



**Flanders**  
State of the Art

## **Low emission zone Antwerp powered by Crossroads bank Flanders**

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**Vlaanderen**  
is verbonden

**INFORMATIE  
VLAANDEREN**



# Low emission zone Antwerp



# Why a low emission zone in Antwerp?

lost healthy life-years  
children / elderly / ill



# Improving air quality with access restrictions



# LEZ in Antwerp





# Enforcement with ANPR



# Access criteria

Based on Flemish legislation, with local social and economic corrections



# Functional needs for a city with LEZ

- ▶ **Dealing with a fluent processing of demands** of citizens and companies for permits to enter LEZ
- ▶ Direct or indirect **access to federal databases** to check
  - information on permit demands
  - technical information on vehicle
  - name and address of offenders
- ▶ Automatic reading and **filtering of permitted** number plates + manual **validation** of list of potential **offenders**
- ▶ Processing and sending **administrative fines** + follow up payments
- ▶ Collection of **data to monitor** effects





# The challenge

- ▶ Meet the functional requirements
- ▶ Fully automated processes
- ▶ 24/7 availability
- ▶ 'Only once' principle
- ▶ Handle high datavolumes
- ▶ Multilevel cooperation
- ▶ Meet personal information legislation
- ▶ Reusability (reuse existing systems, enable future reuse)
- ▶ Enable customer-friendly front

... within 7 months



# Involved partners

- ▶ **Local level**

- City of Antwerp

- ▶ **Regional level**

- Department of Environment and Spatial Development
- Flanders Information Agency – Crossroads bank Flanders
  - MAGDA platform (Maximum Data Sharing between Administration and Agencies)

- ▶ **Federal level**

- Federal Ministry of Economy – Crossroads Bank Enterprises
- Federal Ministry of Interior – National Registry of Natural Persons
- Ministry of Mobility – Database of Registered Vehicles

