AI in the public sector

An extract from JRC's AI in the public sector research

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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.

PA come attore vitale nello sviluppo di AI

COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE 2021

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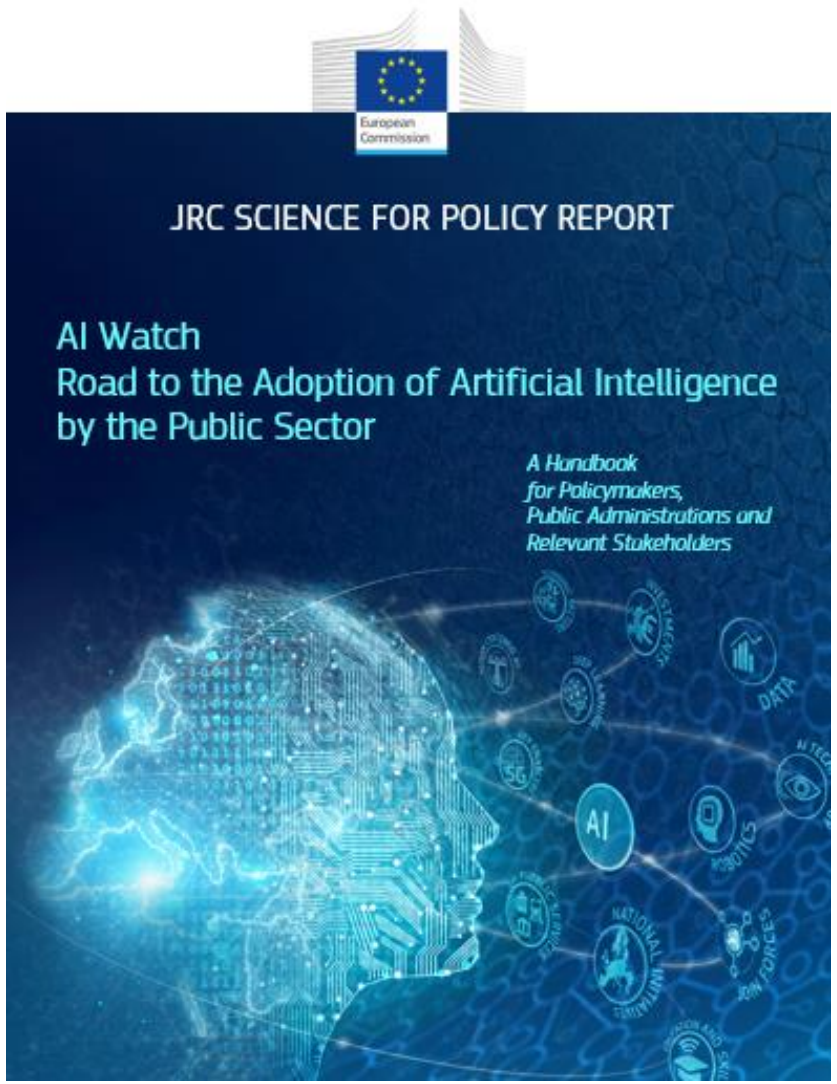
Road to the adoption of AI by the public sector



4 Areas of interventions

16 Recommendations

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Road to the adoption of AI by the public sector

Area 1
Promote an EU value-oriented, inclusive, human-centric and trustworthy AI in the public sector

1.1 Harmonise and complement EU regulations to promote human-centric and trustworthy AI enabled public services for all citizens.

1.2 Promote the adoption of ethical principles, the development of guidelines and the identification of mitigating measures to minimize the risks of deployment of AI by the public sector.

1.3 Develop and promote dedicated AI-enabled solutions based on co-creation approaches to increase relevance of services, and citizens' and businesses' trust and confidence in the use of AI by the public sector.

Area 2
Enhance coordinated governance, convergence of regulations, and capacity building

2.1 Create an EU-wide network of governance bodies for a streamlined management of AI in the public sector.

2.2 Design national and European capacity-building programs for public sector innovators aiming to develop and/or adopt AI in support of the digital transformation of public services.

2.3 Build upon and promote the use of regulatory sandboxes for public administrations, allowing experimentation of AI-enabled solutions in controlled environments.

