

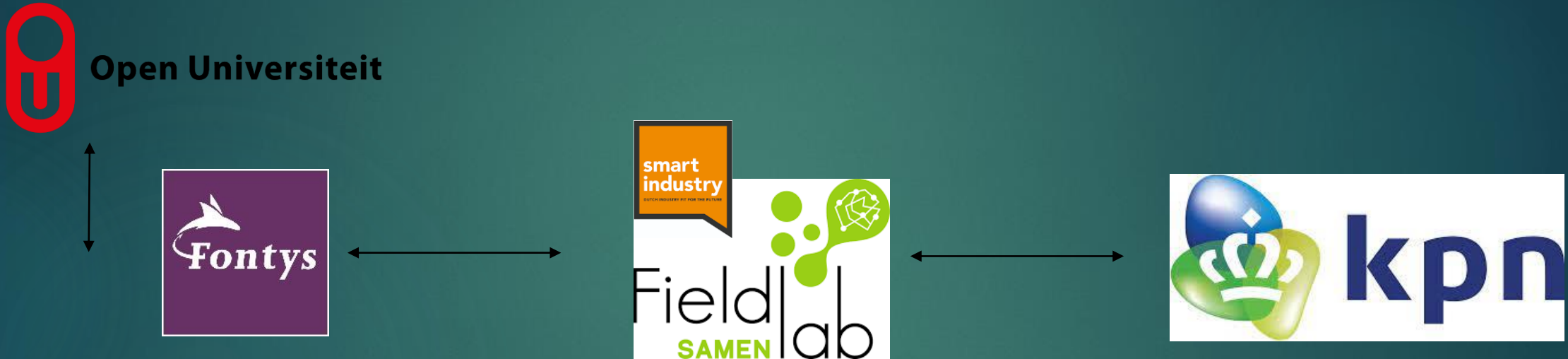
Architecture Principles and Digital Trust in practice

