusimaa region and within Finland in general.

It is also important to consider that the employment effects of the platform economy are multifaceted. While platforms offer new job opportunities, they also impact the quantity and working conditions of traditional jobs in positive and negative ways. As such, it is important to monitor and understand the development

of the platform economy and its impact on the labor market on an ongoing basis, to ensure fair employment and the well-being of workers. It is also important to understand that employees are not a homogeneous group, as different individuals value different things in varying ways.

The platform economy in the Helsinki-Uusimaa region employs professionals from various fields. The nature of the platform economy allows for a diverse range of skills and expertise to be utilized.

In terms of directly employed workers, the platform economy attracts individuals with different educational backgrounds and skill sets. While some positions may require specific technical knowledge, such as software development or data analysis, other roles focus on customer service, logistics, or content creation, which may not necessarily require higher education. Therefore, the platform economy provides employment opportunities for both highly educated professionals and those with different levels of education and skills.

"Simply running a platform actually generates surprisingly much work outside the company. For example, most recently, we have employed service design consultants, consultants specializing in intellectual property rights, and business consultants from outside our organization. Additionally, although we also utilize external lawyers and digital platform developers, we have them in-house as well." - CEO of the platform company.

Moreover, the platform economy creates additional jobs indirectly in various sectors. For example, the rise of food delivery platforms has increased the demand for delivery drivers and has led to the expansion of restaurant services that cater to online orders. This creates employment opportunities for individuals in the transportation and hospitality sectors.

The highest volume where the platform economy generates work opportunities is for freelancers, independent contractors and entrepreneurship, especially with delivery and transportation services. But also among professionals from creative industries, such as youtubers, graphic designers, writers, photographers, and musicians, - who can leverage platforms to showcase and sell their services or products. This allows them to reach a broader customer base and expand their

client network, ultimately creating additional work opportunities in these creative fields. Above all, platforms add dynamics to the economy and society in many different ways.

It is worth noting that the impact of the platform economy on specific industries and the types of jobs created can vary. Some industries may experience more significant changes and opportunities, while others may be less affected. The platform economy's ability to create additional jobs as a byproduct depends on factors such as market demand, technological advancements, employee availability and consumer preferences.

Overall, the platform economy in the Helsinki-Uusimaa region engages professionals from diverse backgrounds, ranging from highly educated individuals to those with different skill sets. It generates a variety of employment opportunities and also most importantly work flexibility in sectors such as transportation, hospitality, and creative industries, contributing to job creation and economic growth in various fields.

Several factors contribute to this observation:

1. **Emergence of Digital Platform Companies:** The region has seen the rise of digital platform companies across different industries. These platforms, such as ride-hailing services, food delivery apps, and freelance marketplaces, have expanded their operations and user base, leading to an increased demand for employees to support their services. The presence and growth of these companies indicate the creation of new types of job opportunities within the platform economy.
2. **Technological Advancements:** The growing advancement of digital technologies and API connectivity has facilitated the expansion of the platform economy. This technological infrastructure has paved the way for the emergence of new job roles and opportunities within the digital ecosystem. The emergence and unprecedented proliferation of new AI models will further accelerate these dynamics.
3. **Changing Consumer Behavior:** The shift in consumer behavior towards digital platforms and online services has fueled the growth of the platform economy. Consumers now rely on digital platforms for various needs, such as

transportation, food delivery, accommodation, and online shopping. As the demand for these services continues to grow, it drives the need for more workers in the related sectors to meet the increasing customer demand.

4. **Flexibility and Entrepreneurial Opportunities:** The platform economy provides individuals with flexible work arrangements and entrepreneurial opportunities. People can choose to work as independent contractors or freelancers through platform-based gigs or start their own businesses using digital platforms. This flexibility and autonomy attract individuals with diverse skills and qualifications, creating a pool of workers from various educational backgrounds and expertise.

5. **Supportive Business Environment:** While there are some ongoing pending regulatory considerations in regard to relation of gig workers to be considered as self-employed partners or employees of platforms. The regulatory environment at a national level and in the Helsinki-Uusimaa region, over time, has mostly embraced and supported the development of the platform economy. Ie taxi license change, freedom to operate micro-mobility services, etc. Regulations that enable the operation of digital platforms and while also developing new models to protect the rights of workers have encouraged the growth of the sector. This supportive regulatory framework has contributed to the creation of a conducive environment for job creation within the platform economy.

The scale of job creation within the digital platform economy

The exact number of jobs created around the digital platform economy in the Helsinki-Uusimaa region is very challenging to determine precisely. The employment impact and potential of the platform economy can vary depending on various factors such as market demand, technological advancements, and regulatory environment.

That being said, due to the overall flexible nature of the platform economy combined with the freelancer platforms, compared to the traditional employment markets, it has the potential to generate a significant number of jobs in the region. The emergence of digital platform companies across different sectors, the growth in consumer demand for platform-based services, and the expansion of entrepreneurial opportunities all contribute to job creation.

The employment effects of the platform economy can be substantial, offering both direct and indirect job opportunities. Additionally, the platform economy provides flexibility in work arrangements, attracting individuals with diverse skills and qualifications. This flexibility, combined with a supportive regulatory environment, can further enhance the job creation potential of the platform economy.

To fully understand the employment impact and potential of the platform economy, ongoing monitoring and analysis of the labor market are crucial. This helps ensure that appropriate policies and regulations are in place to promote fair employment practices and protect the well-being of workers.

Employment opportunities for non-Finnish speakers

The platform economy in the Helsinki-Uusimaa region employ many individuals whose native language is not Finnish. While the platform-based work may involve communication in Finnish, there are growing opportunities for non-Finnish speakers as well in all types of different roles.

Certain roles within the platform economy, such as software development, technical support, marketing, and customer service, may also require Finnish due to the local market's language requirements. However, there are positions within international-facing platforms or platforms that cater to diverse markets where proficiency in languages other than Finnish are even more advantageous.

Moreover, the platform economy's solutions and opportunities can indeed aid in the integration of immigrants into society. Digital platforms can provide a means for immigrants to access flexible work arrangements, acquire new skills, and establish professional networks. Platforms that facilitate language learning, skill development, or offer support services specifically targeting immigrants can play a crucial role in assisting their integration efforts.

By leveraging the platform economy, immigrants can utilize their skills and expertise, potentially overcoming language barriers and cultural differences. Additionally, these platforms can foster entrepreneurship among immigrants, allowing them to start their own businesses or offer services that cater to their specific cultural or linguistic backgrounds.

However, it is essential to acknowledge that language proficiency and cultural familiarity are still often important factors for success within the platform economy.

Efforts to provide language training and support services tailored to the needs of immigrants can further enhance their integration prospects and increase their employability within the platform economy.

Uusimaa's attractiveness among highly educated individuals

The presence of the digital platform economy has indeed enhanced Uusimaa's attractiveness among highly educated individuals, both domestically and internationally. Several factors contribute to this enhanced appeal. At the national level, Finland's reputation in gaming talent and in core internet technologies like Linux and open source, reflects transparency and collaboration within the tech industry, fostering a conducive environment for highly skilled individuals. Moreover, Uusimaa's capital region, with its growing trend towards remote work and the concentration of recent digital platform success stories like Smartly, Wolt, and Supercell, acts as new role models, further boosting the region's appeal. The overall brand image of Finland, characterized by happiness, safety, neutrality, work-life balance, and trustworthiness, also plays a crucial role in attracting highly educated individuals especially those with families, seeking an environment conducive to personal and professional growth. These factors, combined with the positive momentum in the local startup ecosystem, contribute to Uusimaa's enhanced attractiveness among highly educated individuals, both domestically and internationally.

However, the new government program announced in the summer of 2023 has also raised dark clouds and strong concerns among key players in the startup ecosystem and among many highly educated individuals with foreign backgrounds already living in Uusimaa region.

Challenges encountered by digital platform companies

Societal challenges

> *"Outdated legislation has caused many challenges over the years. Legislation has been gradually changed in a more favorable direction, but it has required significant efforts. At times, it also feels like some decision-makers are unwilling to accept the ongoing transformation of the labor market and actively seek to impede it. Work performed on platforms is about people's livelihood, and the different interpretations of the same issues by policymakers create uncertainty for platform users, making it less appealing to engage in work through the platform." - CEO of the platform company*

Initially the introduction of ride-hailing platforms like Uber, operating in a gray area of taxi regulations, had a significant impact on the taxi industry. Initially, these platforms faced resistance and controversy due to their unconventional approach to providing transportation services. However, as regulations evolved to accommodate more flexible models, it brought about a range of effects on the industry.

The change in taxi regulations, which freed the industry for more flexible models, led to increased competition and a wider variety of options in terms of pricing and the overall ride experience. This shift forced all actors in the taxi industry to reassess their strategies and develop unique differentiating factors and value propositions to attract their own target customers.

On one hand, this development brought healthy competition to the industry. It allowed new players to enter the market and challenged traditional taxi companies to improve their services and adapt to changing customer expectations. The increased competition fostered innovation, leading to advancements in technology, convenience, and service quality to all directions. Customers benefited from a greater choice of transportation options and improved experiences at different price points and availability.

On the other hand, the changes also presented challenges for the taxi industry. Traditional taxi operators faced the need to adapt their business models and

compete with the convenience and competitive pricing offered by ride-hailing platforms. Some struggled to keep up with the rapidly changing market dynamics, while others found new opportunities for growth, expansion and opportunities to establish their own differentiating brands.

Overall, the regulatory changes and the entry of ride-hailing platforms like Uber have had a transformative impact on the taxi industry. While there have been both positive and negative consequences, such as increased competition and the need for adaptation, this development aligns with the normal dynamics seen in all private businesses. The evolution of the taxi industry highlights the importance of continuously evolving to meet customer demands and maintaining a strong value proposition in the face of changing market conditions.

Micromobility platforms, particularly those offering electric scooter-sharing services, have encountered several challenges that have arisen from the volume of competition and the behavior of users. One prominent issue has been the proliferation of electric scooters left scattered on the streets, causing clutter and inconvenience in urban areas. The high volume of scooters available from various platforms has sometimes exceeded the demand, leading to oversupply and difficulties in managing their distribution and parking.

Another problem has been the misuse of scooters by riders. Some users have engaged in unsafe practices, such as riding against traffic rules, carrying multiple passengers on a single scooter, or riding under the influence of alcohol. These behaviors have raised concerns about public safety and the need for appropriate regulation and enforcement.

In response to these challenges, policymakers have taken an active role in collaborating with major micromobility platform providers to address the negative impacts while preserving the positive aspects of micromobility services. Voluntary actions have been initiated to mitigate the issues associated with scooter-sharing.

