

# Democratizing INSPIRE: INSPIRE as a Service

24.05.2016

Thorsten Reitz

Geospatial World Forum 2016, Rotterdam

**we**  
we>transform>to

# About Us



**Thorsten Reitz**  
**Founder/CEO**

*Previously:*  
*Lead Product Engineer, Esri R&D Center Zurich*  
*Department Head GEO, Fraunhofer IGD*



## Company Offerings:

- Software as a Service Solutions for agile standardisation ([hale connect](#)) and spatial data infrastructures ([inspire gis](#))
- Professional support and consulting for data harmonisation with [hale studio](#)
- Research Data Management

*We support INSPIRE since 2006.*



**wetransform GmbH**  
Fraunhoferstr. 5  
64283 Darmstadt  
Tel. +49 (6151) 155-408

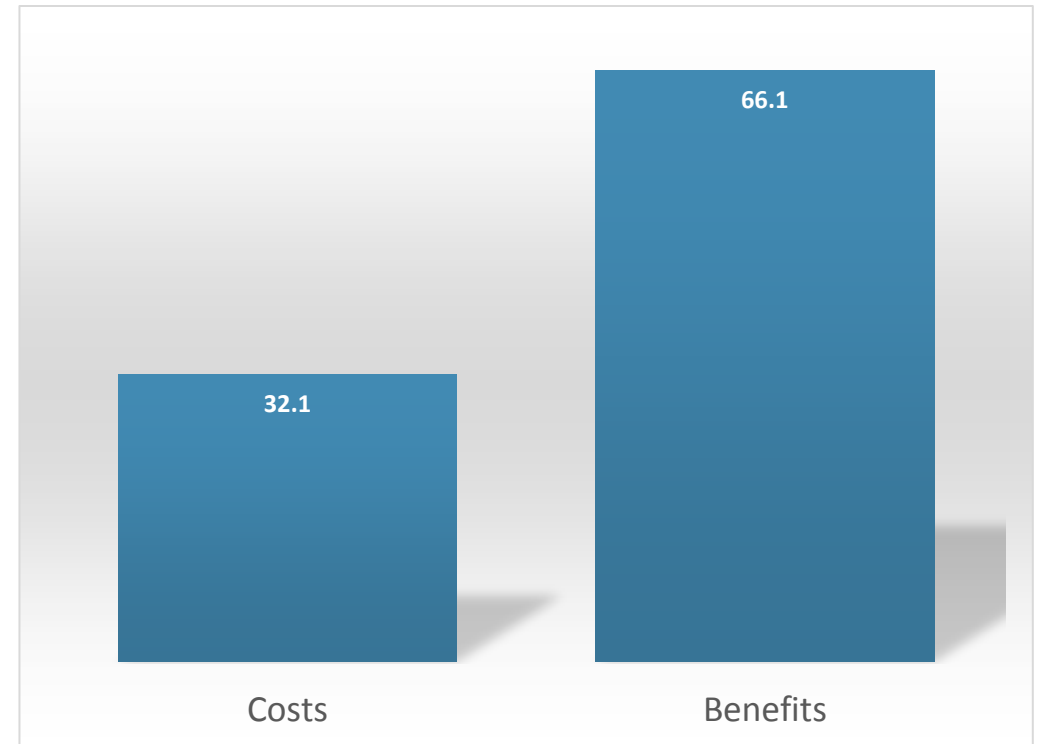
# What will we address in this talk?

1. What are the main **cost drivers** behind providing INSPIRE services?
2. Are INSPIRE services **more expensive** to provide than other types of spatial data services?
3. How can we **reduce the cost** of INSPIRE services to make them much more accessible?



# What about the Benefits?

1. **Not in scope of this talk**
2. Most research found that benefits „*vastly outweigh costs*“
3. Benefits occur in the future, **costs occur now**
4. Often, Benefits don't occur where the costs occur
5. A common view is that INSPIRE implementation is complicated and thus expensive, **which hinders adoption**



Source: ECORYS Nederlands, INSPIRE Cost Benefits Analysis, 2009

# Cost Drivers

Methodology

Regulatory Requirements

Service Types

Service Deployment Models

# Methodology

1. Collect real-world INSPIRE/SDI implementation cost data points
  - Publicly available reports 11 data points
  - Internal and external projects 48 data points
  - Tendering data bases 51 data points
  - Other cost studies 3 data points
  - Survey 14 data points
  
2. Normalize information to a baseline scenario for comparison
  1. Functional normalization (linear)
  2. Data size normalization (fitting function)
  3. Time normalization (linear)

