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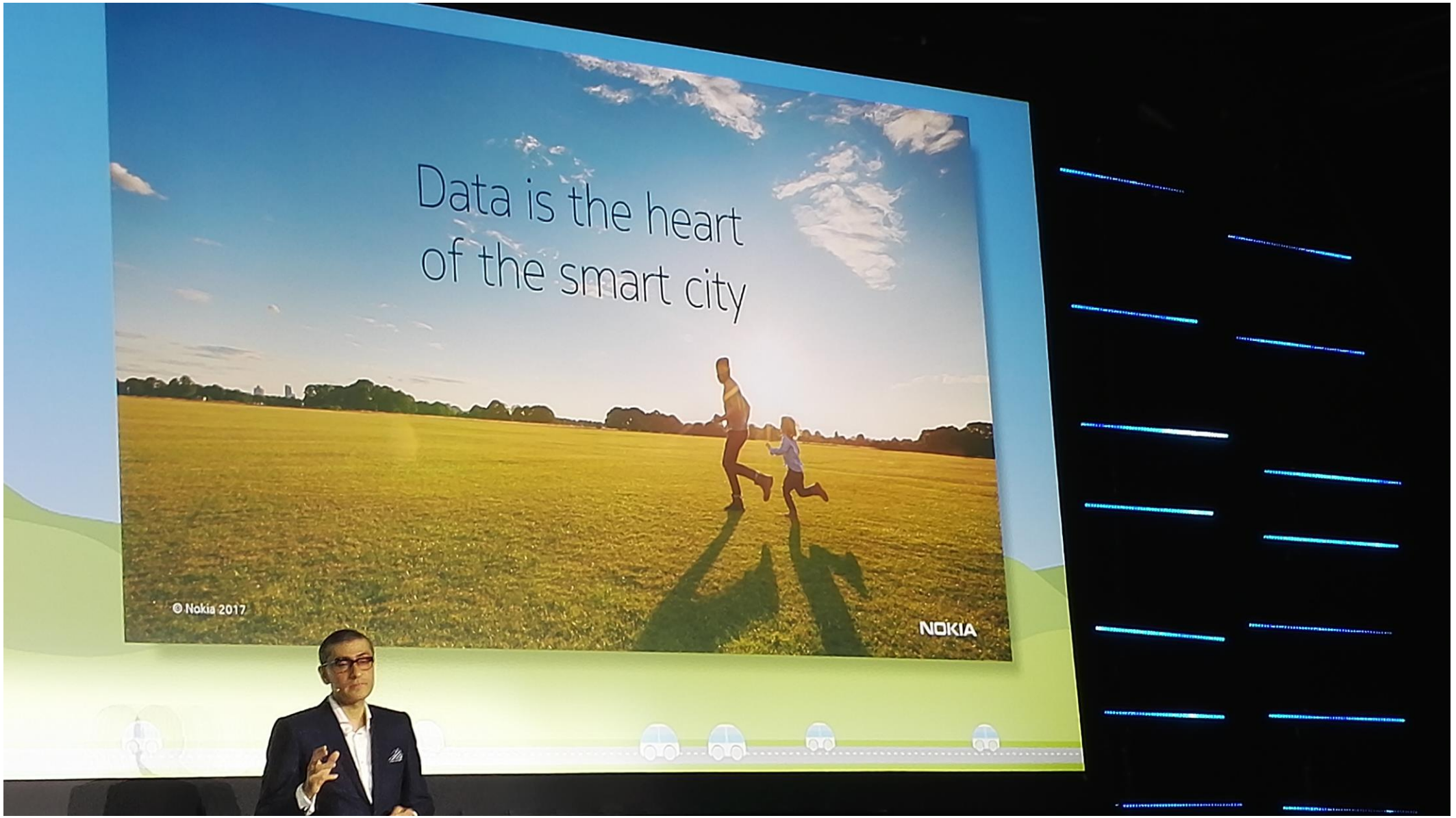
The way to a spatially enabled Smart City
Case: City of Helsinki

Jaana Mäkelä

Kartdagar 2018
20.3.2018



Source: Rajeev Suri, CEO Nokia, 12.12.2017,
100 Lasissa! Smart City and Environment

YEAR 2010: CHALLENGES IN THE MANAGEMENT AND USE OF SPATIAL DATA

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- Spatial data was produced and managed independently in subdivisions
- Several copies of the same dataset
- Spatial data was not easily available for other subdivisions – they even had to pay for the data
- Top management did not understand the benefits of enhanced use of spatial data
- The employees did not have competences to use spatial data and technologies

