

Business Ecosystems in Industries

The Robot Revolution and Industrial IoT International Symposium 2022

Japan-Germany Expert Forum

Shuhei Sugie (Future Corporation)

Prof. Dr. Ulrich Löwen (Plattform Industrie 4.0 AG6 / Siemens AG)

Japanese Activity

- Analyzing Business Ecosystem -

Mr. Shuhei Sugie

German Activity

- Example of an evolving Business Ecosystem -

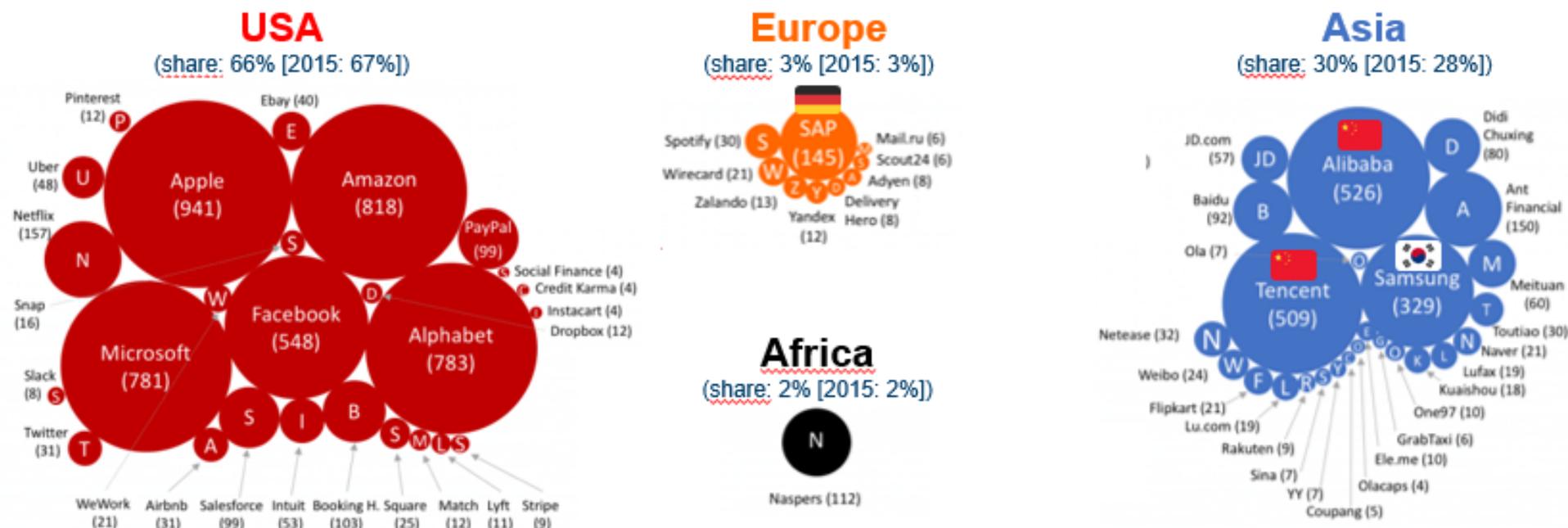
Prof. Dr. Ulrich Löwen

Future discussions and outlook

Prof. Dr. Ulrich Löwen



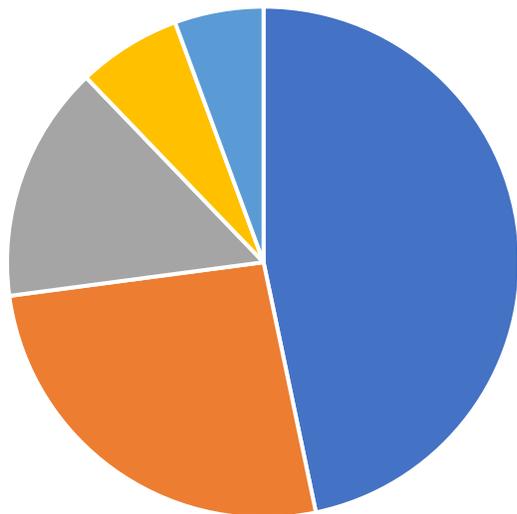
The most Valuable Companies in the World are Platform Companies – but there is a Regional Imbalance



→ B2C is dominated primarily by USA & China.
 → Competition in the B2B sector has not yet been decided. This creates opportunities for Japan and Germany.