One approach has involved implementing time restrictions during peak hours when instances of drunk driving are more likely to occur. By temporarily limiting scooter availability during these times, the risk of accidents related to impaired driving can be reduced. Additionally, reducing the maximum speed of scooters, both overall and in specific areas of the city, promotes safer riding and helps address concerns about reckless behavior.

Furthermore, designated parking areas have been established to alleviate the issue of scooters being left haphazardly on the streets. By providing clear guidelines and designated spaces for scooter parking, the clutter and obstruction caused by scooters can be minimized, enhancing the overall pedestrian experience and urban aesthetics.

These voluntary measures, developed in collaboration between policymakers and micromobility platform providers, aim to strike a balance between the convenience and environmental benefits of micromobility and the need for responsible and safe usage. By addressing the challenges associated with competition, rider behavior, and public safety, policymakers and platform providers can work together to create a more sustainable and harmonious micromobility ecosystem within cities.

Job market

The debate surrounding the employment status of individuals working in platforms like Wolt delivery and similar services has shed light on the challenges faced by independent workers. The significant growth of solo entrepreneurs, such as those operating as individual entrepreneurs or freelancers, has highlighted the need for improved conditions and social benefits for these workers. However this is not anything new, but has always existed among freelance and solo entrepreneurs life, what has changed is that the challenges have become more into broader attention. As such this can also be seen as a positive thing that can also help improve conditions for those that just were not as visible before.

The current terms and conditions for independent workers often fall short in providing adequate social benefits and protections. This issue has prompted discussions among policymakers and politicians, focusing on the necessity of addressing these challenges rather than solely attempting to classify platform workers as traditional employees. This concern extends beyond specific platforms like Wolt and similar, including all freelancers and solo entrepreneurs, regardless of where they work.

While platforms offer the benefit of flexibility, enabling individuals to work on their own terms and schedules, it is crucial to recognize the shortcomings in terms of social benefits for entrepreneurs. The existing policies and regulations need to be reevaluated to ensure that independent workers receive fair treatment and support regardless of where and how they work independently.

The ability to work across various platforms and engage in multiple projects provides freelancers with flexibility and diverse income sources, while at the same time, it promotes the dynamics of the region and the economy. However, the associated social benefit terms often remain insufficient due to current policies.

In conclusion, while platforms offer opportunities for independent work and flexibility, it is evident that the social benefit terms for entrepreneurs need improvement. Policymakers and politicians should focus on addressing these issues to ensure fair and adequate conditions for independent workers, rather than solely attempting to reclassify them as employees. By improving policies and regulations, the platform economy can provide benefits while also safeguarding the well-being of those operating within it.

Another related and significant contributing factor to the development of the platform economy and the employment landscape is the emergence of "invoicing as a service" platforms. Companies such as Eezy, Ukko.fi, OP-kevytyrittäjyys, and numerous smaller platforms have been created to facilitate micro-entrepreneurship, particularly for part-time gigs and additional work.

These platforms have streamlined and automated the relationships between individuals seeking temporary work and those in need of their services. In the past, direct freelance models were often complex and ambiguous for both companies/organizations and individuals. However, these new platforms have simplified the process by acting as intermediaries. Instead of individuals having to register as entrepreneur or establish their own companies, they can now utilize these platforms to handle invoicing, receive payment as regular salary, and rely on the platform company to take care of tax reporting and other necessary administrative tasks. In return, the platform charges a fixed commission fee for their services.

This model has proven highly successful, offering a convenient and efficient solution for both parties involved. The initial success of one platform sparked the growth of many other competing services that have further improved and expanded the model. These platforms provide varying service options and levels, enhancing the overall experience for individuals and companies alike.

The "invoicing as a service" platforms have experienced remarkable growth, expanding from 85,371 registered members and a combined revenue of 116 million

euros in 2017 to an impressive 216,820 registered members, generating a combined revenue of 229 million euros in 2021. In 2022, it is estimated that approximately 60,000 active freelancers are utilizing this model. This significant increase in membership and revenue reflects the platform's growing success and its ability to attract a larger user base, contributing to increased and diversified economic activity. It is noteworthy that nearly half of these solo entrepreneurs are based in the Uusimaa region, highlighting the region's prominence in embracing this model of work.

In summary, the introduction of "invoicing as a service" platforms has played a significant role in supporting micro-entrepreneurship and facilitating part-time gigs and additional work. These platforms have simplified the process, alleviating the complexities associated with freelance work and providing a seamless experience for both workers and companies. Their success has led to the establishment of numerous competing services, further enhancing the overall model and benefiting all parties involved.

There is a clear synergy and symbiosis between different types of platforms; gig platforms that offer independent work and the “invoicing as a service” platforms that facilitate the acceptance and invoicing of such work.

Where gig platforms provide opportunities for individuals to find and engage in various independent work assignments, while "invoicing as a service" platforms streamline the administrative and financial aspects of accepting and invoicing for these gigs. Together, these platforms create a combined ecosystem where individuals can easily discover and participate in independent work while enjoying the benefits of simplified administrative processes, ensuring a smooth and efficient experience for both workers and clients.

Talent shortage

Maybe the biggest and most pressing challenges in the Helsinki-Uusimaa region, from an economic perspective, is the shortage of talent in technical skills, specifically in the fields of software development, creation of technology architectures, and digital business development. This talent shortage is not unique to the region but it is a global phenomenon that has persisted and grown for many years.

To address this shortage, companies often seek to attract talent from outside of Finland, and beyond Europe. However, the challenges associated with hiring international talent extend beyond the initial recruitment phase. Securing visas, work permits, and other necessary documentation for non-european citizens in a timely and efficient manner can be a complex and often too long process, not only for the hired individuals but also for their family members. There have been significant improvements in this area, but more is needed to address the skills gap. The current government program also raises concerns among experts and stakeholders in this field.

Recognizing the significance of this challenge, efforts have been made to address it. Several notable and tangible steps have been taken to facilitate the recruitment and integration of international talent. New visa types have been developed or introduced to provide more streamlined processes, and express lanes have been developed for certain types of talent profiles. However several of these are still dependent on implementation and also the new government program outline is also raising new concerns. Additionally, specific units and leadership have been created within the immigration services, with a clear agenda to update migration strategies and foster a supportive culture within institutions like Migri (Finnish Immigration Service). However many of these are still in progress and gradually improving things, but the direction has seemed positive. As regardless of any other factors, Finland has a growing aging population with a growing shortage of people at their working age.

These measures aim to streamline the immigration process, reduce administrative burdens, and create a more welcoming environment for international talent. By facilitating the entry and integration of skilled professionals from abroad, the region can better meet the demand for technical expertise and support economic growth and innovation.

> *"On our platform, we have a large number of immigrants who are looking for friends and advice on starting their everyday life in Finland. I know from my own experience how challenging it is to build a support network and get to know locals. That's why I'm glad that we can contribute even a small part in the integration of immigrants." - Founder of a platform company.*

Overall, while the shortage of talent in technical skills remains a significant challenge, steps have been taken to improve the situation. The introduction of various initiatives within different institutions demonstrate a recognition of the importance of attracting and retaining international talent in the Helsinki-Uusimaa region. These efforts aim to create an environment where talented individuals from around the world can contribute to the region's success and help address the ongoing talent shortage in technical fields.

Job flexibility

In the platform economy, the concept of job independence can be seen in various ways. While some platform economy jobs are inherently tied to physical locations, others offer the flexibility of remote work and are not dependent on physical presence.

Many platform economy companies, especially those in the digital business sector, have office jobs that embrace remote work as a normal or even default practice. This is because a significant portion of the work is digitally organized and the work can be lead and measured at a high level of detail. Remote work not only provides flexibility for employees locally but also enables companies to utilize talent from anywhere in the world, expanding their pool of potential candidates.

However, it's important to note that even in the platform economy and digital business companies, there are still occasions where in-person teamwork is beneficial or necessary. Certain tasks or projects may require collaboration and face-to-face interaction. However, compared to traditional office-based jobs, the platform economy and digital businesses often have a lesser need for extensive in-person operations and teamwork.

The digital nature of the work and the availability of collaboration tools facilitate remote work arrangements. This flexibility allows employees to work from different locations and adapt their work environment to their preferences. It can contribute to a better work-life balance and attract talent from diverse backgrounds and also enable them to work from many geographic locations as ‘digital nomads’.

Overall, in the platform economy, job independence and remote work are often more common in office-based roles within digital business companies. The digital nature of the work, coupled with effective collaboration tools, allows for a higher degree of flexibility and the possibility of remote work arrangements. While in-person teamwork is still required in certain situations, the platform economy and digital businesses prioritize remote work as a viable and productive option for their employees.

Summary of benefits and challenges overall

The working life has been undergoing a significant transformation for years due to the increased digitization. This transformation was dramatically accelerated during the pandemic when digital practices were adopted in many places. At the same time, the pandemic taught society as a whole about the benefits of digitalization in various ways. Obtaining an accurate situation assessment of the disease's spread across the country and regions, as well as its growth and development, was crucial and comprehensive. Tools such as the COVID tracker and vaccination certificates quickly taught citizens to embrace and adopt new digital services and their advantages. In business operations, it became evident how physical services faced weaknesses and challenges, while the benefits enabled by digital services and platforms came to light. The decline in traditional business activities was partially counterbalanced by the significant rise of the digital side.

Many companies and entrepreneurs, along with the entire society, found themselves in a situation where they had to seek solutions through digital means. The pandemic forced the rapid adoption and utilization of digital tools and services. It quickly became also clear that these digital solutions were readily available and easily adaptable. The accelerated use of digitalization and the creation of value have been significant factors driven by the pandemic in all societies.

In summary, the pandemic has played a pivotal role in hastening the use of digital tools and accelerating value creation through digitization. The benefits of

digitalization became evident as organizations and individuals quickly adapted to new digital tools and services during the pandemic. This experience has reinforced the importance of the digital transformation in the working life and society as a whole.

The platform economy brings forth both benefits and challenges as it reshapes industries and creates new economic opportunities. Examining the benefits from the lens of creating entirely new economic value primarily through digital assets highlights the potential for net positive economic impacts with low negative effects on society and the environment. However, it is also important to consider platform models that primarily create value by reducing overall economic value through efficiency improvements, which may have additional societal implications. Moreover, the negative impacts can be magnified when value capture occurs predominantly by non-domestic platforms, leaving domestic economies with the associated negative consequences without related meaningful economic upside.

