



mmeC

Brabantse Wouden

Jan Adriaenssens

Directeur publieke technologie

21 juni 2024

Imec drives the semiconductor roadmap









Technologie in de maatschappij

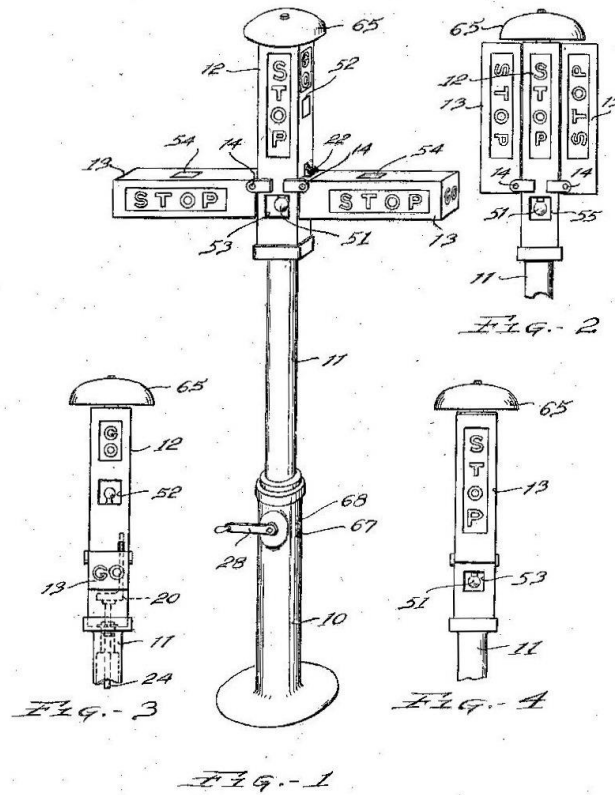
Kruispunten

Nov. 20, 1923.

G. A. MORGAN
TRAFFIC SIGNAL
Filed Feb. 27, 1922

1,475,024

2 Sheets-Sheet 1



INVENTOR
Garrett A. Morgan,
By Walter Macklin,
ATTORNEYS





Wegen en straten





Navigatie





Weer, klimaat, milieu

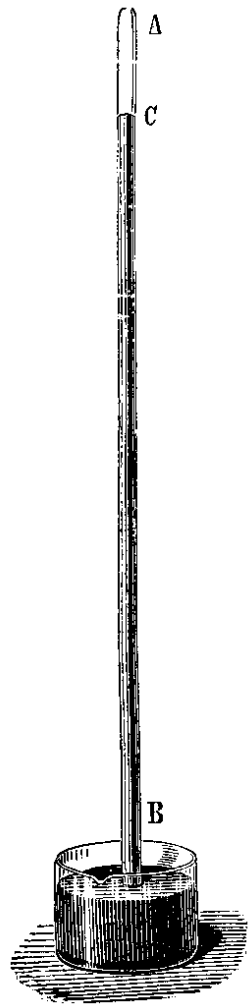


Fig. 275. — Baromètre à cuvette.

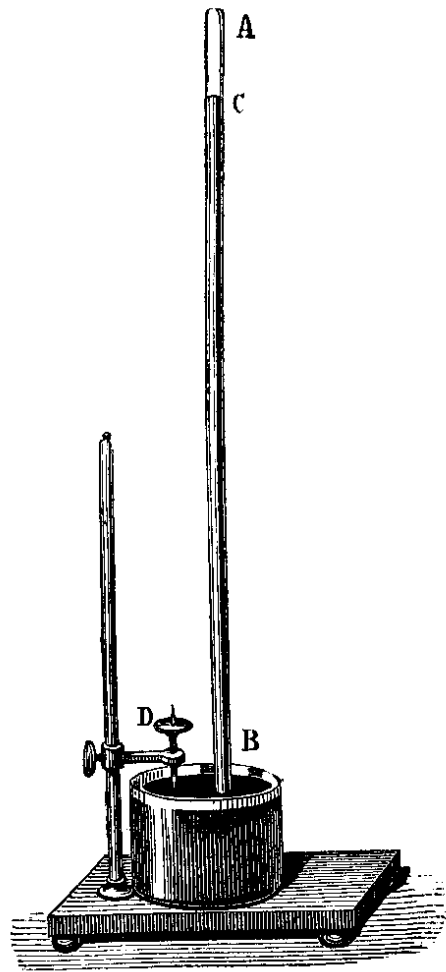
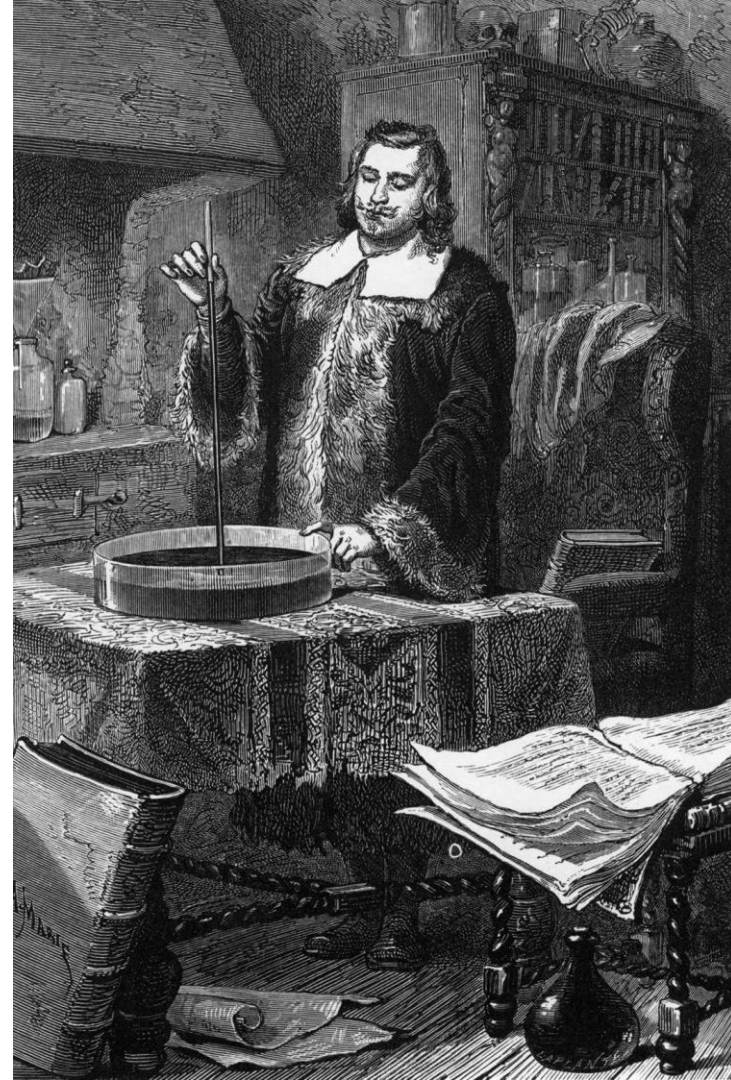
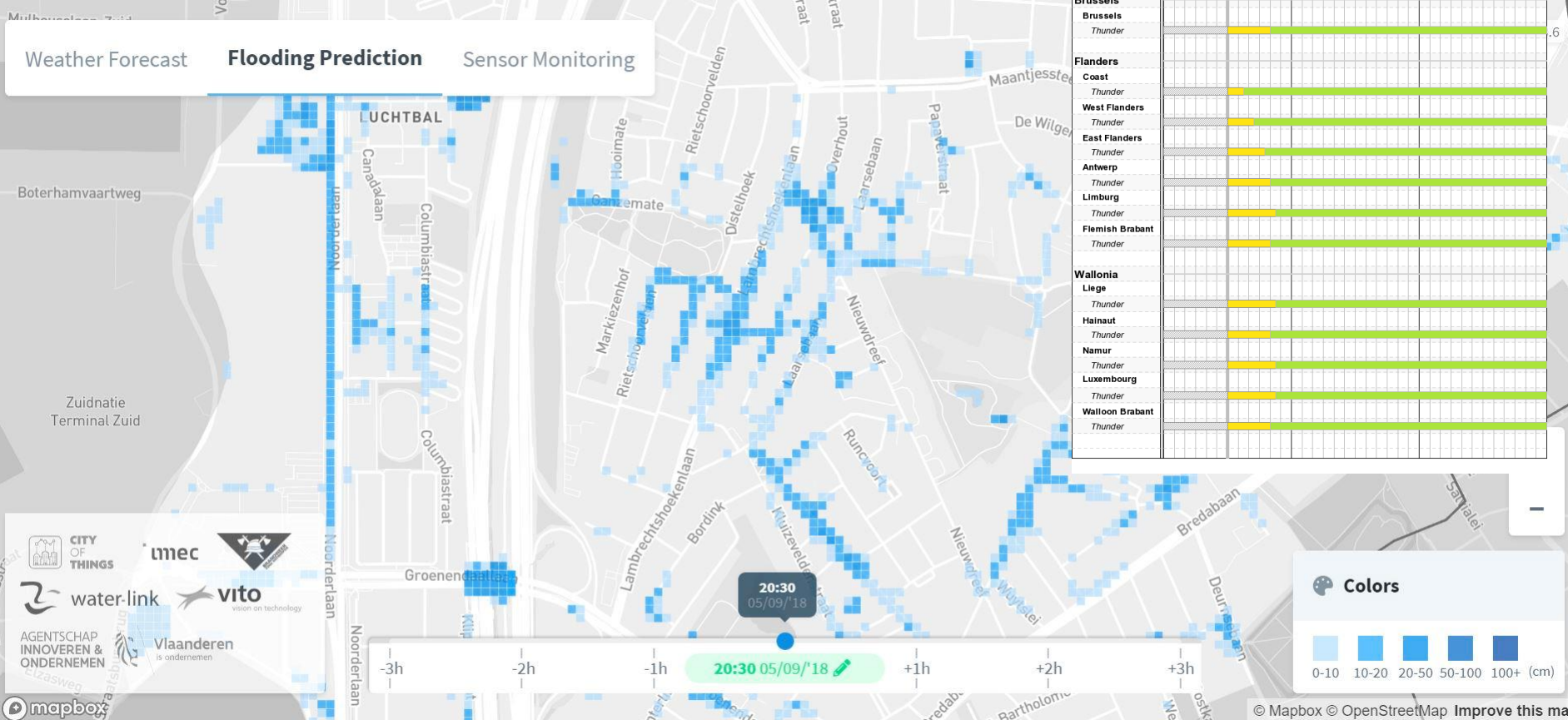


