



AI-WATCH



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

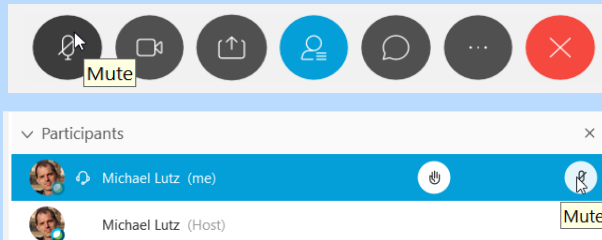
AI uptake and use for and by the Public Sector

24th June 2021 (09h30 – 13h30)

Welcome and some hints for participants

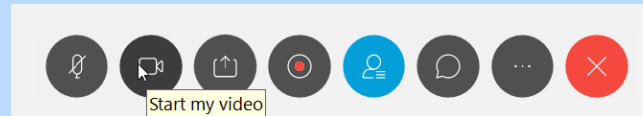
Mute your mic!

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



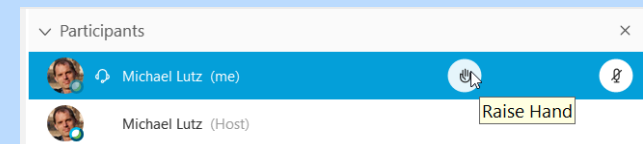
Turn off video

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.



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**

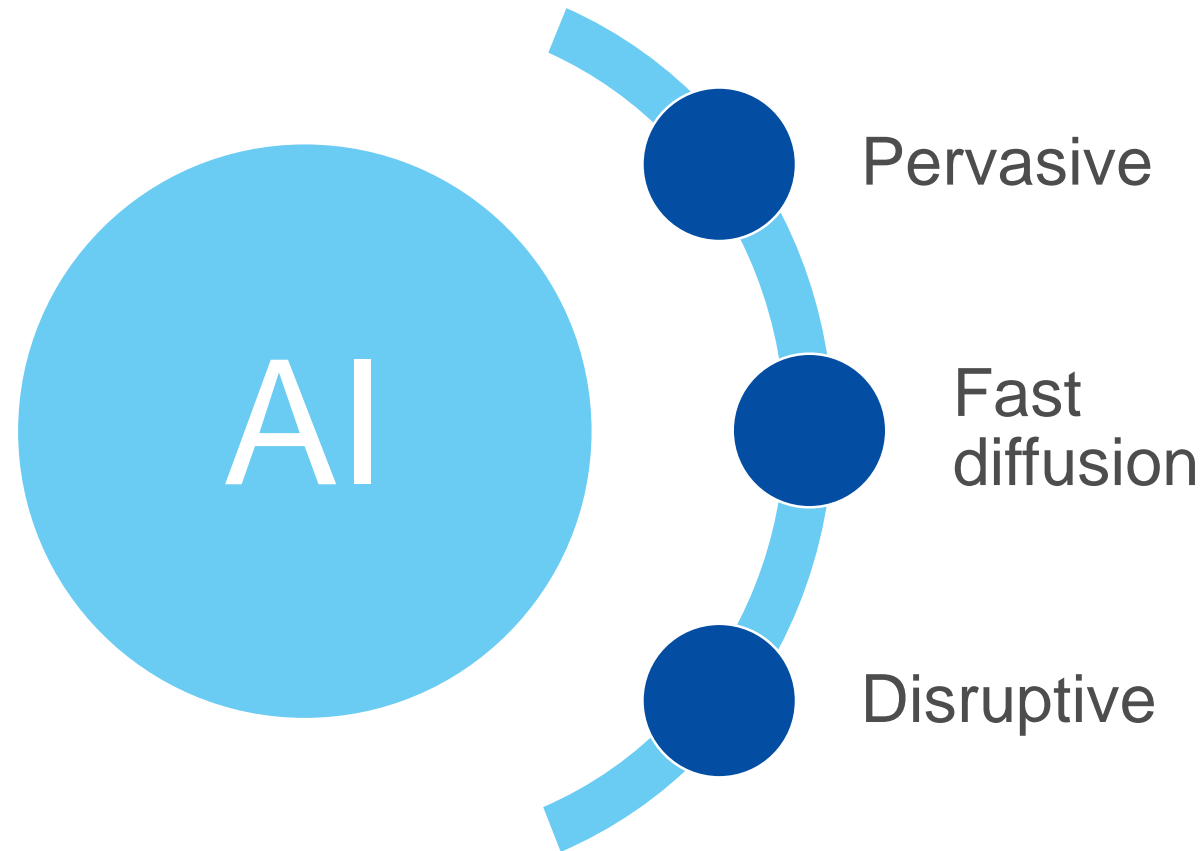
*Carlos Torrecilla Salinas, Head of the Digital
Economy Unit, JRC/B6 – European Commission*

24 June 2021

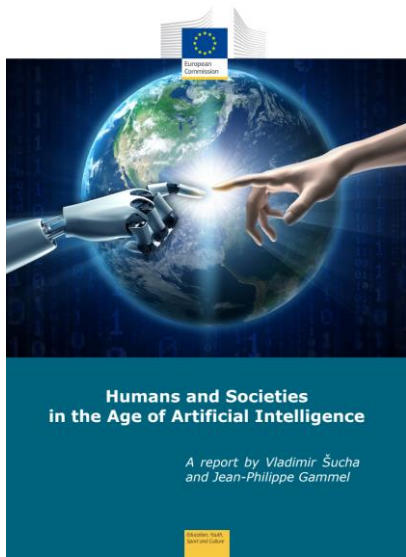
Joint
Research
Centre

*The views expressed are those of the author and may not in
any circumstances be regarded as stating an official position
of the European Commission.*

The potential of AI for Digital Transformation



Rising interest & dilemmas in AI for government



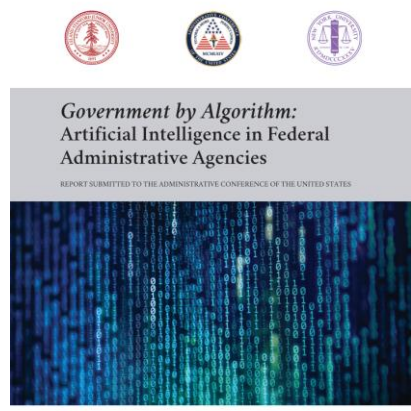
#Bürokratt:
digiriigi järgmine arengutase e-Eestis

Visioon ja kontseptsioon



Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda
Anneke Zuiderwijk^a, Yu-Che Chen^b, Fadi Salem^c
^a Delft University of Technology, Faculty of Technology, Policy and Management, Jaffalouan 5, 2628, RX, Delft, the Netherlands
^b University of Nebraska at Omaha, College of Public Affairs and Community Service, 109 CPACS, 6320 Maverick Plaza, Omaha, NE 68182, United States
^c Mohammed Bin Rashid School of Government, Convention Tower, Level 7, P.O. Box 72229, Dubai, United Arab Emirates

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



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



Mapping the challenges of Artificial Intelligence in the public sector: Evidence from public healthcare
Tara Qian Sun^{a,*,†}, Rony Medaglia^{†,‡,§}
<https://doi.org/10.1016/j.giq.2018.09.008>

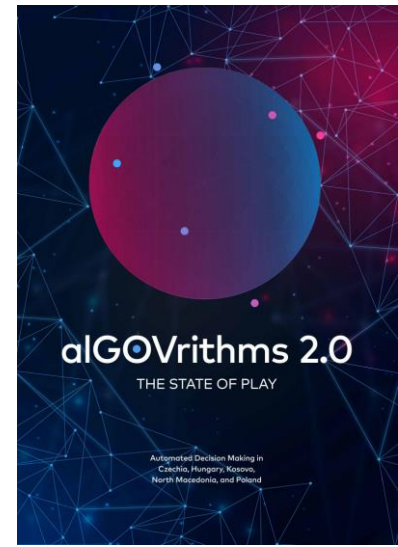
How and where is artificial intelligence in the public sector going? A literature review and research agenda
Weslei Gomes de Sousa^{†,§}, Elis Regina Pereira de Melo[†], Paulo Henrique De Souza Bermejo^{†,§}, Rafael Araújo Sousa Farias[†], Adalmir Oliveira Gomes[†]



New Wine in Old Bottles: Chatbots in Government
Exploring the Transformative Impact of Chatbots in Public Service Delivery
Authors: 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)



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
2,238 Views
4 CrossRef citations to date
1 Altmetric



Original Manuscript
Exploratory Insights on Artificial Intelligence for Government in Europe
Colin van Noordt¹ and Gianluca Misuraca²



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

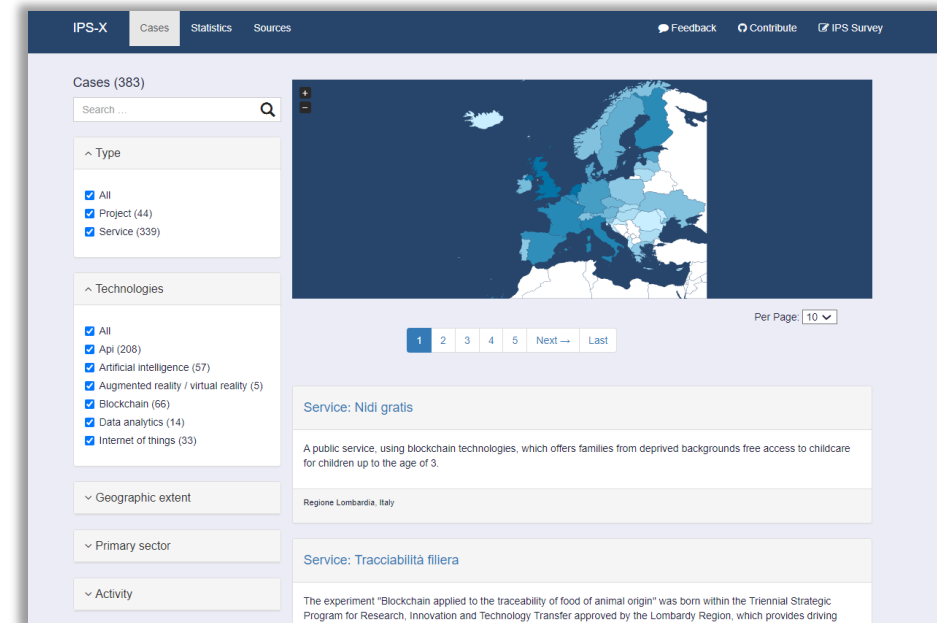


A Storymap on AI in Europe

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/>

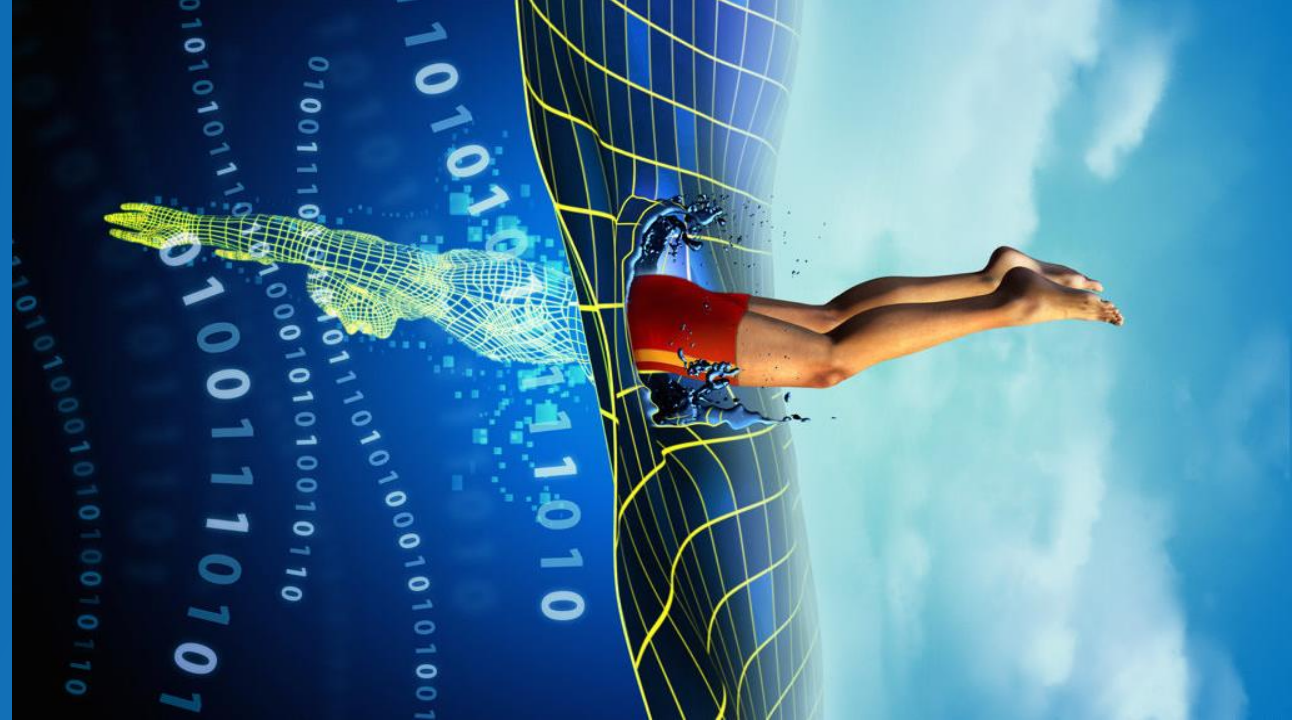
How can AI benefit the Governments?



Learning from the peers

- Promote **use of human-centric AI** in the public sector
 - **Structured 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



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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

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



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2021 REVIEW**

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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](#)

[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...

[Evolution of AI uptake](#)

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



[AI Landscape and Dashboard](#)

[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...

[Key Enablers](#)

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



[Strategic Actions and Coordination](#)

[Evolution of AI technology](#)

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

[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...

EC-OECD cooperation on national AI policies



STIPCOMPASS
INTERNATIONAL DATABASE ON STI POLICIES


OECD
BETTER POLICIES FOR BETTER LIVES

M 1.4. What strategies (or plans, roadmaps) and other types of policy initiatives, if any, make up your national artificial intelligence (AI) policy?

Dedicated (or significant part of) scheme, programme or incentive that supports the development, use, adoption and/or diffusion of artificial intelligence systems.

