Delhi School of Economics
University of Delhi

Course: EC 602

Public Economics II

MA Economics – Semester IV

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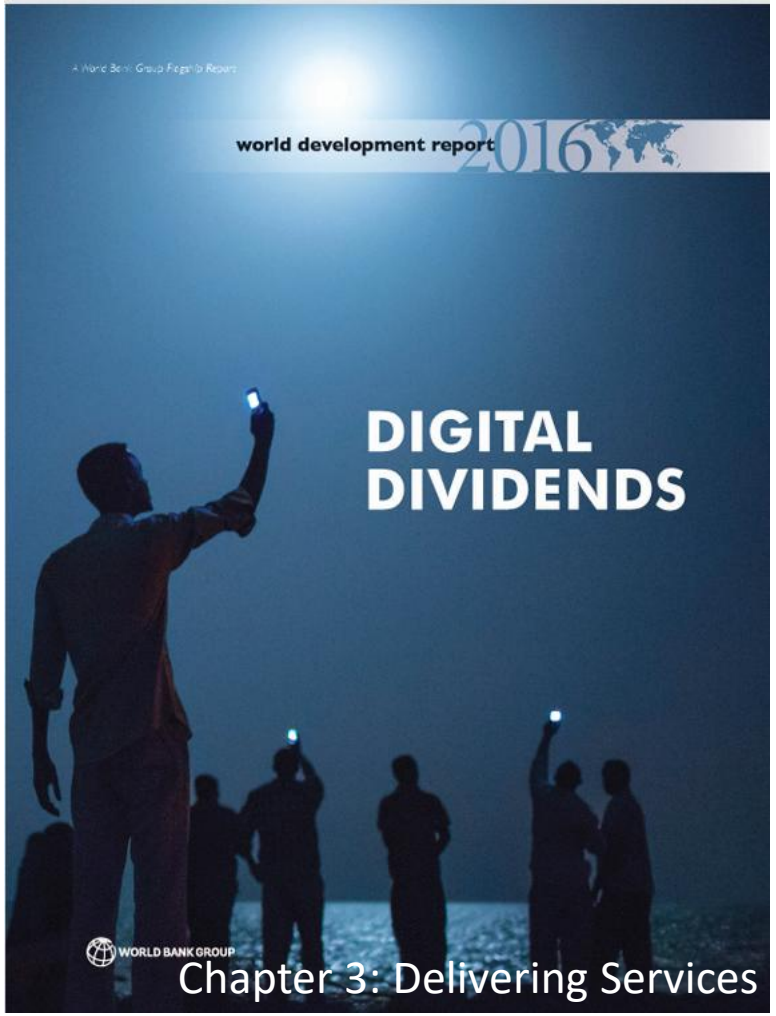
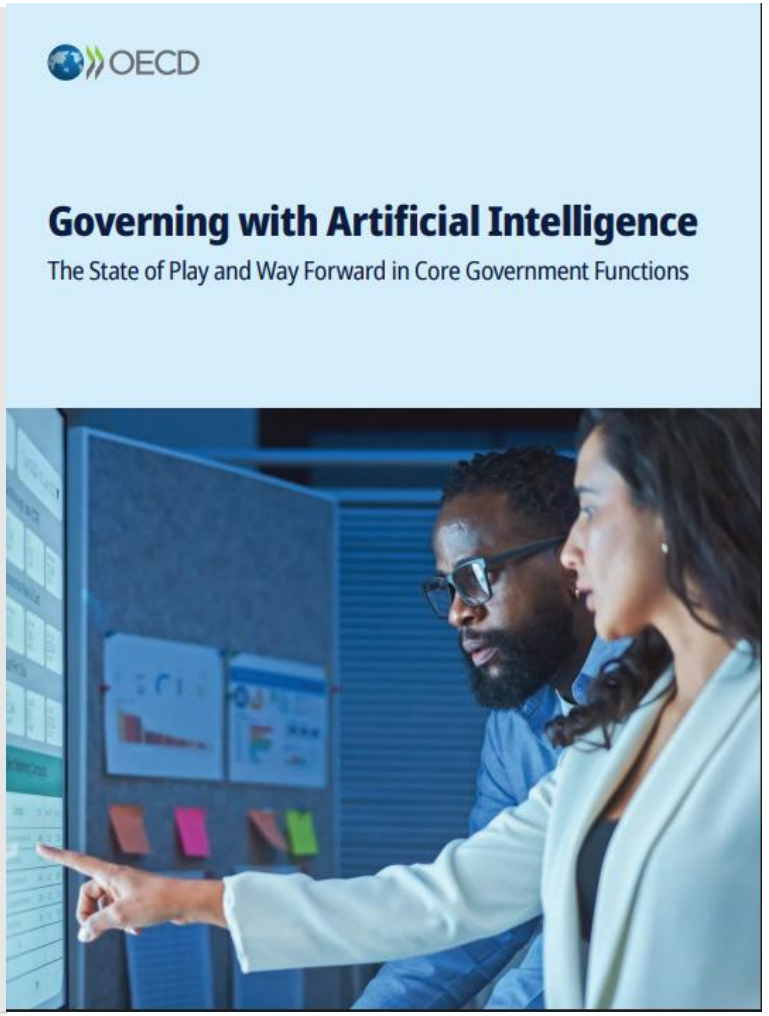
Outline of today's class