Fig. 276. — Baromètre à cuvette et sa pointe.





Weather Forecast **Flooding Prediction** Sensor Monitoring

CITY OF THINGS

imec

water-link

vito

AGENTSCHAP INNOVEREN & ONDERNEMEN

Vlaanderen is ondernemen

mapbox

Bossen

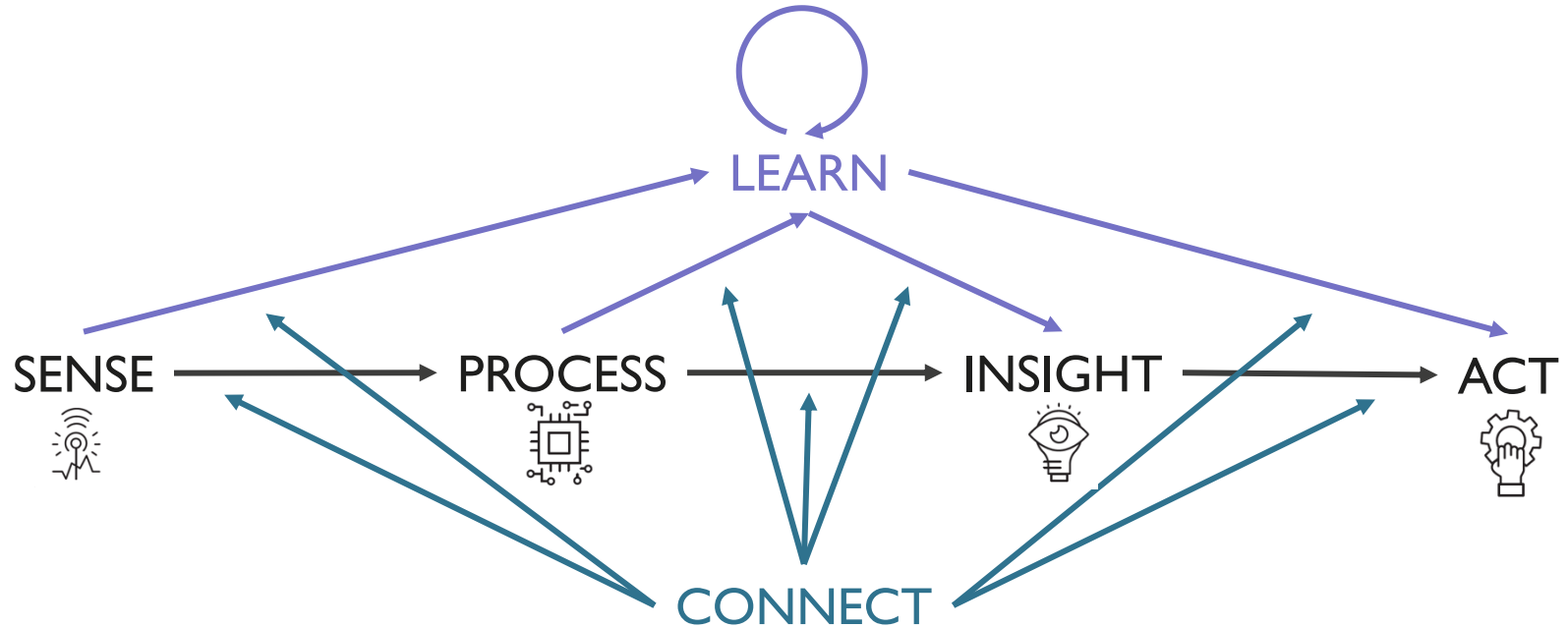




Technologisch 'ecosysteem'

Wat kan digitale technologie doen?

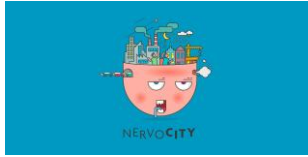
De keten (en de volgorde ervan)



City Of Things 2017-...

