# AI-WATCH

## 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

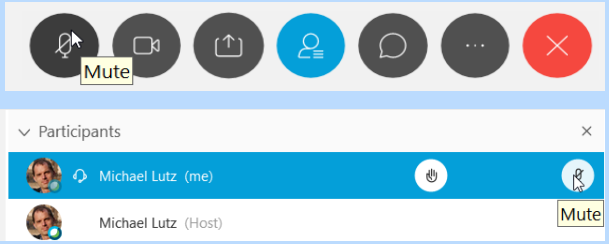
## AI uptake and use for and by the Public Sector

***24th June 2021 (09h30 – 13h30)***

# Welcome and some hints for participants

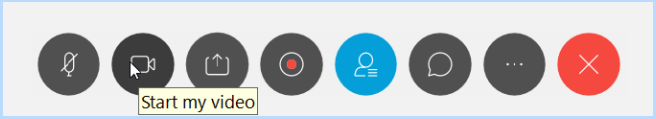
## Mute your mic!

To mute and unmute, click the microphone icon next to your name or at the bottom of the screen.



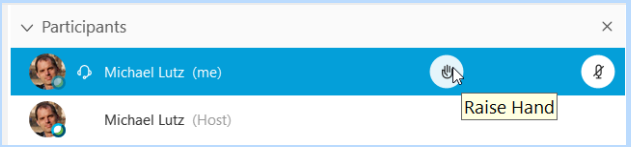

## Turn off video

Share your webcam video **only** when you are talking. To do this, click video icon next to your name.




## Ask a question

Use “raise hand” functionality to ask a question. Click the hand icon next to your name in the participant list.  If this is not available write ‘hand’ in the chat.




European Commission

# Adopt AI Programme

**Kilian Gross, Head of Artificial Intelligence Policy Development and Coordination Unit, CNECT/A2 – European Commission**

# ‘Adopt AI Programme’ was initially announced in February 2020 as one of the actions in the White Paper on AI:

*F.PROMOTING THE ADOPTION OF AI BY THE PUBLIC SECTOR*

*It is essential that public administrations, hospitals, utility and transport services, financial supervisors, and other areas of public interest rapidly begin to deploy products and services that rely on AI in their activities. A specific focus will be in the areas of healthcare and transport where technology is mature for large-scale deployment.*

*Action 6: The Commission will initiate open and transparent sector dialogues giving priority to healthcare, rural administrations and public service operators in order to present an action plan to facilitate development, experimentation and adoption. The sector dialogues will be used to prepare a specific **‘Adopt AI Programme’** that will support public procurement of AI systems and help to transform public procurement processes themselves.*

**Coordinated Plan on AI Review (as part of the AI Package from April 2021) announced that the Commission** will:

– launch in 2021 the **Adopt AI Programme**, as announced in the White Paper to support public procurement of AI systems and help transform public procurement processes themselves; in particular:

– **open** and **transparent sectoral dialogues** will help to build a bridge between public procurers (who want to know what solutions are available to address their needs) and European industry (which wants to supply products/services to public administrations and which needs to know more about their plans);

## What will the Adopt AI Programme be about?

To support public procurement of AI systems in the European Union and help to transform public procurement processes themselves, the Commission is developing an Adopt AI Programme. This Programme will specifically focus on the public sector in the EU and aim to help this sector to maximize benefits and European synergies from the deployment of trustworthy, human-centric and sustainable AI, inter alia, by utilizing the sector's strong collective purchasing power as a catalyst to stimulate procurement and uptake of AI.

## Difference to AI Watch Task 6:

AI Watch Task 6 goes from monitoring to problem definition, while Adopt AI takes it from problem definition to formulating possible solutions (practical approach).

# In view of the Commission's ongoing work to launch 'Adopt AI Programme' the study will cover the following 4 main research tasks:

| | |
|---|---|
| **Task 1** | **State of Play: review and analysis of available qualitative and quantitative data on the public procurement of AI technologies in the EU** |
| **Task 2** | **Assessment of key sectors for the public procurement of AI-technologies** |
| **Task 3** | **Consultation of the main stakeholders, including through the open and transparent sectoral dialogues, in key sectors** |
| **Task 4** | **Comparatively assess practical suggestions, alternative options and decisions to be made by the Commission in developing 'Adopt AI Programme'** |

Thank you for the attention.

*AI Watch*

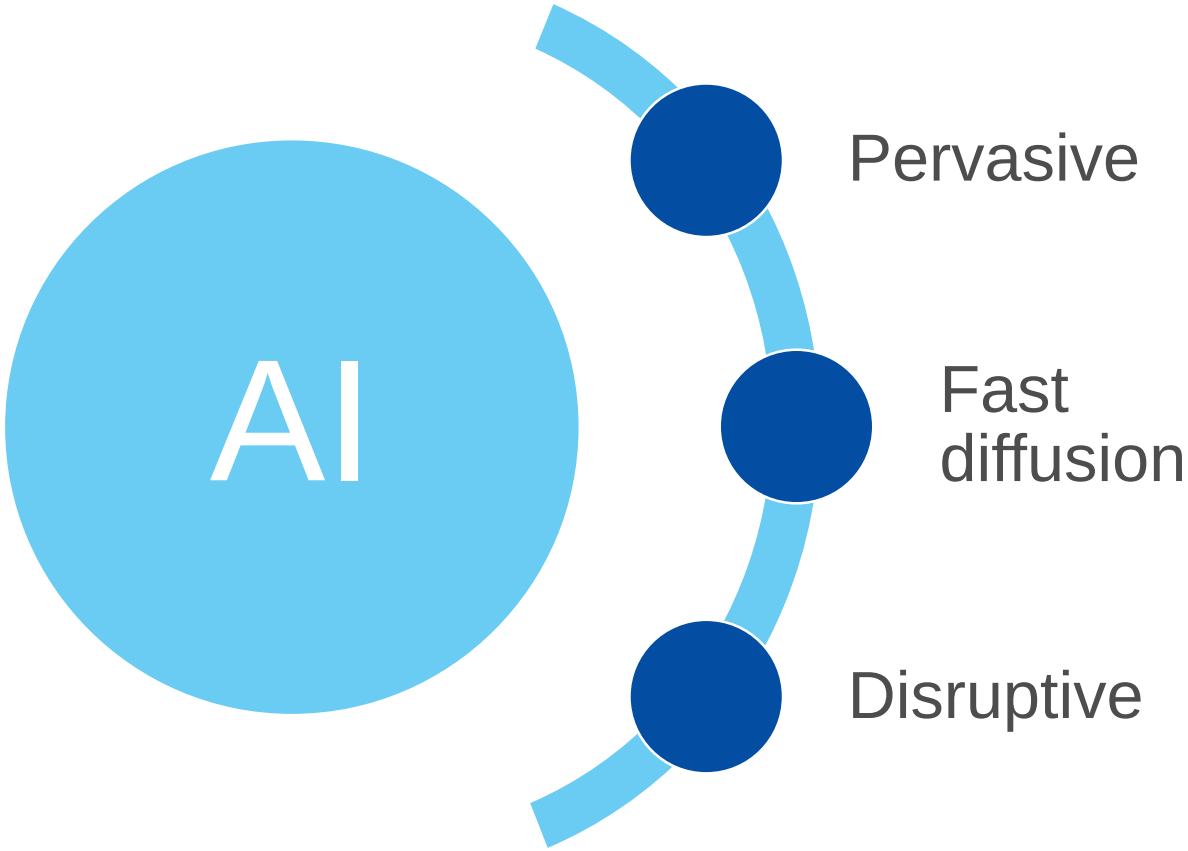
# 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

## Framing the context:
## AI uptake and use for and by the Public Sector

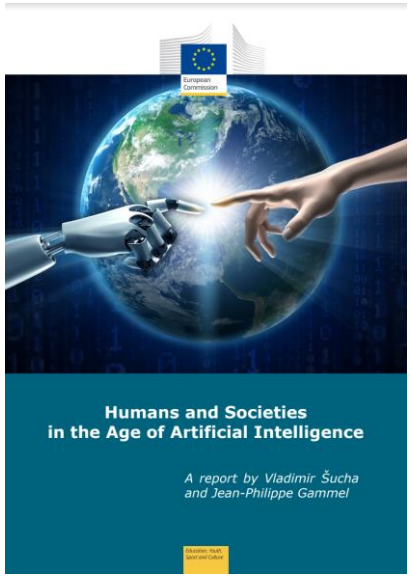
*Carlos Torrecilla Salinas, Head of the Digital Economy Unit, JRC/B6 – European Commission*

*24 June 2021*

# The potential of AI for Digital Transformation



# Rising interest & dilemmas in AI for government




MAJANDUS- JA KOMMUNIKATSIOONI-MINISTEERIUM

KRATT
Eesti
Tehisintellekt

#Bürokratt:
digiriigi järgmine arengutase
e-Eestis

Visioon ja kontseptsioon


Government Information Quarterly
Volume 36, Issue 2, April 2019, Pages 368-383

Mapping the challenges of Artificial Intelligence in the public sector: Evidence from public healthcare

Government Information Quarterly
Volume 36, Issue 4, October 2019, 101392

How and where is artificial intelligence in the public sector going? A literature review and research agenda


Contents lists available at ScienceDirect
Government Information Quarterly
journal homepage: www.elsevier.com/locate/govinf

Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda

Anneke Zuiderwijk, Yu-Che Chen, Fadi Salem


International Conference on Electronic Participation
ePart 2019: Electronic Participation pp 49-59 | Cite as

New Wine in Old Bottles: Chatbots in Government

Exploring the Transformative Impact of Chatbots in Public Service Delivery

Authors and affiliations

Colin van Noordt, Gianluca Misuraca

Conference paper
First Online: 26 July 2019

Part of the Lecture Notes in Computer Science book series (LNCS, volume 11686)

Berlin Declaration
on
Digital Society and
Value-Based Digital Government

at the ministerial meeting during the
German Presidency of the Council of the European Union
on 8 December 2020


Journal
International Journal of Public Administration
Volume 42, 2019 - Issue 7

2,238 Views
4 CrossRef citations to date
1 Altmetric

Original Articles

Artificial Intelligence and the Public Sector—Applications and Challenges

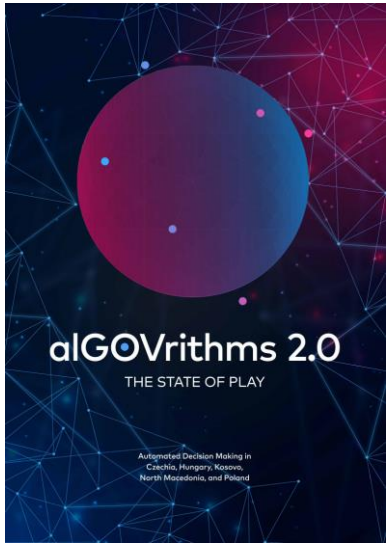
Bernd W. Wirtz, Jan C. Weyerer & Carolin Geyer

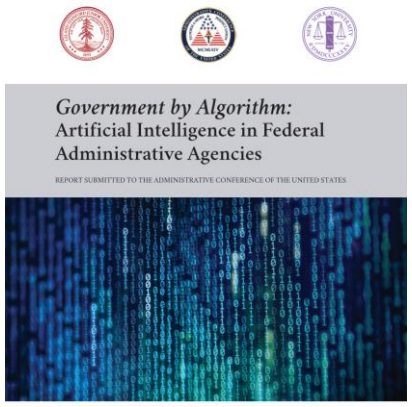
Pages 596-615 | Published online: 24 Jul 2018

Download citation https://doi.org/10.1080/01900692.2018.1498103

OECD.AI
Policy Observatory

AI4GOV





Government by Algorithm:
Artificial Intelligence in Federal Administrative Agencies
REPORT SUBMITTED TO THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES

David Freeman Engstrom, Stanford University
Daniel E. Ho, Stanford University
Catherine M. Sharkey, New York University

Original Manuscript

Exploratory Insights on Artificial Intelligence for Government in Europe

Social Science Computer Review
1-19
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DOI: 10.1177/0894439320980449
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SAGE

Colin van Noordt[1] and Gianluca Misuraca[2]

European Commission

# **AI Watch** – the Knowledge Service to monitor the Development, Uptake and Impact of AI for Europe



AI for the public sector


AI Landscape and Dashboard


Strategic Actions and Coordination

AI History Timeline

European Policy on AI


A Storymap on AI in Europe

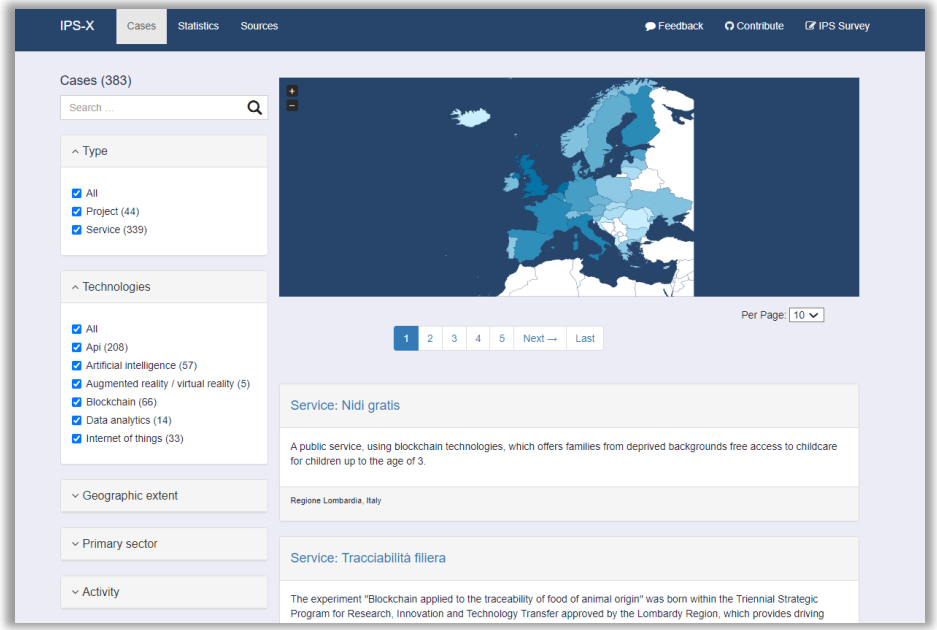
https://ec.europa.eu/knowledge4policy/ai-watch_en

European Commission

# Innovative Public Services Observatory (IPSO)

- Together with DG DIGIT
- Feasibility study and prototype of the IPSO
- Monitoring emerging technologies in public services
- Linked to the Commission's GovTech Incubator

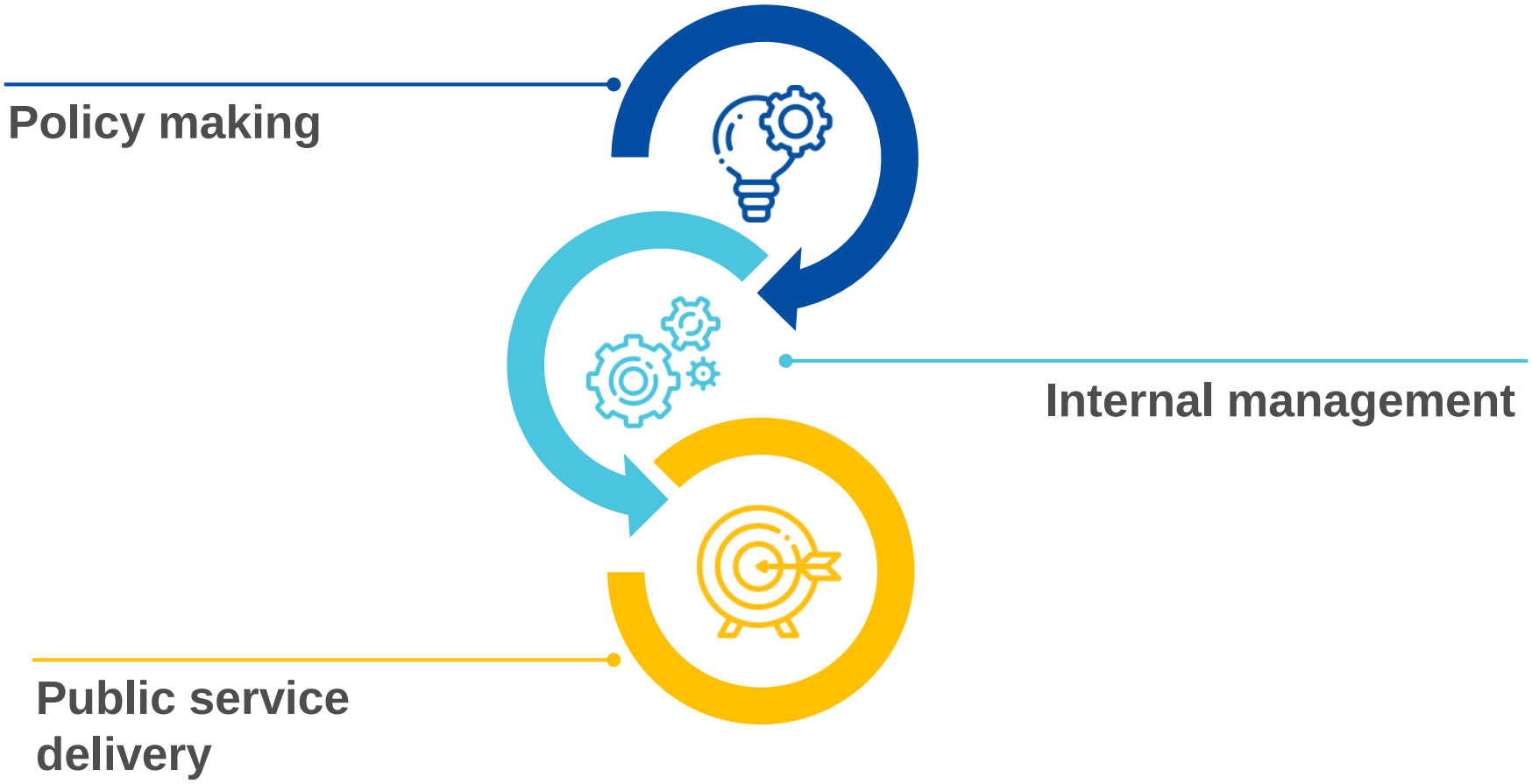
IPSO prototype platform:




https://ipsoeu.github.io/ips-explorer/case/

European Commission

# How can AI benefit the Goverments?

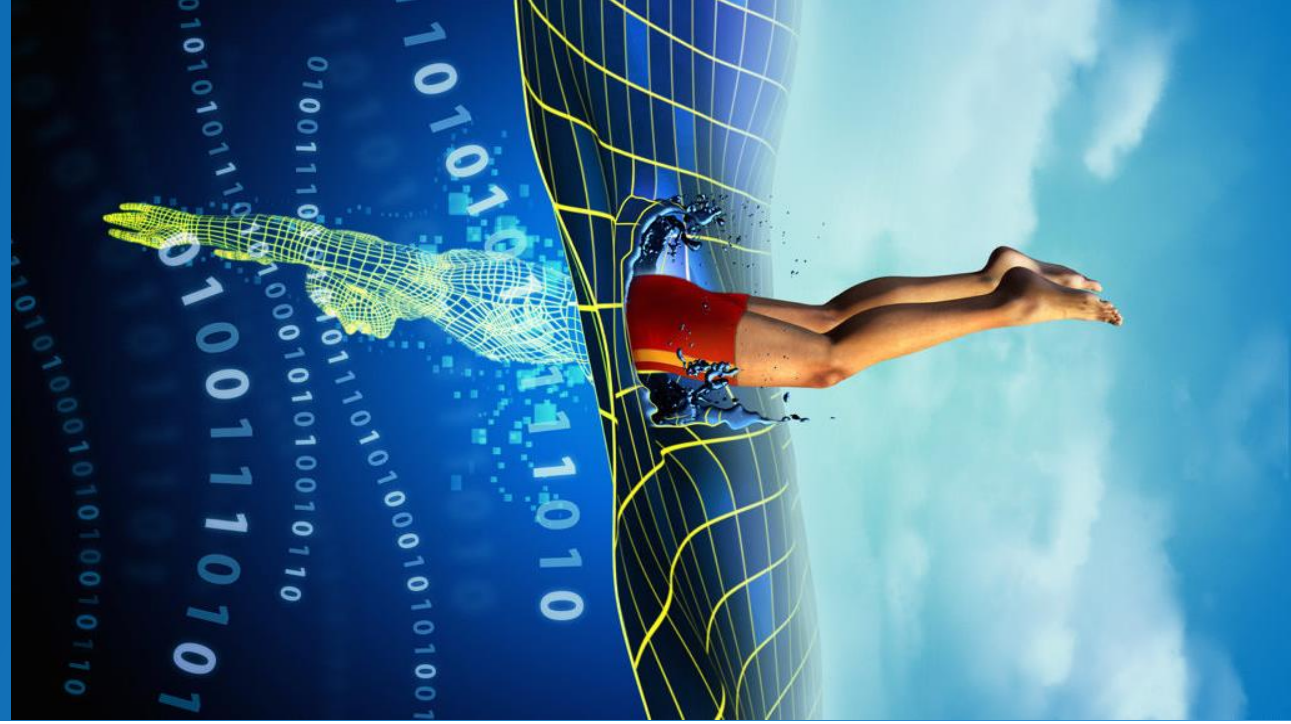



European Commission

# Learning from the peers

- Promote **use of human-centric AI** in the public sector
  - S**tructured mapping and surveying** of AI initiatives in public administration
  - Development of a **methodological approach to assess impacts of AI**
  - **Illustrative case studies** of AI used in government
- **Identify and overcome barriers** for adoption and implementation
  - Proposal of a **roadmap** for advancing on the use of AI in EU
  - **Sharing and analysing policy initiatives** on AI for government from EU MS
- **Peer-learning and validating** the recommendations with MS