2.4 Optimise funding in support of AI in the public sector to promote the spreading and scaling of reusable solutions.

2.5 Promote the development of multilingual guidelines, criteria, and tools for public procurement of AI solutions in the public sector throughout Europe.

Area 3
Build a shared and interactive AI digital ecosystem

3.1 Support multidisciplinary research and knowledge creation amongst European universities and Research and Development (R&D) institutions around AI for the public sector.

3.2 Build a common European Data Space for public sector bodies and their operators, drawing from the compilation of relevant AI datasets and related Registries throughout Europe.

3.3 Reinforce and advance existing initiatives on open data and interoperability.

3.4 Share reusable and interoperable AI components at all operational levels of European public administrations.

3.5 Create a European marketplace for GovTech solutions in support of public sector digital transformation.

Area 4
Apply and monitor sustainability through value-oriented AI impact assessment co-created frameworks.

4.1 Set up an EU observatory on AI, built on a pan-European network of AI national observatories to gather, share, and collectively manage best practices and experiences learned from different stakeholders in the public sector throughout Europe.

4.2 Develop and apply umbrella impact assessment frameworks based on key influencing factors to measure the use and impact of AI in the public sector.

4.3 Promote AI in the public sector in support of sustainability while developing sustainable AI, in compliance with environmental principles, and leveraging on civic engagement and participation.

European Landscape

1. Analisi delle strategie nazionali con un focus sul settore pubblico

2. Raccolta di use cases di AI nel settore pubblico

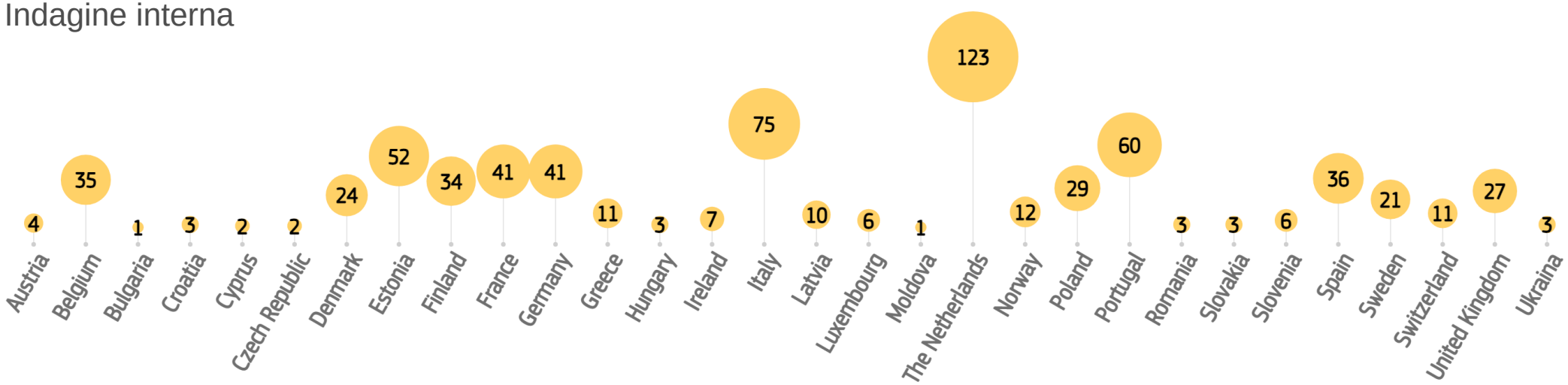
3. Casi studio

AI Case Inventory

686 AI Cases collected and validated

Come li abbiamo raccolti?

- Repository nazionali o studi di ricerca
- Articoli di divulgazione
- Indagine interna



n.b. the cases are not statistically representative. No comparison can be done among the different countries

Published cases: [Joint Research Centre Data Catalogue - Selected AI cases in the public sector - European Commission (europa.eu)]

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Organization Features

Responsible Organisation

- Central Governmental
- Local Governmental
- Private sector
- Academic-Research
- Non-governmental
- Community led
- Consortium

Geographical Extent

- Local
- Regional
- National
- Across Countries

Functions of Government I

- Defense
- Economic affairs
- Education
- Environmental protection
- General public services
- Health
- Housing and community amenities
- Public order and safety
- Recreation, culture and religion
- Social protection

Service Description Features

Process type

- Enforcement
- Analysis, monitoring and regulatory research
- Adjudication
- Public services and engagement
- Internal management