- Definitions and conceptual frameworks
- AI use in government
- Use case studies: Brazil, China and Taiwan
- AI offers both opportunities and risks
- Key takeaways

Key general readings



Chapter 3: Delivering Services

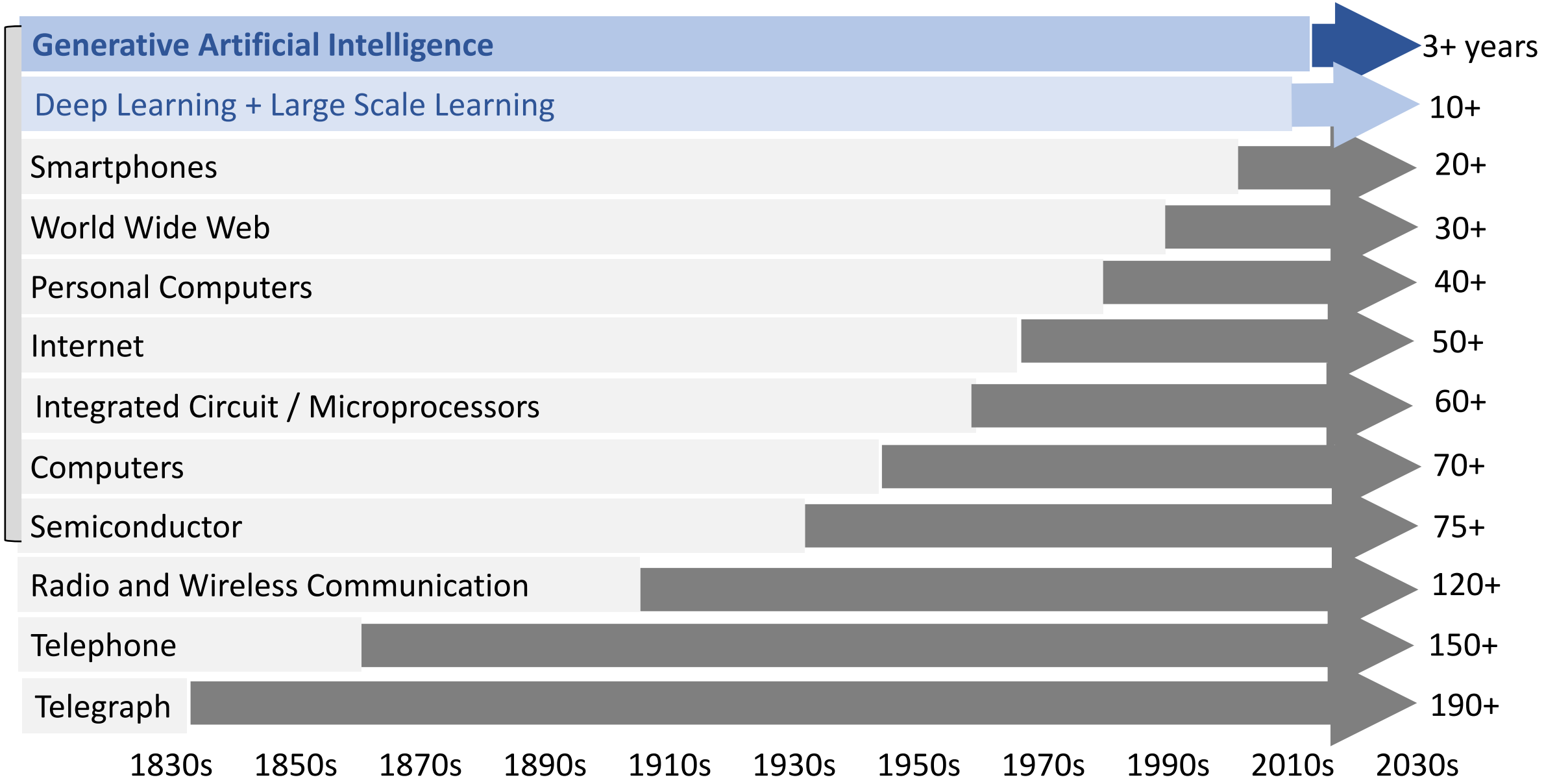


Definitions

- **Digitalisation** refers to the use of digital technologies—especially the internet, mobile networks, and data systems—to collect, store, analyze, and share information digitally. It holds the potential to transform economic activity, government operations, and social interactions. (WDR 2016)

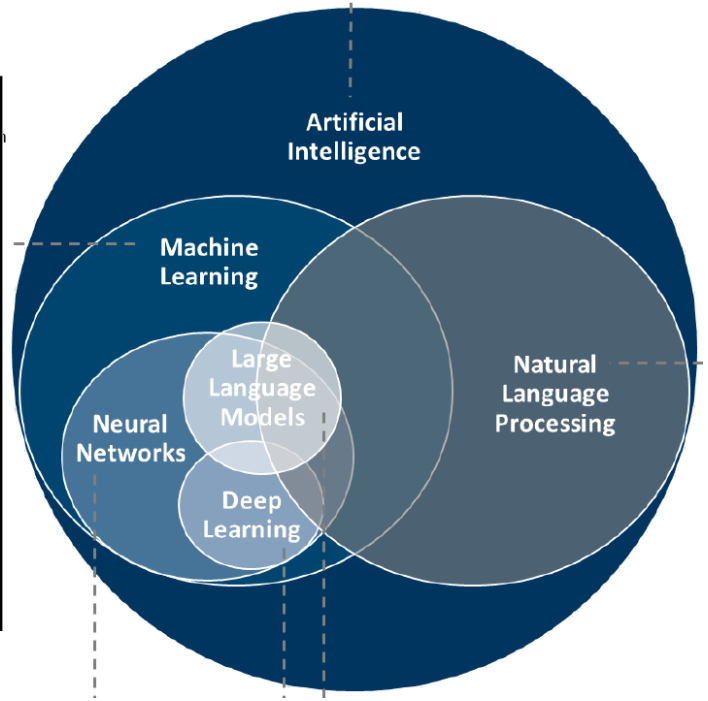
- **Artificial Intelligence** refers to computer systems that can perform tasks – such as predictions, recommendations, or decisions – which typically require human intelligence like learning, reasoning, perception, language understanding, and decision-making.

Evolution of the ICT revolution



Various stages of the AI era

	Knowledge Source	Exemplar	Capability	Data Curation
Expert Systems	Human	Rules	Follows	High
Machine Learning	+ Databases	Rules/Networks	+ Discovers Relationships	Medium
Deep Learning	+ Sensory	Deep Neural Networks	+ Senses Relationships	Low
General Intelligence	+ Everything	Pre-Trained Deep Neural Networks	+ Understands the World	Minimal



