



Aalto University
School of Science

Data Value Chains?

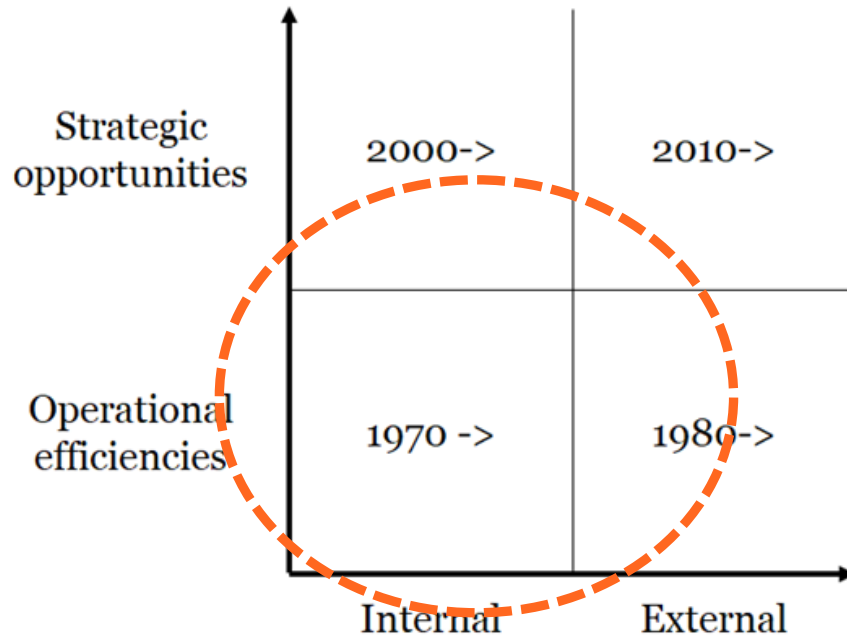
Arvoketjut datan hyödyntämisessä

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ETLA

Transformation: Categorization of identified data-related benefits



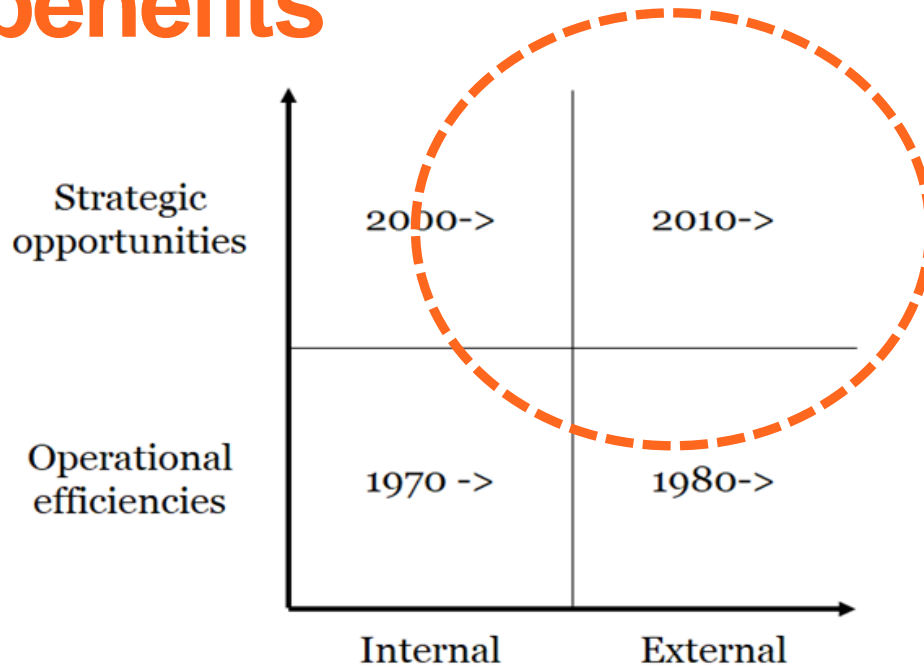
**Operational
perspective of
data sharing
benefits well
understood by
the companies.**

Source: Huttunen, Seppälä, Lähtenmäki & Mattila, (2019), What Are the Benefits of Data Sharing? Uniting Supply Chain and Platform Economy Perspectives, ETLA Report No. 93

Data sharing is a
common business
practice for 49% of
companies

Source: Huttunen, Seppälä, Lähtenmäki & Mattila, (2019), What Are the Benefits of Data Sharing? Uniting Supply Chain and Platform Economy Perspectives, ETLA Report No. 93

Transformation: Categorization of identified data-related benefits



**Strategic
perspective of
data sharing
opportunities are
not understood
by the
companies.**

Source: Huttunen, Seppälä, Lähtenmäki & Mattila, (2019), What Are the Benefits of Data Sharing? Uniting Supply Chain and Platform Economy Perspectives, ETLA Report No. 93

Starting point...

“The ownership of a device (material) is the default situation of data management when no contractual arrangements or the like have been made.”