# Thank you





European Commission

# 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

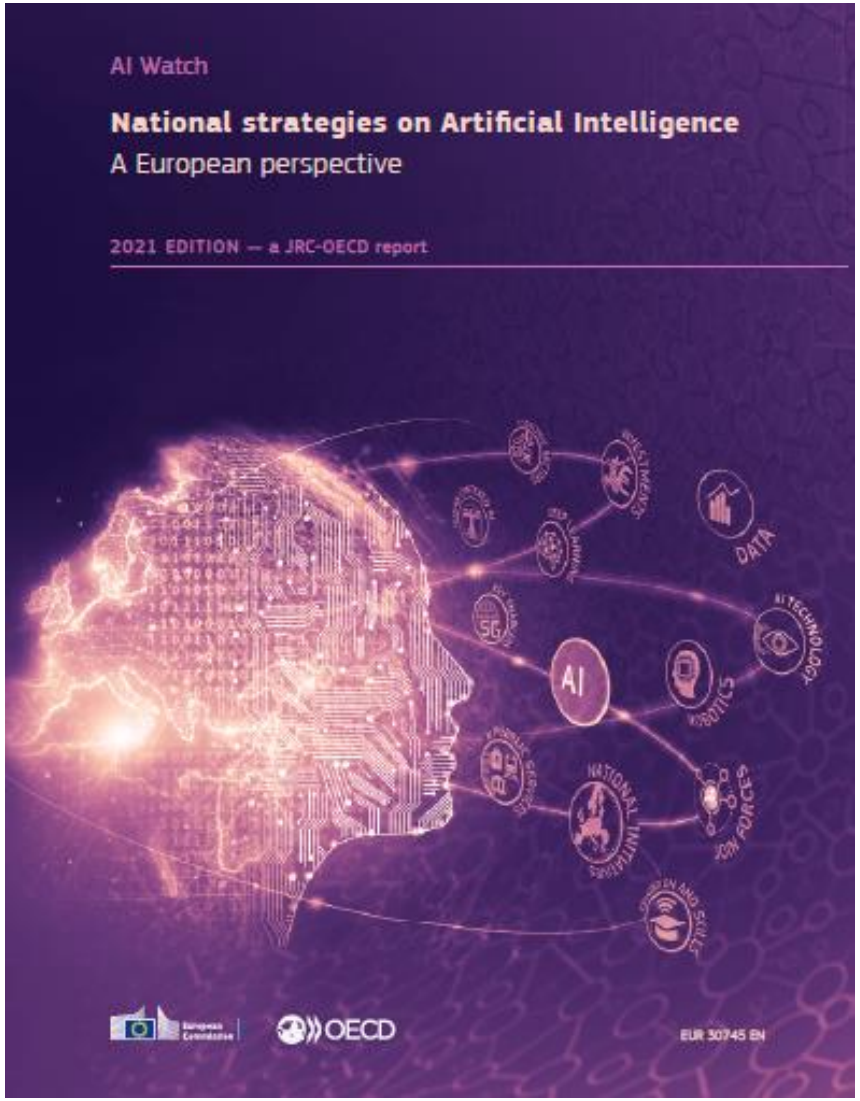
## AI National Strategies: preliminary results overview

*Vincent Van Roy, European Commission,*

*Joint Research Centre – European Commission*

*24 June 2021*

# AI Watch report on national AI strategies




Released at the webinar on National AI strategies: where are we now and what's next? | 22 June 2021

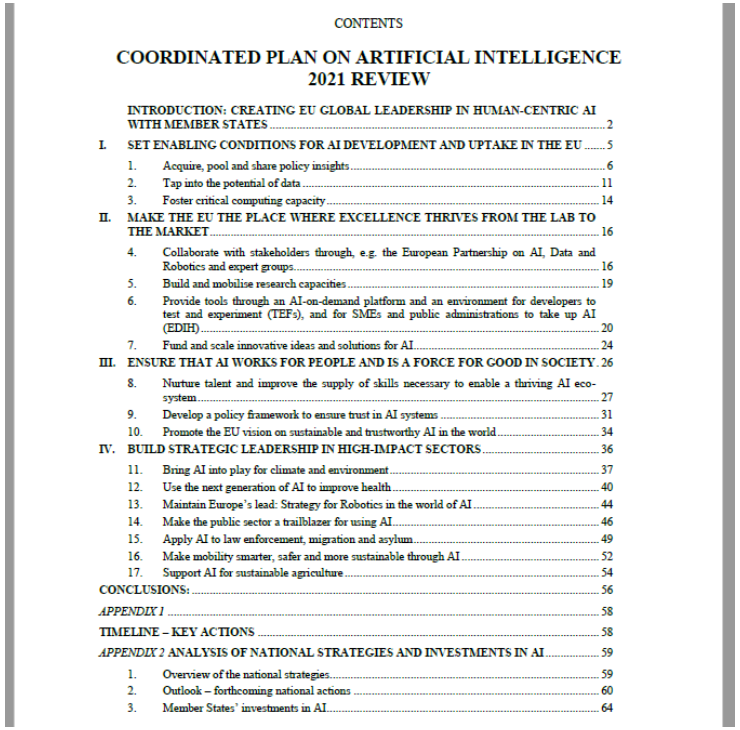
- Learn about emerging trends in AI policies in EU countries
- Discuss the role of national AI policies in building ecosystems of excellence and trust in AI
- Learn about the EC and the OECD's work to monitor and analyse national AI policies

This AI Watch report and the recording of the webinar are available on the AI Watch portal

European Commission

# AI Watch

- Knowledge service from the European Commission launched in December 2018
  - “to monitor the development, uptake and impact of Artificial Intelligence for Europe”
- Developed by JRC in close collaboration with DG CONNECT
  - To support monitoring and development of the European strategy for AI
  - Based on scientific evidence
- Contributes to monitoring the Coordinated Plan on AI



CONTENTS

**COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE 2021 REVIEW**



European Commission

# AI Watch

- Knowledge service from the European Commission launched in December 2018
  - “to monitor the development, uptake and impact of Artificial Intelligence for Europe”
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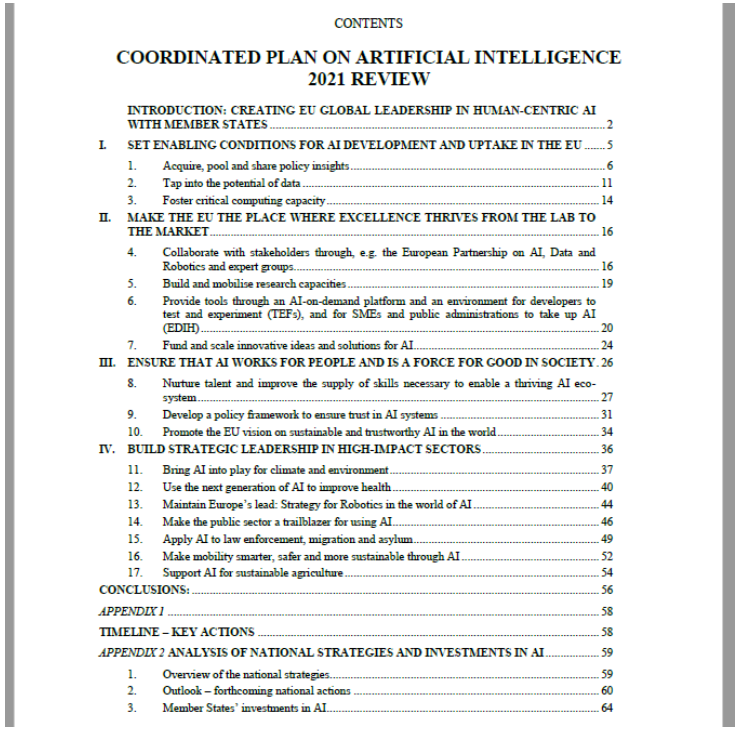


CONTENTS

**COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE 2021 REVIEW**



European Commission

# Main AI Watch main publications… so far

- AI Worldwide Ecosystem Mapping
- **National Strategies on AI**

  **– in collaboration with OECD**
- AI in the Public Sector
- AI and Health and Healthcare
- AI History Timeline
- AI Standardisation*

Scientific publications, methodology reports

* forthcoming

AI Watch portal: https://ec.europa.eu/knowledge4policy/ai-watch_en


**AI for the public sector**


**AI Landscape and Dashboard**

**Strategic Actions and Coordination**

**Data: a cornerstone for AI – Toward a Common European Data Space**

For an application of AI to be ready for market entry it has to learn on the basis of training data. Additionally, it may need further data sources in order…

**Education and Skills**

Education and training are crucial to harness AI, but AI can also help us rethink what competences and skills will be needed in the future to live…

**Evolution of AI technology**

Although AI has a long history of development, recent breakthroughs have impacted multiple application domains and industrial sectors.

**Evolution of AI uptake**

AI as a general-purpose technology can rapidly spread across industry sectors and yield strong positive growth effects.

**Key Enablers**

The Digital Single Market and its regulatory framework will provide key enablers to enhance AI adoption.

**Social perspective**

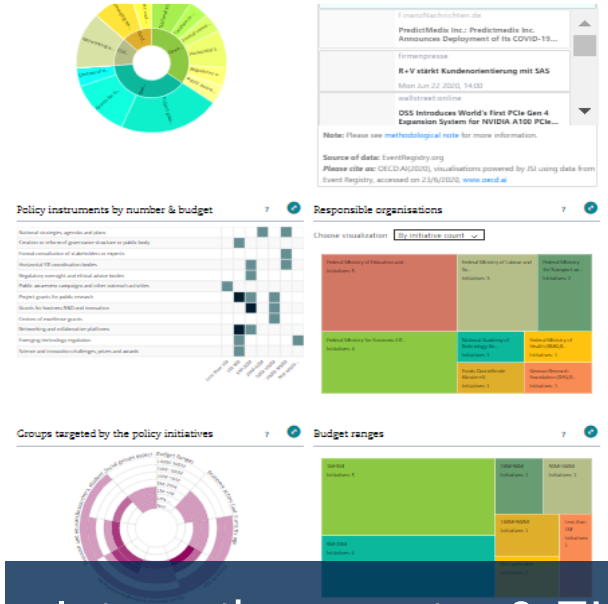
It is crucial to think how the concepts of autonomy and identity of individuals as well as security, safety and privacy issues might change under the influence of AI. AI WATCH…

European Commission

# EC-OECD cooperation on national AI policies


**Survey** on national AI policies, collecting qualitative and quantitative data


OECD.AI Policy Observatory contains **joint EC-OECD database** with over **650** national AI policies




Interactive country & EU dashboards (60+) and EC-JRC analytical reports

OECD.AI Policy Observatory

European Commission

# AI Watch Reports on National AI Strategies

Main objectives

- Present an overview of national AI policy initiatives in the European Union and Associated Countries
- Provide a useful resource for Member States' policy makers to help them compare their strategy to those of other countries, and to identify areas for collaboration;
- Support, at the EU level, the monitoring of the implementation of the Coordinated Plan on Artificial Intelligence and provide input for its development

# AI Watch Reports on National AI Strategies

- Based on
  - Public information
  - Information from EC-OECD STIP Compass survey
  - Engagement with Member States
- Validated by Member States
- Published jointly on AI Watch portal and OECD AI Policy Observatory (OECD.AI)
- New in 2021
  - Coverage of associated countries Norway and Switzerland
  - AI initiatives in health and environment
  - New sections: e.g. Insights analysis

# Overview of National AI Strategies

| Country | Status | Date |
|---|---|---|
| Austria | In progress | |
| Belgium | In progress | |
| **Bulgaria** | Published | Dec. 2020 |
| Croatia | In progress | |
| **Cyprus** | Published<br>Last update | Jan. 2020<br>Jun. 2020 |
| Czech Republic | Published | May 2019 |
| Denmark | Published | Mar. 2019 |
| Estonia | Published | Jul. 2019 |
| **Finland** | Published<br>Last update | Oct. 2017<br>Nov. 2020 |
| France | Published | Mar. 2018 |
| **Germany** | Published<br>Last update | Nov. 2018<br>Dec. 2020 |
| Greece | In progress | |
| Hungary | Published | Sept. 2020 |
| Ireland | In progress | |

| Country | Status | Date |
|---|---|---|
| Italy | In progress | |
| Latvia | Published | Feb. 2020 |
| Lithuania | Published | Mar. 2019 |
| Luxembourg | Published | May 2019 |
| Malta | Published | Oct. 2019 |
| Netherlands | Published | Oct. 2019 |
| Norway [AC] | Published | Jan. 2020 |
| **Poland** | Published | Dec. 2020 |
| Portugal | Published | Jun. 2019 |
| Romania | In progress | |
| Slovakia | Published | Jul. 2019 |
| **Slovenia** | Published | May 2021 |
| **Spain** | Published | Dec. 2020 |
| Sweden | Published | May 2018 |

# Some Highlights of the 2021 Edition

All EU Member States and Associated Countries have ambitious plans.

National strategies notably focus on (in all or in several countries):

- AI education and skills
- research and innovation to drive AI developments into successful products and services,  also by improving collaboration and networking
- regulation framework to address ethical and legal issues
- data and ICT infrastructure
- COVID-19 pandemic and climate change – in most recent strategies
- manufacturing, agriculture, healthcare, transport and energy

# Engagement with Member States and Associated Countries

- AI Watch Steering group composed of Member States and Associated Countries representatives
- Country representatives contribution to this report
  - Responded to calls for input
  - Validated country chapters; provide comments or additional information which was included in the report
- We are very thankful for these contributions and for working together on the report

# Thank you!



European Commission

*AI Watch*

# 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

## Analysis of the National Strategies on AI in the Public Sector

*Colin van Noordt*

*PhD Researcher, TalTech*
*External Expert, AI Watch*

*24 June 2021*

# National AI Strategies

- Revised European Action Plan: Make the public sector a trailblazer for using AI
  - High-impact area for AI
  - Contribute to better public services
  - First mover role in adopting secure, trustworthy and sustainable AI
- Development of National AI Strategies
  - Part of the Coordinated Action Plan
  - To coordinate and share implementation measures on AI

EUROPEAN COMMISSION

Brussels, 21.4.2021
COM(2021) 205 final

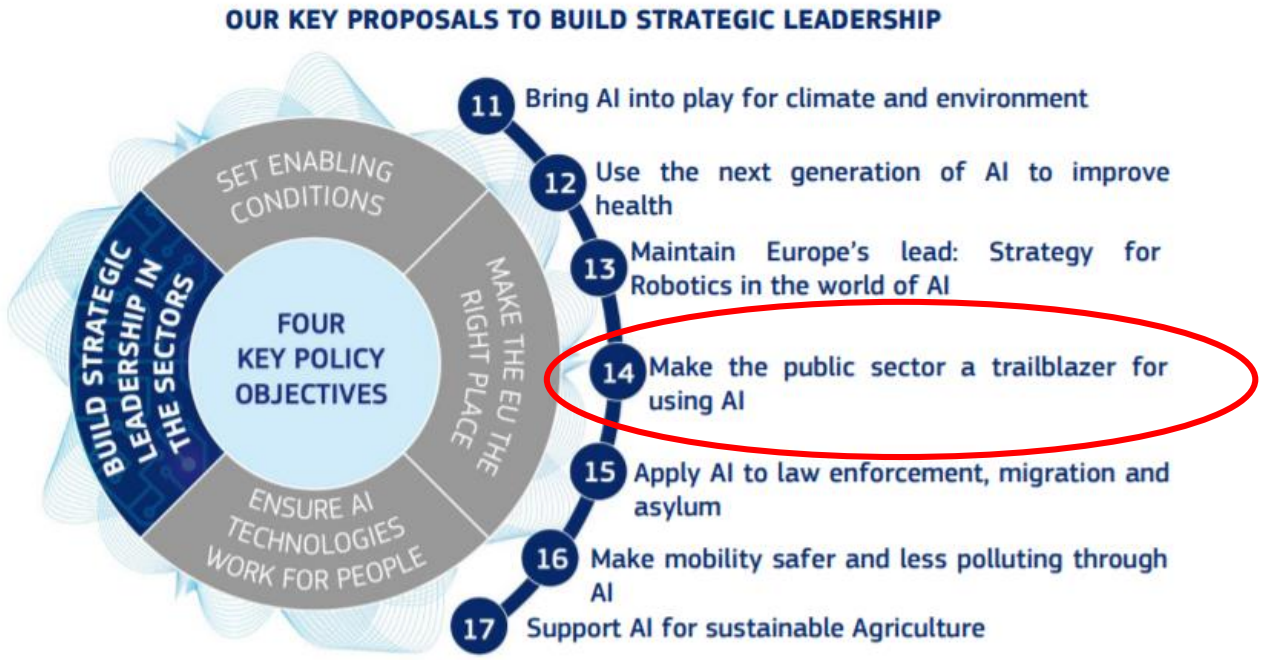
ANNEX

**ANNEXES**

*to the*

**Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions**

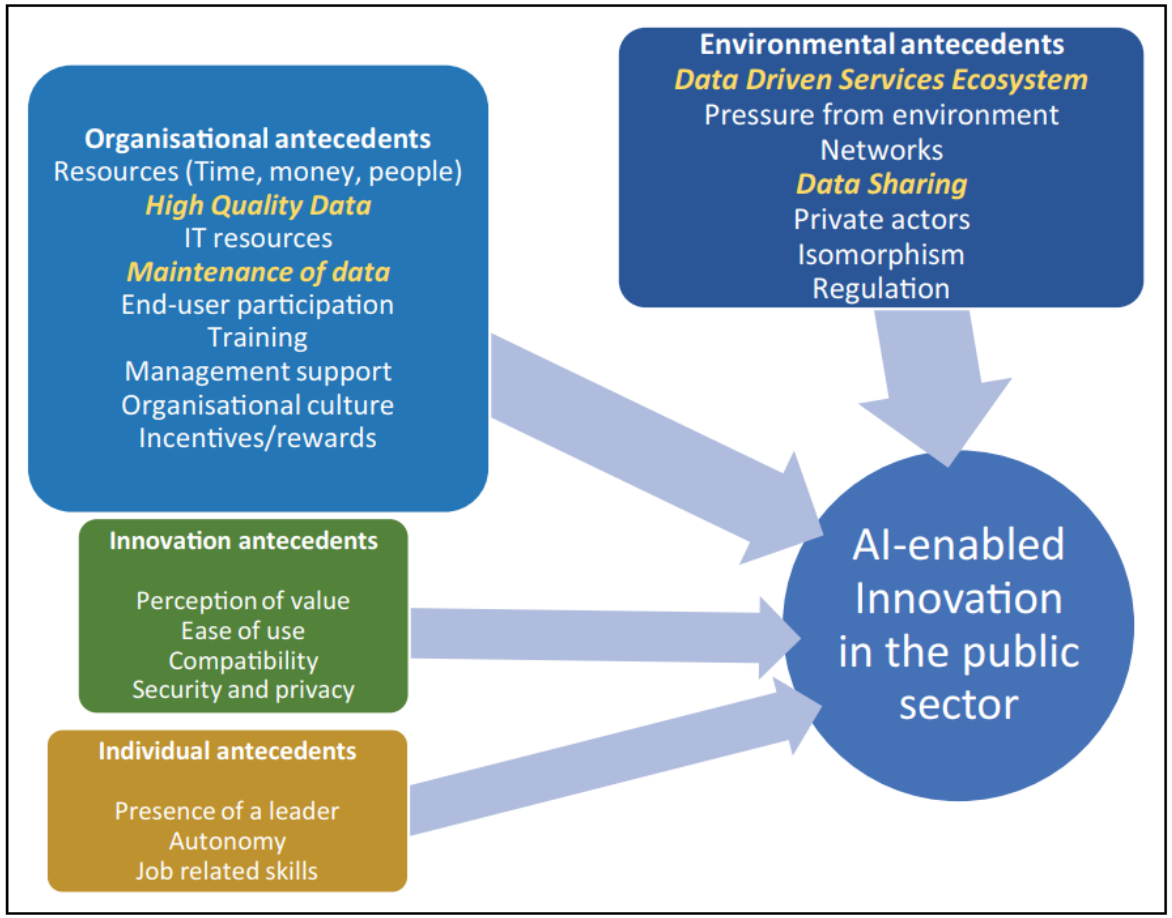
**Fostering a European approach to Artificial Intelligence**