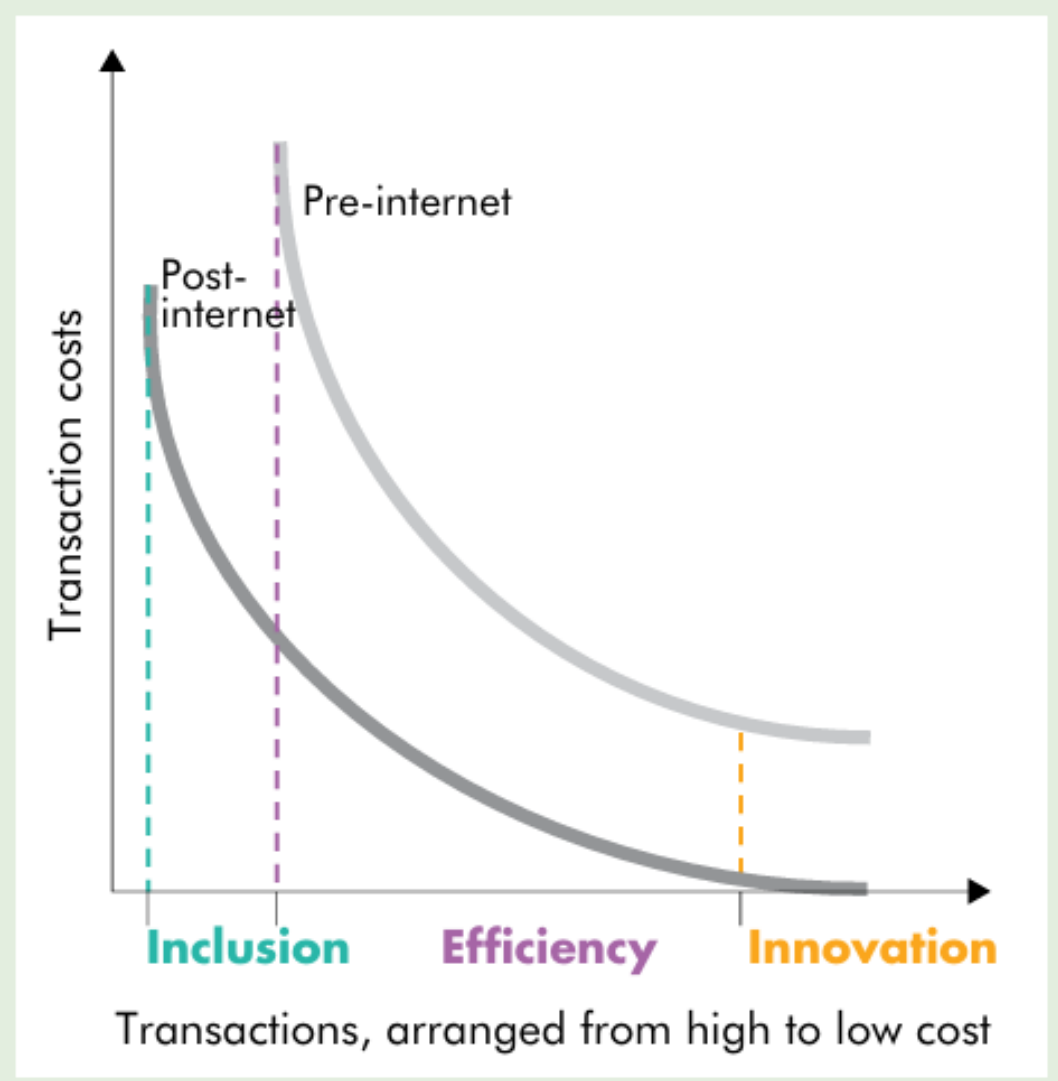
Source: Vasant Dhar (2023), Goldman Sachs (2023)

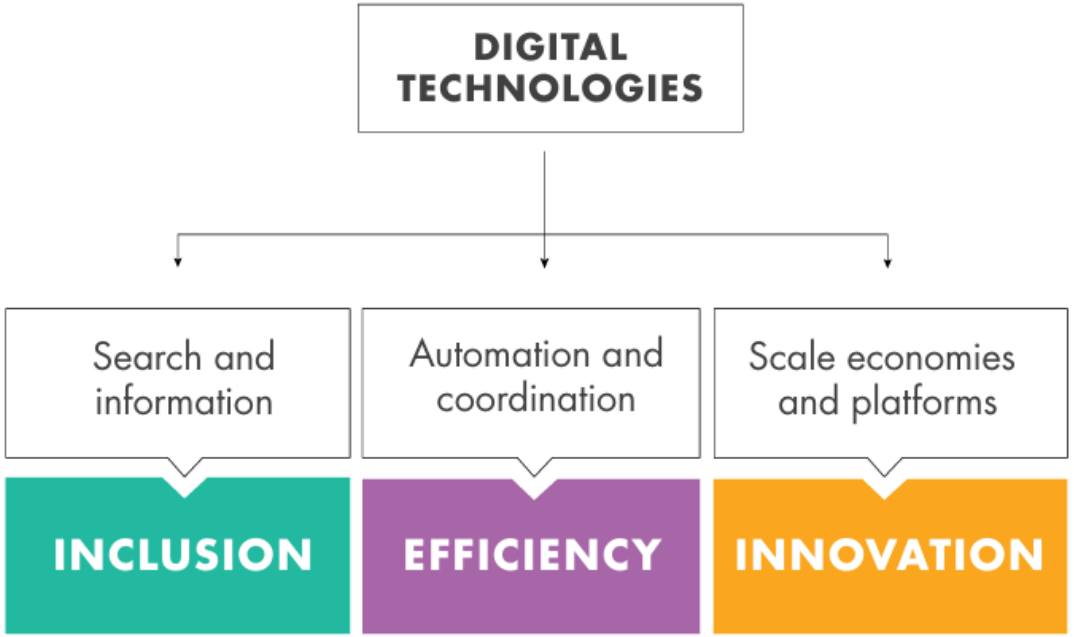
While AI has been around for decades, recent years have seen dramatic breakthroughs

Source: https://epoch.ai/data/ai-models

New economy, old economics.