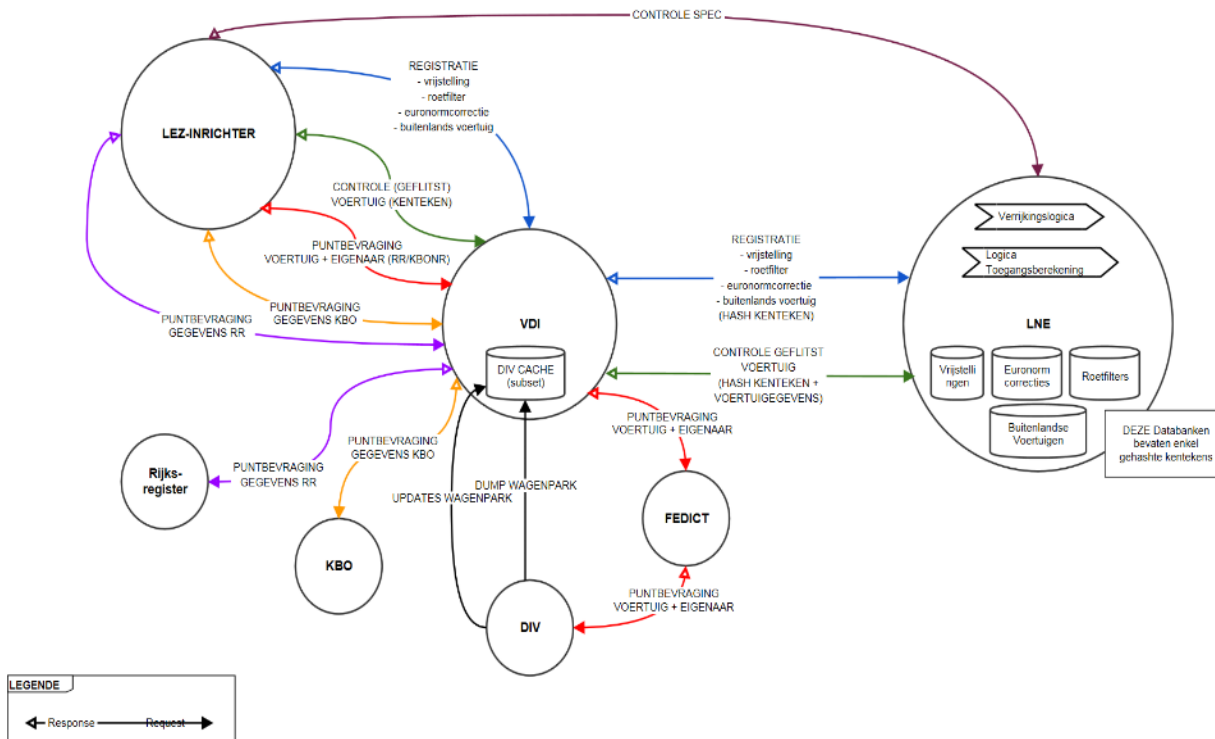


# Deliverables

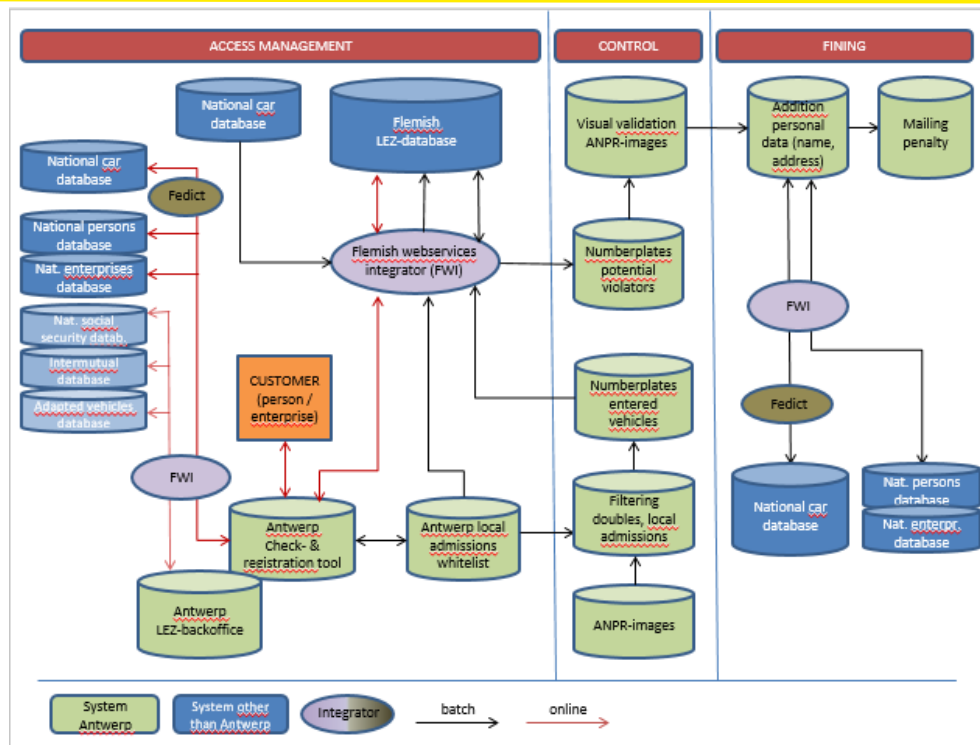
- ▶ Integration “federal vehicles database” ~ “Flemish MAGDA platform”  
→ *(initial load, daily mutations, storage infrastructure)*
- ▶ Integration city ~ MAGDA ~ vehicles database  
→ *(webservice check access with numberplate, check access with vehicle specs. )*
- ▶ Integration city ~ MAGDA ~ Environment Department  
→ *(daily > 100,000 access control, anonymisation numberplates, webservice check access with numberplate and date, upload registered vehicles to LEZ-database)*
- ▶ Integration MAGDA ~ Environment Department  
→ *(dump and hashing)*