European Commission

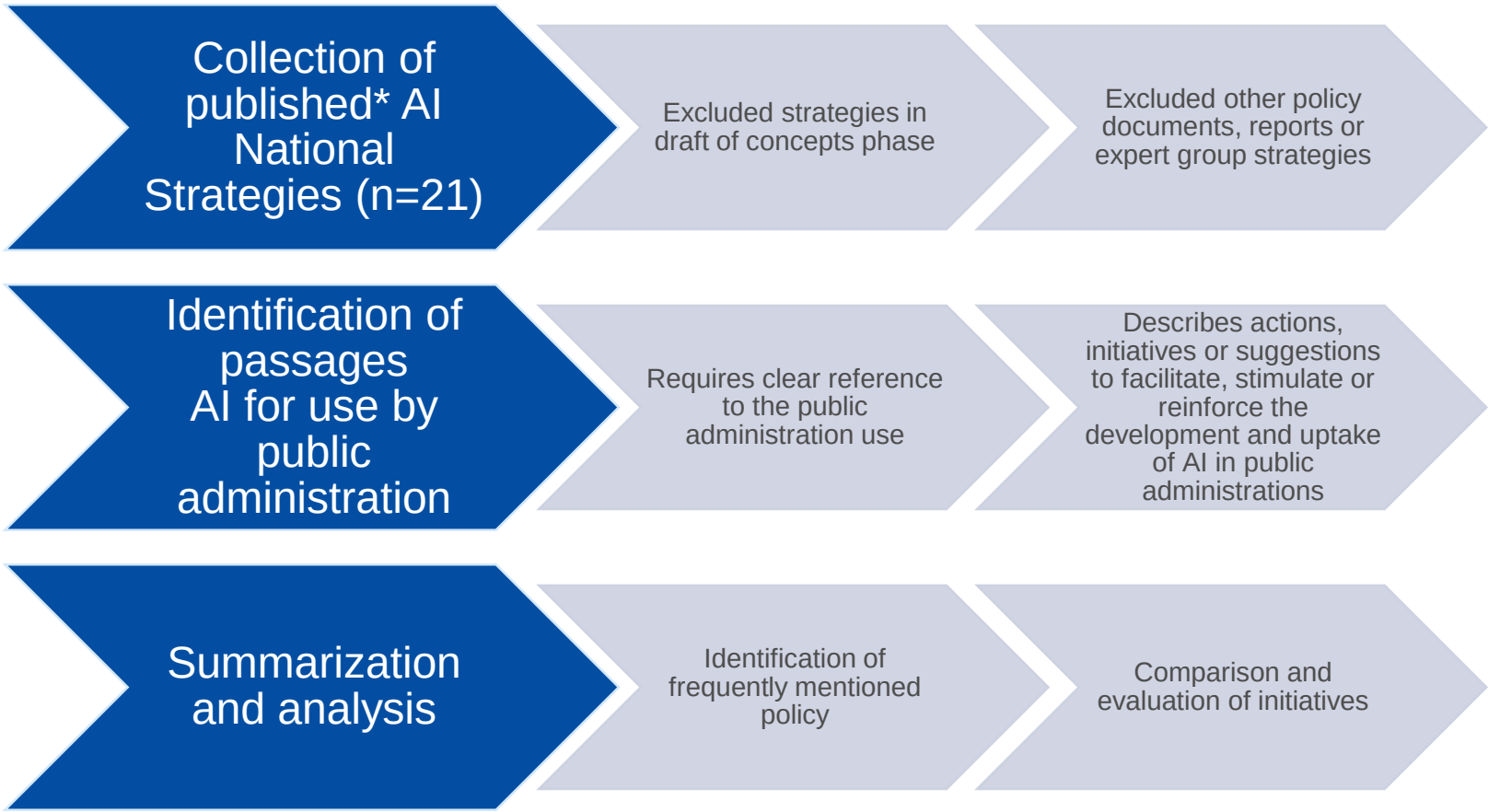
# Barriers limiting AI in government

- Technological challenges
  - Data barriers; poor data quantity, quality, collection or governance
- Legal barriers
  - Privacy regulation or lack of mandate
  - Procurement regulation
  - Legal unclarities and uncertainty
- Ethical barriers
  - Socially justifiable development and use
  - Legitimacy challenges of using AI
- Societal barriers
  - Trust by citizens in use of AI
  - Lack of digital and AI-related skills




Antecedents to AI-enabled public sector innovation, in: van Noordt & Misuraca, 2020

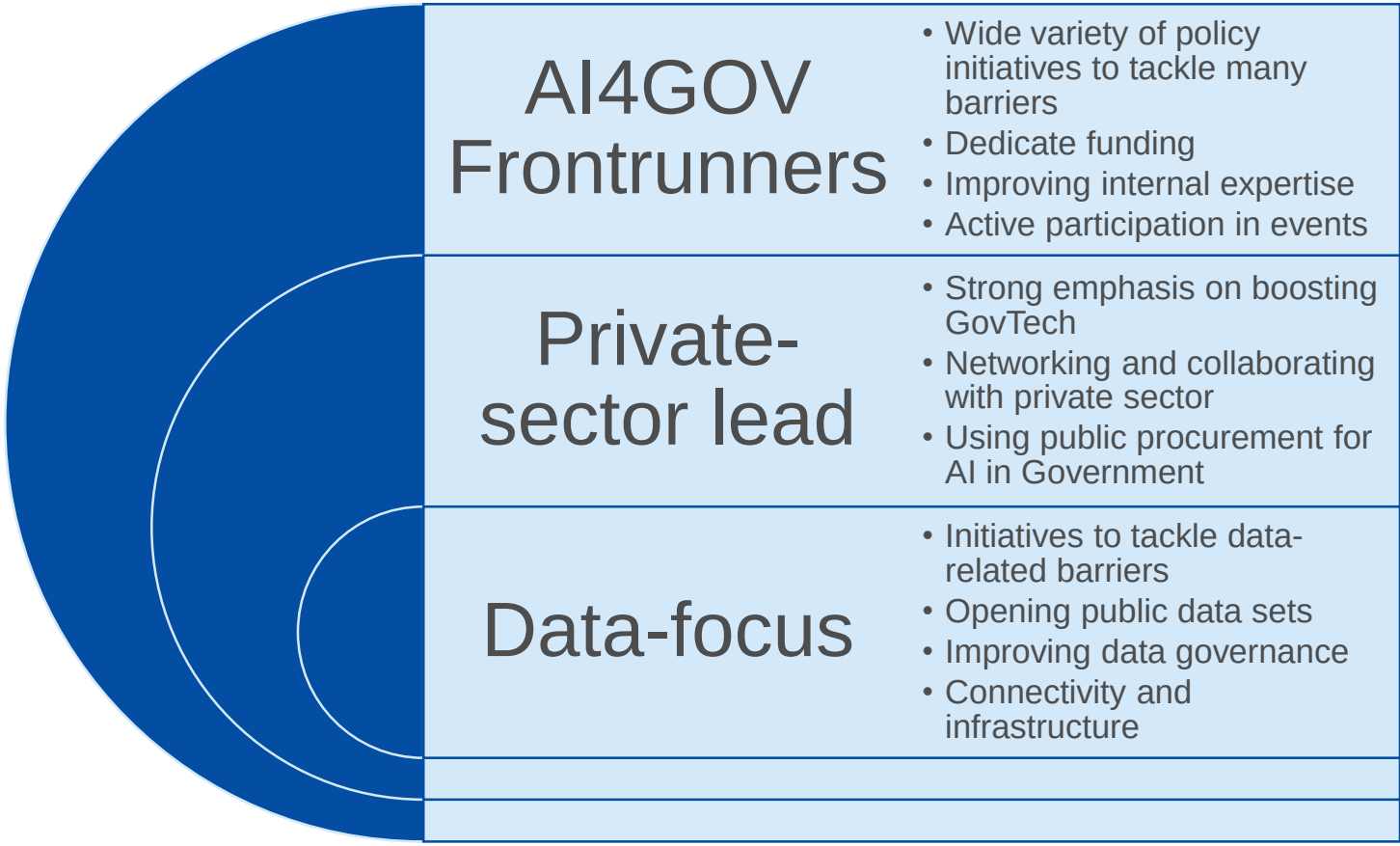
# Analysing national AI strategies



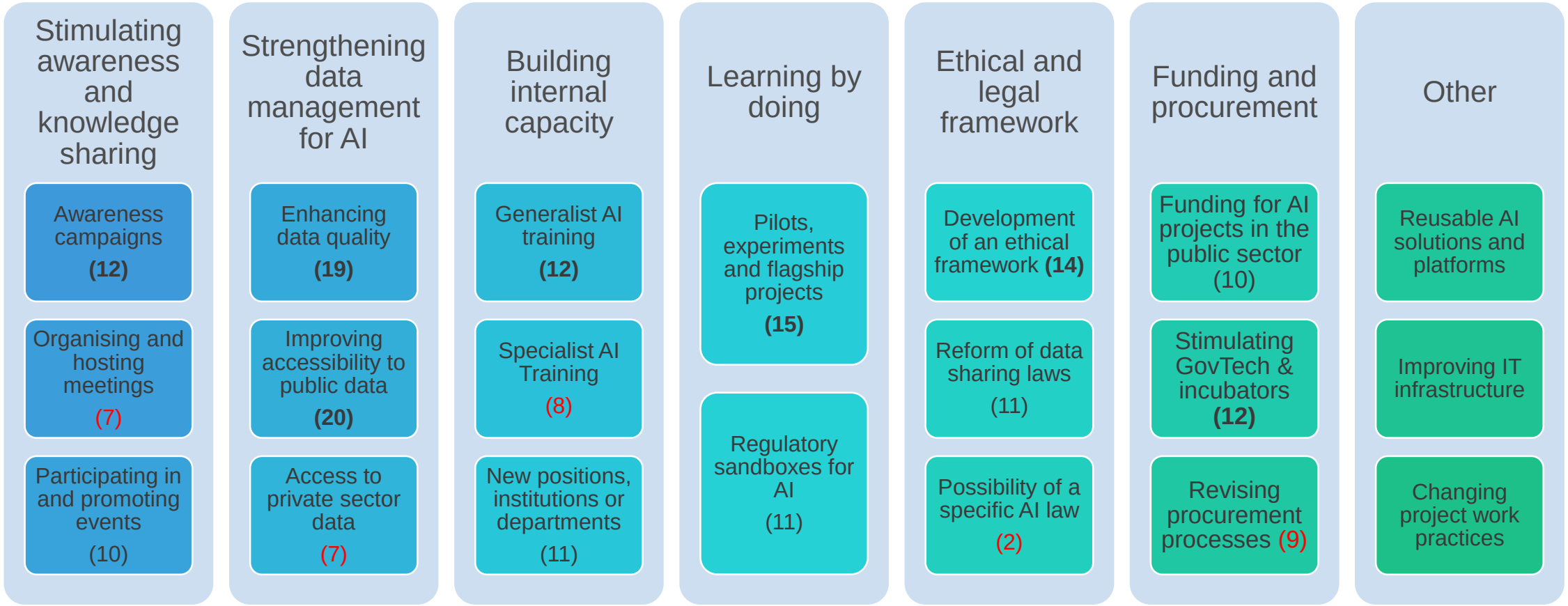

*As of April 2021, there are 21 countries which have published their national AI strategies: Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, and the United Kingdom.

# Insights

- Potential for AI in the public sector often acknowledged in strategies
- **The extent and scope of actions to facilitate AI in public sector vary**
  - On average, **9% of the strategy document text** describes actions related to public sector AI
- Sometimes unclear if strategies describe ‘wishes’ or active implementation measures
- Growing levels of ambition



# Overview of actions and frequency (n=21)




European Commission

# Lessons learned

- **Too strong focus on data-related aspects**
  - Organisational factors and resources needed for AI may be overlooked
- **Close the 'gap'** between the private and the public sector
  - Strategies describe many more actions to facilitate at the private sector than public sector
- **Improving and boosting public procurement for AI is promising**
  - However, a successful AI procurement still requires **internal capacity and skills**. Focus on supply and demand side of the procurement process.
- **More funding for AI in the public sector** is needed
  - Not just for **research and development of AI**, but for **piloting** and **introducing organisational changes**
- Public administrations should go beyond existing **ethical and legal standards**
  - Provide **ethical and legal guidance** for civil servants on AI development, procurement and deployment

# Open research questions

- Are there **other initiatives** to improve the development and uptake of AI in the public sector? Please let us know!
- What is **the status of the plans** as presented in the strategy? Are these initiatives ongoing or have already ended?
- What is the **effectiveness of these actions** in overcoming the barriers to public sector AI? Could you share experiences and examples?
- **What else** may be required to overcome the other barriers to AI in the public sector?

# Thank you!



European Commission

Click to add text

# How to empower digital services transformation with the use of AI:

# a case study of Poland

Ilona Urbaniak, PhD - NASK, Poland
Antoni Rytel - GovTech, Poland

# **Vision:** Digitization of public administration in Poland / AI Strategy in Poland

**Engine**
**EZD**
electronic documentation management system

**Ecosystem tool called gov.pl**
Gateway to public administration services
catalogue of online services/information for citizens
26 mln users per month
(e.g.taxes, registration of birth, child benefits)

**Future:**
Wide implementation of gov.pl services
To be used by any local/central public administration authority

**One of the important aspects of implementing modern technologies in Poland is the use of artificial intelligence.**

# Why the Uniform electronic document management system (EZD)?

**The existing EZD system supports 700 authorities (data for 3 months,** 1Q2021**)**

**1 621 571**
**Internal documentation**

4 610 919
**Internal (chain of command) approvals**

**900 556**
**Number of sent documents**

- Easing access to public services and citizen's life
- Paper-less public administration
- One system for public administration for day to day operation - receiving, storing and archiving electronic correspondence

**Benefits for public administration:**
- time reduction
- cost reduction
- high volume
- Convenience
- easy access
- No printing required
- unification/standardization/harmonization
- effective use of human resources

**1,9 mln**
Public sector employees including administration/healthcare/education.

60K
approx. 60K public authorities (small and large)

**EZD RP**

**Upgrade of the EZD PUW - currently the leading eDMSs for public administration in Poland**

**Full integration of digital processes in administration - connection between administrators with key resources**

**System developed in very close cooperation with stakeholders/users – bottom up initiative**

**Free of charge for users**

**EZD RP provides resource registry API**

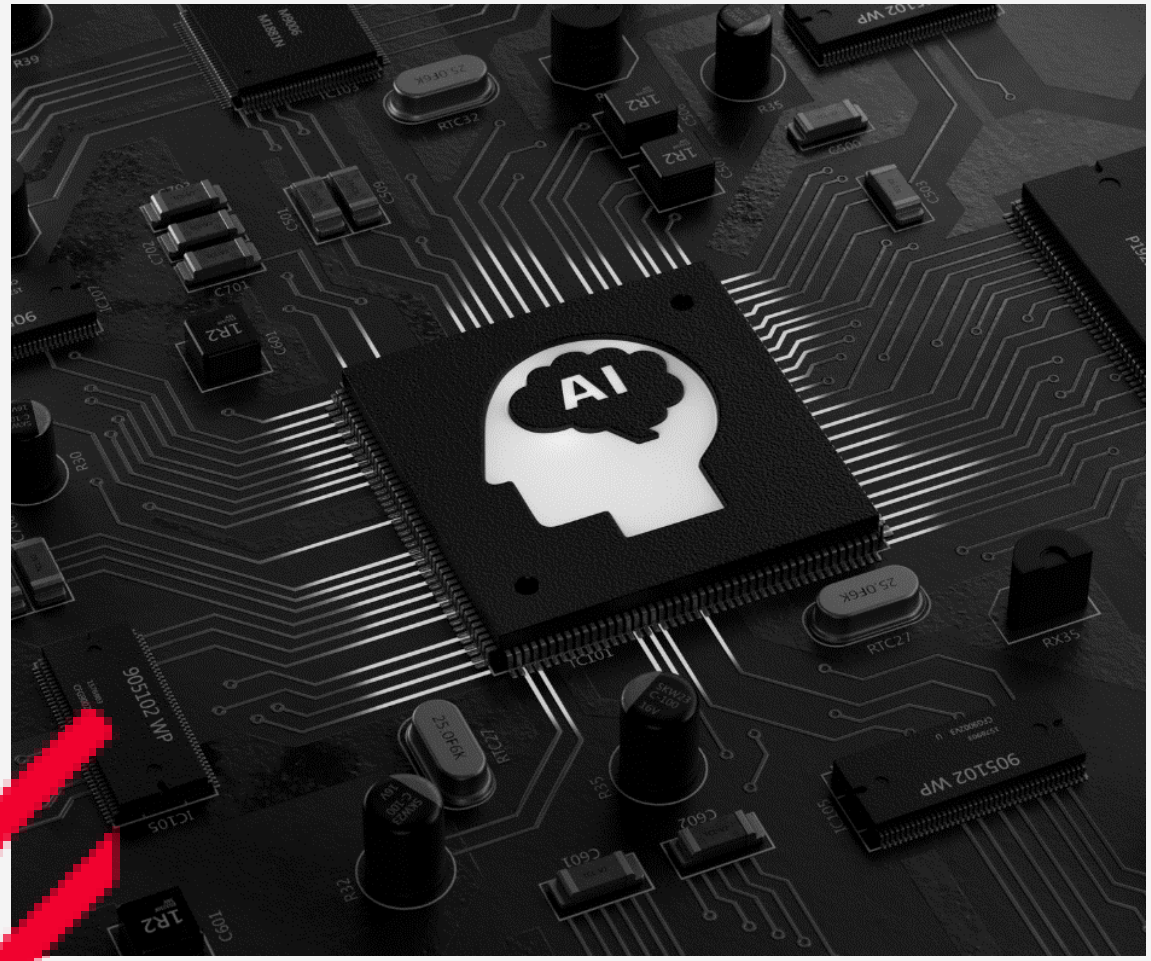
**Launch of EZD RP- January 2022**

# AI in EZD RP

Two existing/developed practical applications of AI
in the electronic document management system EZD RP

1. Automatic division of correspondence based on existing signatures.

2. Automation of document anonymization before sharing

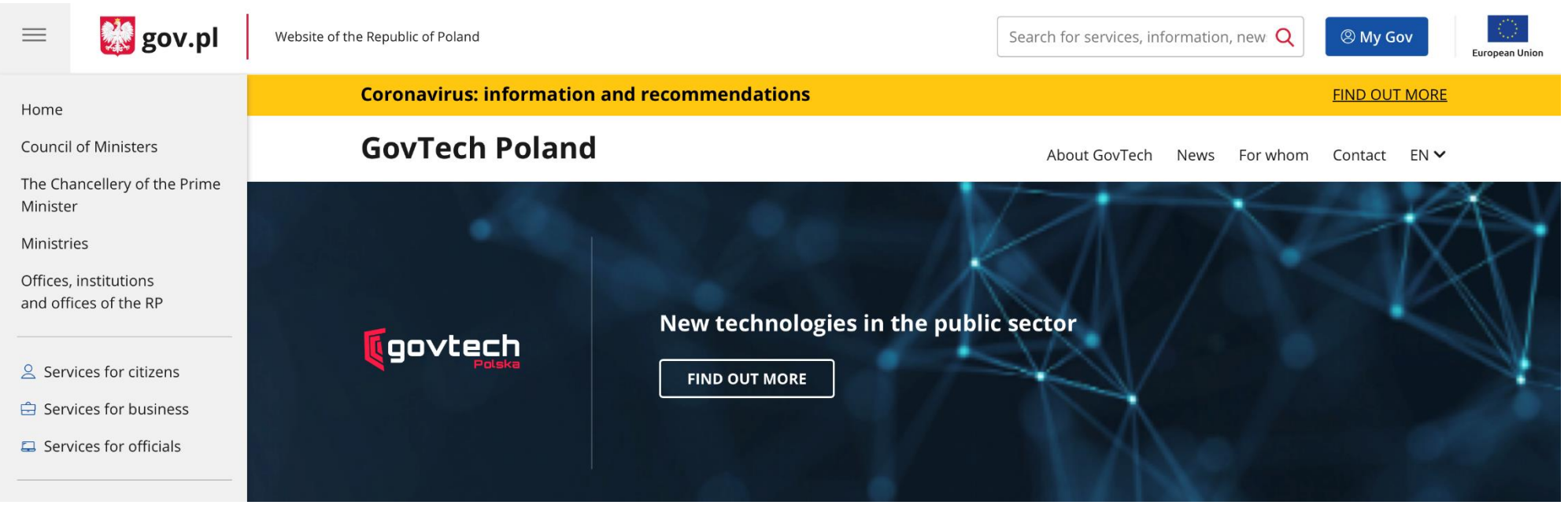



# AI in EZD RP

- Identification of sensitive data
- Detection of non-typical user's actions or anomalies in the usage of documents
- Verification of identical signatures
- Automatic metadata insertion
- Grouping of similar issues
- Summarising document

