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Humans In Charge 2024

International Symposium on AI Ethics, Policy, and Governance

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Accelerating Artificial Intelligence adoption in the public sector

Gianluca Misuraca

07-08/10/2024

AI4GOV

INSPIRING FUTURES

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Outline

1. Futuring Digital Governance
2. Governing AI for Humanity
3. Powering AI for Government

Outline

1. **Futuring Digital Governance**
2. Governing AI for Humanity
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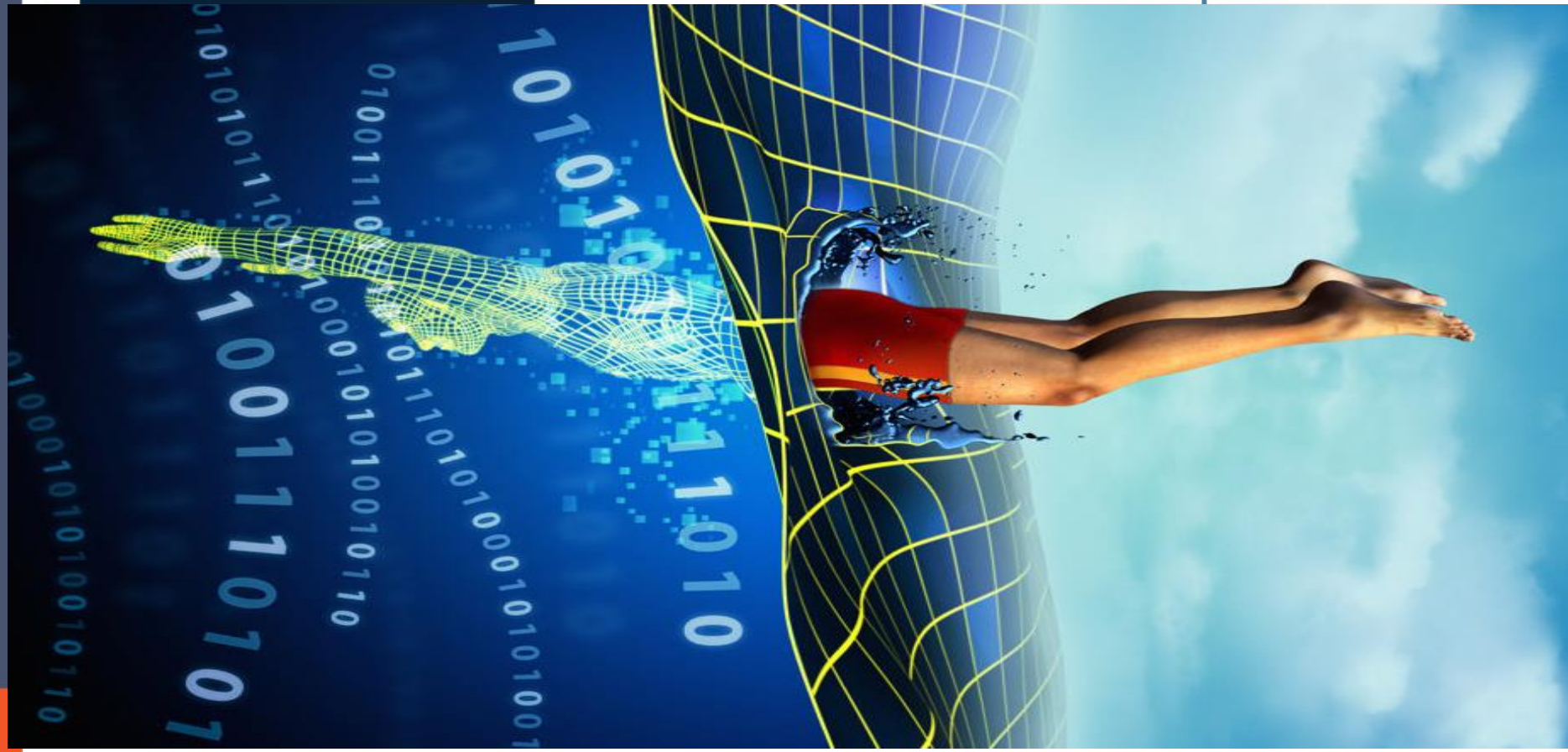
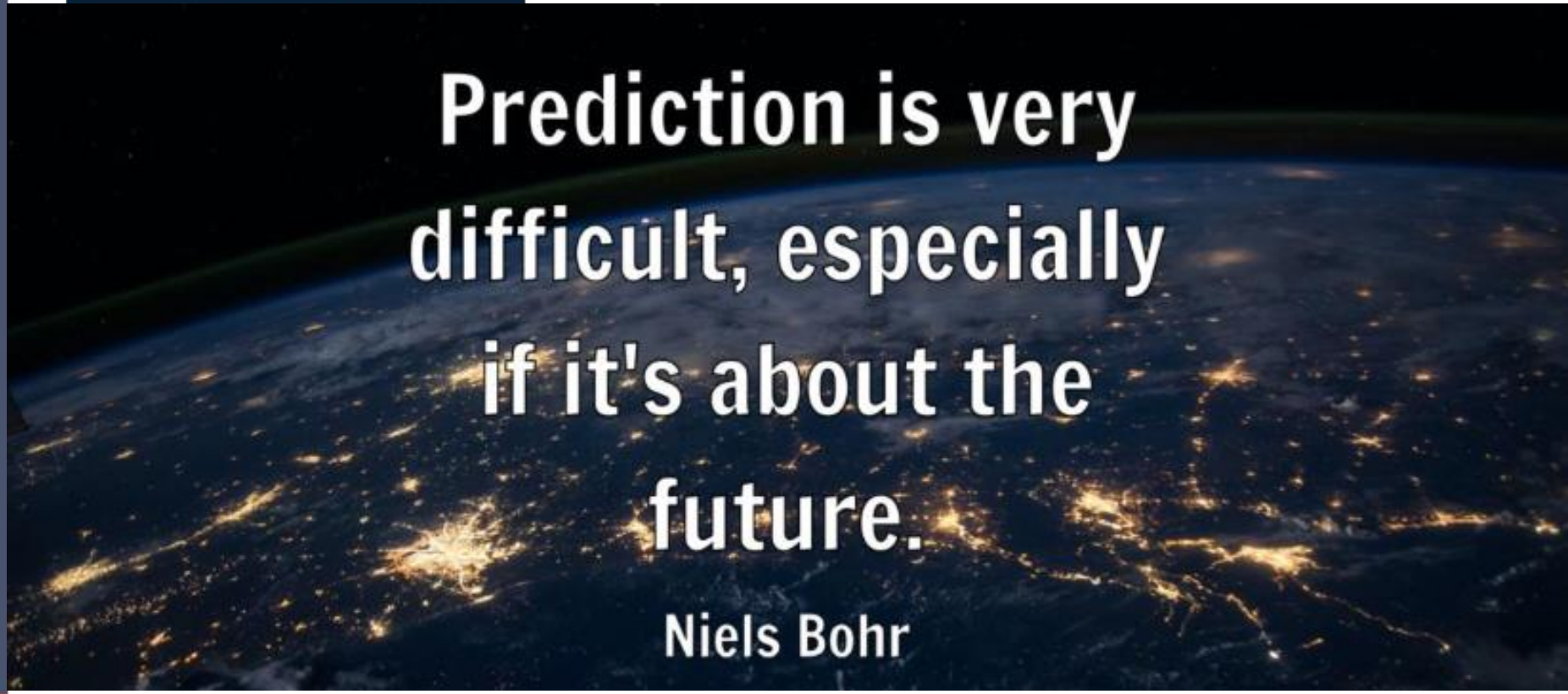
Accelerating AI adoption in the public sector