*Note: Data is sparse, interpolation not very reliable*

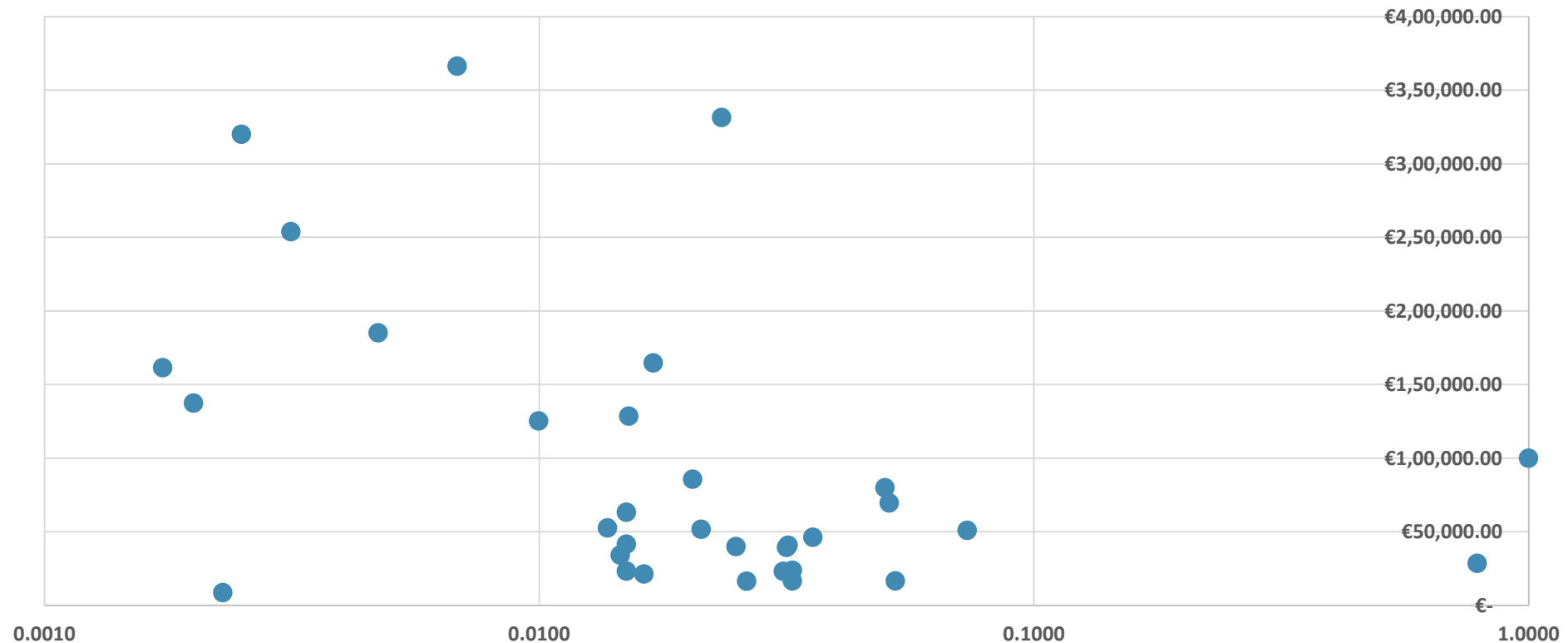


# The Baseline Scenario

- One-time costs
  - Licensing
  - Initial implementation/customisation/configuration, deployment and systems integration
  - Data harmonisation and integration
- Recurring costs (for four years)
  - Licenses, Subscriptions
  - Hosting (ISO27001 or higher compliance, EU only)
  - Application Management
  - Application Maintenance (Keeping up with source/target environment changes)
- Data volume and interfaces:
  - 100 data sets @ 50MB, bandwidth 10GB/month
  - Published via WMS, WMTS, Predefined Dataset Download Service, Direct Access Download Service (Basic WFS and Transactional WFS)



# Normalized Costs Distribution

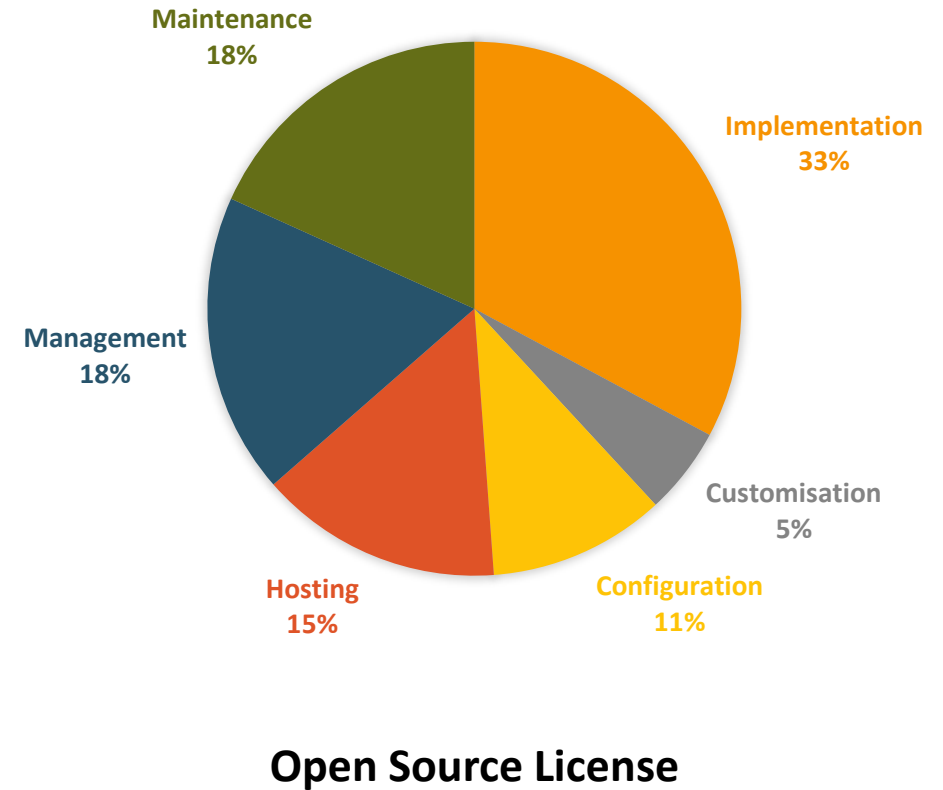
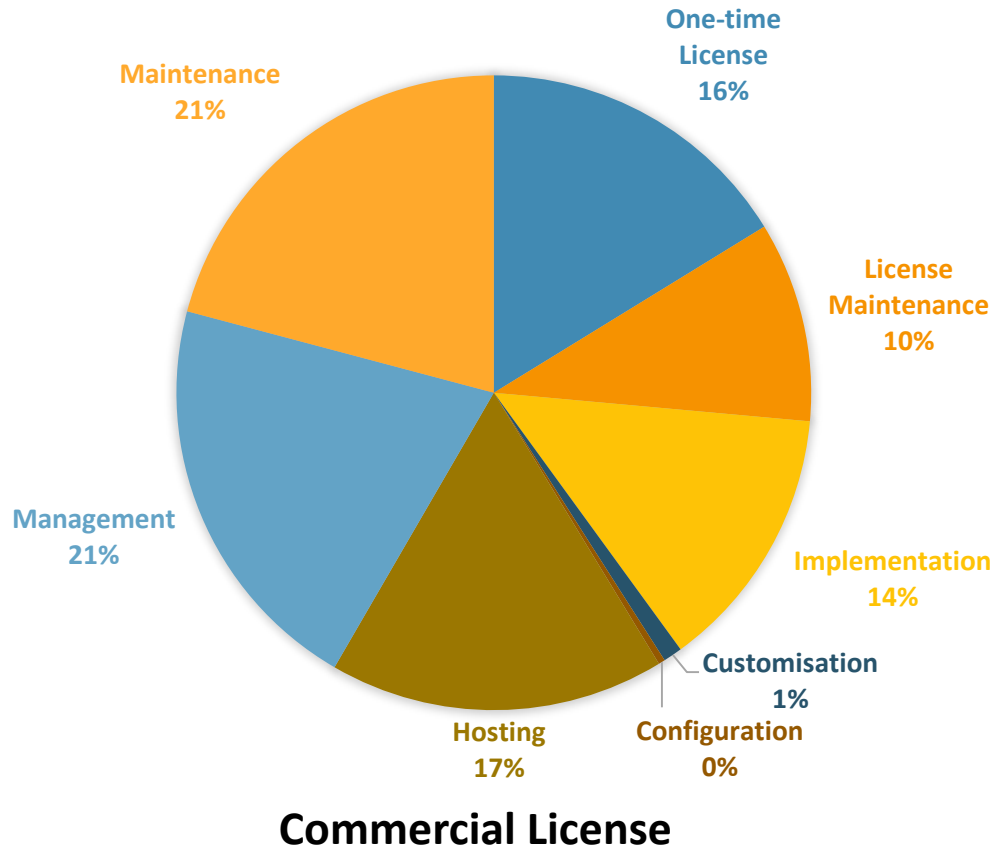


