

Introductie sprekers



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Agenda

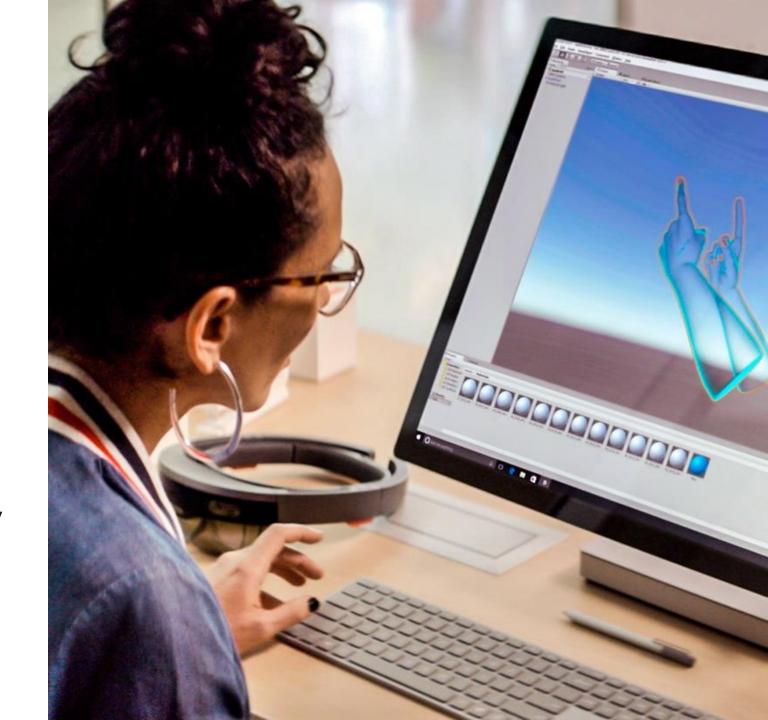
13.30	Welkom en introductie sprekers	
13.35	Visie Microsoft en Al	Henriette
13.50	Toepassing van AI in de publieke sector	Martijn en Jasper
14.20	Korte pauze	
14.30	ID validatie: oplossing en demo	Jasper
14.50	Vervolg en afsluiting	Henriette, Martijn en Jasper
15.00	Einde webinar	



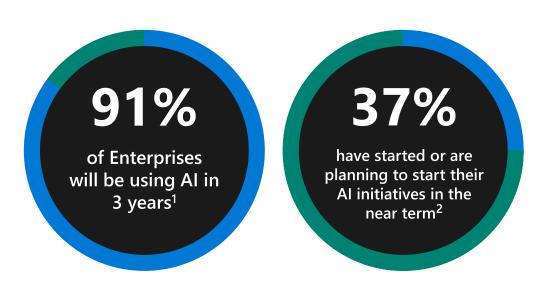
Microsoft Al Principles

Fair | Accountable | Transparent | Ethical

- Al must maximize efficiencies without destroying the dignity of people
- 2 Al must guard against bias
- Al needs accountability so humans can undo unintended harm
- 4 Al must be transparent
- 5 Al must be designed for intelligent privacy
- 6 Al must be designed to assist humanity



Challenges to adopting Al



What's holding organizations back when it comes to AI?



1 Source: Gartner, 2019.

2 Source: Gartner, 2019.

3 Source: Gartner, 2018.

Base: Answered Artificial Intelligence (AI) section; n = 890

Q43. What are the top three challenges to the adoption of AI within your organization?

ID: 355907 3

Al Business School for Government

The Microsoft AI Business School is an engaging master class series that empowers business leaders to be successful and get results from AI:



Define an AI strategy to create business value



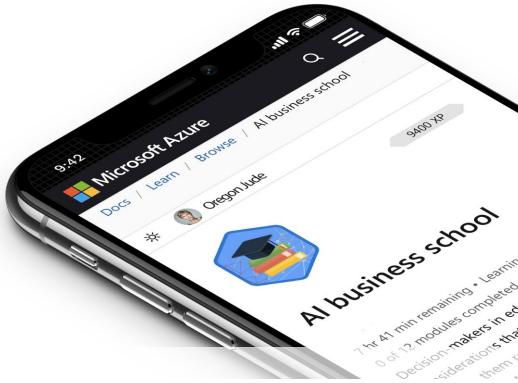
Discover ways to foster an Al-ready culture in your business



Identify guiding principles for responsible AI in your business



Introduction to AI technology for business leaders







We believe in what people make possible

Our mission is to empower every person and every organization on the planet to achieve more.















Microsoft for Government



40+ years

working with governments, deep industry knowledge and expertise



>16k

communities around the world



Mature partner program

>top cloud competitors combined



\$1B

invested annually in security



\$16.9B

invested annually in research & development

Most comprehensive set of compliance offerings of any cloud service provider, more certifications than anyone in the market

Industry-leading scale – with >\$15 billion invested in cloud infrastructure, and >1 million physical servers across 54 global regions

EMPOWERED GOVERNMENTS

Empowered Governments

Empowered citizens. Empowered societies. Empowered governments.



ENGAGE AND CONNECT WITH CITIZENS

Provide secure, inclusive and deep citizen engagement



MODERNIZE THE GOVERNMENT WORKPLACE

Empower secure, inter-departmental and cross-agency collaboration to deliver more effective and efficient services



ENHANCE GOVERNMENT SERVICES

Apply data analytics to provide actionable, predictive, and efficient citizen-focused services