How the internet promotes development?

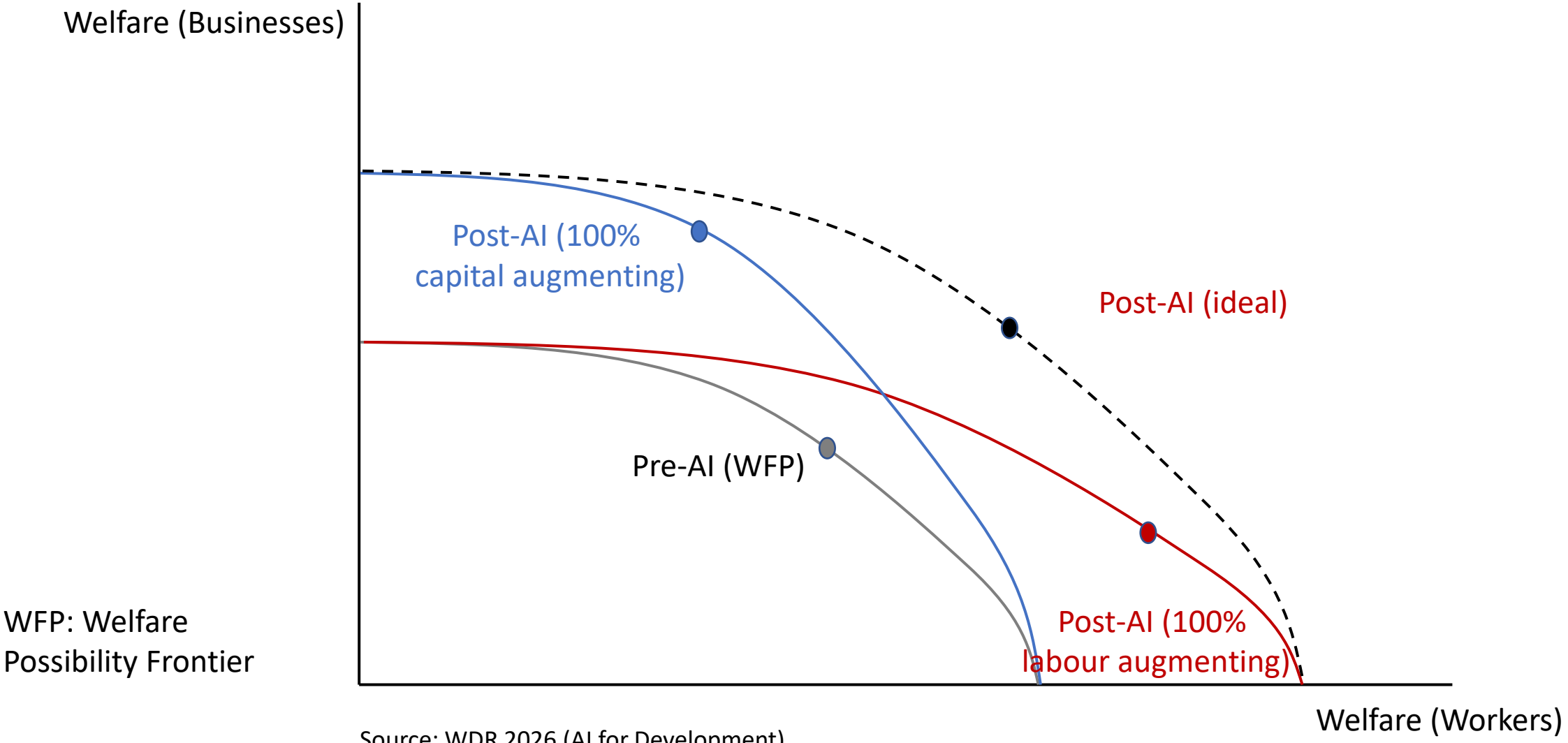




Source: WDR 2016 (Digital Dividends)

New economy, old economics.

How AI can promote development?



