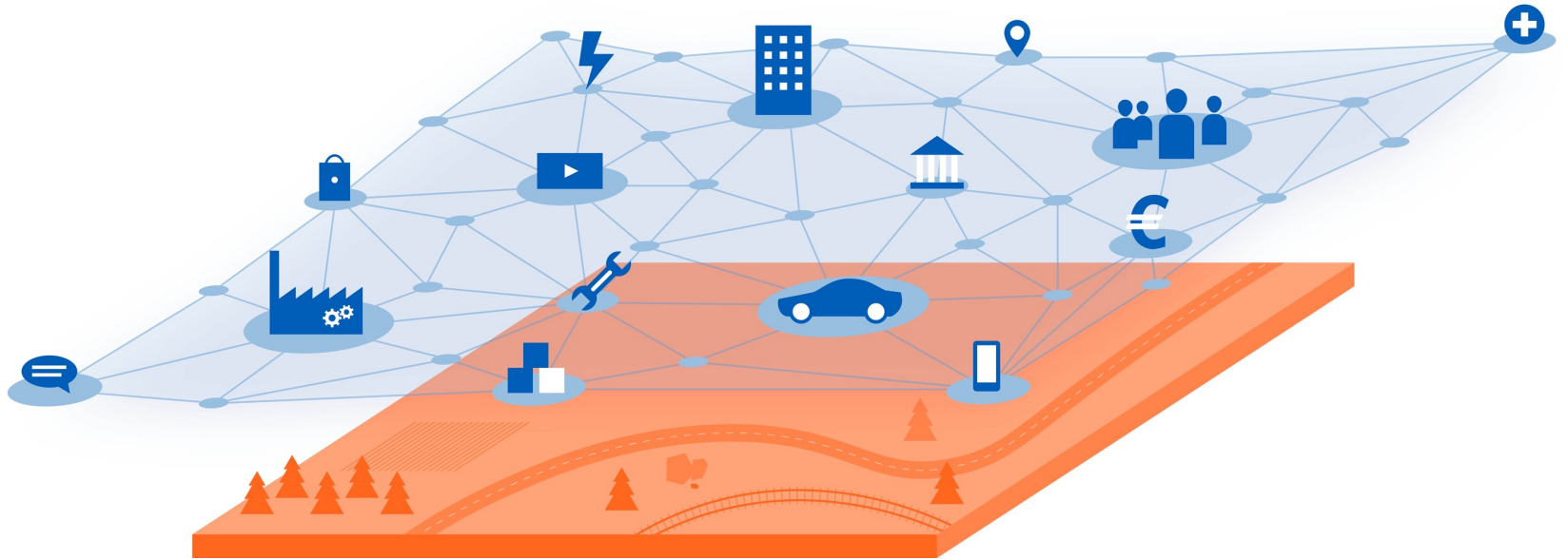


The uniqueness of data and the benefits of a healthy data economy

Gaia-X Finland. Data sharing for breakfast 1.12.2022

Robin Gustafsson, Associate Professor of Strategic Management,
Aalto University, Department of Industrial Engineering and Management

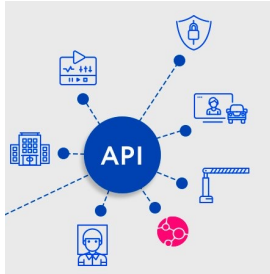
A digitally connected, layered, and data enabled innovation and economic order is forming



Key elements of platform economy



Direct interaction



Boundary resources
(interfaces)



Network effects & externalities



Independent production



Digital superpowers

Many kinds of platforms



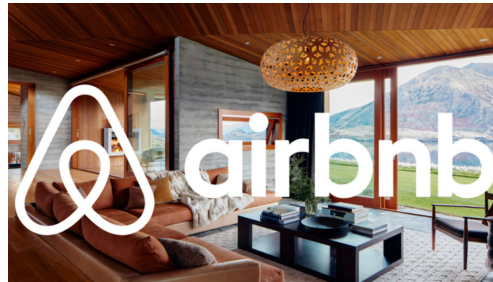
Social media



Marketplaces



Gig work



Sharing economy

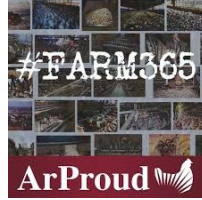


Innovation

...and many types of B2B Platforms

B2B Exchange platforms

i.e. Looprocks - construction material market place; Farm 365; Datahub; Platform of trust (Tilaajavastuu)



B2B Co-creation platforms

i.e. KUKASIM, simulation software for offline programming of system and robots, Autodesk



B2B Asset sharing platforms

i.e. Werflink- share construction equipment, materials and waste between companies active in the construction sector

B2B Data sharing platforms

i.e. Dias and Tambur, housing transaction service (banks and brokers)