  And more…

3 Future features based on AI




4

# GOV.PL – one gateway to access them all

Hundreds of services …

Thousands of institutions …

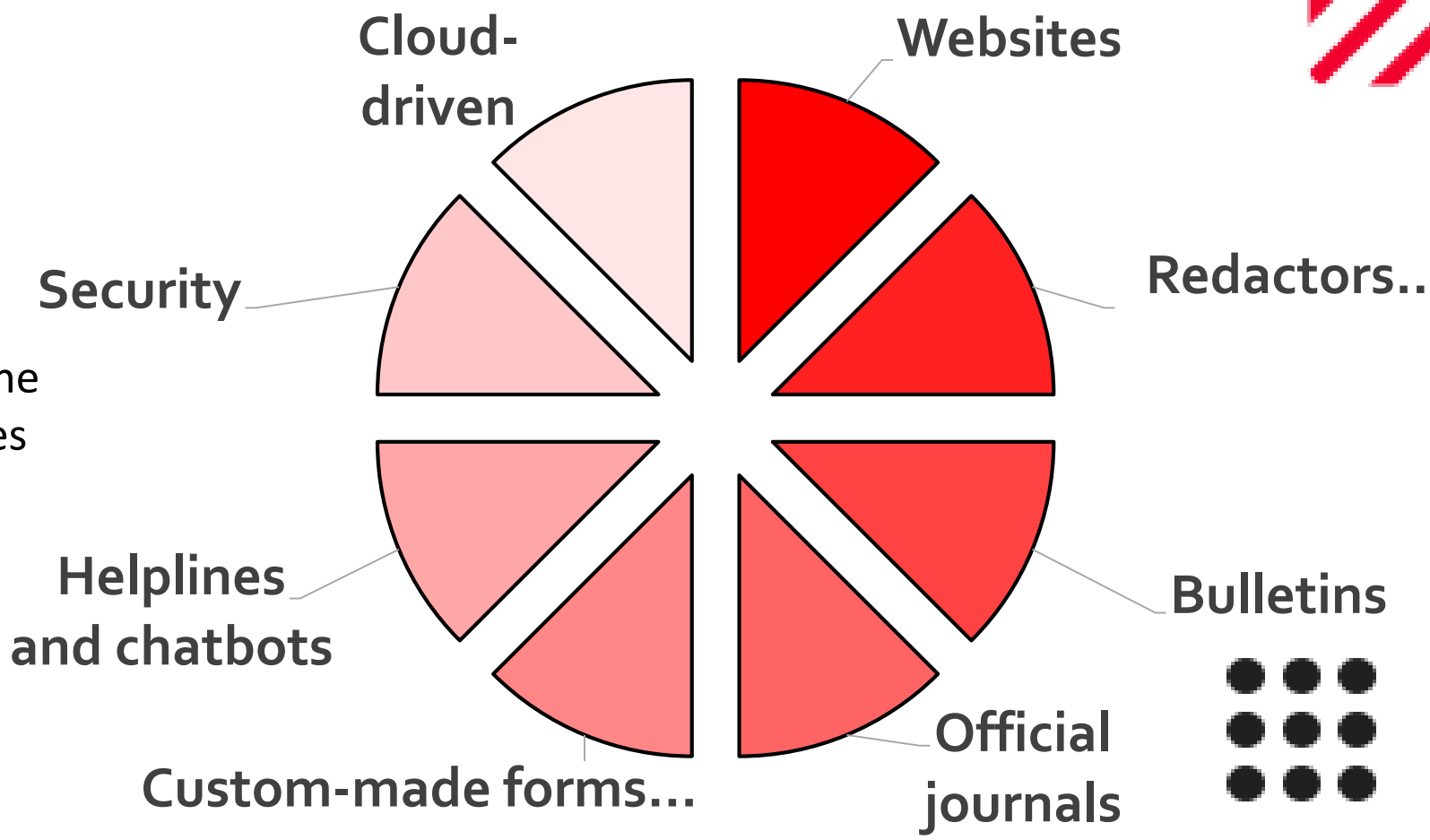
**… all in one place!**

Tens of millions of monthly users …

# One ecosystem for all your needs

5

- Provided for free to central and local government institutions
- Combined with EZD-RP, it will create one ecosystem for all government processes
- Maintained and expanded centrally, administered locally



# Synergy of both systems

6

**EZD RP** ⟷ **GOV.PL**


- Users able to check the status of every process they’re involved in
- AI provided with priceless anonymised data from tens of millions of users
- Customer satisfaction research

EZD RP is the key pillar for digitalization of Polish public administration while using AI tools

Poland remains committed to further developing all tools you have seen today and sharing the results

Stay tuned to our future presentations of our innovations with AI components

**Thank you**

**Ilona Urbaniak, PhD (NASK)**
**Antoni Rytel (GovTech)**

Norwegian Ministry
of Local Government and Modernisation

# The Norwegian AI strategy – what's next?

Christine Hafskjold

Department of national IT policy and public governance

Photo: Ars electronica/vog.photo

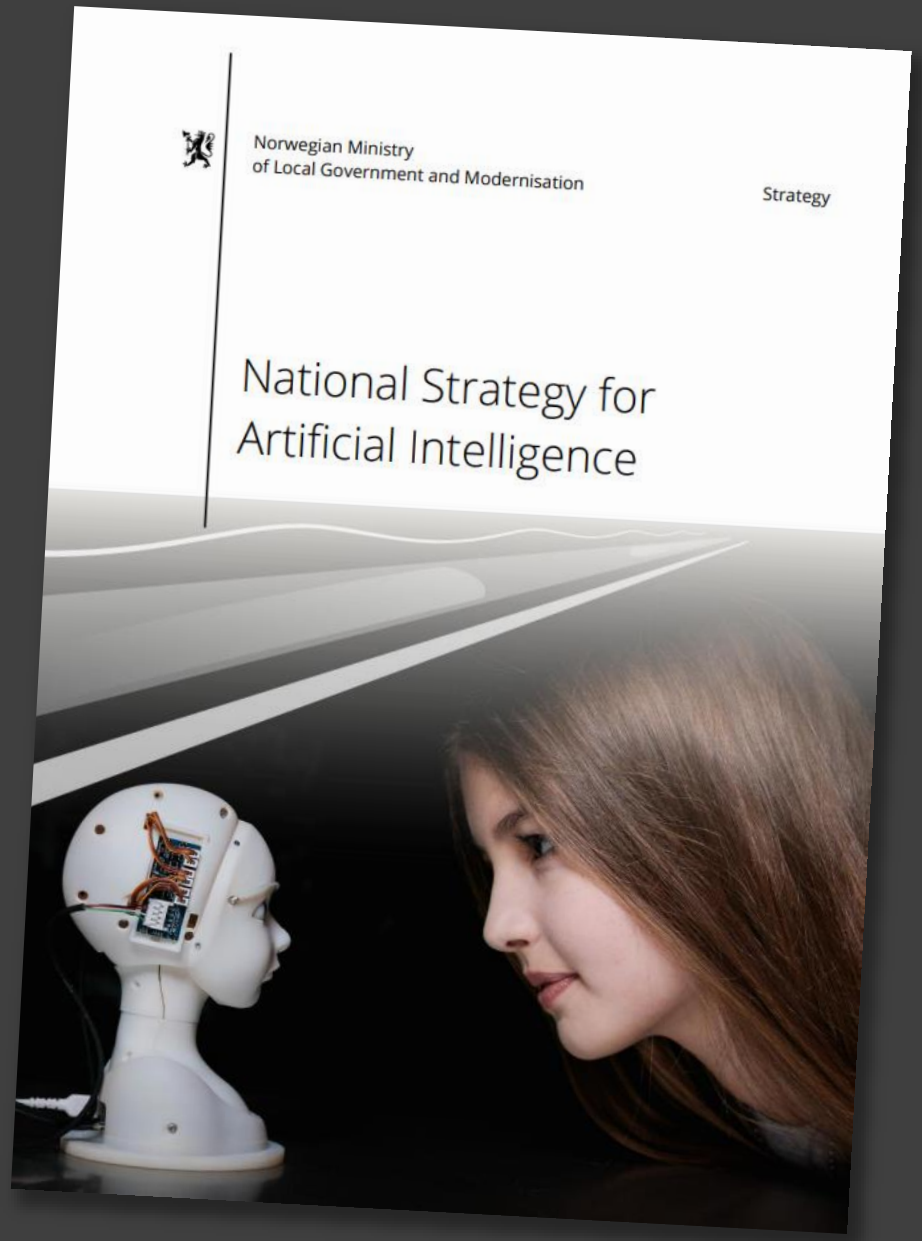
**1: What is AI?**

**2: A good basis for AI**
Important prerequisites for AI such as data and data management, infrastructure, language resources and regulations.

**3: Developing and leveraging AI**
Status and objectives in research and higher education, and the need for upskilling and reskilling for all.

**4: Enhancing innovation capacity using AI**
For both private and public sector

**5: Trustworthy AI**
Ethcis guidelines and cyber security



# Common challenges

- How to get access to enough data of good quality
- How to get funding for AI projects
- How to recruit ICT specialists and data scientists


Norwegian Ministry
of Local Government and Modernisation
Strategy
National Strategy for
Artificial Intelligence
Our new
digital world
Digitalisation in Norway during
the coronavirus pandemic
Norwegian Ministry
of Local Government and Modernisation
DET KONGELIGE KOMMUNAL-
OG MODERNISERINGSDEPARTEMENT
Meld. St. 22
(2020–2021)
Melding til Stortinget
Data som ressurs
Datadrevet økonomi og innovasjon
DET KONGELIGE KOMMUNAL-
OG MODERNISERINGSDEPARTEMENT
Meld. St. 28
(2020–2021)
Melding til Stortinget
Vår felles digitale grunnmur
Mobil-, bredbånds- og internettjenester

# STATUTORY PROVISIONS

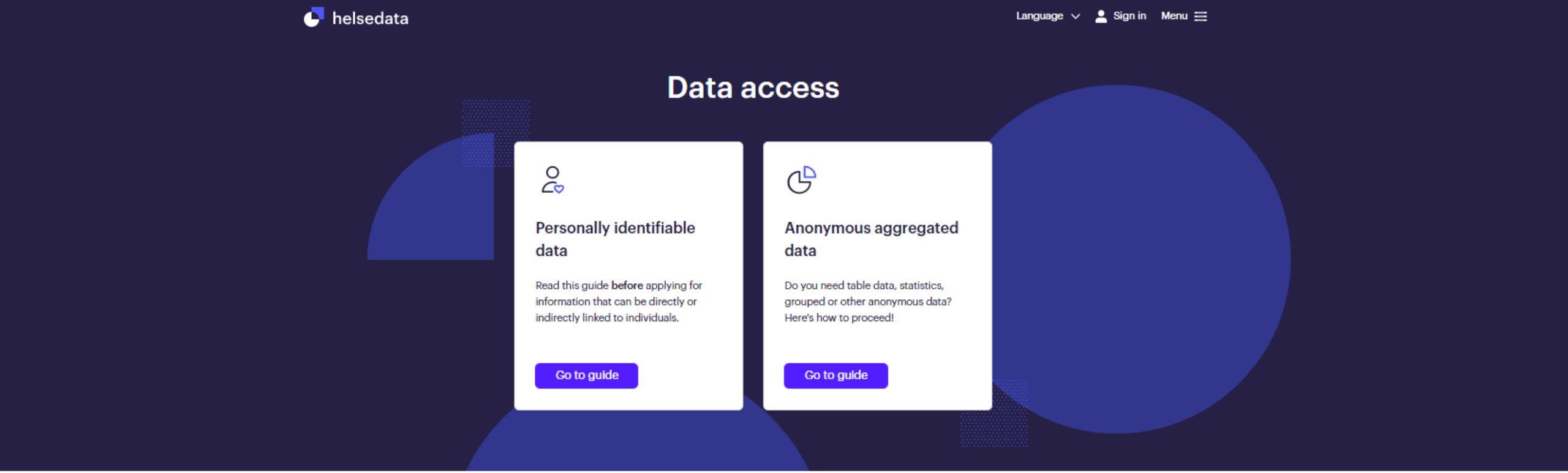
# GDPR

# PURPOSE LIMITATIONS

# Regulatory sandboxes for responsible innovation

- Testbeds for new technologies and/or business models
- Sandbox for autonomous vehicles and testing areas for autonomous vessels
- Sandbox for fintech
- Sandbox for AI and data protection
- 'Data factory' for data-driven business ideas, products and services

Photo: Markus Spiske on Unsplash




## Explore data sources

### Data sources

Find various data sources, such as central health registers, medical quality registers, health surveys, biobanks and socio-economic data. **Information in Norwegian.**

Explore data sources

### Variables

Get an overview of variables and create a variable list. The variable overview shows you which variables you can apply for from Norwegian national health registers. **Information in Norwegian**

Explore variables

### Open data

Overview of published statistics with health information and other sources of health information that are openly available.

**Information in Norwegian.**

Go to Open data

# Next steps

- Gain experience from sandboxes
- Continue to review sector regulation
- Provide guidance regarding privacy and ethics
- Cultivate networks

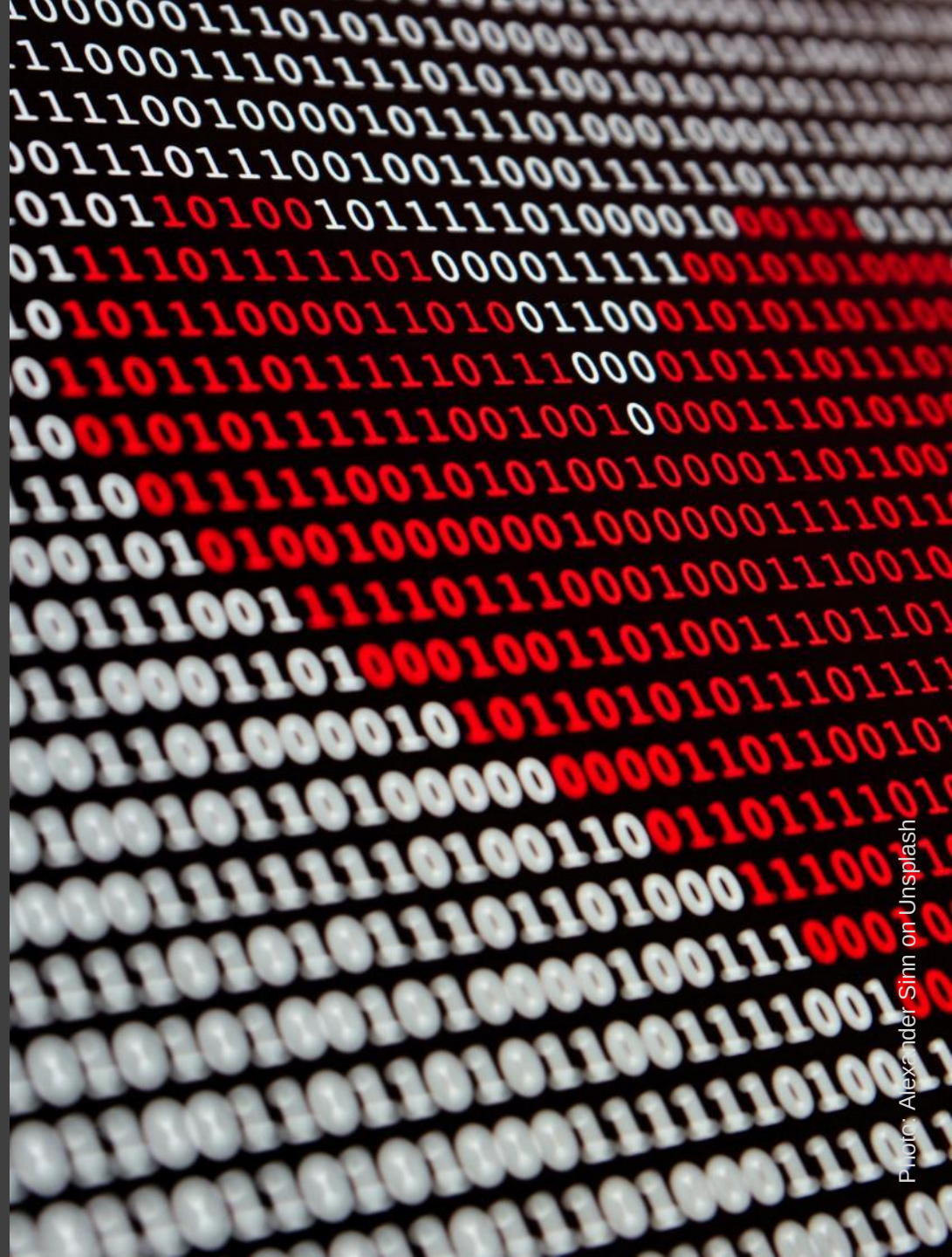


Photo: Alexander Sinn on Unsplash

# Thank you!

«Norway should take a global lead in developing and using AI that respects individuals' rights and freedoms»

Photo: Ars Electronica/Martin Hiesmair

# AI-WATCH

## 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

## AI uptake and use for and by the Public Sector

***Short break (*11h45 – 12h00*)***

# Risk factors and mitigation measures for AI use in and by the Public Sector

Paul Waller

# Brainteaser

5% of children in a population are in danger of domestic abuse.

A predictive classification algorithm correctly identifies a child as in danger for 80%  of those truly in danger.

It correctly identifies as safe 90% of those not in danger.

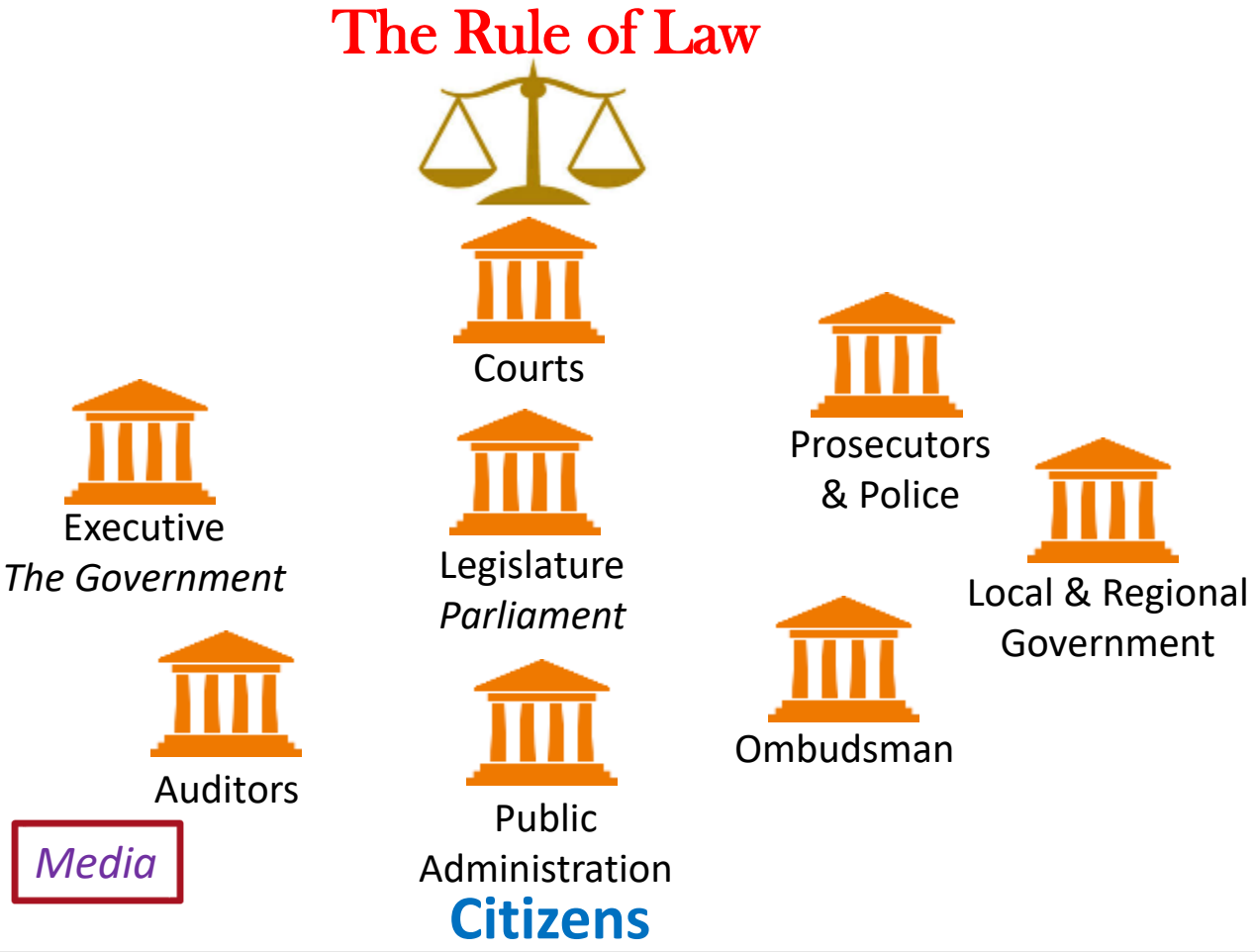
If the algorithm identifies a specific child as in danger, what is the probability that the child truly is in danger?

Approximately:

a) 90%  b) 80%  c) 72%

d) 30%  e) 10%  f) 5%

# The public sector context



# Bad news…


## Ofqual exam results algorithm was unlawful, says Labour

**Exclusive: shadow attorney general says ministers would have been aware of at least three breaches of the law**

## Boris Johnson's 'mutant' planning algorithm could scar England for ever

## UK passport photo checker shows bias against dark-skinned women

## NHS Digital reviewing algorithm after women incorrectly told to shield

## Councils scrapping use of algorithms in benefit and welfare decisions

**Call for more transparency on how such tools are used in public services as 20 councils stop using computer algorithms**

## Police built an AI to predict violent crime. It was seriously flawed

A Home Office-funded project that used artificial intelligence to predict gun and knife crime was found to be wildly inaccurate

**This image-recognition roulette is all fun and games… until it labels you a rape suspect, divorcee, or a racial slur**

If we could stop teaching AI insults, that would be great

# It’s a risky business


Madeleine Waller and Paul Waller. *Why Predictive Algorithms are So Risky for Public Sector Bodies*, 2020. http://dx.doi.org/10.2139/ssrn.3716166

# Legal Risks

- The European Convention of Human Rights (ECHR)
- The European Social Charter (ESC)
- The International Bill of Human Rights
- The Charter of Fundamental Rights of the European Union (CFR)
- General Data Protection Regulation
- Freedom of Information Acts
- Domain Specific Legal Instruments
- Legal Instruments Protecting Particular Groups
- Administrative Law (mandate) for the functions being exercised

Source: https://www.turing.ac.uk/research/publications/ai-human-rights-democracy-and-rule-law-primer-prepared-council-europe

- The European Code of Good Administrative Behaviour

Source: https://www.ombudsman.europa.eu/en/publication/en/3510

# Good Administrative Behaviour

Lawfulness, clear governance and accountability,

Respect for human rights including the right to privacy,

Accuracy in relation to the public function being exercised,

Equality and consistency of treatment and absence of bias or discrimination,

Clarity of the explanations for decision making and reasons for decisions,

Absence of negative consequences,

Security,

Proper record keeping.

