

Joint Workshop on AI for NMCAs

26-27 September 2023

AI in the public sector

Mastering the Governance “of, with and by” AI!



Gianluca C. Misuraca
Executive Director, AI4GOV

Outline

1. Let's start from the future: shaping Digital Europe 2040
2. The trilemma of the Governance “of, with and by AI”
3. AI in public services in the EU: between rhetoric and reality
4. Back to the future: the EU approach to human-centric AI

1. Shaping Digital Europe 2040

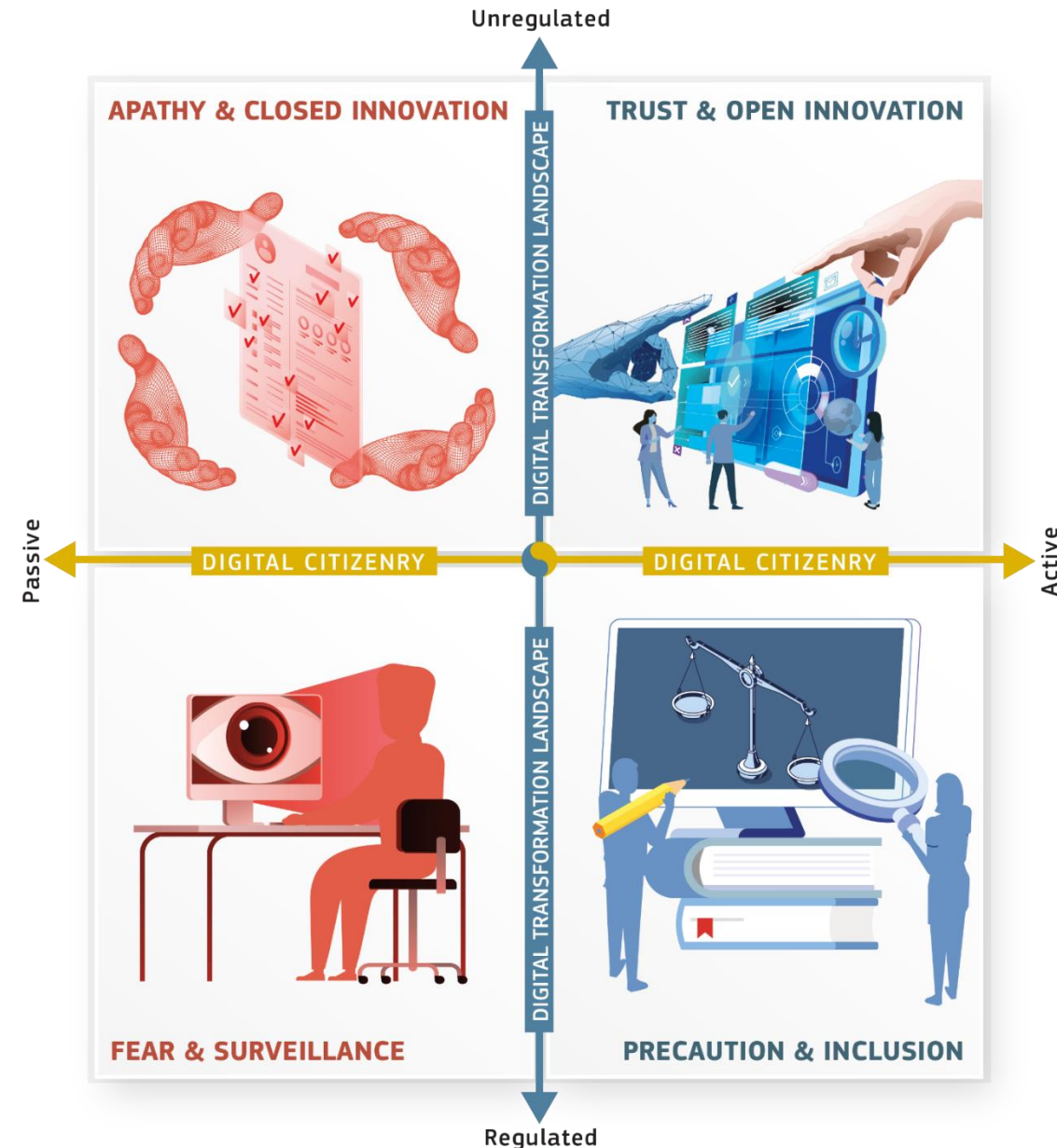
Shaping Digital Europe 2040!



