



## Platform Economy Interactions & Boundary Resources

### Citation

Still, K., Valkokari, K., Seppänen, M., Huhtamäki, J., Seppälä, T., Basole, R. C., & Gawer, A. (2017). Platform Economy Interactions & Boundary Resources: Checklist For Companies. Tampere University of Technology.

### Year

2017

### Version

Publisher's PDF (version of record)

### Link to publication

TUTCRIS Portal (<http://www.tut.fi/tutcris>)

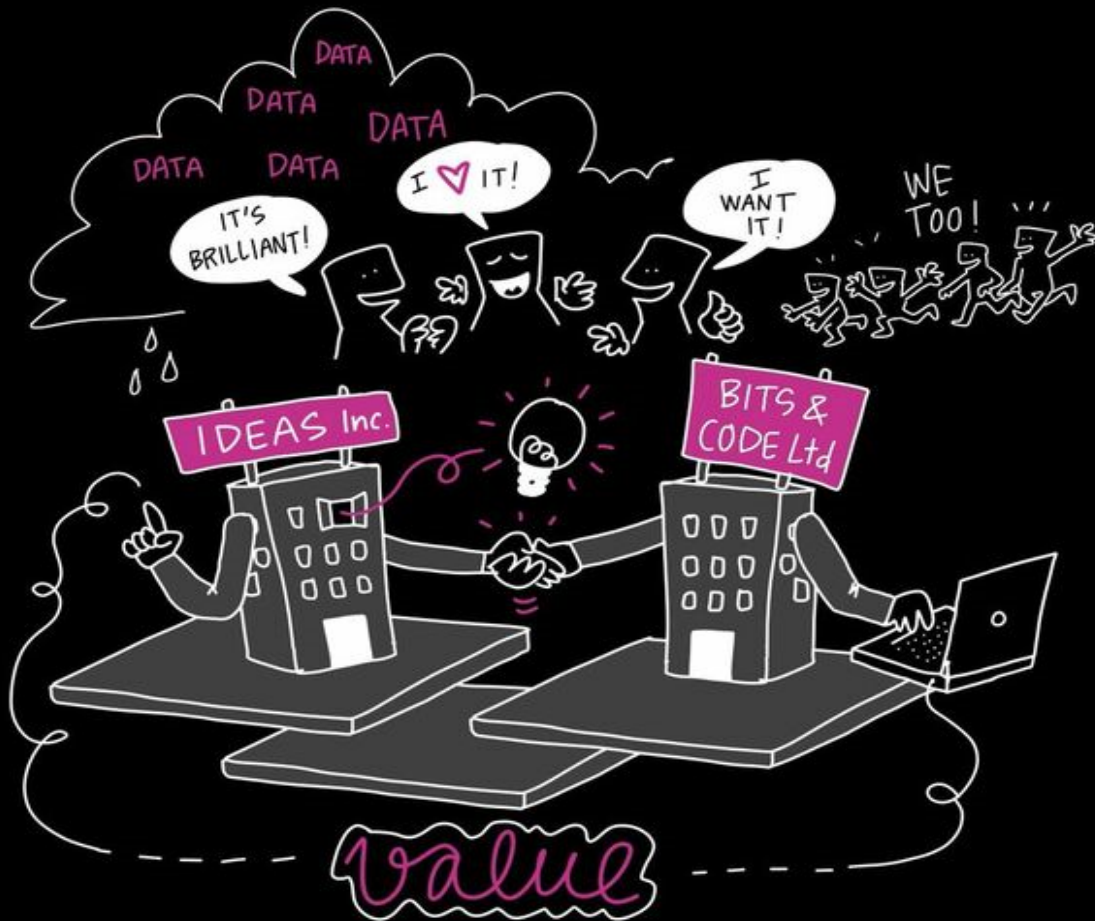
### Take down policy

If you believe that this document breaches copyright, please contact [tutcris@tut.fi](mailto:tutcris@tut.fi), and we will remove access to the work immediately and investigate your claim.