OBJECTIVES OF THE DEVELOPMENT PROGRAM OF SPATIAL DATA 2011-2014

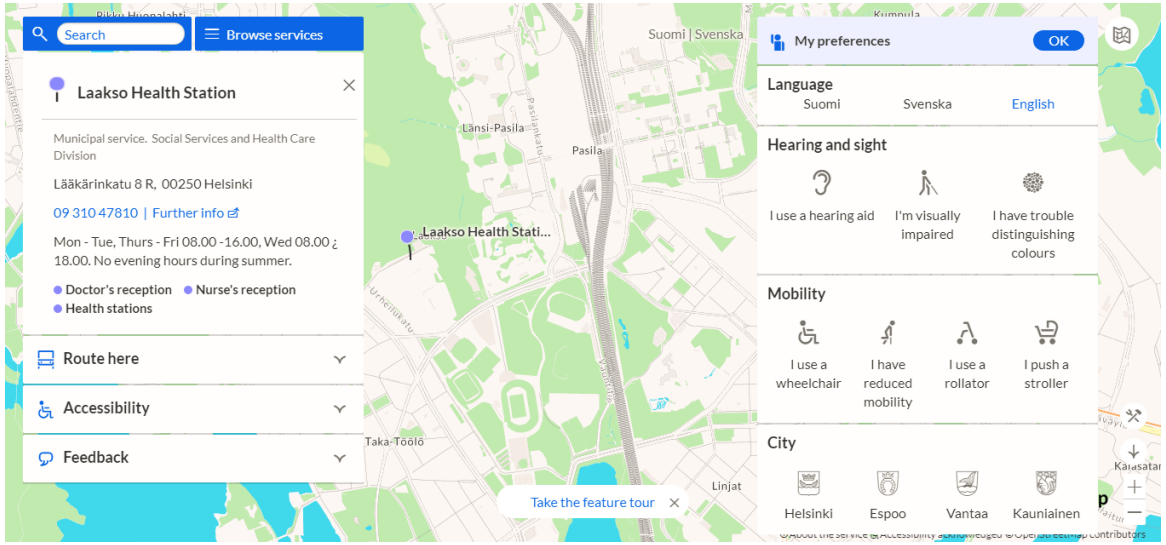
- Mission:
  - The city should use spatial data to serve effectively its citizens, businesses and other actors
- Vision:
  - By 2015 Helsinki has a coherent, high quality and effective spatial data infrastructure that supports the achievement of the goals of the strategy
- Strategy:
  - The city proceeds from the diversified spatial data management and use to a new level where the management and extensive use is based on common enterprise architecture. The development is led at city level.

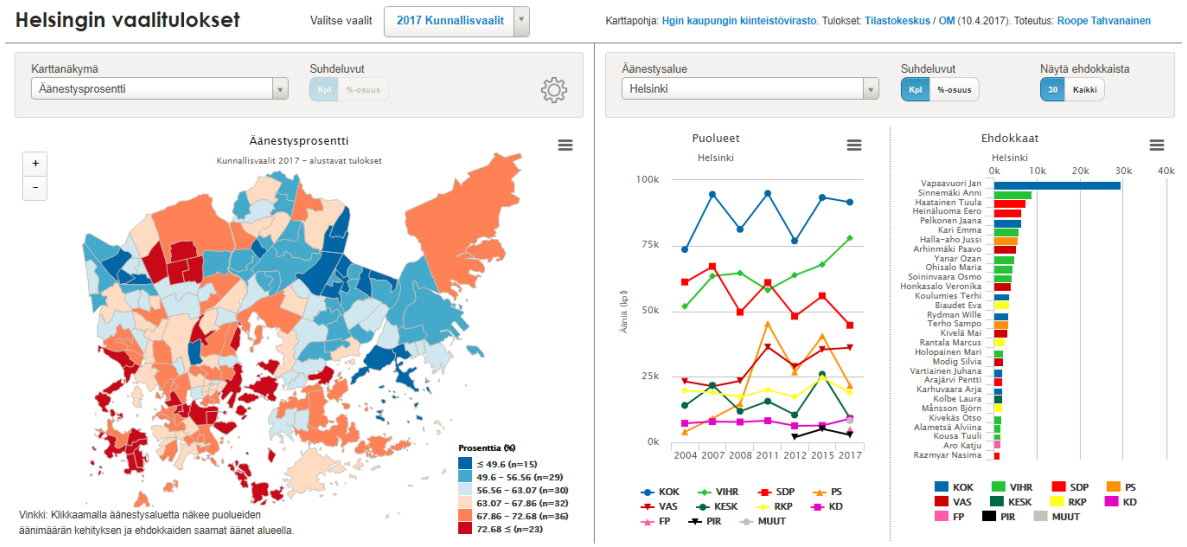
CONCRETE DEVELOPMENT ACTIONS FOR 2011-2014