# Overview datastreams



# Overview datastreams



# Innovative aspects

- ▶ **First** low emission zone **in Belgium**
- ▶ Highest **degree of integration** and automation in Europe
- ▶ Exchange information of different databases between **different partners**, compliant to privacy regulations
- ▶ **'Once only' principle**
- ▶ **MAGDA platform as 'hub'** between LEZ-cities and databases
- ▶ Developed MAGDA **components reusable** in other projects
- ▶ **Data** for environmental management and evaluation





# Some figures

## ▶ LEZ-website

- Nearly 1 mio users (2/3 new, 1/3 return)
- Nearly 5.6 mio pageviews

## ▶ ANPR

- 58 mio camerascans (of which 46 mio confidence > 80%)
- 725,000 unique cars/month checked (average)

## ▶ Outcome

- 72,000 applications handled
- LEZ conformity of carfleet: from 94.7% in February 2017 to 98.8% in October 2017 (Belgian car fleet: < 90%)



## A person in a dark suit is shown from the chest up, reaching out towards a series of glowing, semi-transparent hexagonal icons. The icons are arranged in a cluster, with the largest one in the center. Each hexagon contains a white circle with a black line-art icon. The icons represent various digital and technological concepts: a profile of a head with a brain, a classical column, a network diagram, a person silhouette, a smartphone, a laptop, a building, a bar chart, a person with a magnifying glass, a person with a speech bubble, a person with a gear, and a person with a lightbulb. The background is a blurred image of a person in a suit, suggesting a professional or business context. The overall color scheme is blue and white, with a futuristic feel.

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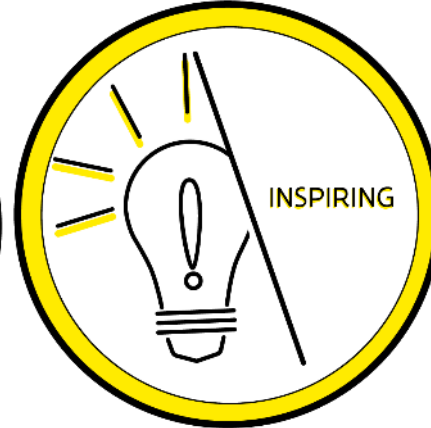
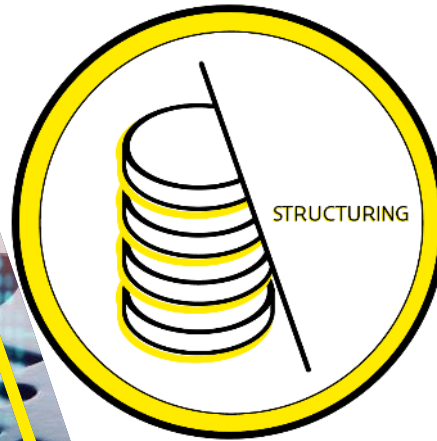
# Tasks

## A DIGITAL GOVERNMENT FOR FLANDERS

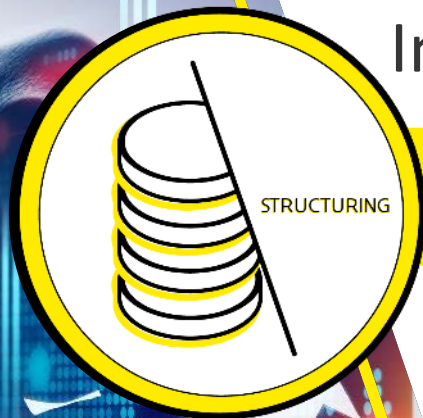
- Making the digitalisation of service provision run more smoothly
- Facilitating end-user access to this service provision
- Customer-oriented: citizens, businesses and associations
- Demonstrating digital leadership through technological innovation and integrated solutions