# PLATFORM Economy

— INTERACTIONS &  
BOUNDARY RESOURCES

Helsinki  
FRI Sep 22, 2017



## Platform Economy - Interactions & Boundary Resources: Checklist For Companies

By

Kaisa Still

Katri Valkokari

Marko Seppänen

Jukka Huhtamäki

Timo Seppälä

Rahul C. Basole

Annabelle Gawer

# COPYRIGHT

**Title** Platform Economy - Interactions and Boundary Resources: Checklist for Companies

**Author(s)** Kaisa Still, Katri Valkokari (VTT Technical Research Centre of Finland Ltd), Marko Seppänen, Jukka Huhtamäki (Tampere University of Technology), Timo Seppälä (AALTO&ETLA), Rahul C. Basole (GeorgiaTech, USA), Annabelle Gawer (Surrey, UK)

**ISBN** 978-952-15-4039-4

**Pages** 16 s.

**Rights** This report may be downloaded for personal use only.



# About IPLATE Project and this report

IPLATE (Integrating platform competences toward network effects) is a research project prompted by the success and disruption by digital platforms, platform companies and platform-based business models.

The project approaches platforms as an interactive, collaborative marketplace: integrating technical competences with creating business from understanding the value creation possibilities within the platform. The project addresses the need to strengthen competences of Finnish companies while also supporting Finnish policy makers in understanding the possibilities of instruments at their disposal for facilitating life in platform economy.

The project is a joint research project financed by VTT, TUT, ETLA and Tekes. In addition to international research collaboration with Georgia Tech and University of Surrey, it partners with Nokia, Oracle, Agendium, Finnvera and Fira.

IPLATE organized a morning seminar with the theme of "Platform Economy: Interactions and Boundary Resources" on Sept 22, 2017. The event was attended by over 60 people, who came from industry, academic and public sector. This report is a result of the presentations and interactions that took place then. We want to thank the audience for participation, and Tekes for its generous support toward our project as well as the event!



TAMPERE  
UNIVERSITY OF  
TECHNOLOGY



# Contents

• Foreword by prof. Annabelle Gawer, University of Surrey	5
• Emphasis on interactions and boundary resources	6
• What are the boundary resources	7
• Finland in platform economy by Director Pekka Sivonen, Tekes	8
• Structure and Strategy: Making Sense of API Ecosystems by prof. Rahul C. Basole, Georgia Tech	9
• Comments from Finnish companies and other stakeholders	10
• Insights from industry	11
• Still opportunities for Finnish companies	12
• Summary	13
• Checklist for companies	14
• References	15
• About us	16

# Foreword

*Platform ecosystems are gaining ground through the digitalization of products, services and businesses processes and in the process are reshaping the global landscape. Platforms present different strategic objectives than traditional frameworks for corporate strategy, which will often emphasize concepts like “lean” and “just-in-time” supply chain delivery.*

*Platforms change what it means to lead organizations, forcing them to re-think their strategies, business models, leadership, organizational structures, and approaches to value creation and capture systems—entailing a vision that extends beyond one’s own firm. The goal is for the platform to become a magnet for complementary innovators. The degree of openness, which the platform owner will design with the interfaces will encourage and stimulate complementary innovation, which will allow the ecosystem to thrive.*

*My studies (e.g. [The Rise of the Platform Enterprise](#)) have established that the governance of the platform ecosystems, combined with the design of technologies and business models are crucial to the success of platforms. While significant challenges lie ahead, the opportunities that platforms reveal are enormous, tapping into an unprecedented level of global Internet connectivity, and a large supply of talent and software skills, which can be tapped to develop the platforms of tomorrow.*