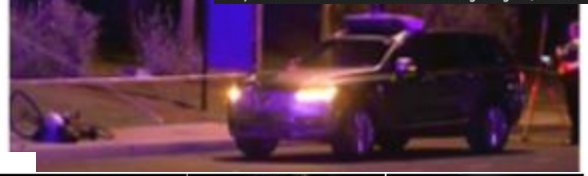
Accelerating AI adoption in the public sector

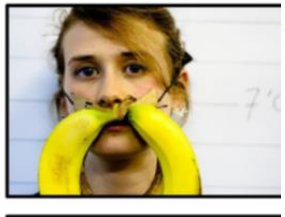


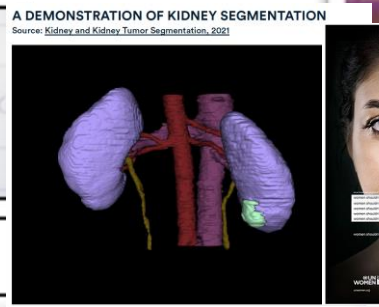
Accelerating AI adoption

AI is already transforming society

- Improved accuracy on imitation, automation, augmentation
- Lack of performance on tasks requiring logical reasoning skills
- Limitations, bias, high risks of dis(mis)information and fakes







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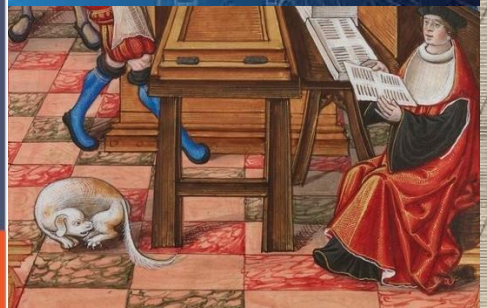
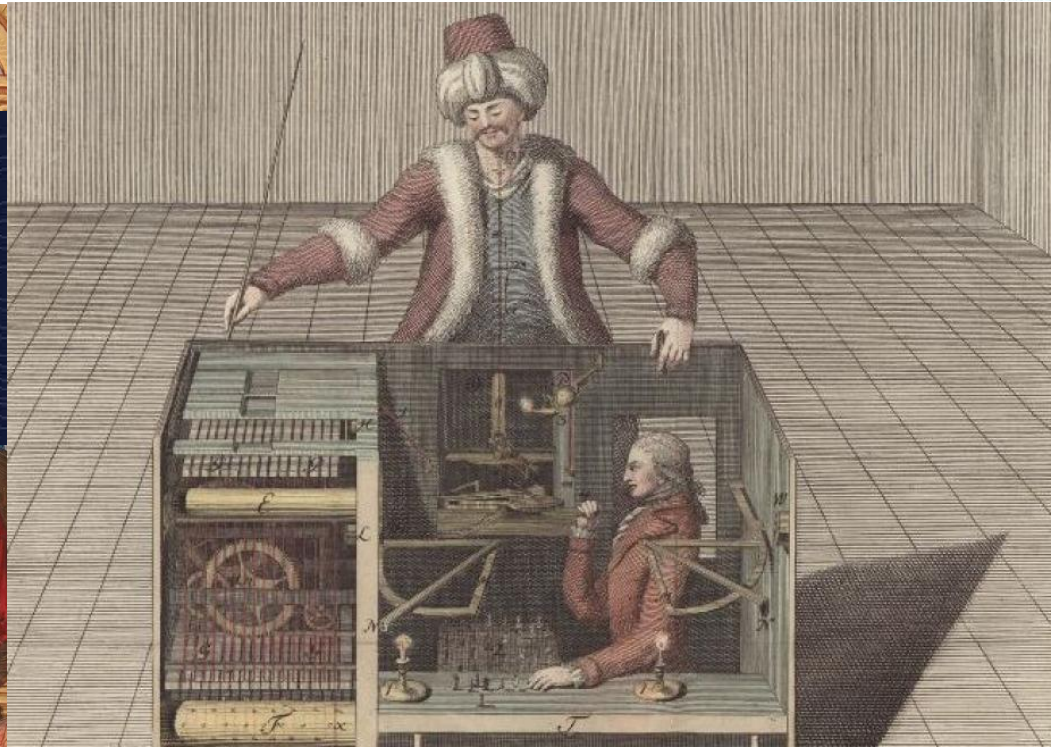
Accelerating AI adoption in the public sector

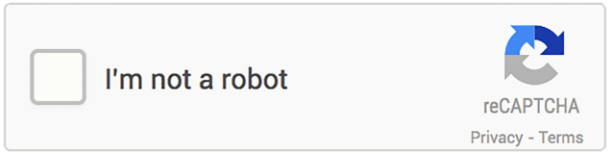
Changing profoundly the way Humans and Machines interact

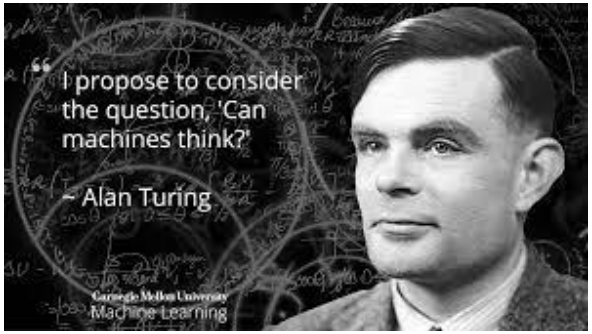




Accelerating AI adoption in the public sector

- From a time when humans code algorithms and take responsibility for the quality and correctness of the resulting software…





- … to a time when machines automatically learn algorithms from a sufficient number of examples of the input/output behaviour predicted by the algorithms

1950

Are we going too fast?

Outline

1. Futuring Digital Governance
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Accelerating AI adoption in the public sector

> The future is already here – it's just not evenly distributed

Accelerating AI adoption in the public sector

The EU AI Act: "Ides of March" or the way to human-centric AI ?

But what is 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), developed with support from InTouchAI.eu

Shaping a human-centric Digital Future at the global level?