Dimensions of Impact

Y. Digital Transformation landscape: Ranging from “regulated/interventionist” to “unregulated/hands off”

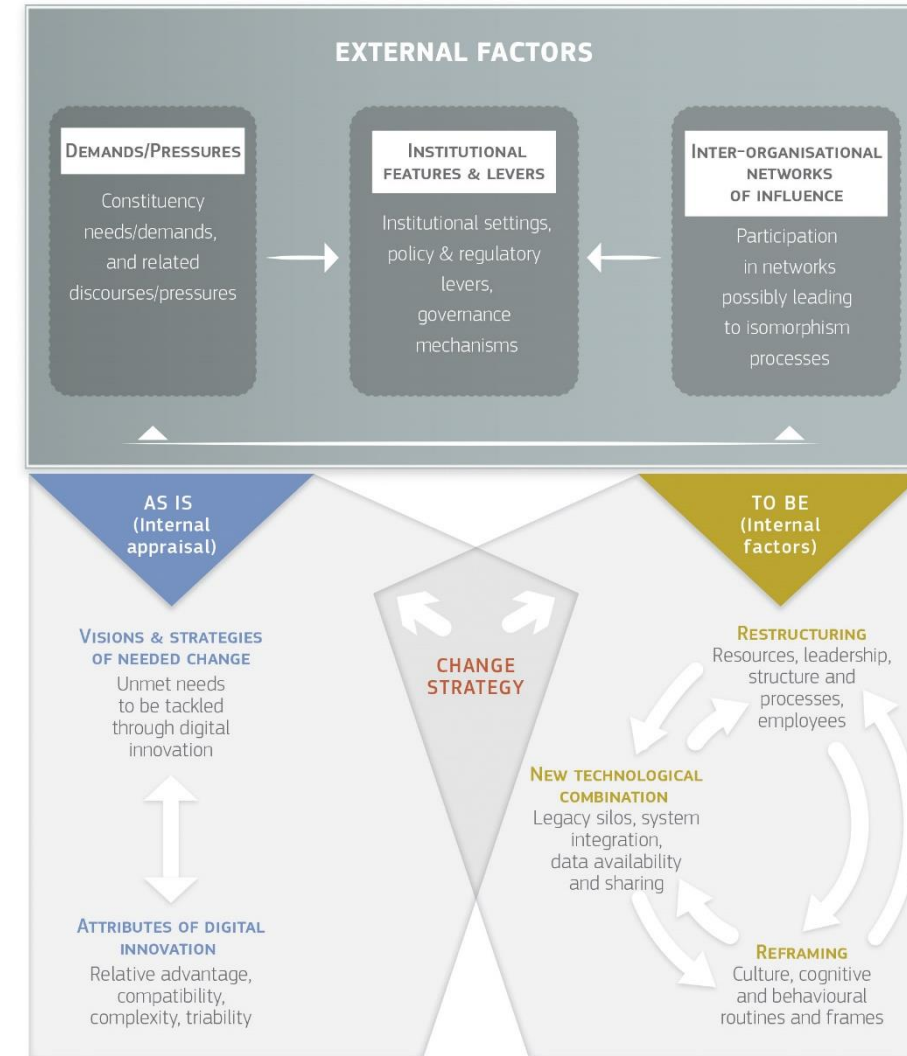
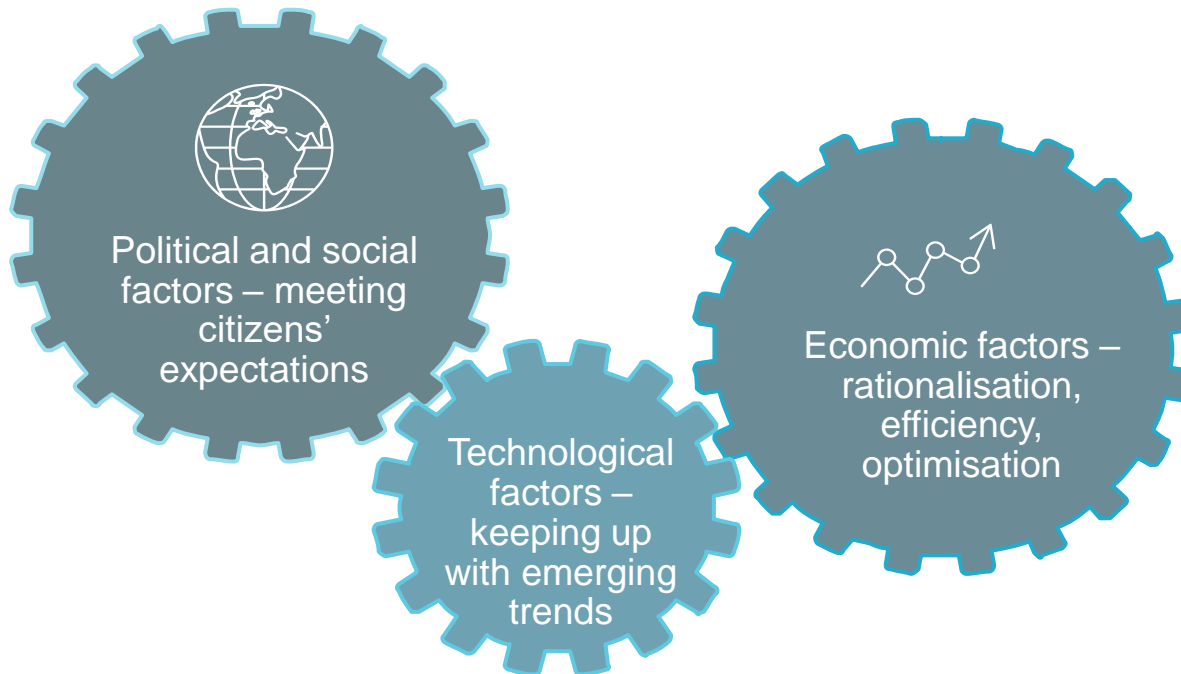
X. Digital Citizenry: Ranging from “passive” (no control to data subjects), to “active” (full data ownership & digital sovereignty)