IoT-enabled smart cities

NervoCity: live-time stress measuring
(e.g. wristbands)



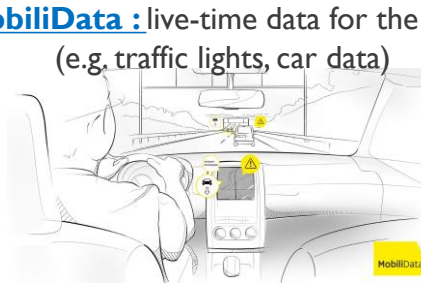
Living labs: measure impact
(e.g. smart lighting)



Air Quality: live-time measuring and extrapolation
(e.g. mobile units on postal vans)



MobilData : live-time data for the road
(e.g. traffic lights, car data)



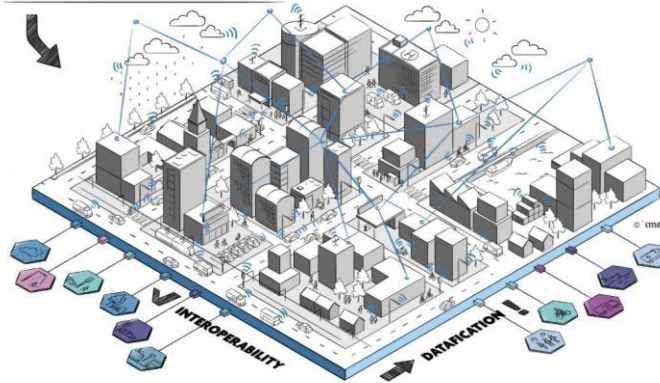
Internet of Water : live-time measuring
(e.g. water quality sensors)



Flooding prediction: combining
prediction algorithms with sensors
(e.g. water height, sewer capacity)



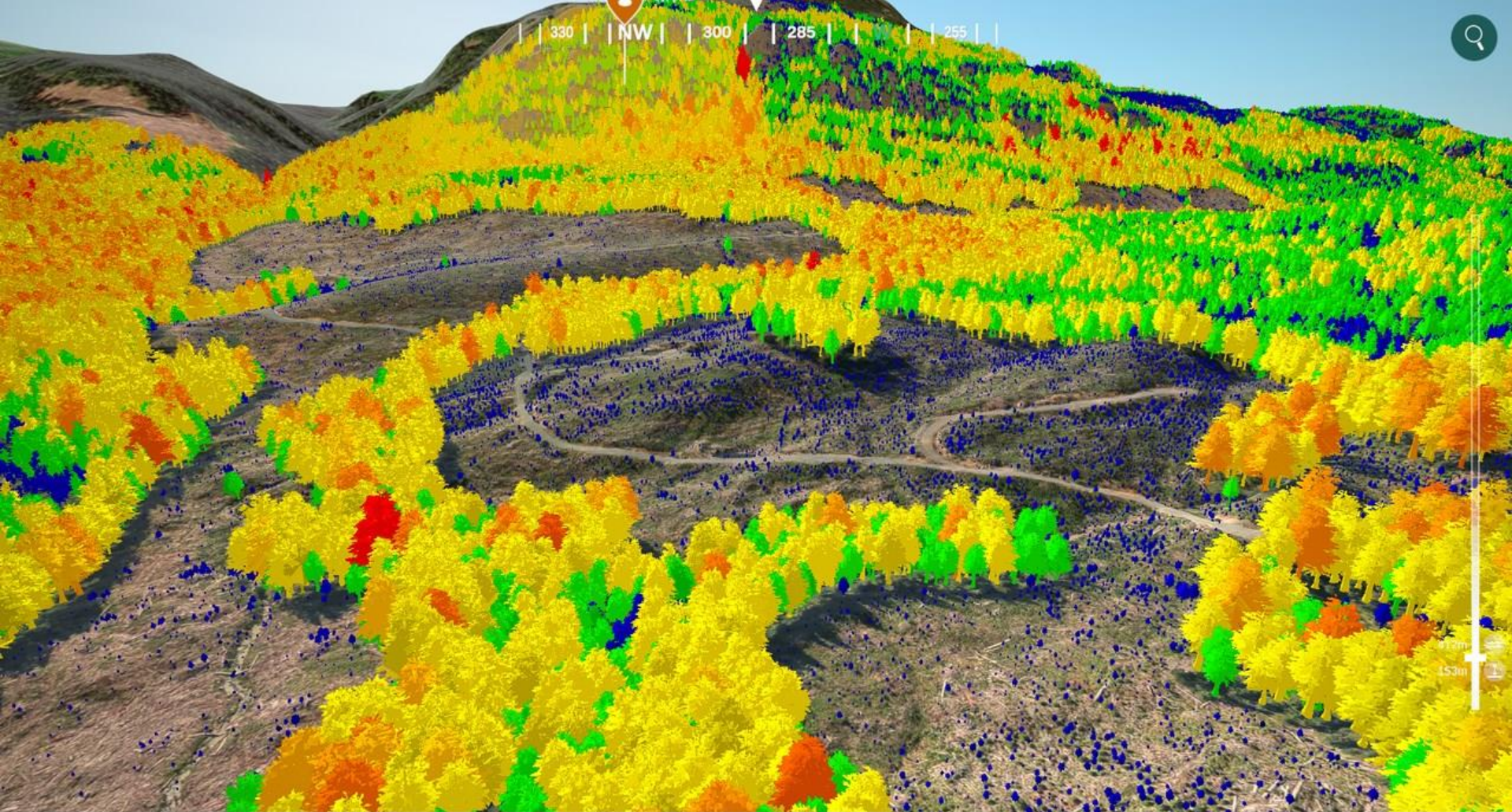
THE SMART CITY OF TOMORROW

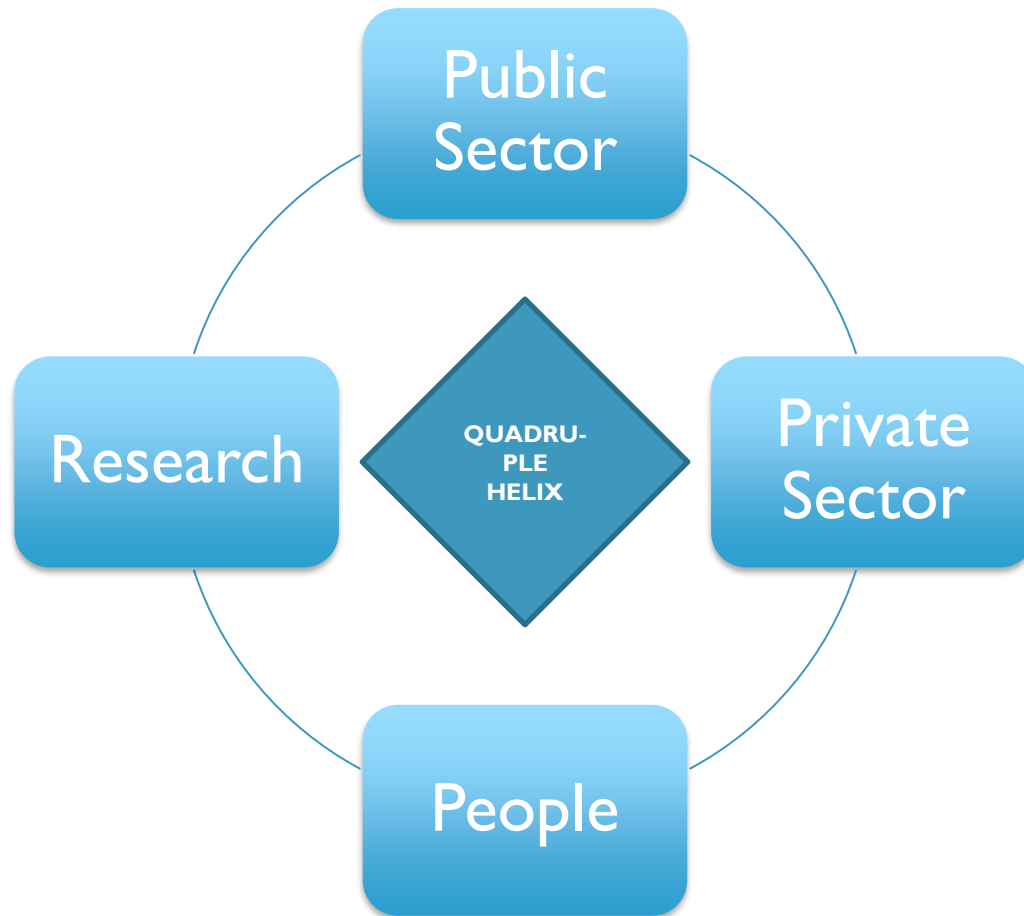


CityFlows: aggregate live-time mobility data and algorithms
(e.g. GSM, Telraam, traffic loops)









Spanningsvelden

De spitstechnologie verandert van aard...