- AI4EU CONSORTIUM (2019-2021)
- BIG DATA VALUE PPP (2014-2020)
- COMMON EUROPEAN DATA SPACE (2019-...)
- COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE (2018-...)
- COUNCIL CONCLUSIONS ON THE COORDINATED PLAN ON THE DEVELOPMENT AND USE OF ARTIFICIAL INTELLIGENCE MADE IN EUROPE (2019-...)
- DECLARATION OF COOPERATION ON AI (2018-...)
- DIGITAL EUROPE PROGRAMME (2019-2027)
- DIGITAL INNOVATION HUBS (2016-...)
- EU COMMUNICATION ON ARTIFICIAL INTELLIGENCE (2018-...)
- EU STRATEGY FOR ARTIFICIAL INTELLIGENCE (2018-...)
- EUROHPC INITIATIVE (2019-2026)
- EUROPEAN NETWORK FOR AI EXCELLENCE CENTRES (2019-2022)
- FET FLAGSHIP- HUMAN BRAIN PROJECT (2013-2020)
- FINANCING OF ARTIFICIAL INTELLIGENCE AND BLOCKCHAIN TECHNOLOGIES (2019-...)
- HIGH-LEVEL EXPERT GROUP ON ARTIFICIAL INTELLIGENCE (2018-2020)

Survey on national AI policies, collecting qualitative and quantitative data



OECD.AI
Policy Observatory

AI Principles Policy areas Trends & data Countries & Initiatives About

Home > Countries & Initiatives > National strategies & policies

National AI policies & strategies

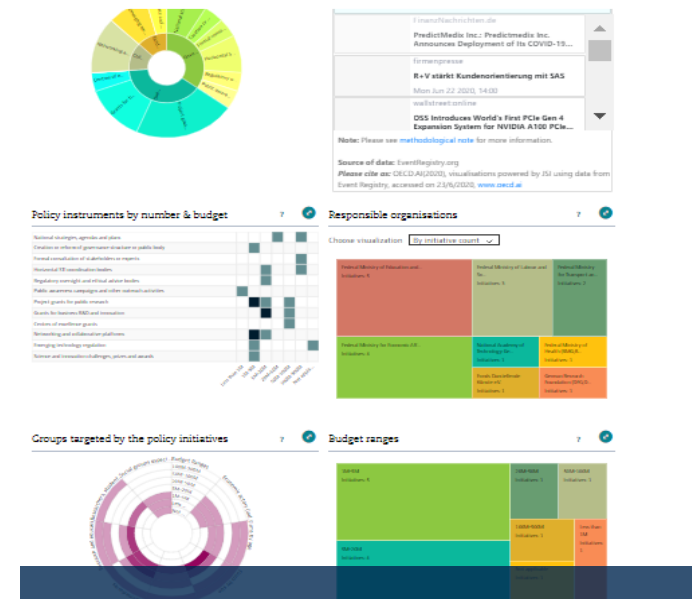
This section provides a live repository of over 300 AI policy initiatives from 60 countries, territories and the EU. Click on a country / territory, a policy instrument or a group targeted by the policy.

Countries & territories Policy instruments Target Group

Choose visualization: By territory count

World map and grid of national flags.

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



Policy instruments by number & budget

Responsible organisations

Groups targeted by the policy initiatives

Budget ranges

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

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



AI policies by country

This web page contains the country chapters for the EU Member States, Norway and Switzerland with detailed information about policies identified in their national AI strategies. The collection of AI policies is conducted jointly by the European Commission's Joint Research Centre (JRC) and the OECD Digital Economy Policy Division. OECD and AI Watch have exchanged content for publication on their respective platforms.

Austria	Belgium	Bulgaria
Croatia	Cyprus	Czech Republic
Denmark	Estonia	Finland
France	Germany	Greece

Overview of National AI Strategies

Country	Status	Date
 Austria	In progress	
 Belgium	In progress	
 Bulgaria	Published	Dec. 2020
 Croatia	In progress	
 Cyprus	Published Last update	Jan. 2020 Jun. 2020
 Czech Republic	Published	May 2019
 Denmark	Published	Mar. 2019
 Estonia	Published	Jul. 2019
 Finland	Published Last update	Oct. 2017 Nov. 2020
 France	Published	Mar. 2018
 Germany	Published Last update	Nov. 2018 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!



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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

Joint
Research
Centre

National AI Strategies

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

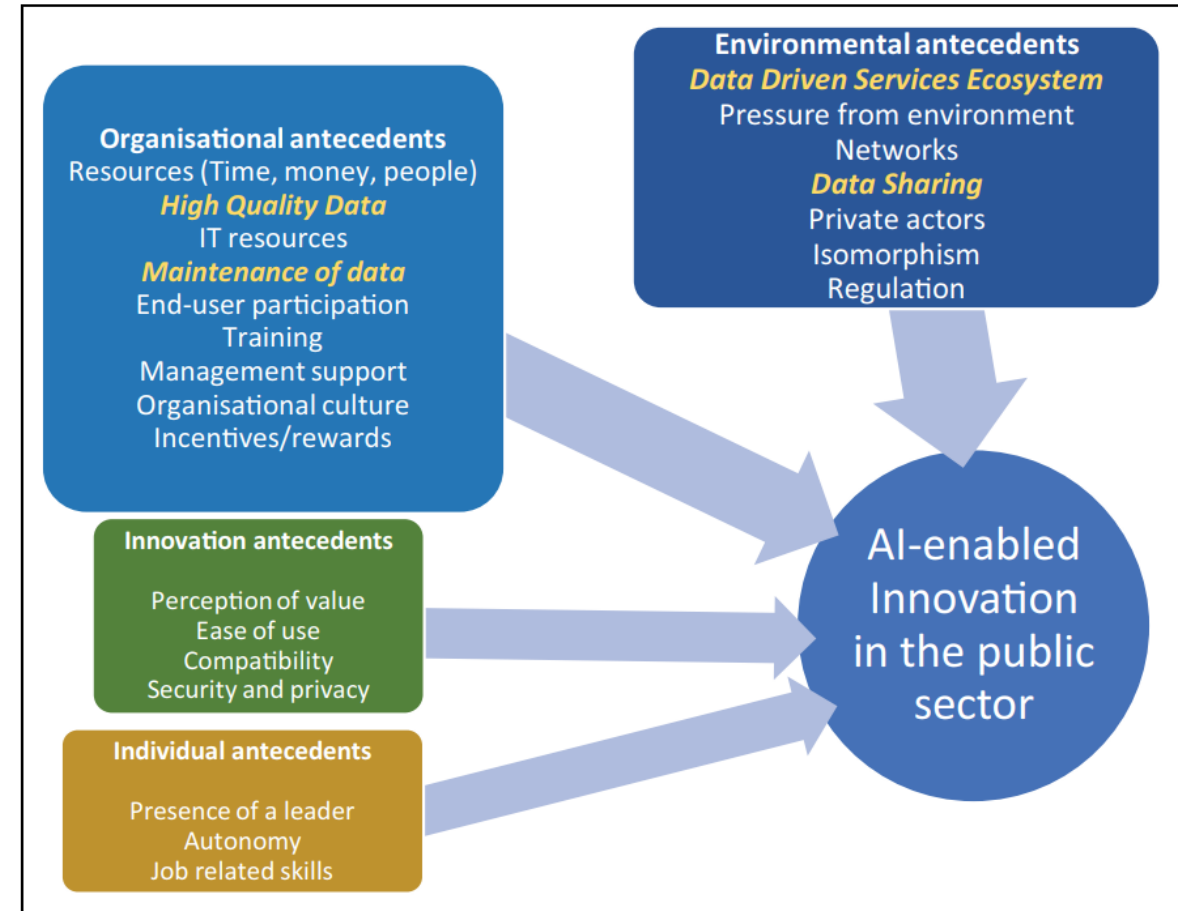
- Revised European Action Plan: Make the public sector a trailblazer for using AI
 - High-impact area for AI
 - Contribute to better public services
 - First mover role in adopting secure, trustworthy and sustainable AI
- Development of National AI Strategies
 - Part of the Coordinated Action Plan
 -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