When platforms leverage primarily digital assets to create new economic value, they have the potential to unlock innovative business models and revenue streams. These models often revolve around the creation and distribution of digital goods and services, such as online games, virtual items, and in-app purchases. By harnessing the power of digital platforms, companies can reach a global audience and scale their operations rapidly, leading to significant positive economic impacts. These platforms generate revenue, create employment opportunities, and foster entrepreneurship, driving economic growth domestically and internationally.

Additionally, platform models that focus on creating new economic value primarily through digital assets can minimize negative societal and environmental impacts. Digital transactions and delivery mechanisms reduce the need for physical infrastructure and resource consumption. They enable efficient resource allocation, reduce waste generation, and contribute to environmental sustainability. Furthermore, the flexible nature of digital platforms allows for remote work opportunities, promoting inclusivity and providing access to employment for individuals regardless of their geographic location.

In contrast, some platform models prioritize efficiency improvements that drive down costs and reduce the need for labor, sometimes even resulting in a decrease in overall economic value. While these models may introduce operational

efficiencies and cost savings, they can lead to job displacement and have potential negative societal consequences, at least in the short term. As such, it is crucial to assess the net economic impact of these models and carefully consider their implications on employment, income distribution, and social welfare.

Moreover, the negative impacts can be exacerbated when value capture predominantly occurs through non-domestic platforms. If the efficiencies gained by these platforms primarily benefit foreign entities, it can lead to a drain of economic value from domestic economies. This can hinder local economic growth, weaken domestic businesses, and exacerbate income inequalities, particularly if the associated negative economic and societal impacts remain concentrated within the domestic market.

To fully realize the benefits and mitigate the challenges of the platform economy, policymakers and stakeholders must consider the balance between different platform model types. Fostering an environment that encourages the growth of platform businesses generating new economic value while ensuring fair value distribution and minimizing negative societal impacts is crucial. This includes promoting domestic innovation, supporting entrepreneurial ecosystems, and formulating policies that encourage value creation, job creation, and sustainable economic development.

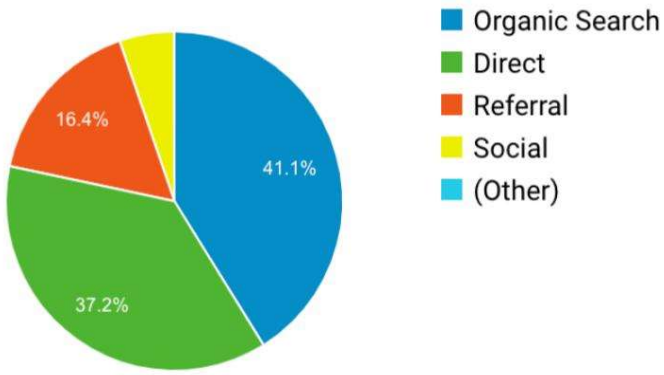
Transitioning of SMEs into the digital platform economy

Insights from www.alustatalous.fi website

As part of this research, we had the unique opportunity to utilize the historical website traffic and knowledge support request form submissions received through the www.alustatalous.fi website. Established as a free information resource following the release of the roadmap to the digital platform economy report in late 2017, the website has served as a focused and free knowledge hub, attracting organic traffic without any advertising or promotional campaigns. Although we must acknowledge the limitations of this data source in terms of volume, nevertheless it provides some valuable insights into the overall activity and engagement on the website since its inception.

From the website's inception until June 18, 2023, the total user count reached 12,081. These users engaged in 16,871 sessions, resulting in a total of 33,255 pageviews.

Analyzing the sources of traffic, we found that over 41% came from organic search, approximately 37% from direct visits, 16% from referral traffic, and the remaining portion from social networks and other sources.

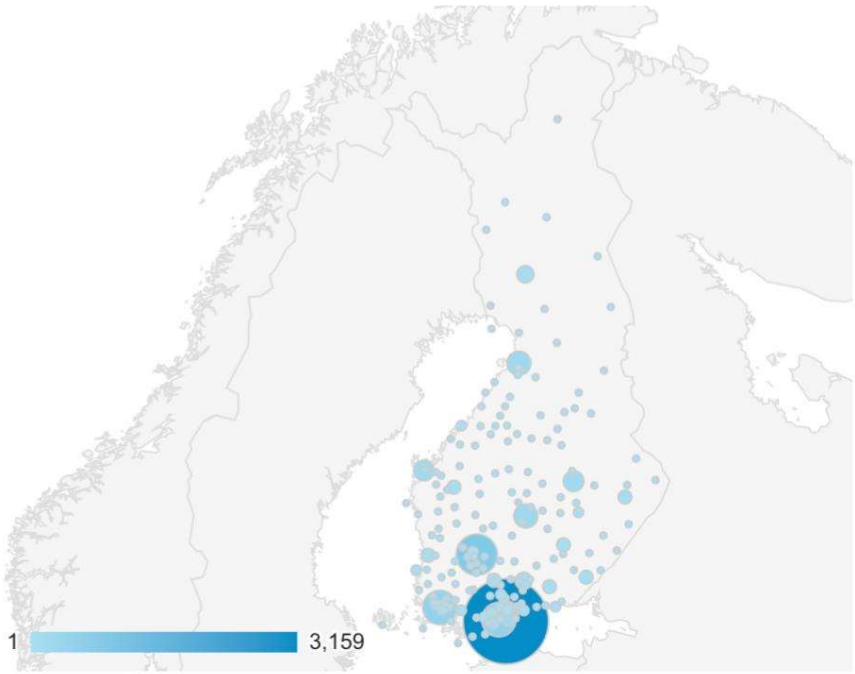


Alustatalous.fi website visitors by source type. Image by: Digiole Oy

Our analysis revealed some key findings. Initially, the visitor count was higher in late 2017 and throughout most of 2018. However, from 2019 onwards, it experienced a decline of 75% compared to the first year. The visitor count remained relatively

stable until 2021 when it began to climb back to levels similar to those of 2018. In 2022, it reached around 90% of the peak level, and as of 2023, it has consistently maintained around 80% of that level.

The most relevant content on the website has been the fundamental information about the platform economy, followed by planning tools and related knowledge resources for assessing and developing platform business models. These findings provide valuable insights into the preferences and interests of the website's users. Additionally, these insights serve as a signal that free information and related free tools should continue to be increased and further developed.



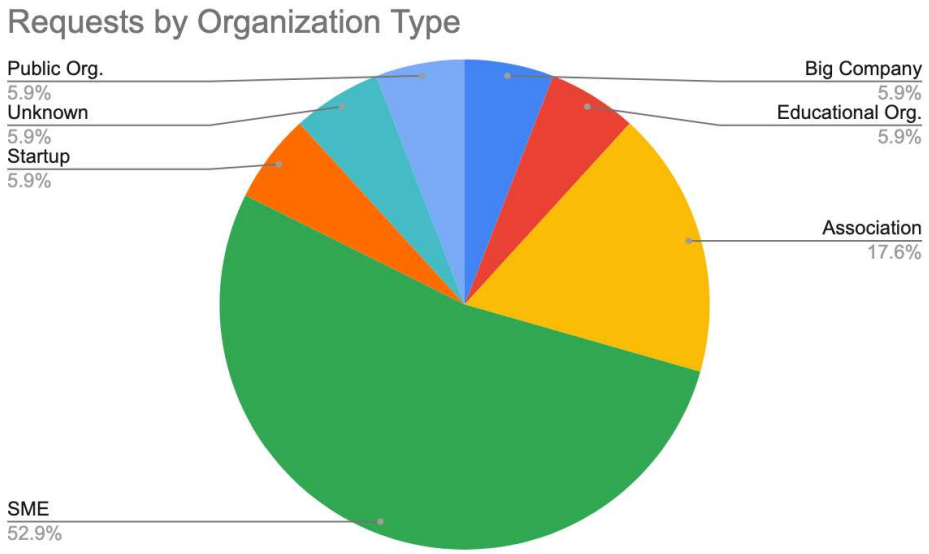
Alustatalous.fi website visitors by geographical location. Image by: Digiole Oy

In terms of geographical distribution, the top 10 cities generating website traffic are as follows:

1. Helsinki
2. Tampere
3. Turku
4. Espoo
5. Oulu
6. Jyvaskyla
7. Vantaa
8. Kuopio
9. Vaasa
10. Lahti

It is worth noting that Helsinki alone accounts for more than four times the traffic compared to city of Tampere, that is second on the list.

Regarding requests for support, the majority have focused on assessing and developing business ideas, accounting for 29.4% of the inquiries. Prototype development follows closely at 23.5%, and assessment/exploration of existing operations towards transitioning into the platform economy comprises 17.6% of the requests. The remaining support requests relate to mentoring, project development, and launch assistance.



Alustatalous.fi website visitors requests by organization type. Image by: Digiole Oy

In terms of organizational types seeking support, small and medium-sized enterprises (SMEs) dominate at 52.9%, followed by associations seeking assistance for their members at 17.6%. The remaining requests originate from educational institutions, large enterprises, growth companies, and public organizations.

Digital transformation considerations

Transforming or transitioning traditional SMEs into the digital platform economy can pose several challenges. Some of these challenges include:

1. **Digitalization and Technological Adaptation:** Traditional SMEs may face difficulties in adapting to new digital technologies and platforms. They may lack the necessary technical expertise or resources to implement digital

solutions and integrate them into their existing operations. Upgrading systems, training employees, and adopting new digital tools can require significant investment and may disrupt established workflows.

2. **Business Model Transformation:** Transitioning to the digital platform economy often requires a fundamental shift in the business model. Traditional SMEs often need to reevaluate their value propositions, target markets, and revenue streams. They often need to redefine their products or services to align with digital platforms and cater to changing customer expectations. This transformation process can be complex and require strategic planning and a deep understanding of the digital ecosystem.

3. **Marketing and Customer Acquisition:** Traditional SMEs may face challenges in effectively marketing their offerings in the digital platform economy. They need to understand how to position their products or services on digital platforms and reach their target audience. Acquiring and retaining customers in a competitive online marketplace requires strong digital marketing capabilities and the ability to differentiate from other businesses in the platform ecosystem.

4. **Data Management and Analytics:** Leveraging data and analytics is crucial in the digital platform economy. Traditional SMEs may lack the infrastructure and knowledge to collect, analyze, and utilize data effectively. Data-driven insights are valuable for understanding customer behavior, optimizing operations, and making informed business decisions. Developing data management capabilities and building a culture of data-driven decision-making is essential for success in the digital platform economy.

5. **Collaboration and Partnerships:** Embracing the digital platform economy often involves collaborating with other businesses, platforms, or technology providers. Traditional SMEs may face challenges in establishing these partnerships and building the necessary networks. Collaborations can bring new opportunities for growth and innovation but require a mindset shift and the ability to navigate complex business relationships.