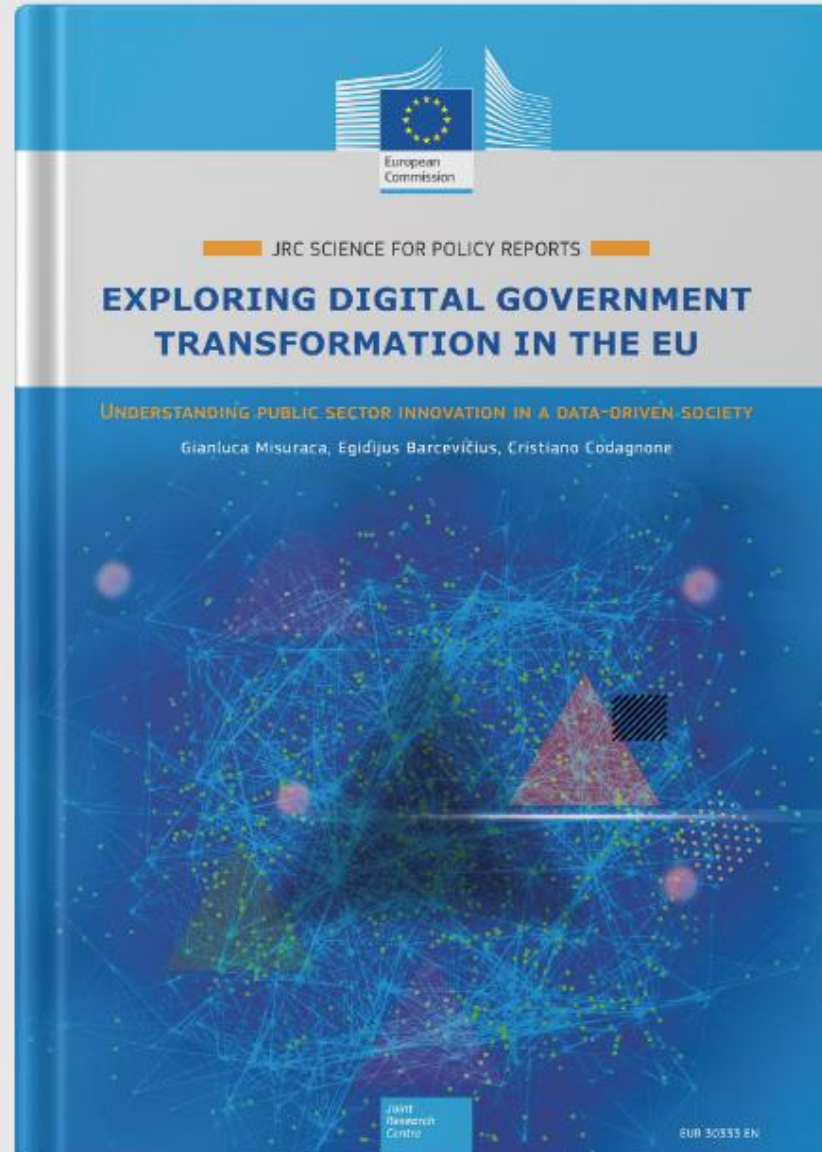
Source: Misuraca et al, 2020

Understanding innovation antecedents and the concept of “reframing” public sector innovation

“Reframing” public sector innovation to address the multi-dimensional aspects of Digital Transformation strategies



To know more...



Shaping Digital Government transformation 2040

Headlines

- About 360 million European adults (82%) consider that their governments should take measures to reduce income inequality.
- Public demand for government action is proportionate to the actual level of income equality in a country.
- The greater the income gap between the middle class and the rich, the more support there is for redistributive policies.
- Individuals who believe that society is basically meritocratic and that everyone enjoys equal opportunities are less likely to support redistributive policies.

Policy context

There is growing consensus that, beyond a certain level, income inequality can have both economic and social costs. It can hamper economic growth and undermine social cohesion. The European Union, through the European Pillar of Social Rights, has put equality and fairness at the heart of its policy objectives.

Data show that **the majority of Europe would favour a more equitable distribution of income**. However, the nature of the link between income inequality and support for redistribution is unclear. Theoretical reasoning would suggest that when income inequality is high, the majority would support state intervention in favour of redistribution. However, empirical analysis usually does not corroborate this theory, for various possible reasons. First, people's conceptions and therefore (mis)perceptions of inequality vary; second, attitudes towards income redistribution may also reflect subjective views about what fairness in social means; and third, socio-demographic characteristics

play an important role.

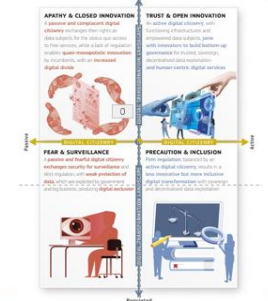
Using new data on income inequality and the special Eurobarometer on 'Fairness, inequality and intergenerational mobility', research at the JRC is helping to shed light on the drivers of support for income redistribution.

Digital Government scenarios

For the purposes of this brief, support for redistribution is expressed through the rate of agreement with the statement 'The government should take measures to reduce differences in income'.

Figure 1 shows that redistribution received a high degree of support (82% on average) across the European Union: 39% agreed, and 43% even strongly agreed, that government should intervene to reduce income inequality. There are, however, disparities across regions and countries.

Figure 1. Support for redistribution



* This brief is based on the JRC report *The Median Voter Takes it All: Preferences for Redistribution and Income Inequality in the EU-28*, Marco Colagrosso, Stylianos Karagiannis and Roman Raab, JRC Working Papers in Economics and Finance, forthcoming.

Enhancing Digital Government for achieving a value-based Digital Society



1. Validity and respect of fundamental rights and democratic values
2. Social participation and digital inclusion to shape the digital world
3. Empowerment and digital literacy
4. Trust and security in digital government interactions
5. Digital sovereignty and interoperability
6. Human-centric systems and innovative technologies in the public sector
7. Towards a resilient and sustainable digital society



Berlin Declaration on Digital Society and Value-Based Digital Government

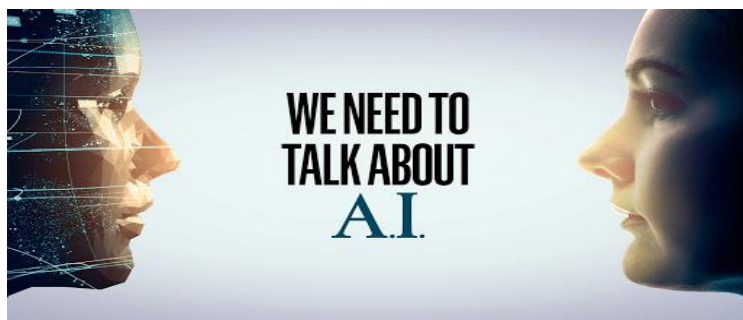
at the ministerial meeting during the
German Presidency of the Council of the European Union
on 8 December 2020

Summary



1. The future of our societies will largely depend on the impact of the digital transformation and if citizens will regain data ownership and digital sovereignty
2. For digital transformation strategies to be effective it is crucial to “reframe” public sector innovation and to embrace the complexity of the multiple factors (i.e. political, social, technological, legal/regulatory, economic) underpinning it
3. The EU has defined a clear policy vision on enhancing Digital Government for achieving a value-based Digital Society and a human-centric approach to AI

2. Governance “of, with and by” AI



...in the public sector!