OUR KEY PROPOSALS TO BUILD STRATEGIC LEADERSHIP



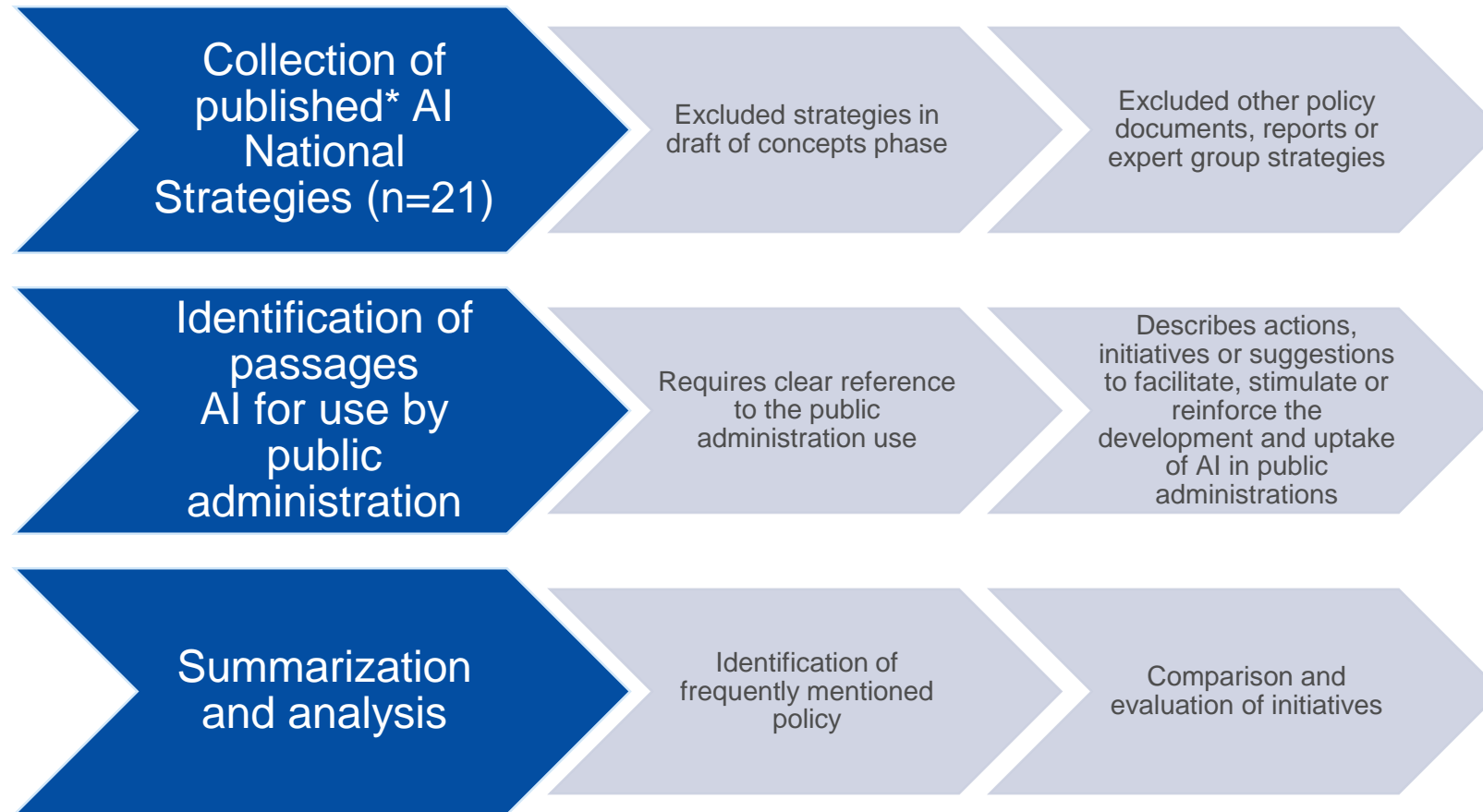
Barriers limiting AI in government

- 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

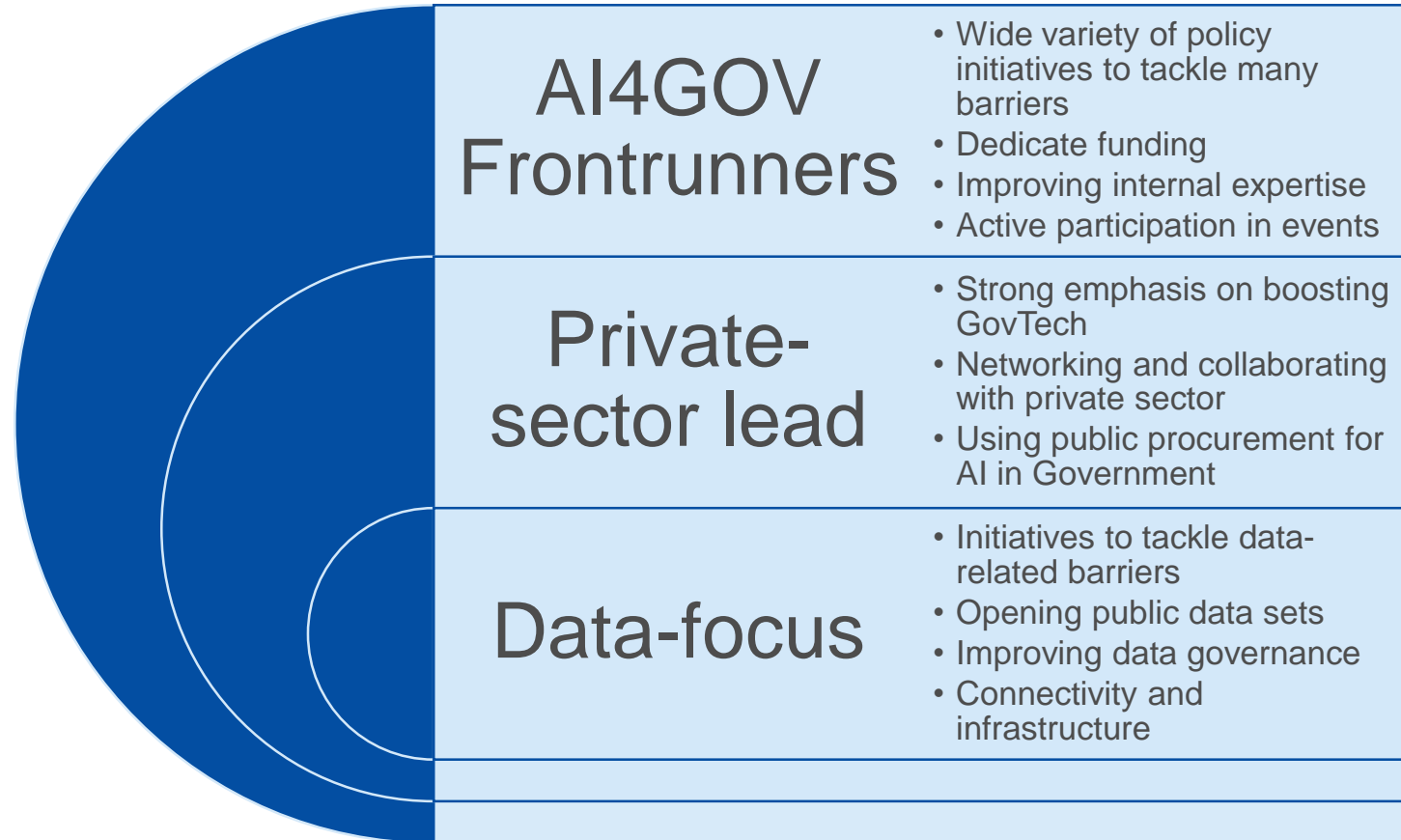
Analysing national AI strategies



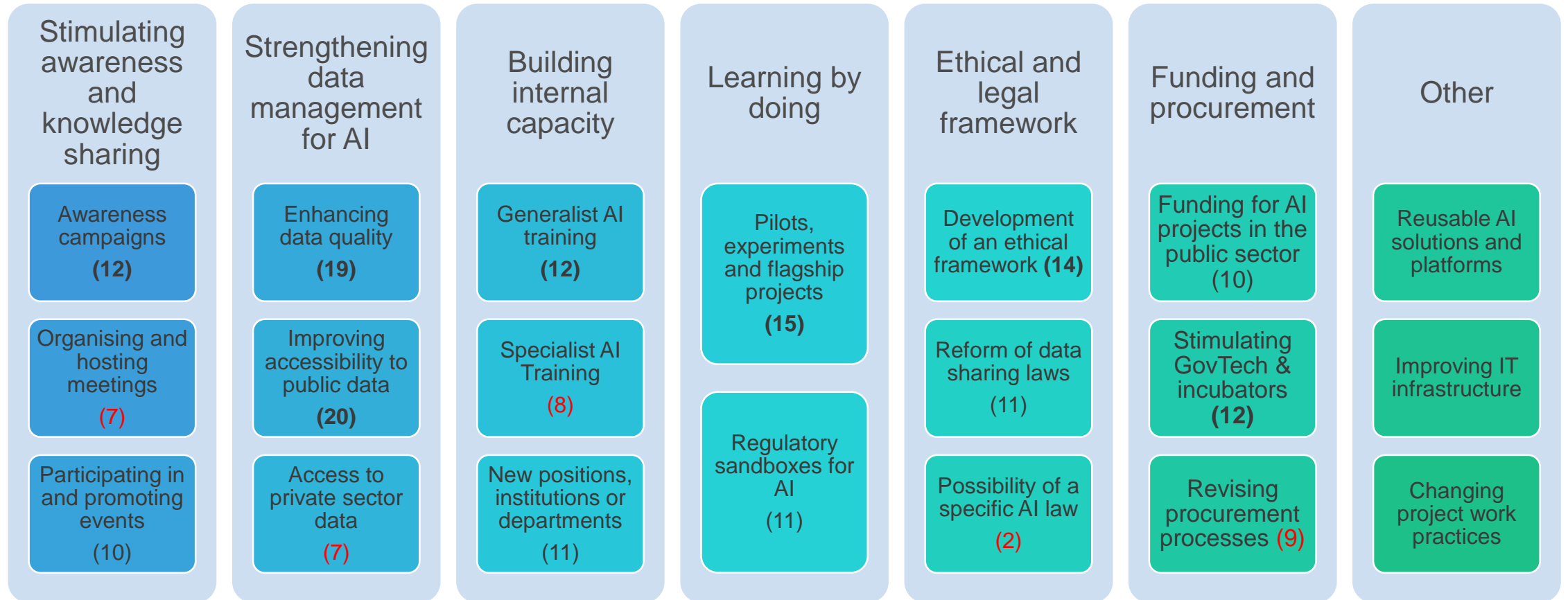
*As of April 2021, there are 21 countries which have published their national AI strategies: Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, and the United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



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!



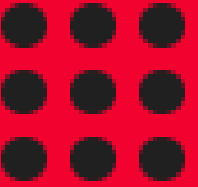
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Click to add text

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:

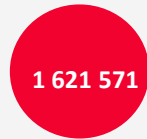
Wide implementation of gov.pl services
To be used by any local/central public
administration authority



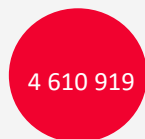
One of the important aspects of implementing modern technologies in Poland
is the use of artificial intelligence.

Why the Uniform electronic document management system (EZD)?

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



Internal documentation



Internal (chain of command) approvals



Number of sent documents



Easing access to public services and citizen's life



Paper-less public administration



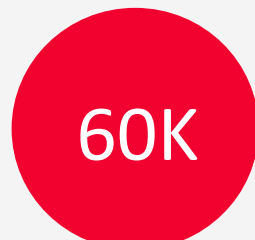
One system for public administration for day to day operation - receiving, storing and archiving electronic correspondence

Benefits for public administration:

- time reduction
- cost reduction
- high volume
- Convenience
- easy access
- No printing required
- unification/standardization/harmonization
- effective use of human resources



Public sector employees including administration/healthcare/education.



approx. 60K public authorities (small and large)

EZD RP

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

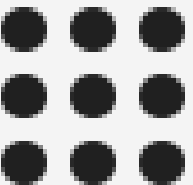
Full integration of digital processes in administration - connection between administrators with key resources

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

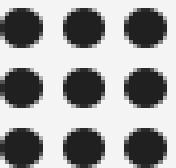
Two existing/developed practical applications of AI in the electronic document management system EZD RP

1

Automatic division of correspondence based on existing signatures.

2

Automation of document anonymization before sharing

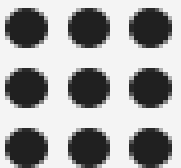


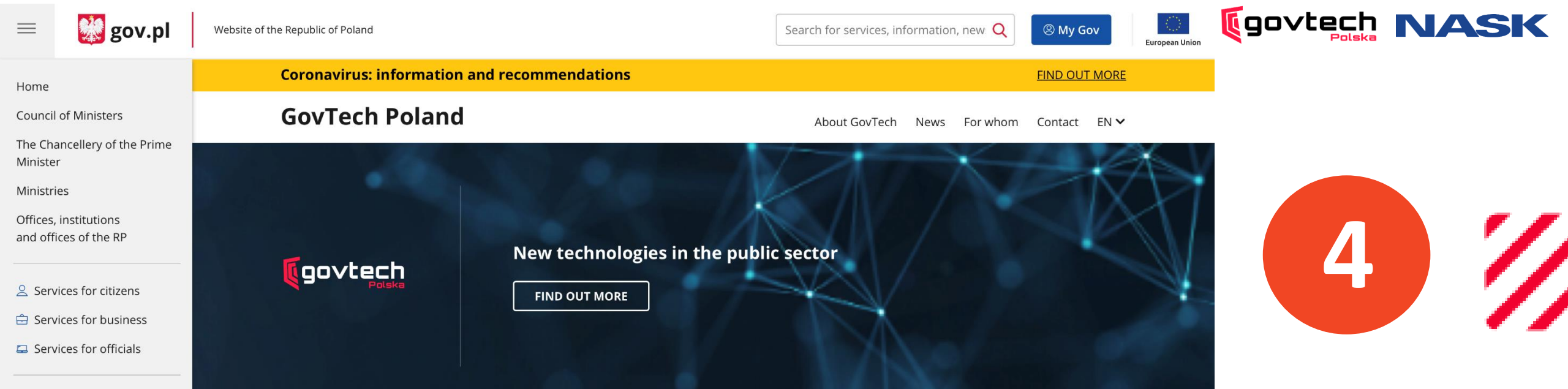
AI in EZD RP

- 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





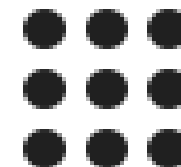
GOV.PL – one gateway to access them all

Hundreds of services ...

Thousands of institutions ...

Tens of millions of monthly users ...

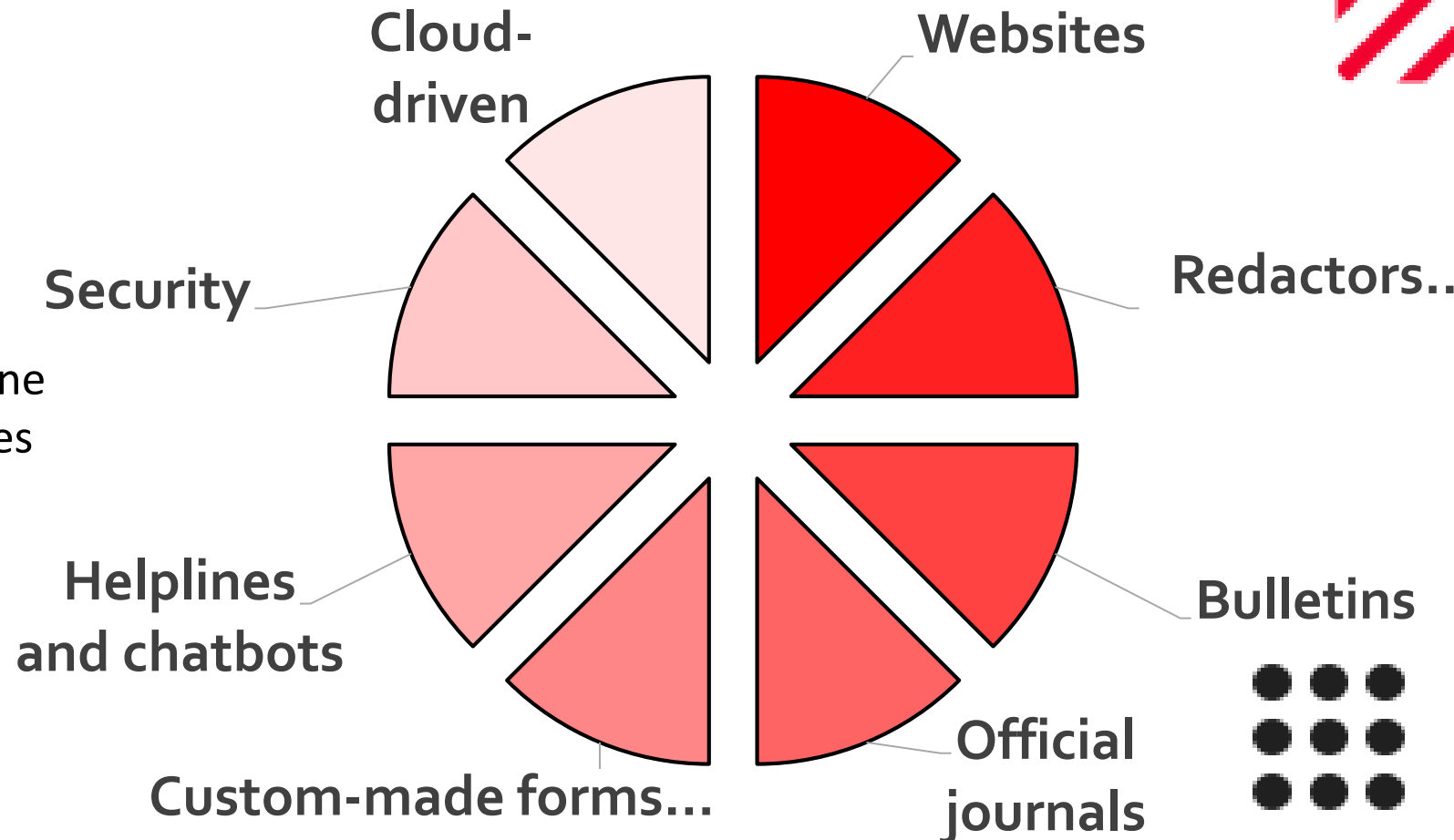
... all in one place!



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

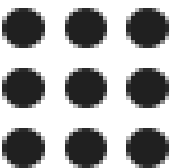
6

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



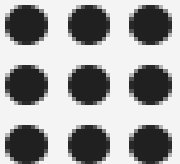
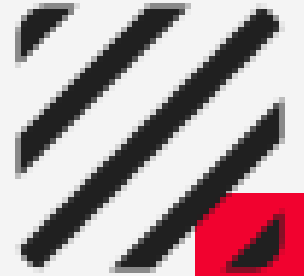
EZD RP is the key pillar for digitalization of Polish public administration while using AI tools

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)





The Norwegian AI strategy – what's next?

Christine Hafskjold

Department of national IT policy and public governance

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

Ethics 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





National Strategy for Artificial Intelligence



Our new digital world

Digitalisation in Norway during the coronavirus pandemic



Meld. St. 22

(2020–2021)

Melding til Stortinget

Data som ressurs

Datadrevet økonomi og innovasjon



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



Data access



Personally identifiable data

Read this guide **before** applying for information that can be directly or indirectly linked to individuals.

[Go to guide](#)



Anonymous aggregated data

Do you need table data, statistics, grouped or other anonymous data? Here's how to proceed!

[Go to guide](#)

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



Thank you!



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



AI-WATCH



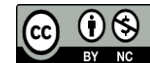
3rd Peer-Learning Workshop on the use and impact of AI in the public sector

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



Paul Waller

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paul@waller-online.co.uk

Brain teaser

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.