Analoog/mechanisch vs digitaal



De spitstechnologie verandert van aard...

Traag vs snel



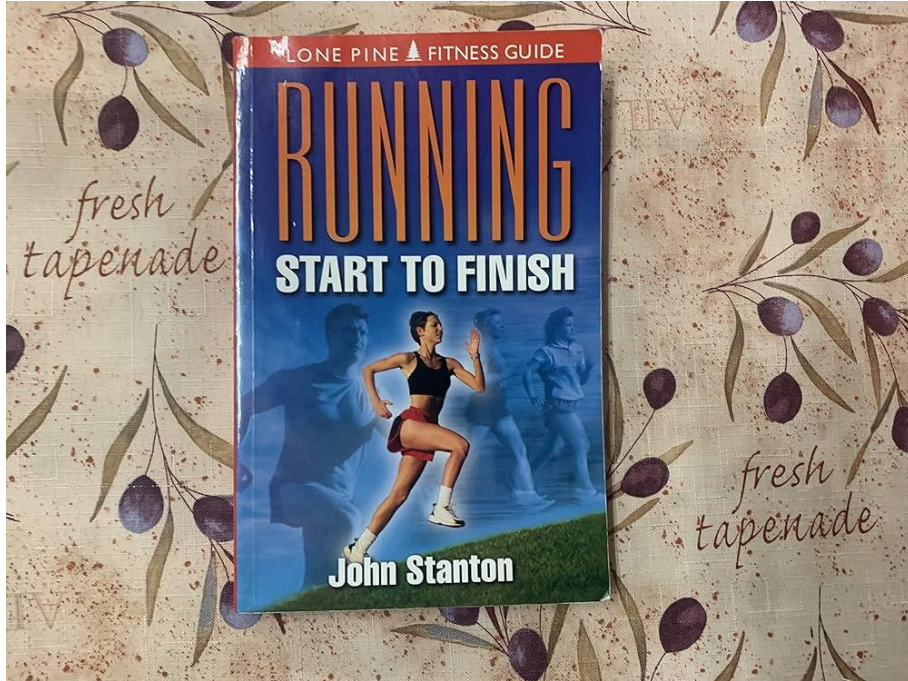
2007



2006

De spitstechnologie verandert van aard...

Anoniem vs hyperpersoonlijk



De spitstechnologie introduceert een kloof...

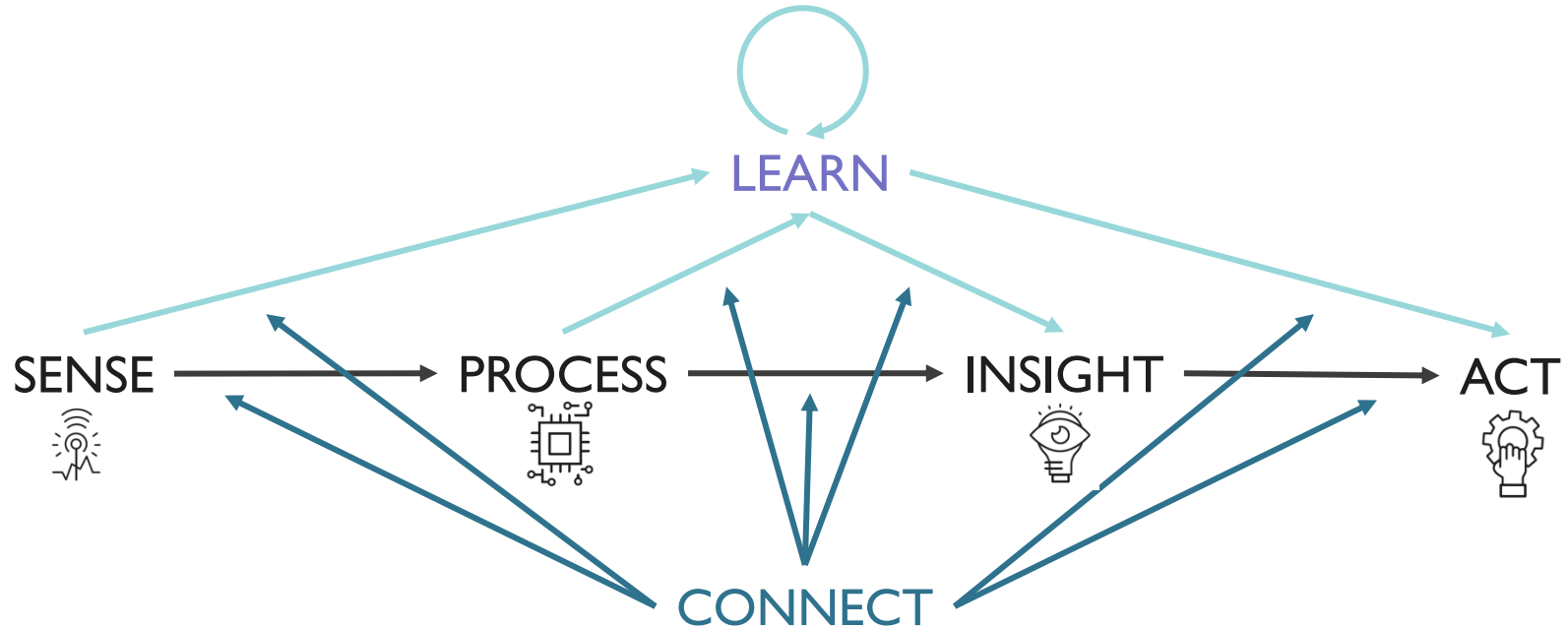
'Mee zijn' vs 'niet mee kunnen of mee willen'



Waarom technologie?

Wat kan digitale technologie doen?

De keten (en de volgorde ervan)



Enorm veel technologische bouwblokken!

Maar je moet weten wát je wil bouwen.