Overcoming these challenges requires a proactive approach, investment in digital skills and infrastructure, and a willingness to adapt and innovate. SMEs that

successfully transition into the digital platform economy can benefit from increased market reach, new revenue streams, and improved operational efficiency.

The most important factor for SMEs in navigating the shift towards the digital platform economy is to adopt a "digital DNA." This means embracing a digital mindset rather than focusing solely on specific technologies or approaches. Digital competence is about having an agile and iterative approach to development, constantly learning and adapting to new technologies and digital business models, and effectively applying those learnings to one's own digital operations, services, and strategies. It involves leveraging data as a valuable asset to inform product and service offerings, as well as a source of factual insights for understanding the effectiveness of business models and strategies. By fostering a digital DNA, SMEs can stay competitive in a constantly evolving technological landscape and unlock the full potential of the digital platform economy.

In practice, adopting a digital DNA requires SMEs to gradually build internal digital competencies and capabilities. While it is beneficial to initially leverage external services and knowledge for designing and developing digital services, the goal should be to establish own internal digital DNA with an internal digital core team. This internal team can drive innovation, operate digital business services, and ensure a deep understanding of the organization's specific digital needs and capabilities.

To fully integrate digital capabilities, SMEs should infuse digital skills across the organization, not just within the core digital team. This involves providing training and resources to all management and employees at all levels, fostering digital literacy, and encouraging a culture of continuous learning and experimentation.

When the SME is transforming from traditional business to digital business operations, and as the digital business evolves and initial validations are successful, SMEs should consider adopting a spin-off entity model for growth. This entails initiating a separate business untit (to be later registered as a separate business entity) that focuses solely on the digital product or service, allowing it to scale independently and attract external investments or partnerships specific to the digital domain. The spin-off entity model provides agility, flexibility, and dedicated focus on the digital business, enabling it to thrive in the dynamic digital platform economy. At the same time, it reduces the risks that would arise from internal

self-initiated changes to current business operations, both for the company itself and its employees.

By gradually building and developing own in-house digital expertise, fostering digital competencies across the digital unit, and considering spin-off entities for growth, SMEs can better and more effectively navigate the digital platform economy and fully leverage the opportunities it presents. Embracing a digital DNA and constantly evolving digital strategies will position SMEs for success in the digital era.

'Digital Business Design' -concept

As part of this pre-study work, we developed a free and "open-source" Digital Business Design concept and toolkit, along with another attachment that also includes 100 different ideas for platform economy business models. These resources are designed to provide practical tools and methods for SMEs that are interested in embarking on their digital journey. The Digital Business Design toolkit offers guidance on various aspects of digital transformation, including strategy development, customer experience design, data utilization, and business model innovation. By making this toolkit freely available, we want to support SMEs and those helping them, in diving deeper into the topic and equipping them with the necessary tools to navigate the digital platform economy effectively.

The Digital Business Design Concept lays the foundations for organizations to navigate the complexities of the digital landscape and successfully launch digital businesses or platforms. It encompasses strategic frameworks, methodologies, and innovative tools that guide organizations in embracing digital disruption and creating value in the digital age.

Platform business model development

Among other design tools and canvases, a key aspect of the Digital Business Design Concept is the development of the Platform Business Model. This model helps organizations identify key stakeholders, define value propositions, map value creation, and determine the essential enablers for their digital platform. By utilizing frameworks such as the Digital Platform Canvas and the Business Model Canvas, organizations can articulate their value proposition, identify customer segments,

establish revenue streams, and outline the key activities required to deliver value in the digital economy.

Becoming a digital company; transformation vs. transition

The Digital Business Design Concept addresses the challenges and opportunities organizations face when transitioning from traditional business models to digitally native business and operations. It provides insights into different approaches, such as transformation or spin-off, and emphasizes the importance of agile operations, fostering an innovative culture, attracting talent, and defining key performance indicators to drive growth and success.

The integration of Objectives and Key Results (OKRs) within the Digital Business Design Toolkit offers a goal-oriented framework for setting and tracking progress. By aligning objectives with the long-term vision, breaking them down into manageable time frames, and focusing on critical areas, organizations can drive accountability, foster collaboration, and achieve measurable results.

Furthermore, the inclusion of persona templates helps organizations develop a deep understanding of their target customers. By capturing key attributes, frustrations, goals, needs, and value propositions of different personas, organizations can tailor their digital business strategy and offerings effectively.

The Digital Business Design Concept also integrates the use of innovative tools such as ChatGPT, a large language model -based AI, to facilitate idea generation, provide valuable insights, and support decision-making throughout the design process. By leveraging ChatGPT's capabilities, users can quickly generate innovative ideas, gain valuable insights, and overcome challenges, making the digital business design process more efficient and effective than ever before.

The Digital Business Design Concept and Toolkit empower organizations to embrace digital disruption, seize opportunities in the digital platform economy, and develop a strategic advantage. It provides the essential guidance and tools to shape digital business strategies, optimize operations, and drive sustainable growth in the dynamic digital landscape. By utilizing these frameworks, methodologies, and innovative tools, organizations can navigate the complexities of digital transformation and create value for stakeholders in the digital age.

Categorizing platform business model types

The concept of platform economy businesses in Finland has often been a topic of a broad and complex discussion. The understanding of the platform economy encompasses various principles, such as the organization of producers and consumers, as well as the integration and orchestration of resources, including assets and labor, to meet supply and demand. However, in many people's minds the concept remains loosely defined and challenging to grasp.

A lot of the public conversation surrounding platform businesses in Finland has predominantly focused on food delivery platforms like Wolt or Foodora or mobility platforms like Uber or Yango with an impact on the taxi industry or micro-mobility platforms that provide shared electric scooters. These platforms digitally orchestrate physical resources and have a very notable impact on citizens, infrastructure, and/or related jobs dynamics between the platform and its workforce. Consequently, the understanding of the digital platform economy often almost entirely becomes synonymous only with these one type of platform business models.

However, it is important to recognize that the platform economy encompasses a much broader spectrum of business models. Overemphasizing the negative associations created by certain types of platform businesses, especially those that heavily rely on digitally orchestrating physical resources, can create an imbalanced perception. This limited perspective can lead to conflicts and misunderstandings when evaluating other platform business models and their economic or growth potential. Also companies themselves do not have a need or benefit to classify themselves or emphasize their platform business model, especially in a negative context. For this reason, many companies operating on a platform economy model, even if not recognized as such by others, do not want to be known for their platform economy business model but rather prefer to be recognized for their actual industry or sector.

It is crucial to avoid generalizations that might result in resistance or negative associations towards platform business models in general. Other types of platform businesses exist with distinct core characteristics that differentiate them from the more prominently discussed models. Failing to acknowledge these differences may

hinder the recognition of their potential positive impacts and hinder informed discussions regarding their unique challenges and opportunities.

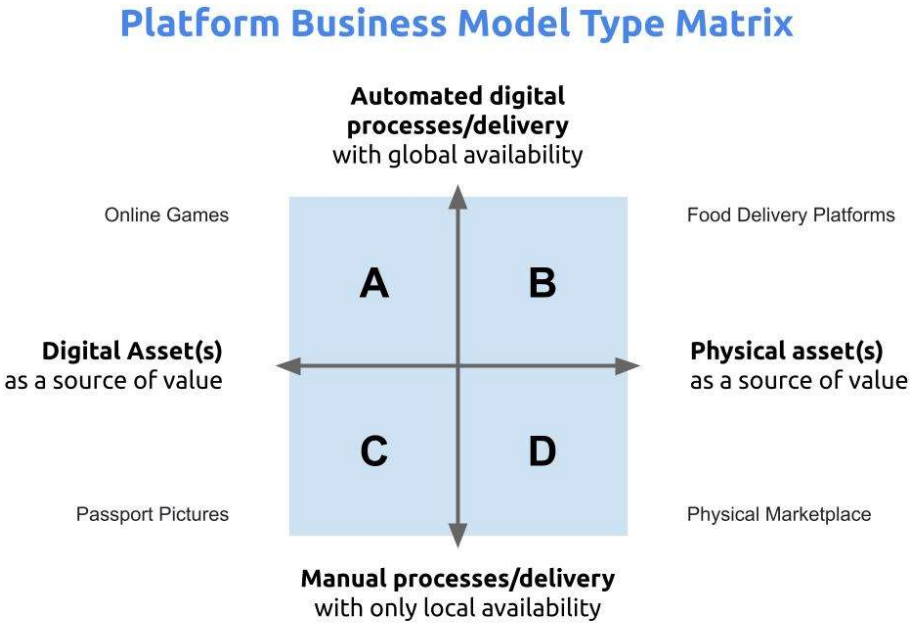
In this segment, we aim to broaden the understanding of the platform economy by encompassing a variety of platform business model types. By providing a simplified categorization and broader assessment framework, we strive to facilitate a more nuanced and inclusive dialogue around the diverse range of platform businesses in Finland.

Furthermore, this intentionally simplified categorization endeavors to simplify and streamline the discourse surrounding platform business models. It aims to enhance understanding by providing clear classifications that differentiate between various types of platform businesses and their respective business model types.

By offering a structured classification framework, we hope this approach can contribute to a better understanding of the platform economy. It allows for a more focused examination of specific platform business model types, their characteristics, and their potential impacts. This segmentation helps stakeholders navigate the complex landscape of the platform economy, facilitating more meaningful and informed discussions.

Platform business model type -matrix

To help in classifying platform companies, an assessment tool based on a four-field matrix has been developed to help evaluate various platform business model types. This Platform Business Model Type matrix looks at the business types mainly from the business creation, operations, and scalability perspectives. For simplification, this matrix utilizes two dimensions: vertical (automated digital processes/delivery with global availability vs. manual processes/delivery with only local availability) and horizontal (digital asset(s) as a source of value vs. physical asset(s) as a source of value).



The 'Platform Business Model Type Matrix' creates four distinct boxes, each representing a different platform business model type. Image by: Digiole Oy.