Source: Netzoekonom.de/idea: Peter Evans.

- Challenges in building Business Ecosystem in Japan



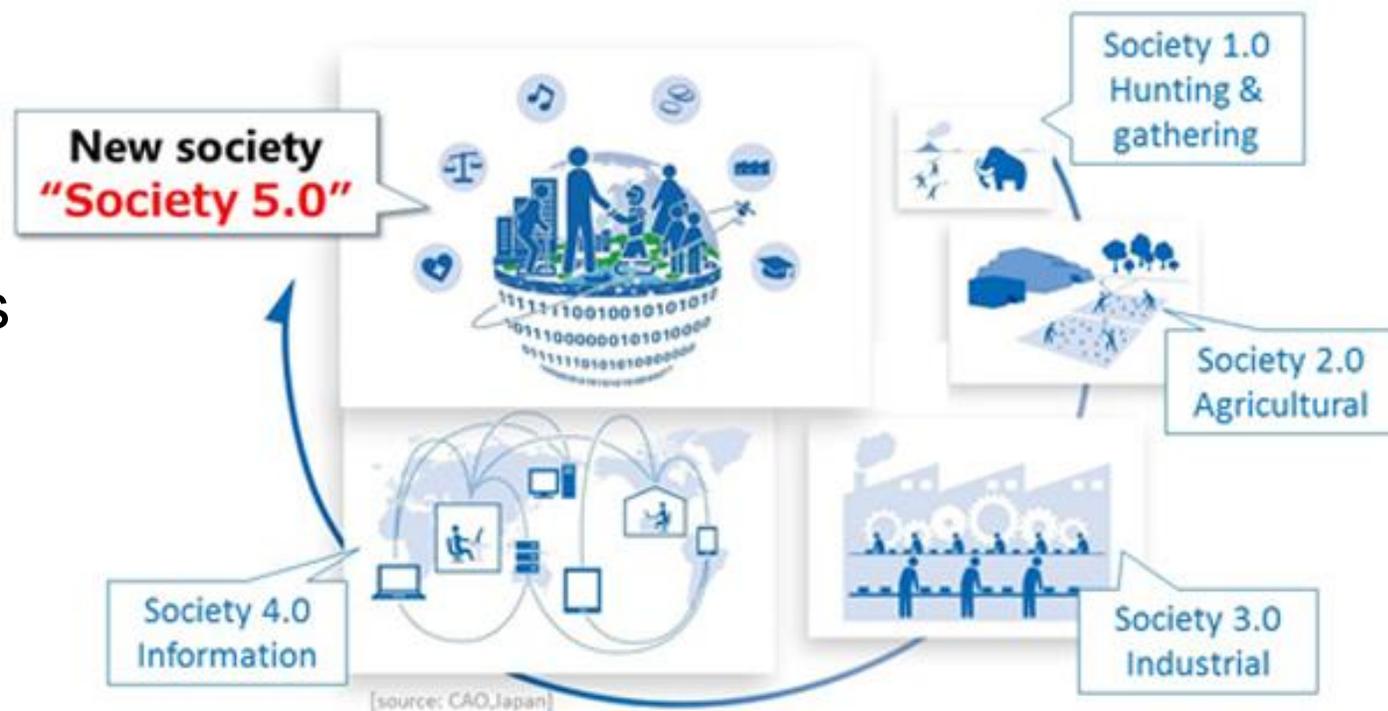
- Difficulties in collaborating with competitors in collaborative areas using digital technology
- Lack of ability to conceptualize business models
- Lack of understanding of digitalization by management and manufacturing sites
- Lack of human resources and lack of technology, knowledge, and know-how to use digital technology
- Others

- Change in Business Ecosystem objectives

- From Business Ecosystem for individual company's business to Business Ecosystem for resolution of social problems
 - Carbon neutral
 - Circular economy

- Society 5.0 was proposed as a future society that Japan should aspire to.