57.1713

32.427

57.1713 11.7157

96.5843

89.4702

94.5767

11.7157

98.7074

44.3278

57.5312

90.5708

93.4931

92.6638

9.3836

35.4658

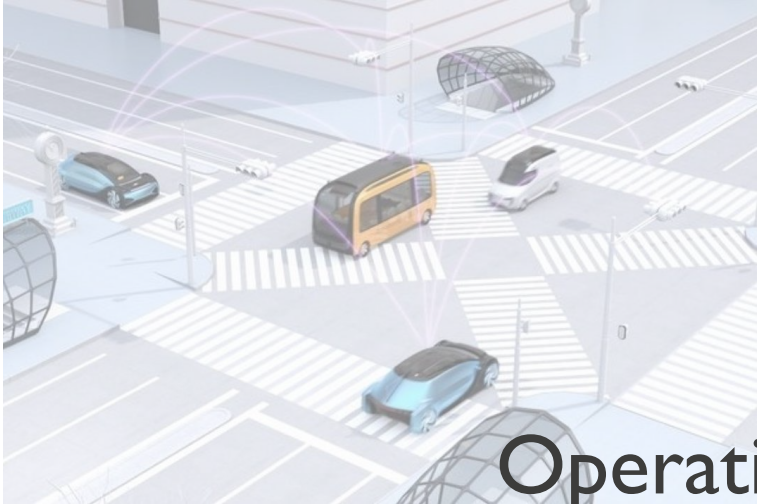
89.4702

44.3256

21.4748

64.487

40.7901



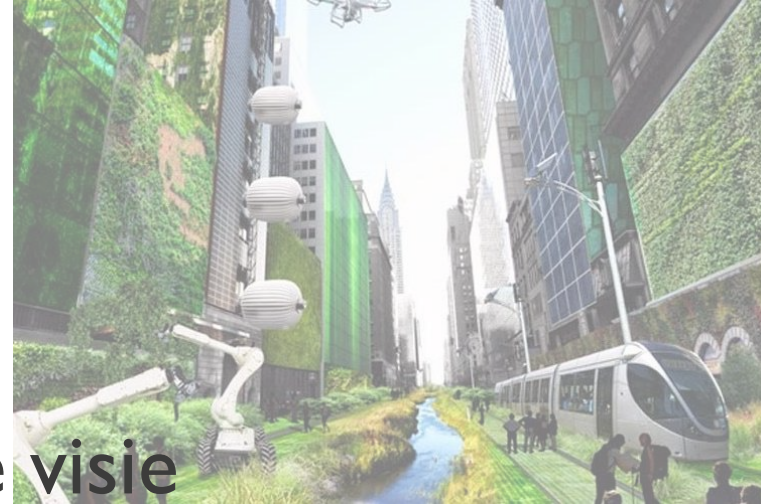
Operationele visie op de toekomst van steden





Dystopische visie op de toekomst van steden



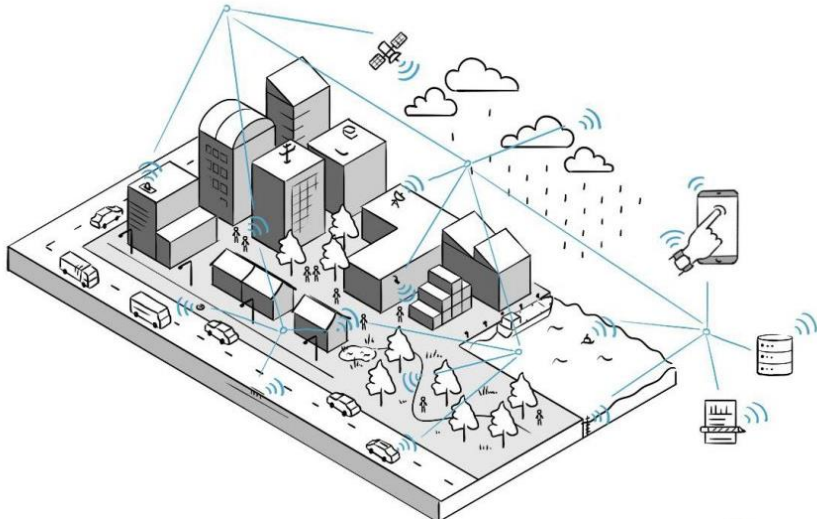


Groene visie op de toekomst van steden



Enorm veel technologische bouwblokken!

Flooding & Emergencies



Floods are **complex to predict and manage**, and can happen at multiple places, at various times, with varying impact levels.

Lots of data can play a very important role in prediction, damage control, and policy adaption

This data is very **heterogeneous** in nature, **diverse** in cost, crosses **organizations** (4-helix), static and dynamic, raw or needs processing, is subject to business or privacy matters, ...

NEED to have quick, continuous, automated (access, cost, ...), transparent, lineage, **trustworthy access to ALL** relevant data at that place, time, and pace.

De Vlaamse Water Data Space in een Europees landschap



Digital Water Systems and Interoperability WG

The scope of this Working Group is to contribute to the creation of a Water Data Space in the context of the European Data Spaces by contributing to the relevant initiatives around data sharing and standardization from a water data perspective; liaising with key entities in the area; encouraging the creation of project proposals in that direction, as well as disseminating reference implementations and APIs.

INTERNATIONAL DATA
SPACES ASSOCIATION



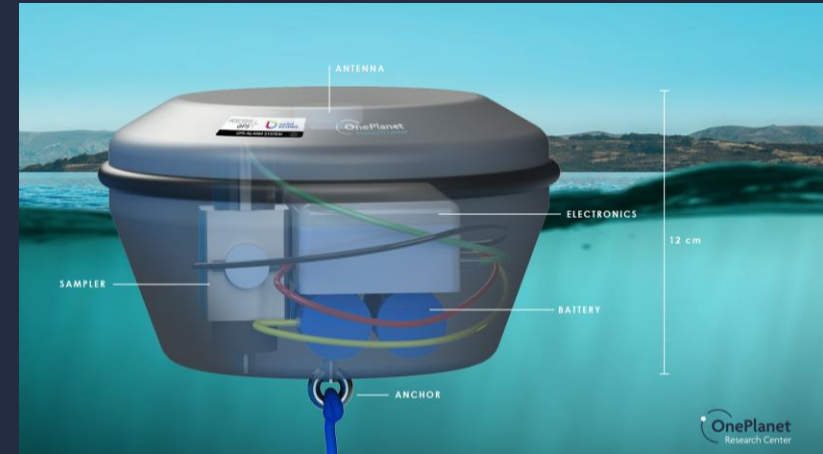
Smart Water

System-of-Systems approach for a sustainable market of interoperable and portable Smart Water solutions.



Nitrate sensors

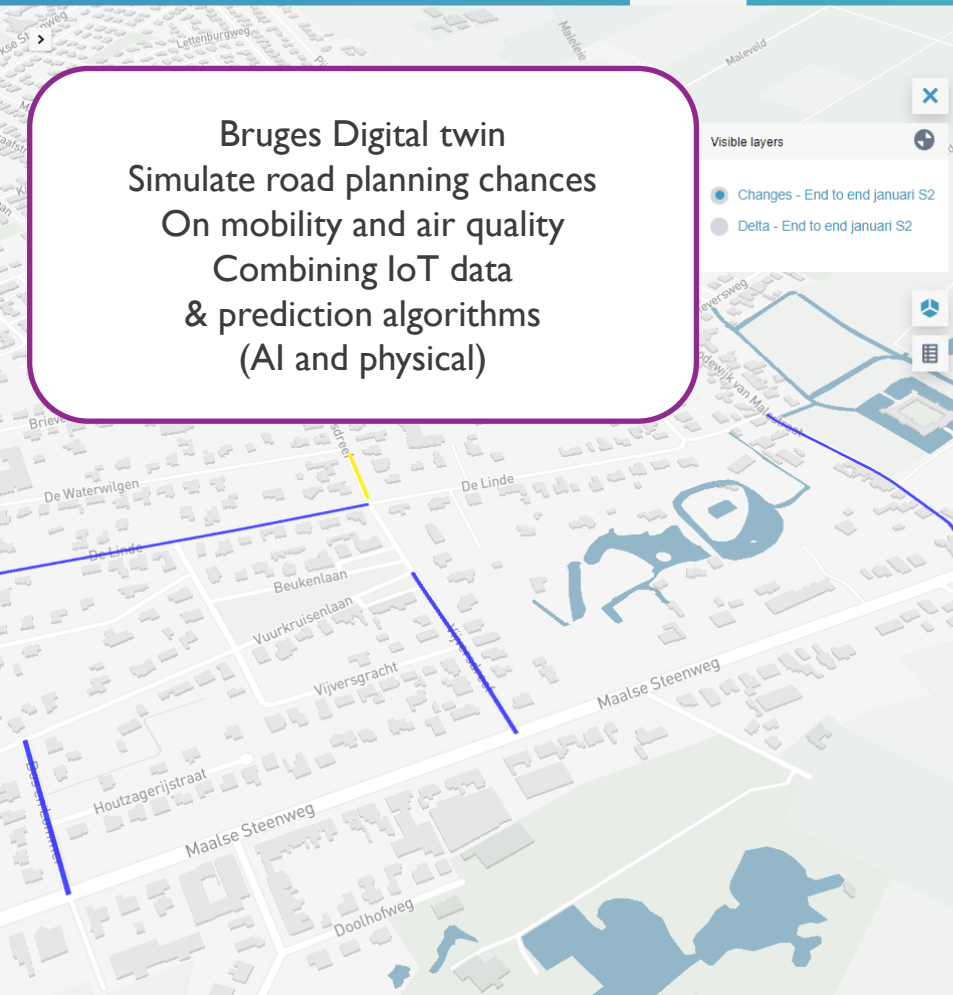
- Handheld nitrate sensor: handheld device for fast sampling of various water sources (e.g. around green houses)
- Continuous, real-time monitoring of nitrate in surface water
Future targets:
PFAS, Hormones, Drugs, Pesticides





Current 'Star' of the program: NitroSense!