Source: Seppälä, Juhanko & Mattila, (2015), Information and data ownership and management, In Ailisto, Mäntylä & Seppälä (Eds), Finland the Silicon Valley of Industrial Internet, Publications of the Government's analysis, assessment and research activities No. 10, pp. 16-17

Typology of Data Platforms

- **Proprietary data (Company)**
 - Company internal use only data repository. Access to data maintained by the company
- **Inner circle data (Platform)**
 - Shared data repositories. Access to data maintained collectively with boundary resources.
- **Distributed data (Industry)**
 - Controlled by a third-party actor. Shared practices and technology to access and share information.
- **Open data (Open)**
 - Distributed, accessible by publicly auditable rules. Programmable interfaces as a key boundary resource.

Source: Rajala, Hakanen, Mattila, Seppälä & Westerlund, (2018), How Do Intelligent Goods Shape Closed-Loop Systems? California Management Review, Vol. 60, Issue 3, pp. 20 –44

Model terms of the technology industries for data sharing

- Proprietary information
- Confidential information
- Distributed information
- Open information

Model terms of the Technology industries for data sharing

OBJECTIVE

The significance of data to the economy has increased during the last years and the growth continues to accelerate. Established practices for agreeing on the rights of the use of information or data are yet to develop, and the rights to data are usually agreed between the companies, for example, in confidentiality or intellectual property clauses of the agreement.

The objective of the model terms of the Technology industries for data sharing is to promote the utilisation of data within companies, and to support the development of practices and business based on data. For this purpose, the objective is:

- To bring the use of data openly to negotiations between companies. When the use of data is subject to clear legal provisions, it can be utilised efficiently.
- To develop practices around agreements concerning the use of data. Model terms can be used to shorten negotiation times and facilitate agreement of data usage so that the agreements will promote efficient use of data.
- Model terms can also be used to encourage companies to better recognise the value of their own data and develop partnerships that further promote the use of data in business development.

CONDITIONS FOR DATA SHARING

Analysis of data

Companies possess various kinds of data. One way to observe data and data sharing possibilities is to divide it into

different categories based on the level of confidence and economic significance. Trade secret legislation requires the recognition and protection of trade secrets as a prerequisite for legal protection. The same recognition of the significance of the data can and should be extended to all data.

1 Proprietary information

Trade secrets, financial data, process data and other data which have key importance to the business of a company. Processing of such data is strictly limited within the company and it is not typically shared outside the company.

2 Confidential information

Information which has key importance to the products and processes of the company, but which is also affected by the results and possibly the information received from business partners. Access to confidential information is limited. However, under certain conditions, it can be shared with trusted partners, such as suppliers or subcontractors, but not with competitors of the company. The business partners that process such confidential information must have the basic capabilities to maintain the confidentiality of the information.

3 Decentralised information

Information possessed by the company that is generic and possibly possessed by other companies in the same industry. This category does not include any significant trade secrets or key information of the business that could create a competitive advantage for the company.

4 Open information

The information possessed by the company that can be shared with anyone, for example to promote innovations and gain partnerships.

Source: Teknologiaetollisuus, 2019

The Risk Levels of individual, device and systems data

- **No risk (e.g. dark web),**
- **Minimal (e.g. non-commercial social media, email),**
- **Low (commercial social media),**
- **Substantial (e.g. banking, finance health),**
- **High (e.g. movement accross borders),**
- **High+ (e.g. aviation, nuclear plants, military)**

Source: Seppälä (2020), Artificial Intelligence: Trust and Excellence, Research memo prepared for Ministry of Transport and Communications and Ministry of Economic Affairs and Employment of Finland

Enablement and control of data sharing through technical boundary resources

Model terms:

- Proprietary information
- Confidential information
- Distributed information
- Open information

Risk Levels:

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Source: Teknologiateollisuus, (2019); Seppälä (2020), Artificial Intelligence: Trust and Excellence, Research memo prepared for Ministry of Transport and Communications and Ministry of Economic Affairs and Employment of Finland

Legal context of data sharing in businesses

- **Contracts**
- **Trade Secrets**
- **Copyrights**
- **Database rights**
- **Privacy Regulation**
- **...?**

Source: Vartiainen & Seppälä (forthcoming 2021), Regulating Data Sharing with Boundary Resources

Coordination of data sharing with regulative boundary resources

- **Internal contracts and policies**
- **Negotiated contracts**
- **Standardized terms of exchange**
- **Open licenses and disclaimers**

Source: Vartiainen & Seppälä (forthcoming 2021), Regulating Data Sharing with Boundary Resources

Why companies are not moving forward?

The motivations (revenue & profits) and tools (business case valuation methods) for evaluating the value of strategic data sharing are missing.

Source: Huttunen, Seppälä, Lähtenmäki & Mattila, (2019), What Are the Benefits of Data Sharing? Uniting Supply Chain and Platform Economy Perspectives, ETLA Report No. 93