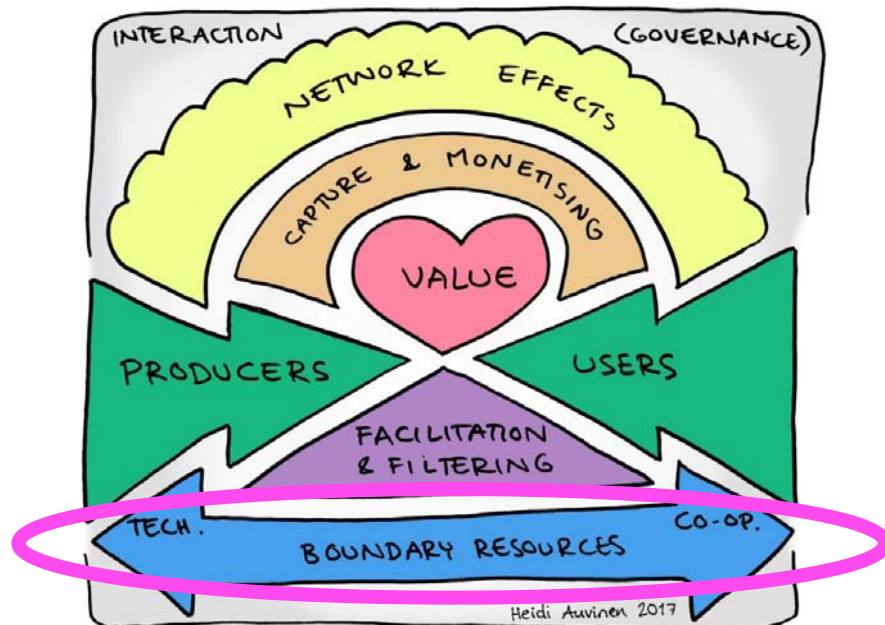
*As a research partner of the IPLATE project, I have been fortunate to learn about some Finnish activities related to platforms. I wish all the best for the endeavors of Finnish entities in their quest toward success in platform ecosystems!*



*Prof. Annabelle Gawer*

*Co-Director of CODE at University of Surrey, UK*

# Emphasis on interactions and boundary resources



Based on and adapted from: Korhonen, H. M. E., Still, K., Seppänen, M., Kumpulainen, M., Suominen, A., & Valkokari, K. 2017. The Core Interaction of Platforms: How Startups Connect Users and Producers. Technology Innovation Management Review, 7(9): 17–26.

## What kinds of value-creating and value-capturing interactions do you want to be part of?

The new platform economy is based on interactions of many involved actors. Digital platforms give companies new opportunities by changing how they interact with each other, oftentimes also disrupting the traditional business rules. As we have stated, platform economy is inherently interaction economy!

How to support identification and understanding of a win-win-win model that is beneficial for all platform ecosystem actors? Based on the broad literature review, we have built a platform canvas with eight key elements describing the critical characteristics.

In this report, the emphasis is on interaction and boundary resources. The boundary resources allow for interactions to take place: between machines, between humans as well as between humans and machines; between internal departments, between organizations and between you and your customers.

# What are the boundary resources

Cooperative boundary resources Agreements between platform owner & participants	Technical boundary resources Supporting multi-level technical interoperability
<ul style="list-style-type: none"><li>- Agreements on risk and responsibility sharing</li><li>- Agreements for IPR</li><li>- Revenue sharing logic</li><li>- Open data</li><li>- Instructions and other documents (for example for user experience)</li></ul>	<ul style="list-style-type: none"><li>- Application programming interfaces (APIs)</li><li>- Service Development Kits (SDKs)</li><li>- Functional scripts</li></ul>