# Unique characteristics

## ADDED VALUE



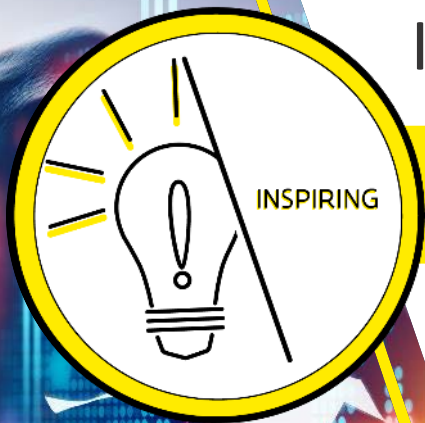
# Information broker



## ORGANISATION

- Integrating and sharing data
- Enriching data
- Conventions on ownership of authentic sources
- Reaching agreements on the structures of authentic sources





# Innovation

## INSPIRATION

- Sharing digitalisation smoothly with society as a whole
- Removing existing barriers and creating new levers for government on a human scale
- Setting up new eco-systems together with partners to better serve end users



# In partnership



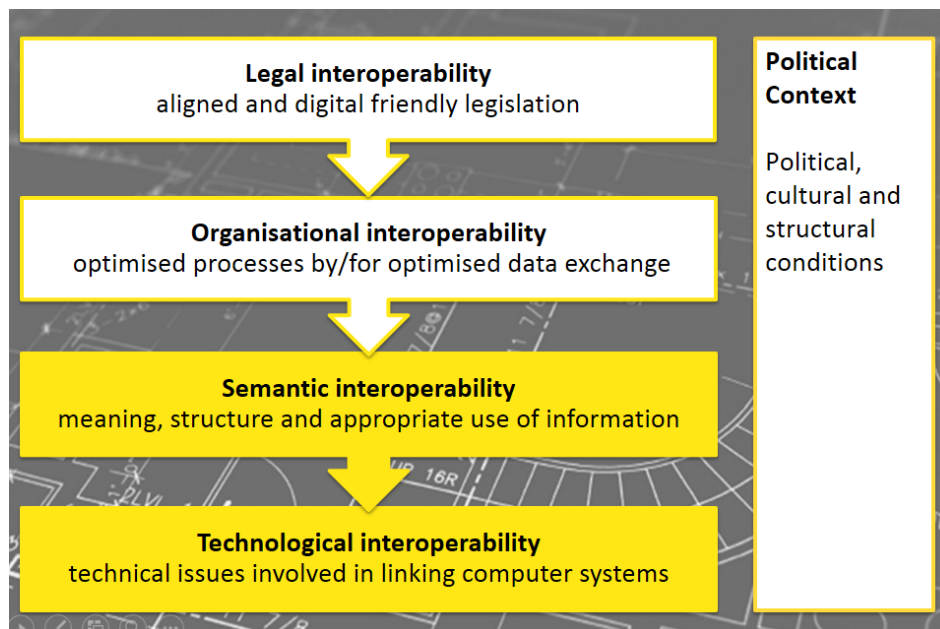
## COOPERATION

- Forging alliances with other areas of government and with the private sector
- Providing technological solutions to partners
- Providing privacy guarantees to source managers and end users