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Research by many partners



FieldlabSAMEN: Areas of Applied Science

Meten en voorspellen van
technische levensduur

Doorvertaling naar O&M,
personeel en organisatie,
design

1. Business Trust Architecture

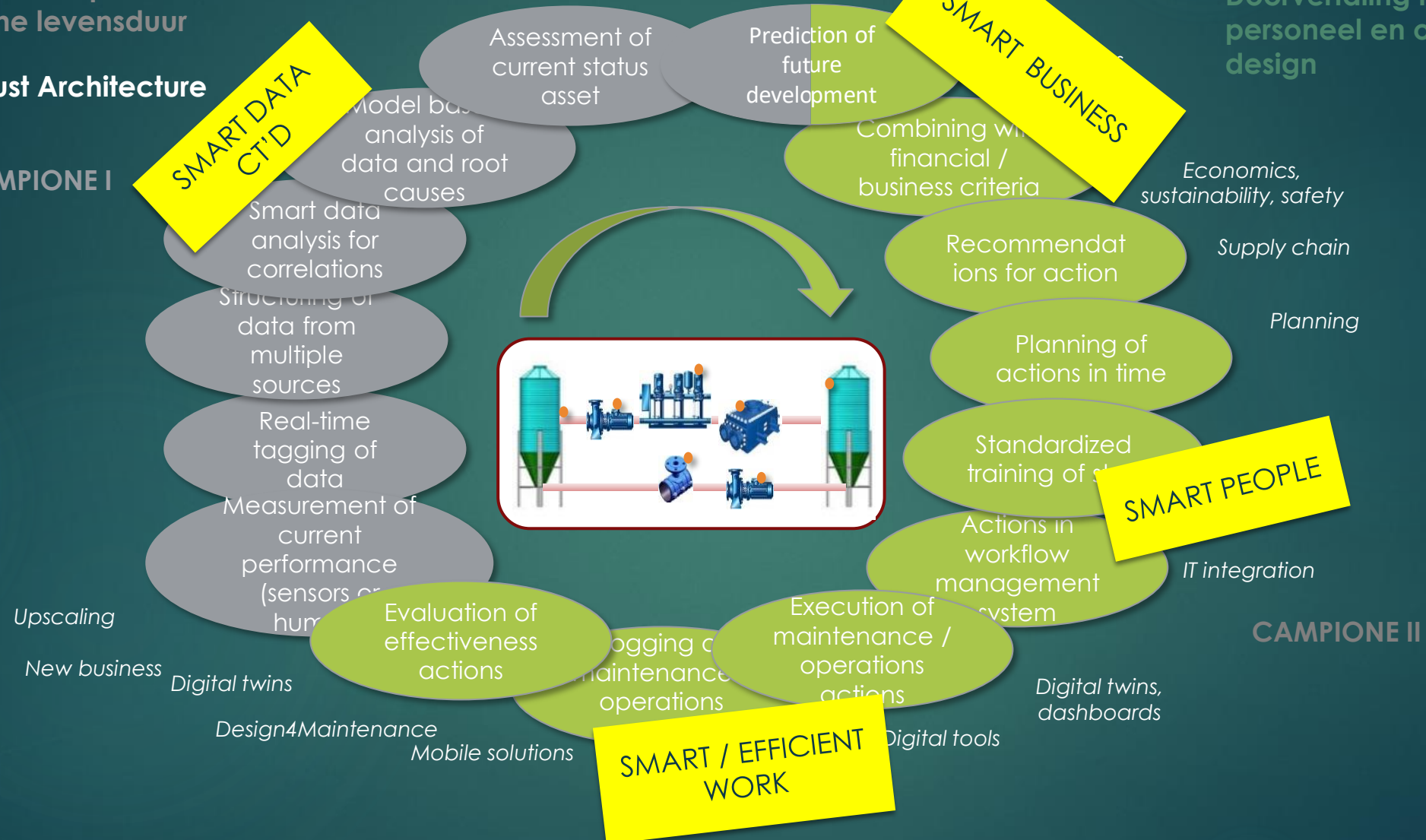
CAMPIONE I

SMART DATA
CT'D

SMART BUSINESS

SMART PEOPLE

SMART / EFFICIENT
WORK



The data-enrichment cycle in Condition-Based Maintenance

Literature

- ▶ When just starting with open service innovation, there is the question of which information can be shared and which information must be protected (Bogers, 2011).
 - ▶ Create **digital trust** to develop new smart services, also because interactions are more and more online. A lack of insight into the relationship between digital trust, **architecture design principles, and open innovation** (Mubarak & Petraite, 2020).
 - ▶ This digital trust can be enabled by developing a digital trust architecture (Qurratuaini, 2018).
 - ▶ Little empirical knowledge on how the **architectural design perspective** can be **promoted** (Dmitrijeva et al., 2019).
 - ▶ Gartner (2021): If you do not introduce trust throughout your data-sharing process, you cannot achieve business value from the data you collect. Gartner predicts that through 2023, organizations that can instill digital trust will be able to participate in 50% more ecosystems, expanding revenue-generation opportunities.
- ▶
- Is there an elephant
 - What is the elephant
 - Shall we discuss the elephant