WFP: Welfare Possibility Frontier

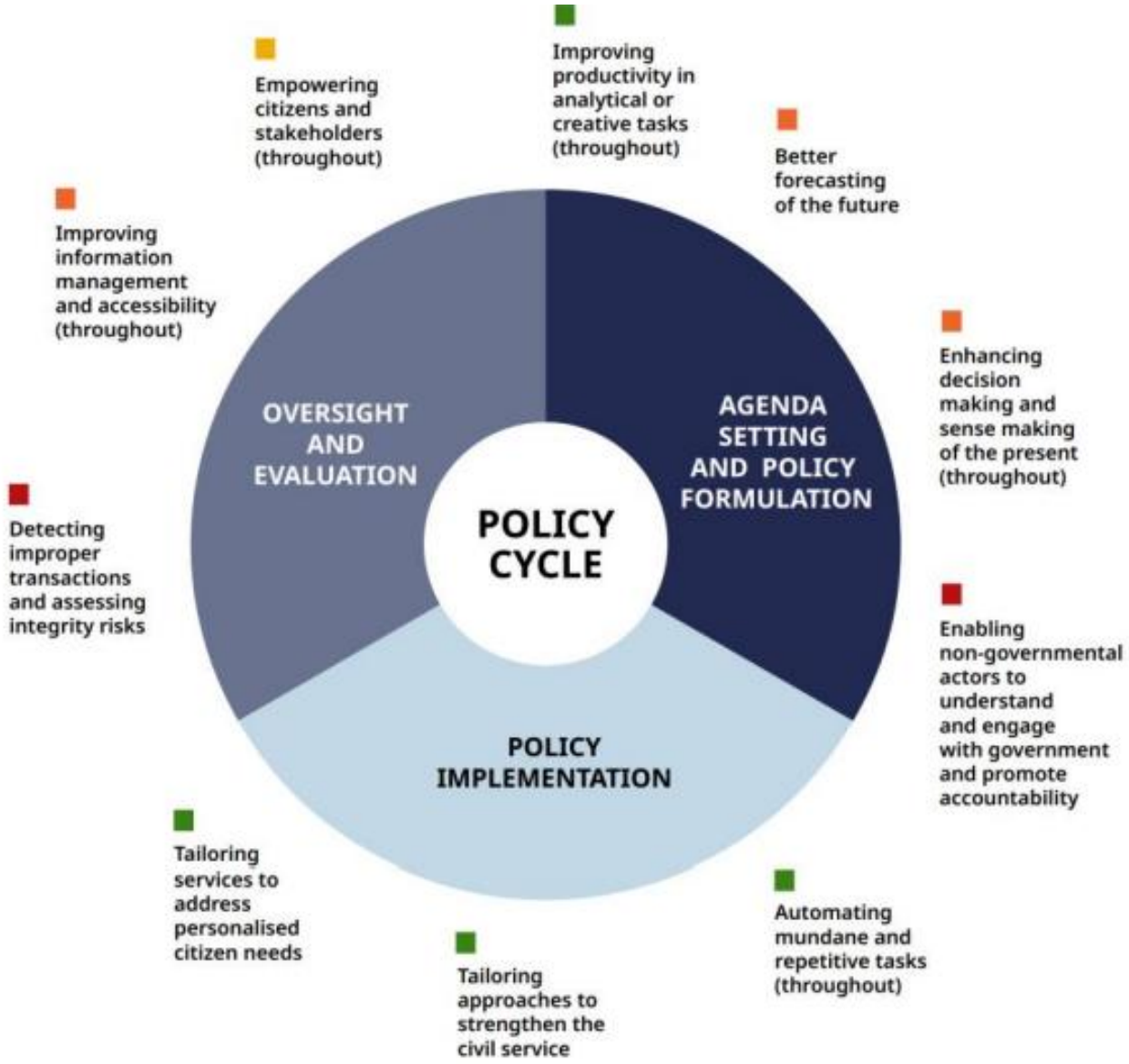
Source: WDR 2026 (AI for Development)

Understanding the use of AI in government

AI tasks	Government activity	Opportunity area
- Recognition - Event detection - Forecasting - Personalisation - Interaction support - Goal-driven optimisation - Content generation - Reasoning with knowledge structures	Internal operations	Productivity (efficiency and effectiveness)
	Policymaking	Responsiveness
	Service delivery	
	Internal and external oversight	Accountability