"A human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space."



Future work

We would like to discuss the following in the Japan-Germany collaboration

- Description of platform ecosystem
- Benefit of and motivation for platform ecosystem
- How to build platform ecosystem

Consider from 3 perspectives based on the use case.

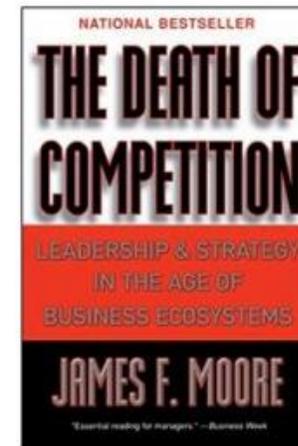
- Standardization
- Open Innovation
- Servitization

Reference for origin of ecosystem:

The Death of Competition by James F. Moore, 1996

Written by MIT prominent professors:

What's Your Digital Business Model? by Peter Weil, Stephanie L Woerner, 2018



- In 2022, RRI studied and considered “The death of competition” in order to deepen understanding of business ecosystems
- The purpose is below
 - Fully understand the contents of "THE DEATH OF COMPETITION“
 - Organize learning and questions after understanding "THE DEATH OF COMPETITION“
 - Consider suggestions for strengthening Japan's competitiveness by building B2B platforms
- 11 Samurais (persons involved in the manufacturing industry) held discussions for half a year and summarized their learnings, considerations, and recommendations in a report.

- The business world has similar properties to biological systems.
- A business ecosystem develops through four distinct stages: Pioneering, Expansion, Authority and Renewal or Death.
- In the biological world and the business world, there are differences in "existence of a leader", "control of the surrounding environment", and "existence of the end of the ecosystem".
- There are various types of ecosystems, such as those centered on business, those centered on society, and those centered on the environment. In order to solve social issues, it is important to understand the value of ecosystems of business, society, and environment, and then consider trade offs and reciprocal adaptations made.

- The need for a "whole ecosystem" that allows for coordination among ecosystems of business, society, and environment is increasing more and more.
- The role of business ecosystems in solving social issues is increasing, and a global cooperative system is required.
- The development of decentralized technology accelerates the formation of "leaderless" ecosystems.

⇒ While understanding the nature and changes of business ecosystems, we would like to work together with Germany and Japan to develop business ecosystems for solving global issues.

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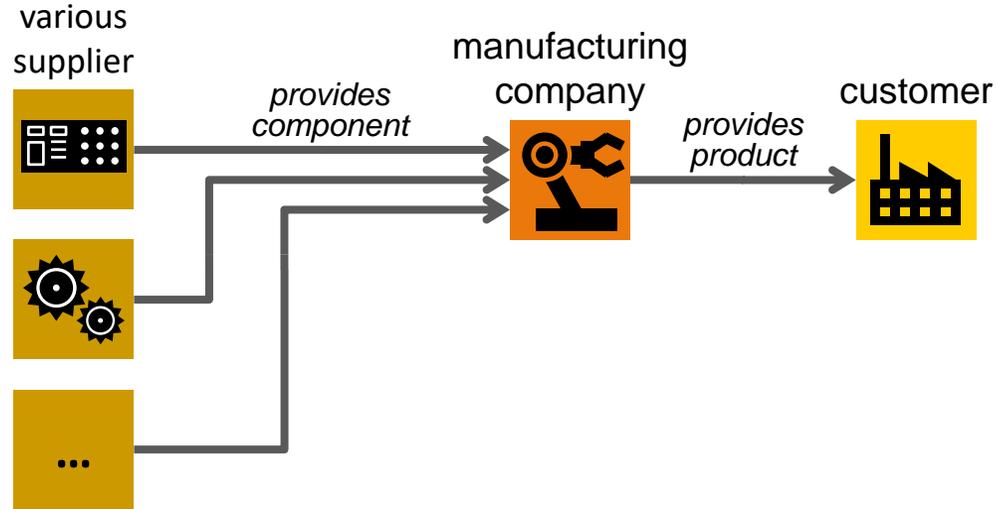
Introduction