Aim & Research Question

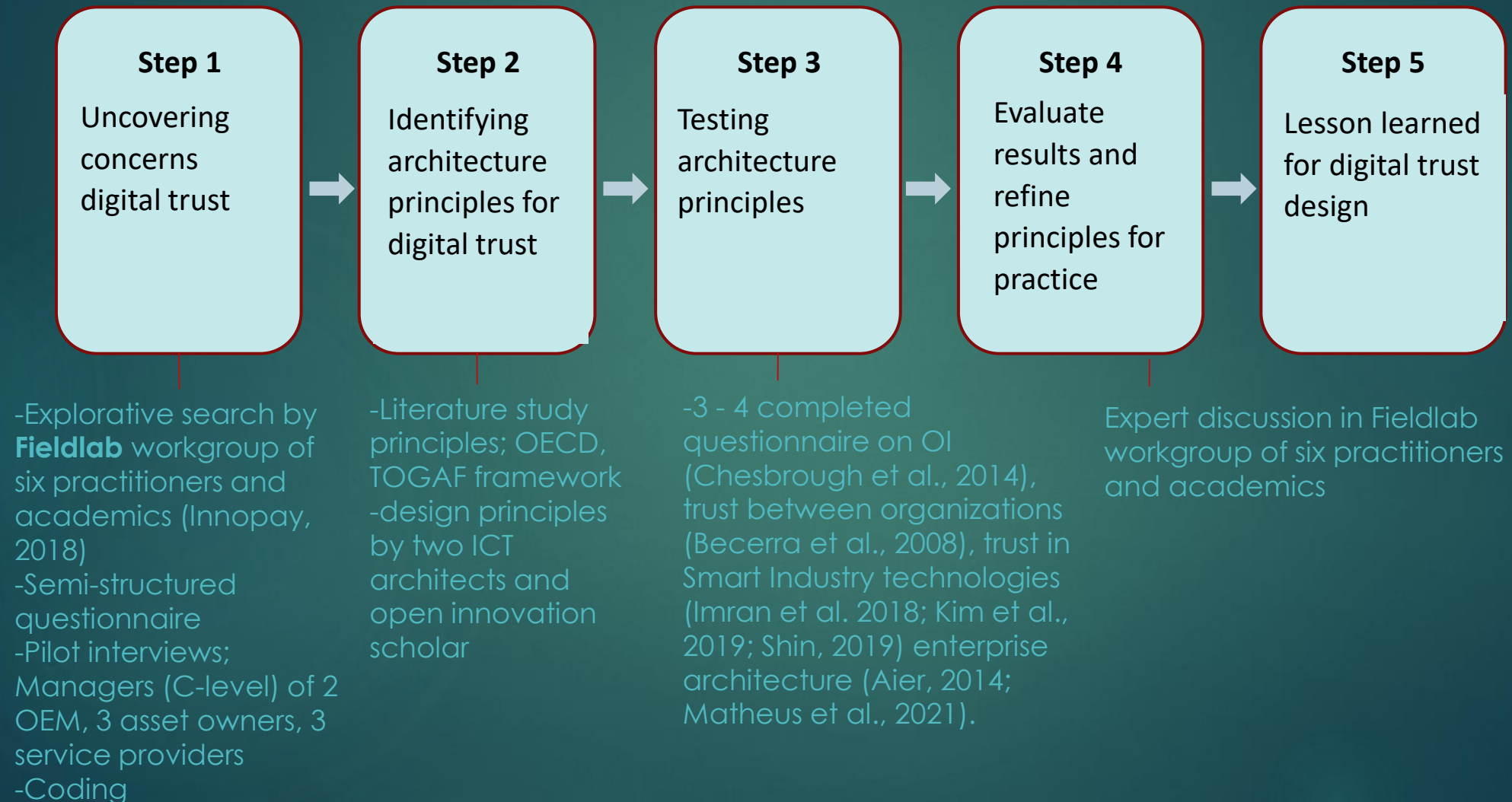
Aim

To provide guidelines for creating digital trust

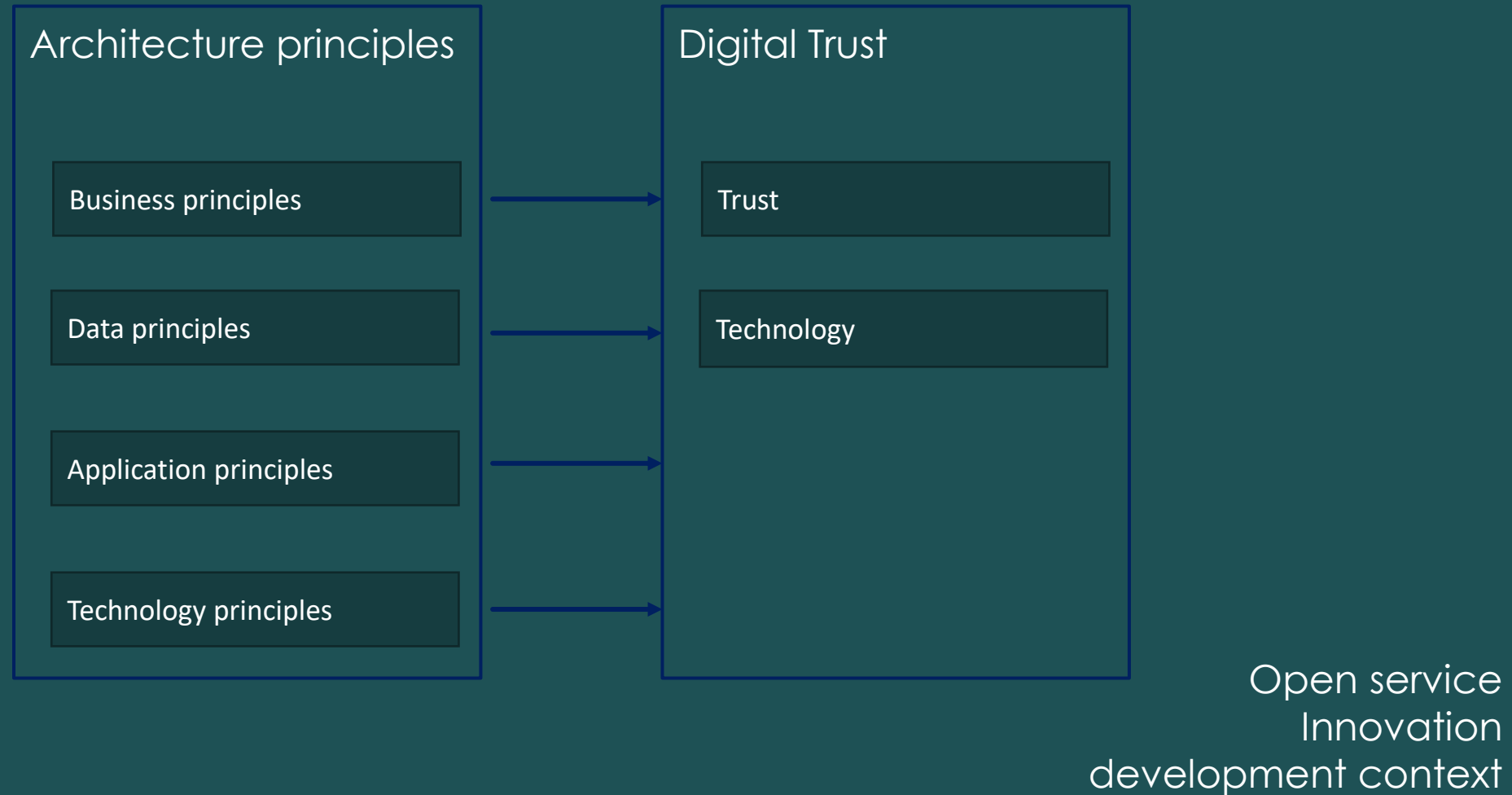
Research question

“how do **architecture principles** contribute to **digital trust** within an **open service innovation** context”

Design Based Research



Result



Business Principles

Architecture principle	Implications for digital trust
Business Principle 1: Agile organization	To use the full benefit of the digital world organizations must transform into an agile organization and willing to change business
Business Principle 2: Intellectual property	Collaboration agreements must be made. They specify who owns the (enriched) data and intellectual property and who allows access to the data.
Business Principle 3: Comply with laws and regulations	Define which laws and regulations are in scope to comply to.