"We often hear that the future will be digital. But the future of digital must be ***human-centric****. This is also the motivation behind my proposed* ***Global Digital Compact on an open, free, inclusive and secure digital future for all****.*

We are aiming for this Compact to be agreed by Governments at the ***2024 Summit of the Future*** *- with input from technology companies, civil society, academia and others…"*

Summit of the Future
Our Common Agenda

UN Secretary-General António Guterres' 17th Internet Governance Forum, "Resilient Internet for a shared, sustainable, and common future", Addis Ababa, 29/11/2022

The G7 Hiroshima Process

- The rapid development and deployment of generative AI has been an important issue for the entire international community, so the Hiroshima Process on AI was launched in May 2023 with the aim of discussing the opportunities and risks of these technologies
- At the IGF Kyoto 2023 and later endorsed by the G7 leaders, the “Global Policy Framework of the Hiroshima Process on AI” was established: this is the first international framework that includes guiding principles and codes of conduct aimed at promoting safe and reliable advanced AI systems

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United Nations

SUMMIT OF THE FUTURE OUTCOME DOCUMENTS

September 2024

Pact for the Future, Global Digital Compact, and Declaration on Future Generations

Global Digital Compact

The Global Digital Compact is a comprehensive framework for global governance of digital technology and artificial intelligence. Twenty years after the World Summit on the Information Society, it charts a roadmap for global digital cooperation to harness the immense potential of digital technology and close digital divides. On 22 September 2024, world leaders convened in New York for the Summit of the Future, where they adopted a Pact for the Future that includes a Global Digital Compact.

Objective 5. Enhance international governance of artificial intelligence for the benefit of humanity

50. We recognize the need for a balanced, inclusive and risk-based approach to the governance of artificial intelligence (AI), with the full and equal representation of all countries, especially developing countries, and the meaningful participation of all stakeholders.

51. We recognize international, regional, national and multi-stakeholder efforts under way to advance safe, secure and trustworthy artificial intelligence systems. We urgently need to inclusively assess and address the potential impact, opportunities and risks of artificial intelligence systems on sustainable development and the well-being and rights of individuals.

International cooperation is required to promote coordination and compatibility of emerging artificial intelligence governance frameworks.

52. We commit to advance equitable and inclusive approaches to harnessing artificial intelligence benefits and mitigating risks in full respect of international law, including international human rights law, and taking into account other relevant frameworks such as the Recommendation on the Ethics of Artificial Intelligence of the United Nations Educational, Scientific and Cultural Organization.[22]

53. We recognize the immense potential of artificial intelligence systems to accelerate progress across all the Sustainable Development Goals. We will govern artificial intelligence in the public interest and ensure that the application of artificial intelligence fosters diverse cultures and languages and supports locally generated data for the benefit of countries and communities' development. This includes, in particular, international cooperation to support developing countries in building artificial intelligence capacities as well as efforts to address potential negative impacts of emerging digital technologies on labour and employment and on the environment.

54. We consider that international governance of artificial intelligence requires an agile, multidisciplinary and adaptable multi-stakeholder approach. We recognize that the United Nations has an important role to play in shaping, enabling and supporting such governance.

Yet another (global) failure by design?

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Powers of AI in government

- **Data-Driven Policy-Making:** High potential for improving the quality of services by processing huge amounts of data, supporting public officials in decision-making processes, helping simulating policy options and and assessing “real time” impact

- **Enhanced internal management:** support recruitment services, facilitate detection of frauds, better allocation of resources and enabling predictive maintenance services, and enabling completely new services leveraging on innovative partnership models

- **Better public service delivery:** Facilitate access to information, automate redundant processes and reducing physical contact thus reducing risk of corruption and providing tailor-made applications and customised solutions to citizens

Perils of AI in government

- **AI systems are already integral part of many high-impact government decisions**
  - e.g. mainstream use of ADMS to support the provision of social benefit entitlements, often with a lack of quality data and poor algorithmic transparency
- **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

But are we ready for the future?