*Low cost, medium-sized projects are most efficient*

*Little gains through large projects*

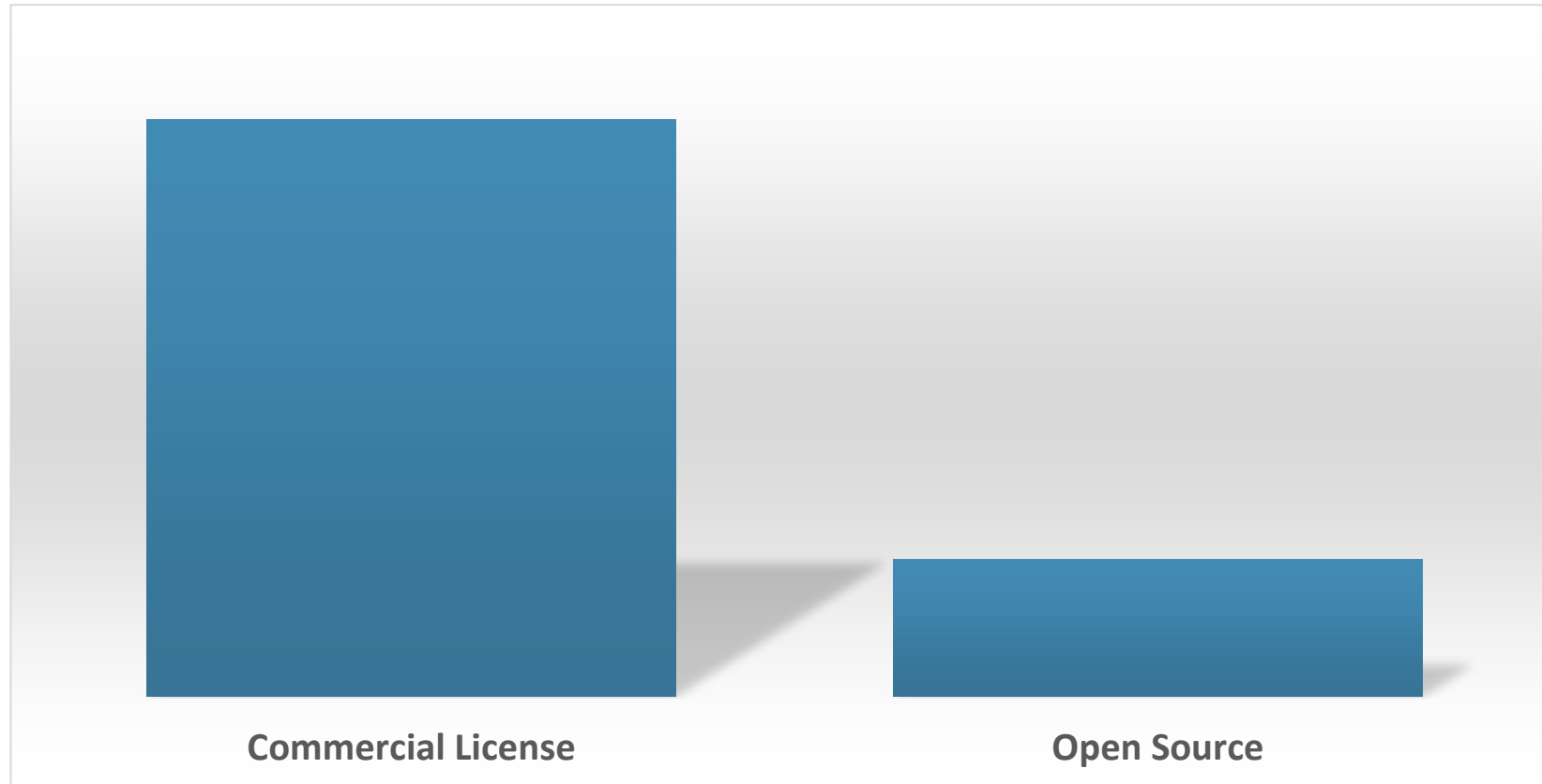
*Small projects all over the place*

# Cost Factors: Category



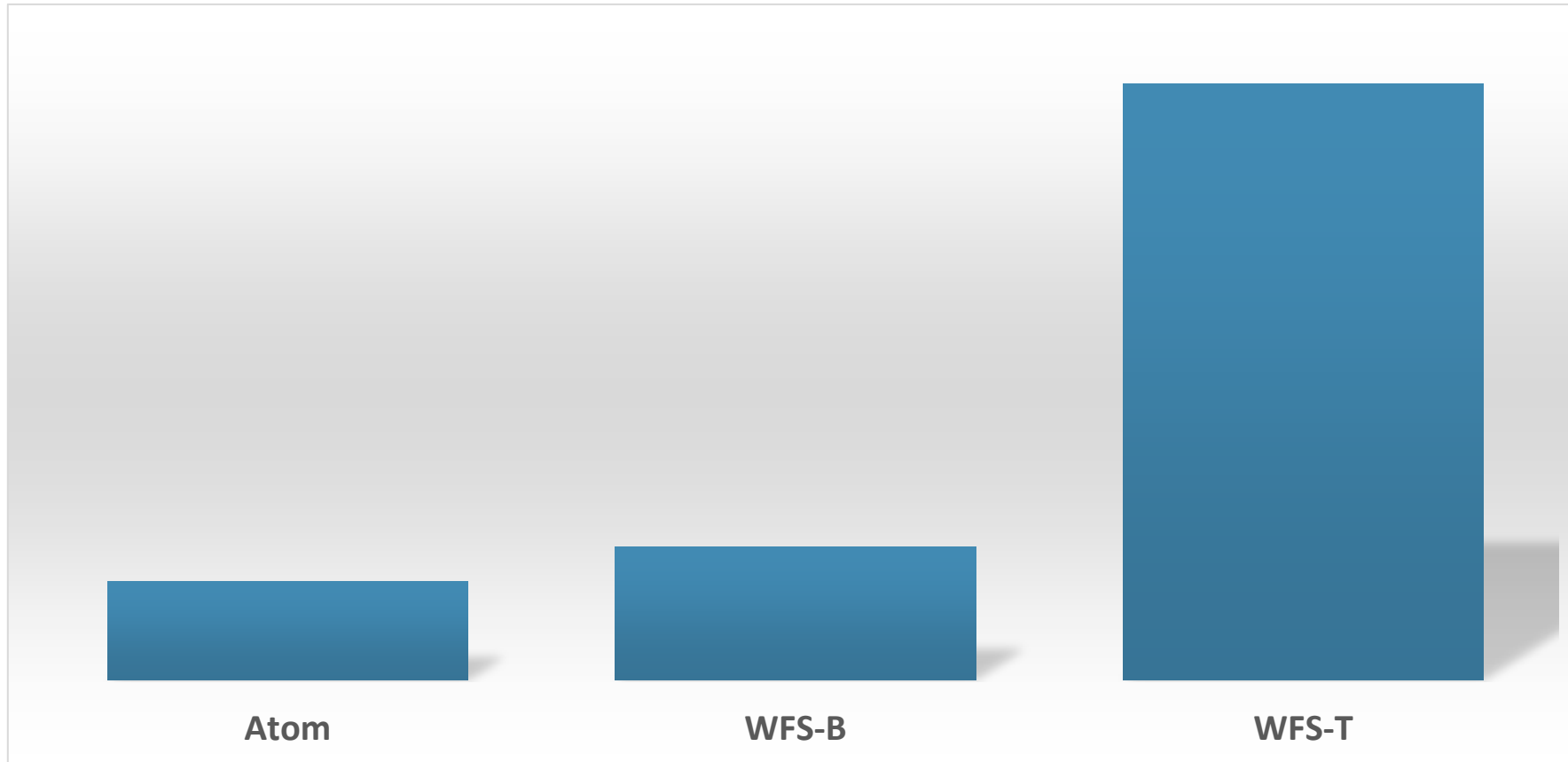
*Note: For Harmonisation, Integration and Deployment, insufficient data is available.*

