Employing the principles of My Data and blockchain in building trust in farm data sharing
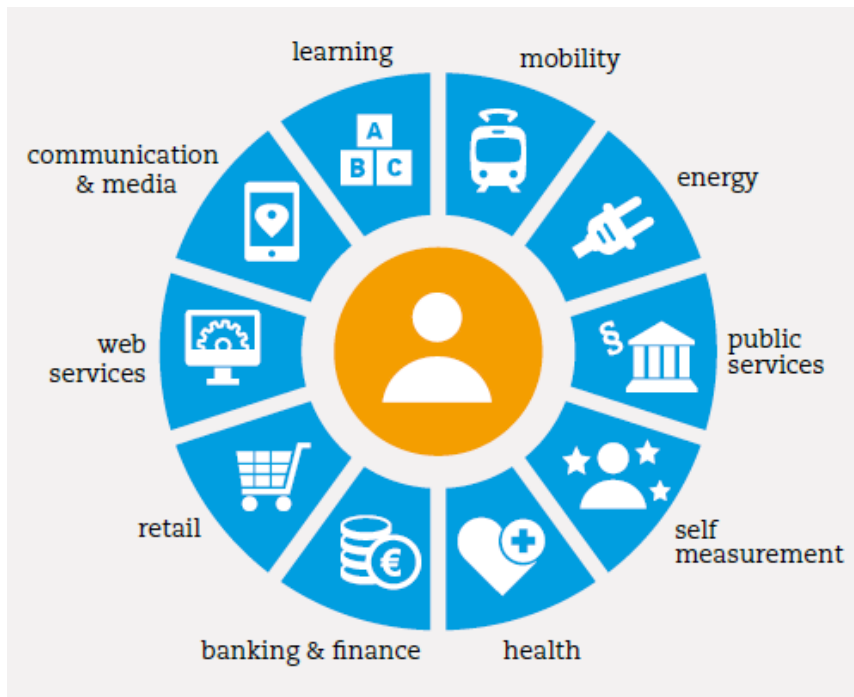
Linked Open Data in Agriculture
MACS-G20 workshop, Berlin

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Natural Resources Institute Finland liisa.pesonen @luke.fi

28th Sept. 2017

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MyData
Movement – framework – infrastucture - model

"The MyData approach aims at strengthening digital human rights while opening new opportunities for businesses to develop innovative personal data based services built on mutual trust."

MyData declaration
https://mydata.org/declaration/

Poikola, A., Kuikkaniemi, K., Honko, H., 2015. MyData – A Nordic Model for human-centered personal data management and processing. Publication of Ministry of transport and communications Finland. ISBN: 978-952-243-455-5

My Data principles

The principles of My Data bring a framework for data management rights, methods and practices

- Human centric control and privacy
- Usable data
- Open business environment

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1. Human centric control and privacy

- Individuals are empowered actors, not passive targets, in the management of their personal lives both online and offline.

- Individuals have the right and practical means to manage their data and privacy.

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2. Usable data

- It is essential that personal data is technically easy to access and use – it is accessible in machine readable open formats via secure, standardized APIs.

- MyData is a way to convert data from closed silos into an important, reusable resource.

- It can be used to create new services which help individuals to manage their lives. The providers of these services can create new business models and economic growth to the society.

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Open business environment
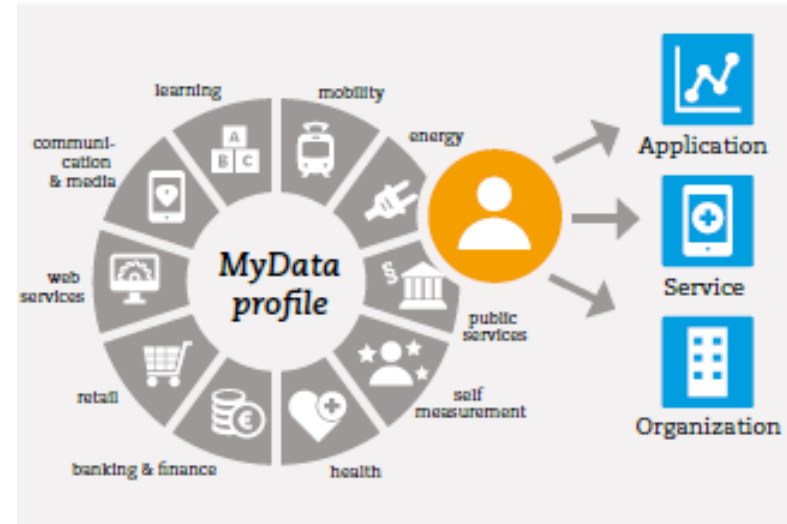
- Shared MyData infrastructure enables
  - decentralized management of personal data
  - improves interoperability
  - makes it easier for companies to comply with tightening data protection regulations
  - allows individuals to change service providers without proprietary data lock-ins.