II level

Application type

- Smart Recognition processes
- Engagement management
- Financial management and support
- Information analysis processes
- Management of auditing and logging
- Data sharing Management
- Monitoring policy implementation
- Prediction and planning
- Predictive enforcement processes
- Service integration
- Service personalisation
- Supporting inspection processes
- Taking decisions on benefits
- Internal primary processes
- Internal support processes
- Internal management processes

Recipients

- G2C Gov to Citizens
- G2B Gov to Businesses
- G2G Gov to Gov

Data input

- Dynamic Data
- Historical Data
- Location Data

Value of Service Features

Improved Public Service Value

- Personalized Services
- Public (citizen)-centered services
- Increase quality of public information and services
- More responsive, efficient, public services
- New services or channels

OpenGov Capabilities

- Increased transparency of PS operations
- Increased participation in government actions
- Improved public control and influence on government actions

OpenGov Capabilities

- Cost-reduction
- Responsiveness of government operation
- Improved management of public resources
- Increased quality of processes and systems
- Better collaboration and better communication
- Reduced or eliminate the risk of corruption and abuse of the law by public servants
- Enabled greater fairness, honesty, equality

Artificial Intelligence Features

AI Domain

- Reasoning
- Planning
- Learning
- Communication
- Perception
- Integration and Interaction
- Services
- Ethics & Philosophy

II level

AI Subdomain

- Knowledge representation
- Automated reasoning
- Common sense reasoning
- Planning and Scheduling
- Searching
- Optimisation
- Machine Learning
- Natural Language Processing
- Computer Vision
- Audio Processing
- Multi-Agent systems
- Robotics and Automation
- Connected and Automated vehicles
- AI Services
- AI Ethics
- AI Philosophy

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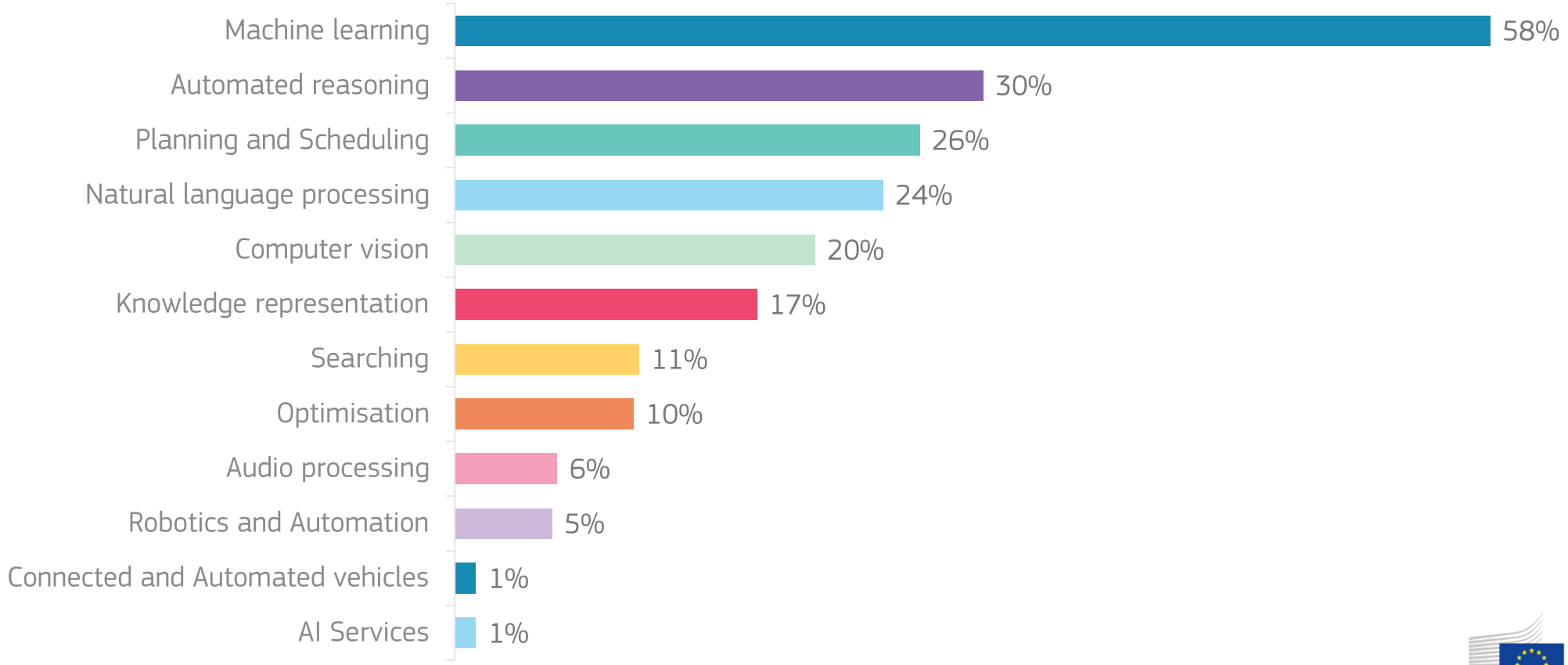
AI Cases by Technology