# Data Risks

**My Top Five Sources of Risk**

- Bias
- Unrepresentativeness
- Quality
- Flawed data pre-processing/coding
- Invalid statistical assumptions

# Reality defies datafication

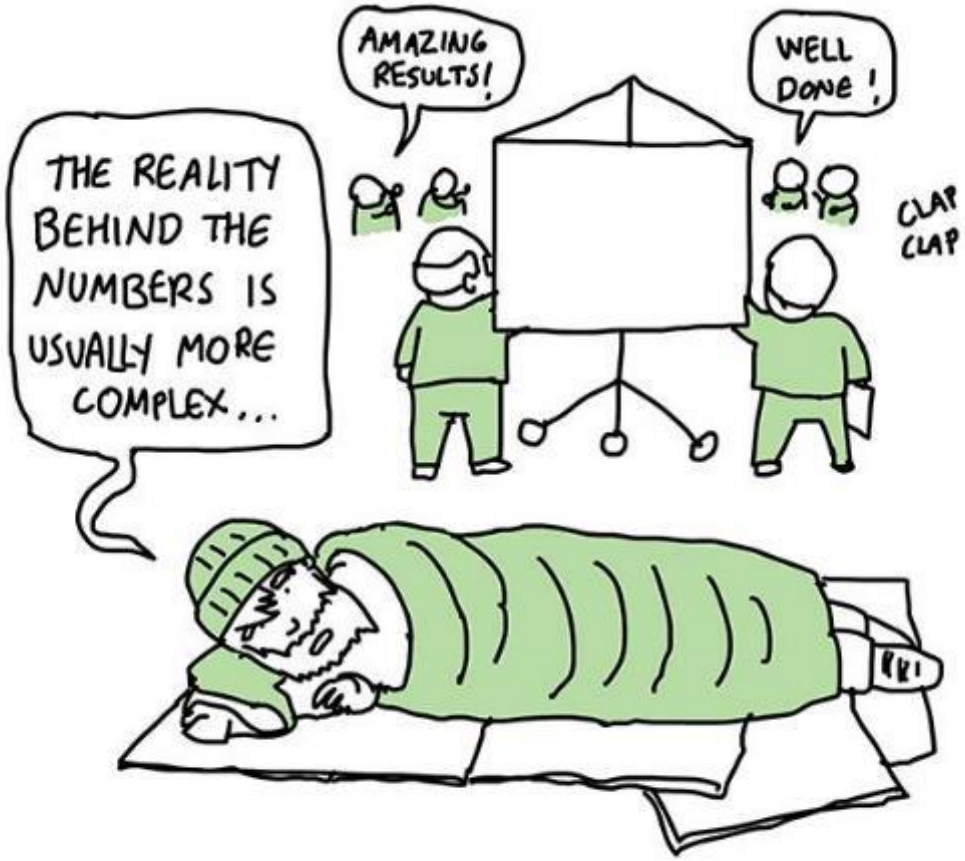



Image from Made to Measure, by Toby Lowe.

# Design Risks

**My Top Five Sources of Risk**

- Choice of model relative to problem & data
- Specification of model & optimisation parameters
- Parameter initialisation
- Inadequate testing
- Incomprehensible complexity

# Implementation Risks

**My Top Five Sources of Risk**

- Poor operational testing
- Inadequate security
- Poor contract management
- Inadequate process design
- Inadequate training

# Use Risks

**My Top Five Sources of Risk**

- Inaccuracy
- Lack of understanding of probabilistic measures & ranges, and weighting consequences
- Automation bias/aversion
- Obscure or inexplicable working and outcome
- Abuse of privacy & other human rights

# Use Risks

95% Safe to eat

5% You will die

Do you eat it?


95% Win the race

5% Lose the race

Do you bet €20 on a win?

# Use Risks

5% of children in a population are in danger of domestic abuse.

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Approximately:

a) 90%  b) 80%  c) 72%

d) 30%  e) 10%  f) 5%

# Assurance

- What's the outcome we want?
- Is it lawful to do this?
- Is the data there & OK?
- Even if it works, is it wise?
- Will it work??!
- Do we understand it, can we explain it?
- Can we actually get it working well in reality?

# Brainteaser - solution

5% of children in a population of 1000 are in danger of domestic abuse: 50 (so 950 are not)

A predictive classification algorithm correctly identifies a child as in danger for 80% of those truly in danger: 40 (so it misses 10)

It correctly identifies as safe 90% of those not in danger: 855 (misidentifying 95)

| | Truly in danger | Not in danger | Total |
|---|---|---|---|
| **Identified as in danger** | 40 | 95 | 135 |
| **Identified not in danger** | 10 | 855 | 865 |
| **Total** | 50 | 950 | 1000 |

So the algorithm identifies 135 children as in danger, of which 40 truly are in danger, giving a probability of 40/135 = 0.296 or approx 30%

But the "Accuracy" is % correct identification = (855+40)/1000 = 89.5% !!!

# Risk factors and mitigation measures for AI use in and by the Public Sector

Paul Waller

# Brainteaser - solution

"D" represents a child truly in danger of domestic abuse
"F" represents the test flagging a case as "in danger"
We are given (where "~" means "not"):
P(D) = 5% = 0.05  so  P(~D) = 0.95
P(F | D) = 80% = 0.80
P(~F | ~D) = 90% = 0.90  so  P(F | ~D) = 0.10

We need to find P(D | F), the probability of truly in danger if flagged

Now P(F) x P(D | F) = P(D ^ F) = P(D) x P(F | D) = 0.05 x 0.80 = 0.04

So P(D | F) = P(D) x P(F | D) / P(F) = 0.04 / P(F)  where

P(F) = P(F ^ D) + P(F ^ ~D) = 0.04 + P(~D) x P(F | ~D) = 0.04 + 0.95 x 0.10
= 0.04 + 0.095 = 0.135

Therefore P(D | F) = 0.04 / 0.135 = 40 / 135 = 0.296 or approx 30%

ALGORITHM WATCH

# Impact Assessment of ADM Systems in the Public Sector

DR. DES. ANGELA MUELLER

3RD AI WATCH PEER LEARNING WORKSHOP ON AI USE & IMPACT IN THE PUBLIC SECTOR| JUNE 24, 2021

@AlgorithmWat_CH | @angela__mueller

# AlgorithmWatch

AlgorithmWatch is a not-for-profit organisation with the aim to evaluate and shed light on algorithmic decision making (ADM) processes that have a relevance to society – meaning they are used either to predict or prescribe human action or to assist or make decisions automatically.

WATCH | EXPLAIN | NETWORK | ENGAGE

# PUBLIC SECTOR

- Unique provider of certain services (security, social benefits, public health)
- No possibility for people to choose provider of services / to deny
- Unique access to certain kinds of data / information of the affected
- Special responsibility towards those affected
- Unique legal requirements binding public authorities
- Need to set an example, credibility in controlling private actors

# OUR ADM-MANIFEST

1. ADM is never neutral.
2. The creator of ADM is responsible for its results. ADM is created not only by its designer.
3. ADM has to be intelligible in order to be held accountable to democratic control.
4. Democratic societies have the duty to achieve intelligibility of ADM with a mix of technologies, regulation, and suitable oversight institutions.
5. We have to decide how much of our freedom we allow ADM to preempt.

# IMPACT ASSESSMENT TOOL FOR PUBLIC AUTHORITIES

- Impact assessment tool: Ethical framework, operationalization, checklists

- https://algorithmwatch.org/en/adms-impact-assessment-public-sector-algorithmwatch/

# EXISTING GUIDELINES

- Numerous recommendations by companies, authorities, civil society, …
- Valuable advice for an ethically acceptable use

- Open questions:
  - “Calculation” of an ethics-score via vague criteria
  - Snapshots
  - Complexity and implementation

# ETHICAL FRAMEWORK: SEVEN PRINCIPLES

- Intrinsic principles:

  Harm Prevention | Justice / Fairness | Autonomy | Beneficence

- Instrumental principles:

  Control | Transparency | Accountability

# OPERATIONALIZATION VIA CHECKLISTS

- Method or tool to obtain transparency on risk signals
- Checklist 1 (triage): questions derived from ethical principles
  → answers determine which checklist 2 questions need to be answered
- Checklist 2 (transparency): questions to be answered in transparency report
- Result: transparency report

# CHECKLIST 1 – TRIAGE (Excerpt):

**Justice and Fairness**

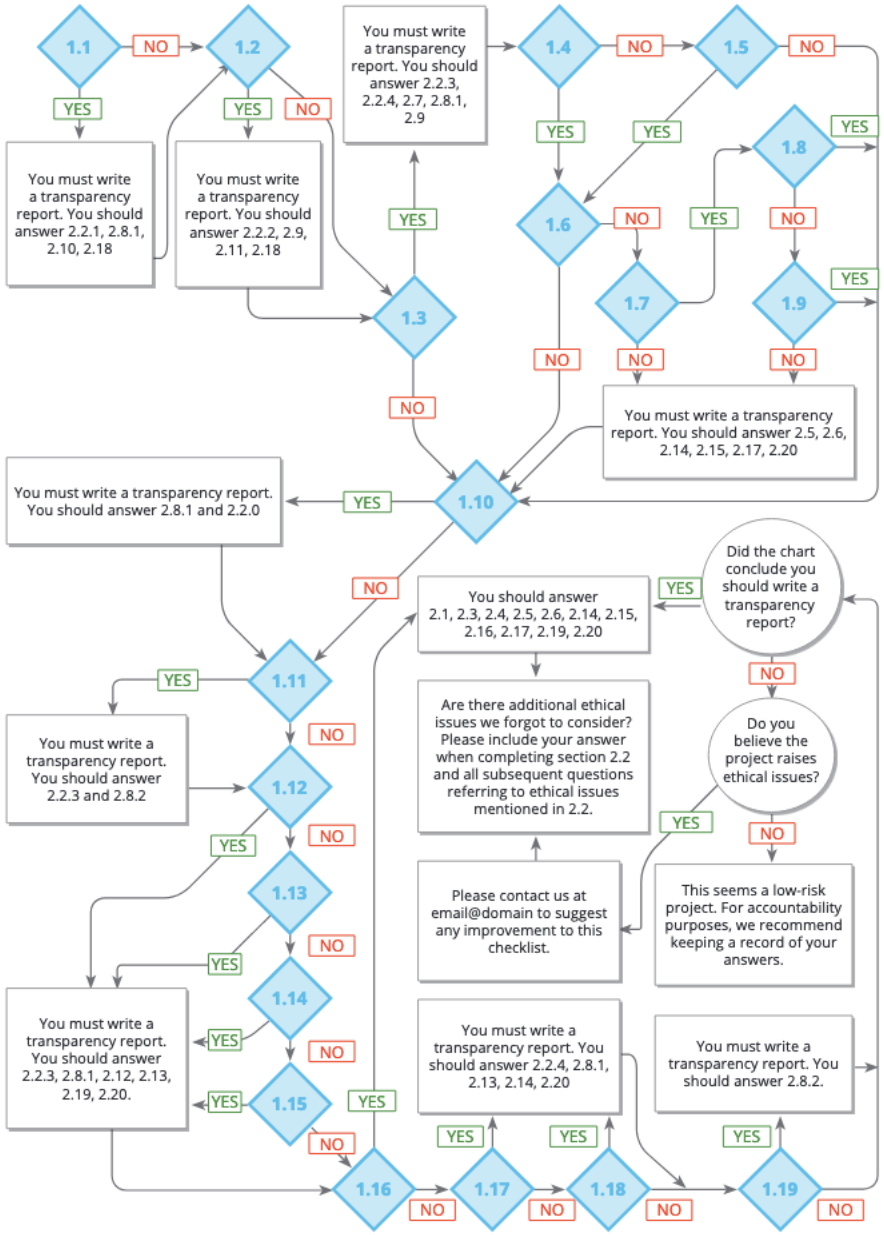
**1.12.** Political risk: Is it possible that the technical system will have an effect on a political decision (e.g. a popular vote)?

**1.13.** Economic risk: Does the technical system affect the distribution of public resources to economic actors in society?

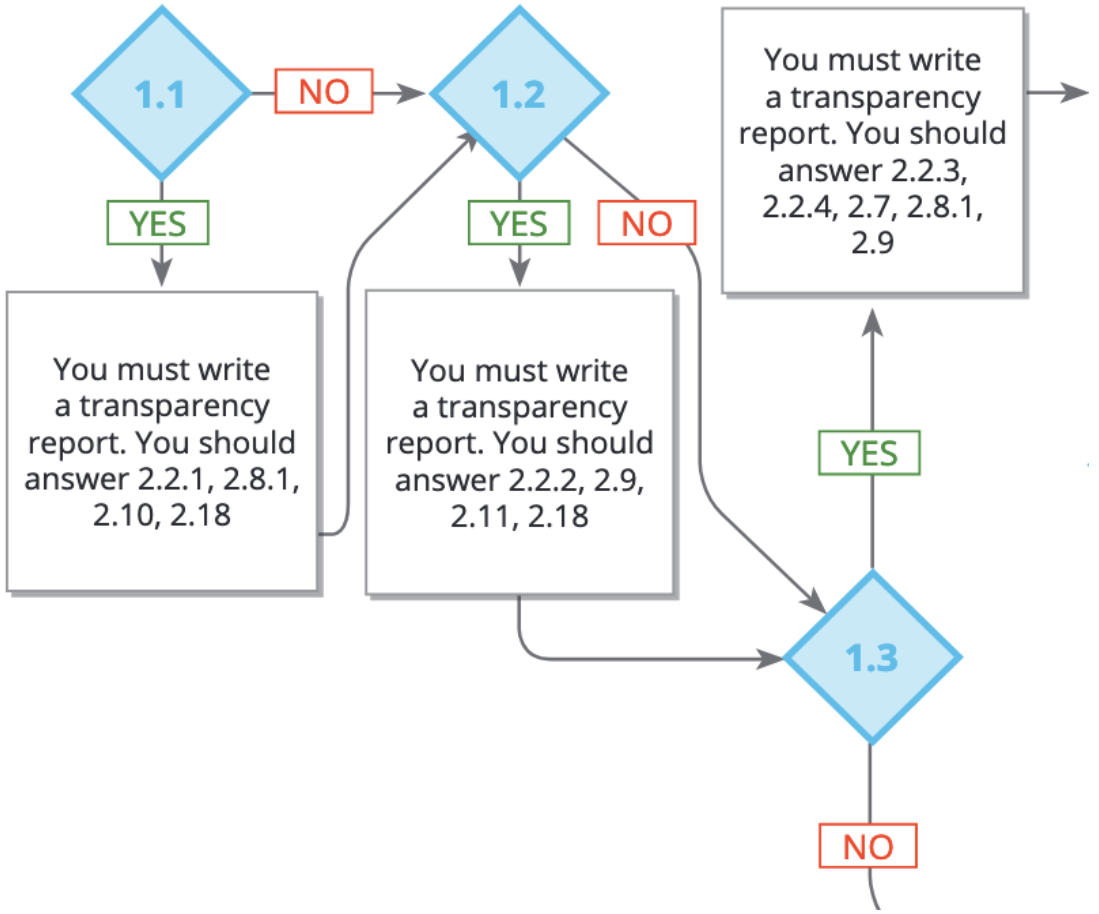
**1.14.** Statistical proxy risk: Does the technical system rely on a statistical model of human behavior or personal characteristics?

**1.15.** Procedural regularity risk: Is the system designed to be adaptive so that it will not treat all new cases in the same way as those it encountered in the past, because it changes its parameters (e.g., in order to become more efficient)?

# FLOWCHART


1.1
NO
1.2
YES
YES
NO
You must write a transparency report. You should answer 2.2.1, 2.8.1, 2.10, 2.18
You must write a transparency report. You should answer 2.2.2, 2.9, 2.11, 2.18
You must write a transparency report. You should answer 2.2.3, 2.2.4, 2.7, 2.8.1, 2.9
1.4
NO
1.5
NO
YES
YES
1.8
YES
1.6
NO
YES
NO
1.7
1.9
YES
1.3
NO
NO
NO
NO
You must write a transparency report. You should answer 2.5, 2.6, 2.14, 2.15, 2.17, 2.20
You must write a transparency report. You should answer 2.8.1 and 2.2.0
YES
1.10
NO
Did the chart conclude you should write a transparency report?
YES
You should answer 2.1, 2.3, 2.4, 2.5, 2.6, 2.14, 2.15, 2.16, 2.17, 2.19, 2.20
NO
1.11
YES
Are there additional ethical issues we forgot to consider? Please include your answer when completing section 2.2 and all subsequent questions referring to ethical issues mentioned in 2.2.
Do you believe the project raises ethical issues?
NO
YES
NO
You must write a transparency report. You should answer 2.2.3 and 2.8.2
1.12
NO
YES
1.13
NO
Please contact us at email@domain to suggest any improvement to this checklist.
This seems a low-risk project. For accountability purposes, we recommend keeping a record of your answers.
YES
1.14
You must write a transparency report. You should answer 2.2.3, 2.8.1, 2.12, 2.13, 2.19, 2.20.
YES
NO
You must write a transparency report. You should answer 2.2.4, 2.8.1, 2.13, 2.14, 2.20
You must write a transparency report. You should answer 2.8.2.
YES
1.15
YES
NO
YES
YES
YES
1.16
1.17
1.18
1.19
NO
NO
NO
NO

# FLOWCHART


1.1
NO
1.2
YES
YES
NO
You must write a transparency report. You should answer 2.2.3, 2.2.4, 2.7, 2.8.1, 2.9
You must write a transparency report. You should answer 2.2.1, 2.8.1, 2.10, 2.18
You must write a transparency report. You should answer 2.2.2, 2.9, 2.11, 2.18
YES
1.3
NO

# CHECKLIST 2 – Transparency (Excerpt):

**Stage of assessment for checklist items 2.7 to 2.19: after testing the system**

**Translation and Control Transparency**

**2.7.** What methodologies have been used to test and measure the performance of the system?

[Please indicate how you measure the performance with respect to the main goal of the system, specified in checklist 2—question 2.1]

**2.8.** What methodologies have been used to identify …

**2.8.1.** the stakeholders directly affected by the system's predictions/recommendation/decisions? What are the foreseen effects on these individuals?

**2.8.2.** the individuals affected by digital transformation in the public administration (e.g. public administration personnel)? What are the foreseen effects on these individuals?

# OUR APPROACH

- First step: Triage for all ADM systems
- Second step: Transparency report

- No score, but a tool for reaction to risk signals on a case-by-case basis
- Transparency
  - Necessary (but not yet sufficient) condition for ethical conformity
  - Different addressees of transparency

- Accompanying project over entire life cycle (planning, testing, operation)

- Practice-oriented checklists

# POLICY RECOMMENDATIONS

- Mandatory impact assessment for every ADMS deployed in public sector
- If risk signals are detected, public authorities must ensure that a transparency report is provided and that follow-up measures are taken.
- Public register for every ADMS deployed in the public sector
  - containing intelligible information on system's purpose, underlying model, actors involved in development and deployment, and results of impact assessment (or on addressees of transparency)

# THANK YOU!

*AI Watch*

# 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

## On-going work :
## Towards the Road to a better use of AI by and for the Public

*Marina Manzoni, Policy and Project Officer*

*Economy Unit, JRC/B6 – European Commission*

*24 June 2021*

# Road to a better use of AI for and By the Public Sector: *Scope*

Building on the results from analysis of the **landscaping exercise**

- National Strategies from Members States
- Identified AI cases and practices
- Impact Assessment framework under validation (on-going survey) https://ec.europa.eu/eusurvey/runner/IA-of-AI-public-sector

# Road to a better use of AI for and by the Public Sector: *Objectives*

- Provide an updated **State of The Art** and an overview of different approaches applied by the MSs in support to AI adoption and use in and by the Public Sector in Europe
- Outline **priorities, needs and opportunities** identified by **MSs** and map them towards EU relevant policies and guidelines in support to them
- Outline a **dedicated Roadmap** on AI governance for the Public Sector, including a set of recommendations to key stakeholders (policy makers, practitioners, third sector organisations, Communities of Practices, and scientific communities) at different operational levels (International, National, Regional, and local level

# Road to a better use of AI for and by the Public Sector: *Content outline*

Main sections of the Roadmap:

- Overview of **AI cases, initiatives and practices** by EU Member States for the Public Sector
- Analysis of the main features of **European National strategies** on AI addressing the Public Sector
- An example of possible **Impact Assessment framework** in support to the MSs for assessing impact of AI in their specific context.
- A set of **recommendations and related actions** are suggested to the benefit of Policy makers, Public Administrators and practitioners

# Road to a better use of AI for and by the Public Sector: preliminary findings

**Main Objectives of the identified areas of interventions**:

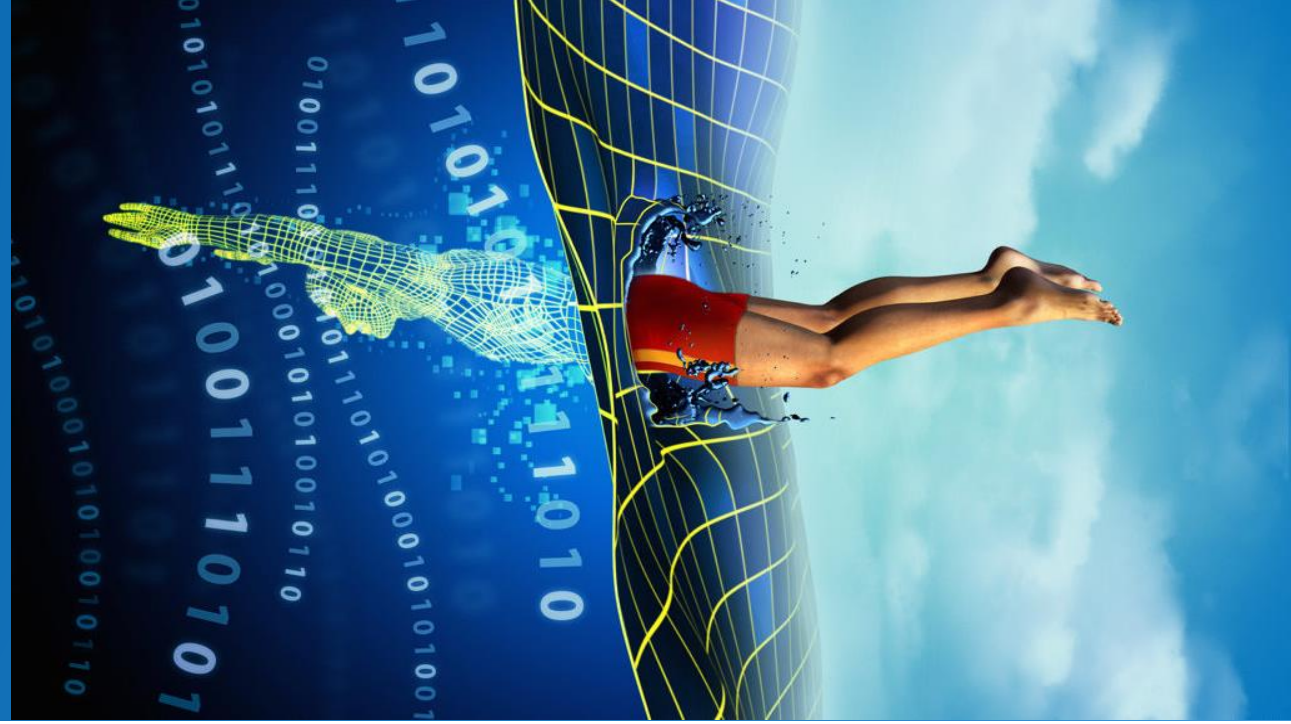
- Promote *value oriented and human-centric AI* in the public sector.
- Enhance *governance and capacity building*.
- Build a dedicated AI *digital ecosystem* for the Public Sector.
- Take stock of knowledge gains and propose a value oriented AI *impact assessment* methodology.