- AI systems are integral part of many high-impact government decisions
 - **mainstream use of ADMS** to support the provision of social benefit entitlements, often with a lack of quality data and poor algorithm accuracy
 - **proliferation of FRS** in public spaces, causing unease and often unnecessary surveillance and human rights breaches, especially in non-democratic regimes
- **Covid-19 outbreak exacerbated the threats AI systems pose further**
 - governments had to quickly reorient resources to adopt fully digital ways to carry out administrative work and deliver public services with risks of mishandling data protection rules (e.g. contact-tracing apps and tools for early detection of citizens' behaviours)
 - but in reality this occurred in most public sector applications of AI even before Covid-19 piled more pressure onto government administrations

Benefits and risks of AI in government



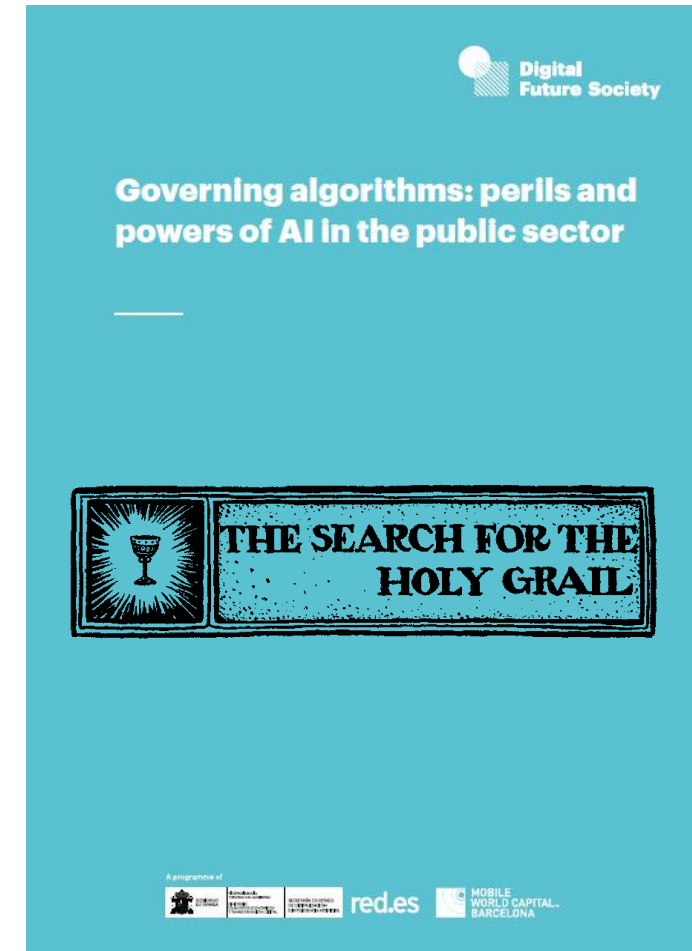
- High **potential** for improving the quality of services by processing huge amounts of data, supporting public officials in decision-making processes and providing tailor-made applications and customised solutions to citizens
- **Risks** of crystallising dysfunctional systems, intensifying asymmetries and penalising citizens in vulnerable situations
 - **Discrimination “by default”**: AI can enable better data collection and help generate knowledge and solutions by applying advanced predictive analysis, but it also tends to be invasive and can often further intensify social prejudices and biases
 - **“Black-boxing” effect**: navigating through false positives and false negatives. Predictive algorithms are prone to error with examples of harmful use that can lead to create paradoxes in control systems and increase the danger of mass surveillance

Governance “of, with & by” AI

Policy-maker’s dilemmas in the digital age

“the obligation to protect citizens from potential algorithmic harms is at odds with the temptation to increase efficiency and enhance quality of digital services”, [Misuraca, DFS, 2021]

- **Governance of AI:** introducing AI into the public sector must not override existing governance mechanisms and institutional barriers need to be addressed
- **Governance with AI:** humans should remain in control of a set of technologies that reinforce human capacity, safeguarding human rights and deploying AI ethically
- **Governance by AI:** the true power and risk of AI use in the public sector emerge when human decision makers would surrender to the “superhuman” capacities of AI



<https://digitalfuturesociety.com/report/governing-algorithms>

Lessons learned: turning away from dystopian futures



- **Beware of techno-solutionism:** avoid thinking of AI as some sort of super-agent able to do more or less everything
- **Be suspicious of ethical shortcuts:** if superficially handled, AI systems may infringe upon the principles of privacy and data protection
- **Adopt a public value perspective:** focusing on the effective implementation of AI to address the complex challenges government must solve
- **Be ready to handle disruption:** experimenting with AI considering both tangible changes in procedures, as well as a ‘cognitive restructuring’
- **Design new models of governance:** rethink how services are delivered, data is managed, and the way algorithmic decision-making is implemented