ENGAGE AND CONNECT WITH CITIZENS

Improve

efficiency, delivery and quality of in-person citizen services

Enhance

citizen engagement with digital interaction and social forums

Enable

rapid response and transparency to citizen service requests

Increase

online and mobile citizen services experiences



EXPECTATIONS OF GOVERNMENTS ARE CHANGING

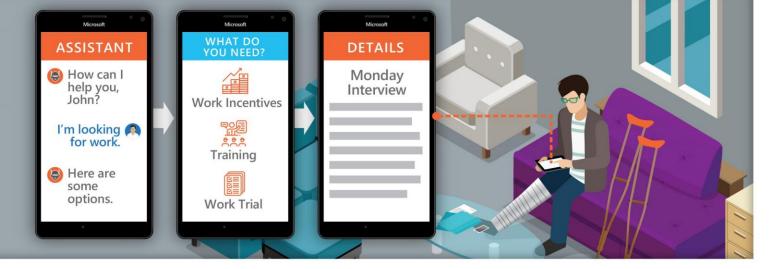


ENGAGE AND CONNECT WITH CITIZENS



Engage and connect with citizens how they want, where they want, when they want

Enable faster response times and quicker issue resolution



Provide real time alerts and updates to keep citizens informed

MODERNIZE THE GOVERNMENT WORKPLACE

Advance

government employee productivity with complete collaboration solutions

Collaborate

with integrated tools to produce better decisions and outcomes

Improve

services response rates with access to information and people

Enhance

services experience when employees have the best tools for the job



MODERNIZE THE GOVERNMENT WORKPLACE



Automate time-intensive processes by adopting intelligent tools

Increase agility and mobility so employees can stay connected anywhere

Enable cross-organization collaboration and improved productivity



ENHANCE GOVERNMENT SERVICES

Reduce

costly maintenance and free up government resources

Enhance

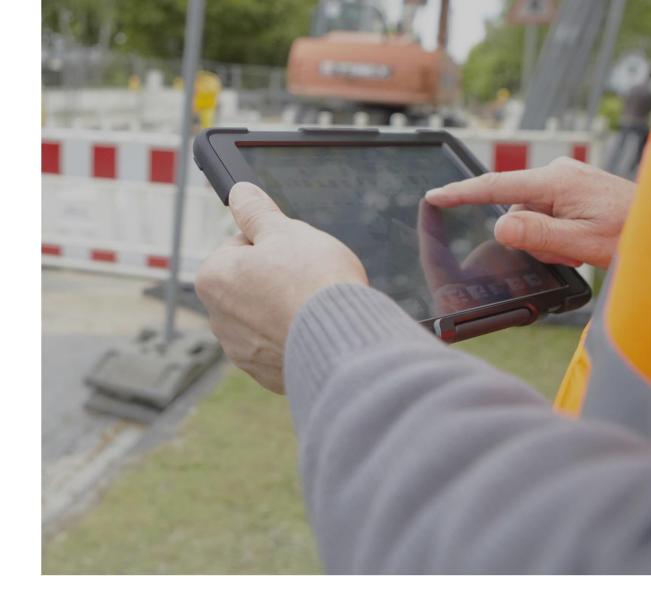
capabilities for performing work through mobile tools

Improve

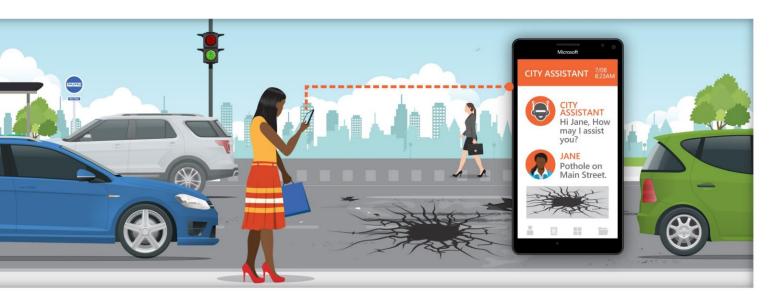
agency agility through self-provisioning services

Increase

resiliency with scalable, on-demand, secure government infrastructure



ENHANCE GOVERNMENT SERVICES



Engage and connect with citizens how they want, where they want, when they want

Enable faster response times and quicker issue resolution



Provide real time alerts and updates to keep citizens informed

CITIZEN EXPERIENCE JOURNEY MAP



DIGITAL HOTSPOTS

City Services

Obtaining information
Taxes and payments
Citizen and business services
Connecting with leaders

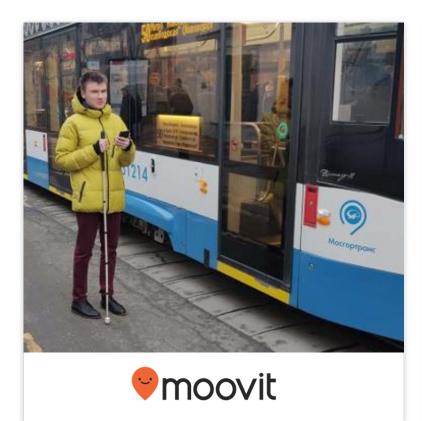
City Insights

Operations management
Energy and resource management
Safety management
Population Health Management

Mobility

Traffic management
Public transportation services
Transportation Optimization
Fleet management

Al in Practice







Transit for people with disabilities

The world's most popular transit-planning and navigation app develops inclusive technology to help people with disabilities use public transit.