Bruges Digital twin
Simulate road planning chances
On mobility and air quality
Combining IoT data
& prediction algorithms
(AI and physical)



Vlaanderen

AANMELDEN
MIJN BURGERPROFIEL

HULP NODIG ?

Intelligente verkeerslichten

Bestaande verkeerslichten worden uitgerust met nieuwe technologie wat extra mogelijkheden biedt. Intelligente verkeerslichten **reageren vlot en flexibel** op weggebruikers bij een kruispunt en geven zo **sneller of langer groen licht** o.b.v. het werkelijke verkeer dat zich aandient. Verbonden met de cloud worden o.a. gegevens van weggebruikers, wegbeheerders, weerstations, verkeersdatabanken in kaart gebracht en gebruikt. Tegen eind 2024 worden zo'n **250 bestaande verkeerslichten intelligent** gemaakt.

Waar komen er intelligente verkeerslichten bij jou in de buurt? Ontdek het [hier](#).

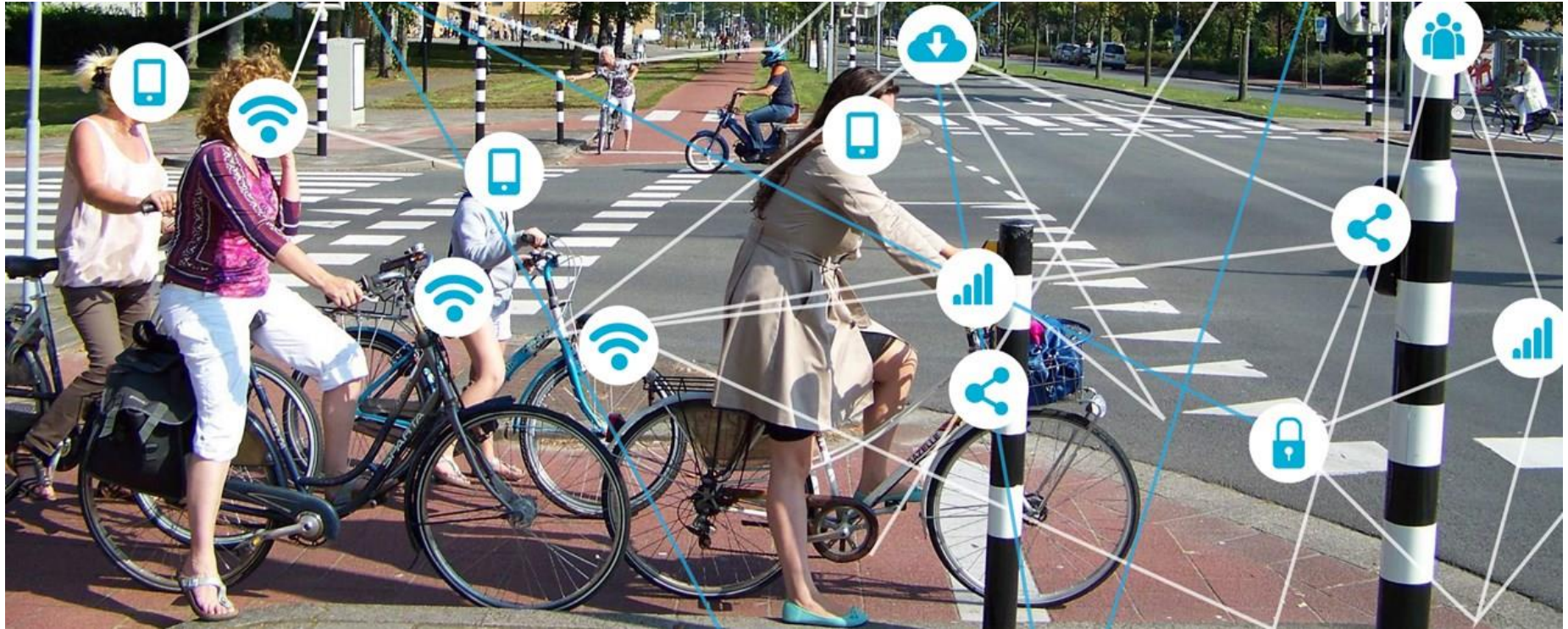
OSM Light | GeoSolutions | OpenStreetMapcontributors,ODI Data

30 km

- Actieve intelligente verkeerslichten**
- Intelligente verkeerslichten in opbouw**
- Geplande intelligente verkeerslichten**

MegaBITS

Mobilizing Europe's Green Ambition through Bicycles and Intelligent Transport Systems



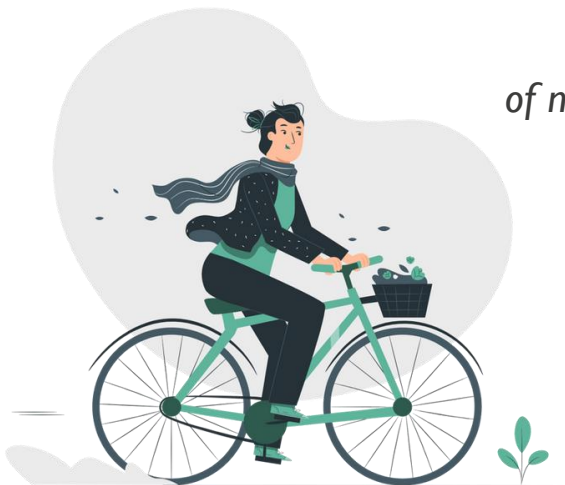
Towards a common European mobility data space (EMDS)