Summary

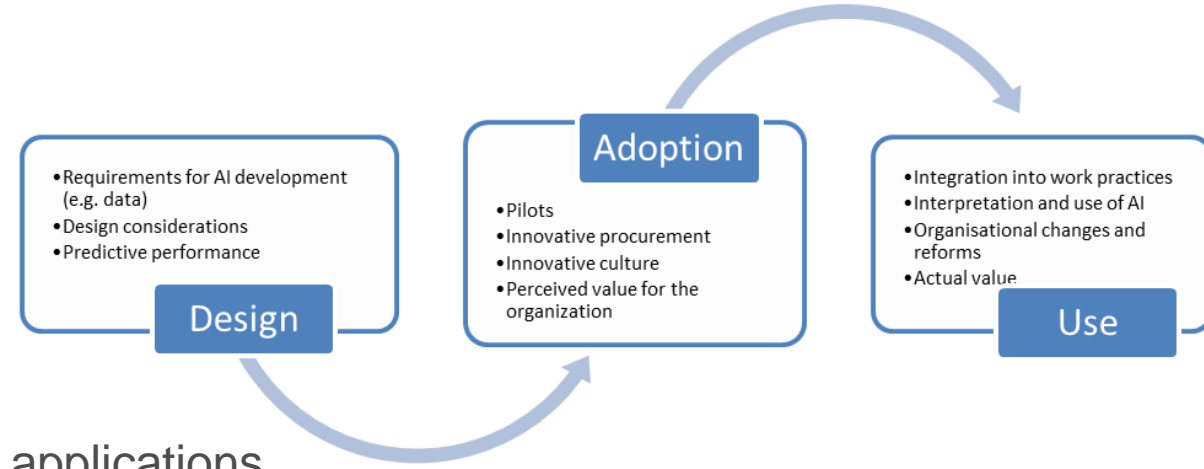


1. The use of AI systems in the public sector has huge potential, but the risks associated with them must be managed by improving data quality and supervising/auditing algorithms
2. There is a need to address the inherent complexity of AI governance, integrating AI into government processes, and “enabling” the “superhuman” power of AI in a positive manner
3. The AI Act represents the world's first attempt to “govern” the use of AI in an ethical and responsible manner, limiting the risks of applications that go against the founding values of the EU

3. AI in public services in the EU

Mapping AI use in public services in the EU

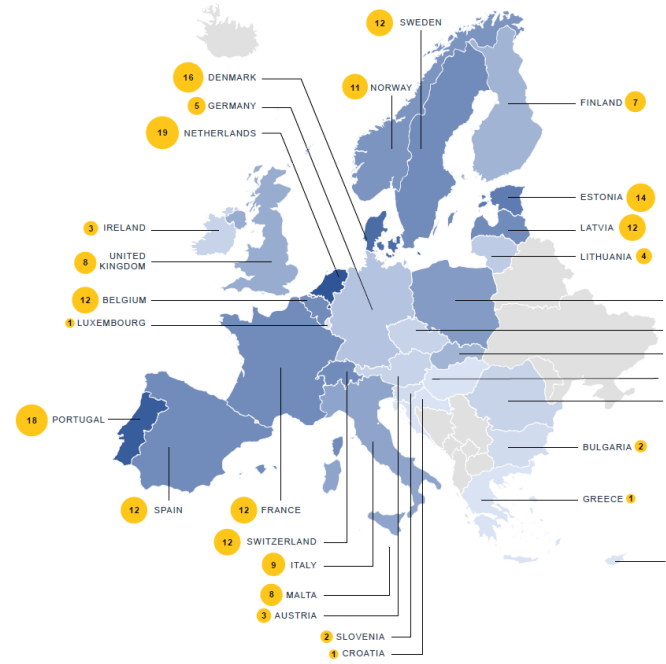
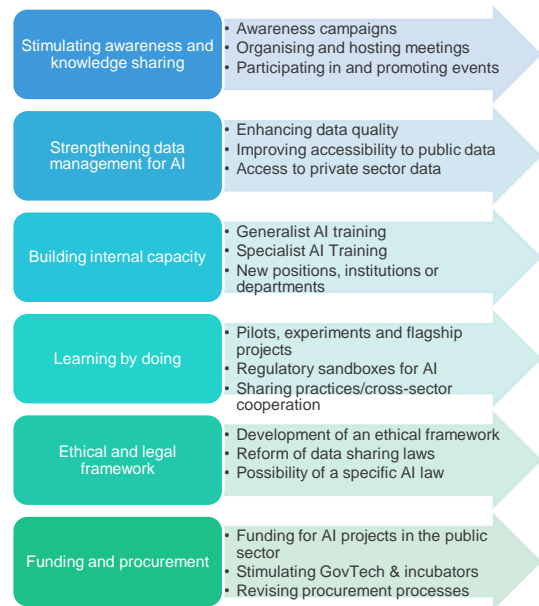
The origins!



- Focus on adoption & use of AI applications
- Functional view of AI use: Perception, Reasoning & Action
- AI typology derived from collected cases



AI typology
Audio Processing
Chatbots, Intelligent Digital Assistants, Virtual Agents and Recommendation Systems
Cognitive Robotics, Process Automation and Connected and Automated Vehicles
Computer Vision and Identity Recognition
Expert and Rule-based Systems, Algorithmic Decision Making
AI-empowered Knowledge Management
Machine Learning, Deep Learning
Natural Language Processing, Text Mining and Speech Analytics
Predictive Analytics, Simulation and Data Visualisation
Security Analytics and Threat Intelligence



230 cases (EU27 + CH, NO & UK)

Déjà vu?



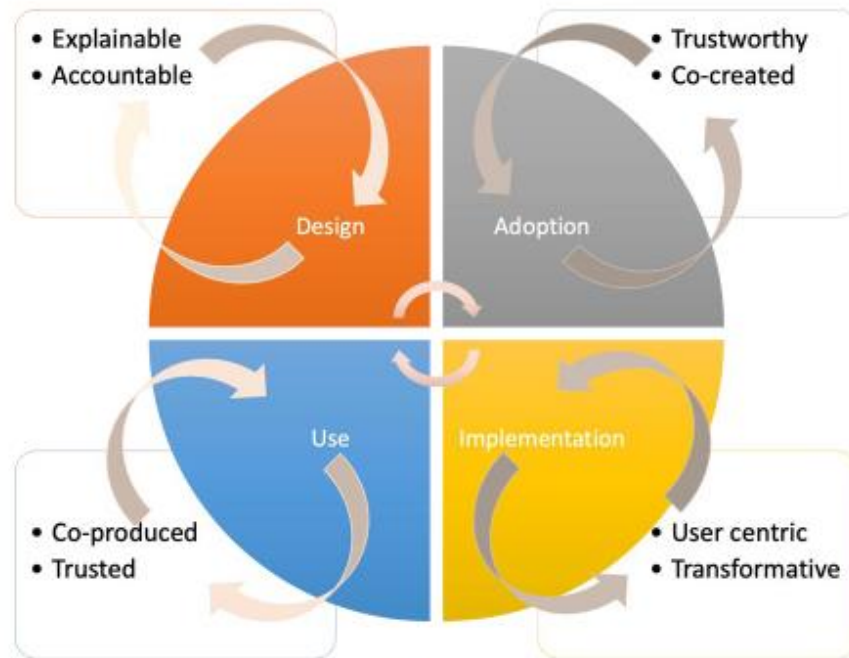
1. **High level of heterogeneity of AI use** across EU and unclear public value created
2. **Search for “best practices”**: learn from success stories and replicate / scale out
3. **Beyond “ever-piloting”**: ensure the path to institutionalise AI into mainstream services
4. **Little evidence of what works** and what is actually threatening services quality
5. **Varying scope and depth of strategies** to develop and adopt AI
6. **Innovative Public Procurement** is crucial for adopting AI solutions
7. **Sailing through new known unknowns and the multiple roles of government**



