Sander van Lingen
Business Development Manager
for Digital Cities & Connected Societies
TAKE THE DIGITAL COMPLEXITY AWAY

EDGE/FIELD

IOT

Manage millions of things from your IoT edge

CORE

BIG DATA

Put data from things into action

CLOUD

APPS

Develop and deploy cloud-mobile IoT solutions
ROLE OF DELL TECHNOLOGIES

In the world of Smart Cities and New Mobility Services

DATA
DATA
DATA
DATA
ROLE OF DELL TECHNOLOGIES

Build technologies to process, store, manage & secure your data
FLEXIBILITY & INTEGRATION ALL THE WAY

Service, Application, Infrastructure & device Independence

Any Use Case
- Video Surveillance
- Transportation Management
- Water Services
- Waste Management
- Infrastructure Management
- Elderly Care
- Environmental Management

Any Application
- Traditional
- Microservices
- Container
- BlockChain
- Code Language

Any Cloud
- Public Cloud
- Private Cloud
- Hybrid Cloud

Any Device
- Any Scale
ROLE OF DELL TECHNOLOGIES

Innovate with our clients & partners

DATA ACCESS
DATA ANALITICS
DATA MONETIZE
DATA SECURITY
Training AI/ML models using Digital Data Marketplaces
Creating value and competition by enabling access to additional big data owned by multiple organizations in a trusted, fair and economic way

The more data - the better: an aircraft maintenance use-case

- AI/ML algorithm based Decision Support Systems create business value by supporting real-time complex decision taking such as predicting the need for aircraft maintenance.

- Algorithm quality increases with the availability of aircraft data.

- Multiple airlines operate the same type of aircraft.

- Research Question: “How can AI/ML algorithm developers be enabled to access additional data from multiple airlines?”

- Approach: Applying Digital Data Marketplace concepts to facilitate trusted big data sharing for a particular purpose.
A **Digital Data Marketplace** is a membership organization supporting a common goal: e.g. enable data sharing to increase value and competitiveness of AI/ML algorithms.

Membership organization is institutionalized to create, implement and enforce membership rules organizing **trust**.

Market members arrange **digital agreements** to exchange data for a **particular purpose** under specific conditions.

Agreements subsequently drive data science transactions creating processing infrastructures using infrastructure patterns offered by a Data Exchange as **Exchange Patterns**.

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[https://sc.delaat.net/sc18/posters/SC2018PosterLGv0.5.pdf](https://sc.delaat.net/sc18/posters/SC2018PosterLGv0.5.pdf)
Digital Data Marketplace enabling data sharing and competition

- National Law & Regulations
- Market rules
- Member admission
- Data suppliers
- Algorithm Developers
- Accounting & Auditing

Future Internet Capabilities:
Software Definable - No Bandwidth Limitations, On demand, transaction based
Researching Exchange Patterns to support Digital Data Marketplaces

Data Exchange Model

Research Infrastructure

Research Elements

Trust Modelling:
What is the optimal infrastructure archetype, describing storage and processing locations and their relationships, which best suit member requirements when considering risk?

Processing Models:
What are the implications of distributing data processing across membership organization owned infrastructures in terms of achievable model accuracy and processing performance using federated/distributed models vs centralized models?

Marketplace Reference Architecture:
What constitutes a marketplace? Researching needed functions, personas, flows, credentials, contracts & rules, conflict resolution, and much more

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WHY?
IS AMSTERDAM INVESTING..
THANK YOU!

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sander.vanlingen@dell.com
+31 6 101 848 70