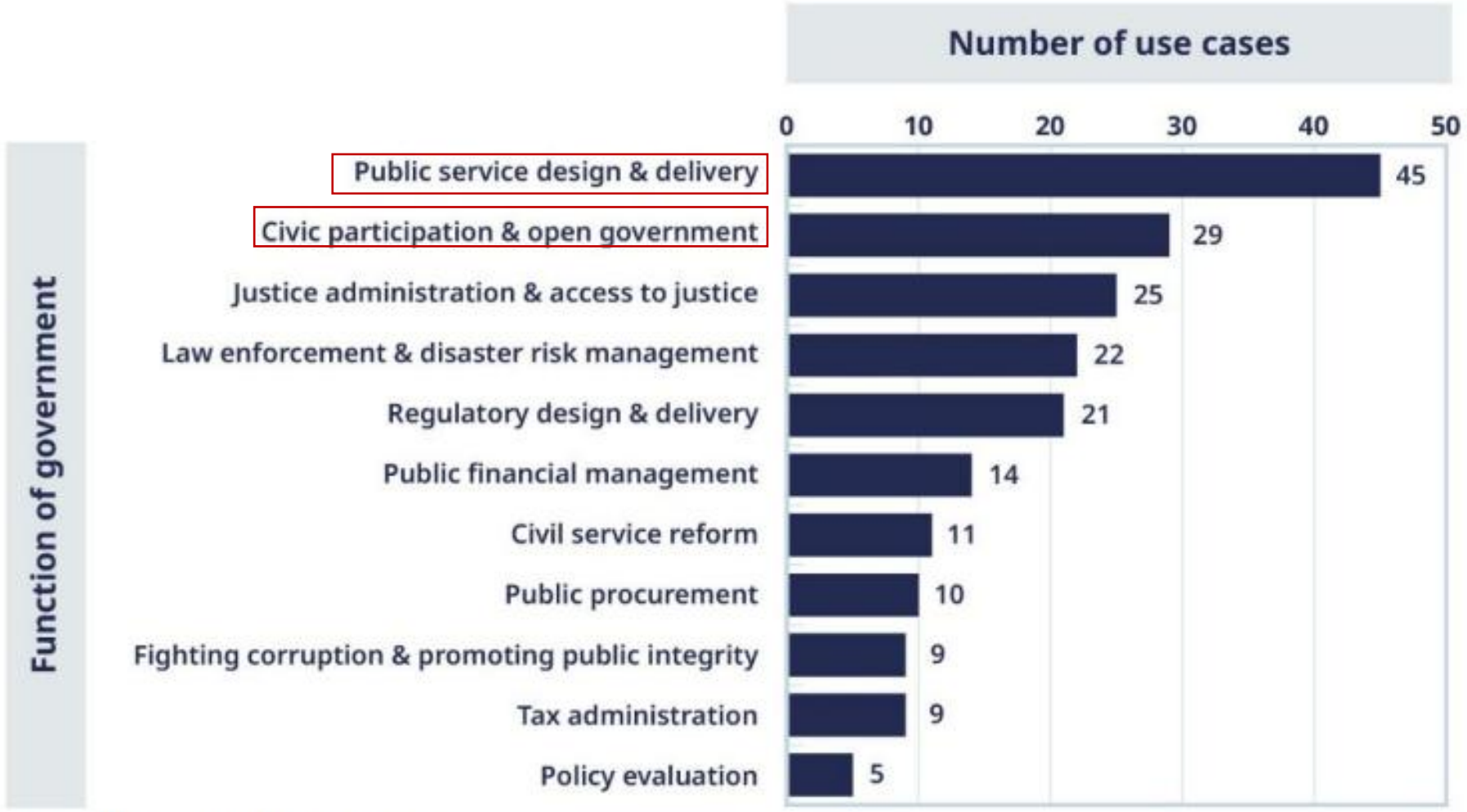
Note: The AI tasks column is adapted from the "AI System Tasks" of the OECD Framework for the Classification of AI Systems (2022[40]). Source: (OECD, 2024[13]).
Source: https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/governing-with-artificial-intelligence_398fa287/795de142-en.pdf

AI at each stage of the policy cycle



Source: https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/governing-with-artificial-intelligence_398fa287/795de142-en.pdf