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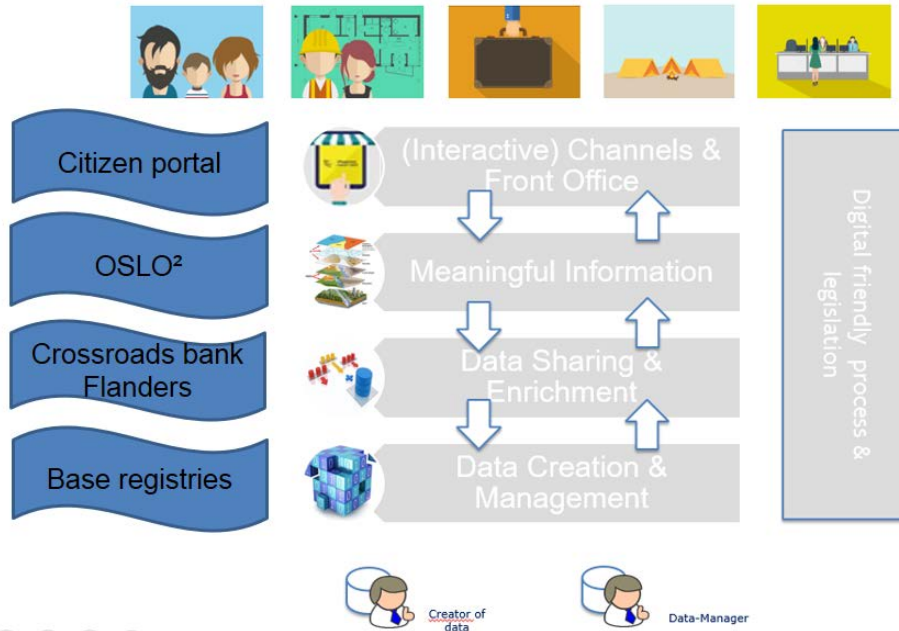


## Interoperability Framework



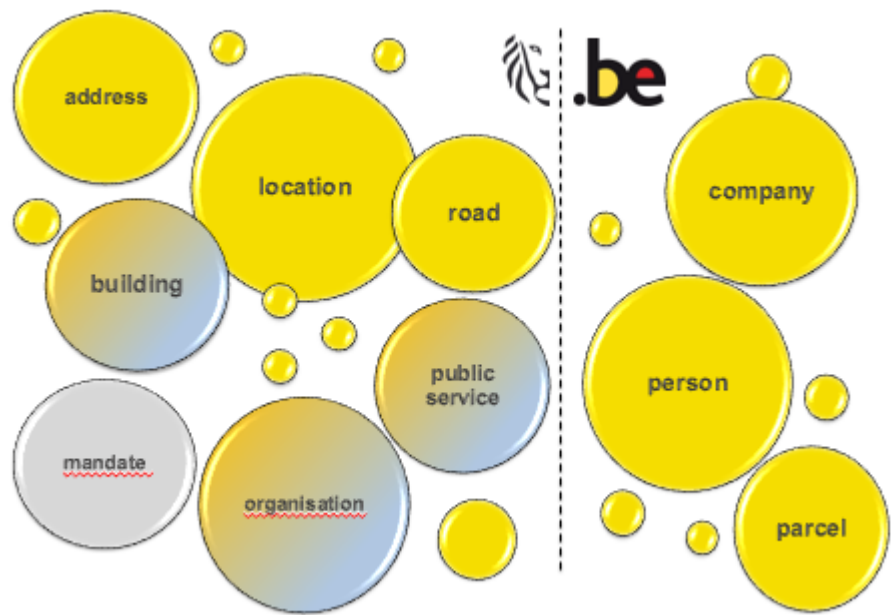
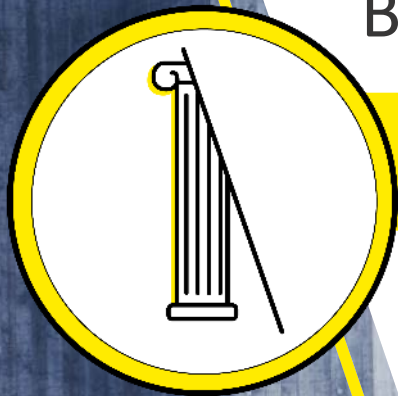
# Kruispuntbank.Vlaanderen