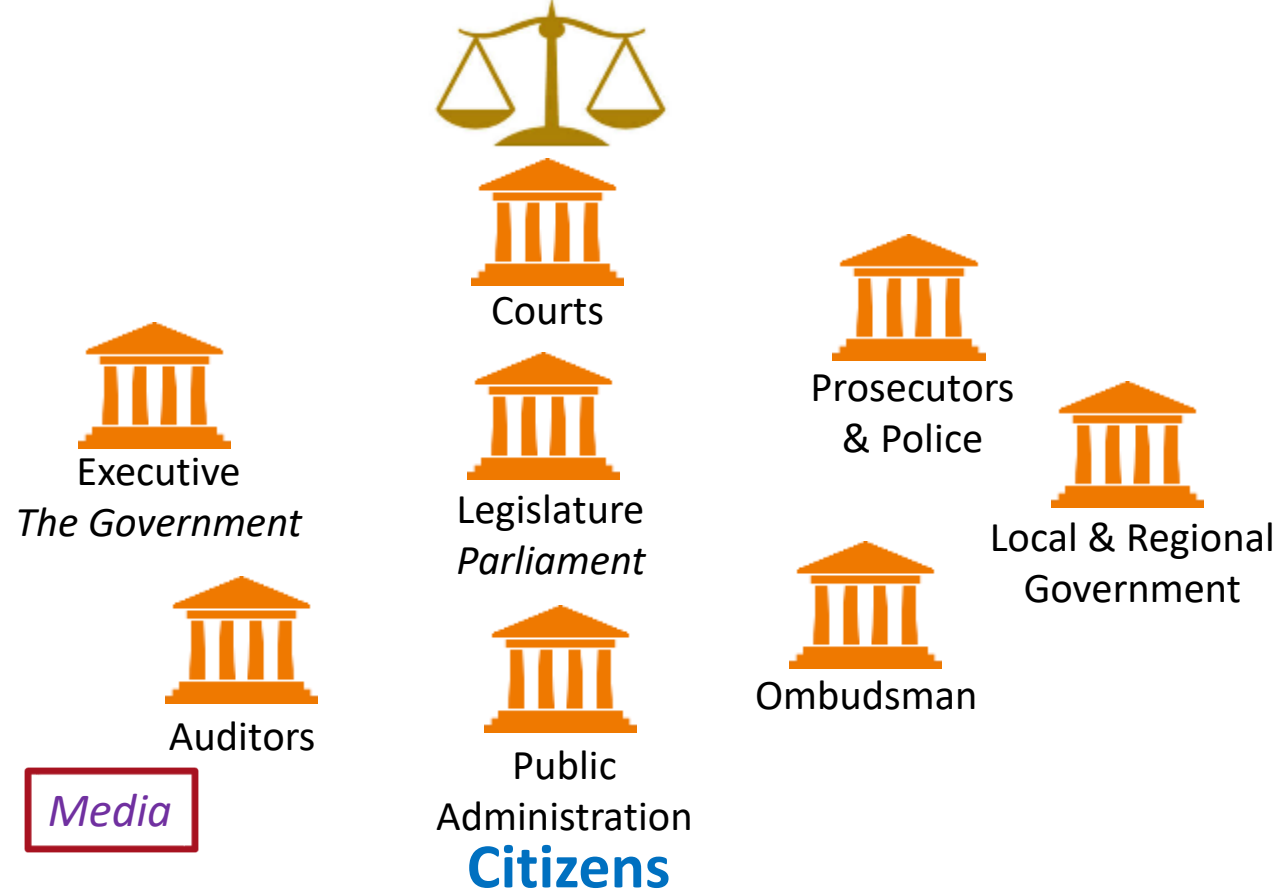
If the algorithm identifies a specific child as in danger, what is the probability that the child truly is in danger?

Approximately:

- | | | |
|--------|--------|--------|
| a) 90% | b) 80% | c) 72% |
| d) 30% | e) 10% | f) 5% |

The public sector context

The Rule of Law



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

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

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

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

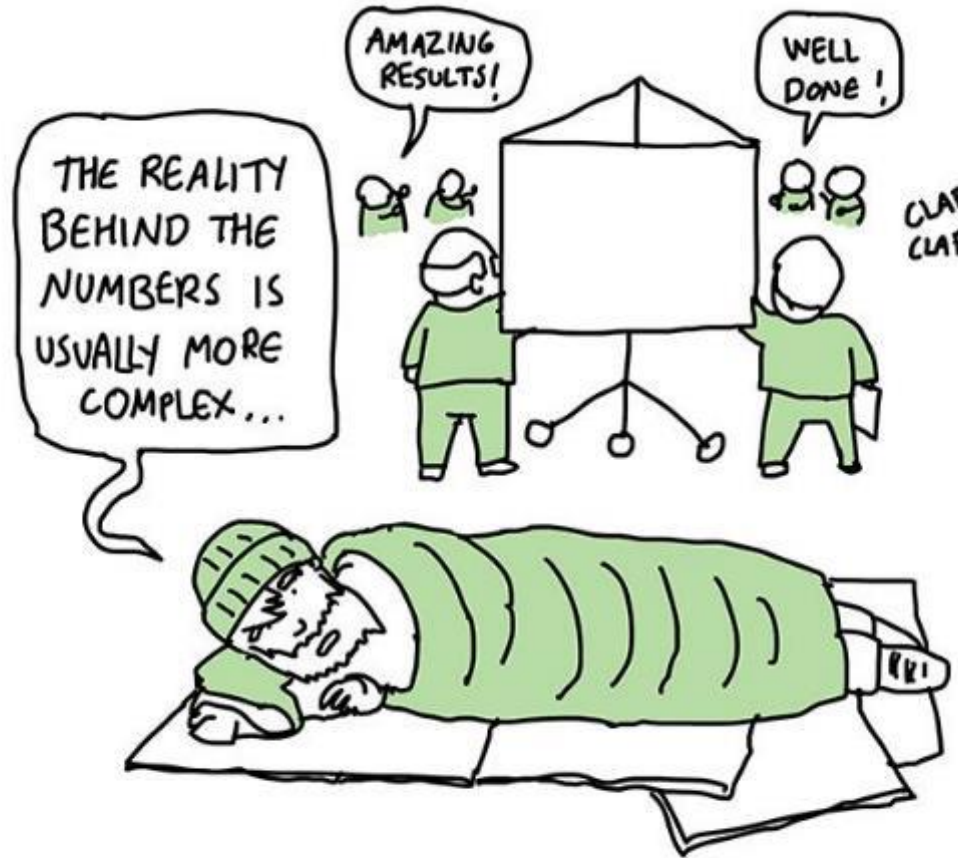


Image from *Made to Measure*, by Toby Lowe.

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.

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?

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| a) 90% | b) 80% | c) 72% |
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Use Risks

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

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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% |

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



Paul Waller
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paul@waller-online.co.uk

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”):

$$P(D) = 5\% = 0.05 \quad \text{so} \quad P(\sim D) = 0.95$$

$$P(F | D) = 80\% = 0.80$$

$$P(\sim F | \sim D) = 90\% = 0.90 \quad \text{so} \quad P(F | \sim D) = 0.10$$

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

$$\text{Now } P(F) \times P(D | F) = P(D \wedge F) = P(D) \times P(F | D) = 0.05 \times 0.80 = 0.04$$

So $P(D | F) = P(D) \times P(F | D) / P(F)$ where

$$\begin{aligned} P(F) &= P(F \wedge D) + P(F \wedge \sim D) = 0.04 + P(\sim D) \times P(F | \sim D) = 0.04 + 0.95 \times 0.10 \\ &= 0.04 + 0.095 = 0.135 \end{aligned}$$

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



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-MANIFESTO

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)?

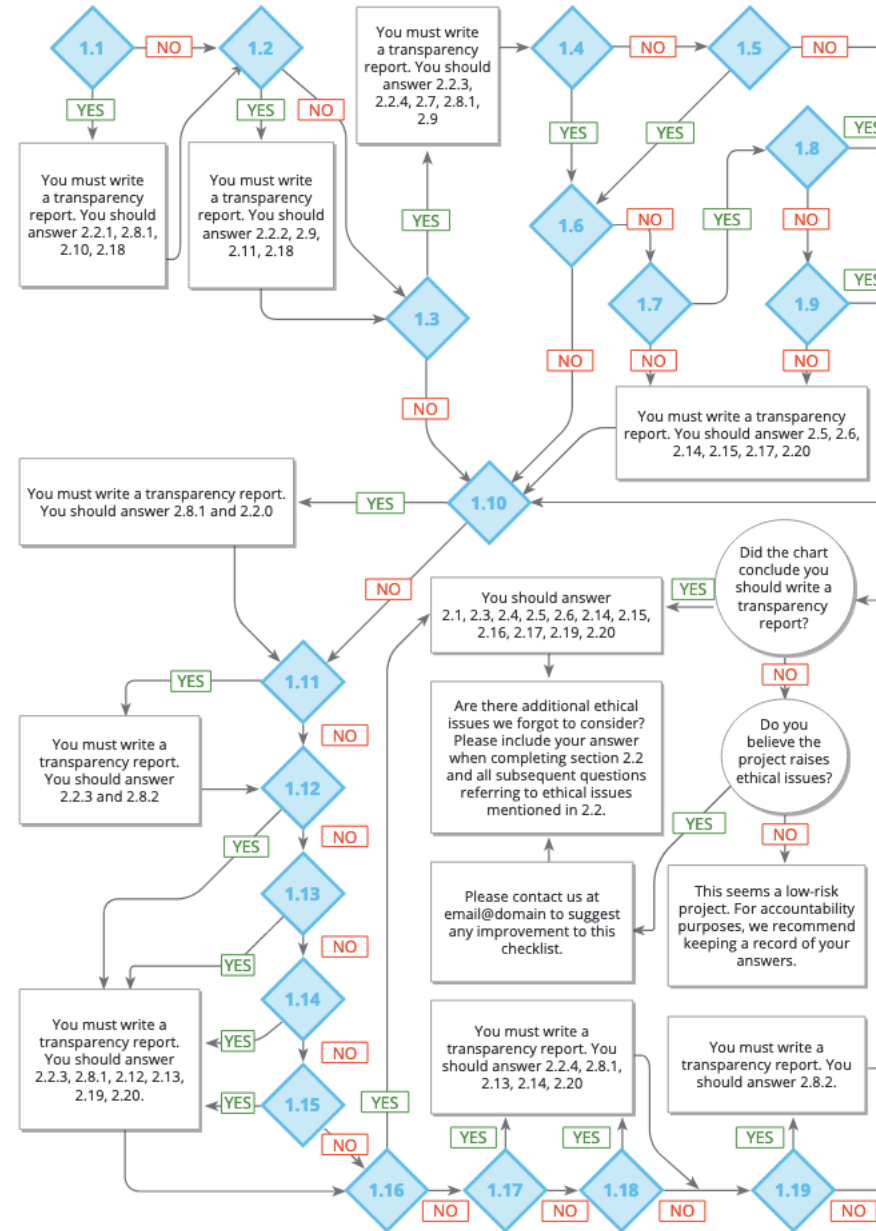
1.13. Economic risk: Does the technical system affect the distribution of public resources to economic actors in society?

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)?

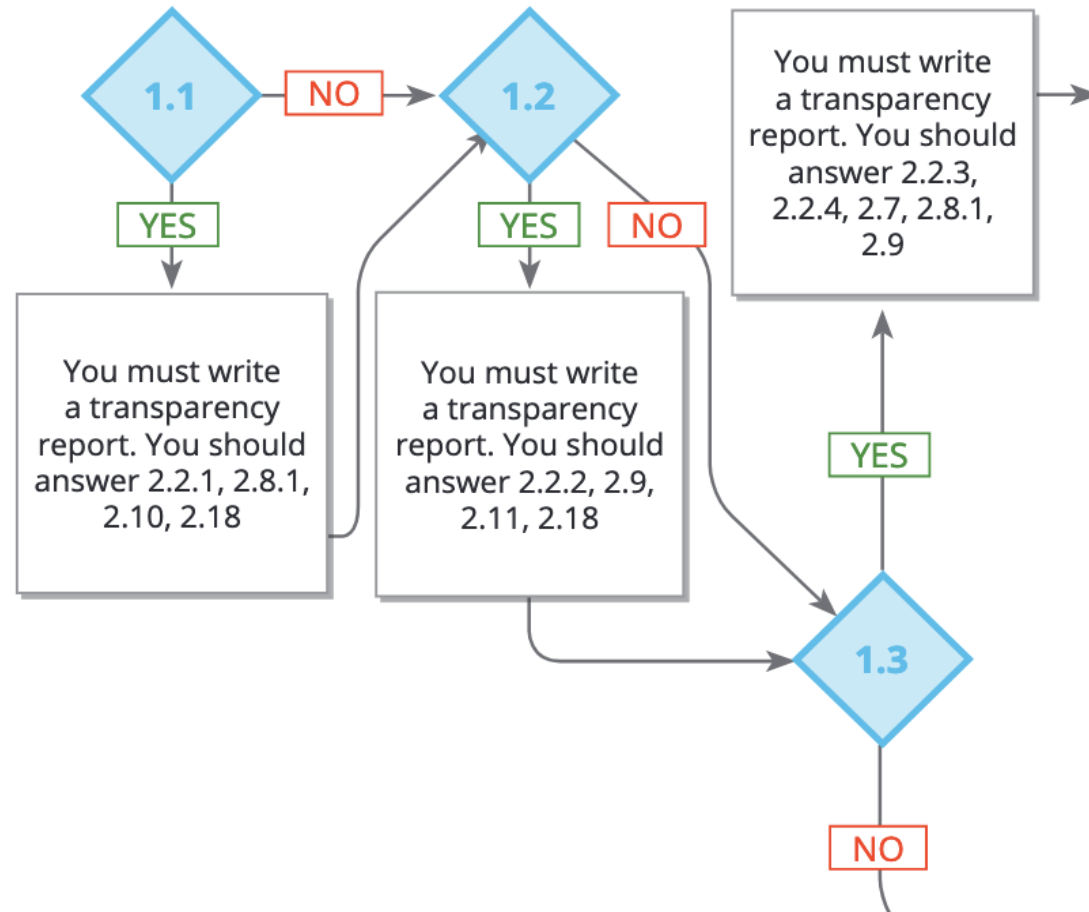


FLOWCHART





FLOWCHART





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

Joint
Research
Centre

The views expressed are those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.