ML è la principale tecnologia, nonostante un panorama molto variegate di tecnologie utilizzate



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Status

Un numero molto consistente di casi è già in uso nella PA

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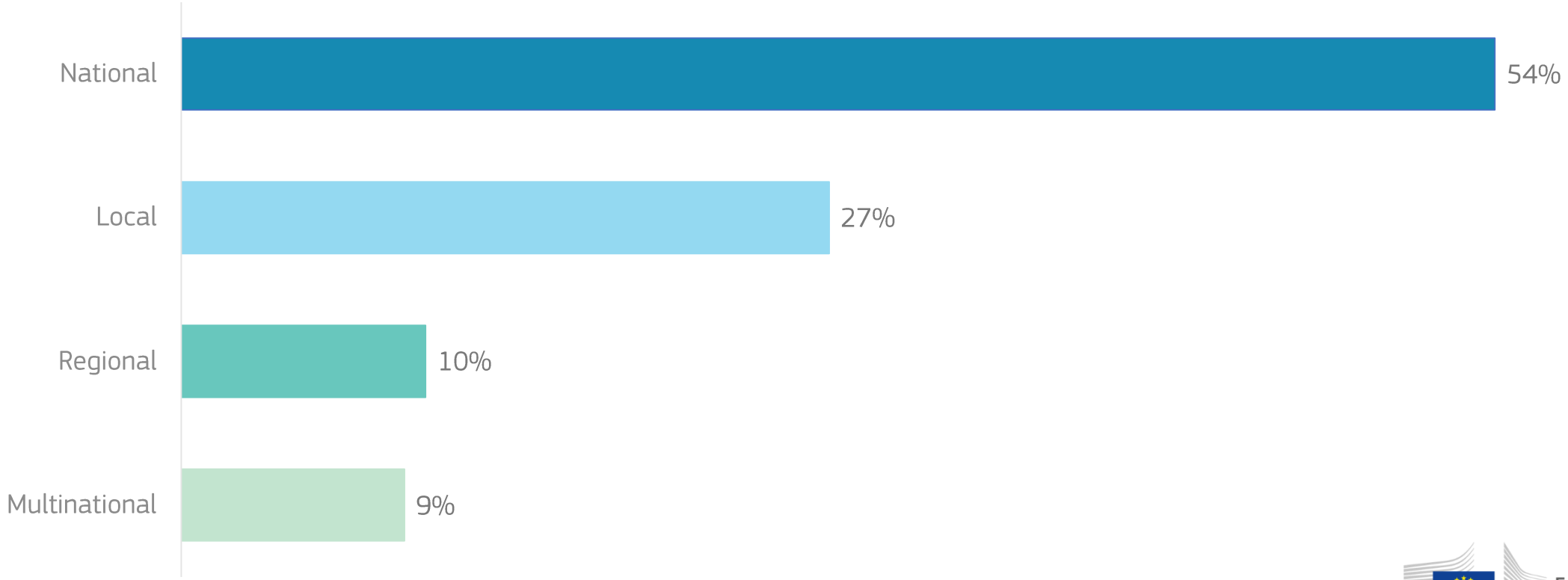
Geographical Extent

La maggior parte dei casi sono a livello nazionale, anche se ci sono importanti iniziative locali