B2B Complementor platforms

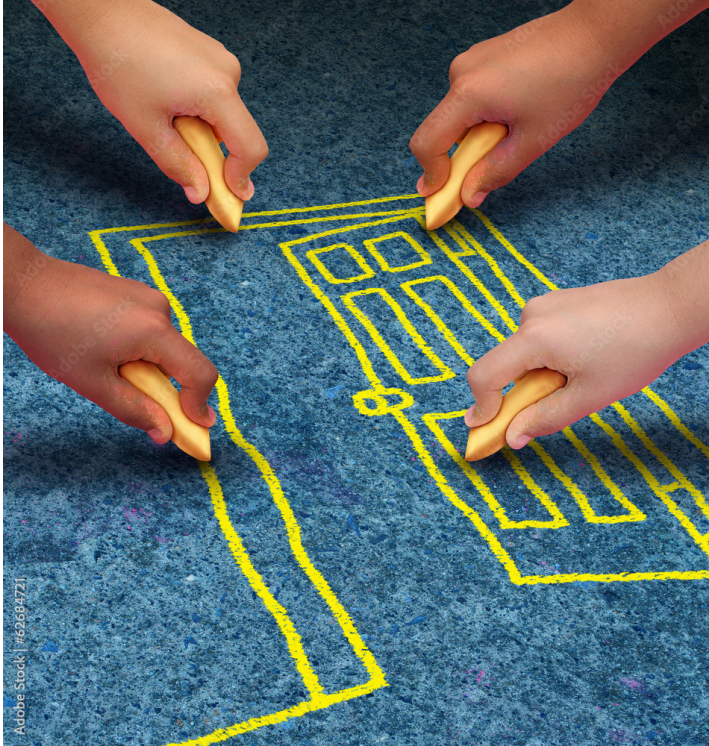
i.e. Jakamo - connecting customers and suppliers across the manufacturing ecosystem; Combiworks - tailored production and manufacturing ('Factory-as-a-Service')



B2B IOT platforms

i.e. Predix, edge-to-cloud OT/IT data connectivity, processing, analytics, and services to support industrial applications (GE)

Opportunities with platform economy



- Boundedless scaling
- Barriers for collaboration dissapears
- Informed decisions by producers and consumers
- Intelligent directing of demand and supply
- Market accounts for positive and negative externalities

The Uniqueness of Data as an Asset



Data is non-rivalrous good. Multiple actors can exploit one single data set at the same time.



Data is non-fungible, referring to the variety of data: different data sets contain different information and vary in value.



Data is a context-bound and experience-based commodity whose value comes at the moment it is used (experience good)

The marginal cost of data production is very low or non-existent (economies of scale in production)

Business models for creating and capturing value from data



Selling data

- Grant ownership of the data to the buyer
- i.e. data aggregators, who combine and analyze data from multiple sources



Selling analyses

- Sell data-based analyses but to restrict access to the original data
- Purchasers of the analyses use them to enhance their understanding of consumers, competitors, production elements, or business environments, and to improve decision-making.
- As a benefit compared to selling raw data, analyses are less sensitive in terms of data privacy and security as the data ownership does not change as a result



Selling data-based services

- Multi-sided business models, usually implemented via dashboards or similar digital interfaces
- The data comes from the users of the service, and is monetized as signals of or access points to them, the paying customers being other organizations

Barriers for the development of data and platform economy?



Data and platform economy is evolving with different speed and in different extent in sectors



A healthy data and platform economy does not establish because of ...



Failure of the market to establish open and interoperable digital infrastructure



Tragedy of the digital commons and the platform economy



Failure to establish equitable data markets for innovators

Failure to establish equitable data markets for innovators

Successful data-based digital innovations require enough standardized data from diverse data sources as well as the capability and infrastructure to assemble this data into complex goods and services (Alaimo et al., 2020).

- Markets underinvest in data sharing
- Data reserves are unevenly distributed across firms
- Unclear and fragmented legal frameworks for data ownership together with a lack of proper standards in data sharing
- Ex ante valuation of data is highly difficult, rendering data markets subject to information based market failures

Why should we care?



- Digital innovation and entrepreneurship is hampered
- Digital affordances are not realized
- Generative properties of digital, data, AI and platforms do not establish

Data and platform business and economy booms from ...



Interoperability and openness of digital infrastructure

Digital commons and access to shareable digital goods

Equitable data economy

Four Sector Specific Policy Briefs (FI & ENG) + one synthesis (in FI)



How will innovations fare in the platform economy? Four challenges and solutions for the manufacturing industry

Robin Gustafsson, Eero Aalto, Niko Lipäinen & Suvi Lavinto

Abstract

This policy brief focuses on the innovation challenges of the platform economy in the manufacturing industry. We discuss four innovation challenges facing the manufacturing industry and the key reasons for them. We present recommendations related to innovation policy that can accelerate the development and growth of the platform economy in the manufacturing industry. The challenges and recommendations are derived from the results of the Policy Rationales in the Shift to Digital Platform Economy research project funded by Business Finland.