Personal data and My Data

Personal Data

MyData
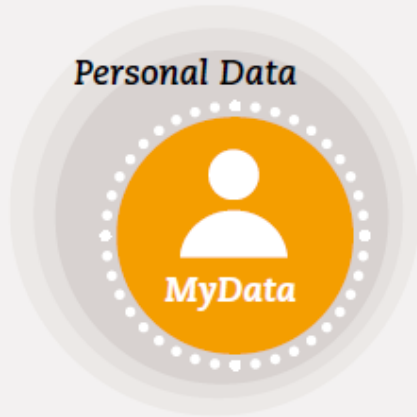
- Right to know what personal information exists.
- Right to see the actual content of personal information.
- Right to rectify false personal information.
- Right to audit who accesses and processes personal information and why.
- **Right to obtain personal information and use it freely.**
- Right to share or sell personal information to third parties.
- Right to remove or delete personal information.
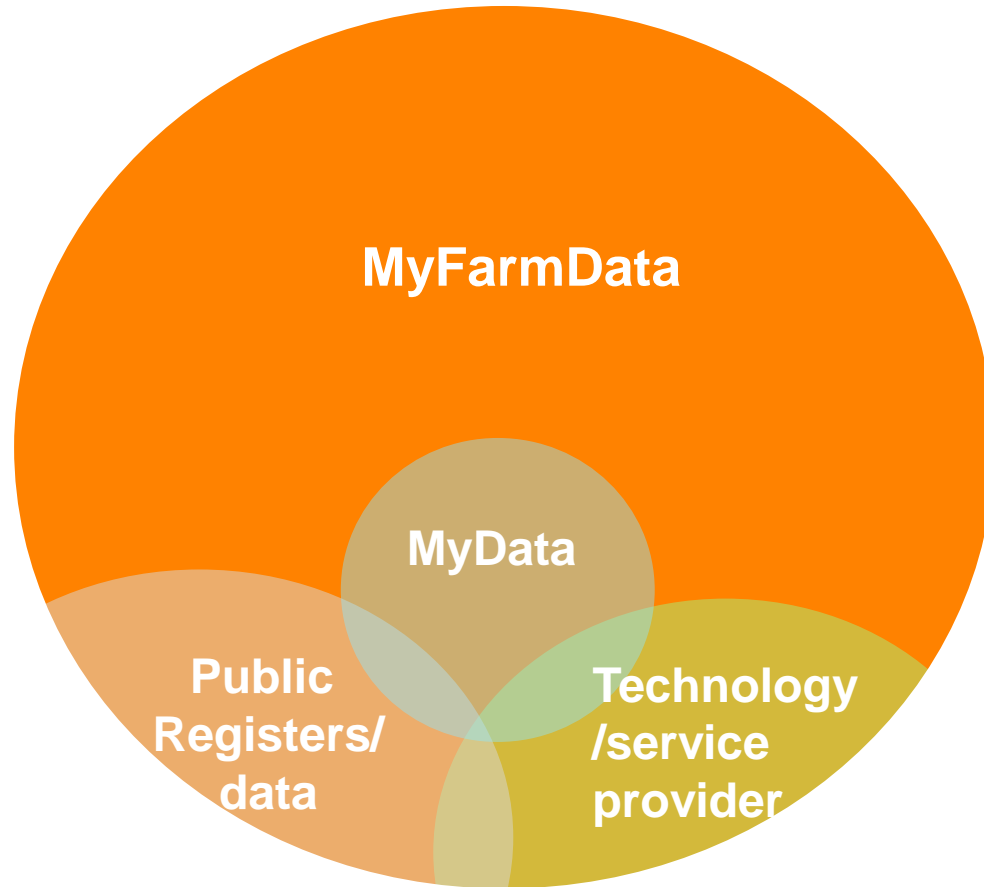
Support from the EU regulation:
The **General Data Protection Regulation** (**GDPR**) (Regulation (EU) 2016/679)
- Implementation date 25 May 2018
   https://gdpr-info.eu/art-7-gdpr/

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Farm Data

MyFarmData

MyData

Public Registers/ data

Technology /service provider

Farm Data: Data about the farm and/or produced in the farm.