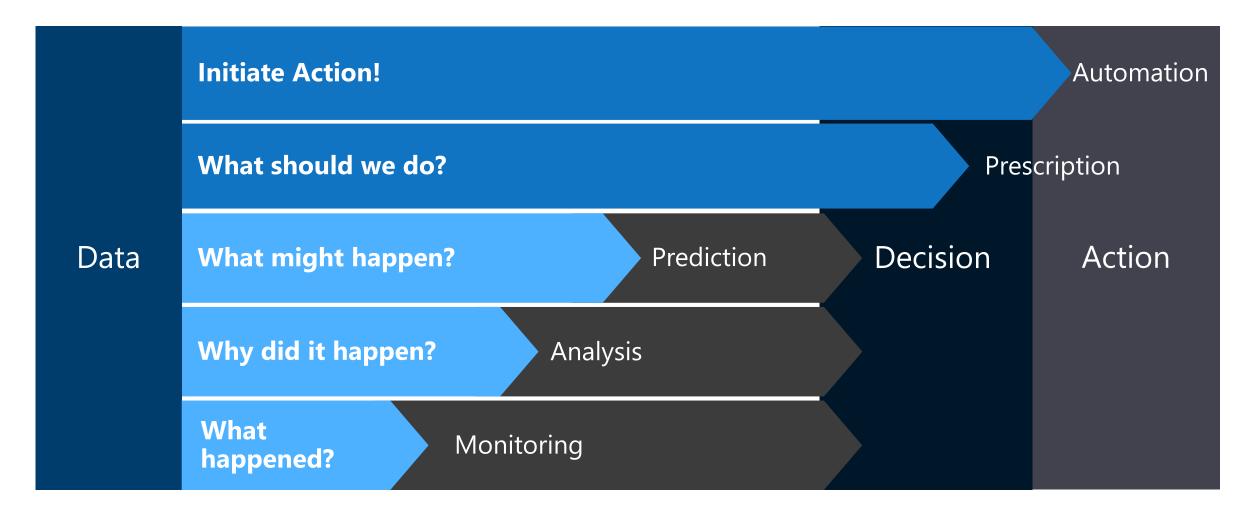
Waste collection route optimization

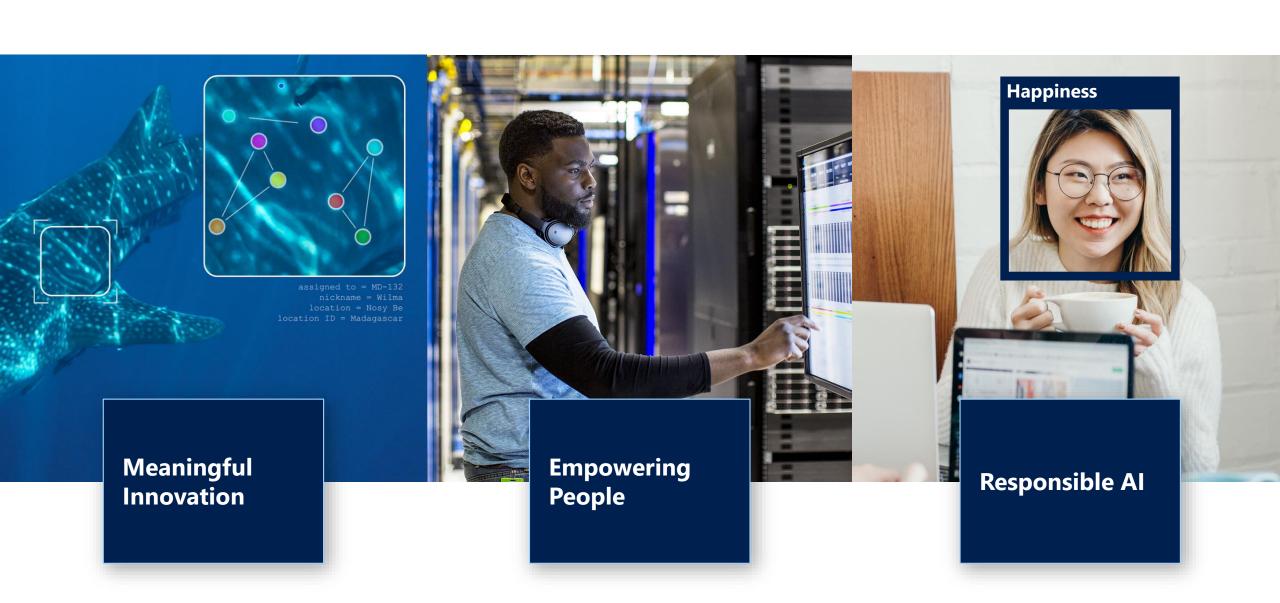
City of Seville municipal cleaning company optimizes waste collection routes and planning, resulting in an improved collection service and 66% reduction in costs.

Real-time traffic management

City of Antwerp provides travelers with a relevant multimodal or intermodal urban route planner and a real-time traffic information.

Moving from data to informed action







What is the Public Sector?

Large and Diverse Business with Distinct Sub-Sectors

Public Administration:

Central Government, Local Government

Healthcare:

Ministry of Health, Hospitals, Health Insurances, University, Clinics

Defence:

Ministry of Defence; Military Police

Tax & Customs:

Ministry of Finance, Financial Intelligence Units, Custom Agencies.

Security:

Police and Emergency Services, Intelligence Agencies

Welfare:

Job Employment Agencies, Social Benefit Agencies, Insurances, ...

But Common High Level Challenges

Delivering better services (to increasingly demanding citizens)

Driving out costs (to pay for those services)

Safeguarding and protecting citizens against external & internal threats

And a common frame

European Privacy Law

A European Data Strategy aiming at Pan-European open / sharing data initiatives

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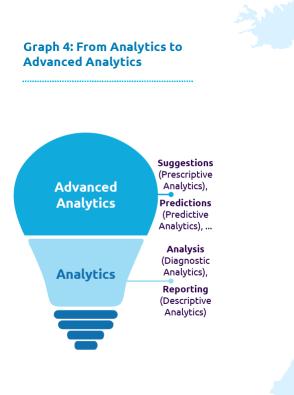
The Public Sector is facing big common challenges globally