- Purpose
 - Create awareness for designing business ecosystems from a **business perspective**
 - Illustration of **design options** for business ecosystems using a concrete example

- Considered example: “Sustainability”
 - Considered challenge: calculation of the PCF of a product based on **primary data**

Manufacturing company wants to declare PCF based on primary data

Value streams



Challenge

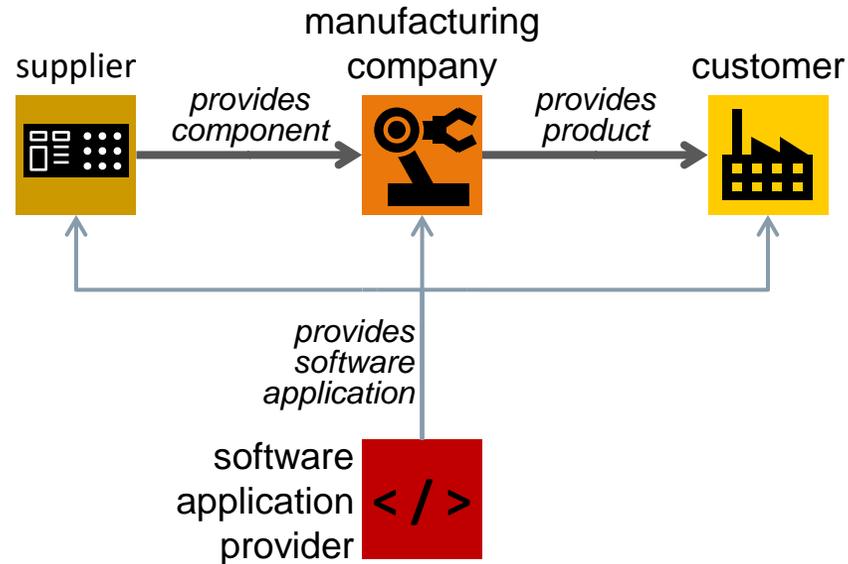
Manufacturing company wants to declare the PCF of its product to the customer

- Manufacturing company calculates direct emissions (“scope 1”) of manufacturing the product
- Manufacturing company calculates energy (“scope 2”) required for manufacturing the product
- Manufacturing company **requests** for PCF of the components supplied by the supplier (“scope 3”)
- Manufacturing company calculates PCF of the product by adding the values of the three scopes
- Manufacturing company provides the PCF of the product to its customer

A customer must **trust** the declared PCF because the customer cannot verify it himself

Software application provider wants to offer PCF management software

Value streams



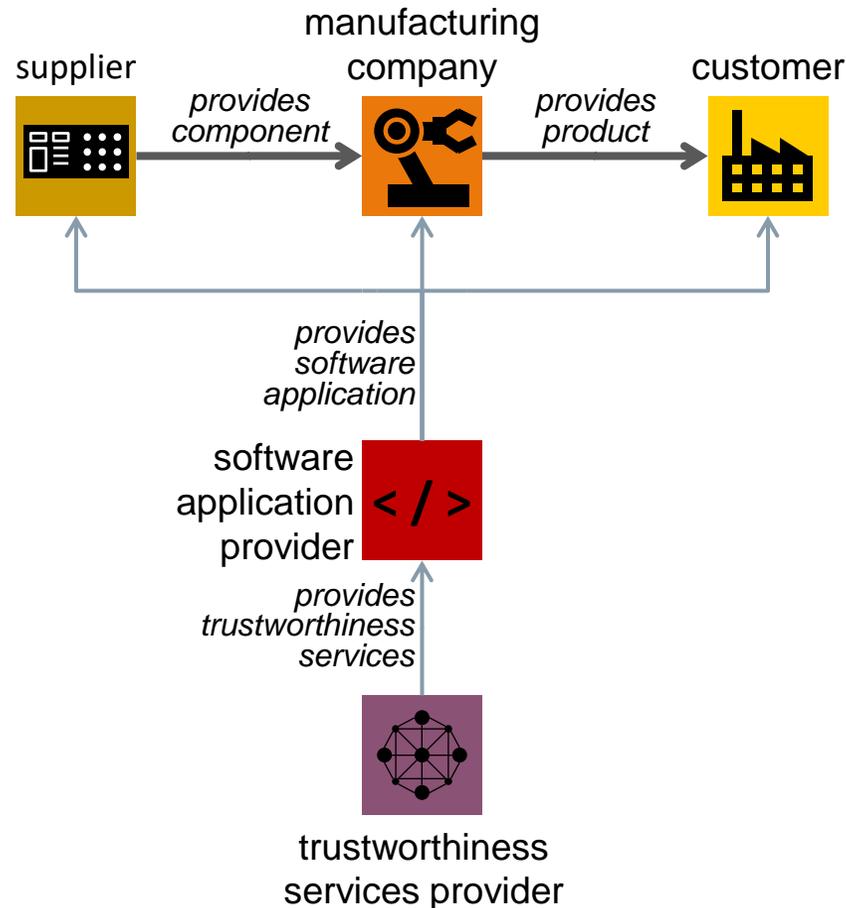
Value proposition software application provider