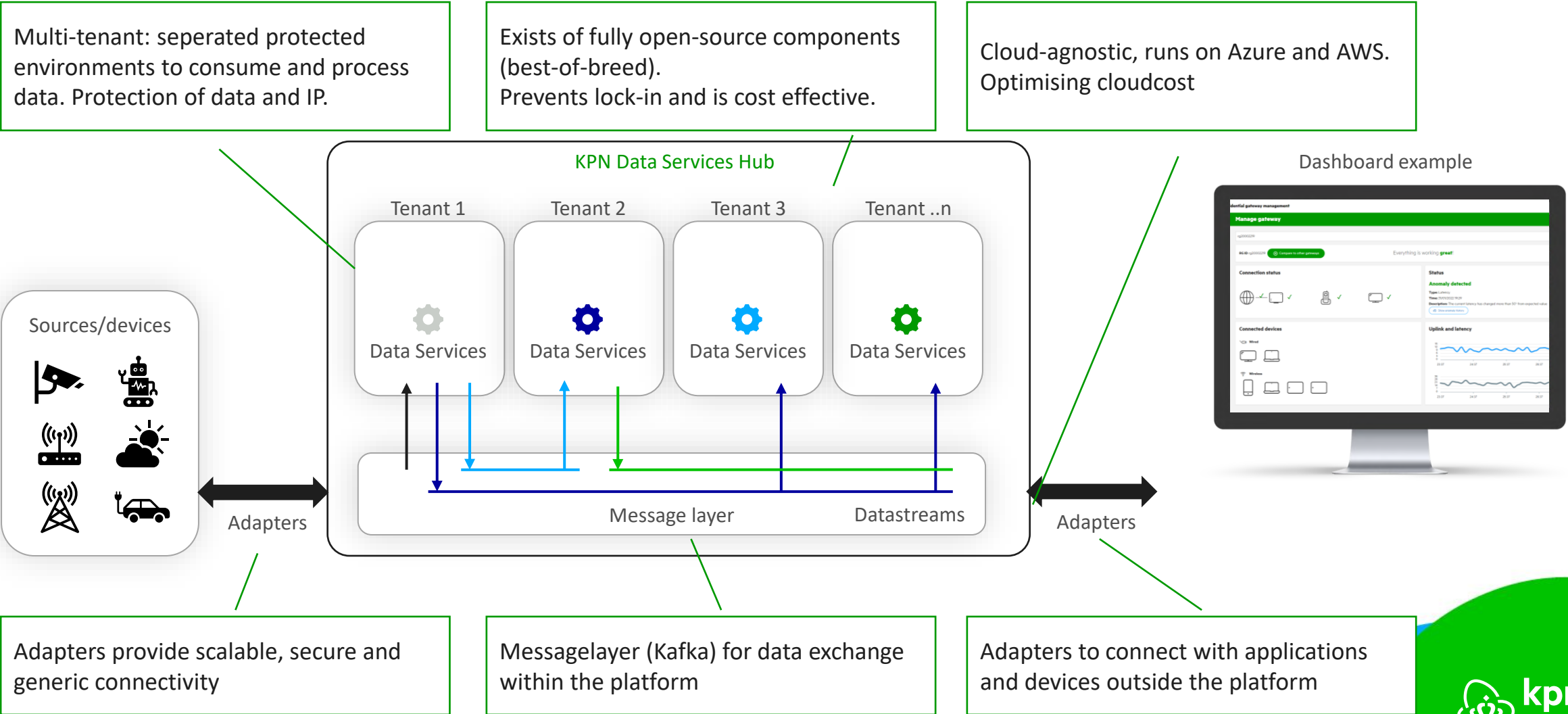
Information Principles

Architecture principle	Implications for digital trust
Information Principle 1: Data has an owner	The participant who creates the data is the owner of the data. The owner is the only party who grants others access to his data.
Information Principle 2: Realtime data	(sensor) data delivered by automated processes might be time critical within business processes. It must be processes and treated accordingly.
Information Principle 3: Data is secured	Measures are taken to ensure that the data is not available to everyone
Information Principle 4: Logging	To increase trust within the eco data system all actions on the the data will be logged
Information Principle 5: Data is accessible	To enable exchange, the data must be made available to the organizations involved