- Define spatial data policy
- Harmonize spatial data content
- Develop spatial data infrastructure
- Increase employees' competence to use spatial data
- Simplify operational structures

HELSINKI STARTED TO OPEN SPATIAL DATA IN 2011

- Make spatial data easily available as a self service
- Have as wide user community as possible: decision makers, employees of the city, citizens ja private companies
- Promote the use of spatial data in eServices and mobile applications

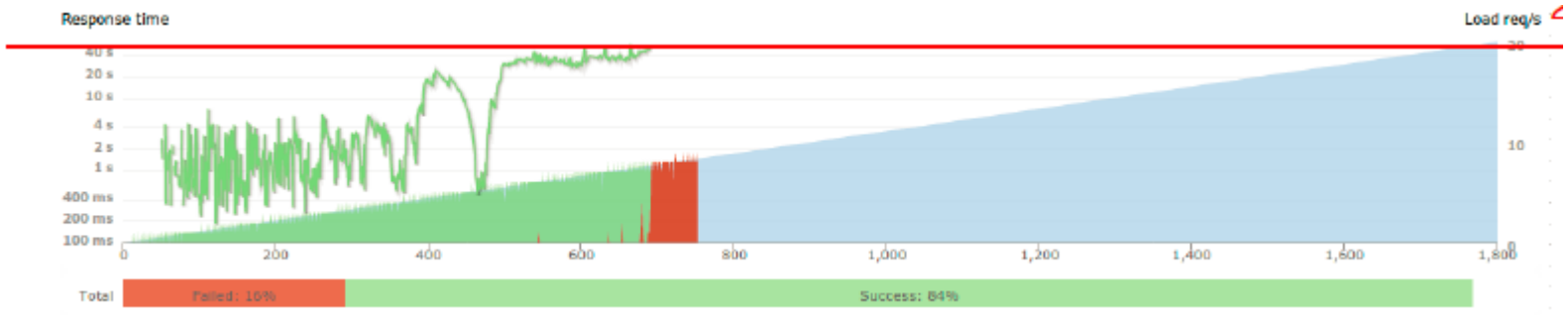




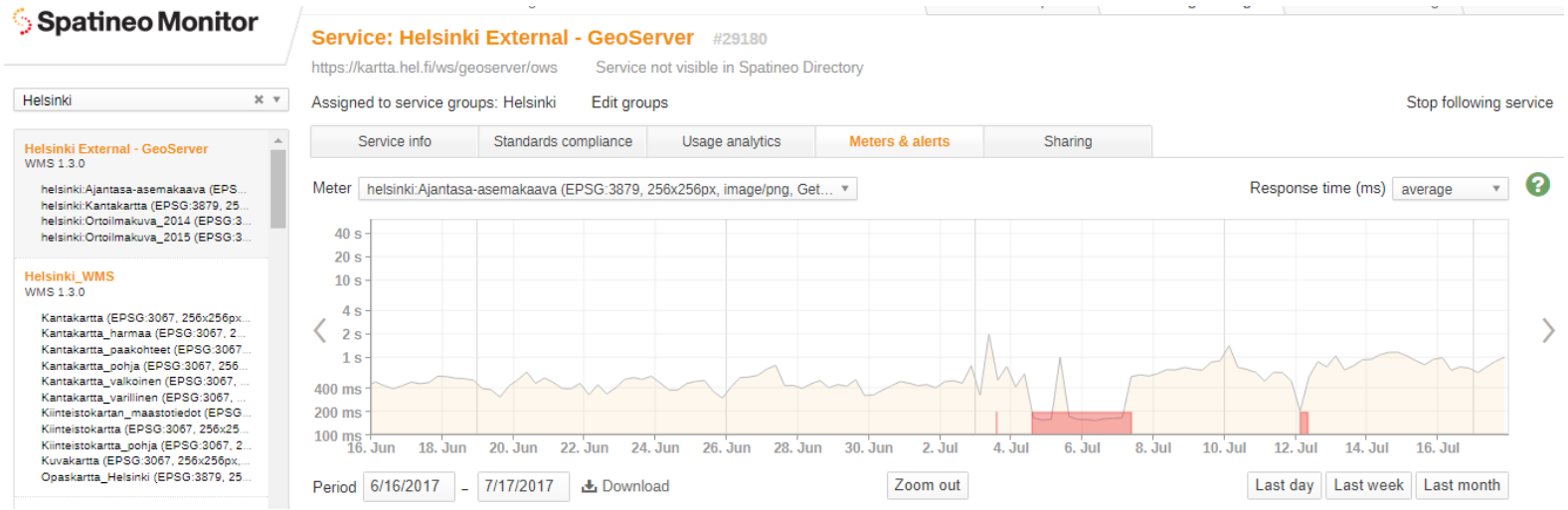
https://palvelukartta.hel.fi/, https://hri.fi/data/fi/showcase