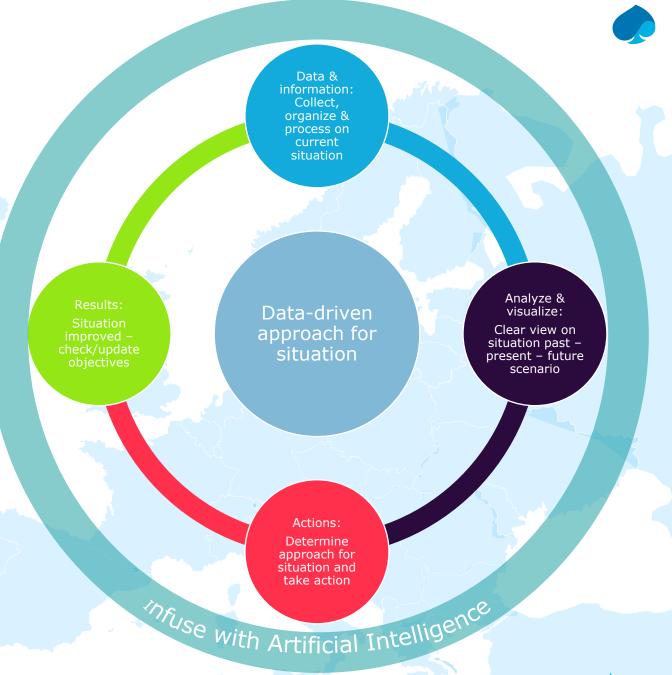


These challenges require action Action requires insight Insight requires data

Becoming the Data-Driven Government



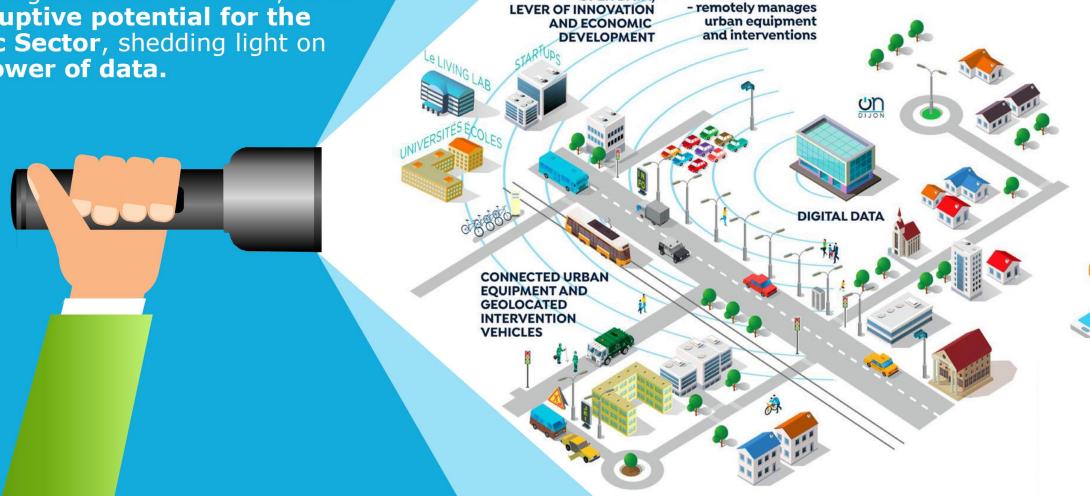




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To master AI means to have data.

In the digital world we live in, AI is a disruptive potential for the Public Sector, shedding light on the **power of data**.



OPEN DATA,

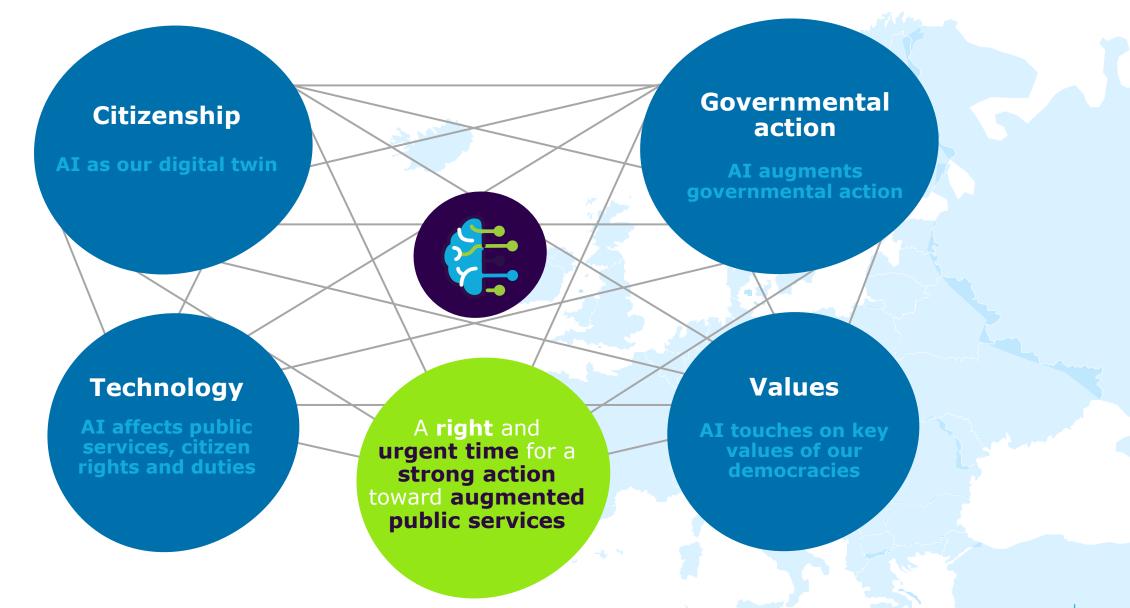
THE CONNECTED

CONTROL CENTRE









Our 4 playfields for AI in the Public Sector



1. Intelligent Automation of Administration

End-to-end automation of administrative processes

2. Interaction with the citizen / public servant

24/7 interaction between administration, citizen and processes

3. Identifying anomalies

Real-time identification of danger, incidents & other anomalies

4. Helping in the decision making process

New and influent insights that can be leveraged for better decisions

Al helps, doesn't replace!

Augmented Public Service



Al as Tool

The human decides

Al helps

Al augments



Al with ethics

Fair

Explainable

Lawful

AI is a way of the Public Sector to master data, in order to accomplish its missions with more pace, efficiency and security

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1. Intelligently automating administration processes



Scanning the content of the document.

Extracting relevant information in data form.

Assigning the validated content to the right civil servant.















Providing the document in a readable form.

Classifying the documents based on the content or the types.

Validating the content of the document.

Filling-in documents based on pre-defined parameters.

1. Intelligently automating administration processes















Public Administration

Supporting cities in automating their core manual processes through intelligent case management

Reading and validation of student authentication documentation, city contract texts, address modification

Tax & Customs

Reading and validation of end-of-year expenses and benefits form, income tax

Intelligently automating self-assessment appeals

Social Welfare

Reading and validation of child allowance forms, academic enrollment certificates for students, dead letters

Intelligent automation of elderly care management and retirement case management

Security

Reading and validation within the processing of visa / title stay / resident permit documentation

Reading and validation of penalty documentation

Defence

Reading and validation of passports

Intelligent case management, automating processes with regard to the material management

Healthcare

Reading and validation of scanned documentation within patient care or benefit programs requiring certification

Intelligent case management, automating processes with regard to the medical standards



2. Interacting with the citizen / state employee





Natural Language Processing

Analysis & synthesis of natural language and speech

FAQ Assistants

Provide answers to FAQs

Possibility to reply to a large number of requests in self-service



Conversating Assistants

8

Ability to conduct a conversation by building upon past answers

Wide range of interaction

Sentiment-understanding Chatbots

Empathy-based coping with the human using sentiment analysis



Guiding requests according to the emotional state of the human

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2. Interacting with the citizen / state employee















Public Administration

Citizen-guiding chatbots for city administration purposes (changes of address, electoral registers etc)

Providing intelligent guidance for citizens, for example regarding rights to information within the GDPR framework

Tax & Customs

Citizen-guiding chatbot using AI to provide guidance and help through the tax declaration using virtual assistants

Identity-assertion: using AI to establish non face-to-face identity assertion of citizens for authorization processes

Social Welfare

Citizen-guiding chatbots for job-seeking processes or for social benefits (pension, insurance, family rights etc)

Using AI to enable chatbots in helping immigrants with their requests

Security

Virtual Assistant answering first-aid question regarding dangerous situations

Defence

Using AI to provide chatbots and additional services for employees when navigating through internal digital services

Healthcare

Using Al for

service-guiding chatbots answering recurrent questions about medical services

Virtual Assistant at home communicating with at risk patient based on real-time processed data



3. Detecting anomalies

COVID19 - Anomaly detection: mistake or fraud?