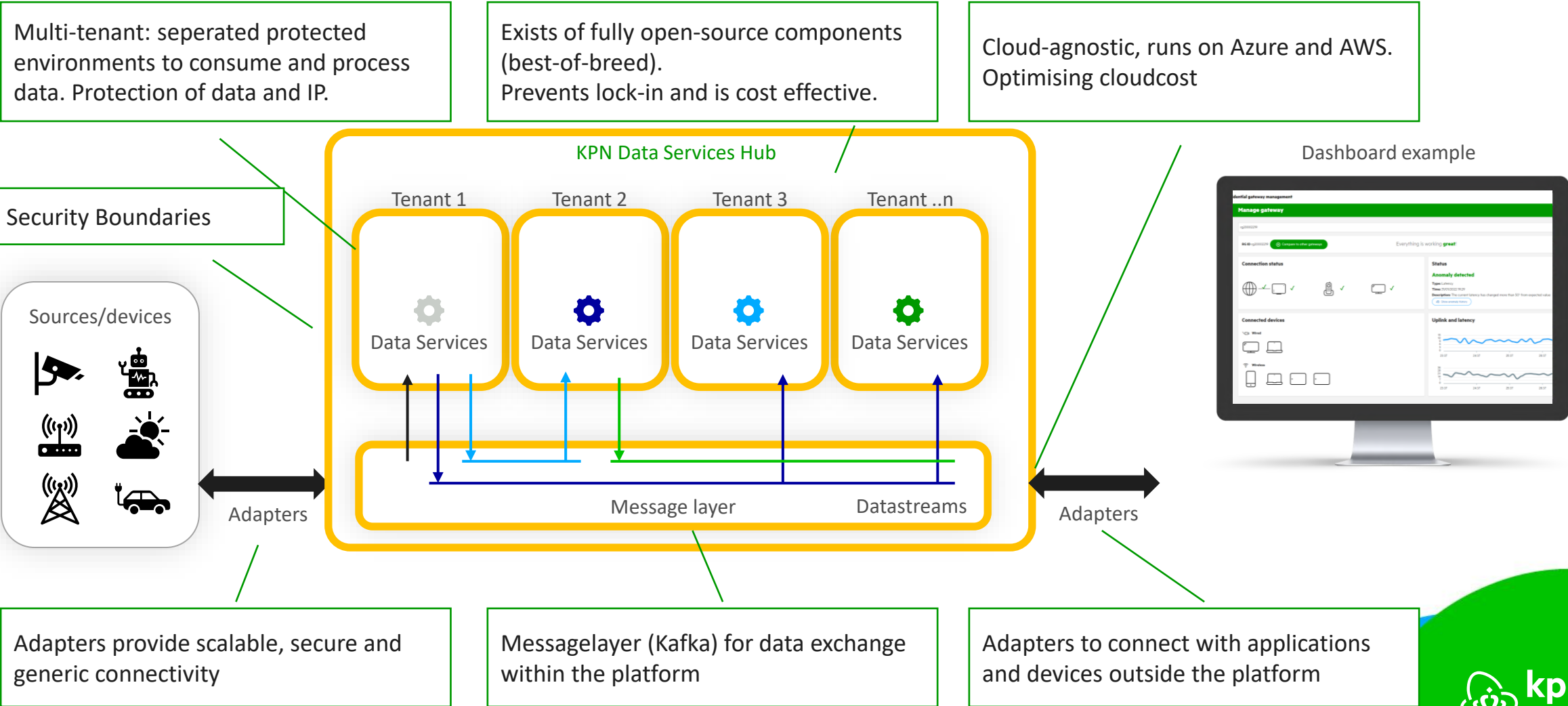
Technology Principles

Architecture principle	Implications for digital trust
Technology Principle 1: Security by design	Security measurement are embedded into the platform hence the platform itself is secure
Technology Principle 2: Deploying a platform	To prevent the data from being available via different platforms, one central platform will be used where every participant can share data
Technology Principle 3: Platform is high available	For timely availability of the data, it is necessary to use a platform that meets the highest availability requirements
Technology Principle 4: Scalable platform	To support future growth the platform is almost unlimited scalable in size, connections and power so new participants and new functions can be supported
Technology Principle 5: Data Integrity	The platform ensures integrity of the processed data in rest as well as in transit

How we do this with the KPN Data Services Hub?



How we do this with the KPN Data Services Hub?



In practise

► CONNECTED FACTORIES

Data sharing in the manufacturing industry

- Connected Factories is one of the 8 Smart Industry transformations.
- Safe and secure data sharing in the manufacturing supply chain is the main focus
- The Fieldlab **Smart Connected Supplier Network** aims to achieve this.



In practise

Better and safer trafficflow

Real-time data communication between ambulance and traffic light systems to set green light on intersections when arriving

Situation

- Dangerous situations because ambulances/firemachines drive through red traffic light

Solution

- Intelligent traffic light systems connected by KPN DSH with ambulances and traffic light management systems (Dylniq).
- Ambulances have an ability to request 'prioriteit' at traffic light systems at intersections, the traffic light responds by setting green light for the ambulance

Specialties

- Several competitors on one platform
- Low latency (200ms)



Dutch ambulances now safer on the road

28 March 2022

The Dutch ambulance sector is the first emergency service to connect to Talking Traffic services nationwide. Thanks to Talking Traffic, ambulances on their way to an emergency (i.e. with siren blaring and lights flashing) will from now on always be "connected" and therefore "digitally visible". Smart traffic lights can give ambulances a green light and therefore a safe passage when they cross over an intersection. Other road users are warned in good time that an ambulance is approaching so that they can react accordingly. This helps increase road safety for other road users, the ambulance crew and the patient on board.





Thank you for your attention

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