# Road to a better use of AI for and by the Public Sector: Next Steps

Step-wise, **collaborative approach**

- First draft on preliminary results July-August 2021
- Peer-learning/Validation workshop in Autumn
- Final draft December 2021

# Thank you





European Commission

European Commission

*AI Watch*

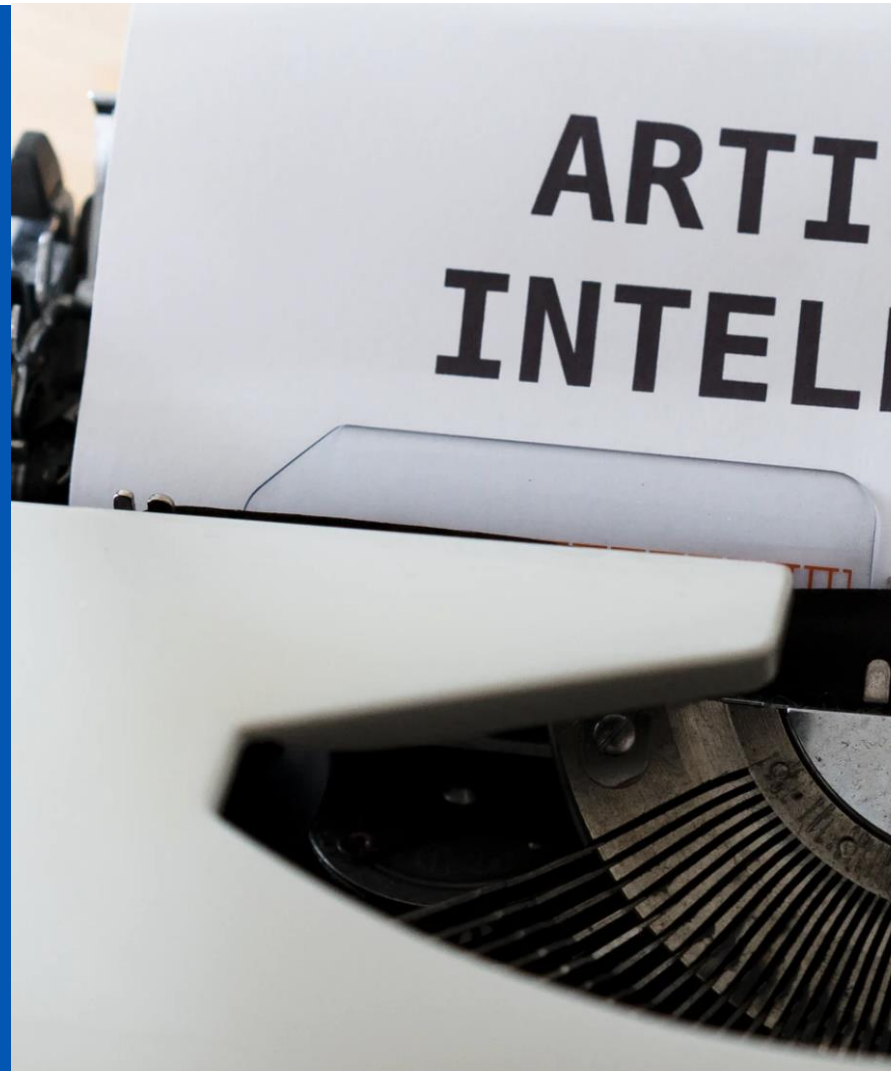
# 3rd Peer-Learning Workshop on the use and impact of AI in the public sector

# Ongoing work: collection and publication of AI cases in the Public Sector

*Lorenzino Vaccari, external consultant*

*24/6/2021*

Joint Research Centre



# Topics

- Short questionnaire
- Survey on AI use in the public sector: cases, enablers and effects
- AI cases in the public sector as open data
- Conclusions & results of the questionnaire

# Let's start with some questions

1. *What is the most important enabler for the use of AI in the public sector?*
2. *What is the greatest impact of AI in the public sector?*
3. *Rate the importance of:*
    1. *Having an EU inventory of AI cases in the public sector*
    2. *Letting organisations adding directly the cases to the inventory*
    3. *Having a common set of metadata about cases*

**To answer*: Connect to https://www.sli.do/ & insert the code: #AIWatch**

**Please answer before the end of this presentation*

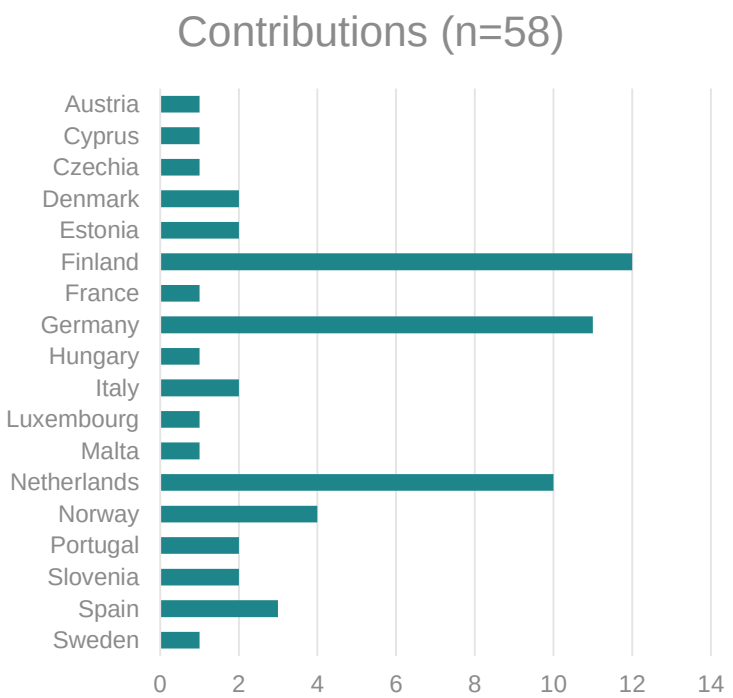
**Answers are anonymous*

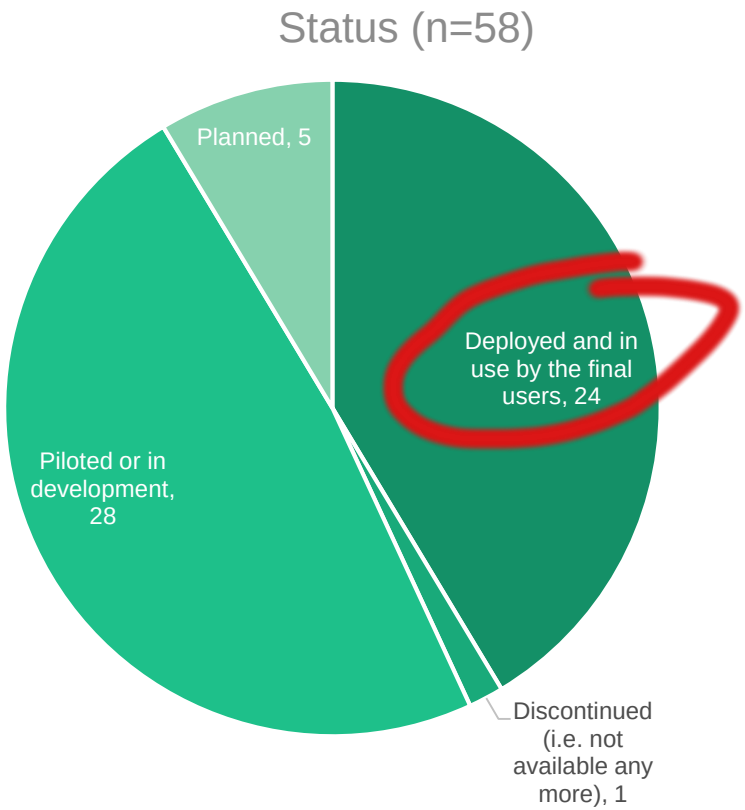
European Commission

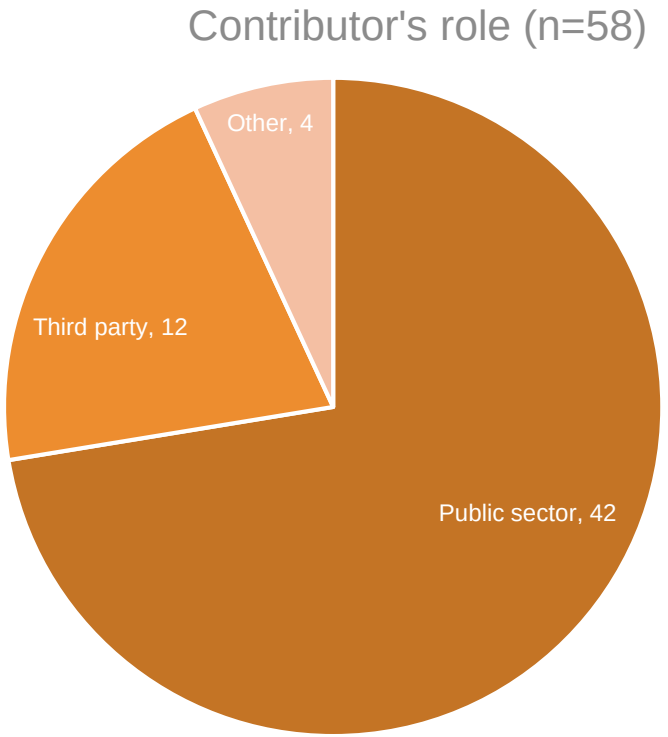
# The survey

- Two main goals (and parts):
  1. Collection of AI cases in the public sector
  2. Impact assessment of the use of AI in the public sector
- Launched at the beginning of 2021, will remain open for contributions till the end of 2021
- Around 20’ to fill the survey
- Available at: https://ec.europa.eu/eusurvey/runner/IA-of-AI-public-sector
- **Your contribution is fundamental!**
- Let’s check some preliminary results of the contributions received so far