deployEMDS

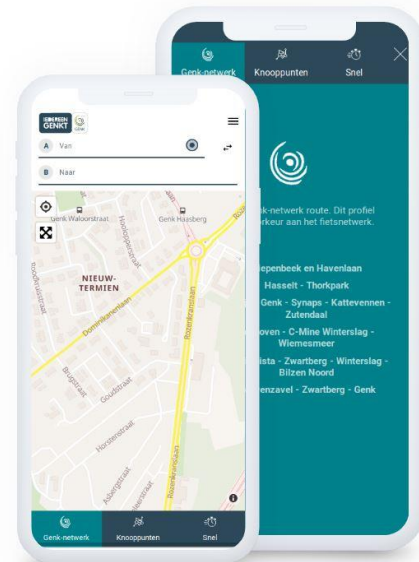
DISCOVER MORE



Serendipity Engine

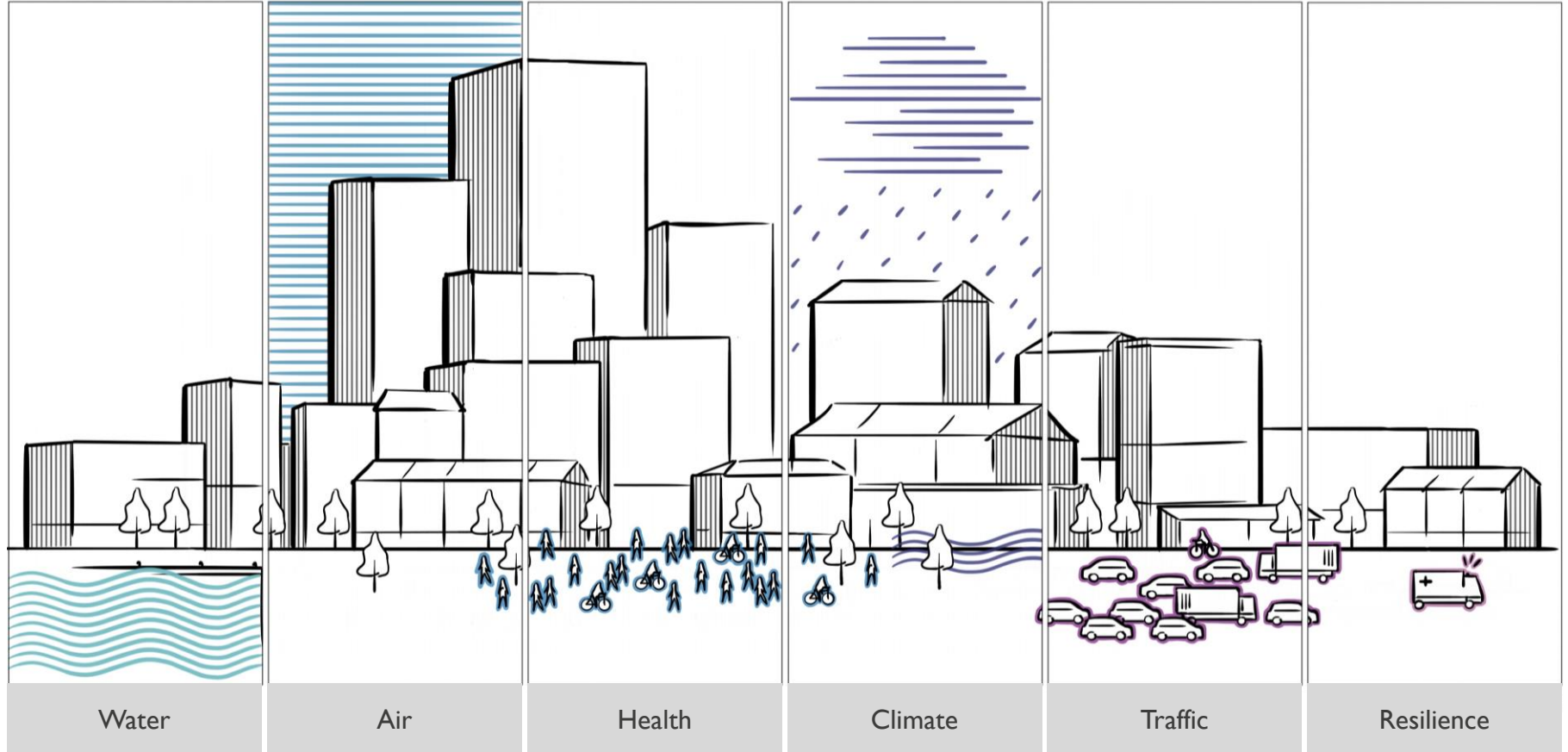


*Building cycle routes
allowing for the discovery
of new places and spontaneous encounters*



<https://www.serendipityengine.be>

“Everything is connected...”

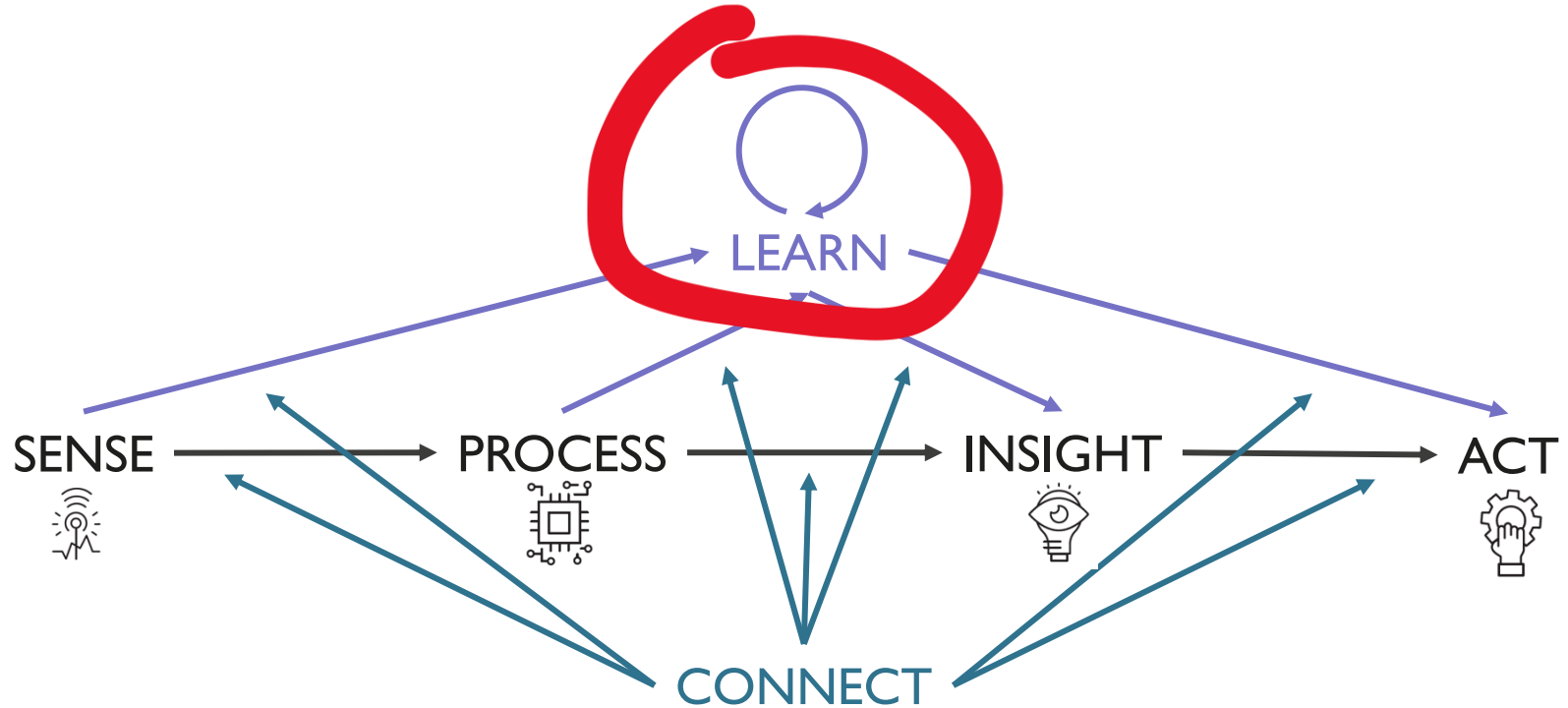


Data (en inzichten)
verzamelen (=sensoren)
en delen

is cruciaal

Wat kan digitale technologie doen?