Categories and examples:

Category A: This category represents platform business models that primarily leverage automated digital processes and delivery with global availability. These platforms predominantly rely on digital assets as a source of value, such as online games, virtual items, and in-app purchases. They enable seamless access to gaming experiences on a global scale through digital delivery mechanisms. - *Example: Online Gaming Platforms*

Category B: In this box, these platforms primarily utilize automated digital processes and delivery, ensuring global availability. While the primary value lies in physical assets like food or rides, the digital interfaces facilitate seamless ordering, tracking, and delivery, providing convenience and accessibility to users worldwide. - *Example: Food Delivery Platforms*

Category C: This category includes platform business models that typically involve manual processes and delivery with primarily local availability. The digital assets here can be images, software, etc. while the platforms utilize digital tools for image capturing, editing, and ordering processes, often limited to specific physical

locations or delivery. - *Example: Platform and process for Passport Pictures (also how software and DVD movies were in past).*

Category D: The final box encompasses “original” platform business models that primarily operate as physical marketplaces and physical assets. These platforms rely on manual processes and delivery with only specific local availability. Physical assets, such as artisanal products, locally produced goods, or unique crafts, are the sources of value. The platforms facilitate local connections between buyers and sellers, creating a physical space for transactions. - *Example: Physical Marketplaces: exhibitions, fairs, malls, etc.*

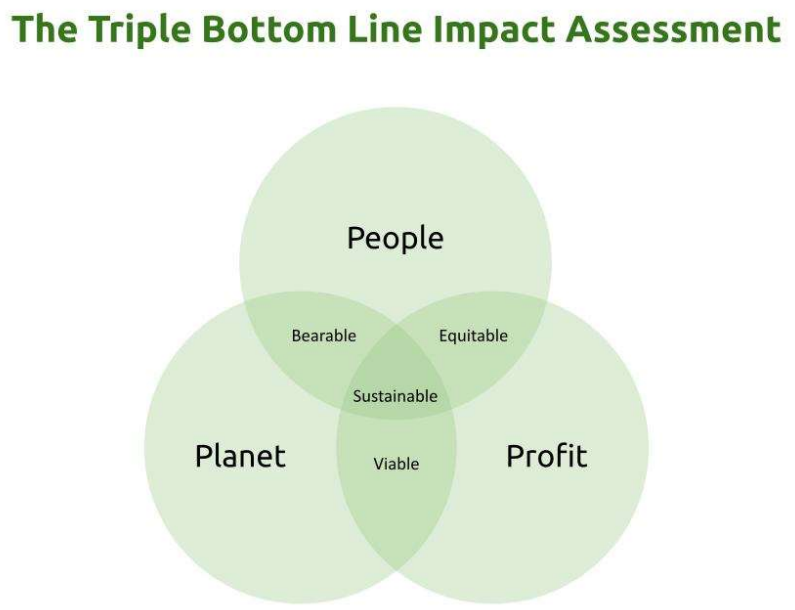
This matrix allows for simplified visualization and classification of different platform business model types based on their key characteristics, helping to assess their business potential and related potential. It provides a framework to understand the interplay between digital and physical elements, as well as the scope of availability and delivery processes. However, it's important to note that platform business models can often encompass multiple elements within the overall operations, and may not be easily categorized into a single box within the matrix.

For instance, a platform business may primarily rely on digital assets as a source of value but also involve some physical assets in its operations. Similarly, a platform might employ both automated digital processes and manual processes for certain aspects of its service delivery. These nuances and variations within platform models highlight the diversity and flexibility of the platform economy. However, as such each platform model should be assessed from the perspective of its primary operations. When a platform grows large enough, such as Amazon.com, it can expand its business into almost any domain using the platform business model, leveraging its platform expertise and the knowledge derived from the data it gathers from its operations.

By utilizing this type of categorization, stakeholders can gain a better understanding of the complexity and hybrid nature of different platform business models. It enables a more comprehensive assessment of their unique attributes and implications, fostering more informed conversations, decision-making, and strategic considerations.

The triple bottom line impact -model

The Triple Bottom Line Impact Assessment provides a framework for evaluating the impact of an initiative, organization, or project across three dimensions: social, environmental, and economic. This approach recognizes that the success of an entity should not solely be measured by financial profits, but also by its contributions to society and the environment.



The Triple Bottom Line concept. Image by Digiole Oy.

In the social dimension, the assessment examines the effects on individuals and communities, considering aspects such as social equity, human rights, access to education and healthcare, job creation, and community development. It aims to understand how the initiative or project contributes positively or negatively to social well-being, inclusivity, and the overall quality of life for stakeholders.

The environmental dimension focuses on the impact on the natural environment and ecosystems. It assesses factors such as resource consumption, waste generation, greenhouse gas emissions, pollution, and biodiversity conservation. The goal is to evaluate whether the initiative or project reduces or increases environmental harm, promotes sustainability, and supports ecological balance.

The economic dimension explores the financial implications and outcomes, including profitability, revenue generation, cost-effectiveness, and job growth. It

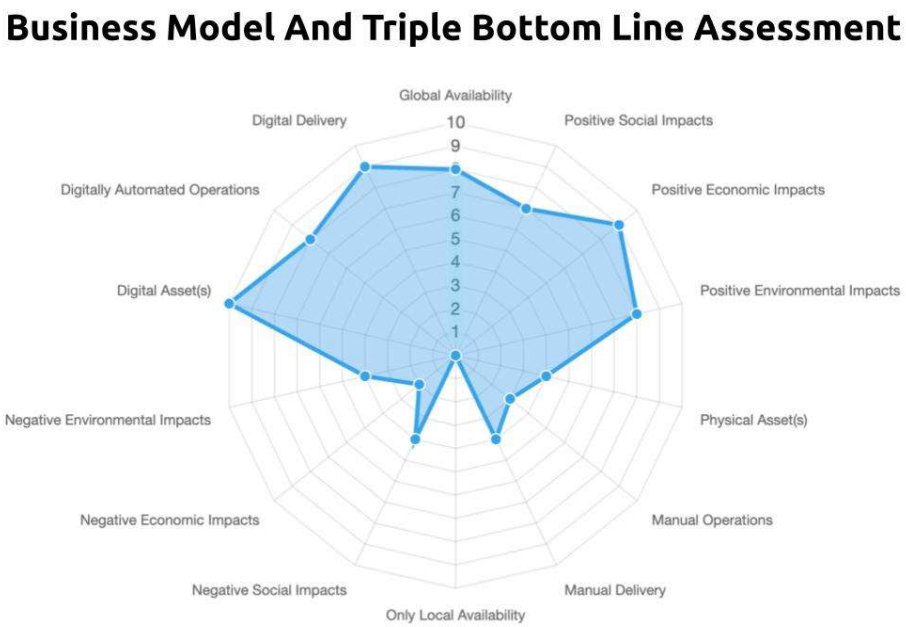
analyzes the economic viability and sustainability of the initiative, considering factors such as economic development, value creation, and long-term financial prospects.

By conducting a Triple Bottom Line Impact Assessment, organizations and stakeholders can gain a comprehensive understanding of the initiative's overall impact. This assessment enables informed decision-making, accountability, and the identification of opportunities for improving social, environmental, and economic performance.

It is important to note that the Triple Bottom Line Impact Assessment is not a one-time evaluation but an ongoing process. As societal priorities and contexts evolve, the assessment needs to be regularly updated to reflect changing needs and emerging insights. Through this iterative approach, organizations and regulators can strive for a balanced and sustainable impact that considers social well-being, environmental stewardship, and economic prosperity.

Combined assessment approach

This example radar chart illustrates a visualization example for assessing different types of digital platform models through all key dimensions related to them from both; Business Model Potential and the Triple Bottom Line perspective.



Holistic Platform Business Model Assessment concept and image by Digiole Oy.

By utilizing this type of visualization, relevant stakeholders can assess and gain insights into the impacts of specific digital platform business model types. As such, it can serve as an effective and simplified communication tool for comparing different platform business models, enabling a better understanding of the related complexities and implications.

On the top right side of the radar chart, we find dimensions that highlight the positive aspects of society at large. In this example, these positive dimensions include positive social impacts, positive economic impacts, and positive environmental impacts. Each dimension is assigned a data value indicating its level of significance in terms of employment impacts.

On the bottom left side of the radar chart, we encounter dimensions representing potential negative impacts within the specific platform business model being assessed. These dimensions include negative social impacts, negative economic impacts, and negative environmental impacts. The assigned data values reflect the level of concern regarding their societal effects.

Furthermore, **on the top left side**, the chart assesses the growth potential of different platform business model types. It considers dimensions such as the utilization of digital assets as a value source, digitally automated operations, global availability, and digital delivery. In addition, it is important to also separately consider factors such as competition or the competence of the company's top management. In contrast, **the bottom right side** presents their opposite dimensions, including the use of physical assets as a value source, manual operations, only local availability, and manual delivery.

It is important to note that when it comes to these factors, the societal perspective often differs the most from the perspective of a company's business interests, particularly regarding the significance of their negative implications. This is evident in this analysis as well.

Areas of assessment for platform business models

1. **Global Availability:** Refers to the extent to which a platform or its services are accessible and available on a global scale (delivery, language, etc), transcending geographical boundaries.

2. **Only Local Availability:** Denotes the limited availability of a platform's services or operations within a specific local or regional area, with a narrower scope of reach.

3. **Digital Asset(s):** Represents the use of digital assets, such as data, software, or digital content, as a key source of value creation or delivery within the platform ecosystem.

4. **Physical Asset(s):** Represents the presence and primary utilization of physical assets, such as tangible goods or infrastructure, in the platform's value creation or value delivery process.

5. **Digitally Automated Operations:** Refers to the automation and digitization of various operational processes, reducing the reliance on manual labor and increasing efficiency through technological solutions.

6. **Manual Operations:** Refers to primary use of manual labor or significant volume of human resources or intervention in various aspects of the platform's operations, such as service delivery, quality control, or customer support.

7. **Digital Delivery:** Describes the delivery of goods, services, or content primarily through digital channels, such as online platforms, mobile applications, or digital marketplaces.

8. **Manual Delivery:** Describes primarily the manual or physical delivery of goods or services to end-users, involving human effort and logistics.

Areas of assessment for the triple bottom line impact

1. **Positive Social Impacts:** Represents the positive effects of a platform on society, such as fostering community engagement, social inclusion, and promoting diversity and equality.

2. **Negative Social Impacts:** Represents the negative effects of a platform on society, such as labor exploitation, social inequality, or erosion of traditional industries.

3. **Positive Economic Impacts:** Indicates the positive economic effects generated by a platform, including job creation, economic growth, increased productivity, growth in tax income and innovation.
4. **Negative Economic Impacts:** Indicates the negative economic effects associated with a platform, such as job displacement, income inequality, decrease in tax income or market concentration.
5. **Positive Environmental Impacts:** Signifies the positive environmental effects resulting from a platform's operations, such as reducing carbon emissions, promoting sustainable practices, and supporting environmental conservation.
6. **Negative Environmental Impacts:** This signifies the negative environmental effects resulting from a platform's operations, such as increased resource consumption, pollution, or ecological degradation.