## Strategy towards interoperability

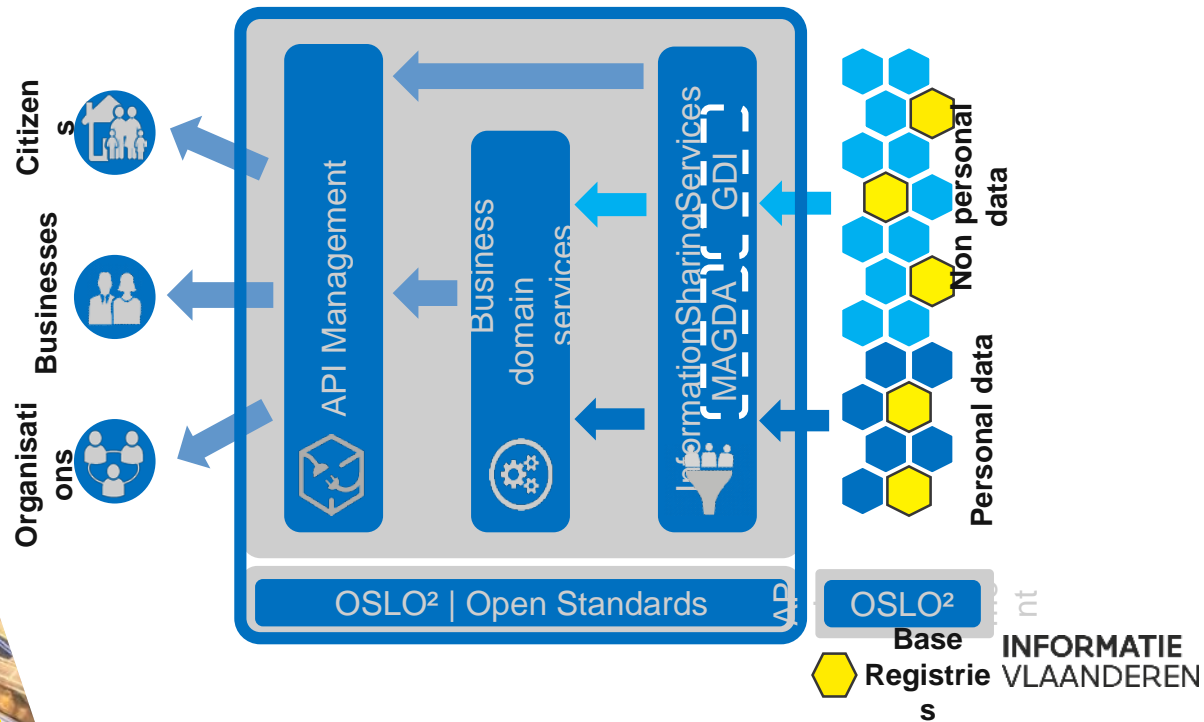




# Base registries



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## Opportunities

Persoon	Onderneming	Perceel	Adres
Gebouw	Dienstverlening	Sociale Zekerheid	Werk en inkomen
Onderwijs en diploma's	Inburgering	Mobiliteit	(Sociale) Economie
Organisatie	E-procurement	Topografie	Landbouw en visserij
Natuur en milieu	Welzijn, gezondheid en gezin	Cultuur, sport en toerisme	Energie



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## Opportunities

- New ways of data collection
- Large volumes, real-time and divers



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## Opportunities

- Smart services
  - Business rules engine, business domain services
  - Analytics and Artificial Intelligence