# Cost Factors: License Type

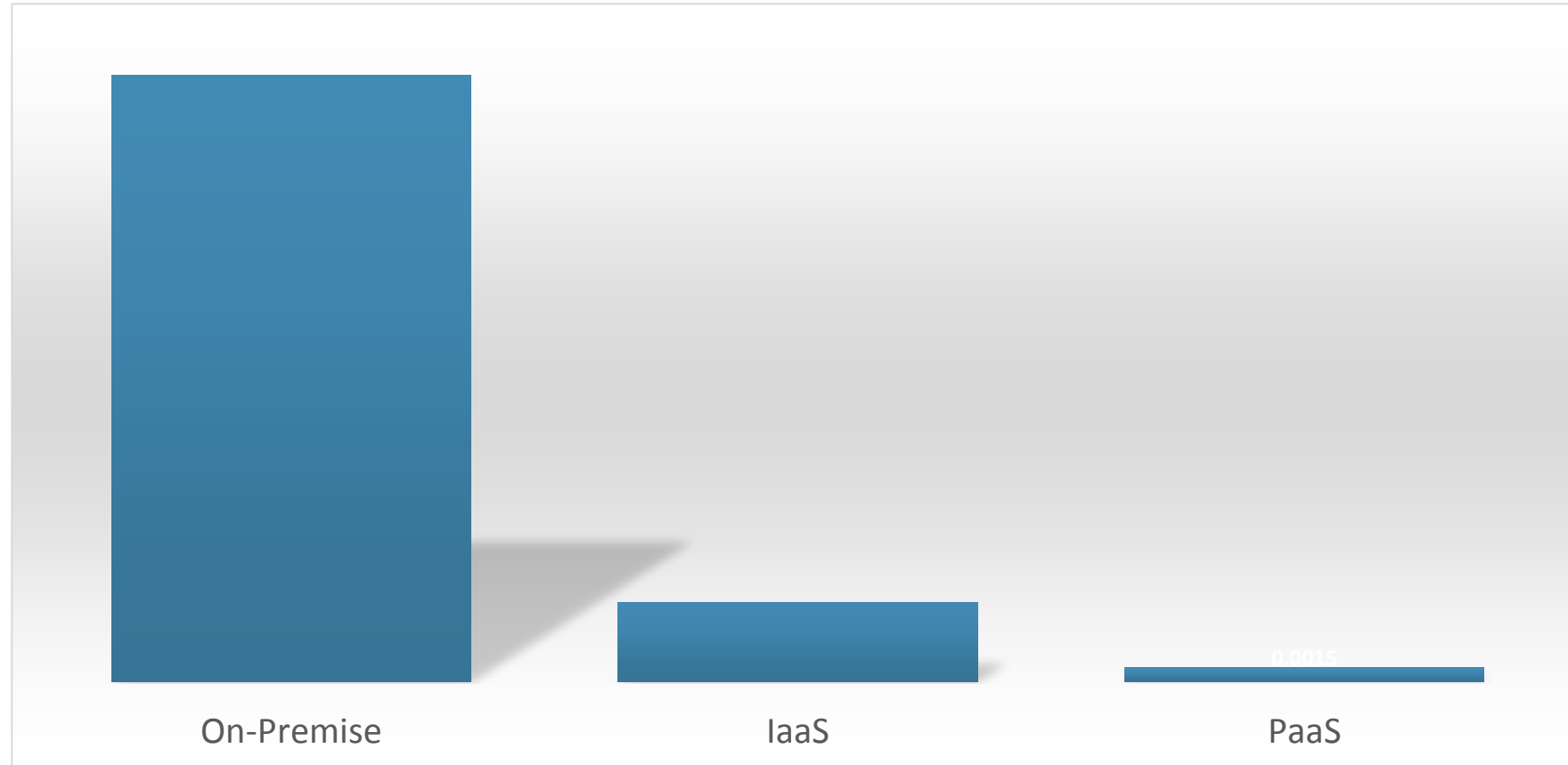


*Note: Removal of two outliers reduces the factor to 2.8.*

# Cost Factors: Download Service Type

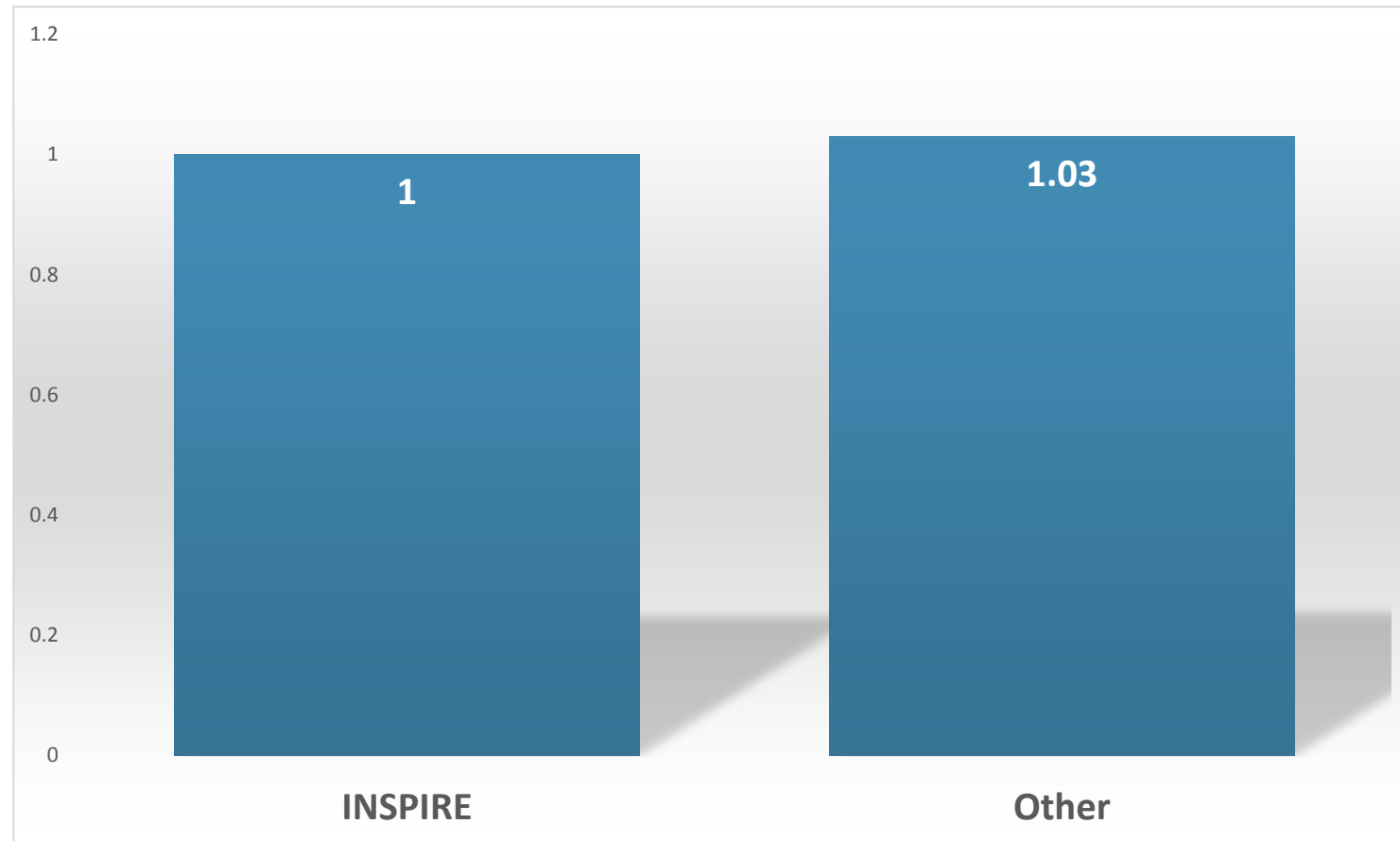


# Cost Factors: Hosting and Operations Model



*Note: There are only four confirmed Software as a Service projects.*

# Cost Factors: INSPIRE or not?



*Not significant at all!*

# Cost Reduction Potentials

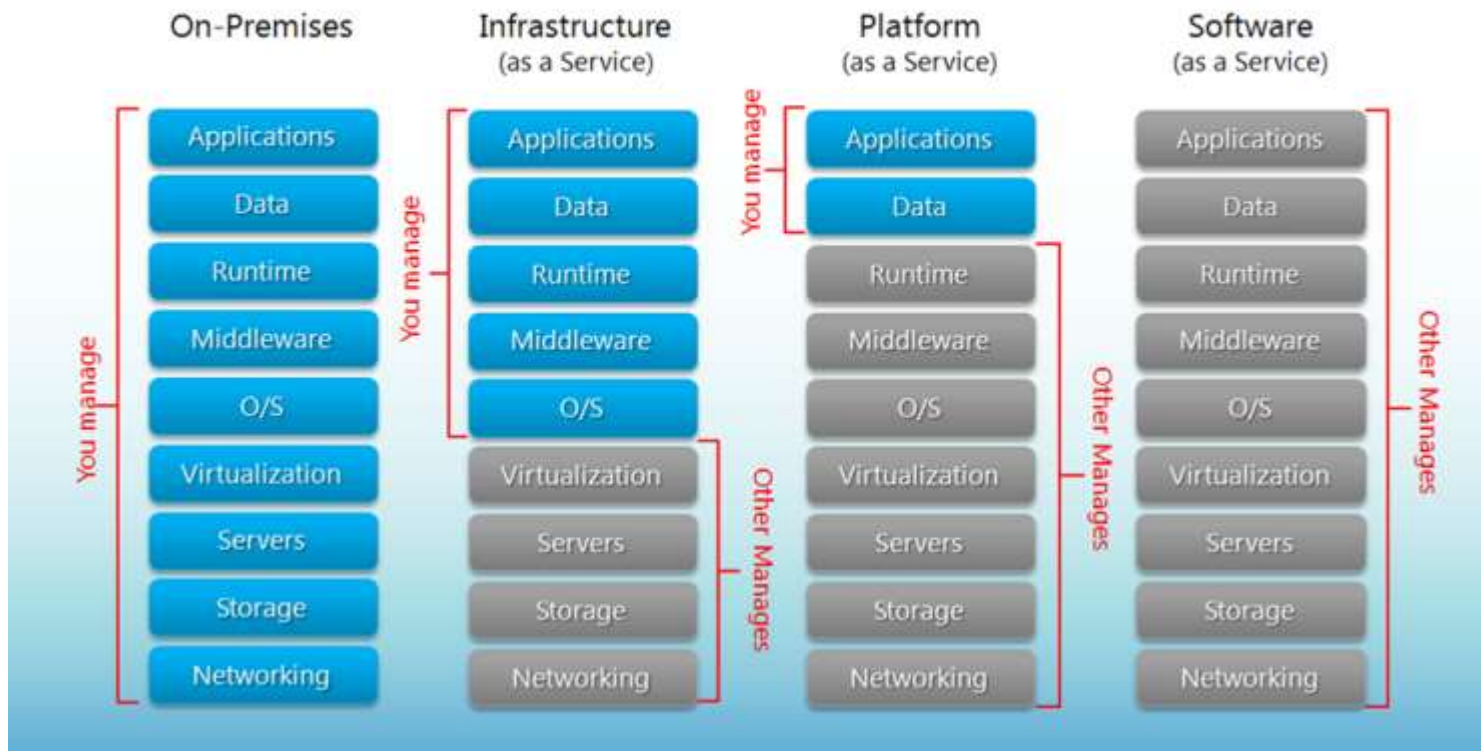
Service Deployment Models

Service Types