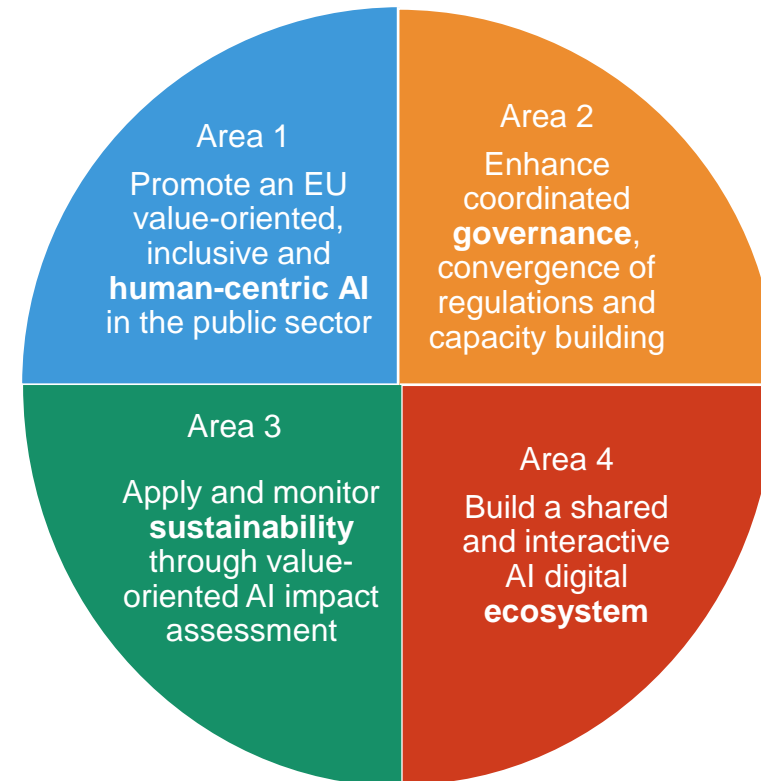
EU Coordinated Plan on AI (v2.0 – April 2021)

Beyond Pilots: paving the road to AI in government

“For deeper and wider AI uptake to become a reality, Europe’s public sector should have access to adequate funding and be equipped, skilled and empowered to conduct strategic and sustainable purchasing and adoption of AI-based systems”



Source: JRC, own elaboration.



Source: JRC Technical Report, 2021, Molinari F., et al. <https://publications.jrc.ec.europa.eu/repository/handle/JRC126665>

Source: JRC Technical Report, 2022, Manzoni et al., <https://op.europa.eu/en/publication-detail/-/publication/34251428-dc12-11ec-a534-01aa75ed71a1>

But are we ready for mastering AI?

- According to the latest ITU data (March 2023), half of all countries worldwide (94) have adopted overarching, cross-sectoral digital policies or strategies:
 - However, **only 9 countries – less than 5% of countries worldwide** – are currently equipped with mature national frameworks for digital markets geared at transformational development of digital economies and societies.
 - Additionally, **just 30% of countries globally** have made progress in establishing advanced national digital policy, legal and governance frameworks.

“Government should have the right skills for the digital future. The success of digital transformation depends on equipping senior business leaders to make informed decisions and acquiring and keeping enough skilled specialists on board”.

National Audit Office of the UK Cabinet Office (March 2023)

AI4GOV: Building the European ecosystem on AI for public services



1. Design a world-class international master on AI in public services rooted in blended learning and project-based work
2. Develop an ecosystem and network of excellence on AI for government across the EU
3. Establish an EU Knowledge Hub of Excellence on AI for the public sector recognized worldwide



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The AI4GOV Project is
co-financed by the EU



<https://www.ai4gov-hub.eu>



AI4GOV Master: training “functional specialists”



Master in
Artificial Intelligence for Public Services
AI4Gov



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**Digital Skills &
Jobs Platform**

- Integral curriculum teaching the technical, service design and policy aspects of applied Artificial Intelligence in the public sector

<https://ai4gov-master.eu>



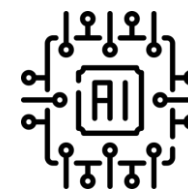
Governance and
policy aspects of
AI



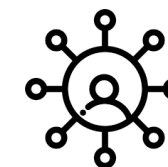
Human-centric
principles for AI systems
and service design



Focus on use
cases of AI in the
public sector



Technical knowledge
in on-demand AI
techniques



Networking with a
world-class
executive group

Summary



1. Heterogeneity in the use of AI in the public sector in Europe, and unclear impact in terms of socio-economic benefits and “public value” creation
2. Little evidence of what really works and how to institutionalise AI in public service governance and delivery processes to go beyond piloting and give special relevance to data management and testing of algorithms and predictive models in controlled environments (“sand-boxing”)
3. There is an urgent need to strengthen the skills of civil servants and policy-makers by training new figures of “functional specialists” in AI, combining skills in design, public management and data science

4. The EU approach to human-centric AI

Shaping Europe's Digital future!