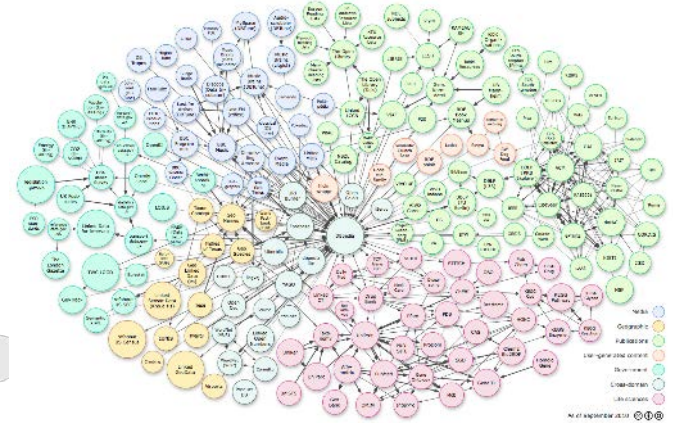
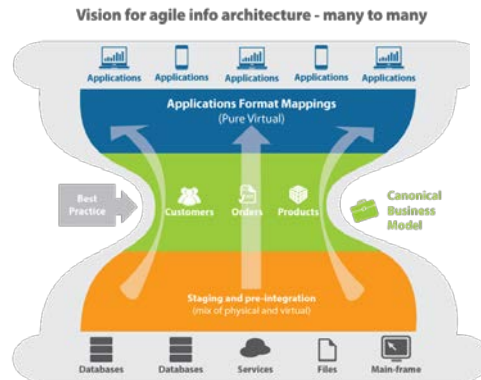


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## Opportunities

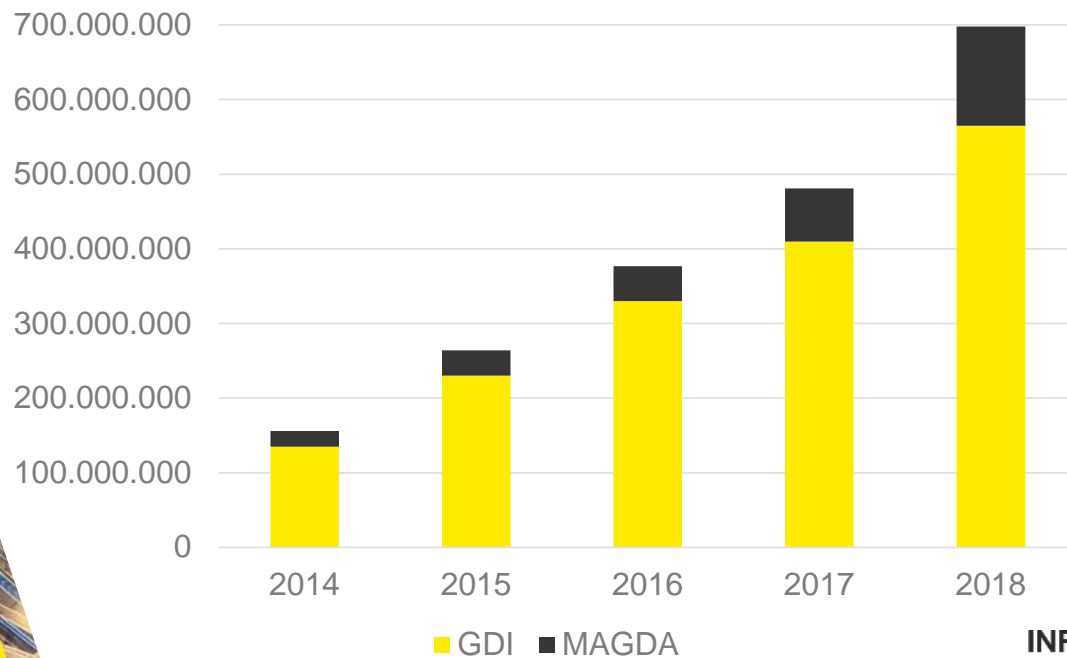
- New technologies
  - Cloud
  - Data virtualisation
  - Linked data
  - Blockchain



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## Numbers



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## Numbers

- MAGDA-platform (excl. GEO)
  - > 1.000 customers
  - > 50 sources
  - > 125 services



## USE CASE - MY CITIZEN PROFILE

- A single personal profile with the citizen at the centre
- Integrated platform with data from all levels of government
- Secure and reliable application with privacy protection
- Easy plug-in application for governments
- Increases ease of use for citizens (no wrong door)
- Efficient government