Shared Software Maintenance

# Service Deployment Models

## Separation of Responsibilities

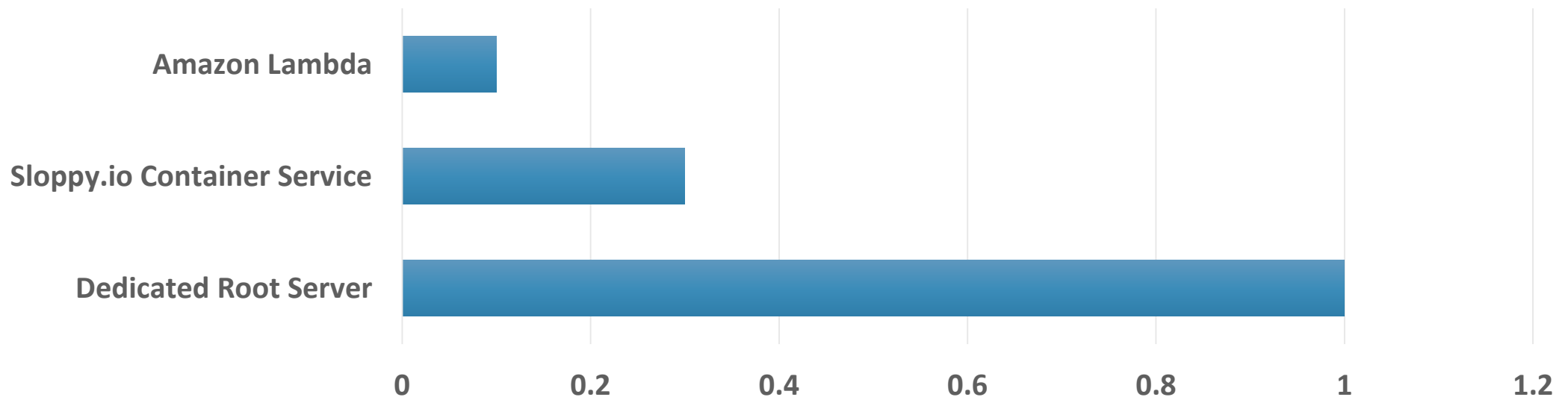


- Move to SaaS/PaaS has highest overall cost reduction potential
- SaaS/PaaS data protection regulations and security can be problematic
- Compliant hosting is **>3x expensive** as basic hosting
- **INSPIRE data is meant to be published!**



# Service Types

- Main potential in WFS-T implementation as SaaS
  - <https://github.com/georocket/georocket>