PCF management software based on primary data

- Trustworthy obtaining the PCF of the supplied components
- Trustworthy providing the PCF of the own product to the customer

Trustworthiness services provider acts as service provider

Value streams



Value proposition software application provider

PCF management software based on primary data

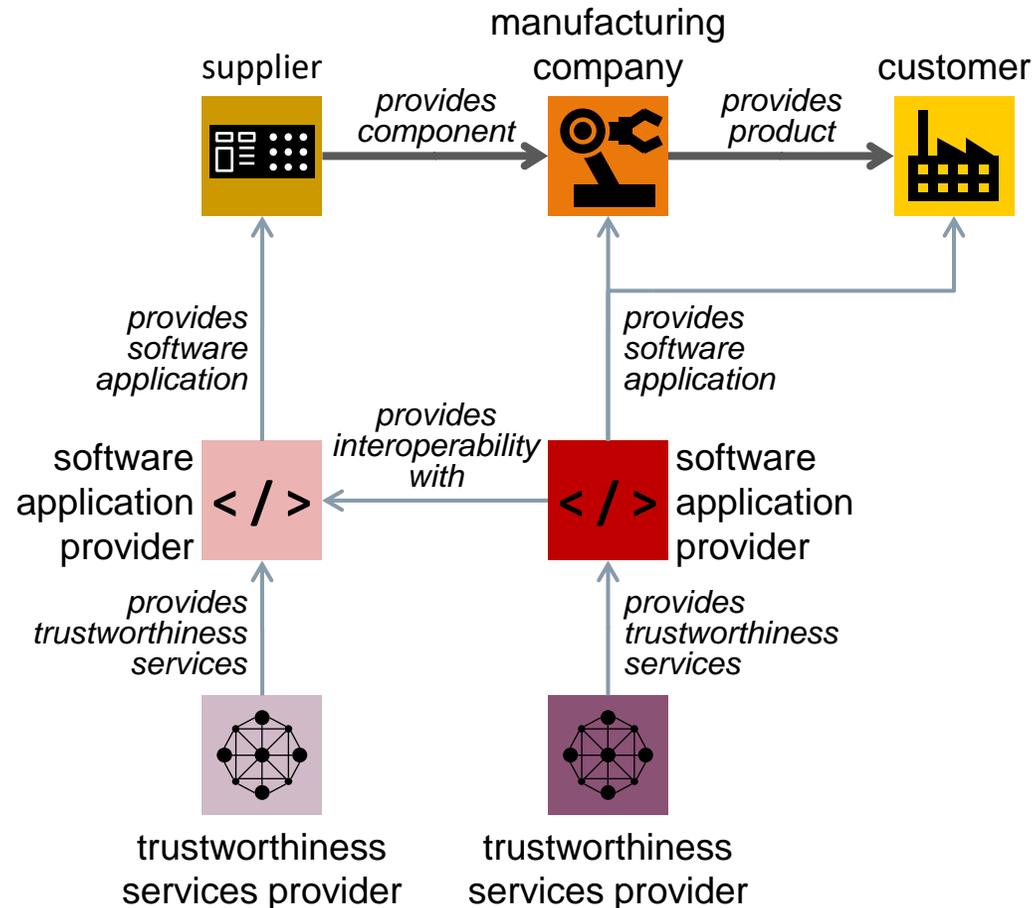
- Trustworthy obtaining the PCF of the supplied components
- Trustworthy providing the PCF of the own product to the customer