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:

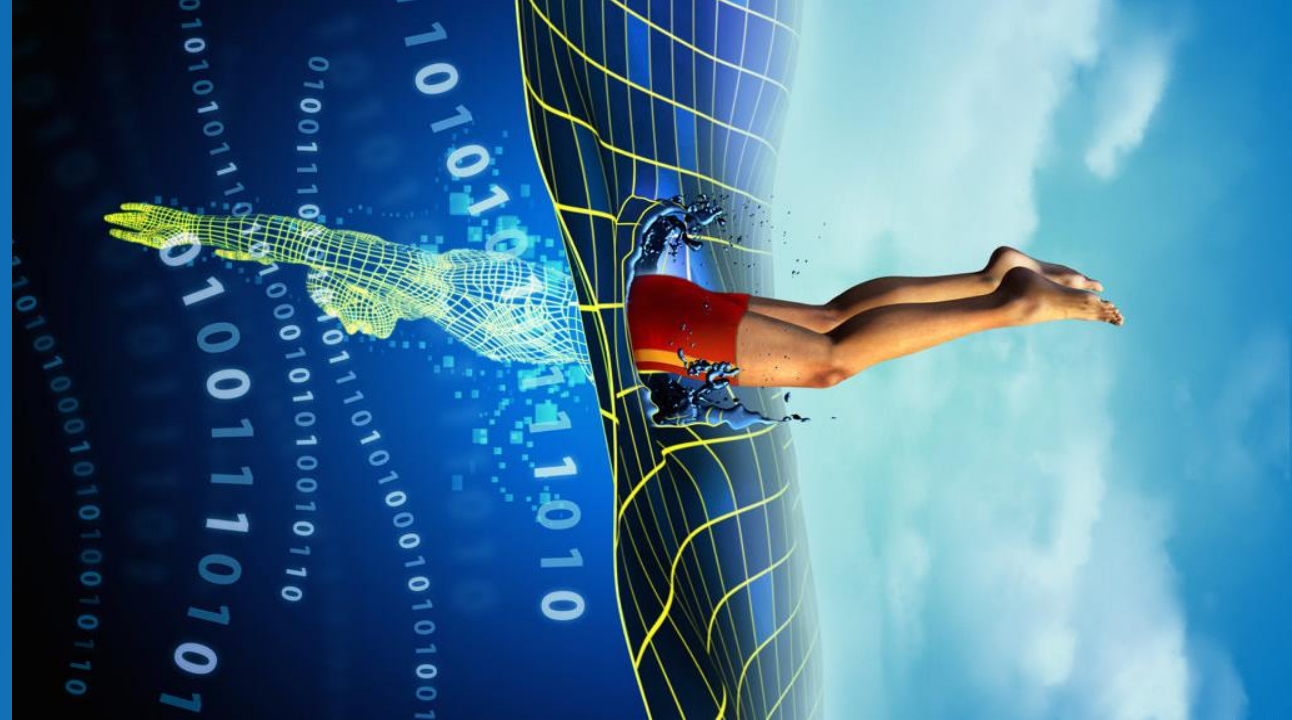
- Promote *value oriented and human-centric AI* in the public sector.
- Enhance *governance and capacity building*.
- Build a dedicated *AI digital ecosystem* for the Public Sector.
- Take stock of knowledge gains and propose a value oriented *AI impact assessment* methodology.

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



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AI Watch

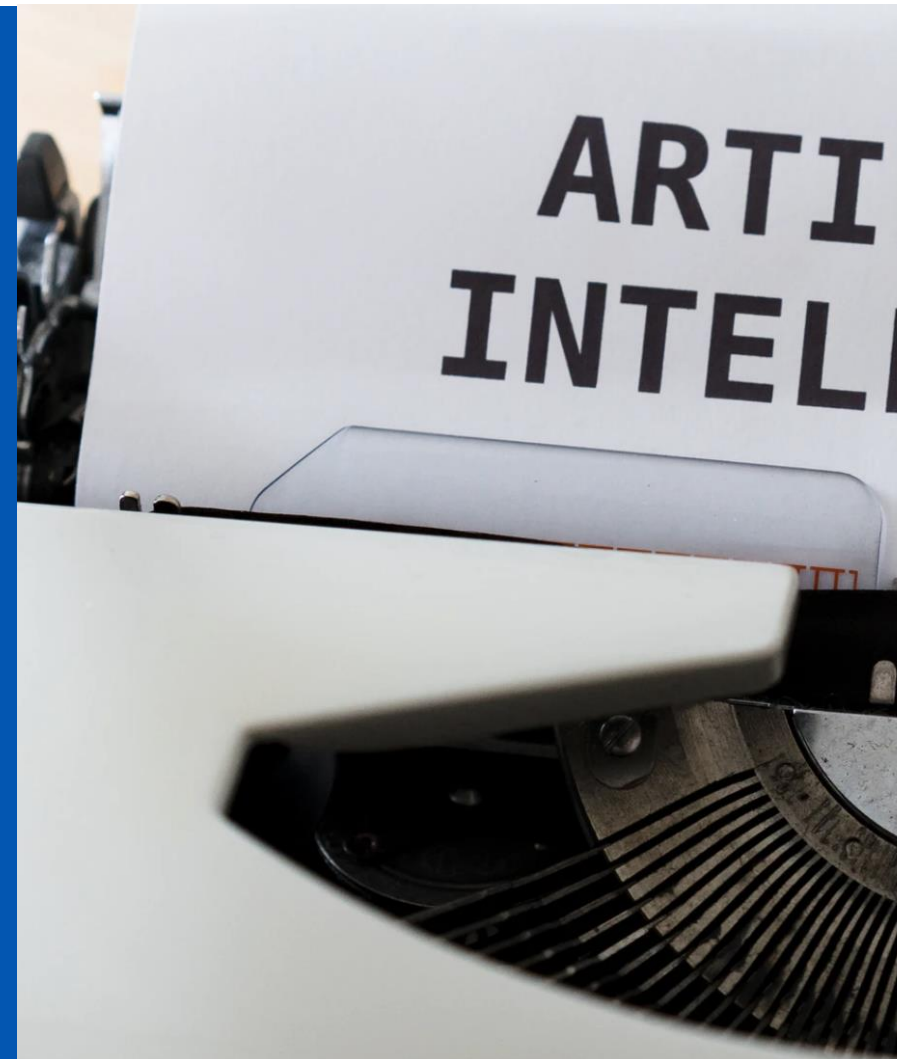
3rd Peer-Learning Workshop on the use and impact of AI in the public sector

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

Lorenzino Vaccari, external consultant

24/6/2021

Joint
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Centre

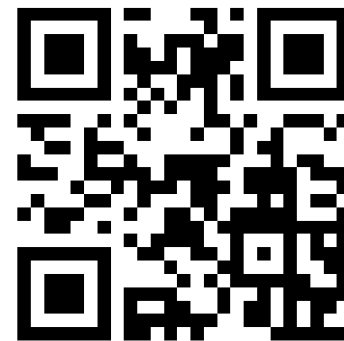


The views expressed are those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.

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*

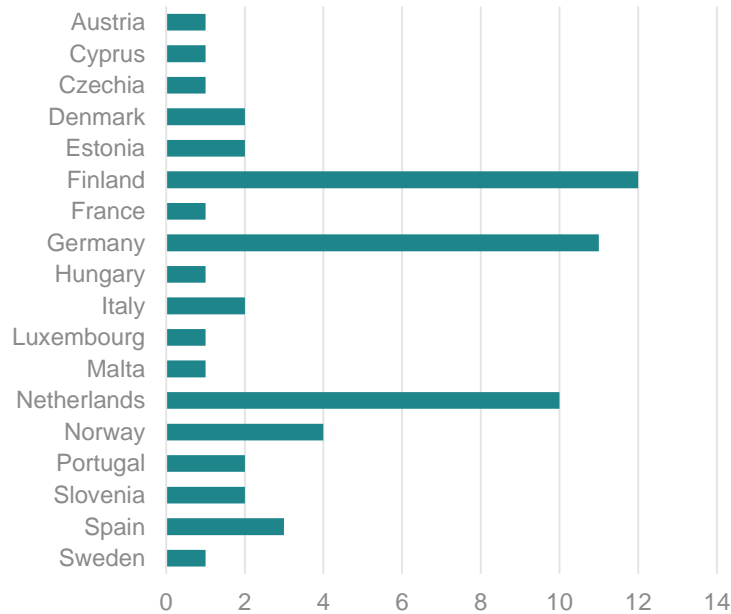
The survey



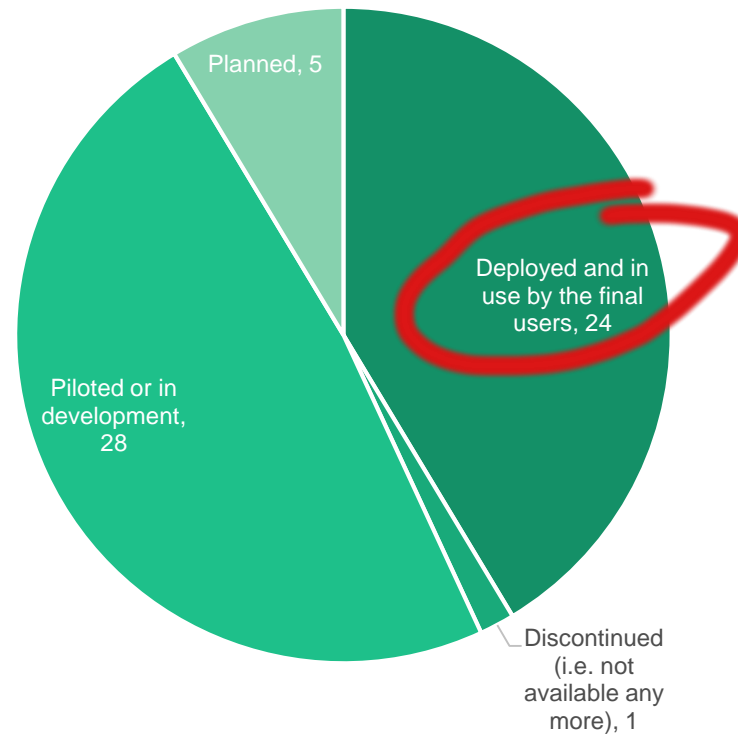
- Two main goals (and parts):
 1. Collection of AI cases in the public sector
 2. Impact assessment of the use of AI in the public sector
- Launched at the beginning of 2021, will remain open for contributions till the end of 2021
- Around 20' to fill the survey
- Available at: <https://ec.europa.eu/eusurvey/runner/IA-of-AI-public-sector>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

Contributions, statuses, roles

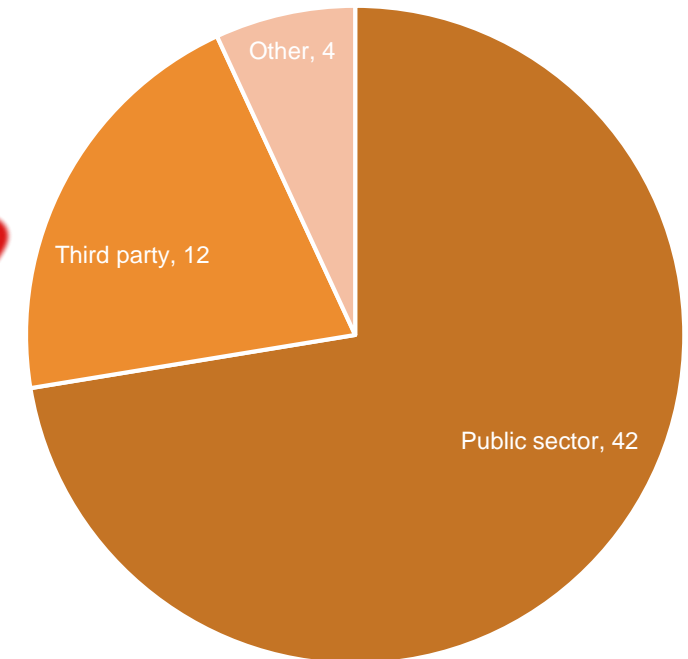
Contributions (n=58)



Status (n=58)

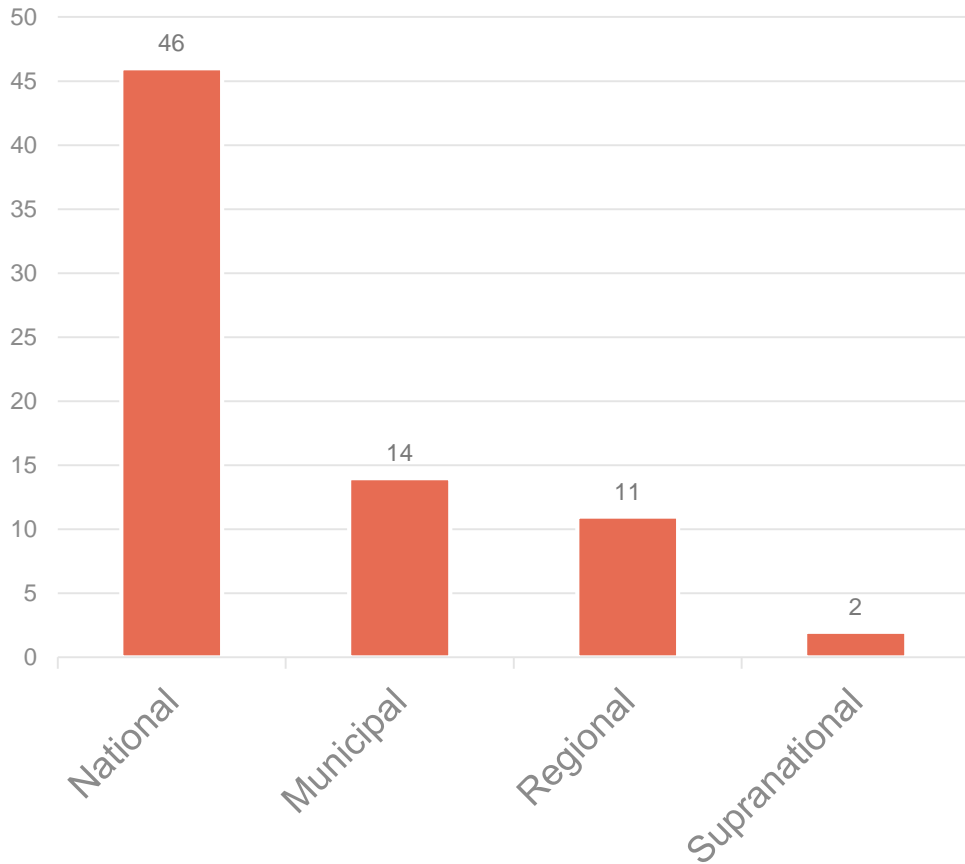


Contributor's role (n=58)