These dimensions capture various aspects of platform businesses, providing a comprehensive assessment framework to evaluate their characteristics, impacts, and implications.

It is important to note that each platform type can have and often does, both positive and negative dimensions simultaneously. Additionally, these dimensions can vary as the platform scales and evolves, and they may be influenced by societal developments and the discovery of impacts that may emerge over time. As platforms grow and interact with different stakeholders, new insights may emerge regarding the employment impacts and broader societal effects associated with the platform model. Therefore, ongoing monitoring and assessment of these dimensions are crucial to understanding the evolving landscape of the platform economy and its implications for employment and society as a whole.

Rating and scoring systems

The platform business model type matrix or triple bottom line concepts do not have a standardized rating or scoring system due to variations in standards, regional contexts, industries, and the evolving nature of political, economic, environmental, and social factors. Therefore, it is essential for actors to define their own assessment criteria based on their specific use case needs and context. Within the scope of this preliminary study, there was no predefined use case and there simply

was not enough time or right resources to create a dedicated assessment and scoring model.

To support the development of suitable assessment frameworks and scoring guidelines, various organizations and frameworks have created tools and methodologies to evaluate the sustainability and social impact of businesses using triple bottom line principles. These frameworks can serve as references or be used in the assessment process.

One such framework is the Global Reporting Initiative (GRI), which provides guidelines and criteria for companies to report and measure their sustainability performance. The GRI framework uses indicators, metrics, and scoring systems to evaluate a company's economic, social, and environmental aspects.

The Sustainability Accounting Standards Board (SASB) is another prominent organization that has developed industry-specific guidelines and criteria for assessing sustainability performance. SASB focuses on disclosing financially material sustainability information that is relevant to investors.

Additionally, the Dow Jones Sustainability Index (DJSI) serves as a benchmark for sustainable investing. It assesses companies based on comprehensive criteria across economic, environmental, and social dimensions. Inclusion in the DJSI demonstrates a company's strong sustainability performance and commitment.

These frameworks, among others, offer valuable guidelines and criteria for companies to report, measure, and compare their triple bottom line performance. However, organizations should consider their specific requirements and adapt these frameworks to their unique circumstances to effectively assess and improve their sustainability and social impact.

For the platform business model assesment matrix that is developed by the pre-study study team, there are no directly applicable known scoring model identified. So this should also be developed per use case, as needed.

New and evolving landscape of generative AI

The field of Generative AI, driven by large language models, is currently undergoing rapid and continuous evolution accross the globe, characterized by constant advancements and emerging developments. In this segment, our objective is to provide an overview of this dynamic landscape, focusing on key insights and studies that pertain to the topics discussed in this pre-study.

Especially in the context of the platform economy, the role of generative artificial intelligence is growing significantly. It is essential to examine how this technology shapes the creation and operation of new digital products and services, disrupting and even rendering obsolete both traditional and now threatening several digital businesses. By harnessing the potential of Generative AI, companies can unlock novel market value, leverage existing data in innovative ways, and drive more efficient business models. Drawing from early studies and research, highlight some insights into the present state of Generative AI. Through these findings, we shed light on its impact on productivity, market expectations, and transformative capabilities, thereby facilitating a deeper understanding of the evolving landscape and the multitude of opportunities it presents.

Relevancy

First it's important to note that Generative AI and related new large language models are relevant for each of the platform types on The 'Platform Business Model Type Matrix'.

Let's explore how:

A: Platforms leveraging automated digital processes and delivery with global availability (e.g., Online Gaming Platforms): Generative AI can enhance user experiences within online gaming platforms by automatically generating realistic virtual environments, characters, and interactive narratives. It can also contribute to intelligent NPC (non-player character) behavior, dynamic dialogue generation, and personalized game content. Additionally, large language models can enable more immersive and engaging player interactions through natural language processing capabilities.

B: Platforms utilizing automated digital processes and delivery with physical assets (e.g., Food Delivery Platforms): Generative AI and large language models can assist in overcoming language barriers by providing real-time translation capabilities. For instance, AI-powered chatbots or voice assistants can facilitate seamless communication between customers and delivery personnel, even if they speak different languages. Additionally, these technologies can facilitate personalized recommendations for users, based on their preferences and order history, enhancing the overall customer experience.

C: Platforms involving manual processes and delivery with local availability (e.g., Platform for Passport Pictures): In this category, Generative AI and large language models can be applied to automate image capturing and editing processes. For instance, AI-powered algorithms can assist in facial recognition and alignment, ensuring that passport pictures meet the required specifications. Language models can aid in generating accurate instructions or explanations for users during the ordering process, enhancing the user experience and minimizing errors.

D: Physical marketplace platforms relying on manual processes and delivery with local availability (e.g., Physical Marketplaces): Generative AI can be utilized for image recognition technology within physical marketplaces. By analyzing product images, AI algorithms can identify specific items and provide relevant information to customers. Or language models can aid in real-time translations within physical marketplaces. By leveraging voice recognition and language processing capabilities, AI-powered devices can provide instant translations between buyers and sellers who speak different languages. These can enable smoother communication and facilitates transactions in diverse markets.

Identified positive impacts of new AI models:

1. **Enhanced Creativity:** Generative AI and large language models have unlocked new avenues for creativity, enabling AI-generated artwork, music, and literature that inspire and entertain. They are particularly useful for getting started and overcoming creative blocks.
2. **Improved Language Processing:** These technologies have advanced natural language processing, leading to more accurate language translation, text summarization, and voice recognition capabilities, improving communication and accessibility and significantly accelerating related processes.

3. **Data Analysis Advancements:** Generative AI and large language models have revolutionized data analysis by extracting patterns, generating insights, and aiding decision-making processes in fields such as market research, sentiment analysis, and trend forecasting.

4. **Automation and Efficiency:** Routine tasks can be automated using AI models, freeing up human resources for more complex and creative endeavors. This improves efficiency, productivity, and allows individuals to focus on higher-value work. Now, for example, even traditional consulting can be digitized with a digital AI consultant.

5. **Accessibility and Inclusivity:** AI technologies have the potential to make digital content and services more accessible for individuals with disabilities, enabling features like text-to-speech, voice commands, and assistive technologies.

Identified challenges of new AI models

1. **Workforce Displacement:** The automation potential of AI technologies raises concerns about job displacement and the need for reskilling and upskilling the workforce to adapt to new roles and demands.

2. **Trust and Verification:** AI-generated content raises challenges in verifying its authenticity and ensuring transparency, as deepfakes and AI-driven manipulation can undermine trust in digital media.

3. **Data Privacy and Security:** The use of large language models necessitates the handling of significant amounts of data, leading to concerns about data privacy, security breaches, and potential misuse of personal information.

4. **Ethical Concerns:** There are concerns regarding the ethical use of AI-generated content, including issues of bias, privacy, and the potential for misuse, such as the creation of deepfakes or the spread of misinformation.

5. **Regulatory and Legal Considerations:** The rapid advancement of AI technology requires the development of robust regulations and legal frameworks to ensure responsible and ethical use, protect user rights, and address liability concerns.

Key considerations in the context of this pre-study

Increased productivity of the knowledge workers

The most significant and immediate impact of Generative AI on knowledge workers, resulting in increased productivity and efficiency. According to the findings, Generative AI can enhance the efficiency of knowledge workers by a minimum of 30%, with the potential to reach even higher levels of improvement. In some cases, productivity gains can be 2x to 5x or even more, depending on the specific knowledge worker and their field of operation.

The introduction of Generative AI models offers knowledge workers several benefits. Firstly, it provides a personalized learning experience by acting as a virtual mentor, assisting in educating individuals on new concepts and skills as needed. This mentorship aspect contributes to continuous professional development and growth.

Furthermore, Generative AI models have the capability to generate examples, draft work, or even final outcomes, thereby augmenting the capabilities of knowledge workers. By automating certain tasks and providing real-time assistance, these models can accelerate the completion of projects and improve overall outcomes. The ability to generate content simultaneously while learning and collaborating with the AI model creates a symbiotic relationship, enhancing productivity and output quality.

Generating data, data utilization and accessibility

Generative AI plays a crucial role in the realm of data by enabling organizations and individuals to tap into its potential in novel and impactful ways. This technology offers significant benefits in connection to data: understanding data, generating entirely new data and enhancing the utilization of existing data.

Firstly, Generative AI has the capacity to generate entirely new information and data, providing valuable insights and expanding the available information resources. By analyzing patterns and trends in existing data sets, AI models can also generate realistic and meaningful synthetic data, which can be used for various purposes such as also training other AI models, simulating scenarios, or augmenting limited

datasets. This capability opens up new opportunities for research, experimentation, and problem-solving, ultimately driving innovation and discovery.

Secondly, Generative AI enhances the utilization of existing data by significantly improving the efficiency, speed, and user experience in accessing and interacting with data. Individuals with varying levels of technical expertise can leverage AI models to harness the power of data without extensive coding or analytical skills. By employing natural language interfaces, users can interact with AI models in a conversational manner, just as they would with a human colleague. This intuitive approach facilitates data exploration, analysis, and retrieval, empowering users to extract valuable insights and make data-driven decisions more efficiently.

Moreover, Generative AI assists in teaching these data-related skills to individuals who may not have possessed them previously. By acting as a virtual mentor or guide, AI models can provide step-by-step instructions, recommendations, and perform tasks based on natural language requests. This seamless integration of AI technologies into workflows bridges the gap between users and data, unlocking its potential for a broader audience.

AI as an active participant in platforms

Traditionally, AI has been perceived as a tool, algorithm, or program that assists in performing specific tasks, akin to software. However, a paradigm shift is occurring, particularly within the context of the platform economy, where AI is assuming an active role as one of the human-like actors or agents in the platform and/or in the related ecosystem. This transformation is giving rise to new considerations and opportunities that go beyond traditional AI applications.

In the realm of the platform economy, AI is no longer limited to supporting backend operations or providing recommendations from behind the scenes. Instead, it can also take on the role of a virtual agent or entity, representing expertise, engaging in conversations, and facilitating interactions within the platform ecosystem. In addition, it can bring along an infinite memory of past conversations, allowing one to always refer back and inquire about previous discussions when needed. This evolution brings forth a fundamental change in the way AI is perceived and utilized, as it becomes an integral part of the platform itself.

So one key notable aspect of this shift is AI's ability to act as an active and autonomous participant, capable of maintaining natural language conversations with users, understanding their needs, and providing tailored responses. Through advanced natural language processing and machine learning capabilities, AI models can analyze vast amounts of data, have infinite memory, learn from user interactions, and adapt their behavior over time. This enables them to provide personalized experiences, offer expert guidance, and contribute to the overall value proposition of the platform.