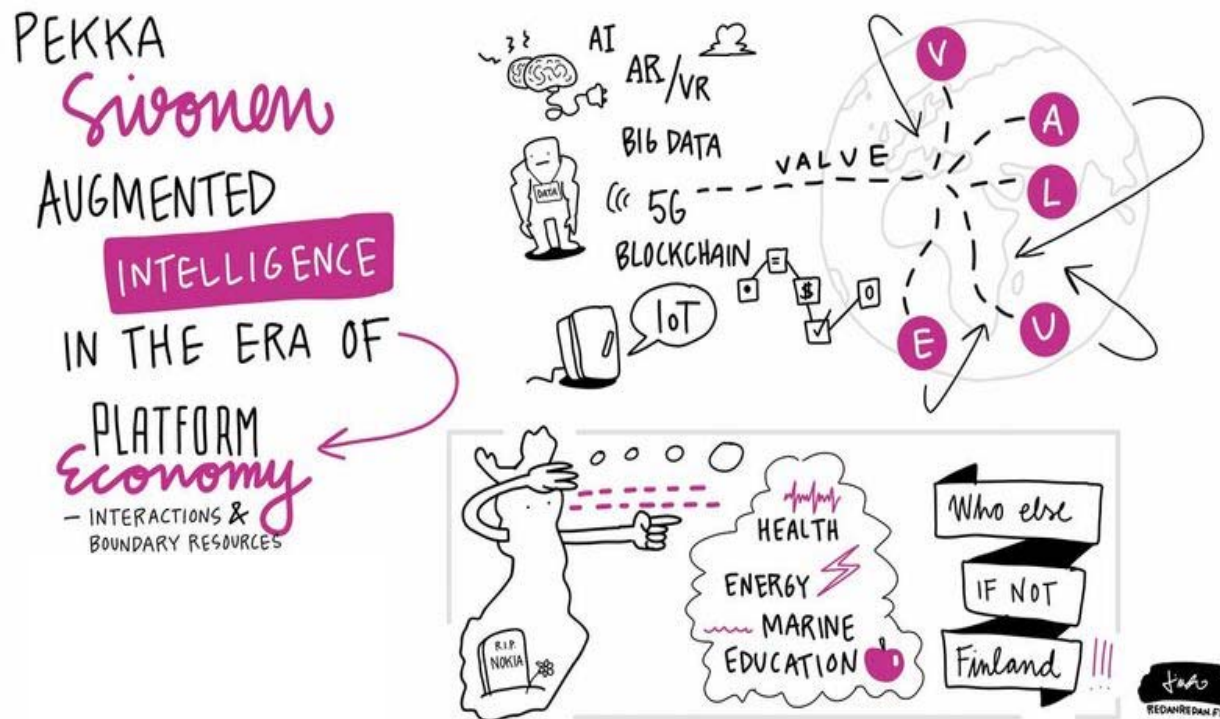
Both technical and cooperative resources are needed—have you defined them?

The boundary resources enable scalable platform based business and make network effects happen by linking, analyzing, and interpreting information transferred over platforms. They are generally categorized into cooperative boundary resources and to technical boundary resources. These resources allow for sharing data, risks, responsibilities and revenue – toward addressing the complexities and costs of innovation, and for providing needed products, services and solutions for the customers. Their goal is to make it easy for many parties to participate in the value-creation and value-capturing activities!

Finnish companies have not been very fast in opening their digital platforms with boundary resources. Only few Finnish companies have public APIs (standardized formats for sharing and receiving data). Luckily, many firms have activated in this front in 2017. Furthermore, developing and operating open data has been in the forefront of Finnish public authorities, such as cities.



# Finland in platform economy



Based on your resources and network positions, which kind of a player do you want to be?

As a innovative country with a lot of technology competences, Finland has all the possibilities to be successful in this new kind of economy. Still, technology excellence is not enough. We all have to understand that the logic of game is changed, and that all actors can't be platform owners or providers.

For companies, there are different strategies to survive and thrive in platform ecosystems.