Accelerating AI adoption in the public sector

Digital Transformation challenges for the public sector

Digital and Data Governance

- **Digital Infrastructure** - Managing legacy system integration in perpetual change
  - **45%** of civil servants reported that their department's digital priority is modernizing or upgrading legacy systems with a hodgepodge of technologies that don't integrate
- **Future Proof Functionality** - Lack of system interoperability and organizational silos
  - **55%** of civil servants reported that "fragmented and disconnected" systems with overlapping functions and obsolete capacities are slowing down digital transformation
- **Data security and privacy** - Navigating the complexity of bureaucratic management
  - **74%** of civil servants reported that current processes do not offer a seamless experience for user and that ensuring stringent security measures while maintaining transparency and accessibility poses a challenge unique to the public sector

Source: Unlocking Workforce Potential with Digital-led Solutions, Workday Whitepaper,June 2023

Accelerating AI adoption in the public sector

Digital Transformation challenges for the public sector

Investment, Innovation and Skills

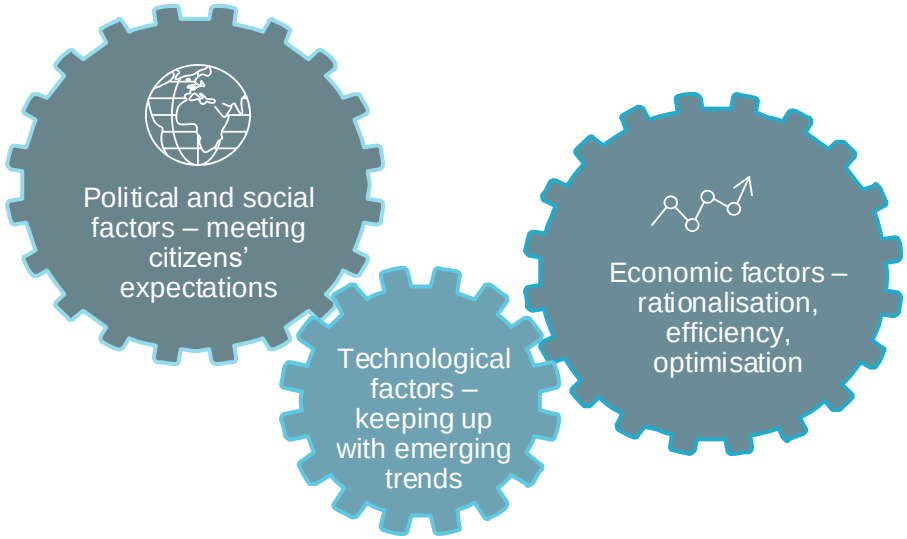
- **Digital investment** - Cost-effective procurement for "doing more with less"
  - 79% of government organisations find procurement to be a challenging area to manage in their transition to digital. Investing in digital transformation overcoming budgetary constraints requires innovative funding mechanisms and public-private partnerships
- **Change-averse culture** - Unleashing disruptive and radical public sector innovation
  - 78% of government organisations states that their transformation programs didn't achieve their objectives or took longer than expected due to resistance to change within public sector cultures which inhibits digital adoption and transformational change
- **Knowledge and skills gap** - Lack of digital know how and technical capacities
  - Only 4% of civil servants in the UK can be considered "digital professionals", compared with between 8% and 12% industry average; with most senior leaders not able to grasp the potential for digital transformation and future-oriented strategic thinking!

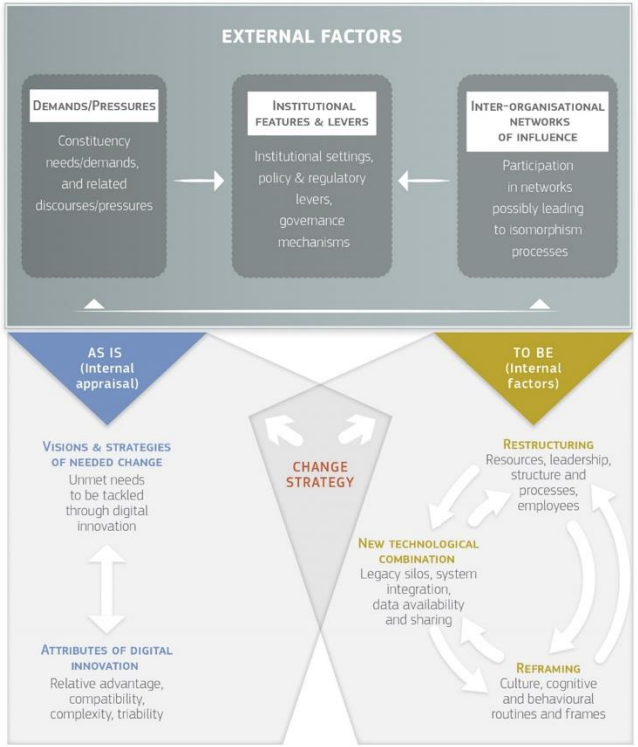
Source: Deloitte Digital, 2021, Mc Kinsey, 2022 and UK-NAO, 2023

Accelerating AI adoption in the public sector

The need of "reframing" public sector innovation

Understanding innovation antecedents and addressing the multi-dimensional aspects of Digital Transformation strategies