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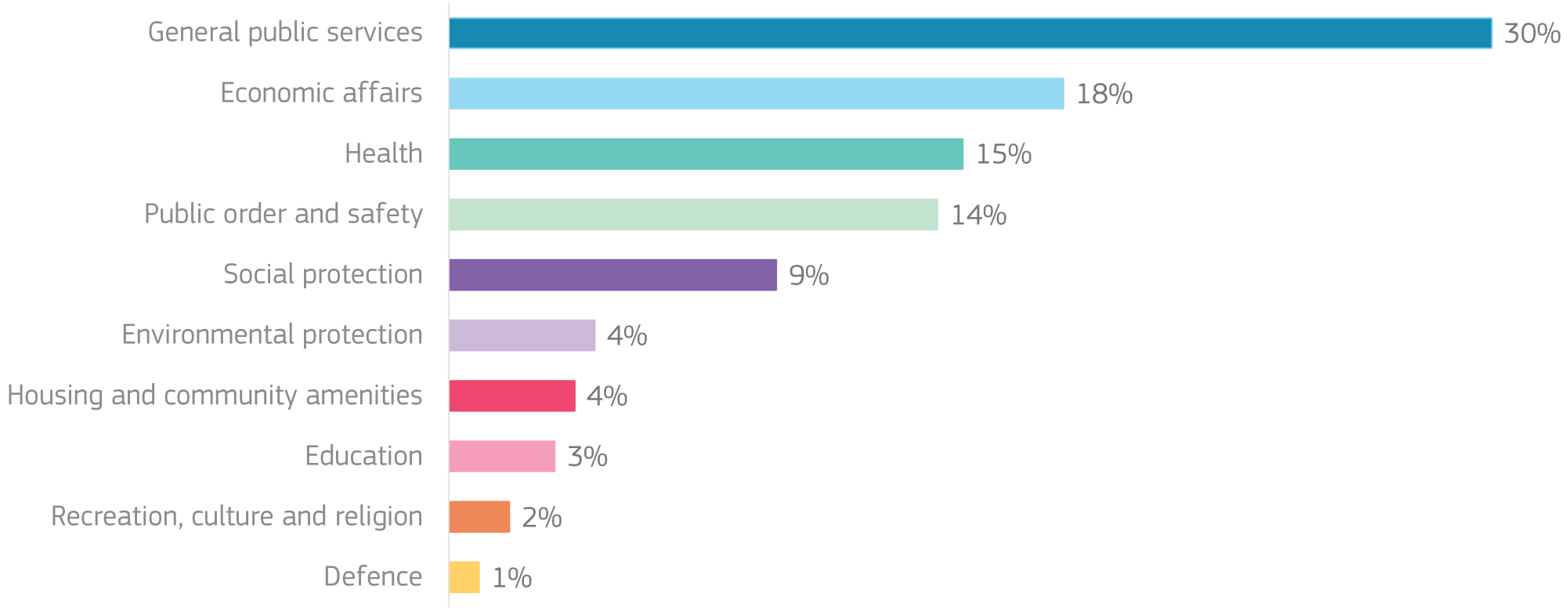
COFOG I

La maggior parte dei casi puntano a migliorare l'erogazione dei servizi pubblici



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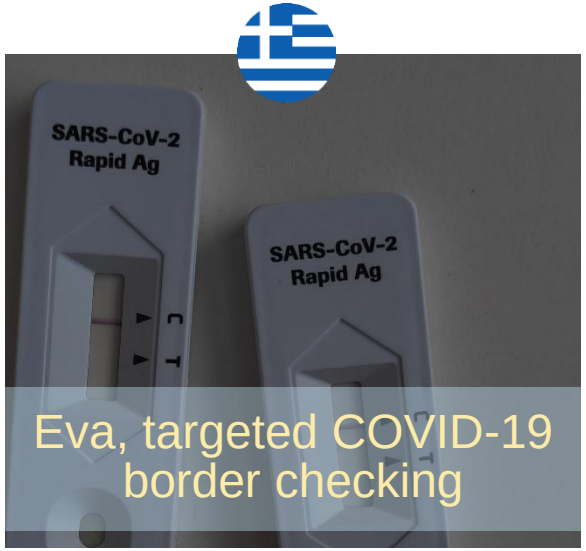
Qualche esempio