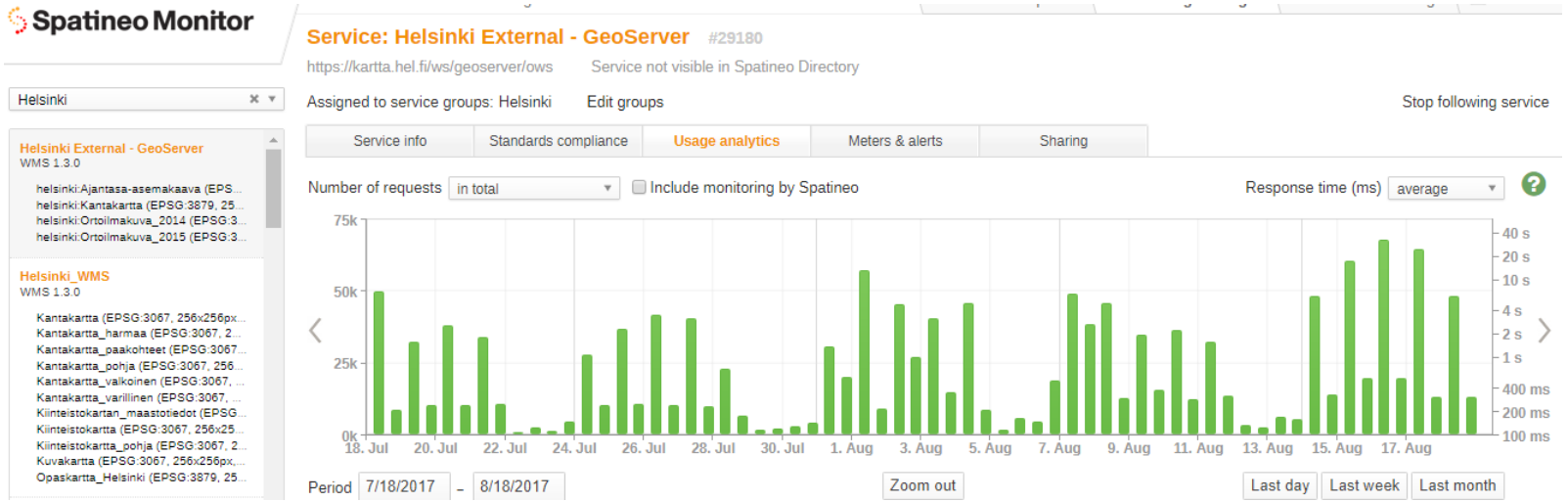
ENSURE THE CAPACITY OF SPATIAL WEB SERVICES

- In 2014 Helsinki changed the technical platform of their spatial web services and wanted to ensure the capacity of services
- Spatineo did as a consulting project performance testing of the services with Spatineo Performance and compared the test results to those from 2013 (same services on the old platform)



HELSINKI HAS ENSURED THE QUALITY AND ANALYSED THE USE OF SPATIAL WEB SERVICES





REPORTS SHOW VALUABLE INFORMATION ABOUT THE IMPACT OF SERVICES

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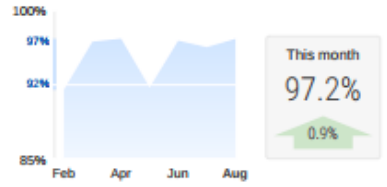
20 services included in the report, 13 with missing data

Executive report
August 2016

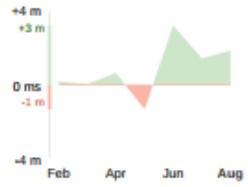
Quality of Service and network traffic

Average service availability %



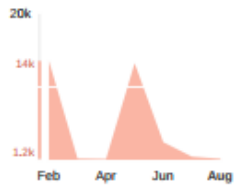
This month
97.2%
0.9%

User impact of service speed improvement*



This month
+2 m

Est. requests hindered by service interruptions



This month
~1.3k
-18%

Longest service interruptions

Date	Service title	Time
8/8	GeoServer Web Map Service	5.6 h
8/8	GeoServer Web Feature Service	5.5 h
8/23	Helsinki_WMTS	2.9 h
8/25	GeoServer Web Feature Service	1.5 h

