Artificial Intelligence, Public Services and Policy: A Value Chain Perspective

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Artificial Intelligence: The Technology Context

An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as
predictions, content, recommendations, or
decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment. (OECD, 2024, n.d.)

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Public Value: The Normative Context

- A set of ideas arising as a response to the monitorisation/ commercialisation of public services emergent in managerial thinking
- Public service values would include trust, accountability, stewardship, transparency, fairness, etc.
- And managerialism intrinsically linked to the digitisation of public services
- The ‘Public Value Chain’ approach is useful analytical tool to identify and assess types of value created in the lifecycle of a new technology – and the values threatened by AI!

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A Public Value Chain Analysis

- Value Chain approach traditionally used for identifying sequences in the commercial production process to identify and deliver ‘value’ to producers and consumers
- Recent literature highlights application of approach in public service contexts. So, value can relate to individual and societal consumption
- Highlights nuanced ways in which value is determined and intertwined relationship between digital services and public value
- Particularly useful in identifying activities and involvement of stakeholders, as well as the challenges evident in each ‘stage’ of the chain

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Generic Public Value Chain Analysis

The generic value chain model:



The generic public policy and service delivery value chain model:

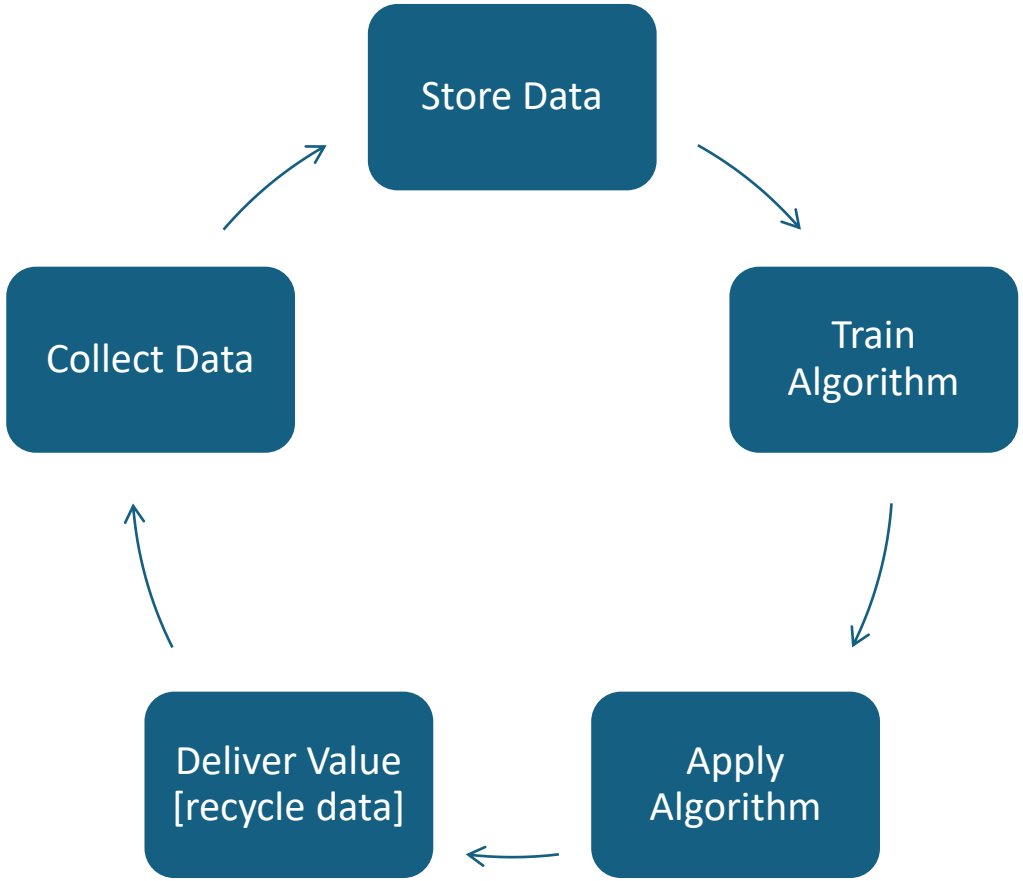


The generic algorithm value chain:



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Generic Public Value ‘Circular’ Chain Analysis



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Value Chain Issues for AI

STEPS	1. Data collection	2. Storage	3. Training	4. Analysis	5. Usage
Potential issues and concerns	Quality of the data, Recycled data, Incomplete data sets Reliability of data, Representativeness of data, Repurposed data, Data inequalities, Extent of personal data, Overt or covert collection of data, Over collection of data (mass surveillance), Legality of data	Security, Data breaches, Records management, Data destruction, Storage capacity, Data preservation, Protection of sensitive data, Data anonymisation, Data protection requirements, Access and transparency, Standardisation	Transparency, biases in the data (e.g., racial/ethnic), resource and sustainability issues with respect to data centres, different purposes in public and private sectors intellectual property,	Integrating disparate data sets, Reliability and fairness of algorithms, Acquiring data analysis skills, Interpreting data science, Satisfying both commercial and public service values and logics, Integrating data analysis into public service contexts	Ownership and control of data (especially new data), IPR, Informing public policy, Data protection requirements, Informed consent, Implied or explicit anonymity, Mass surveillance, Reusing data, Fairness and transparency

Identifying the instruments for the governance regime

- National legislation
- Transnational legislation
- Self-regulatory instruments
- Codes of conducts, principles, recommendations
- Regulation through design

What creates desired outcomes (values)? What is legitimate? What does not perpetuate poor outcomes?

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The actors

- National regulatory bodies/watchdogs
- Transnational actors
- Big tech companies
- Designers/the profession
- Civil liberties groups
- The user groups (officials and citizens)

Who should be involved in governing AI in the future?

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The specific challenges for HR in the public sector

- Capabilities – not just technical competences, but also ethical
- Uncertainty around the value of university education
- Managerial responsibilities
- Security and data protection
- Poor quality of data causing inimitable errors
- The risk of biases (and errors!)

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But…

…more important is how AI will affect the sense of **trust** within public sector organisations

- When cheating and gaming through the use of AI becomes easy, we will become more suspicious.
- Lack of trust breaks down the team spirit (and social capital)
- Lower level of trust also results in higher transaction costs (the need for control and accountability mechanisms)

Concluding Comments

- Value chain analysis allows us to highlight potential challenges to the design and deployment of AI. It also highlights potential instruments and actors
- Challenges are evident around data quality, intellectual property, surveillance and privacy, transparency and fairness. They arise primarily because of different processing norms between the private and public sectors.
- The value chain approach also demonstrates the difficulties with identifying all-encompassing regulatory mechanisms
- How to govern such technological processes in the future - Emergent AI governance regimes

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