Value proposition trustworthiness services provider

Providing trustworthiness services to software application provider

Supporting interoperability with other software application provider

Value streams



Interoperability of software applications

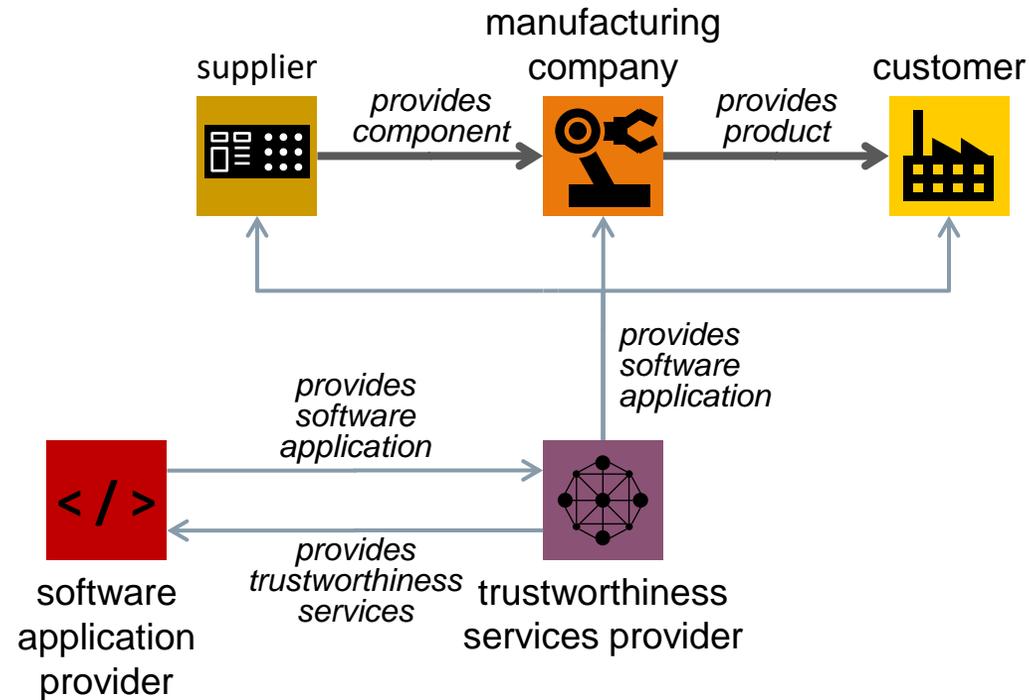
Manufacturing company may choose **any** software application provider

Manufacturing companies will **require** interoperability of software applications

Designing interoperability is responsibility of the software application providers, who are in competition with each other