× marks announced interruptions

2518 service interruptions with a combined duration of 21 days, out of which 21 days were unannounced

*) Difference from the latest six-month average response time multiplied by the monthly request count for all included services

Most used services

Service title	Requests	Users	Transfer	Type	Service ID
Helsinki Internal - GeoServer	25M	146	594 GiB	WMS	#29179
Helsinki External - GeoServer	883k	3	73 GiB	WMS	#29180
Helsinki_WFS	9.8k	2	176 MiB	WFS	#30966

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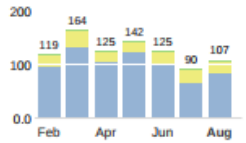
20 services included in the report, 11 with missing data

Executive report
August 2017

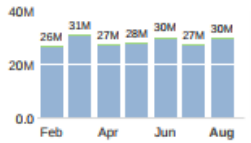
Users and service usage

Number of users*



This month
107
19%

Number of requests



This month
30M
8.6%

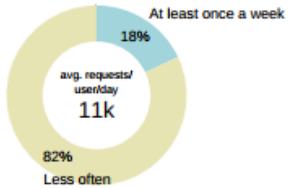
WMS WFS WMTS

Usage compared to previous years

Yearly totals January - August

	Users		Requests	
2017	1.0k	-26%	226M	+32%
2016	1.4k	+165%	171M	+245%
2015	514		50M	
2014	0.0		0.0	
2013	6		4.6k	

User visit frequency



Most popular data sets

Most requests by layer name / feature type

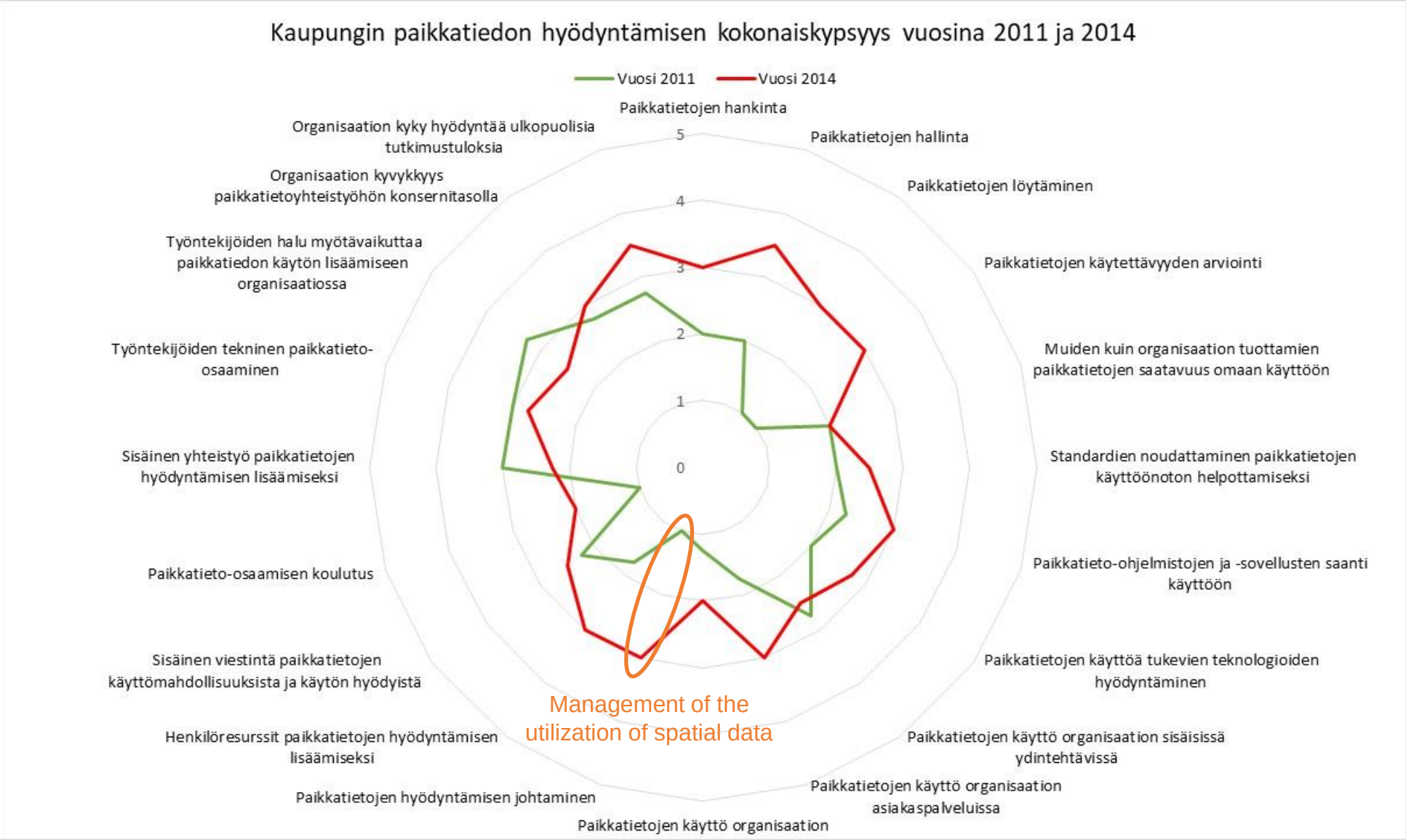
Name	Requests	Users	Service Type	Service ID
Kantakartta	3.9M	37	WMS	#29179
hel:Opaskartta_tekstit	3.1M	6	WMS	#29179
hel:Kantakartta_pohja	3.0M	7	WMS	#29179