- A white shark at the top of food chain (only the chosen few can achieve this!)
- A swordfish, a big niche player willing to change the role, with fast actions
- A piranha, who is small player but aggressively looks for different opportunities

# Structure and Strategy: Making Sense of API Ecosystems

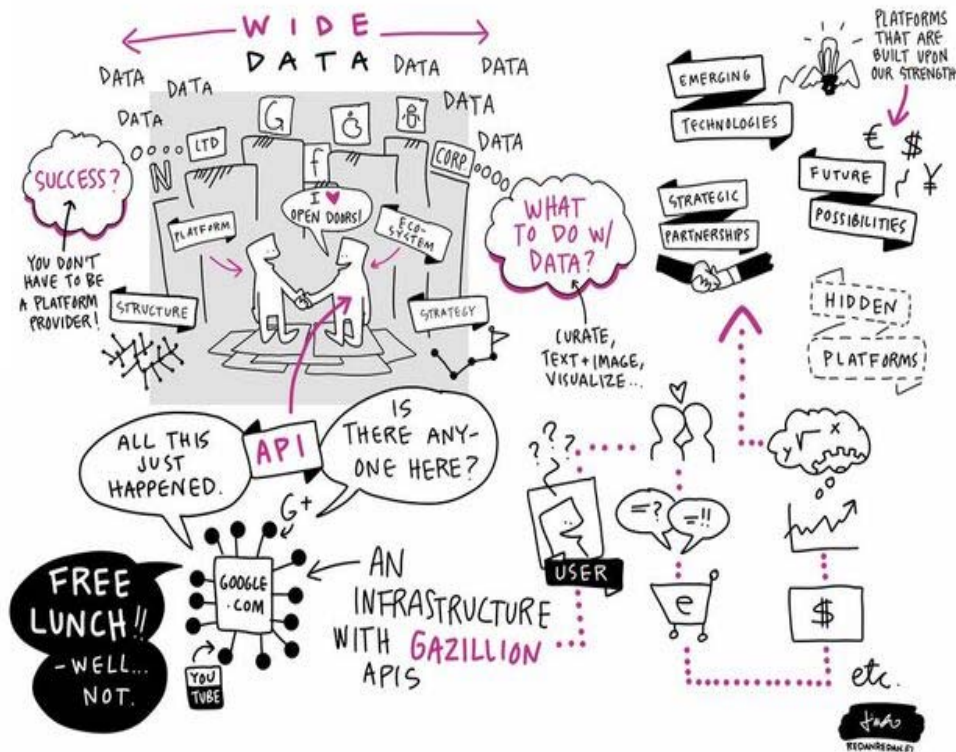
## How to position yourself in the platform ecosystem?

Platforms do not appear from thin air! Despite much of the interest being on platform companies, actually in the core of platforms are the products and services that link the actors together— toward seamless experiences.

Accordingly, platforms become places for digital interactions, where for example micro-services are accessible via APIs. Furthermore, it is not a matter of how many APIs a firm has; it is a matter of allowing stakeholders to create new value within the platform.

If you want to be a platform company, you have to know how other companies describe themselves and what are their business models. That way you are able to position yourself within the platform ecosystem, build strategic partnerships or even explore if there are hidden platform ecosystems.

With more platforms and their digital interactions, there is more data— wide data— that allows for analysis. In order to make sense of platforms and the ecosystems, visualization is a good tool to make the interaction and boundaries more transparent.



MAKING SENSE  
OF API  
ECOSYSTEMS

Rahul C.  
BASOLE,  
PROFESSOR, GEORGIA TECH

# Comments from companies and others



## What about scaling?

In the platform ecosystem visualizations, financing companies were not in the core. Still, they play an important part in the ecosystem as they provide resources for growth. In their quest for finding the potential, they should look in to scaling motivation and capabilities.

-- Riku Mulari, Finnvera --

## How to support the non-technical boundary resources?

The other than technology side of boundary resources tends to get less attention. More research is needed on those elements, the human-in-the-loop thinking needs to be addressed.

-- Jarkko Pellikka, Nokia --

## Where to start?

The visualizations and other means of data analysis can support your understanding of what is already there— and what is missing. The white spaces can be give you insights on ecosystems.