Source: Misuraca et al, 2020

Accelerating AI adoption in the public sector

Use of AI in government in the UK (2024)

NAO National Audit Office

REPORT

Use of artificial intelligence in government

Cabinet Office
Department for Science, Innovation & Technology

SESSION 2023-24
15 MARCH 2024
HC 612

2018
launch of the government's AI Sector Deal to promote the use of AI (artificial intelligence) in the UK, including within the public sector

74
number of AI use cases already deployed as reported by government bodies responding to our survey

£101mn
the Incubator for Artificial Intelligence's estimate of its five-year funding requirement to 2028-29 (before inflation)

37%	proportion of government bodies responding to our survey that had deployed AI
37%	proportion of government bodies responding to our survey that had not deployed AI but were actively piloting or planning AI
June 2024	target by which central government departments are expected to have costed and reviewed AI adoption plans in place
21%	proportion of government bodies responding to our survey that had a strategy for AI in their organisation, while a further 61% had plans to develop one
70%	proportion of government bodies responding to our survey who reported that skills were a barrier to AI adoption in their organisation

Accelerating AI adoption in the public sector

The need of "functional specialists" on AI for public services

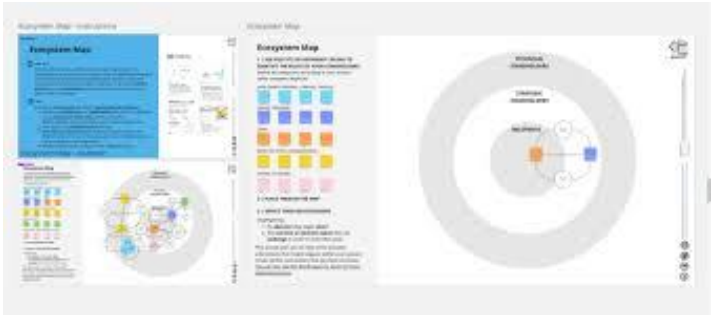
Master in
Artificial Intelligence for Public Services
AI4Gov

UNIVERSIDAD POLITÉCNICA DE MADRID
POLITECNICO MILANO 1863 DIPARTIMENTO DI DESIGN
Digital Skills & Jobs Platform

https://ai4gov-master.eu

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

AI4Gov Toolkit - https://www.ai4gov-hub.eu/ai4gov-toolkit

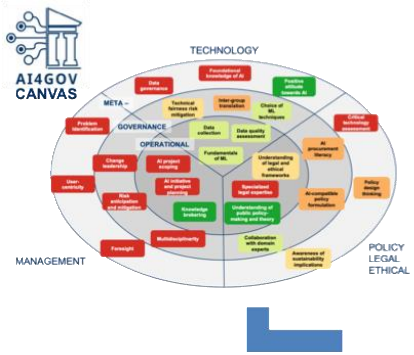


Example – Building Functional Specialist Personas: the Policy Sentinel

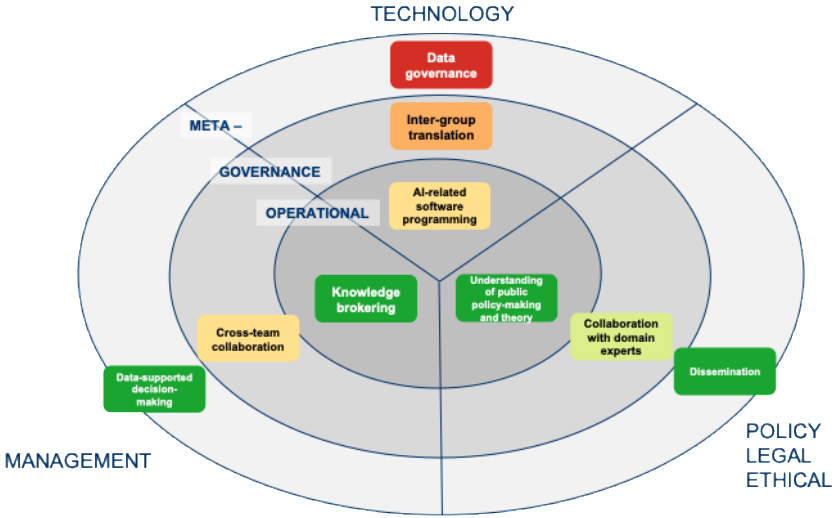
	Technology			Management			Policy / legal / ethical			Total	
		Imp.	*μ*		*Imp.*	*μ*		*Imp.*	*μ*	*Imp.*	*μ*
Operational	**Data collection**	136	89	Budgeting	84	90	**Specialized legal expertise**	98	121	*318*	*30*
Governance	Choice of machine learning techniques	100	95	Partnership development	103	100	**AI procurement literacy**	108	110	*311*	*30*
Meta-	**Positive attitude towards AI**	106	44	**User-centricity**	104	83	**Policy design thinking**	113	111	*323*	*23*
		342	*228*		*291*	*273*		*319*	*342*	**952**	**84**