# Contributions, statuses, roles



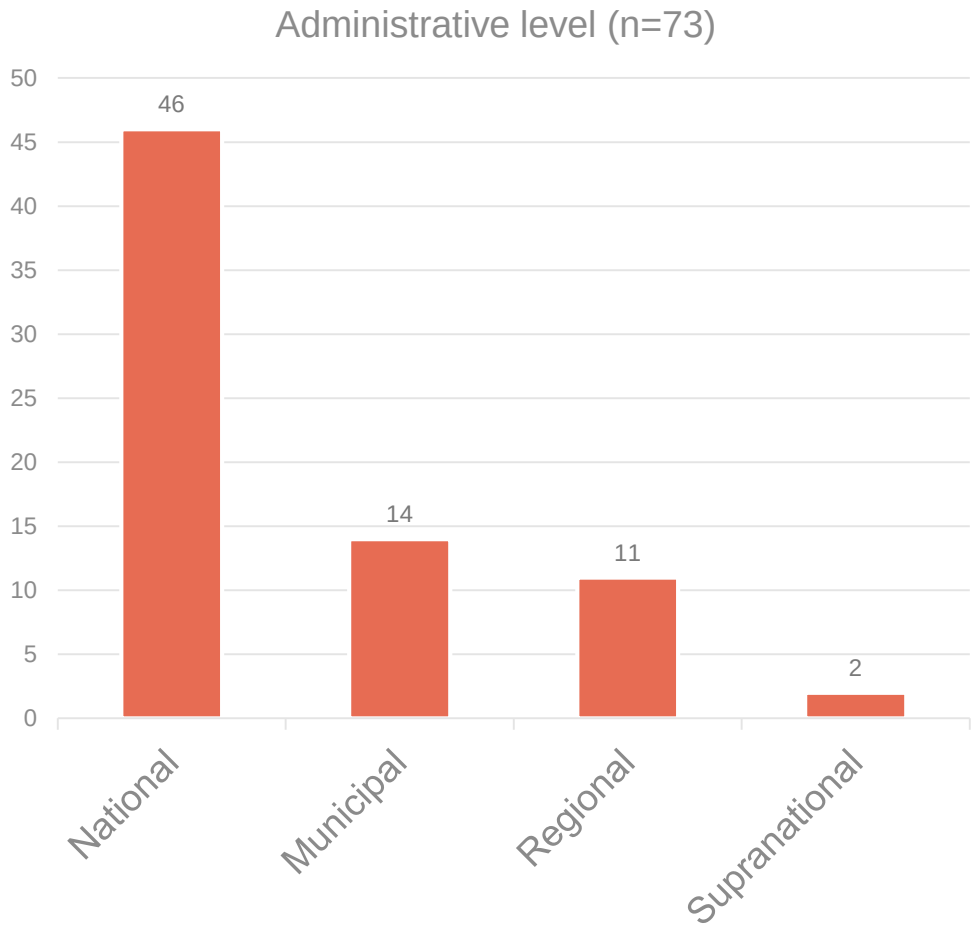



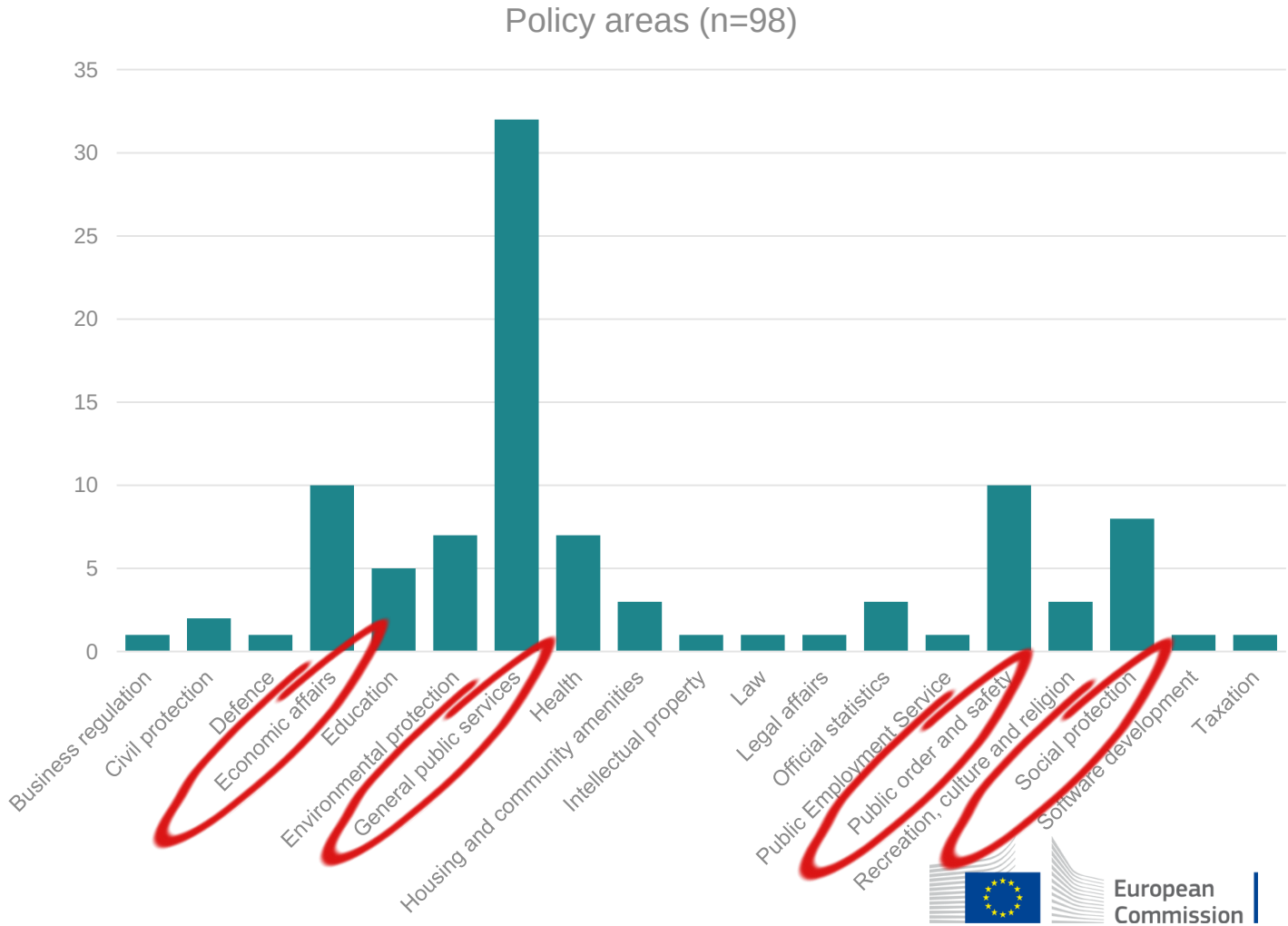




https://www.sli.do/; Code: #AIWatch

European Commission

# Administrative level, policy areas



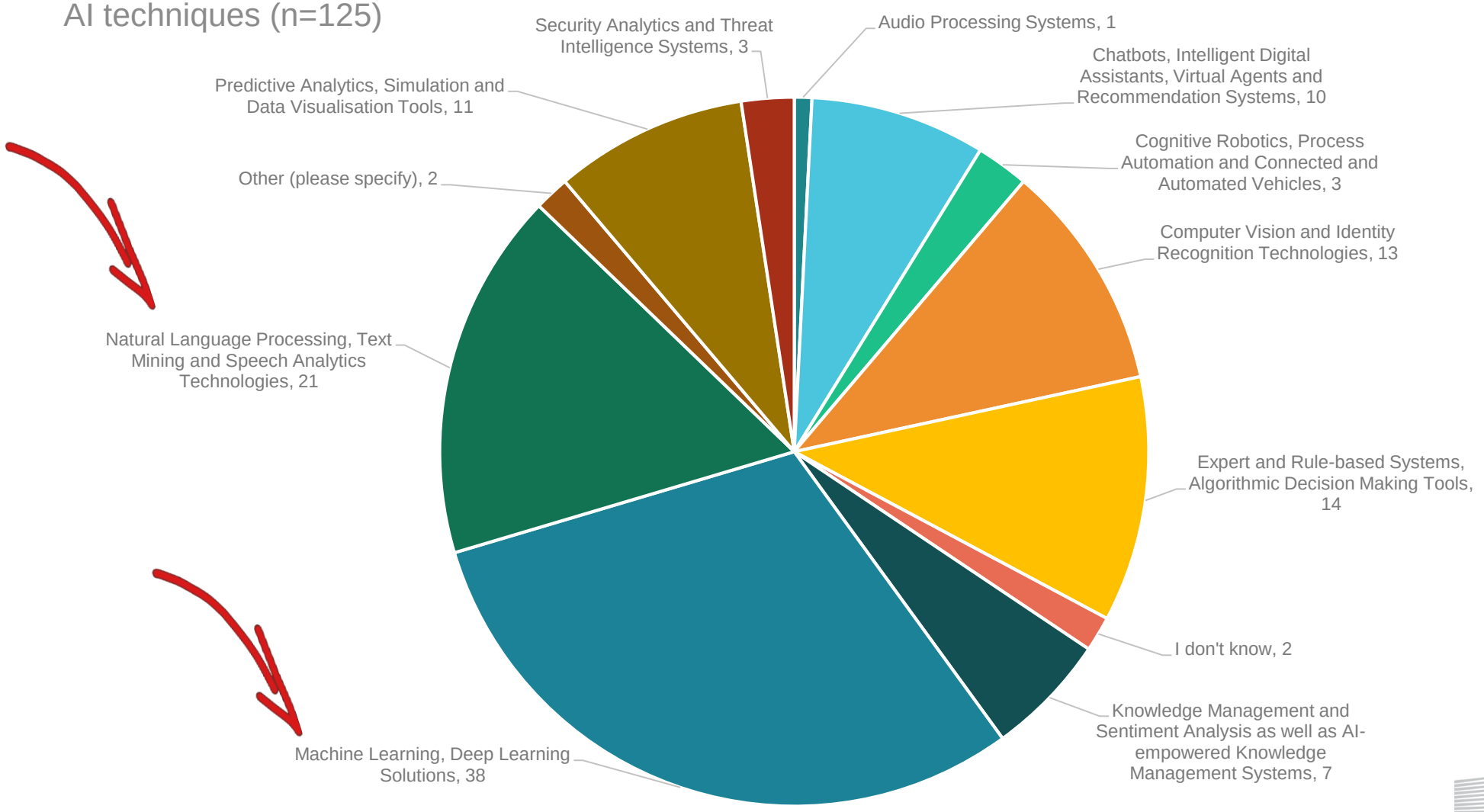




**https://www.sli.do/; Code: #AIWatch**

European Commission

# AI techniques

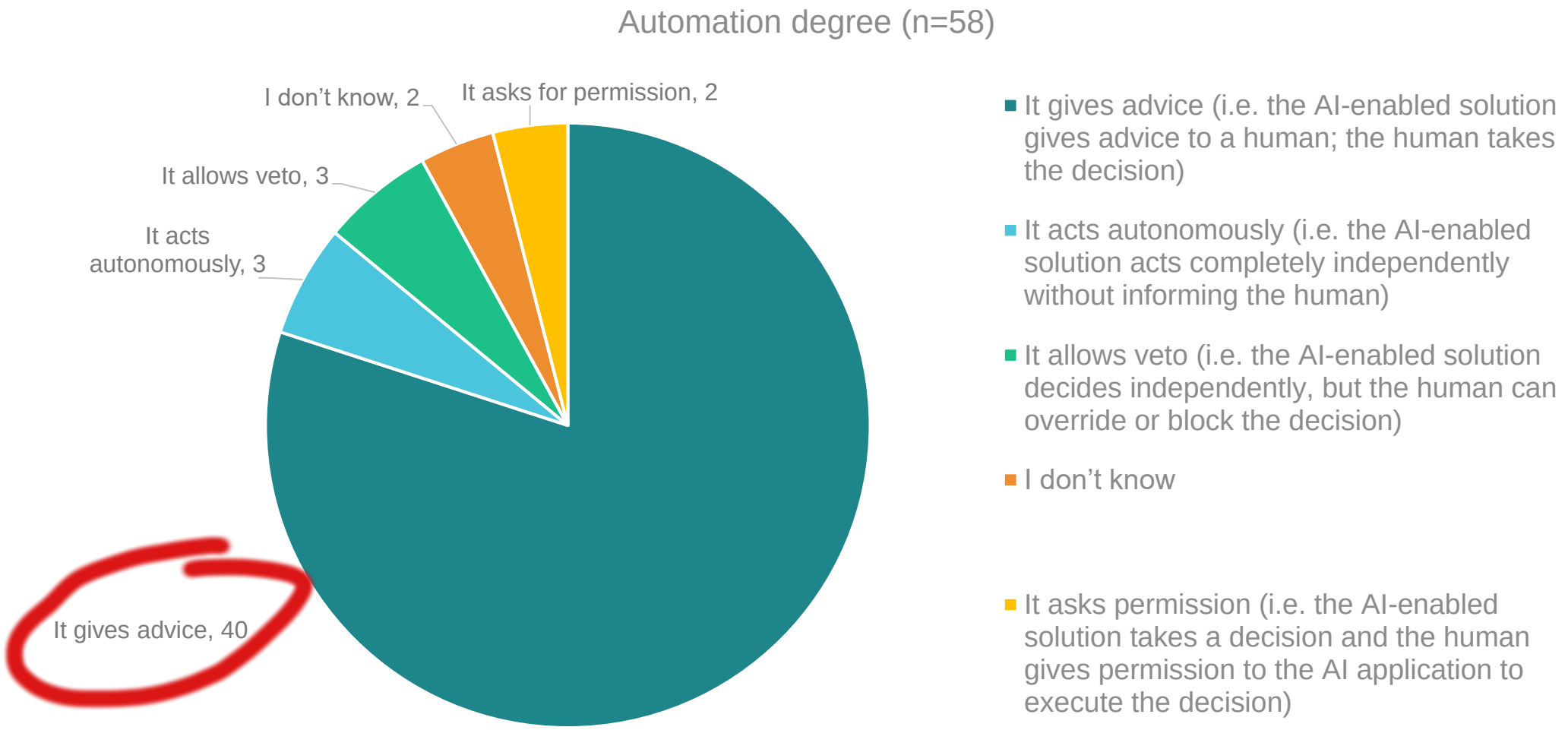
AI techniques (n=125)




**https://www.sli.do/; Code: #AIWatch**

European Commission

# Automation degree




**https://www.sli.do/; Code: #AIWatch**

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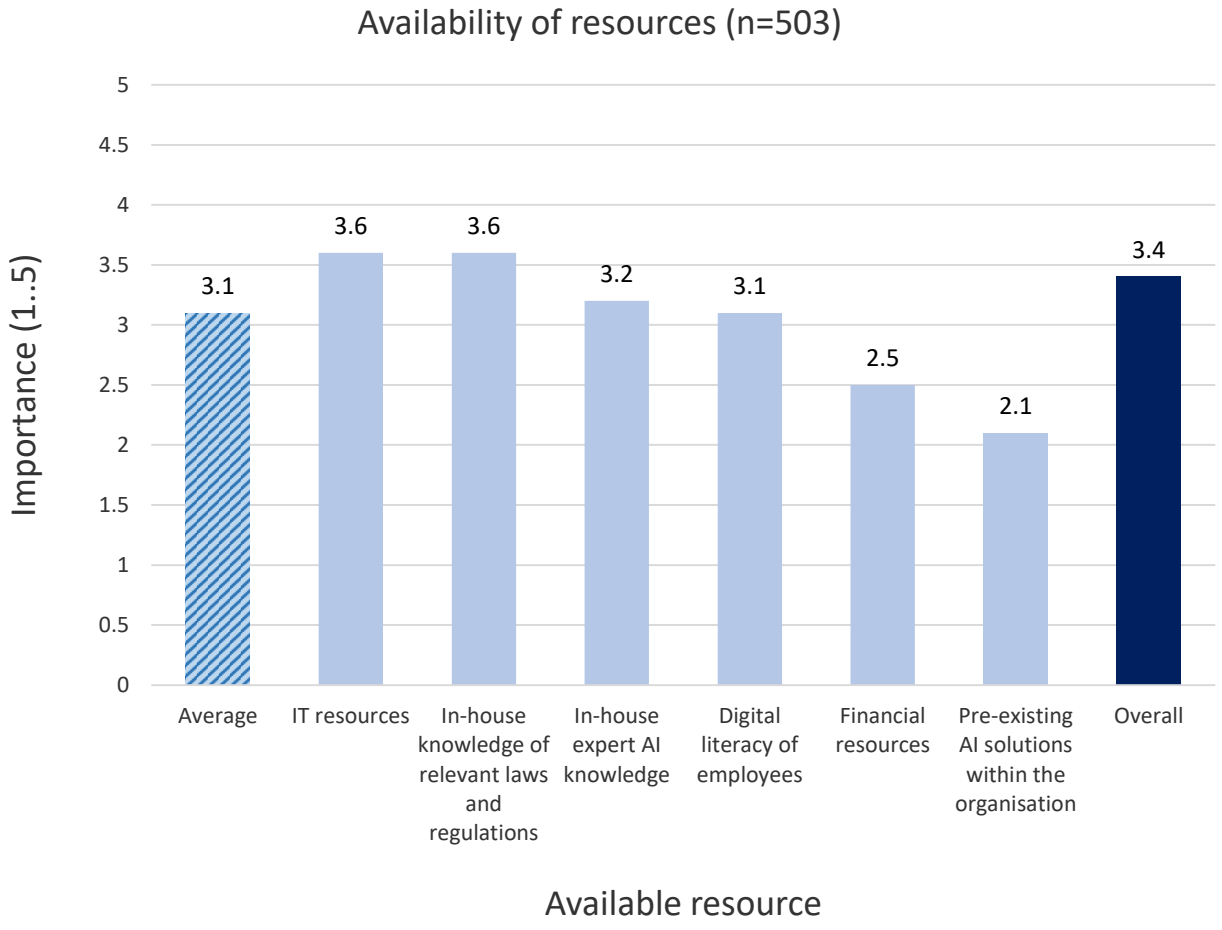
# Enablers: Resources & stakeholders





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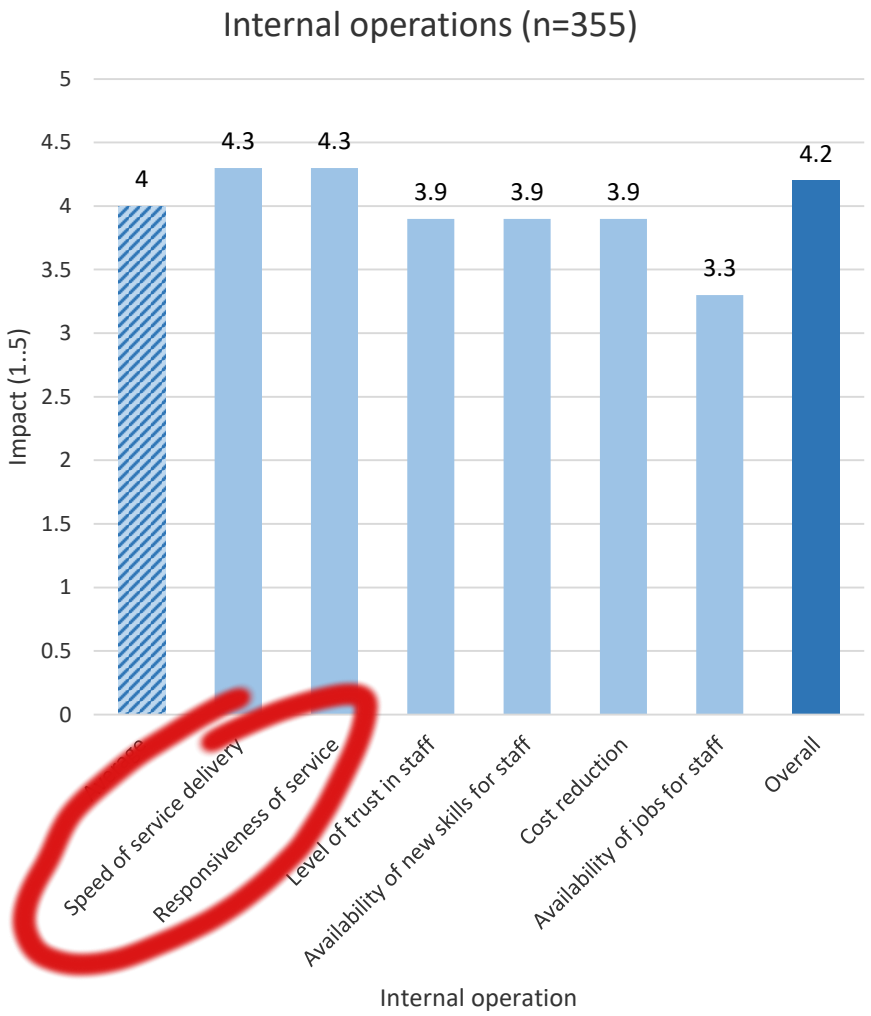
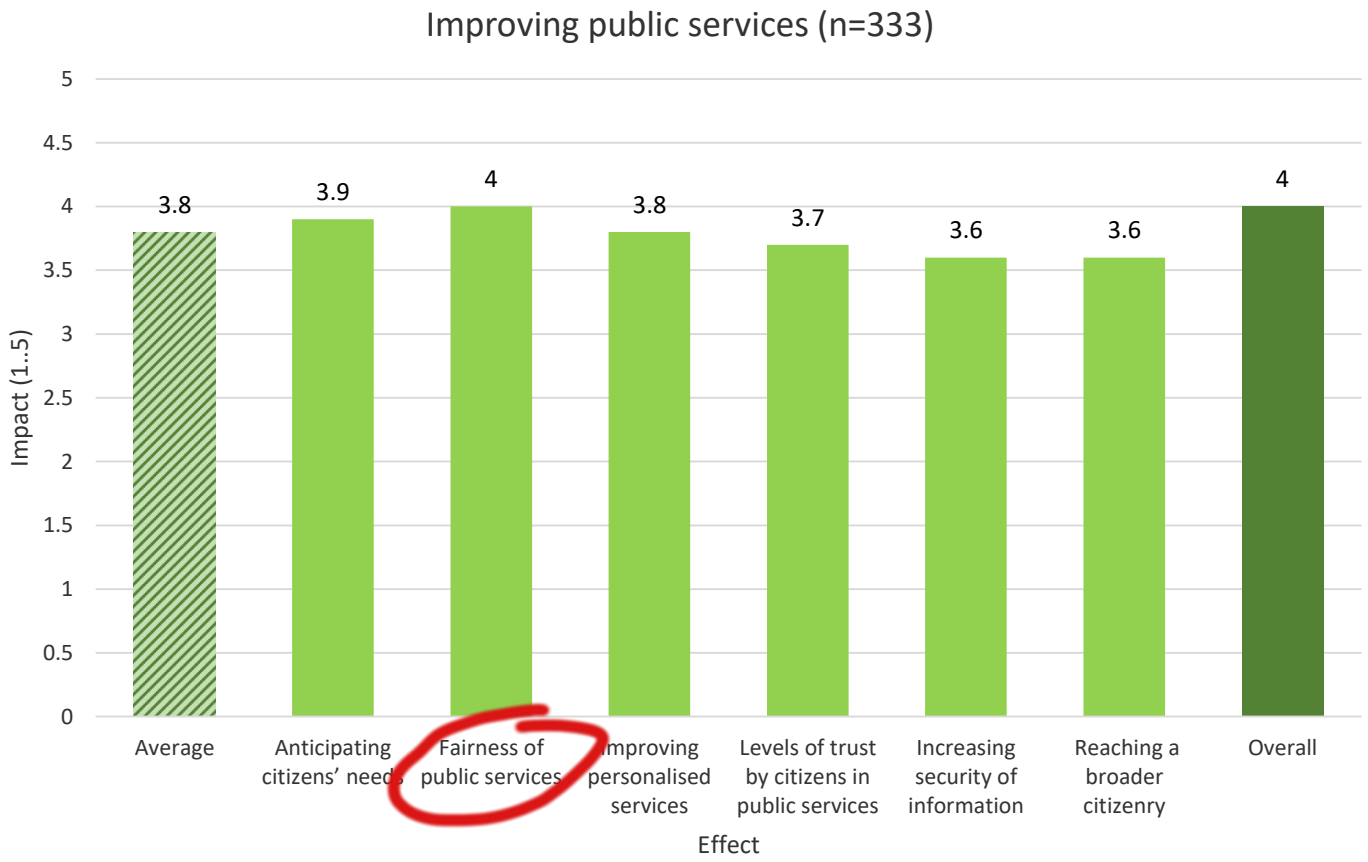
# Effects: Service & Internal

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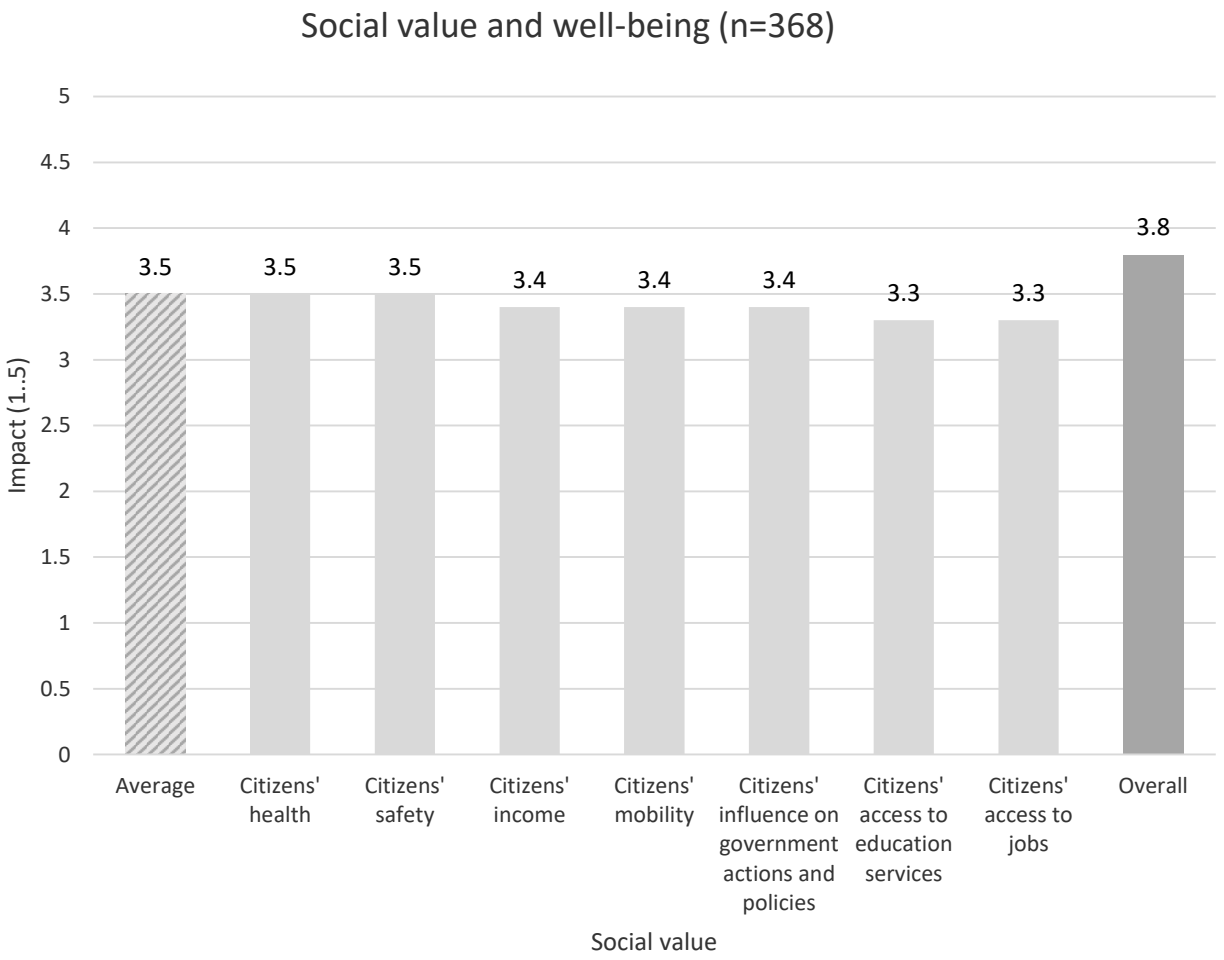
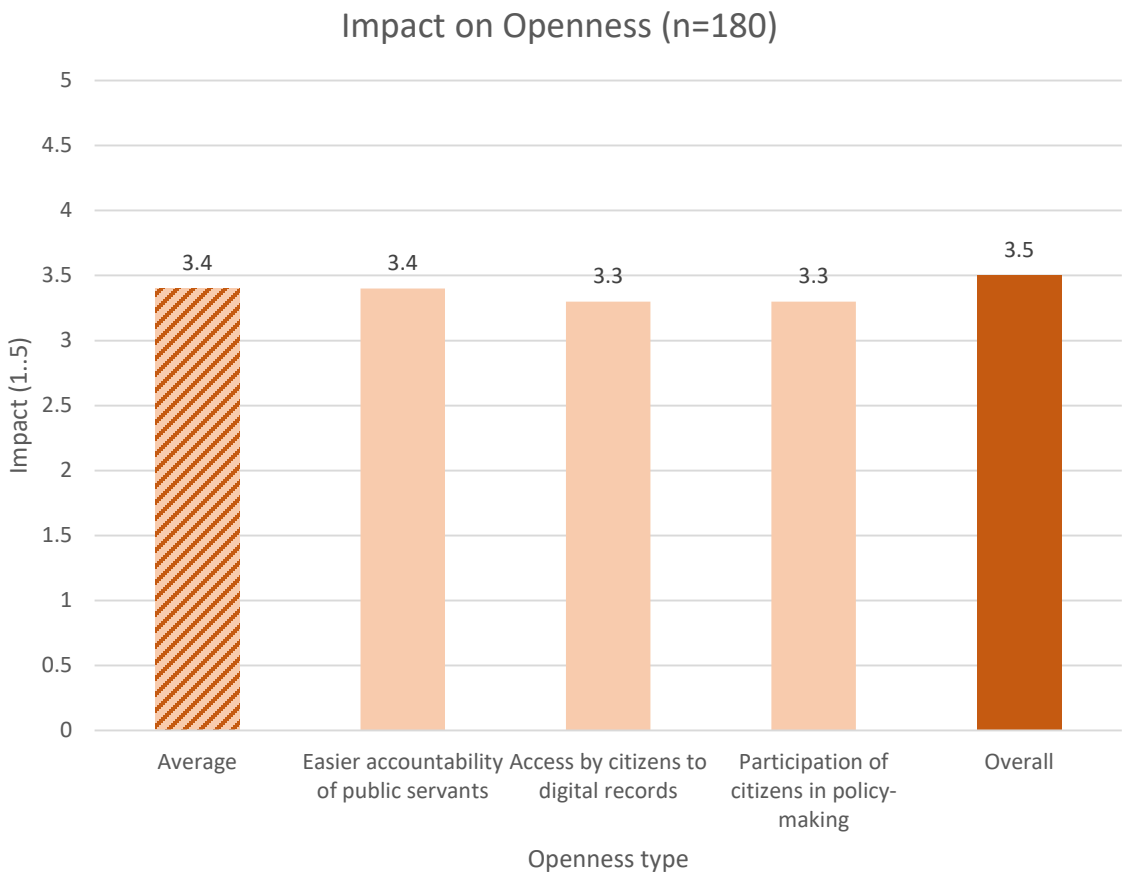
# Effects: Social & openness