-- Sami-Pekka Salminen, Oracle --

# Industry insights



## What is the actual problem that you are solving with platforms?

In project industry, management is too often a black box problem— managers cannot see what is happening inside the box. This is why transparency is needed, and linking this data through platform creates opportunities.

-- Ari Viitanen, Caruna4 --

## Where are you in the digital transformation evolution?

In more traditional industries such as construction, the use of digitalization has not been fully grasped. Maybe for these companies jumping to APIs is not first on the agenda. They should concentrate on understanding how they can create value for all stakeholders.

-- Juhani Vanhanen, Fira --

## What is your platform ecosystem?

There should be more focus on ecosystems that vitalize the platform. The ecosystem is where the customer need and value process is discovered— also where use of data can be explored.

-- Jukka Viitanen, ResoluteHQ—

## How to grasp the business opportunities provided by APIs?

The business motivation is key in understanding why and how to use APIs.

- 1) Start with internal APIs and broaden to partner APIs
- 2) Provide business driven functional APIs as well as data APIs and
- 3) use API management, networks and platforms to grow with platform partners.

-- Jarkko Moilanen, APInf --

# Opportunities available for Finnish companies



What is your strength? Do you have a data strategy? Are you ready for a global game?

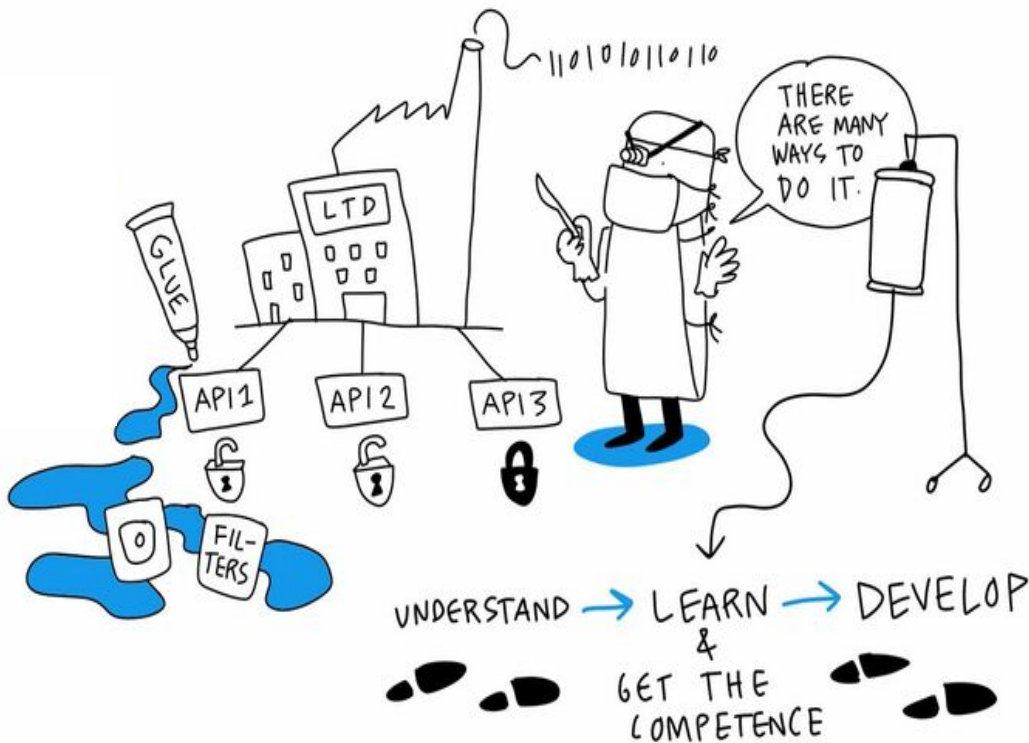
The home market for Finnish companies is always small and digital platforms are mostly about a global game. In addition, customers value seamless services, but do not necessarily expect all of those to come from one source. Therefore, you want to be in the winning teams, which is why multihoming (connecting to more than one platform) can be a viable strategy.