Trending data sets

Biggest consecutive increase in user base in last three months, by layer name / feature type

Name	Users	change	Requests	Service Type	Service ID
hel:Maanomistus_sisainen	4	+300%	26	WMS	#29179
hel:Yleiskartta_8m	5	+150%	462k	WMS	#29179
hel:Kiinteistokartta_pohja_2016	8	+100%	900	WMS	#29179

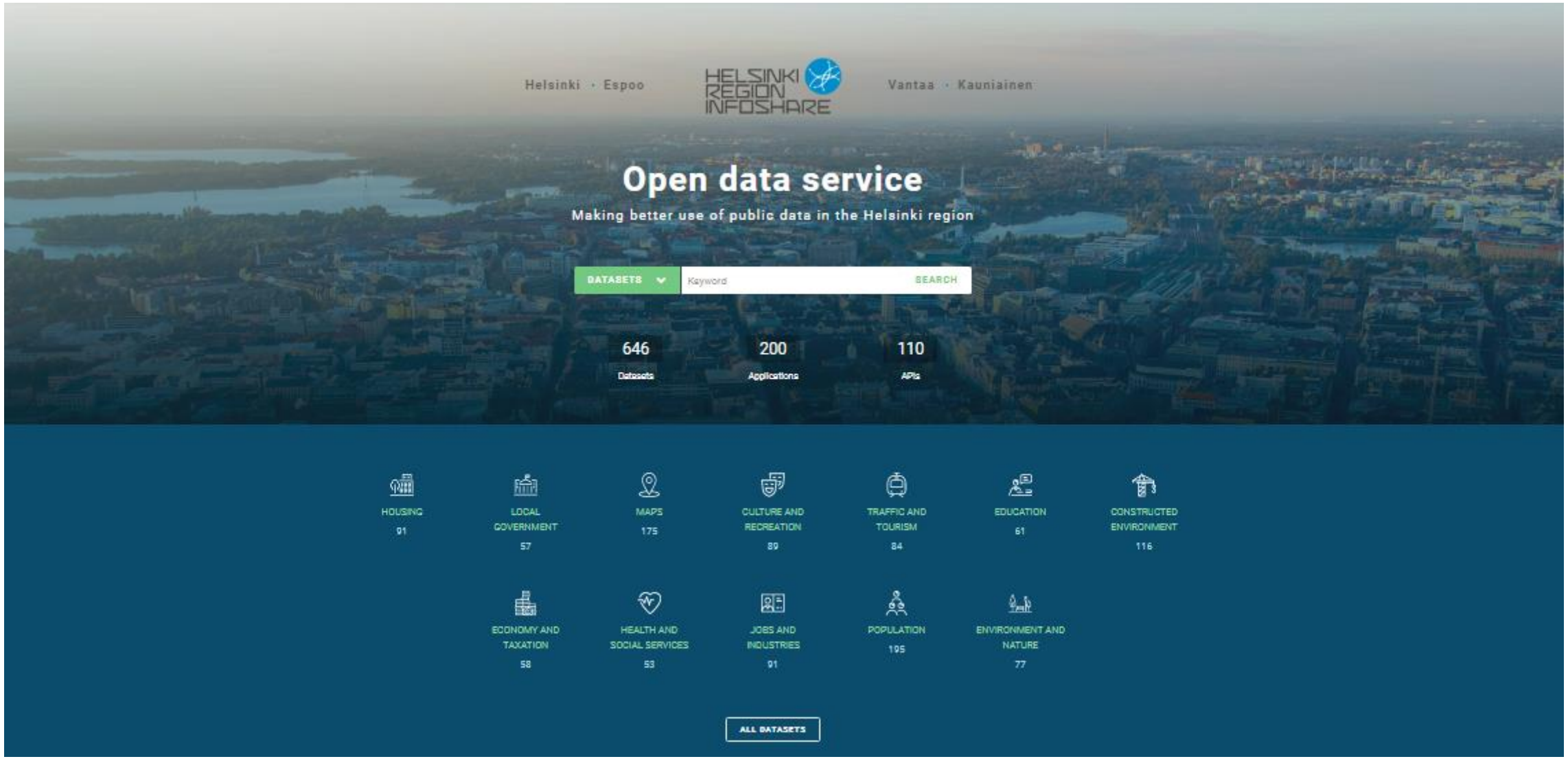
WERE THE GOALS OF THE DEVELOPMENT PROGRAM 2011-2014 ACHIEVED?