Intelligent Control Platform

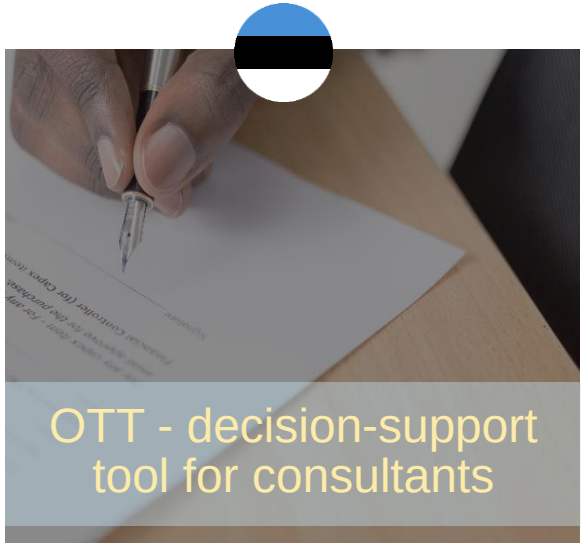


Eva, targeted COVID-19 border checking

Reducing night noise through nudging

Unlocking digitised documents and correcting OCR

Object Detection Kit



OTT - decision-support tool for consultants

Automation of subtitling videos and audios

Estimation of income for those paying by modules

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Object Detection Kit

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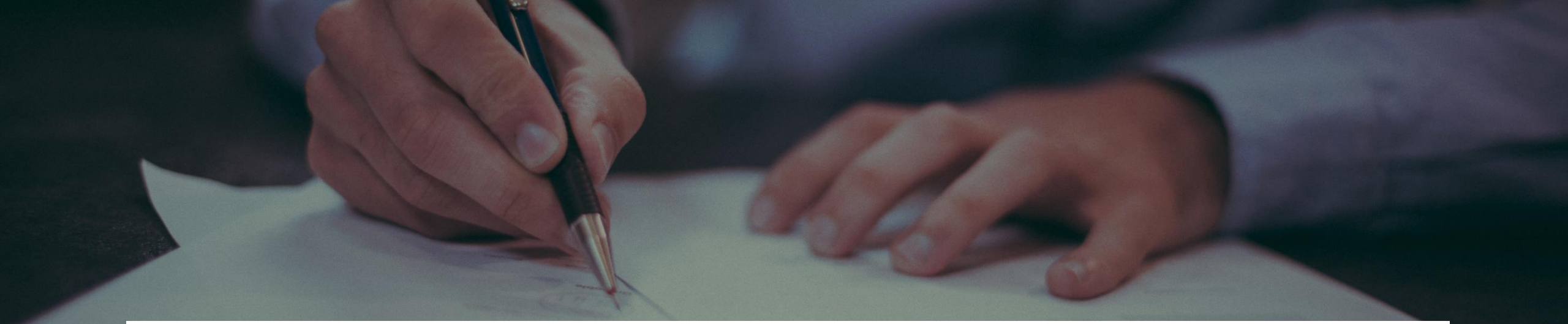
Object Detection Kit

- Netturbini che erano costretti a stare a casa a seguito della pandemia hanno supportato il training del sistema
- Supporto manageriale e politico è stato essenziale, e la sua mancanza a un certo punto ha bloccato il progetto
- C'è stata una forte enfasi sulla trasparenza: una documentazione dettagliata del sistema è disponibile online
- Le telecamere già installate sulle macchine per altri motivi non sono state utilizzate per motivi etici e legali.



OTT - decision-support tool for consultants

- Prevede le possibilità del cliente – una persona disoccupata – di ottenere un nuovo lavoro
- La risposto dei consulenti che lavorano con OTT varia molto: alcuni apprezzano e usano quotidianamente il Sistema, altri sono più scettici e non consapevoli delle potenzialità del Sistema
- L'amministrazione sente la necessità di formare tutto lo staff al fine di ottenere un generale livello di consapevolezza sul funzionamento di un sistema di intelligenza artificiale
- Casi atipici creano difficoltà e sono spesso classificati erroneamente dal sistema
- Le competenze 'umane' non sono mai state sostituite dall'IA

Lesson Learned

Lesson learned

_ AI è ormai diffusa

Public organisations should start considering AI not only as a research and innovation area but also as a set of solid and available technologies for improving the administrative machine. Moreover, they should start preparing themselves for a diffuse and common usage of AI in all public sector areas

_ Acquisizione di competenze internamente

Public administrations should consider in-house knowledge on AI for the – partial or complete - internal development of AI, for the direction and adjustment of the system developed by external suppliers and/or for ensuring proper management of procurement activities.