Moreover, AI's active participation within the platform economy extends beyond conversational interactions. AI can leverage its computational power and analytical capabilities to generate insights, make predictions, and even make autonomous decisions within predefined parameters. By leveraging AI as an actor in the platform, organizations can unlock new opportunities for automation, optimization, and innovation, leading to enhanced user experiences, increased efficiency, and the creation of new business models.

Furthermore, as natural language interfaces are developed between services and humans, the next logical development is that applications themselves can start conversing with each other through these same interfaces. This, in itself, will be a tremendous change and simplification compared to how complex the current application programming interfaces (APIs) are, and how much effort is required for documenting and maintaining those.

Scaling human knowledge with AI-driven automation

A significant portion of manual work in fields such as coaching or consulting, particularly at basic levels, involves the ability for experts to understand questions and provide knowledgeable explanations in a natural and comprehensive manner. Additionally, it requires the capacity to rephrase and reframe knowledge and concepts in different ways when providing answers, until understood by the individual seeking assistance. Moreover, the expertise lies in the capability to assess the situation, ask clarifying questions, and delve into the root of the challenges in order to offer tailored solutions that address specific needs.

The emergence of new AI models has introduced a transformative opportunity to revolutionize this process. These advanced AI models possess the ability to replicate human-like interactions, making it entirely possible to utilize AI as a means

of scaling human expertise enriched with various ways and additional information into an AI-driven automated interactive format. By leveraging the capabilities of these models, organizations can extend the reach of human knowledge and expertise, making it accessible to a broader audience and scaling their services in an unprecedented way.

These AI-driven systems excel in understanding complex queries and providing detailed explanations, offering a level of interaction that closely resembles a human conversation, including doing so in multiple languages. The models have the capacity to process vast amounts of information, extract relevant insights, and generate responses that are tailored to the specific needs and understanding of the individual. This opens up new possibilities for disseminating existing expertise and delivering personalized guidance at scale.

Furthermore, AI-powered automation enables continuous learning and improvement of these systems. As more interactions take place, the AI models gain knowledge, refine their responses, and enhance their ability to address a wide range of questions and challenges. This iterative learning process ensures that the AI-driven expertise becomes increasingly accurate, reliable, and valuable over time.

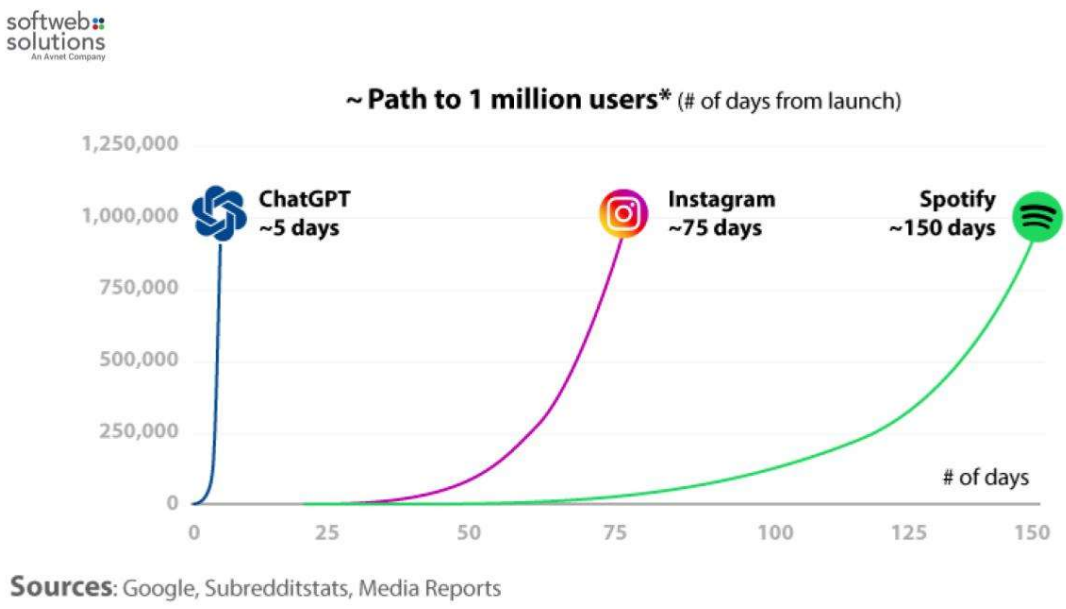
By incorporating AI-driven automation into expertise-based fields, organizations or even individual consultants can extend their reach, provide round-the-clock support, and deliver consistent and high-quality experiences to a larger audience in any language. This transformation has the potential to democratize access to expertise, making it more affordable and readily available to individuals who may have previously been limited by factors such as time, location, or cost.

Summary of the AI landscape

For years, AI has held the promise of a transformative future. However, as evidenced by the related reports and studies, this promise has largely been accessible to a select few with expertise in technology and AI, or hindered by limitations in data availability.

Nevertheless, the unprecedented launch and widespread adoption of ChatGPT and the Large Language Models that power it, have truly unlocked many of these promises, turning them into tangible realities within months. These developments have ignited a global wave of advancements in the field, thanks to the generative

capabilities and application programming interfaces (APIs) that allow for seamless integration into various software applications. As a result, the impact of these new AI models has also raised significant concerns and also underscored the need for global regulatory development and collaboration.

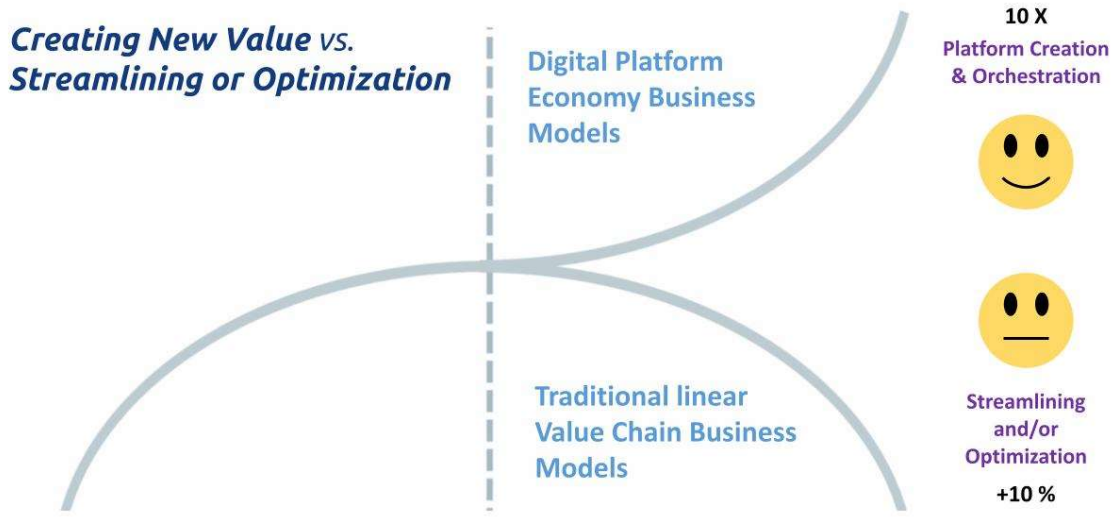


Unpresedented growth of ChatGPT. Image by: Softweb Solutions.

In the context of this pre-study, it is important to consider one of the primary constraints faced in the job market of the Helsinki-Uusimaa region and Finland as a whole: the shortage of talent. Despite concerted efforts to address this issue, the shortage has only intensified in recent years. From this perspective alone, the impacts and benefits of these new AI models are likely to be significantly net positive. However, it is challenging to envision these models immediately fulfilling or exceeding the current and growing demand for digital talent and knowledge workers.

However, it should be noted that realizing these benefits requires individual knowledge workers to embrace these new capabilities as a means of enhancing productivity. Additionally, companies must navigate the challenges of harnessing this increased productivity for sustainable growth, rather than solely pursuing short-term productivity for added profitability alone. So, it's not just about making current things more efficient but also exploring the possibilities of doing things in completely new ways and creating entirely new value.

At the same time, it is important to ensure that one's own current operations are not entirely threatened by how other competing companies apply these new models in their own functions. Moreover, it is essential to recognize that global competition is already actively leveraging these AI models at all levels, emphasizing the urgency of adoption and adaptation to remain competitive.



Creating new value vs. streamlining or optimizing. Image by: Softweb Solutions.

While the potential benefits are substantial, it is crucial to also proceed with caution. The development and deployment of AI should be guided by ethical considerations, privacy concerns, and a deep understanding of the potential societal impacts. Furthermore, collaboration between stakeholders, including researchers, policymakers, and industry leaders, is essential to address the emerging challenges and shape the future of AI in a responsible and inclusive manner.

In conclusion, the AI landscape is experiencing a transformative shift, thanks to the breakthroughs achieved with ChatGPT and Large Language Models. The potential benefits of these models are significant, particularly in addressing talent shortages and increasing knowledge worker productivity. However, harnessing these benefits requires a thoughtful approach that balances short-term gains with long-term growth strategies. By navigating the complexities and collaborating on a global scale, we can unlock the full potential of AI while ensuring it serves as a force for positive and sustainable change.

Conclusions

1. The Platform Economy and Digitalization in Finland

Globally, the platform economy has experienced significant and ongoing growth. Finland has also witnessed rapid development in this field, although the number of new platform businesses with a global reach has been limited. The transition to the platform economy is closely intertwined with the broader digitalization framework. However, the resources allocated to improving software expertise have been insufficient, leading to a growing skills gap in the data and platform economy, particularly with a current shortage of over 10,000 software developers, engineers, architects, data scientists, and other related roles.

2. Shifting Emphasis: From Platform Economy to AI to the Data Economy (and now again to AI)

In Finland since 2018, discussions on the platform economy have taken place across various forums in recent years. Initially, these discussions were accompanied by a growing focus on artificial intelligence (AI) and its potential for renewing Finnish industry. However, the emphasis shifted to the themes of the data economy as the anticipated expectations and usability of AI did not materialize as expected, partly due to the dependence of AI models on the availability of data.

3. The Impact of AI: Unforeseen Developments and Platform Business Models

The most recent developments have now shown the significant impact of AI, such as the unprecedented success of ChatGPT by OpenAI, which is rapidly transforming the global digital landscape. These "black swan" moments remind us that unforeseen rapid developments can start shaping industries in unexpected ways. The key question in this new field will be to explore the opportunities of platform business models within all industries, now empowered with these new and more powerful AI models.

4. Generative AI: Potential and Ongoing Development

Generative AI, particularly large language models, is an area of significant potential and rapid ongoing development. Therefore, it is important to include even a small segment in this report to reflect early studies and information on this key topic in this pre-study.