In platform economy, it is not wise to do it all. In order for you to get to play, you need to focus on your strengths so that you can become a relevant player. Maybe for Finland this is focusing on b-to-b markets?

As much of the promise of platform economy is still in the future and you cannot imagine the types of future services, allowing for wide data becomes necessary. A data strategy and open mind can support this! "If a startup does not have a data strategy, you should consider that as a warning signal!"



# Summary



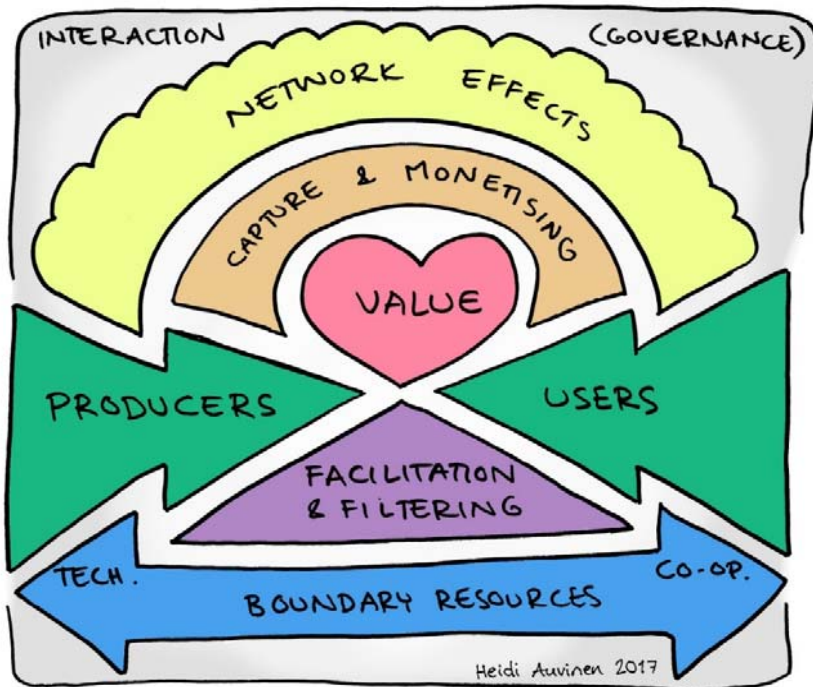
## Are you ready for a journey– what is your first step?

Platforms bring many types of actors together: they bring different contributions to the seamless experiences. APIs and other boundary resources can act as glue in keeping all of this together.

Platform actors are not usually operating in a single platform, which has created the notion of platforms-of-platforms. Accordingly, there is no single journey towards the success in digital platforms– there are many ways to do it.

The general process of first making sense and understanding, then learning and getting the competences, and of course continually developing are key. If you have not explored the importance of interactions and boundary resources in your organization, the check-list based on the insights from academic, industry and other stakeholders can be a first step for you!

## A checklist for companies: Interactions and boundary resources in platform economy



Based on and adapted from: Korhonen, H. M. E., Still, K., Seppänen, M., Kumpulainen, M., Suominen, A., & Valkokari, K. 2017. The Core Interaction of Platforms: How Startups Connect Users and Producers. Technology Innovation Management Review, 7(9): 17–26.

- ☐ What is the actual problem that you are solving with platforms?
- ☐ What kinds interactions do you want to be part of?
- ☐ What is your strenght (value-creating or value-capturing)?
- ☐ Are you ready for a global game?
  
- ☐ Where are you now in the digital transformation evolution?
- ☐ Have you defined your technical and cooperative resources?
  - ☐ How to grasp the business opportunities provided by APIs?
  - ☐ How to support the non-technical boundary resources?
- ☐ What is your stake on scalability? Are you ready?
- ☐ Do you have a data strategy?
  
- ☐ What is your platform ecosystem?
- ☐ Based on your resources and network positions, which kind of a player do you want to be?
- ☐ Have you considered your position in the platform ecosystem?
  