Platform economy innovation challenges in the manufacturing industry

Challenges	Reasons	Policy recommendations
<ul style="list-style-type: none">Only few platforms are createdInefficient data sharingLack of shared digital goodsCompetition in existing digital network is lacking	<ul style="list-style-type: none">Lack of competence related to the platform and data-based businessClassical ICT systemsDifficulty in determining the value of dataRestrictive cooperation practicesSingle organisational structuresIncomplete or restrictive legislation	<ul style="list-style-type: none">Recommendation 1: Thresholds for participating in the early stages of development should be loweredRecommendation 2: Data sharing practices and competences should be developedRecommendation 3: Open digital goods should be createdRecommendation 4: Innovation activities should be transferred to digital networks

Keywords: platform economy, innovation policy, manufacturing industry, digital platforms
JEL: L7, L8, O30, O38

How to accelerate the platform economy in the education sector? Three challenges and solutions

Robin Gustafsson, Niko Lipäinen & Suvi Lavinto

Abstract

This policy brief focuses on the challenges of innovation and growth in the platform economy in the education sector. By the education sector, we refer to early childhood education and care, pre-primary education, basic education, secondary education, higher education and liberal adult education. We make recommendations related to innovation policy aiming to accelerate the development and growth of the platform economy in the education sector. The key themes of the recommendations are cooperation, common rules and operations. To ensure the favourable development of platform-based solutions, significant changes will be needed in the roles and operating models of private and public actors in the production of teaching content and learning tools. The challenges and recommendations are derived from the results of the Policy Rationales in the Shift to Digital Platform Economy research project funded by Business Finland.

Challenges and recommendations

Challenges	Policy recommendations
<ul style="list-style-type: none">Challenge 1: Only few platforms are created in the field of educationChallenge 2: Underdeveloped and incomplete data marketsChallenge 3: Little shareable digital teaching and learning goods are created	<ul style="list-style-type: none">Recommendation 1: A future vision aiming for coherence should be created for the education sector platform economy, interoperability should be developed, and incentives should be made in co-developmentRecommendation 2: Performance of the data market in the education sector should be improved through common rulesRecommendation 3: The sharing of digital goods and their use in teaching should be developed

Keywords: Platform economy, innovation policy, education, teaching, digital platforms
JEL: O38, R40, L7, L8, L9

How should the platform economy be promoted in the mobility sector?

Eero Aalto, Robin Gustafsson, Suvi Lavinto & Niko Lipäinen

Abstract

Can Finland take its place in the global growth market of smart mobility? The platform economy offers mobility sector companies a significant new opportunity for growth, internationalisation and finding solutions to the societal and environmental challenges of mobility. The political intent of the Finnish mobility sector should now be translated into action and policy measures that support it. In this report, we present three recommendations related to innovation policy that support the development and growth of the platform economy in the mobility sector.

Challenges and recommendations

Challenges	Policy recommendations
<ul style="list-style-type: none">Challenge 1: A limited number of digital goods for common useChallenge 2: Data are unavailable or unsuitable for use casesChallenge 3: Scalable platform solutions are not created in the mobility sector	<ul style="list-style-type: none">Recommendation 1: Ecosystem growth should be accelerated through initial investments and functional interfacesRecommendation 2: Common standards should be created, and customer needs should be made transparentRecommendation 3: Common rules and preconditions should be created for scalable solutions

Keywords: Platform economy, innovation policy, mobility, digital platforms
JEL: O38, R40, L7, L8, L9

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<https://www.aalto.fi/en/departement-of-industrial-engineering-and-management/policy-rationales-in-the-shift-to-digital>

Platform Economy facts and myths podcast

(Alustatalouden faktata ja myytit - in Finnish)

- Expert podcast, episodes 30 min, can be found on all publishing platforms, e.g. Spotify, Apple Podcast and Supla
- Launched in spring 2021, now 18 episodes
 - *How do you create more functional cities with the platform economy?*
 - *Let's forget SOTE, let's solve the issue with the platform economy*
 - *The ABC of the platform economy*
 - *Towards a world of virtual platforms*
- Over 18 000 listenings and 4 500 unique listeners
- +40 guests, e.g. *Juha Jolkkonen, Eija Warma-Lehtinen, O-P Heinonen, Maria Rautavirta, Ossi Laukkanen, Pauliina Seppälä, Risto Siilasmaa, Mårten Mickos, Anita Lehtikoinen, and Kim Väisänen.*
- Third season in production, will be launched in later autumn 2022, several episodes on energy and environment



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#platformpolicy
#platformeconomy
#alustapolitiikka
#alustatalous



Politiikkatoimet alustataloudessa tutkimushanke (2019-2022)

<https://www.aalto.fi/fi/tuotantotalouden-laitos/politiikkatoimet-alustataloudessa-tutkimushanke>

Uusi innovaatiotutkimushanke: In2Mission - Informational infrastructure to accelerate mission-oriented system-level transformations (Aalto-VTT)