New situation, new opportunities for fraudsters

- · Huge volumes of requests to be paid in short time
- Companies requesting subsidies with dubious credentials, getting paid, and then going broke with no possibility of recovery
- Furloughed employees doing voluntary work which benefit to employer, while getting subsidies from government
- New employees being declared as part of a company, only to get furloughed and generate subsidies to the company
- Sick employees converted to furlough, because compensations are more generous

Automated processing to enable fast payment with low risk

- · Processing of subsidy requests
- Analysis and verification of documents
- Check with company databases
- Risk scoring based on expected fraud signals
- Analysis and discovery of fraud patterns
- Social graph analysis against organized crime



3. Detecting anomalies





Public Administration

Identification of fake news during election periods

Identifying address fraud

Identifying errors within statistical data

Identifying mistreatment of animals

Tax & Customs

Identifying tax fraud (VAT fraud, money laundering)

Detecting criminality at borders

Insurance fraud (document plagiarism, social benefit fraud)

Social Welfare

Dangerous situations in road traffic

> Identifying people at borders

Identifying political and religious radicalization or online hate speech on social media

Security Defence

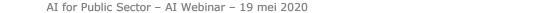
Identity assertion at borders

Analysis of seized material in relation to organized crime

Healthcare

Cancer and disease detection

Using Al to prevent fraud in drug management / prescriptions or by detecting anomalies in the invoicing of doctors and insurance companies

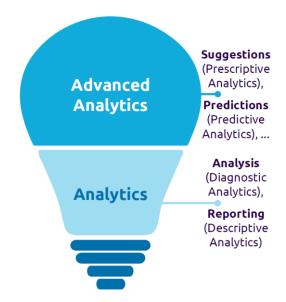


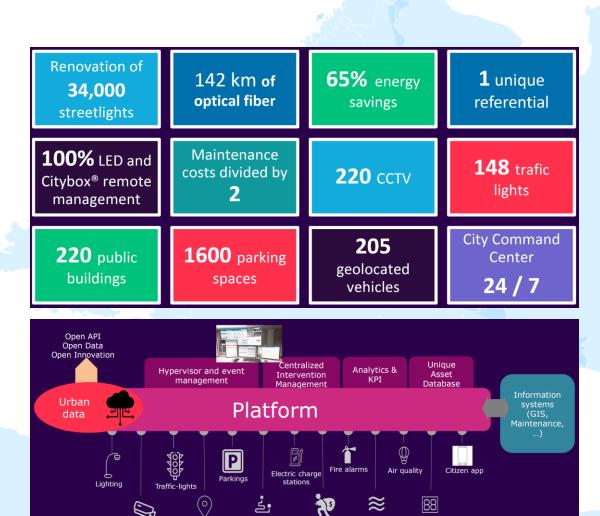
4. Helping in the decision-making process



Reduce uncertainties, complexities and deliver predictability

Help public organizations to move from identifying issues to resolve these before they occur.





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4. Helping in the decision-making process







Tax &

Customs









Public Administration

Analysis and

school offer

legal texts or

decisions

hearings and to

give guidance on

optimization of

Using AI to classify

Using predictive analytics and data-driven enables a better understanding of build smart cities (eg. regulation and optimization of resources and traffic)

Augmented tax inspector understanding of how tax inspectors operate, in order to help them do the right type of work

allocation management – to review and analyze tax payments to gain better understanding for benefit allocation purposes

Getting insights on tax models

Social Welfare

Augmented tax inspector – using Al enables a better understanding of how tax inspectors operate, in order to help them do the right type of work inspector allocation – using Al helps public sector employees find suitable jobs for citizens by getting relevant insights about unemployed

Augmented benefit Using AI for better allocation manage-ment – to review benefits such as and analyze tax child allowance

better understanding for benefit allocation purposes

Analyzing debtor profiling to enable efficient debt management

Security

Predictive Policing
– predicting
criminal incidents
by using data based
on sensing
platforms or risk
assurance
platforms that
provide guidance to
decision-makers

Crisis detection dashboard

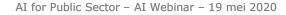
System for identifying and enabling security inspections by the fire services department Defence Healthcare

Predictive maintenance of forces material

Intelligent deployment of resources Augmented patient flow management – augmenting patient flow by using speech recognition and sentiment analysis when dealing with people calling to access scores, as well as predicting incoming calls

Gaining insights on patient data – to analyze data insights emerging from the link between patient, medical protocols, telemedicine etc.





Current challenge with AI: Realizing concrete business benefits at scale



AI needs EXECUTION to bridge the AI Death Valley and SCALE

DEVELOPMENT

Use cases enrichment

Key challenge for the organizations

AI « Death valley »

LARGE SCALE DEPLOYMENT

Continuous improvement

Scaling business adoption of AI

Putting AI solutions in production

Scaling up the operating model for AI

"AI's potential has given companies lofty expectations of transforming their business and dominating their market. But data quality, talent scarcity, and a trust gap serve as a **reality check**." *

"Source: Forrester Infographic: AI Experiences A Reality Check Three Challenges Hold Firms Back From Achieving Enterprise AI Aspirations May 17, 2019

Source: Capgemini Invent – AI maturity curve in the customer relationship field

EXPLORATION

First use cases identification

and data experimentation

Beyond the Hype – Successful AI projects Not only for Public Sector projects



Perform Al Artificial Intelligence. Real World Solutions.