Accelerating AI adoption in the public sector

How to use the AI4Gov Canvas for "functional specialists"
Example: The "TechnoSteward"

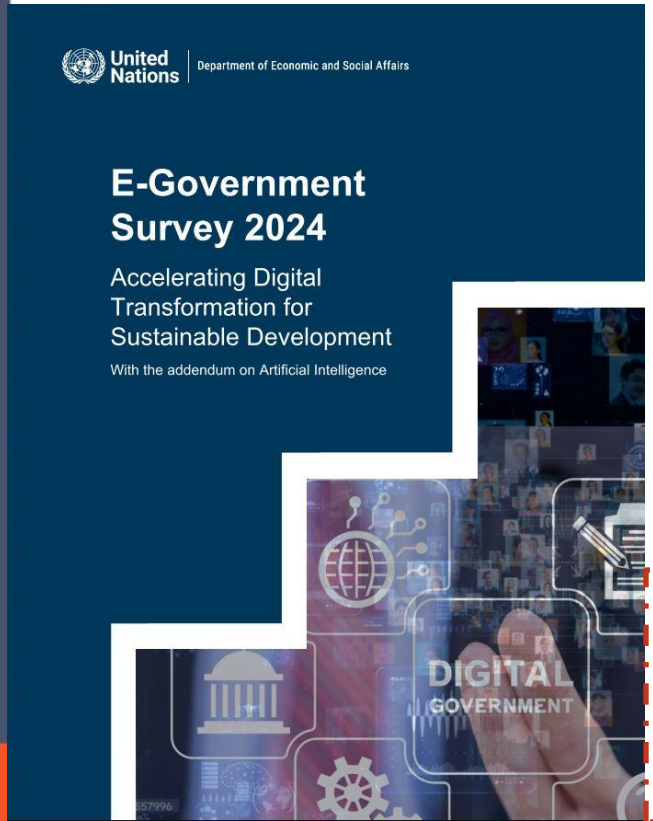


Functional Specialist Competency Profiles



	Technology			Management			Policy / legal / ethical			Total	
		Imp.	*μ*		*Imp.*	*μ*		*Imp.*	*μ*	*Imp.*	*μ*
Operational	**AI-related software programming**	87	114	**Knowledge brokering**	89	72	**Understanding of public policy-making and theory**	97	77	273	263
Governance	**Inter-group translation**	120	113	Cross-team collaboration	101	97	Collaboration with domain experts	98	95	319	305
Meta-	**Data governance**	124	169	Data-supported decision-making	96	76	**Dissemination**	79	60	299	305
		331	396		286	245		274	232	**891**	**873**

Accelerating AI adoption in the public sector



Addendum on AI and Digital Government

Digital capacity-building should target both producers (AI developers) and consumers (the end users or beneficiaries) of AI technologies in order to realize optimal economic and social benefits. Governments must strengthen citizens' basic awareness and understanding of AI concepts and applications by increasing their exposure to relevant concepts and providing AI education to build AI literacy. Bootcamps are an effective way to increase AI literacy within the general population. Singapore offers an integrated bootcamp programme aligned with their AI capability programme (AI singapore) designed to identify and train AI professionals (see box 1).

The strengthening of AI capabilities in developing countries has also been undertaken through partnerships with world-renowned universities. Carnegie Mellon University Africa, for example, offers master's of science degrees in information technology, electrical and computer engineering, and engineering artificial intelligence. These programmes are designed to train innovative and technically proficient engineers within an African context. Leveraging the strong reputation of Carnegie Mellon, the University extends its influence beyond Rwanda, attracting students from across the African continent. Currently, the university has more than 300 students and more than 550 alumni representing 19 nationalities.