“We must make this Europe's Digital decade”

- 1. Data:** European Cloud based on GAIA-X ensuring data-flow and ownership to maintain leadership on industrial data management
- 2. Human-Centric AI:** European law on AI ensuring respect of data protection, trusted digital identity and cybersecurity
- 3. Digital Infrastructures:** wide-connectivity to reduce digital divide and enhance access to digital services through deploying next generation networks/computing

Vision for Digital Europe 2050 and Action plan 2030 with 8 billion Euros investment in supercomputing technology (High-Tech Made in Europe) to guarantee EU digital sovereignty and respect of European and universally recognised values



The EU strategy for data governance and trustworthy AI (*the world before the AI Act...*)



- "Building Trust in Human-Centric Artificial Intelligence" COM (8.04.2018) & AI Declaration (10.4.2018)
- "Maximising the benefits for AI in Europe" COM (25.4.2018) & Coordinated Action Plan "AI Made in Europe" (07.12.2018), also establishing the **AI-Watch**
- **High Level Expert Group on AI - Ethics Guidelines & Policy & Investment Recommendations for Trustworthy AI**
- **2020 Strategy on Shaping Europe's digital future**
 - White paper on AI – A European approach to excellence & trust COM(2020) 65 final, 19/02/2020
 - A European Strategy for Data COM(2020) 66 final, 19/02/2020
 - The Data Governance Act, COM(2020) 767 final, 25/11/2020
 - Digital Services/Digital Market Acts, COM825/842, 15/12/2020

Turning the EU into the global hub for human-centric AI (*the world after the AI Act...?*)

- **21st April 2021 – The EU presents the “AI Package”**

- Regulation on AI - COM(2021) 206 final 2021/0106 (COD)
- Review of the EU Coordinated Plan on AI - COM(2021) 205 final

- The combination of the AI regulation and Coordinated Plan will make sure that Europeans can trust what AI has to offer

- The proposed Regulation aims to develop proportionate and flexible rules to address specific risks posed by AI systems and set highest standard worldwide
- The Plan outlines the necessary policy changes and investment at Member States level to strengthen Europe's leading position in the development of human-centric, sustainable, secure, inclusive and trustworthy AI



Brussels, 21.4.2021
COM(2021) 206 final

2021/0106 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

LAYING DOWN HARMONISED RULES ON ARTIFICIAL INTELLIGENCE
(ARTIFICIAL INTELLIGENCE ACT) AND AMENDING CERTAIN UNION
LEGISLATIVE ACTS

{SEC(2021) 167 final} - {SWD(2021) 84 final} - {SWD(2021) 85 final}



European Digital sovereignty and global AI governance: *two sides of the same coin!*



- *“How to ensure digital resilience and collective well-being while safeguarding liberal democracy and individual rights?”*
- In other words: how to govern AI while governing with & by AI !

Misuraca, (2020), Rethinking Democracy in the pandemic society

- *“Like the Investiture Controversy affected all people, no matter whether religious or not, whoever will win the fight for digital sovereignty will determine the lives of all people on both sides of the digital divide”*

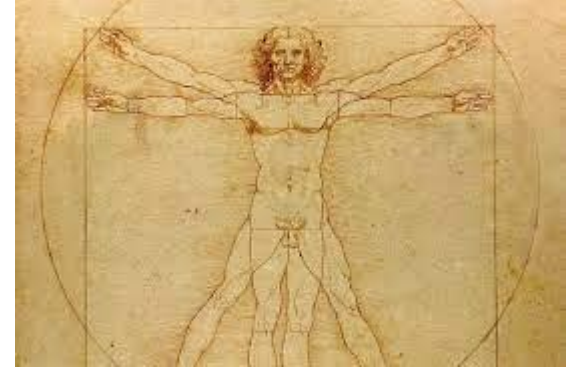
Flori, (2020), The Fight for Digital Sovereignty: What It Is, and Why It Matters



When negative side effects offset the risks avoided, precaution can be turned on its head: it is precautionary not to intervene!

Sunstein, 2005, The Law of Fear

Defining human-centric AI...



- *“An approach to AI that prioritises human ethical responsibility, dynamic qualities, understanding and meaning. [....]”*
- *Human-Centric AI systems are built on the recognition of a meaningful human-technology interaction [...] in which humans assume meaningful agency.*
- *Human-Centric AI is designed as tools to serve people with the ultimate aim of increasing human and environmental well-being with respect for the rule of law, human rights, democratic values and sustainable development”.*

Source: EU-U.S. TTC Terminology and Taxonomy for AI (2023), (based on Hasselbalch, G., 2021) and developed with support from InTouchAI.eu for the EU



Managing the advent of Generative AI...

GatesNotes THE BLOG OF BILL GATES

A NEW ERA

The Age of AI has begun

Artificial intelligence is as revolutionary as mobile phones and the Internet.

By **Bill Gates** | March 21, 2023 • 14 minute read



https://ialab.com.ar/wp-content/uploads/2023/03/ChatGPT.-Imperfect-by-design_.pdf

.UBAderecho



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ChatGPT

Imperfect-by-design?

Exploring the limits of conversational artificial intelligence



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AI can indeed help augmenting human-capacities...



Image Credits: How are Humans Evolving in the Digital Age?, Ivan Ferrero, Blog, 2018

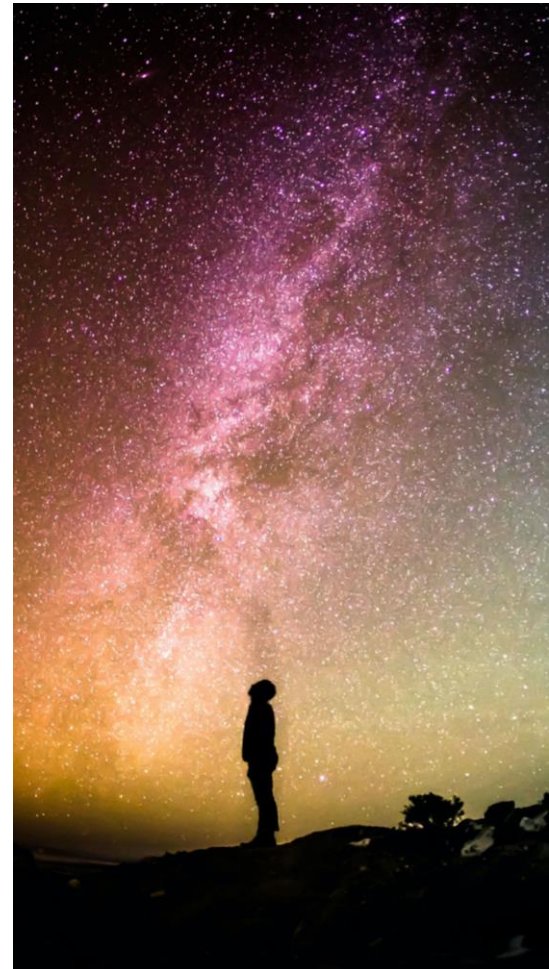
... if ethically designed and mastered!