- **Helsinki is the world's leading city in opening up and utilizing public data.**
- Helsinki aims to be the city in the world that makes the best use of digitalization.
- Faster decision making and better capacity to predict and react
- Find solutions to significant global challenges
  - Prevention of climate change
    - Energy efficiency of buildings, reduction of traffic emissions
- Helsinki serves as a testing platform in the commercialization of new smart mobility solutions enabled by current transport legislation (incl. the Mobility as a Service model)

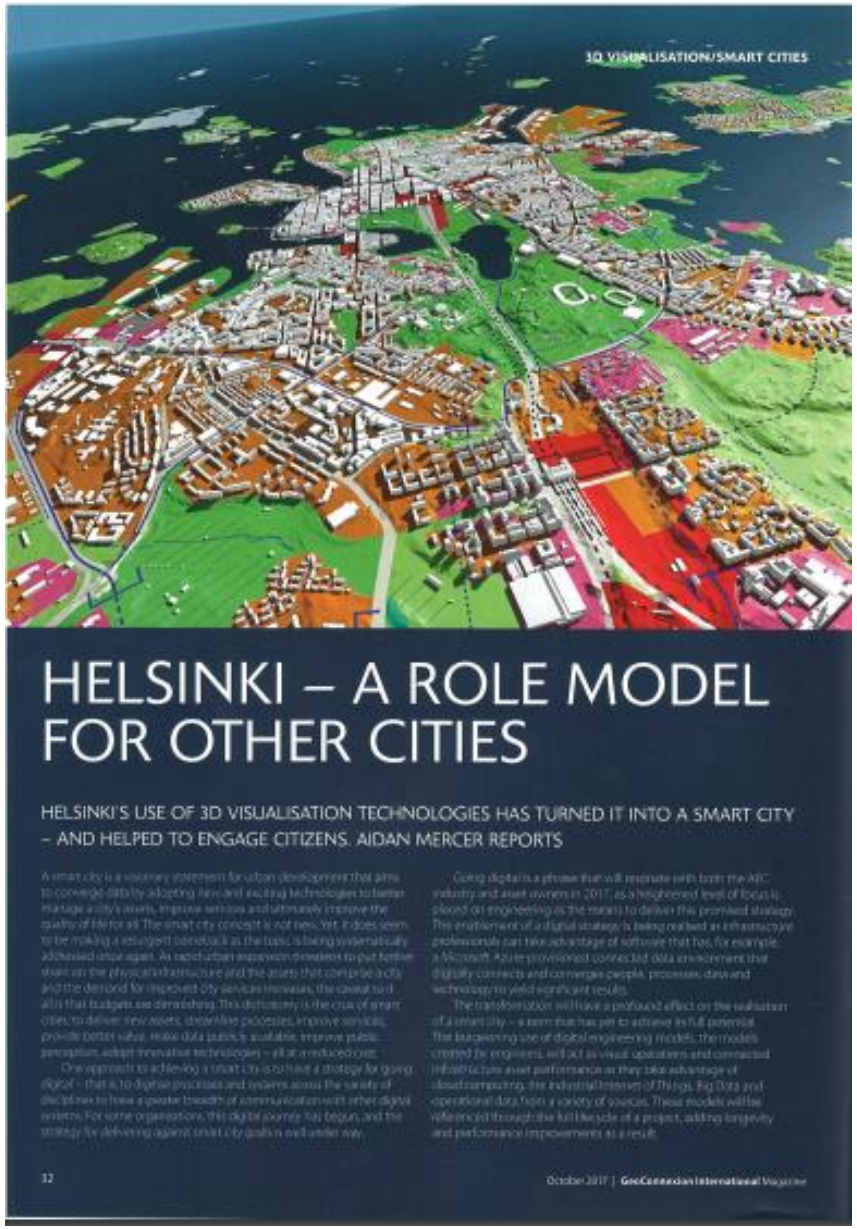
Source: https://www.hel.fi/helsinki/en/administration/strategy/strategy/city-strategy/

OPEN DATA AND APPLICATIONS AVAILABLE IN HELSINKI REGION INFOSHARE



https://hri.fi/en_gb/

HELSINKI – THE SMART CITY



cooperation units that help to develop the two models beyond their intended use.