- Example potential for a Transformation Service SaaS:



# Shared Software Implementation and Maintenance

*High percentage of GI systems is custom-built or heavily customised*

## **Approach 1: Open Source Tools**

- Data indicates Open Source to be effective for INSPIRE implementation
- Concentrate resources on core projects

## **Approach 2: Commercial Products**

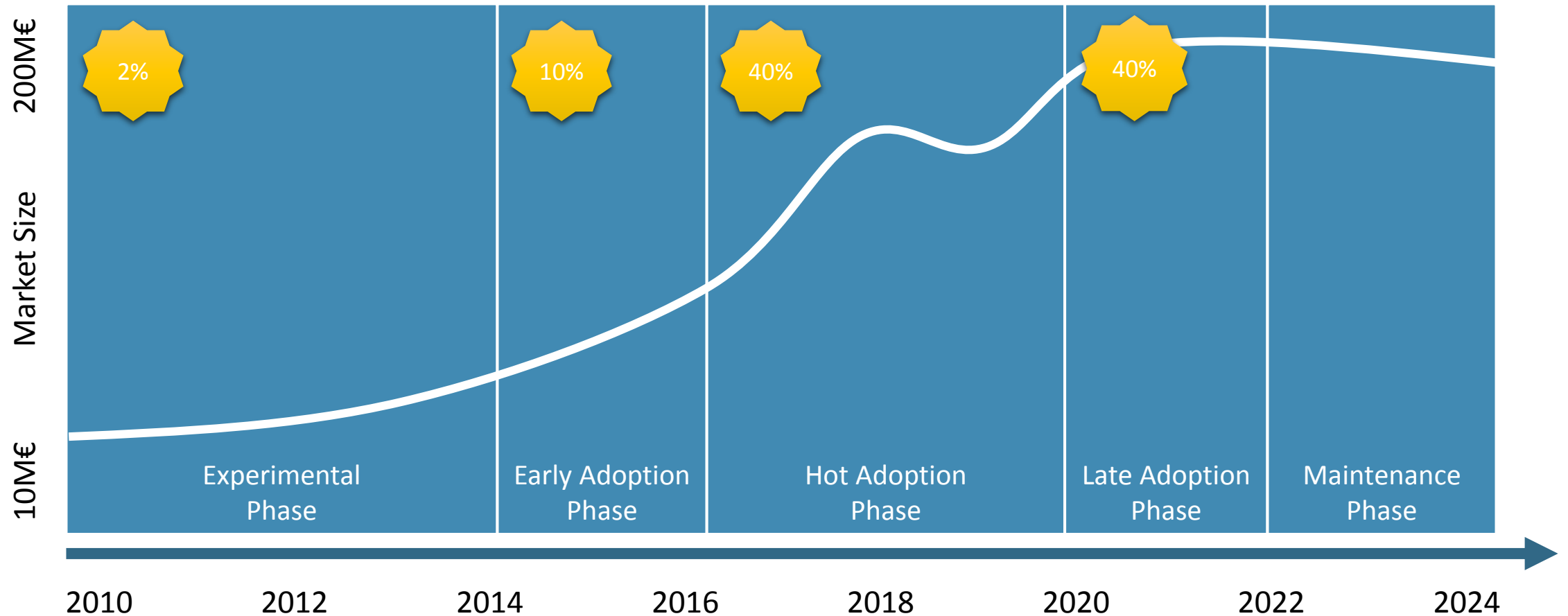
- Allows more attractive business models, leads to more investment
- Higher investment enables better User Experience