5. Confusing with Themes: Towards a Simplified 'Digital Business' -perspective

While dividing key themes for detailed studies, funding instruments and targeted activities under topics like AI, Platform Economy, Data Economy, API economy, etc. can benefit organizing public organizations activities, public discourse and research, from the audiences and especially business perspective it can be confusing and even harmful.

Instead, it is more beneficial to better connect and tie these tightly related themes together under a broader marketing and communication umbrella, especially when communicating for and between multiple public organizations, and especially when communicating towards their primary customers and audience (private companies and SMEs). The connection and integration of these themes should be addressed to provide a simpler overarching national theme such as 'digital business'; digital business models, digital products and services, or similar, rather than categorizing them separately based on related underlying partial technology components of the digital operating model (ie. digital business).

No significant digital business should overlook any of the essential components, and therefore, promoting these sub-themes should not unintentionally lead to neglecting any of the other required key aspects of digital business models and operations.

6. Leveraging Resources: Funding and Support Opportunities for Digital Businesses

Looking through a broader lens or terminology of 'Digital Business', from the perspective of SMEs and private companies, there is an abundance of knowledge, funding instruments, and programs available to support the development of new digital businesses and services. However, these resources are often unnecessarily categorized under separate sub-themes based on the underlying technology components of the overall digital operating model, when a simpler approach would be to classify businesses as primarily digital or non-digital based on their overall business model. Additionally, the classification and evaluation concept created in this pre-study can be a useful tool.

Fortunately there are already existing digital platforms such as Grants.fi available to address the challenge of identifying the most suitable funding instruments among the fragmented public information. These platforms cater to the need of helping

companies find the most suitable funding instruments for their needs and operations.

As the simplest and most commonly applicable initial funding instrument, for any entrepreneur or company in Finland planning a new digital business is the 'innovation voucher' funding offered by Business Finland. With this voucher, companies can receive funding of up to 6,000 euros to support their strategic planning of the digital business or the creation of a digital service prototype. Being 100% grants based funding, in practical terms, this means it is essentially free to get helper to accomplish the initial design, development and/or prototype phase.

7. Harnessing the Potential: Adapting and Thriving in the Platform Economy

Overall, the platform economy presents opportunities for growth and transformation, both in Finland and globally. By understanding the interconnections between digitalization, AI, the data-driven economy, and the platform business model, businesses can adapt and thrive in the evolving landscape. It is essential to continuously explore and leverage these interconnected themes to harness the full potential of the platform economy.

Recommendations

Throughout the discussions and analysis conducted, several key findings have emerged regarding the digital platform economy. These findings shed light on various aspects of the platform economy and provide valuable insights for stakeholders and researchers. The following recommendations are based on these key findings:

1. **Addressing Employment Impacts**
   Recognize the significant employment impacts of the digital platform economy and strive to create a balance between job opportunities and worker rights. Address concerns related to job insecurity, income volatility, and the erosion of traditional employment relationships. Encourage platforms to provide fair working conditions and explore mechanisms for social protection.

2. **Navigating the Transformative Work Environment**
   Embrace the transformative change brought about by the platform economy and the broader digital developments. Ensure that gig-based and flexible

work arrangements prioritize worker rights, social protection, and the well-being of individuals. Foster a dialogue on work-life boundaries and promote initiatives that support work-life balance.

3. **Overcoming Challenges Faced by Platform Companies**
   Collaborate among platform companies, workers, policymakers, and other stakeholders to address the challenges faced by platform companies. Work towards resolving issues related to worker classification, regulatory compliance, trust and safety, and striking a balance between platform control and worker autonomy.

4. **Capitalizing on Opportunities for SMEs**
   Empower small and medium-sized enterprises (SMEs) to strategically transition towards digital platforms. Simplify the communication about digital business. Provide a simple path to support and resources to help SMEs leverage their core competencies and adopt platform business models. Facilitate access to new markets, customer bases, and digital ecosystems to enhance SMEs' competitiveness.

5. **Categorizing and Assessing Platform Business Models**
   Further develop the framework for categorizing and assessing platform business models based on the concept created within the pre-study, in a way that it is aligned with the local needs and specific use case. This categorization can provide valuable insights into the unique characteristics and societal implications of different platform types, assisting in evaluating their business potential.

6. **Generative AI: Potential and Ongoing Development**

   a. **Invest in Research and Development**: Allocate resources towards further research and development in the field of generative AI, particularly large language models. Support collaborations between academia, industry, and government to explore the potential applications, ethical considerations, and technological advancements in this domain.

   b. **Promote Responsible AI Practices**: Foster responsible practices in the development and deployment of generative AI models. Encourage transparency, accountability, and fairness in AI systems to mitigate

potential risks such as bias, misinformation, and unintended consequences.

c. **Address Ethical Implications**: Engage in discussions and formulate guidelines to address the ethical implications of generative AI. Explore topics such as privacy, security, intellectual property rights, and the impact on human labor. Collaborate with stakeholders to establish ethical frameworks and standards.

7. **Integration of Key Themes: Towards a Simplified Perspective**

   a. **Promote Holistic Understanding**: Encourage a comprehensive understanding of the interconnections between key themes such as AI, the platform economy, the data economy, and digital business models under a simpler and broader common theme (like; digital business). Emphasize the integration of these themes to provide a holistic perspective when communicating with organizations, including private companies and SMEs.

   b. **Streamline Communication**: Develop a simplified and cohesive language when discussing the platform economy and related topics. Create a unified framework that encompasses digital business models, digital products and services, or similar terminologies to facilitate clearer communication and comprehension across different sectors and organizations.

   c. **Provide Guidance and Education**: Offer guidance, educational resources, and best practices to help businesses navigate the complexities of the platform economy. Develop accessible materials that elucidate the relationships between AI, the platform economy, and other relevant themes, enabling organizations to make informed decisions and identify growth opportunities.

   d. **Facilitate Collaboration**: Encourage collaboration between public and private entities to foster knowledge sharing, exchange of ideas, and joint initiatives in the areas of AI, the platform economy, and digital business models. Facilitate platforms or forums where stakeholders can collaborate and learn from each other's experiences and expertise.

8. **Addressing Ethical Considerations**: Recognize and address the ethical considerations arising from the platform economy. Ensure fair treatment of workers, protect data privacy, mitigate algorithmic bias, and monitor the concentration of economic power. Foster responsible practices within the platform economy to maintain public trust and create a sustainable ecosystem.

9. **Promoting Further Research**: Encourage further research in areas such as long-term socioeconomic impacts, ethical dimensions, regional and global comparisons, platform governance and regulation, impact on traditional industries, platform innovation and business models, and stakeholder perspectives. This research can contribute to evidence-based policymaking, industry practices, and a deeper understanding of the platform economy.

By implementing these recommendations, stakeholders can harness the potential of generative AI while ensuring responsible practices. Simultaneously, simplifying the communication and integration of key themes can promote a better understanding of the platform economy and support the growth and innovation of businesses operating in this landscape. These recommendations aim to navigate the opportunities, challenges, and complexities associated with the evolving landscape of the digital platform economy.

Summary of the methods used

The research utilized a combination of quantitative and qualitative approaches to gather data and analyze the Platform Economy. The results reveal important insights into the topic and contribute to a deeper understanding of the subject matter.

Literature Review: The literature review explored previous research, reports, and publications relevant to the research topic. Involving analysis of academic articles, books, research papers, and other relevant sources to identify the current state of knowledge and key theories or concepts related to the subject.

Semi-Structured Interviews: The research employed a workshop and semi-structured interviews as an additional data collection methods and to facilitate collaborative discussions and knowledge sharing. Semi-structured interviews allowed for flexibility while maintaining a consistent set of core questions or themes. Through these interviews, insights were obtained on the employment dynamics, challenges, and opportunities within the digital platform economy in the Helsinki-Uusimaa region.

Data Analysis: The collected data, including interviews, workshop outputs, and other relevant sources, underwent a data analysis process. Including organizing, categorizing, and analyzing the data to identify patterns, themes, and relationships.

Overall, considering this being only a pre-study, the combination of literature review, semi-structured interviews, workshop approach, and data analysis provided good and sufficient methodology for investigating the research topic. Each method contributed unique perspectives and information, leading to a comprehensive understanding of the subject matter and yielding valuable insights for further study or practical application.

Participants

Digiole Oy served as the main implementing organization in this pre-study project, which examined the impact of digital platform economy on employment in the SME sector. The project received funding through the AKKE program by Uusimaa Regional Council. The research focused on analyzing changes in the business environment of the Uusimaa region from the perspective of the platform economy.

The project involved a diverse group of stakeholders, including municipalities, clusters, economic development units, entrepreneurship support organizations, platform economy companies, and SMEs from the Uusimaa region and beyond. The expertise and experience of these participants were significant in achieving the project's objectives. Below we list some of the entities involved or supporting the project, but the list is not exhaustive as there were also several private entrepreneurs and experts who preferred to share their insights anonymously.

The diverse group of participants allowed for the utilization of various perspectives and experiences in the project, strengthening the planning work and supporting decision-making.

On behalf of Digiole, we sincerely thank all those who participated in the project, our collaborators, and supporters. Without your valuable contributions, the implementation of the project would not have been possible to the extent it is now. We are extremely grateful for your participation and demonstrated support, which have been instrumental in the project's success. We would also like to express our gratitude to the Uusimaa Regional Council for providing funding for the project. Your collaboration and support have been invaluable. Thank you all for this meaningful partnership.

- Uudenmaan liitto
- Espoo
- Helsinki
- Vantaa
- Järvenpää
- Porvoo
- Yrittäjät Uusimaa
- Posintra
- TechVilla
- KeuKe
- SITRA
- Forum Virium
- Motiva
- TIEKE
- Rastor Instituutti
- Cursor

- LADEC
- Accounta
- Finanssitaito
- Vastuu Valmennus
- Liiketoiminta.info
- Sarastus events
- Headai
- DOC
- It Veljet
- Arter
- Premiumgroup
- Intressi
- Moreni
- Laki Lehtonen
- Alfa Law
- Hetkisauna
- Viaxone
- Euroeat
- OpenCO2
- Pilkkoset
- Bitaps
- Gixon App
- Foxdo
- WYS
- XC Chamonix
- Eezy kevytyrittäjäpalvelut
- Bolt Works
- Oiva Health

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Appendices

1. Digital Business Design Kit
2. 100 Platform Business Model Ideas
3. Presentation Slides used in the context of this project (in Finnish): Digital business and the utilization of AI among SMEs