Intermediary between manufacturing company and software application provider

Value streams

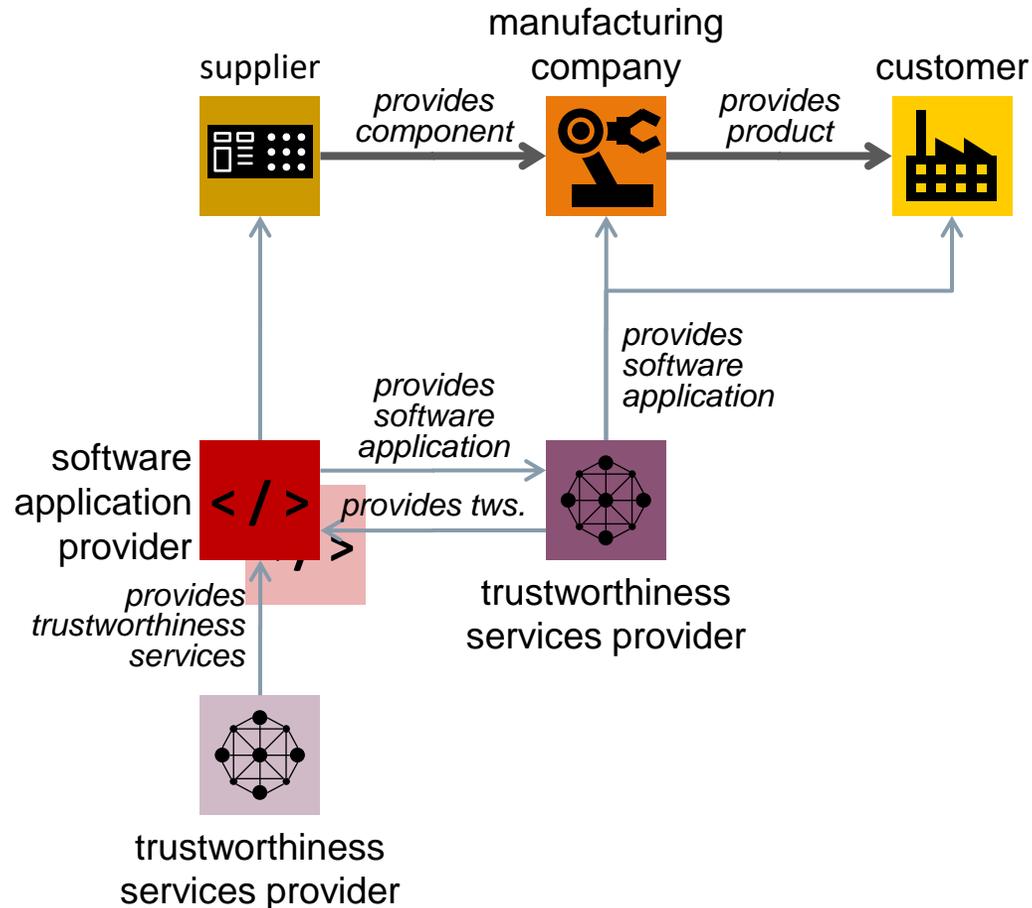


Extension of value proposition of trustworthiness services provider

In addition to providing trustworthiness services, the trustworthiness services provider also acts as a marketplace operator for software applications

Each business stakeholder will try to push the own interests

Value streams



Independent acting in the market

- **Manufacturing companies** can choose software application provider and trustworthiness services provider
- **Software application provider** must differentiate themselves and define their sales channel to address their customers
- Challenge for **trustworthiness services provider** will be to acquire large market share for their services

- Discuss further dimensions
 - Differentiation of the software application provider through specific functionality or addressing specific market segments
 - Scaling opportunities of platform provider by supporting additional (complementary) use cases
- Observation from GER perspective
 - Currently the technical discussions are conducted with great commitment
 - But the discussion of how technical solutions can be used commercially and the development of a business perspective in a more systematic way should be stimulated
- The concrete subject and the regulatory framework are still under development
 - Various approaches are currently introduced on the market
 - The market will decide which approaches will ultimately prevail

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- All examples shown are **business ecosystems**
 - The examples have different setup
 - The business owner have to decide which role they want to assume in the business ecosystem
 - The approach is inline with the JPN-GER report of 2020
- **Future discussions**
 - GER experts will consolidate their considerations and discuss them with JPN experts
 - JPN experts will consolidate their considerations and discuss them with GER experts
- **Outlook**
 - Common white paper combining the GER and JPN perspectives
 - Concrete content and time schedule to be discussed

Thank you!

Shuhei Sugie

Strategy Innovation Group Open Innovation Unit Director

FUTURE CORPORATION

Phone +81 50 (5306) 0556

E-mail s.sugie.zt@future.co.jp

Prof. Dr. Ulrich Löwen

Senior Principal Key Expert Engineer

Siemens, T RPD1 CES

Phone +49 (9131) 17 - 33155

Mobile +49 (173) 9770999

E-mail ulrich.loewen@siemens.com