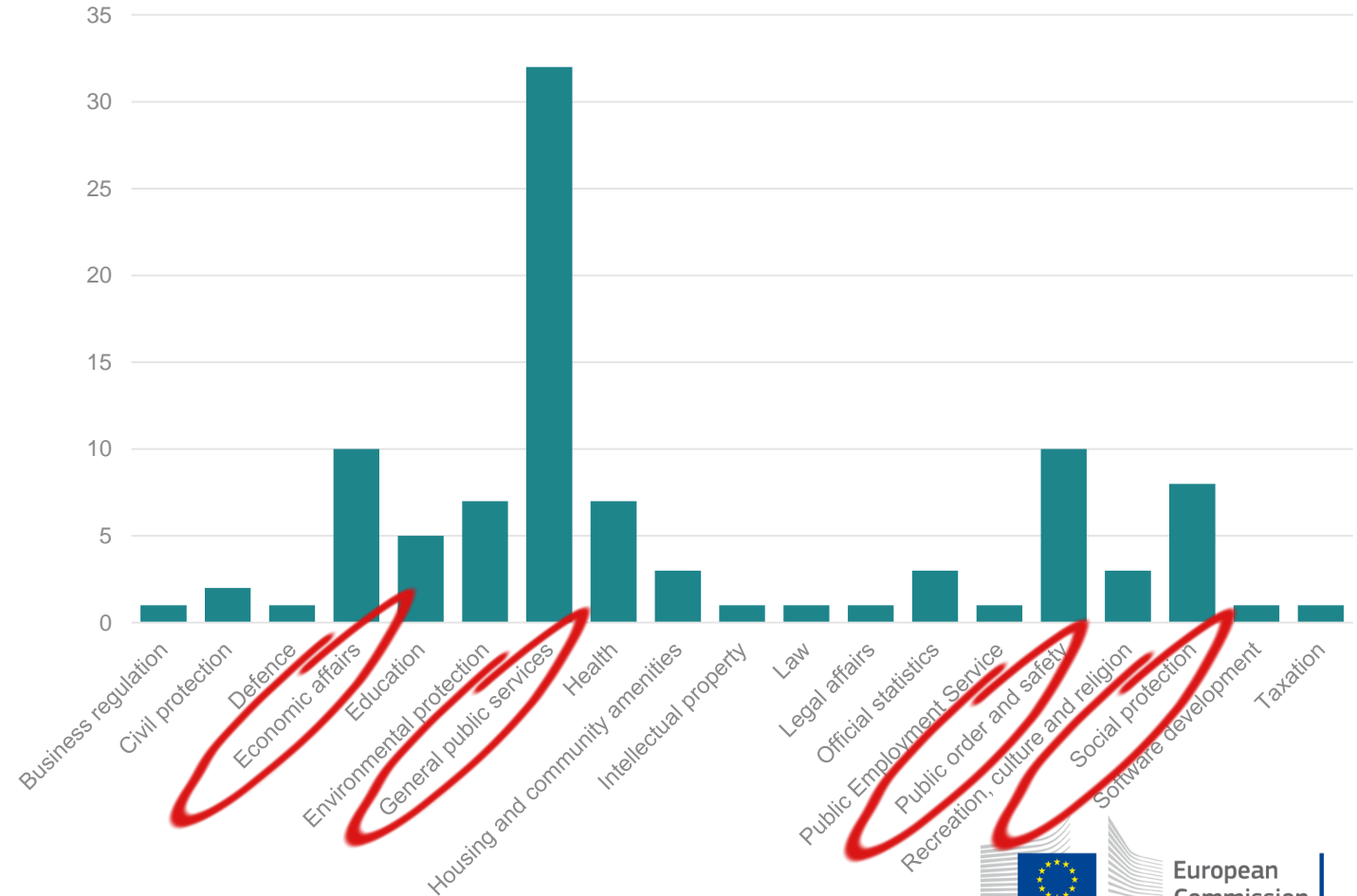


Administrative level, policy areas

Administrative level (n=73)



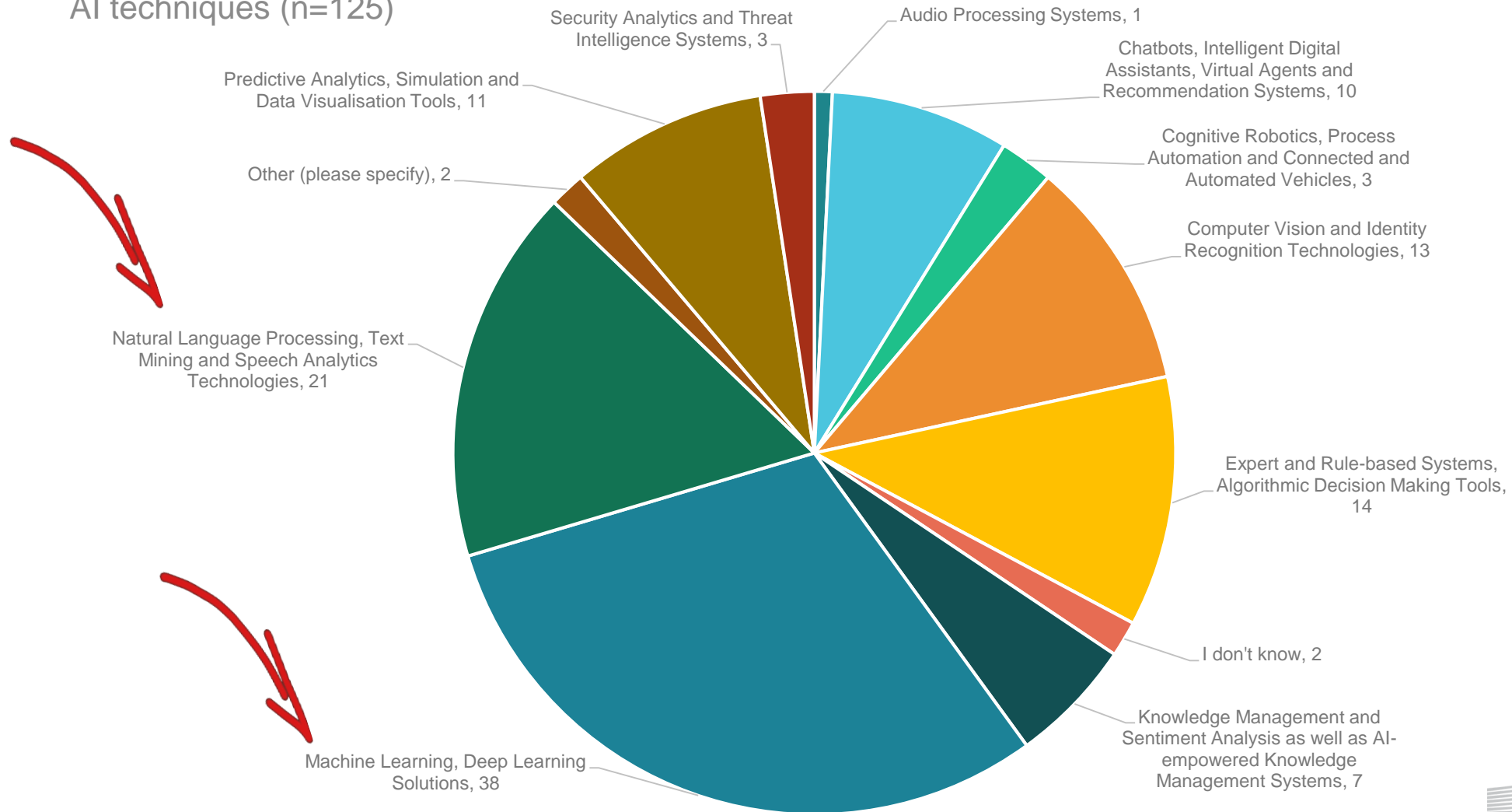
Policy areas (n=98)



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

AI techniques

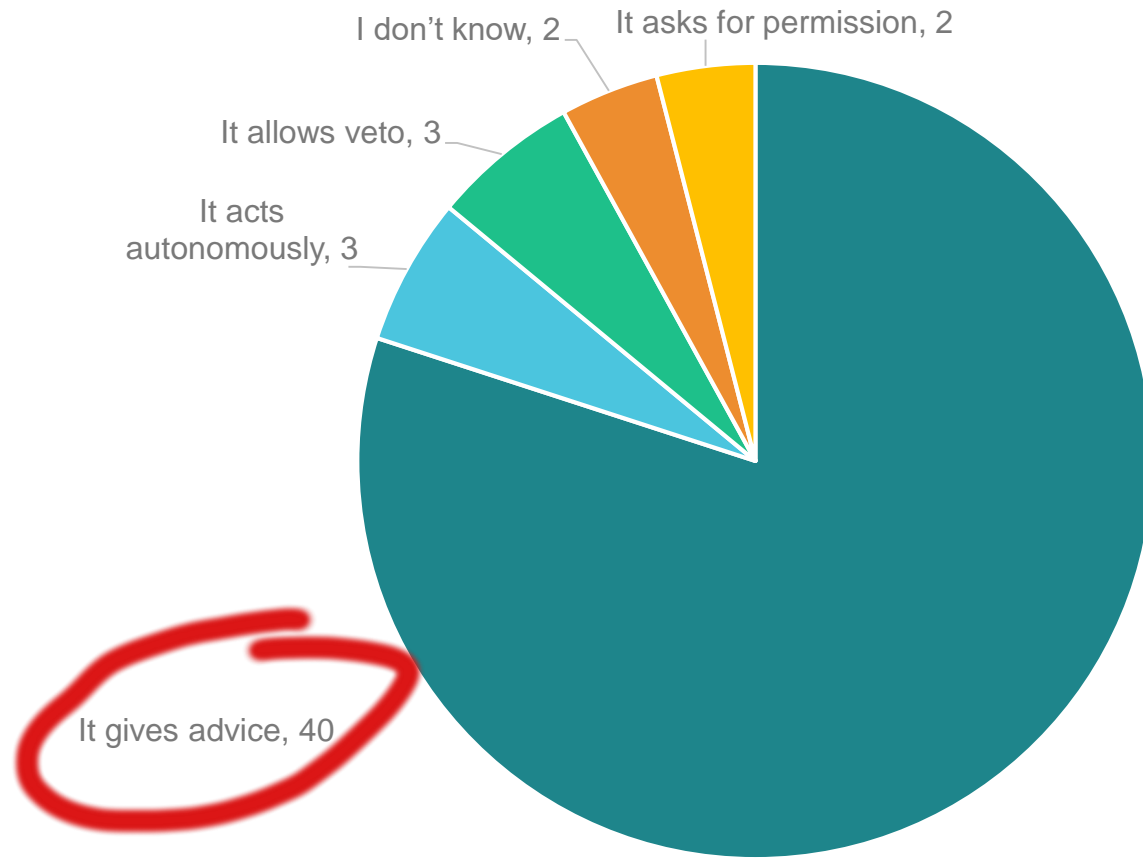
AI techniques (n=125)



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

Automation degree

Automation degree (n=58)

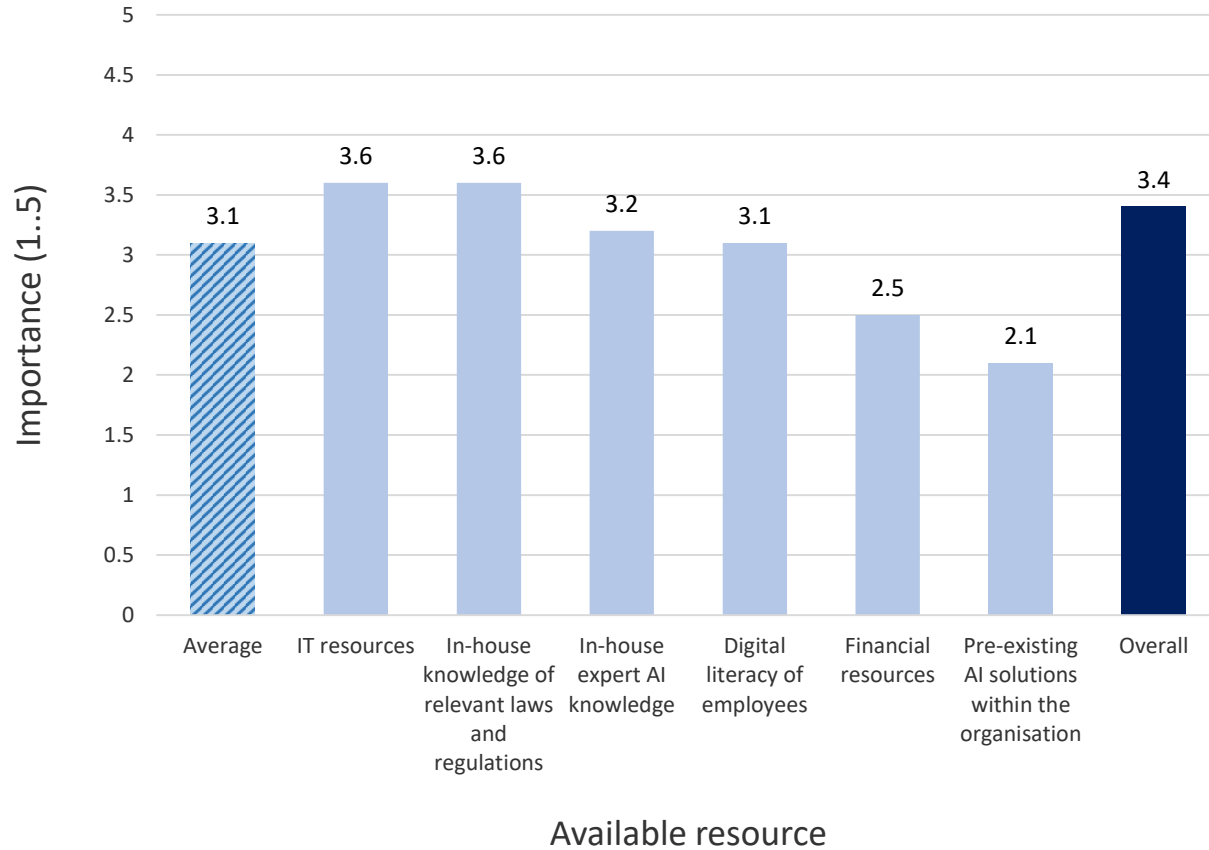


- It gives advice (i.e. the AI-enabled solution gives advice to a human; the human takes the decision)
- It acts autonomously (i.e. the AI-enabled solution acts completely independently without informing the human)
- It allows veto (i.e. the AI-enabled solution decides independently, but the human can override or block the decision)
- I don't know
- It asks permission (i.e. the AI-enabled solution takes a decision and the human gives permission to the AI application to execute the decision)