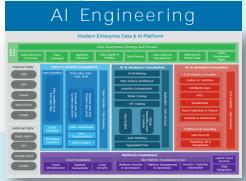
Four reasons, why AI projects fail

Answers

- Death Reason I AI without goal
- Death Reason II AI without scalability
- Death Reason III AI without data
- Death Reason IV AI without humans









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Real-life examples for AI in the Public Sector



Augmented Job Search



Intelligent Case Management for cities



AI Platform for the Security forces



AI enabled Smart Cities



Fighting Diseases & Cancer



AI for Fraud Detection



Cognitive Document Processing



Citizen Services Guidance bot



Patient flow at the hospital













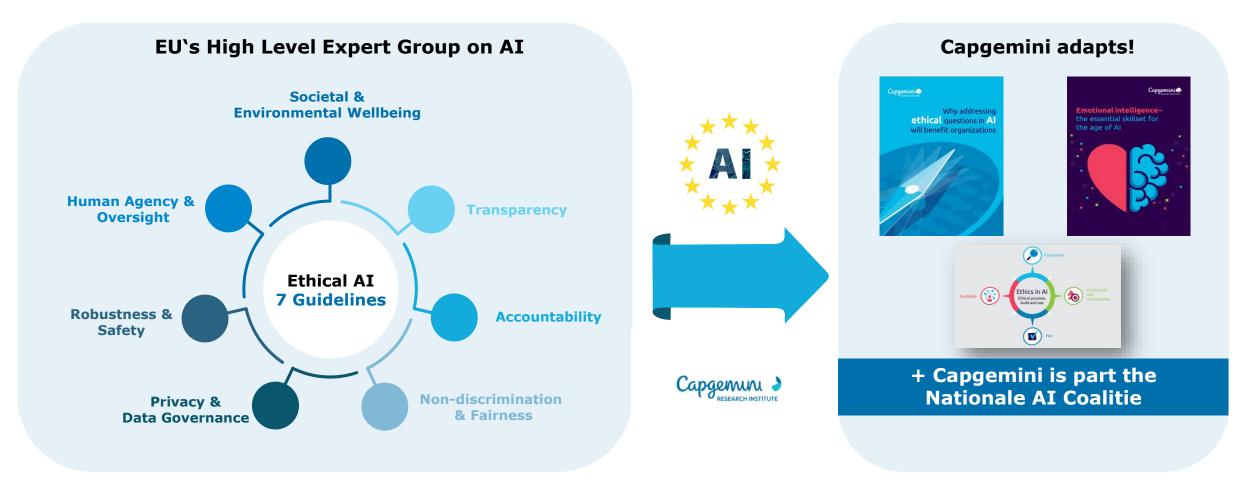




The ethical debate on AI is getting more and more relevant



Guidelines & Principles are required!

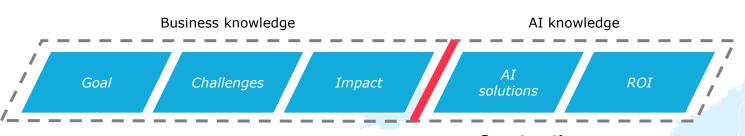


Tooling by Capgemini is necessary in order to create and implement guidelines

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We invite you to a free, high-level AI-value discovery workshop

https://www.capgemini.com/nl-nl/bronnen/webinar-week-ai-public/





Sweetspot!Combining business knowledge with Data

Science knowledge

What are the use cases that are interesting in your context?

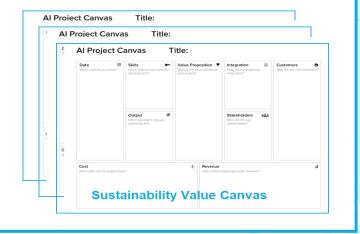
High

Output

Difficult Ease of implementation

Easy

How to start with implementing Al use cases?



Contact us for an AI value discovery workshop!

https://www.capgemini.com/nl-nl/bronnen/webinar-week-ai-public/





Jasper Hillebrand

Insights & Data Artificial Intelligence Lead Martijn van de Ridder

Insight & Data Public Sector Lead







Since artificial intelligence (AI) is driven by data, experts in this field will have to shed...







DSGVO: Fluch oder Segen für Europ Wettrennen um Künstliche Intelligen

Selt dem 25. Mai 2018 ist die Verarbeitung personenbezogener Daten in der Europäischen Livien darch die Datenschutzgrundverweinung (2054C) geregelt. Kleinliche Histiligens (20) As then siet eiligen 221 die Bestimment Ehmau der digitalen Terarformation, Die « wesendlich durch Daten getrieben wird, mösers sich Ki-Dipentinen mit den Auswindungen der GSCVOV intensa weseinselndersten. Die sill gasz bewonders in Gurapa.

Die DSGVO als Rahmen für eine leistungsfähig

Met der DSSOO hat der Gesetzgeher Turssparenz die bere Geschaft julie, 5. A.Ms. E.B. der Gesetzgeher Turssparenz die bere Geschricht julie, 5. A.Ms. E.B. der Geschaft julie der Geschaf



Public Goes AI
Toward an augmented citizen experience





Identity Management

AI for public

Jasper Hillebrand

Data Science & Analytics Lead Capgemini Insights & Data Netherlands

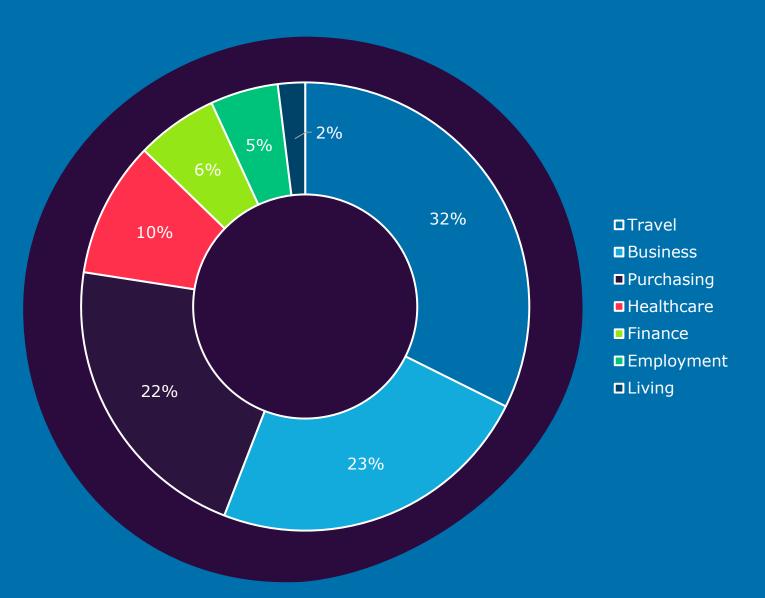
Martijn van de Ridder

Public Sector Lead
Insight & Data Netherlands

Capgemini

Personal Identification plays a large and important role within our lives, where travel is the most dominant sector