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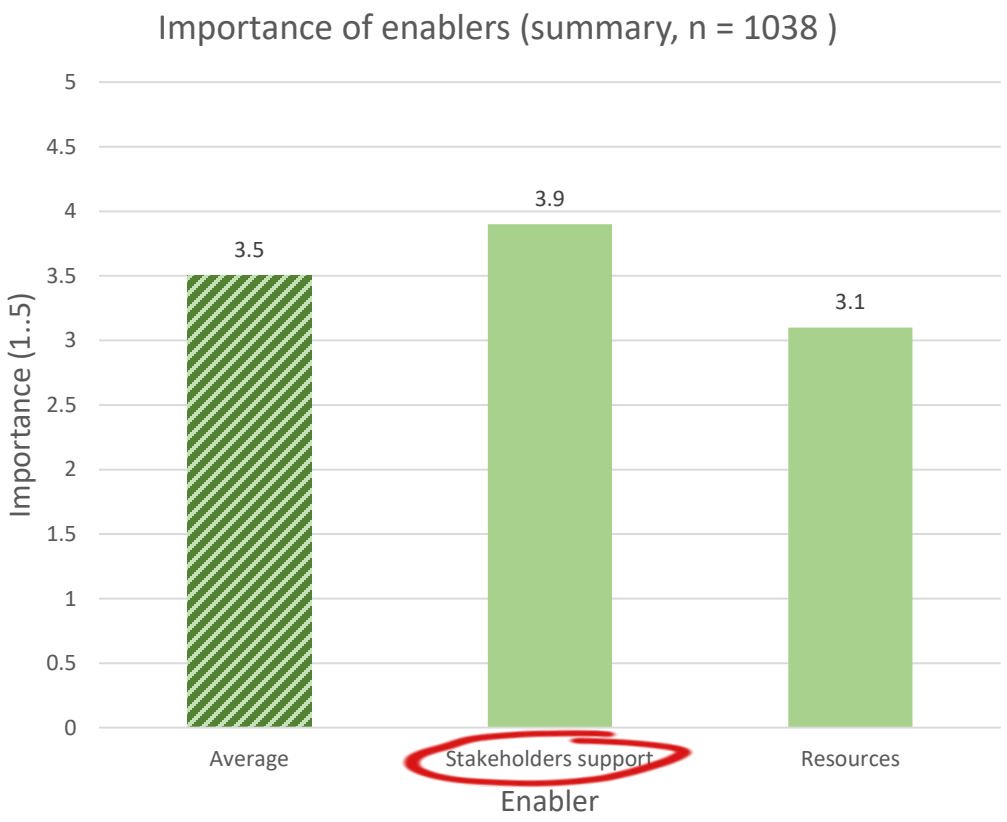
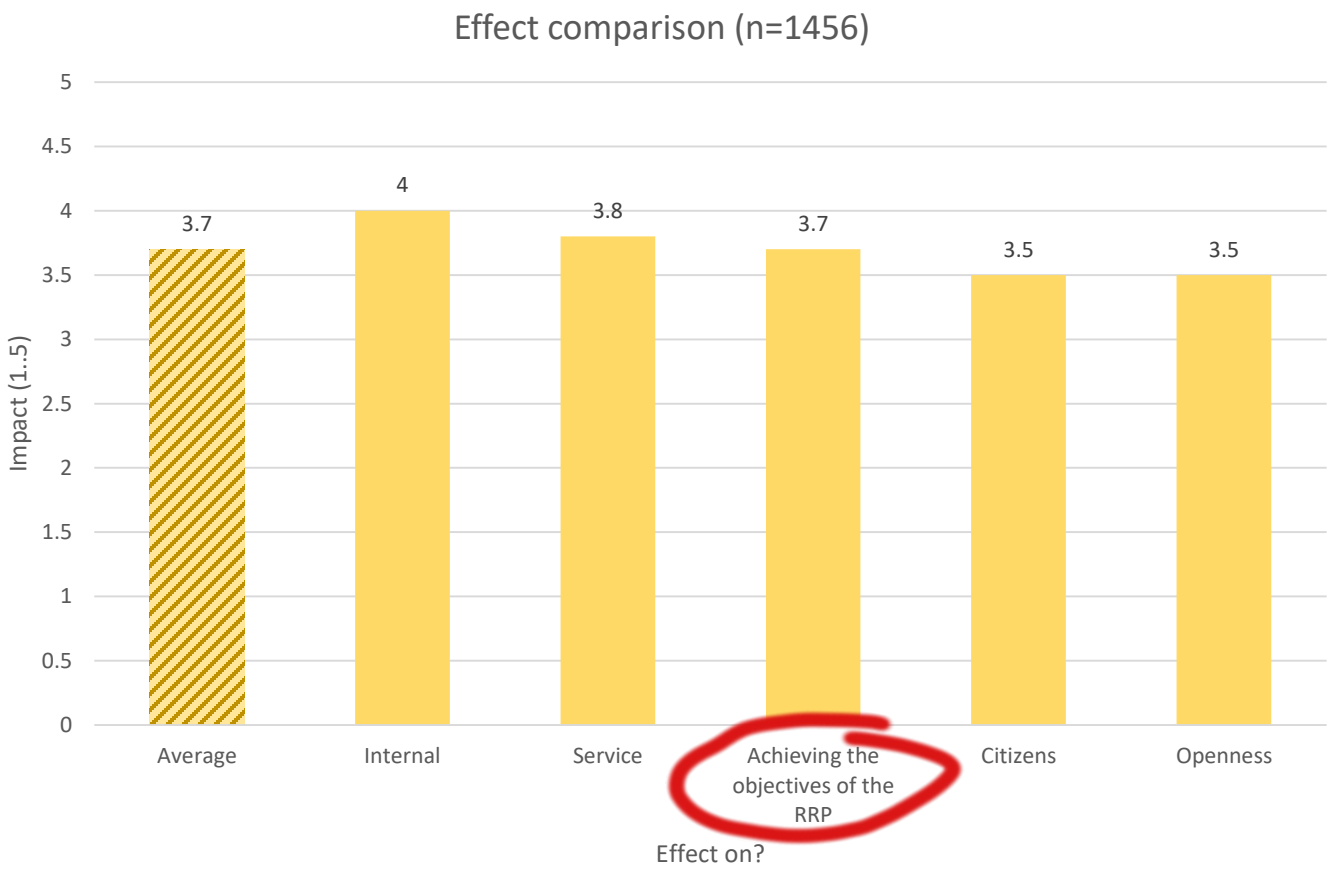
# Enablers & Effects (summary)

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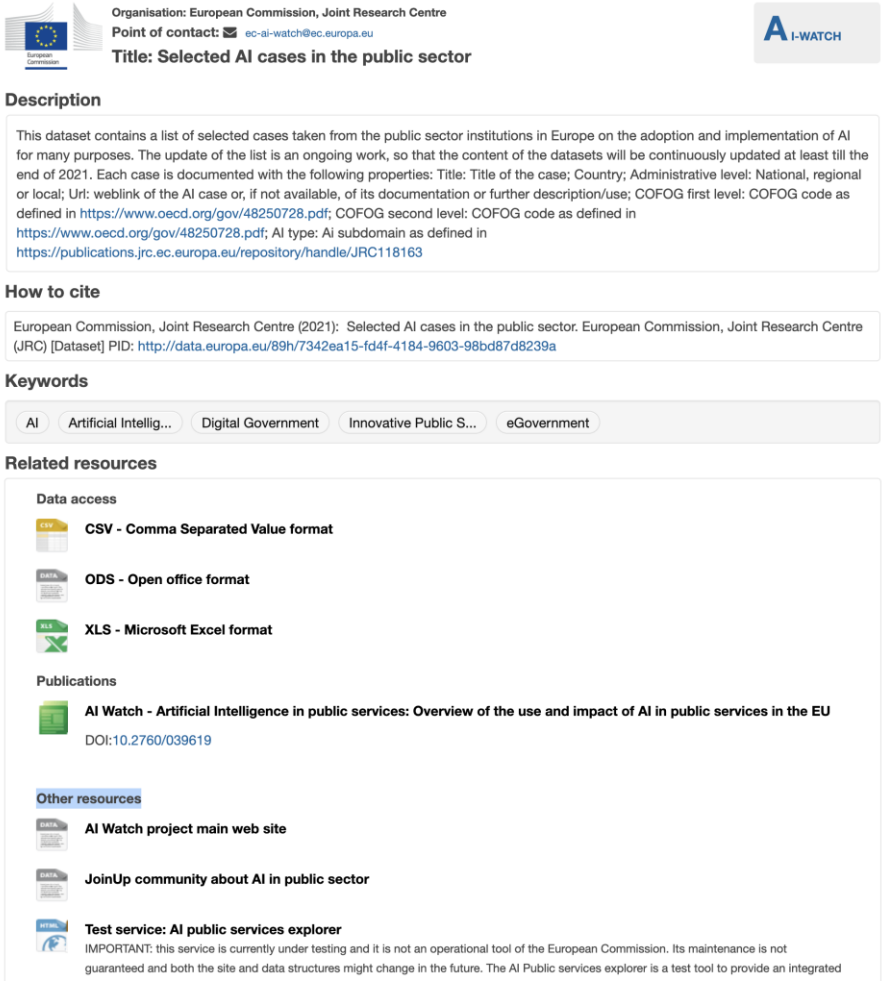
# AI cases as Open Data



Organisation: European Commission, Joint Research Centre
Point of contact: ec-ai-watch@ec.europa.eu
AI-WATCH
Title: Selected AI cases in the public sector

**Description**

This dataset contains a list of selected cases taken from the public sector institutions in Europe on the adoption and implementation of AI for many purposes. The update of the list is an ongoing work, so that the content of the datasets will be continuously updated at least till the end of 2021. Each case is documented with the following properties: Title: Title of the case; Country; Administrative level: National, regional or local; Url: weblink of the AI case or, if not available, of its documentation or further description/use; COFOG first level: COFOG code as defined in https://www.oecd.org/gov/48250728.pdf; COFOG second level: COFOG code as defined in https://www.oecd.org/gov/48250728.pdf; AI type: Ai subdomain as defined in https://publications.jrc.ec.europa.eu/repository/handle/JRC118163

**How to cite**

European Commission, Joint Research Centre (2021): Selected AI cases in the public sector. European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/7342ea15-fd4f-4184-9603-98bd87d8239a

**Keywords**

AI | Artificial Intellig... | Digital Government | Innovative Public S... | eGovernment

**Related resources**

Data access

CSV - Comma Separated Value format

ODS - Open office format

XLS - Microsoft Excel format

Publications

AI Watch - Artificial Intelligence in public services: Overview of the use and impact of AI in public services in the EU
DOI:10.2760/039619

Other resources

AI Watch project main web site

JoinUp community about AI in public sector

Test service: AI public services explorer
IMPORTANT: this service is currently under testing and it is not an operational tool of the European Commission. Its maintenance is not guaranteed and both the site and data structures might change in the future. The AI Public services explorer is a test tool to provide an integrated

- **142 cases** taken from various activities (workshops, surveys, interviews, desk research, etc)
- ***Purpose: AI Watch investigation***
- Available at the JRC Data Catalogue, AI Watch collection, “selected AI cases in the public sector”
- Published as open data & available in 3 formats for download
- A basic viewer is also available

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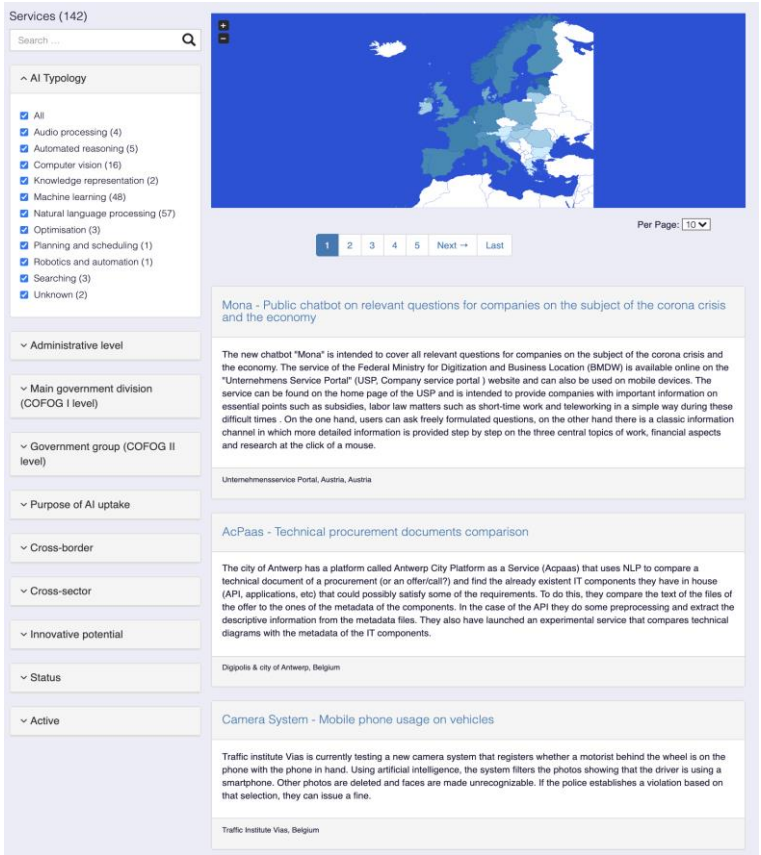
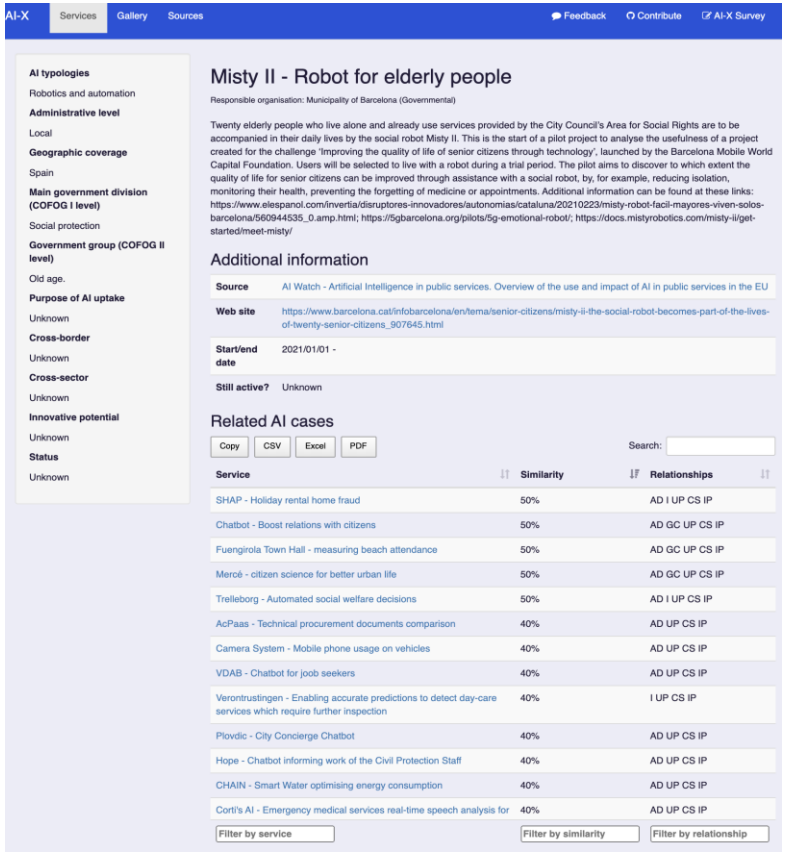
# Basic viewer

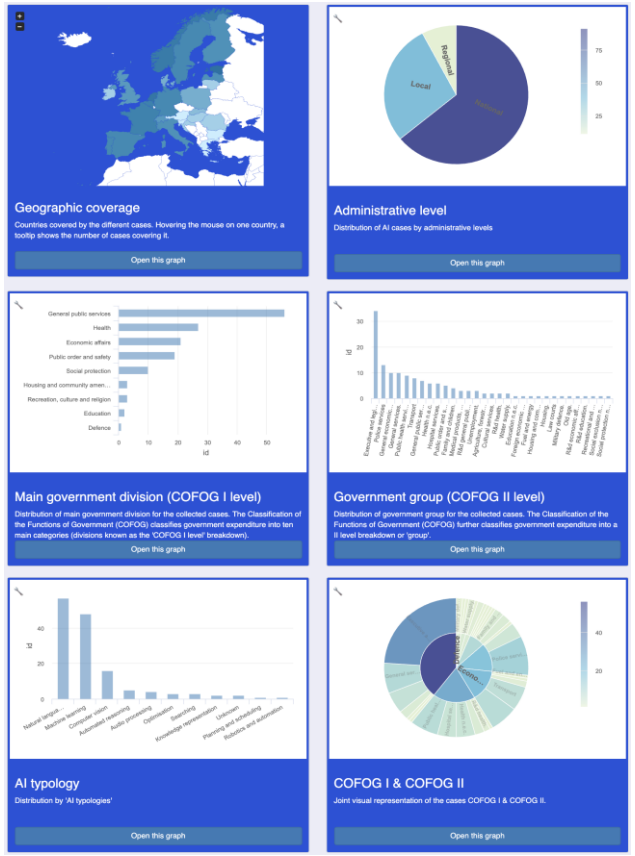
## Search & filter




## Analyse & download




## View

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# Conclusions

- Survey on the use of AI in the public sector
  - **Machine learning** and **natural language processing** are well represented in the cases
  - Most of the cases give '**advices**'
  - **Support from stakeholders** is very important, especially the presence of an '**AI champion**'
  - Internal and external effects are equally distributed, with a **small prevalence of internal impact**
- 142 AI cases have been published as open data.
  - The list is continuously updated.
  - **Contributions to the survey are very welcome!**
- sli.do answers

**https://www.sli.do/; Code: #AIWatch**

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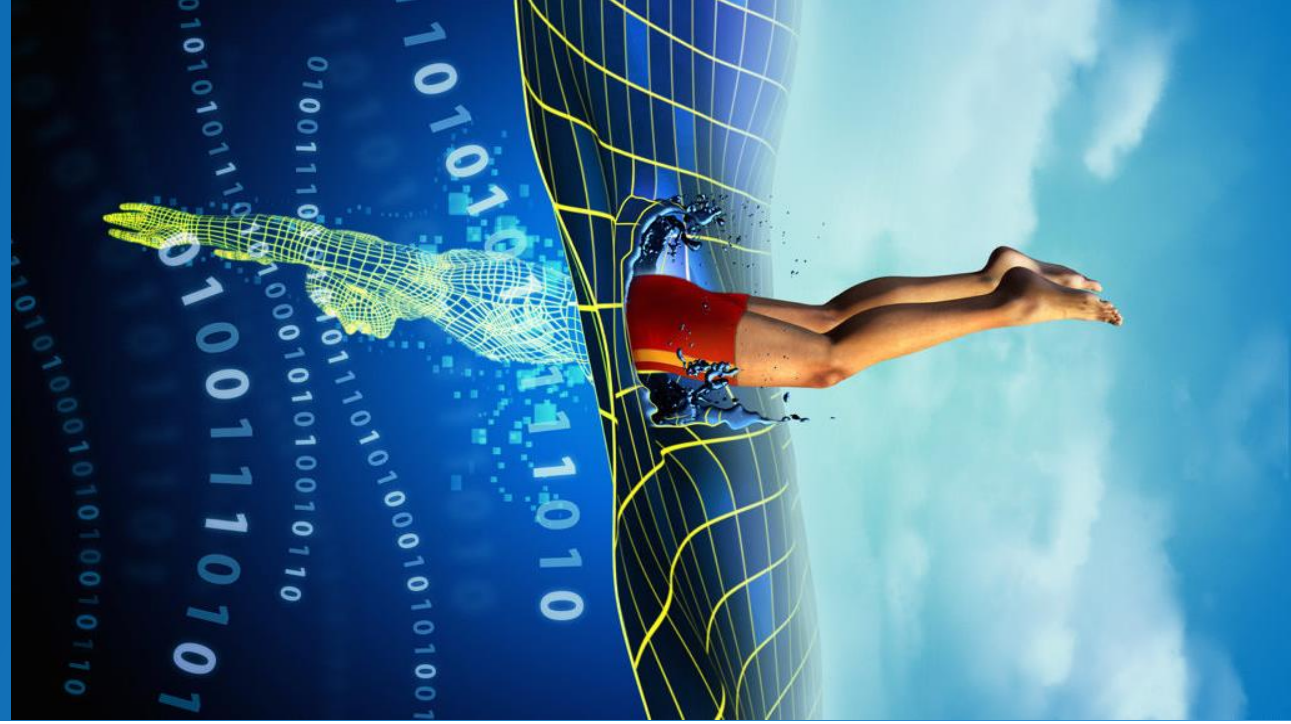
# Thank you





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