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

Enablers: Resources & stakeholders

Availability of resources (n=503)

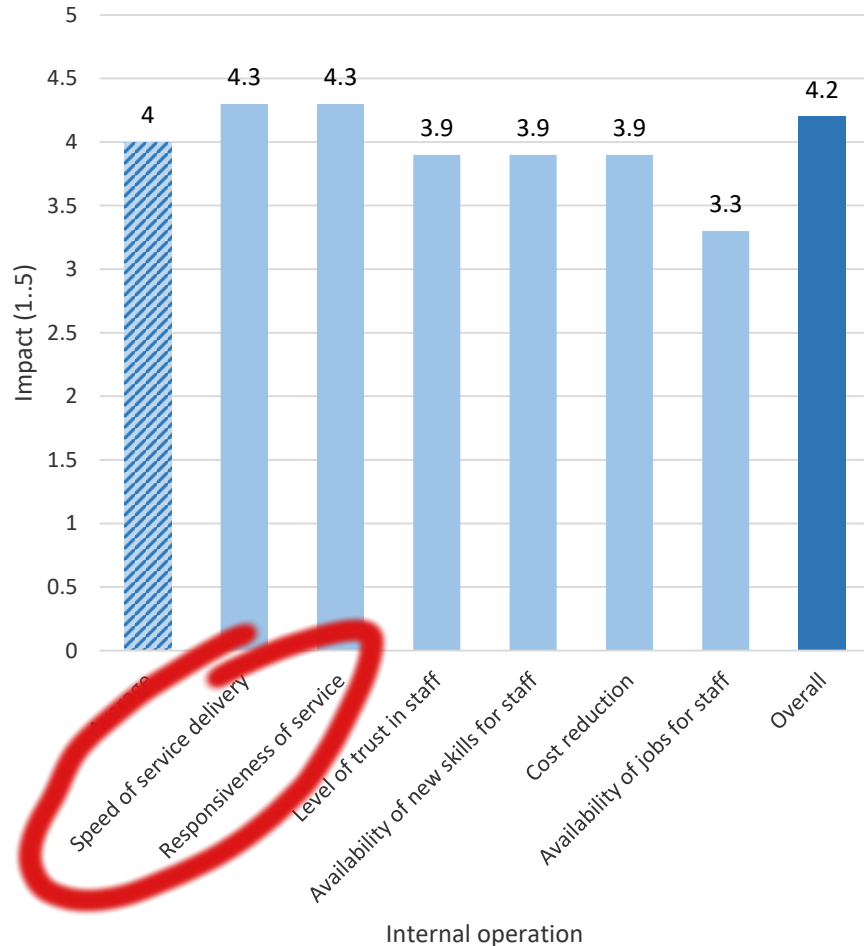


Support from stakeholders (n=535)

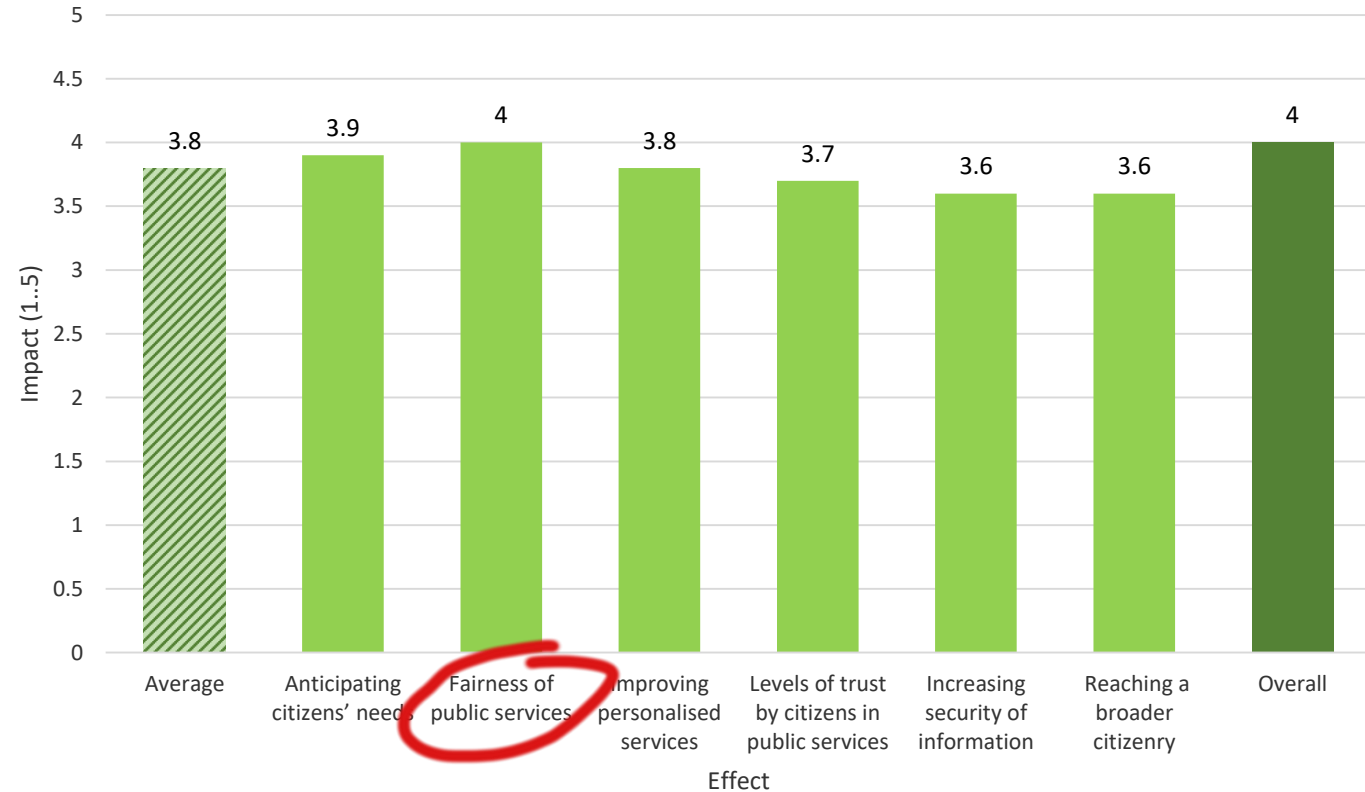


Effects: Service & Internal

Internal operations (n=355)

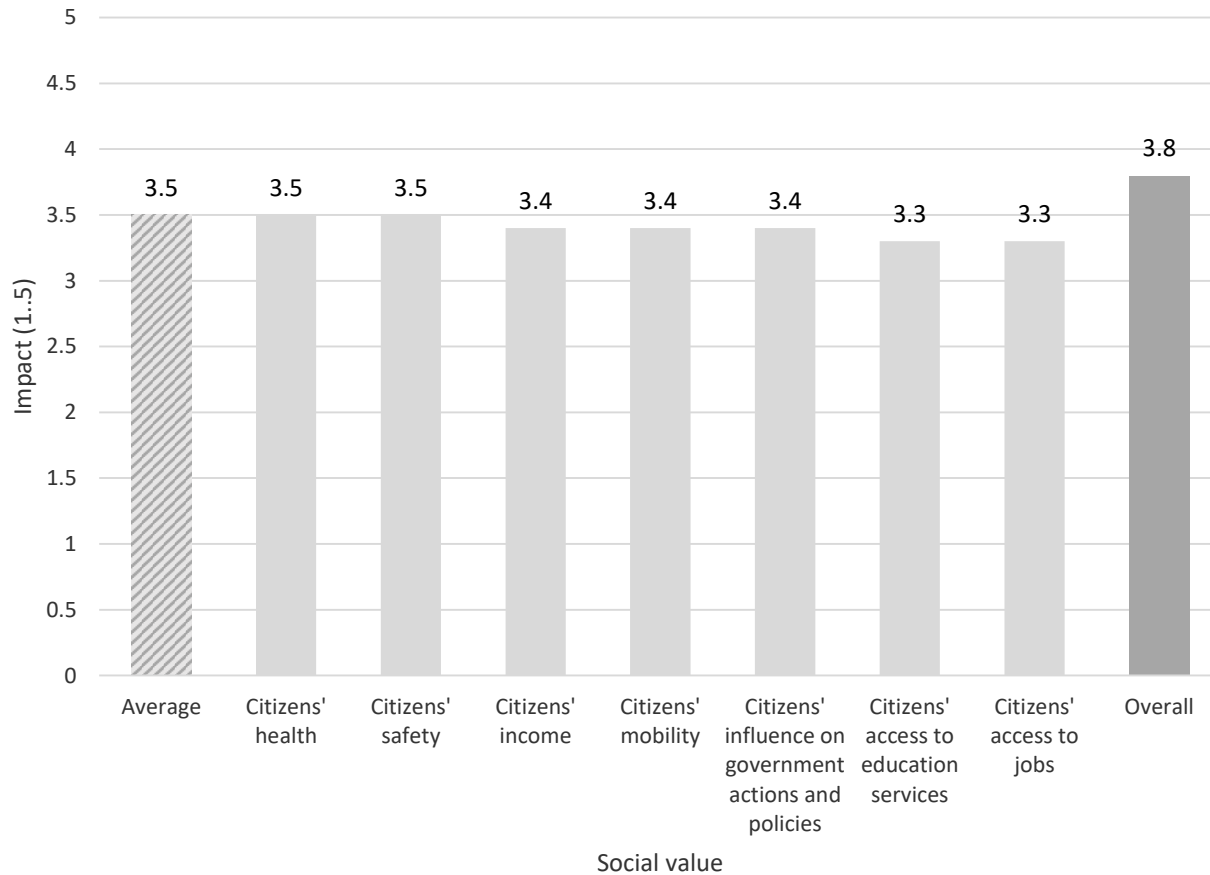


Improving public services (n=333)