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Issues on MyData focus at the moment

- Informed consent
- OurData
- Privacy >< Openness
  - o anonymisation, pseudonymisation, aggregation
- GDPR
- Semantics
- Business and ecosystems
  - Distributed ledger / blockchain
  - BigData
  - Sharing my data to parties that cause harm to you (public register data, power balance)

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Farm Data

MyFarmData

OurData

MyData

Public Registers/ data

Technology /service provider
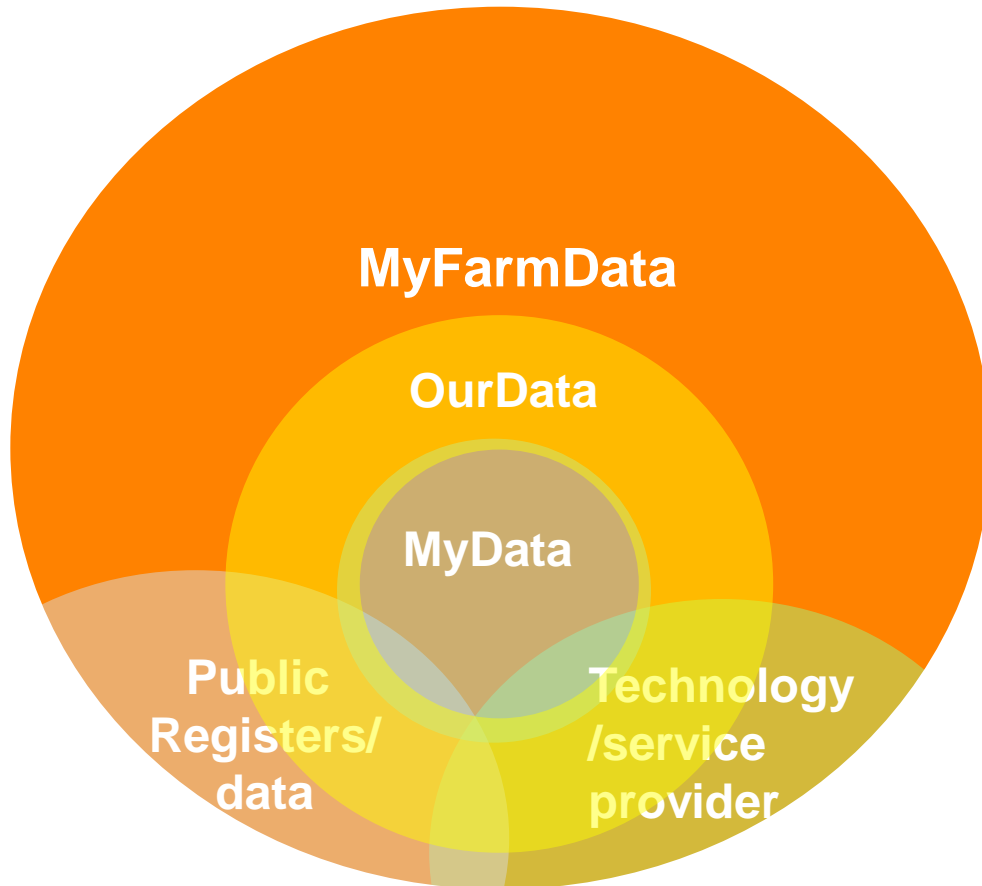
Overlapping areas need attention!