_ Consapevolezza diffusa sulla tecnologia

Public administrations should start considering AI as a technology that will affect the daily routines of most employees, hence start thinking about the wide diffusion of basic knowledge on how the algorithm works and how to deal with systems that use AI techniques.

Lesson learned

_ Bilanciamento tra in-house e collaborazioni esterne

Given that most likely a public organisations would need support for developing an AI system, they should carefully select the proper partner(s) and/or suppliers and balance internal and external development.

_ Trustworthiness la parola chiave

Risks should be systematically assessed with a structured and well-defined procedure, avoiding any form of discriminatory and unfair use of the AI system. Proper mitigation measures should be identified for ensuring a human-centric use of AI. This needs to become a routine for public organisations.

_ Technology is only half of the story!

Public administrations should be aware that the technical effort for coding an AI system is only a small portion of the effort needed for the implementation thereof. Introducing an AI solution requires a general awareness of AI but also new task allocation and, when needed, new roles and positions within the organisation.

Thank you

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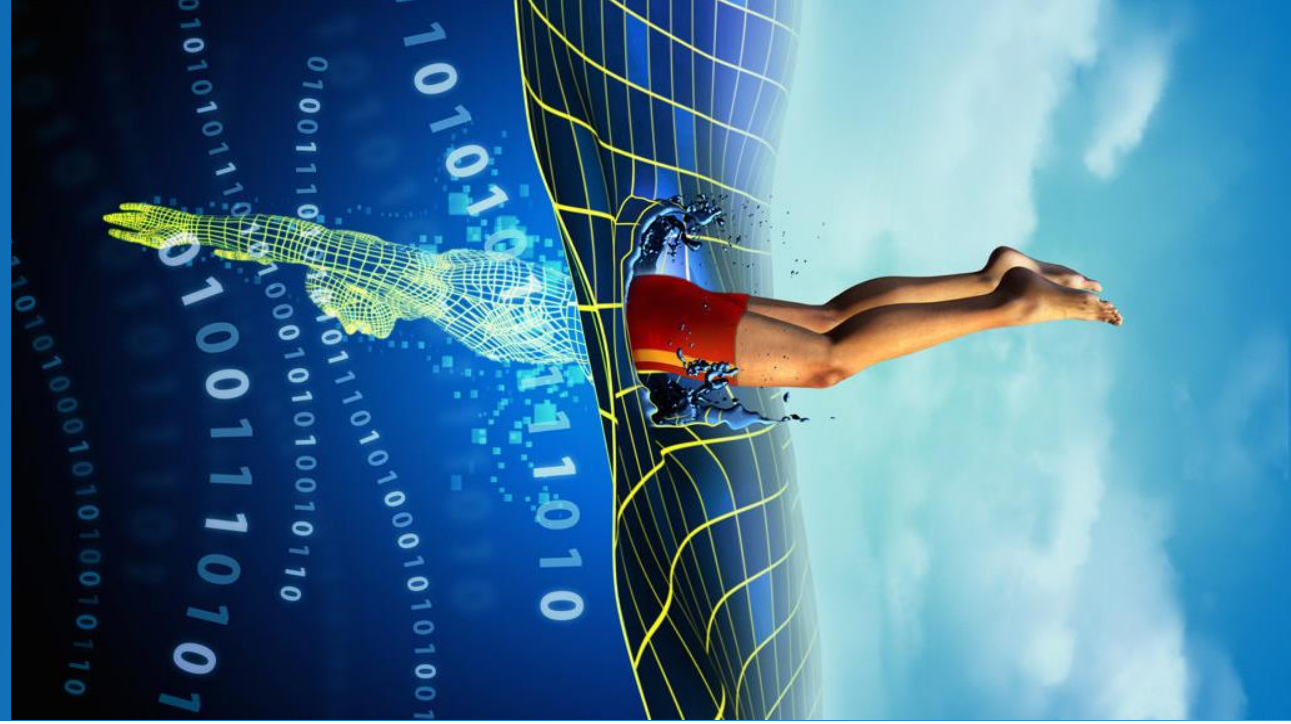

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