helping realising the quintessential innovator's dream!

A “back to the future” return to the utopian origins of the Internet, to promote worldwide the building of an open, democratic and sustainable digital society



Is the future of AI to be found in the origins of the Internet?



Summary



1. Realising the European vision for human-centric AI can enable the EU to narrow the gap with the world's leading countries in the field. But the EU approach is not just a ‘third’ way, between the US and China: it can be the only way forward to develop truly ethical and human-centric AI systems
2. The explosion of “Generative” AI systems must be taken into due consideration, to anticipate risks and to exploit the enormous opportunities they offer for increasing the capabilities of individuals, organisations and society
3. The issue of digital sovereignty should be addressed jointly as an opportunity to increase the strategic autonomy of EU Member States and to address the global challenges of digital governance and Technological Diplomacy

STATE OF THE UNION 2023



- *“Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war.”*
- I believe Europe, together with partners, should lead the way on a new global framework for AI, built on three pillars:
 1. **Guardrails:** ensure AI develops in a human-centric, transparent and responsible way: our AI Act is already a blueprint for the whole world
 2. **Governance:** a new global framework for AI risks must be developed.
 3. **Innovation:** the EU is a leader in supercomputing and is launching a new initiative to open up supercomputers to AI start-ups. But an open dialogue with “tech giants” that develop and deploy AI globally is needed: **AI PACT!**

The AI agenda in and for Europe: what's next!



Madrid 18 Oct
SAVE THE DATE

SEMIC 20
conference 23

interoperable
europe
IN THE AGE OF AI

U23

European Union



AI4GOV
OPEN EVENT

Madrid, Spain
October 19, 2023

European Union



4th European AI Alliance Assembly

AI LEADING
TRUSTWORTHY
AI GLOBALLY

16 & 17 November 2023
Madrid, Spain

European Commission | U23



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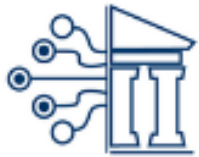
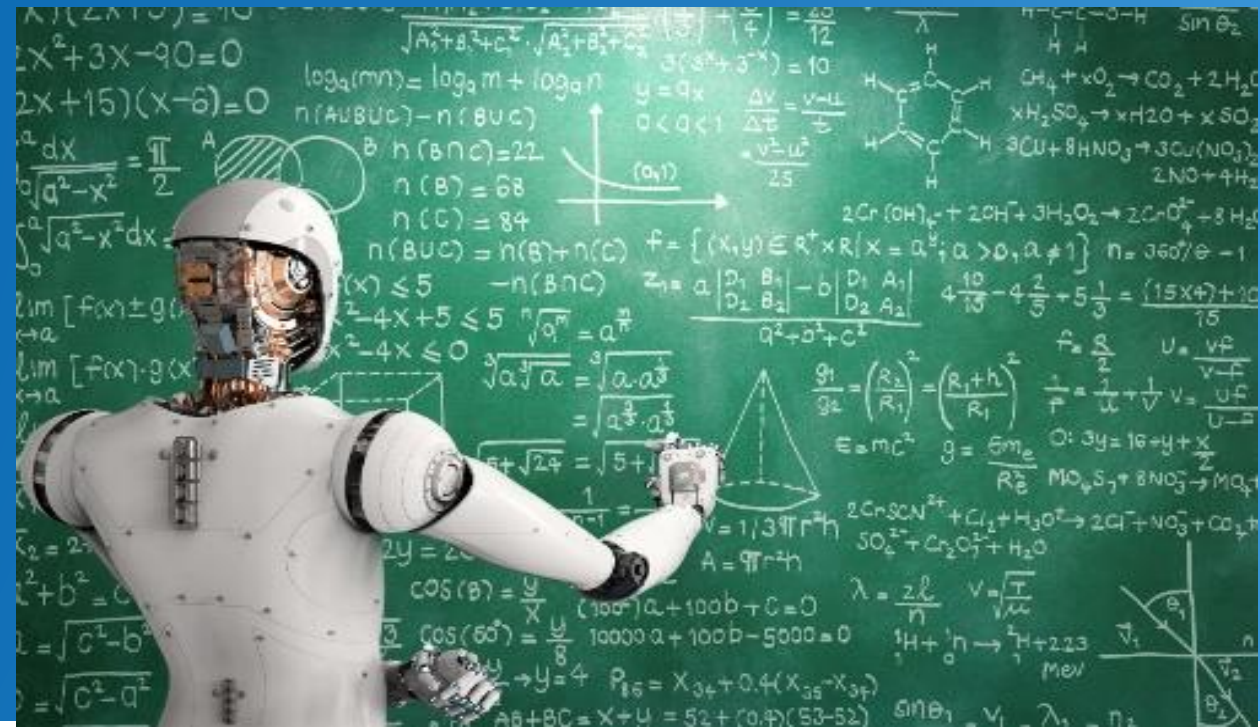


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info@ai4gov-master.eu

gianluca.misuraca@upm.es



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The AI4GOV Project is co-financed by the EU CEF Telecom programme
Action No 2020-EU-IA-0064 under GA No INEA/CEF/ICT/A2020/2265375