Unsolved issues create a great possibility to make difference in:
- Business balance
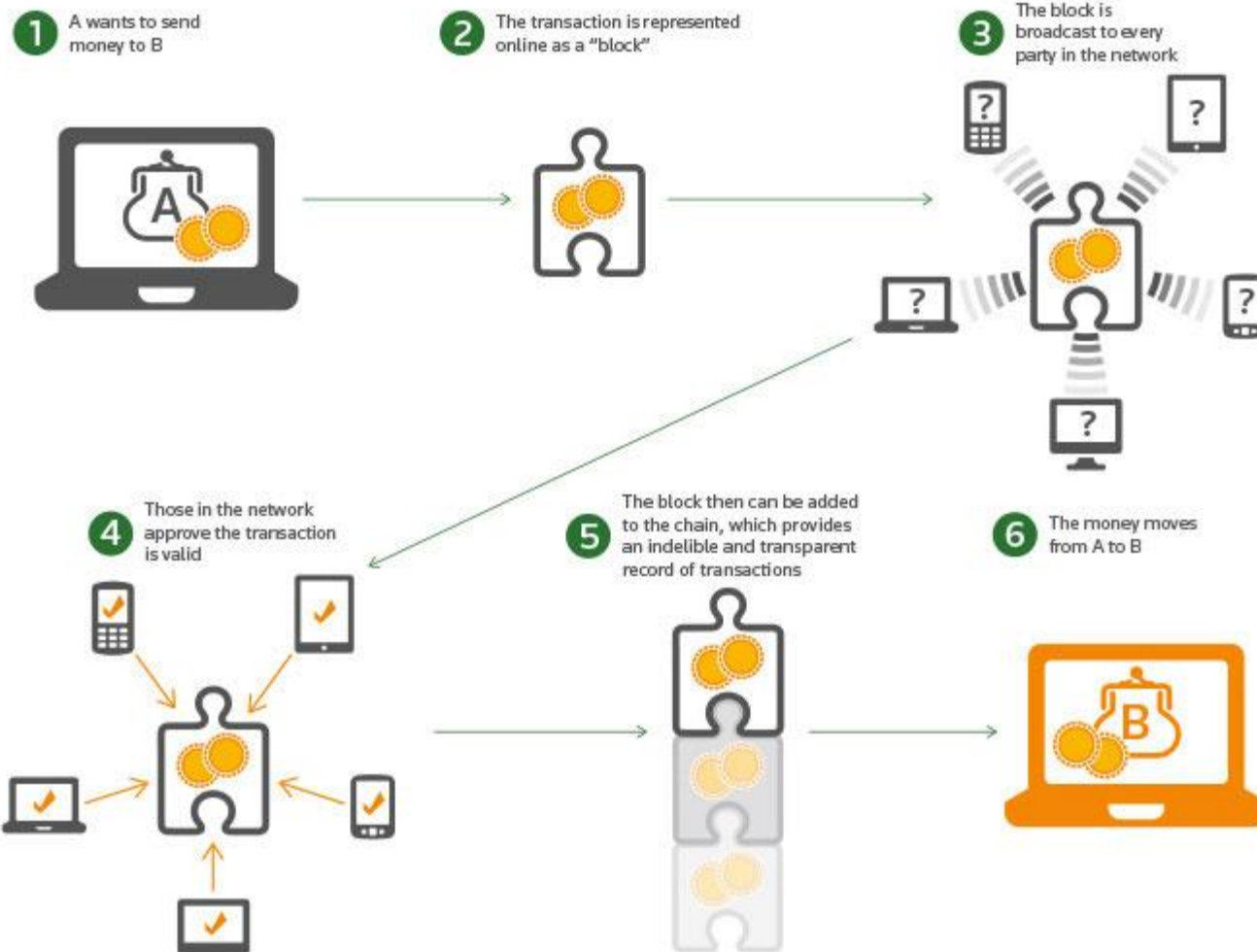- Sustainable development
- Wellbeing

Work / openings done

- The Privacy and Security Principles for Farm Data, November 2014. The American Farm Bureau Federation, https://www.fb.org/issues/technology/data-privacy/privacy-and-security-principles-for-farm-data

- Farm Data: Ownership and Protections, AREC Fact Sheet January 2017 / FS-1055, University of Maryland, http://drum.lib.umd.edu/bitstream/handle/1903/18930/ellixson%20griffin%20farm%20data%20ownership.pdf?sequence=1&isAllowed=y