# Outlook

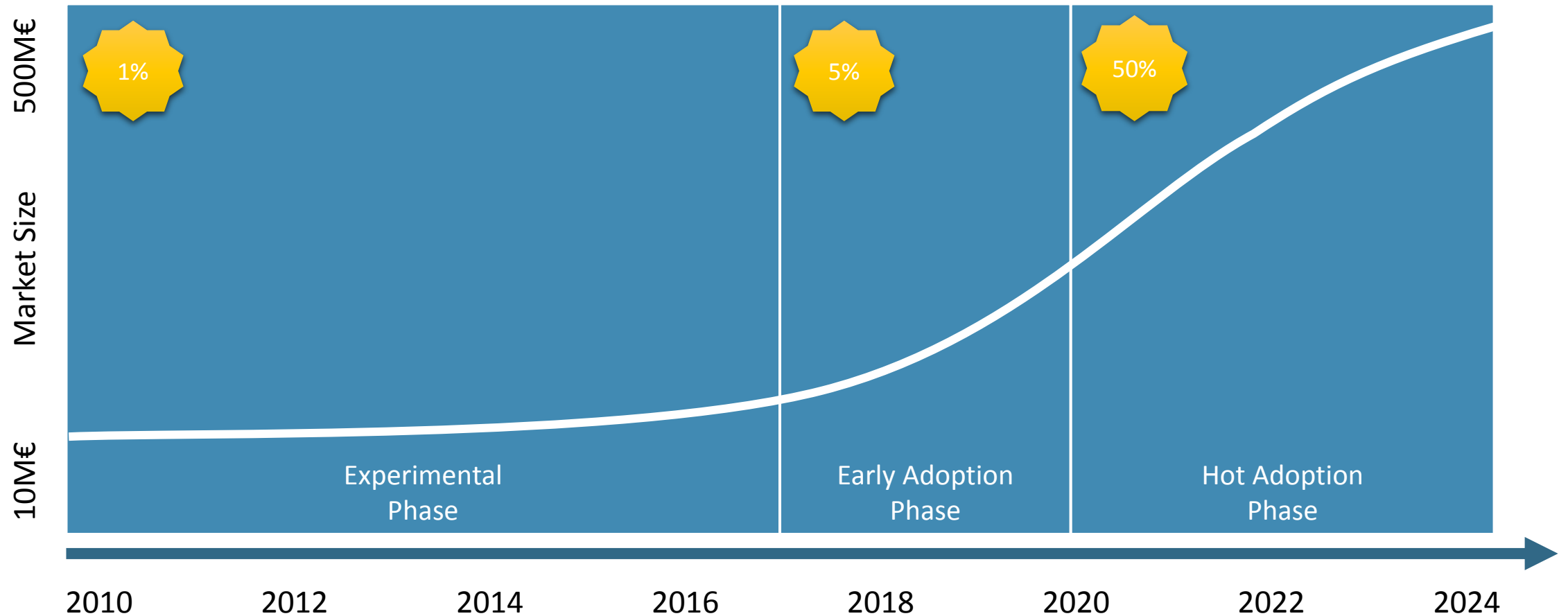
Provider and Consumer Markets

INSPIRE as a Service

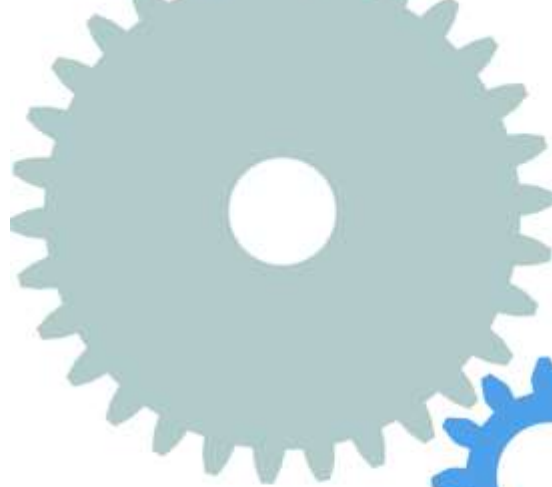
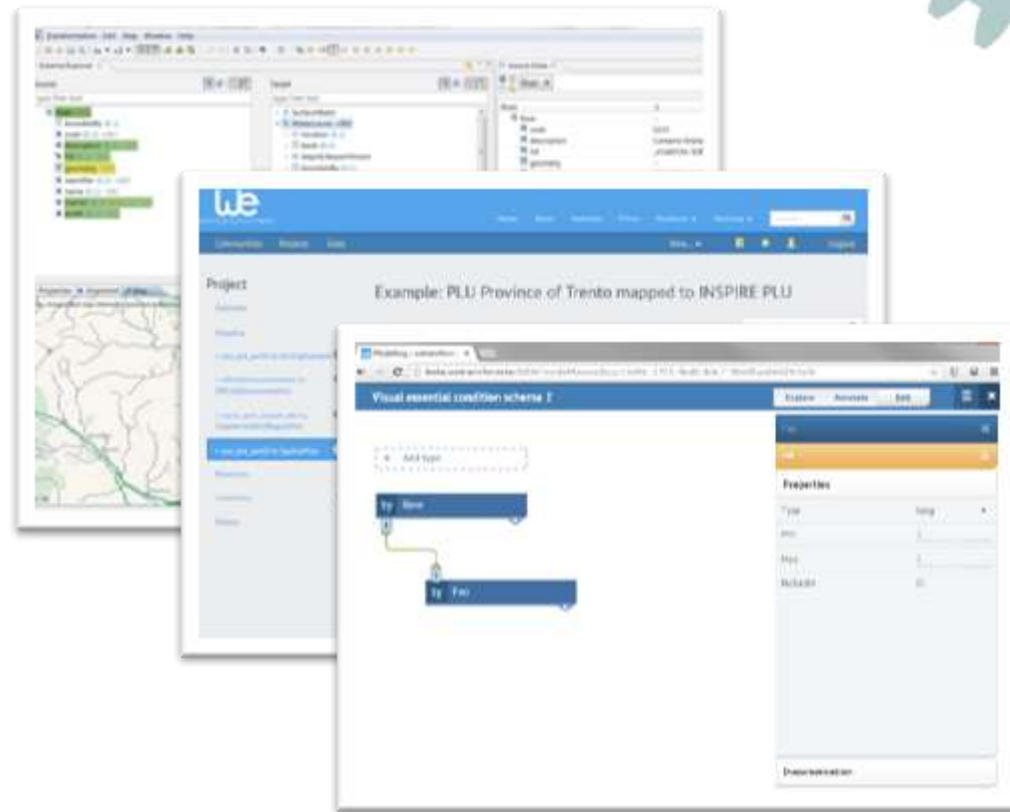
# Phases in the INSPIRE Data Provider Market