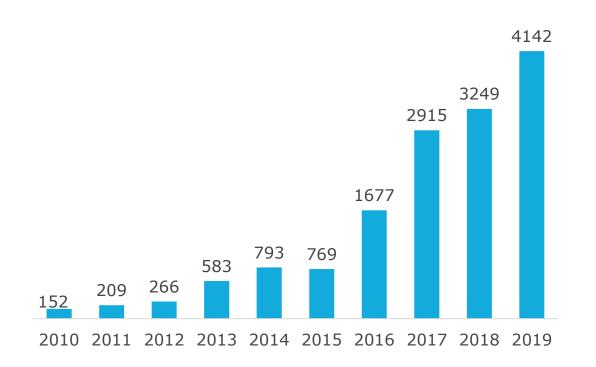




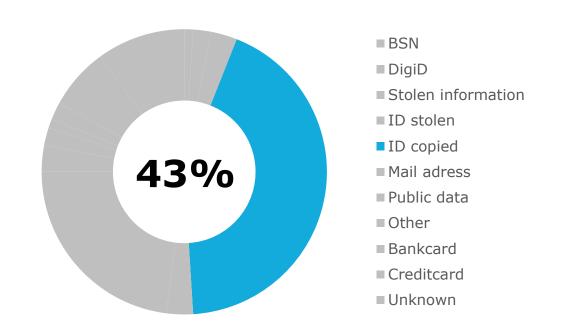
In the last 4 years the Netherlands witnessed an increase of identify fraud, where most fraud was committed using the ID



Reports on identity fraud

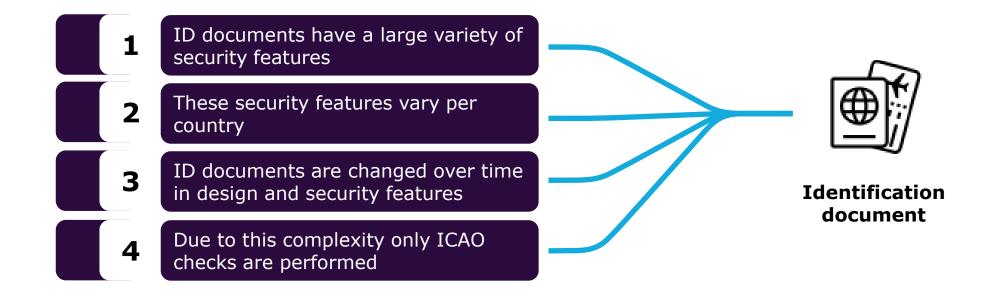


Object used for identity fraud



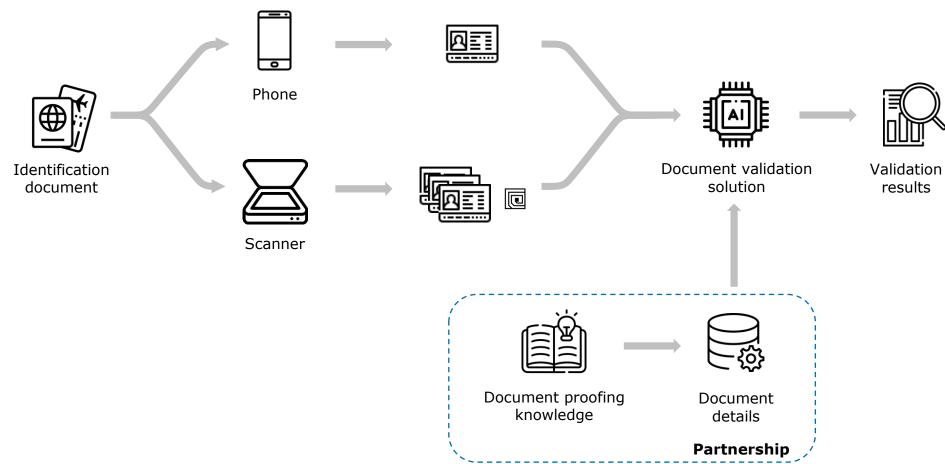
As ID fraud is on the rise, ID validation will play a more important role; however, systems are not able to validate all features of an ID document





Capgemini wants to reduce ID fraud and has been actively working on a solution that can overcome these challenges

Our solution combines ID proofing knowledge with AI technology and enables validation on scale

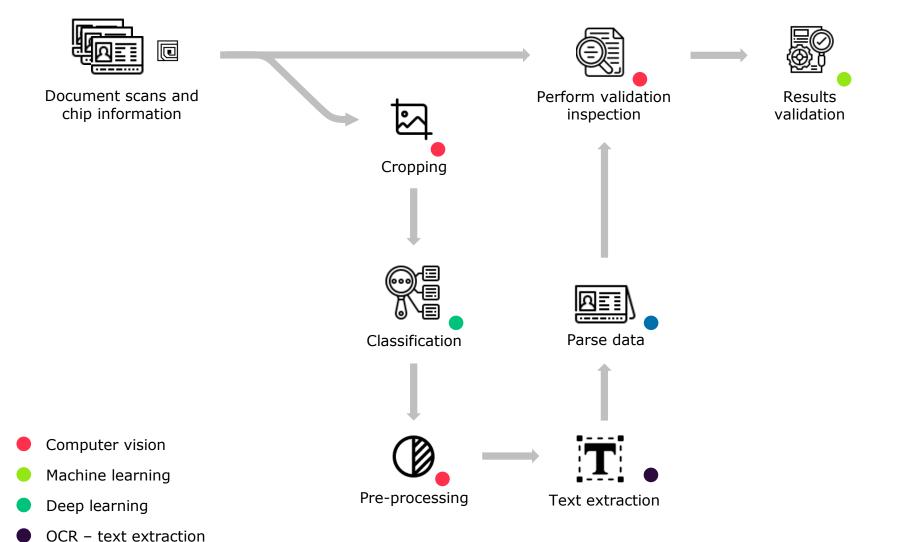






Plaats een document op de scanner

Our solution leverages on Computer Vision, Deep-learning and OCR technology to realize a high level of validation confidence



String matching





Document validation solution

Computer vision technology is used to only extract the document from the scanned image



Our cropping service uses, amongst other things, computer vision technology to remove unwanted information from the image. We are only interested in the data page of the ID document.