Trust

- Agreements based on informed consent are the base
- Can we trust that agreements are followed?
- How to make sure that
  - the shared data will not be manipuated against the agreement
  - the received/used data is legal and original
- Are the data traceable?
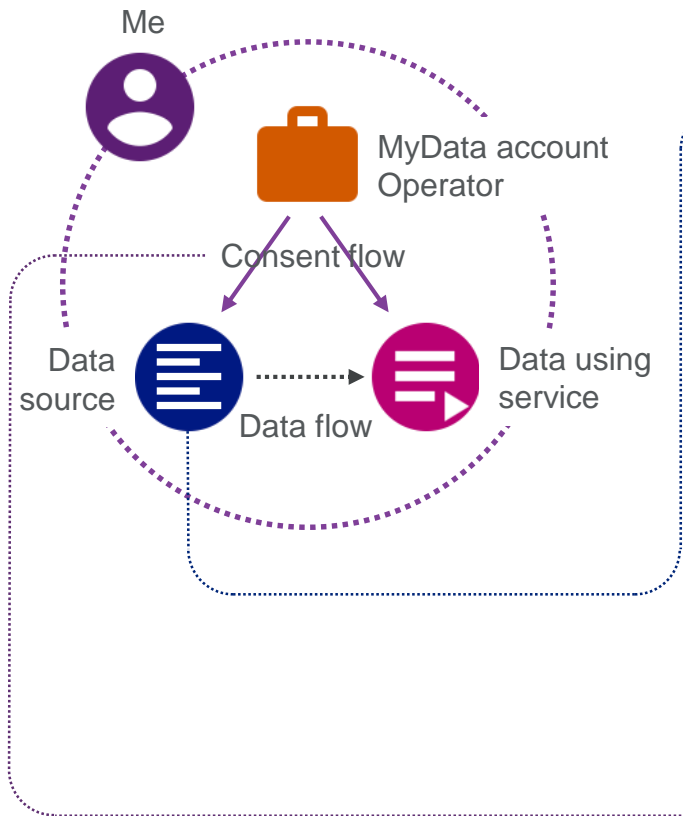- Blockchain / distributed ledger technologies provide solutions for agile and trusted business

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Idea of bolckchain

1 A wants to send money to B

2 The transaction is represented online as a "block"

3 The block is broadcast to every party in the network

4 Those in the network approve the transaction is valid

5 The block then can be added to the chain, which provides an indelible and transparent record of transactions

6 The money moves from A to B

Source: Financial time

Building trust with MyData and blockchain

MyData model

Digital consent management

Me

MyData account Operator

Consent flow

Data source

Data flow

Data using service

MyFarmData

Collections with resources

Hash
Resource provider ID
Resource URL
Data block (encrypted, open, public)

Ontology

Connection to other models
:

Full SOA API ecosystem
Aggregator model

Trust Traceability
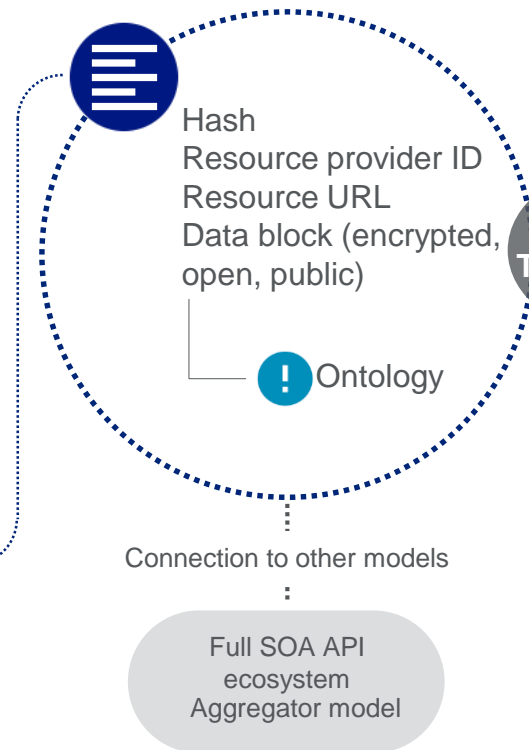
Blockchain model

Public distributed ledger

Block ID
Timestamp
Resource owner ID
Public key
Resource user ID
Resource URL

Rules
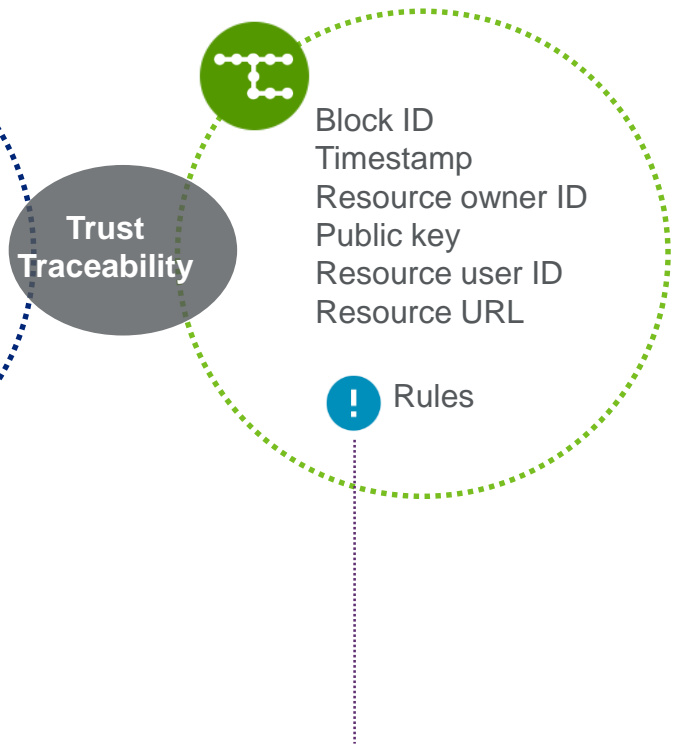
Consent management with MyData

Graph by Markku Koistinen

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Trust outside the business framework
- protection against criminal actions?

- Awarenness about what is really intimate data to keep tightly private for business, profession, personal life reasons
  - Data only to trusted parties with transparent data management and privacy policy

- What data can be shared as OurData or Public Data for common good?
  - Level of aggregation / anonymization and time period
  - ➢ The 'good guys' have access to the data too!
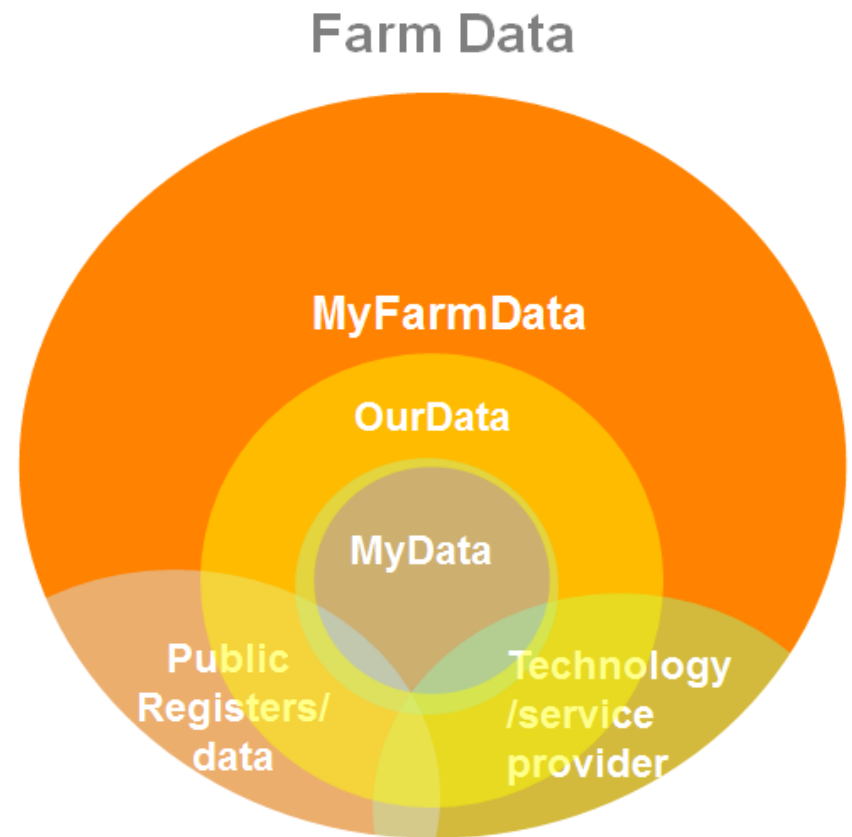 - ➢ Power balance

Conclusion

Possibility to join forces and utilise the change induced by GDPR and MyData movement;

- policies, solutions, techniques, implementation, rised awareness of individual's responsibilities, methods, common understanding of right and wrong

Gradual step-by-step delopment within time.

Co-creation to build data-driven win-win business in 'gray zones'.

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Thank you!

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