Improving AI capacity is an urgent priority for developing countries but is actually recommended for developed countries as well since AI literacy is required at all levels. To address this need, the AI4GOV programme – based in Spain and co-financed by the Connecting Europe Facility of the European Union – is administering a master's programme in artificial intelligence for public services. This ten-month graduate programme is designed to prepare future leaders in digital transformation, equipping them with the knowledge and skills they need to manage the development of AI and its adoption in the public sector.

integration of AI in the public domain and digital government. While this

Accelerating AI adoption in the public sector

Towards a Digital Governance and AI Compass for Policy-Makers

- Governance and policy aspects of AI
- Human-centric principles for AI systems and service design
- Focus on use cases and procurement of AI in the public sector
- Technical knowledge of on-demand AI techniques
- Global Networking and partnership-building

- **Develop** a shared framework of action encompassing norms, institutions and standards that shape Global Digital Governance
- **Enhance** Digital and capacities of public sector leaders in future-oriented systemic thinking change
- **Strengthen** a multi-lateral and multi-stakeholder approach to digital cooperation and development
- **Accelerate** development and adoption of AI and Digital Transformation in the public sector

Accelerating AI adoption in the public sector

Accelerating the adoption of AI in the public sector - AI4Gov-X

The European Knowledge Hub on Digital Governance Transformation, Data and AI

AI4GOV-X accelerate

Co-funded by the European Union

Led by POLITECNICO MILANO 1863

AI4Gov Next	• Expand AI4Gov Master program nationally and internationally. • Diverse training modules in multiple languages and formats. • Micro-credentials contributing towards a master's degree.
AI4Scale	• Customized capacity building and training programs for public agents. • Ethical AI use, innovative procurement, and govtech. • Utilization of sandboxes for experimentation and interoperable digital infrastructure development.
AI4Engine	• Creation of an innovation connection framework driven by AI. • Identifies deployment opportunities, predicts trends, and connects stakeholders. • Leverages information from various EU initiatives and organizations for enhanced digital service deployment.

UNU

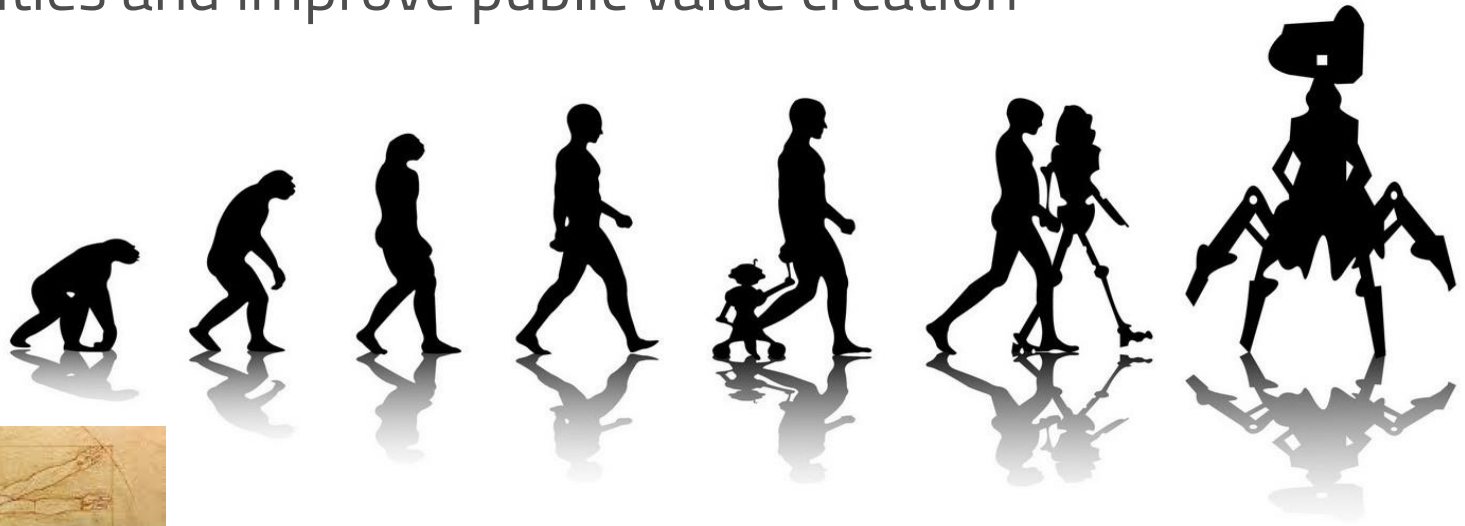
Press Release

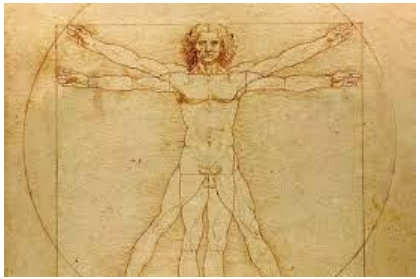
New UNU Institute in Italy Will Drive Global Collaboration in Big Data and Artificial Intelligence

world summit on the information society
Geneva 2003 - Tunis 2005

Accelerating AI adoption in the public sector

…ensuring AI will help augmenting human and institutional capacities and improve public value creation





… if designed and mastered human-centric!

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

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