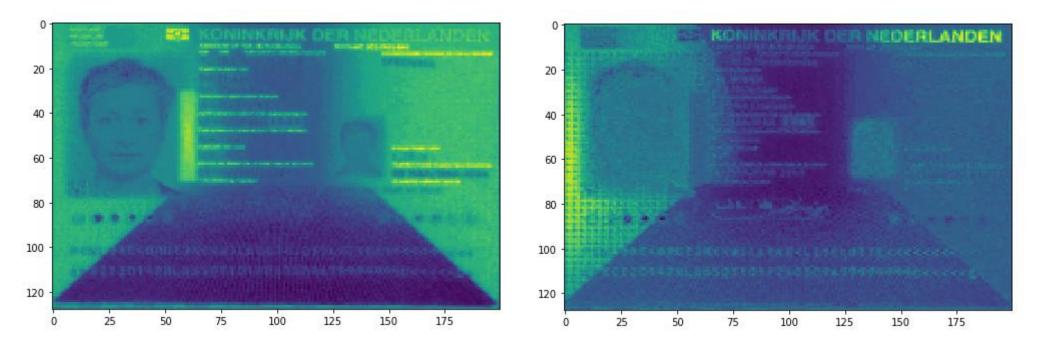


Deep-learning technology allows us to classify the document that is on the scanner while only having one reference image



GDPR regulations prohibits us from storing ID documents, which implies that there is only one reference image per ID document. A special implementation of deep-learning technology still enabled us to classify these documents.





The eye's of the deep-learning model triggering on the security features and the text location.

Image pre-processing is vital to ensure that text extraction returns results that are in line with the document



ID documents vary in color and material, which can result in reflections on the scan. A combination of three advanced pre-processing methods enables us to handle these variations.







Localizing the text prior to the extraction ensures good OCR results



Each country has their own format for various fields including gender and dates. After extraction the text is post-processed to enhance the results and convert the text to a standardized format.







DocumentType: "P"
CountryCode: "NLD"

Nationality: "Nederlandse" DocumentNumber: "SPECI2014"

Surname: "De Bruijn e/v Molenaar"

GivenNames: "Willeke Liselotte"
DateOfBirth: "10-03-1965"
PlaceOfBirth: "Specimen"

Gender: "F"

Height: "1,75 m"

DateOfIssue: "09-03-2014" DateOfExpiry: "09-03-2024"

Authority: "Burg. van Stad en Dorp"

MRZ: "P<NLDDE<BRUIJN<<WILLEKE<LISELOTTE<<<<<"

"SPECI20142NLD6503101F2403096999999990<<<<<84"

Parse and compare the extracted MRZ data with the extracted OCR data



Parse data

The MRZ of ID documents is structured in a predefined way depending on the document type. This enables us to extract the underlying data and use a smart string matching algorithm to compare it with the extracted data from the OCR.

	MRZ	OCR	String Matching
DocumentType:	P <nldde<bruijn< td=""><td>N<< WIELEKE<liselotte< td=""><td><<<< \td><<<<<</td></liselotte<></td></nldde<bruijn<>	N<< WIELEKE <liselotte< td=""><td><<<< \td><<<<<</td></liselotte<>	<<<< \td><<<<<
CountryCode:		NLD	100 %
Surname:	SPECI20142NLD6	503101 <u>5240</u> 3096999999	990<< <u>166</u> 584
GivenNames:	Willeke Liselotte	Willeke Liselotte	100 %
DocumentNumber:	SPECI2014	SPECI2014	98 %
CheckDigit1:	2	-	-
Nationality:	Nederlandse	Nederlandse	100 %
DateOfBirth:	10-03-1965	10-03-1965	100 %
CheckDigit2:	1	-	-
Gender:	F	F	100 %
DateOfExpiry:	09-03-2024	09-03-2024	100 %
CheckDigit3:	6	-	-
BSN:	99999990	-	-
CheckDigit4:	8	-	-
CheckDigit5:	4	-	-



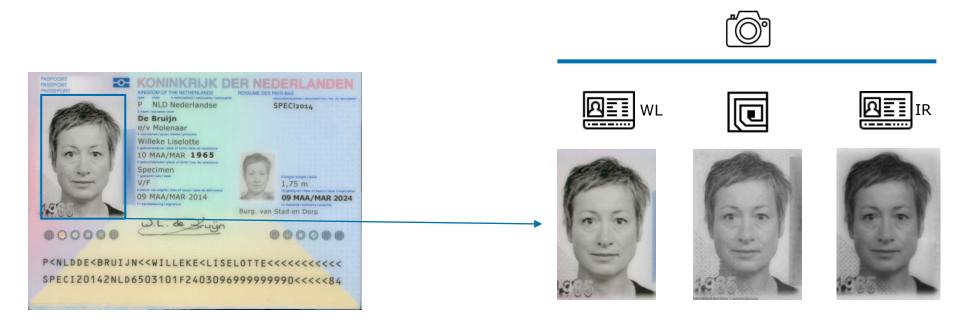


Validating the document is just one step, we also validate if the person holding the document is the rightful owner



Face matching technology allows the solution to match the images from the document and chip with a live photograph. Cappemini uses software from one of it's partners to bring state of the art classification results.





Facial comparison is done on all available sources. Counterfeit documents often have a sticker over the White-light image, blocking the original image. However, the original image is visible in the IR image, allowing us to instantly flag this document as false!

ID validation authentication requires your attention, and through Capgemini's solution you can give it all it needs!





Performs document validation within 8 seconds and on scale



Our solution leverages on ID proofing knowledge through existing partnerships



It performs validation beyond the checks (ICAO) that are found in existing solutions, giving you just that extra bit of safety



It provides a robust alternative even when you don't have documents scanners available



Available as an application, but soon also "as a service" for onetime use by smaller organizations

Let's fight identity fraud together

https://www.capgemini.com/nlnl/bronnen/webinar-week-ai-public/



Jasper Hillebrand Insights & Data Artificial Intelligence Lead



Martijn van de Ridder Insight & Data Public Sector Lead

Afsluiting en Q&A





Martijn van de Ridder **Insight & Data Public Sector Lead**



Jasper Hillebrand Insights & Data Artificial Intelligence Lead



Henriette Brijder Specialist Data & Al