De keten (en de volgorde ervan)



Time taken to reach 1m users (mths)

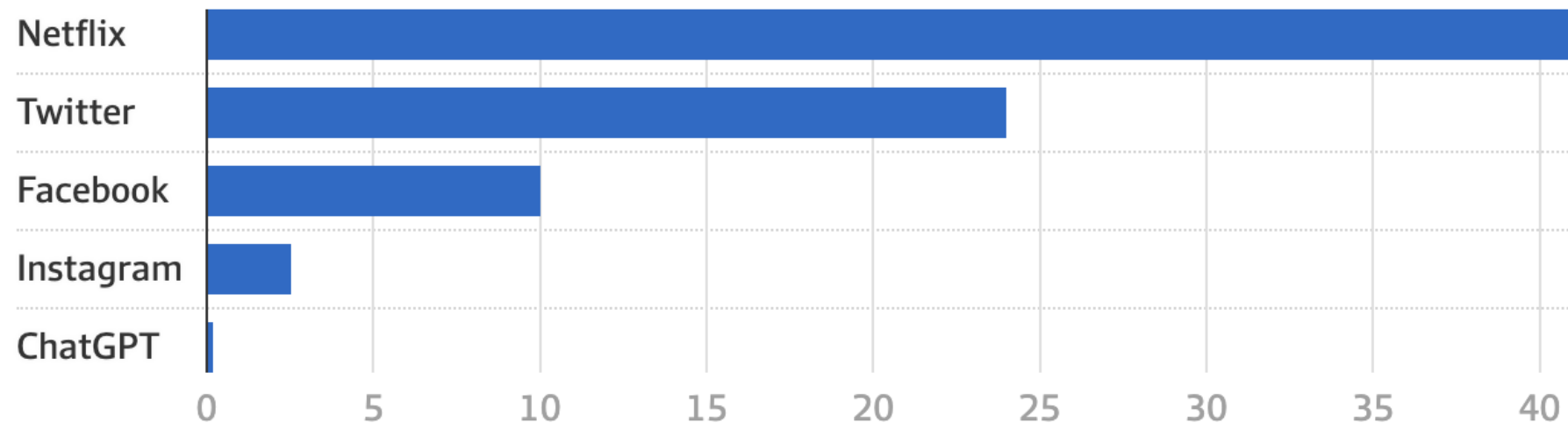


Chart: Financial Review • Source: Genevieve Roch-Decter, CFA



Kan je gesprek gaan met het woud?



mec

embracing a better life

COMPUTATIONAL COMPLEXITY

1980

1990

2000

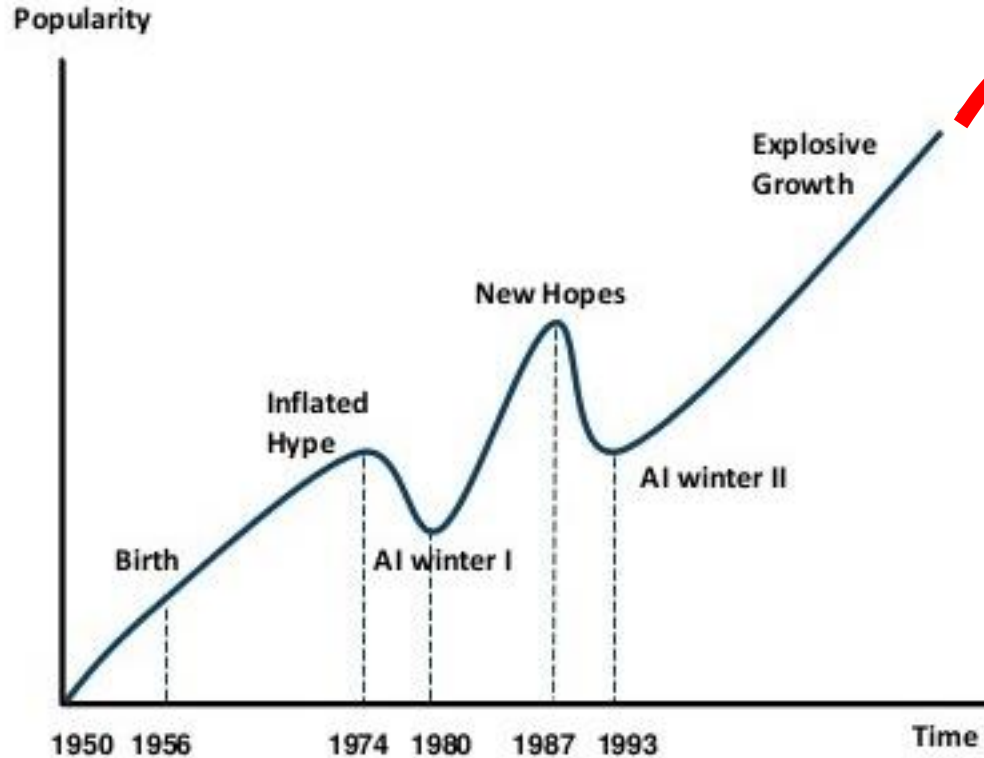
2010

2x increase
every 2 years

100x increase
every 2 years

Waar gaat

En is het duurzaam?



what's next?

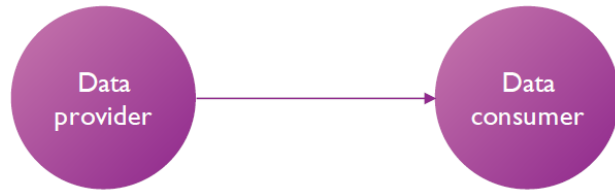
The edge needs to be sustainable...



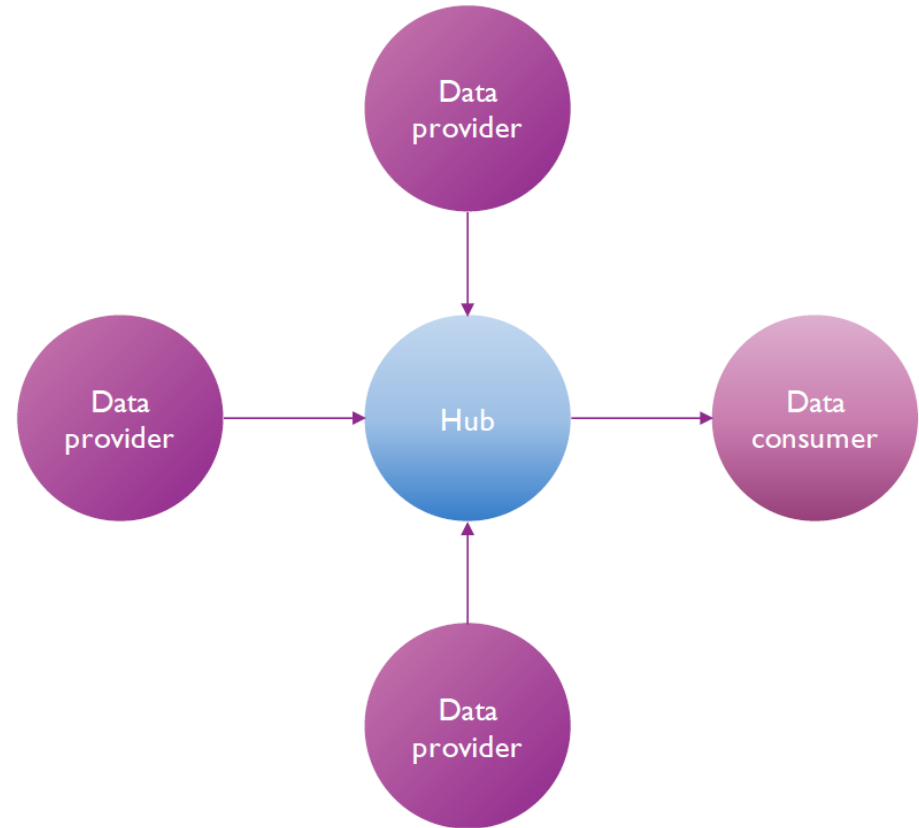
Data (en inzichten)
verzamelen (=sensoren)
en delen

is cruciaal

Bilateral ad-hoc Data Sharing



Hub and Spoke Data Sharing



Data Space Data Sharing