Making data open and available

This 3D reality mesh was made available for the public last December in an open format for anyone to view and access. But rather than just being a visually compelling medium, the reality mesh has far greater use as it can also reference other geospatial data sources. By connecting other data sources to this model, Helsinki has made this model even more intelligent.

As a result, the city is currently working on no fewer than 12 pilot projects. One highlight is a City GML/Inframodel/IFC collaboration that

ContextCapture delivered a high-quality reality mesh for the City of Helsinki

- 5D (+time and cost) project management tool for city development
- Citizen interaction platform for city planning

ENERGY CONSUMPTION OF BUILDINGS

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https://kartta.hel.fi/3d/atlas/#/

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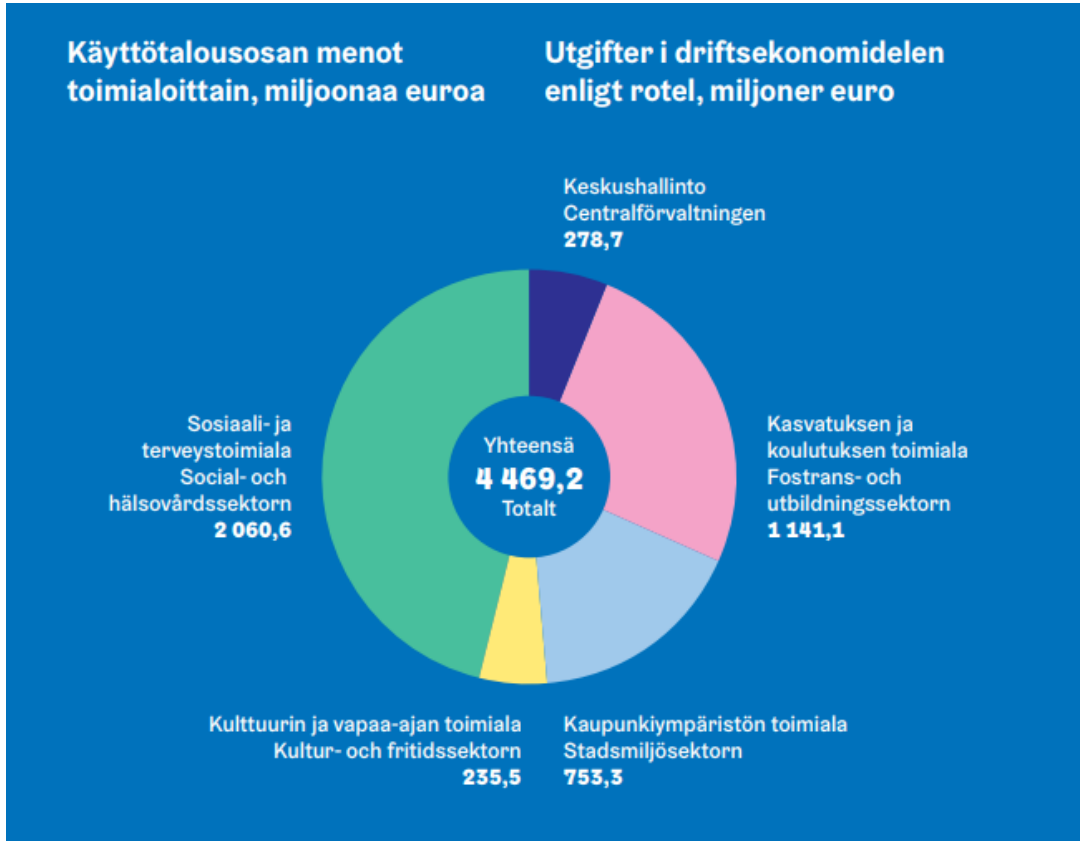
- The city has estimated that just opening up the data has resulted in **1–2 percent budget savings**, because projects are now undertaken with more background knowledge.

Helsinki
Helsingfors

Talousarvio
Budget
2018



http://www.muotoilutarinat.fi/en/project/helsinki-region-infoshare/

Spatineo

Contact information:

spatineo.com

Jaana Mäkelä

jaana.makela@spatineo.com

Tel + 358 40 847 4008

JMSpatineo