- ☐ Do you know where to start – and how to continue?

# Selected references

Huhtamäki, J., Basole, R.C., Still, K., Russell, M. & Seppänen, M. (2017). [Visualizing the Geography of Platform Boundary Resources: The case of the Global API Ecosystem](#).

Proceedings of HICSS-50, Hawaii, January 2017.

Still, Kaisa, Seppänen, Marko, Seppälä, Timo, Suominen, Arho, Valkokari, Katri & Korhonen, Heidi (15.9.2017).

”Alustatalous on vuorovaikutustaloutta”. ETLA Muistio No 61.

<http://pub.etla.fi/ETLA-Muistio-Brief-61.pdf>

Korhonen, H.M.E., Still, K., Seppänen, M., Kumpulainen, M., Suominen, A., & Valkokari, K. 2017. The Core Interaction of Platforms: How Startups Connect Users and Producers.

*Technology Innovation Management Review*, 7(9): 17 – 29.

<http://doi.org/10.22215/timreview/1103>

Ailisto, H., Collin, J., Juhanko, J., Mäntylä, M., Ruutu, S., Seppälä, T., Halén, M., Hiekkänen, K., Hyytinen, K., Kiuru, E., Korhonen, H., Kääriäinen, J., Parviainen, P. & Talvitie, J.

(2016). Onko Suomi jäämässä alustatalouden junasta?, Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja Nro 19/2016.

Basole, R.C. 2016. Accelerating Digital Transformation: Visual Insights from the API Ecosystem. *IT Professional* 18 (6), 20-25.

Evans, P. C. & Gawer, A. 2016. The Rise of the Platform Enterprise— A global survey. [https://thecge.net/wp-content/uploads/2016/01/PDF-WEB-Platform-Survey\\_01\\_12.pdf](https://thecge.net/wp-content/uploads/2016/01/PDF-WEB-Platform-Survey_01_12.pdf)

Gawer, Annabelle (2016). Basics of digital platforms:

<https://youtu.be/y1alc4y8F0s>



# About us



Kaisa Still, Ph.D. is a Senior Scientist at VTT. Her work concentrates on supporting collaboration, co-creation and innovation in companies, ecosystems and digital platforms. [kaisa.still@vtt.fi](mailto:kaisa.still@vtt.fi)

Katri Valkokari, Ph.D., is Research Manager at VTT. Her studies focuses on business networks, ecosystems and networked business operations. [katri.valkokari@vtt.fi](mailto:katri.valkokari@vtt.fi)

Marko Seppänen, Ph.D., is Full Professor in Industrial Management at Tampere University of Technology, Finland. His research focuses on managing value creation in business ecosystems, digitalization and platform economy & innovation management. [marko.seppanen@tut.fi](mailto:marko.seppanen@tut.fi)

Timo Seppälä, Ph.D., is Professor of Practice at Aalto University, School of Science and a Chief Research Scientist at the Research Institute for the Finnish Economy. His research focuses on global value chains, supply chain management, digitalization and platform economy. [timo.seppala@aalto.fi](mailto:timo.seppala@aalto.fi)

Jukka Huhtamäki, Ph.D., a post-doctoral researcher in Tampere University of Technology is an expert in Quantitative Social Research, Visual Sociology, and Information Systems. [jukka.huhtamaki@tut.fi](mailto:jukka.huhtamaki@tut.fi)

Annabelle Gawer is Professor in Digital Economy at Surrey Business School, having recently joined from Imperial College Business School. Her leading-edge research focuses on digital and technological platforms, and innovative ecosystems. [a.gawer@surrey.ac.uk](mailto:a.gawer@surrey.ac.uk)

Rahul C. Basole is an Associate Professor in the School of Interactive Computing, the Director of the Tennenbaum Institute, and a faculty member in the Gvu Center at Georgia Tech. His research focuses on computational enterprise science, information visualization, and strategic decision support [basole@gatech.edu](mailto:basole@gatech.edu)