# Phases in the INSPIRE Data Consumer Market



# The Platform



**Transform**  
Author with real-time feedback



**Analyse**  
Learn how data models are used

**Explore**  
Understand even the most complex data models



**Manage**  
Integrated workflow from data modelling to transformation and sharing



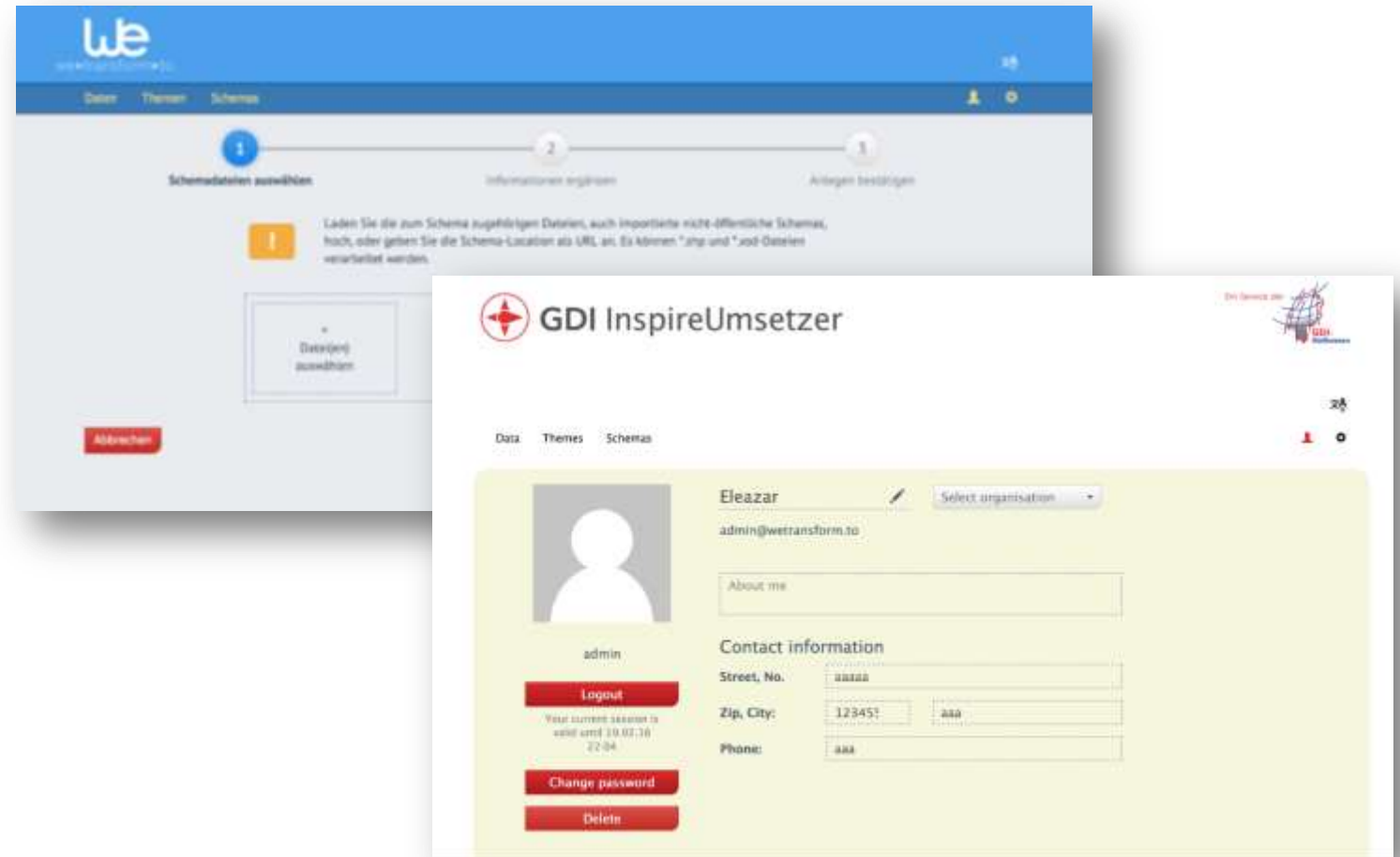
**Design**  
Create your information model from scratch or start from one of the 5.000+ supported schemas



**Publish**  
Provide data as services and exchange models with your community

# inspire»gis

- Software as a Service solution to fulfill INSPIRE obligations
- Complies with INSPIRE Performance rules, European Data Protection Guidelines and ISO 27001
- Constantly updated with new INSPIRE versions
- Metadata integration and publishing
- Highly Cost Effective



Contact us!

+49 6151 155 408

[info@wetransform.to](mailto:info@wetransform.to)

[www.wetransform.to](http://www.wetransform.to)

[www.linkedin.com/company/wetransform-gmbh](http://www.linkedin.com/company/wetransform-gmbh)

[https://twitter.com/tr\\_xodi](https://twitter.com/tr_xodi)