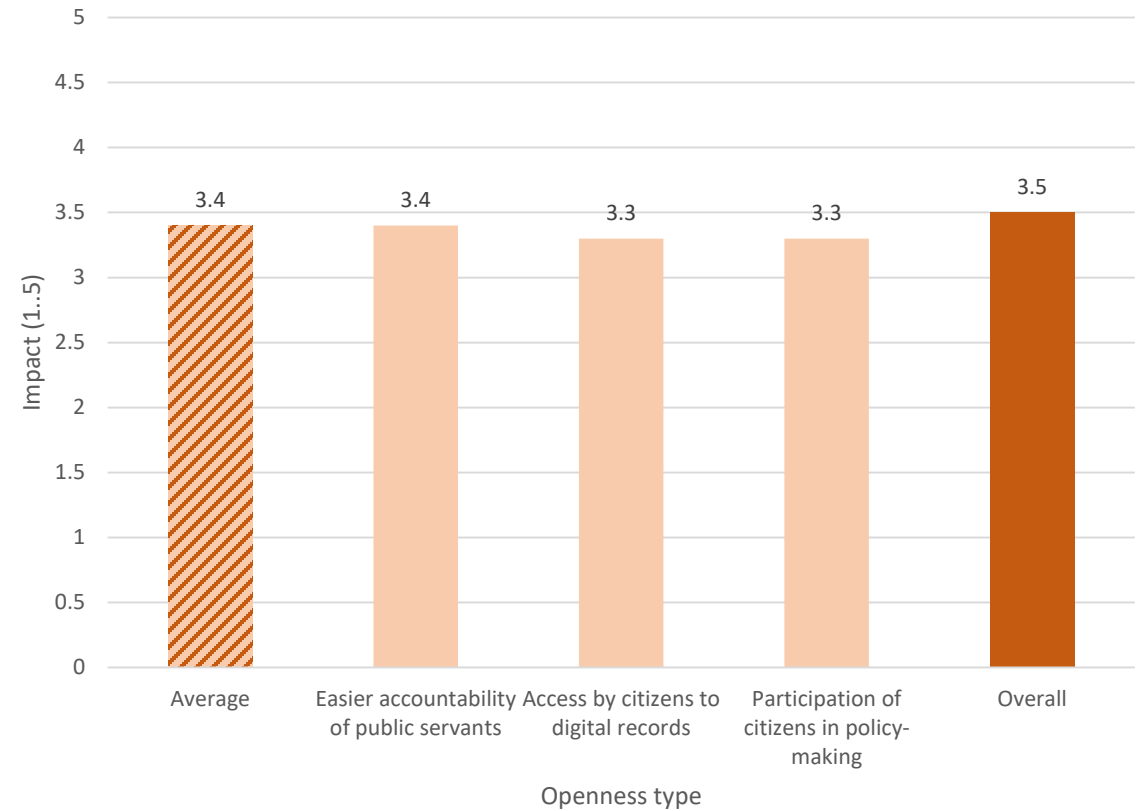


Effects: Social & openness

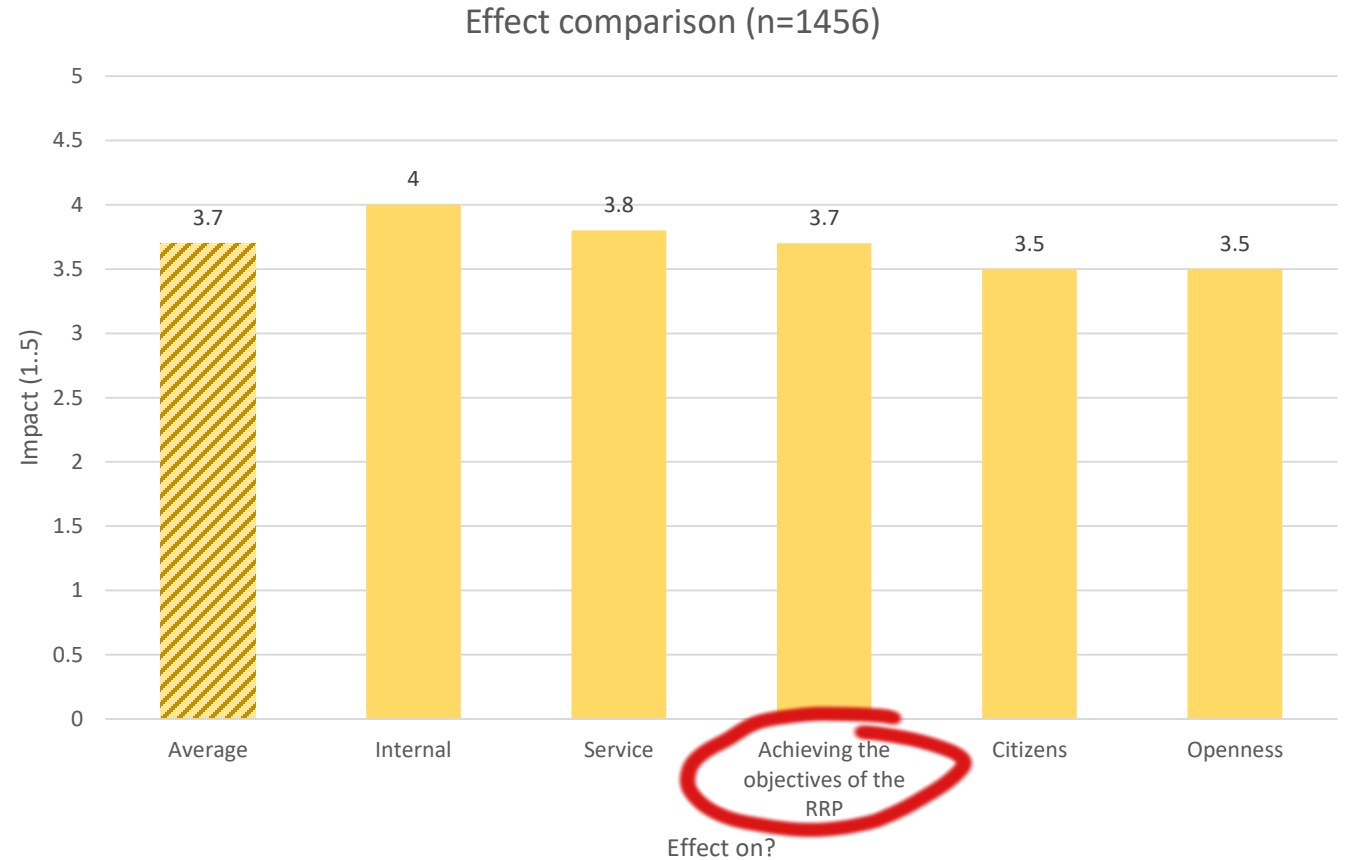
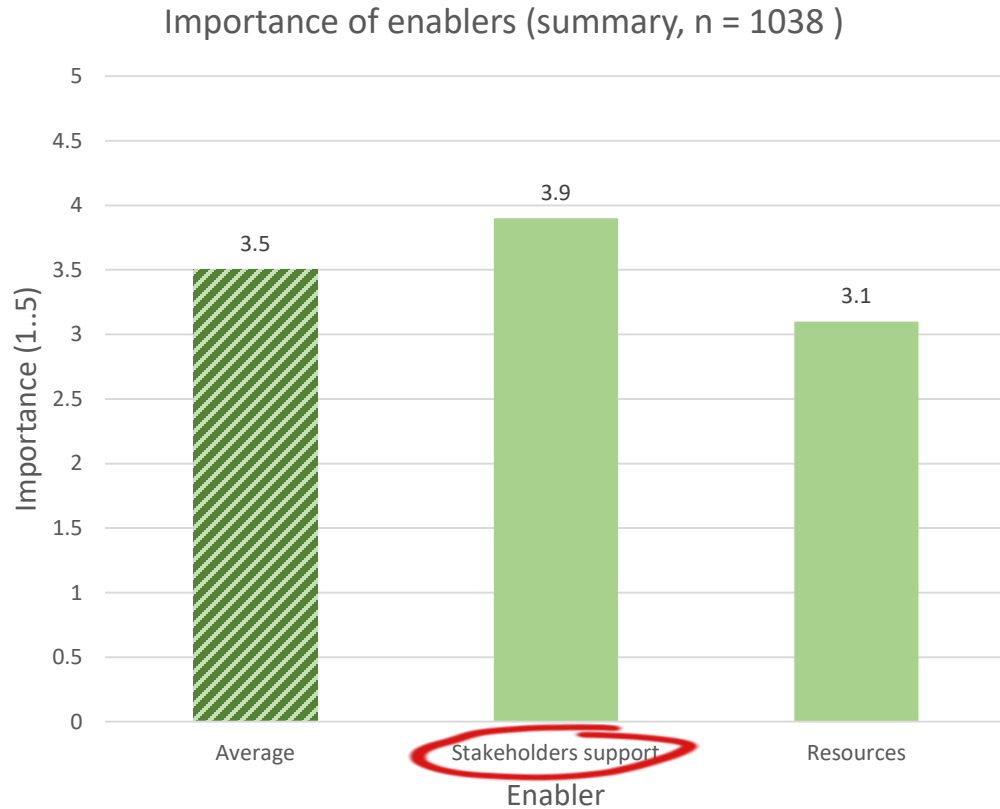
Social value and well-being (n=368)



Impact on Openness (n=180)



Enablers & Effects (summary)



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

AI cases as Open Data



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

AI-WATCH

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

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



Basic viewer

Search & filter

Services (142)

Search ...

AI Typology

- All
- Audio processing (4)
- Automated reasoning (5)
- Computer vision (16)
- Knowledge representation (2)
- Machine learning (48)
- Natural language processing (57)
- Optimisation (3)
- Planning and scheduling (1)
- Robotics and automation (1)
- Searching (3)
- Unknown (2)

Administrative level

Main government division (COFOG I level)

Government group (COFOG II level)

Purpose of AI uptake

Cross-border

Cross-sector

Innovative potential

Status

Active

Per Page: 10

1 2 3 4 5 Next -- Last

Mona - Public chatbot on relevant questions for companies on the subject of the corona crisis and the economy.

The new chatbot "Mona" is intended to cover all relevant questions for companies on the subject of the corona crisis and the economy. The service of the Federal Ministry for Digitization and Business Location (BMDW) is available online on the "Unternehmens Service Portal" (USP, Company service portal) website and can also be used on mobile devices. The service can be found on the home page of the USP and is intended to provide companies with important information on essential points such as subsidies, labor law matters such as short-time work and teleworking in a simple way during these difficult times. On the one hand, users can ask freely formulated questions, on the other hand there is a classic information channel in which more detailed information is provided step by step on the three central topics of work, financial aspects and research at the click of a mouse.

Unternehmensservice Portal, Austria, Austria

AcPaas - Technical procurement documents comparison

The city of Antwerp has a platform called Antwerp City Platform as a Service (Acpaas) that uses NLP to compare a technical document of a procurement (or an offer/call?) and find the already existing IT components they have in house (API, applications, etc) that could possibly satisfy some of the requirements. To do this, they compare the text of the files of the offer to the ones of the metadata of the components. In the case of the API they do some preprocessing and extract the descriptive information from the metadata files. They also have launched an experimental service that compares technical diagrams with the metadata of the IT components.

Digipolis & city of Antwerp, Belgium

Camera System - Mobile phone usage on vehicles

Traffic institute Vias is currently testing a new camera system that registers whether a motorist behind the wheel is on the phone with the phone in hand. Using artificial intelligence, the system filters the photos showing that the driver is using a smartphone. Other photos are deleted and faces are made unrecognizable. If the police establishes a violation based on that selection, they can issue a fine.

Traffic Institute Vias, Belgium

Analyse & download

AI-X Services Gallery Sources

Feedback Contribute AI-X Survey

AI typologies

Robotics and automation

Administrative level

Local

Geographic coverage

Spain

Main government division (COFOG I level)

Social protection

Government group (COFOG II level)

Old age.

Purpose of AI uptake

Unknown

Cross-border

Unknown

Cross-sector

Unknown

Innovative potential

Unknown

Status

Unknown

Misty II - Robot for elderly people

Responsible organisation: Municipality of Barcelona (Governmental)

Twenty elderly people who live alone and already use services provided by the City Council's Area for Social Rights are to be accompanied in their daily lives by the social robot Misty II. This is the start of a pilot project to analyse the usefulness of a project created for the challenge 'Improving the quality of life of senior citizens through technology', launched by the Barcelona Mobile World Capital Foundation. Users will be selected to live with a robot during a trial period. The pilot aims to discover to which extent the quality of life for senior citizens can be improved through assistance with a social robot, by, for example, reducing isolation, monitoring their health, preventing the forgetting of medicine or appointments. Additional information can be found at these links: https://www.elespanol.com/invertia/diarios/planes-innovadores/autonomias/cataluna/20210223/misty-robot-facil-mayores-viven-solos-barcelona/560944535_0_amp.html; <https://5gbarcelona.org/pilots/5g-emotional-robot/>; <https://docs.mistyrobotics.com/misty-ii-get-started/meet-misty/>

Additional information

Source AI Watch - Artificial Intelligence in public services. Overview of the use and impact of AI in public services in the EU

Web site https://www.barcelona.cat/info/barcelona/en/tema/senior-citizens/misty-ii-the-social-robot-becomes-part-of-the-lives-of-twenty-senior-citizens_507645.html

Start/end date 2021/01/01 - Unknown

Still active? Unknown

Related AI cases

Copy CSV Excel PDF

Search:

Service	Similarity	Relationships
SHAP - Holiday rental home fraud	50%	AD I UP CS IP
Chatbot - Boost relations with citizens	50%	AD GC UP CS IP
Fuengirola Town Hall - measuring beach attendance	50%	AD GC UP CS IP
Mercé - citizen science for better urban life	50%	AD GC UP CS IP
Trelleborg - Automated social welfare decisions	50%	AD I UP CS IP
AcPaas - Technical procurement documents comparison	40%	AD UP CS IP
Camera System - Mobile phone usage on vehicles	40%	AD UP CS IP
VDAS - Chatbot for job seekers	40%	AD UP CS IP
Verontrustingen - Enabling accurate predictions to detect day-care services which require further inspection	40%	I UP CS IP
Plovdiv - City Concierge Chatbot	40%	AD UP CS IP
Hope - Chatbot informing work of the Civil Protection Staff	40%	AD UP CS IP
CHAIN - Smart Water optimising energy consumption	40%	AD UP CS IP
Cort's AI - Emergency medical services real-time speech analysis for	40%	AD UP CS IP

Filter by service Filter by similarity Filter by relationship

View

Geographic coverage

Countries covered by the different cases. Hovering the mouse on one country, a tooltip shows the number of cases covering it.

Open this graph

Administrative level

Distribution of AI cases by administrative levels

Open this graph

Main government division (COFOG I level)

Distribution of main government division for the collected cases. The Classification of the Functions of Government (COFOG) classifies government expenditure into an main categories (divisions known as the 'COFOG I level' breakdown).

Open this graph

Government group (COFOG II level)

Distribution of government group for the collected cases. The Classification of the Functions of Government (COFOG) further classifies government expenditure into a II level breakdown or 'group'.

Open this graph

AI typology

Distribution by 'AI typologies'

Open this graph

COFOG I & COFOG II

Joint visual representation of the cases COFOG I & COFOG II.

Open this graph

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

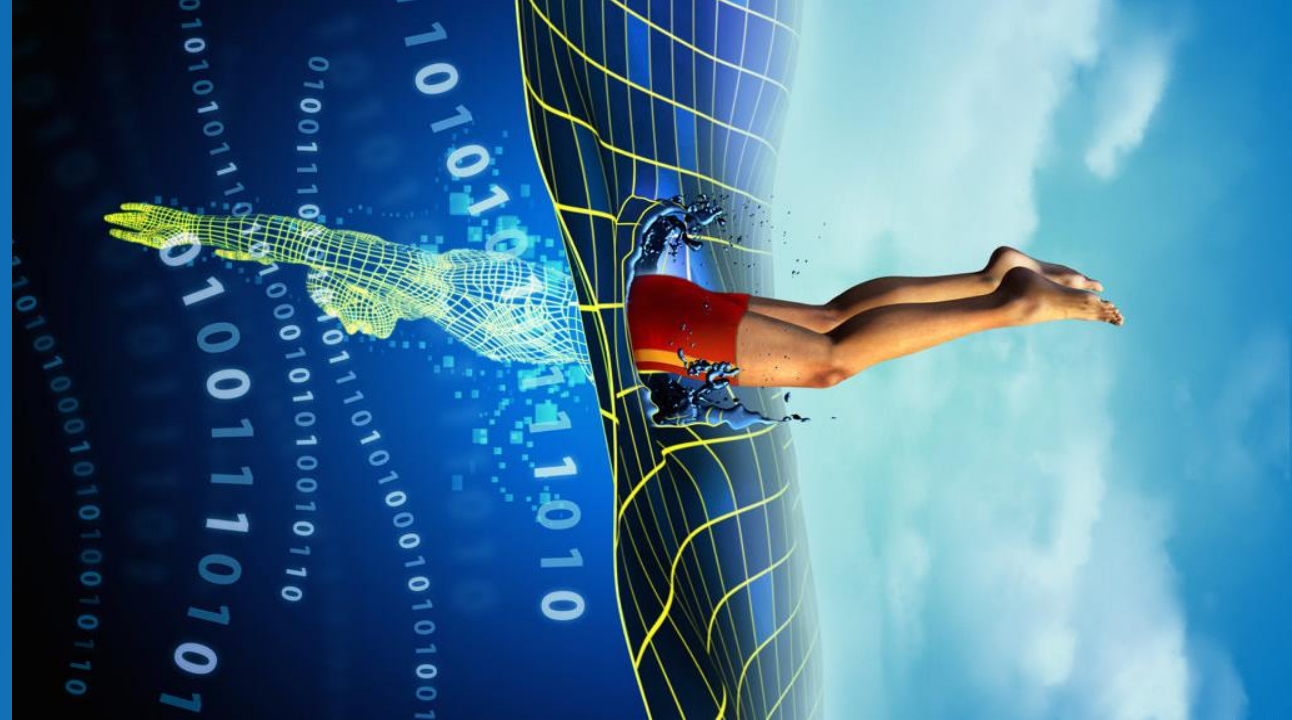


Conclusions

- 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**

Thank you



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