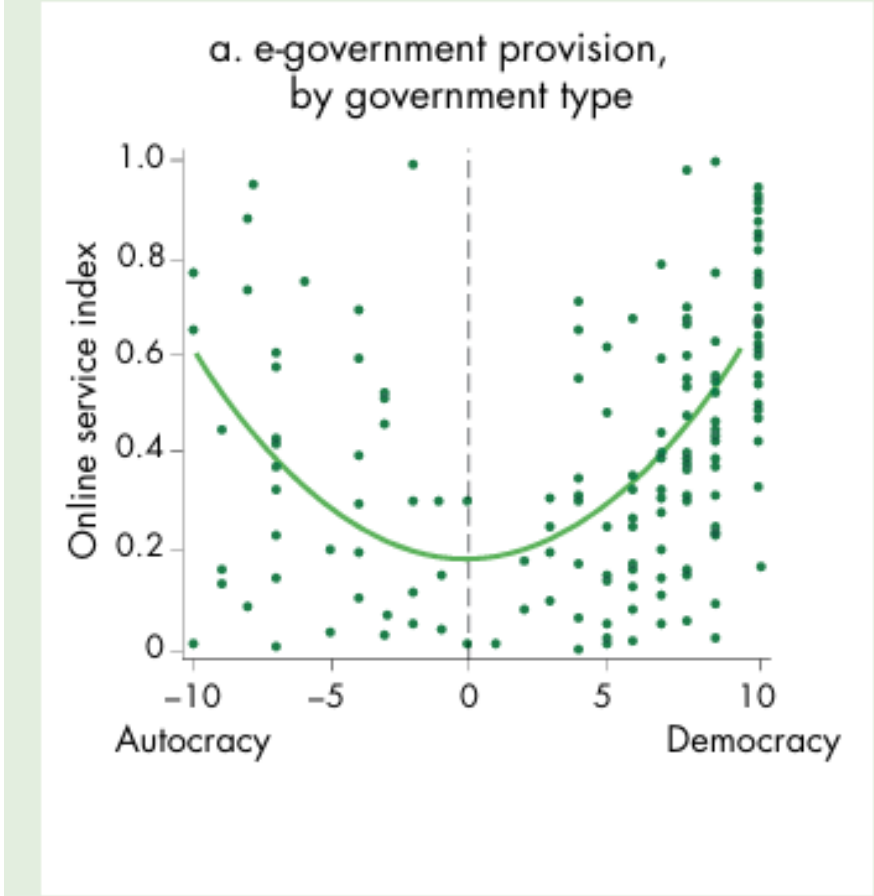
AI use cases are most present in public service, civic participation and justice functions

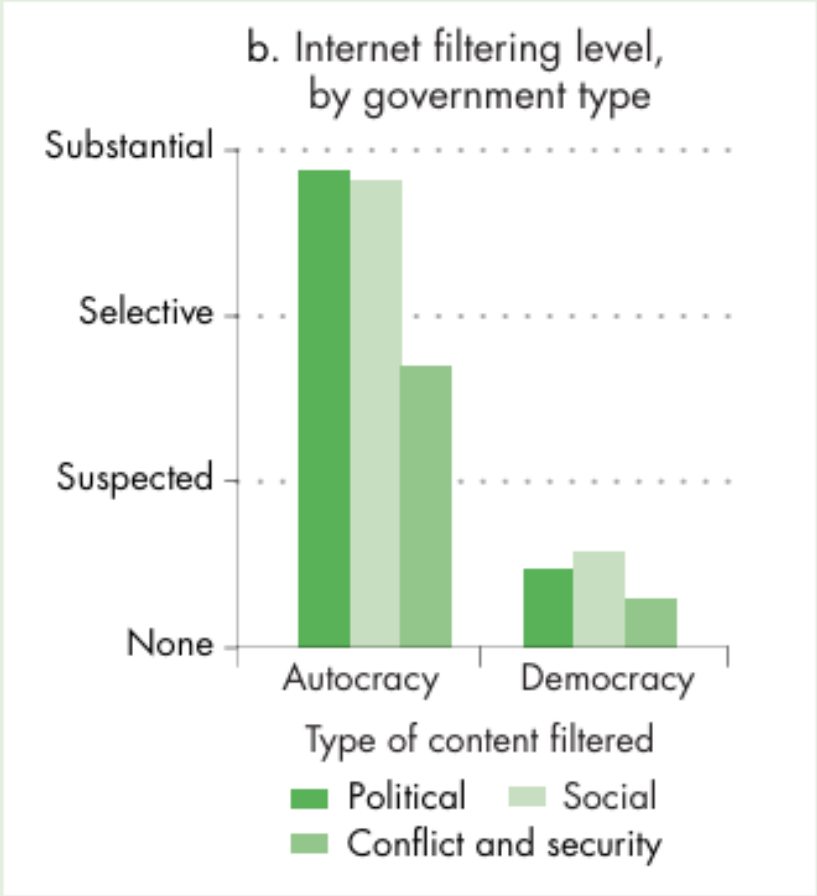


Source: OECD analysis of identified use cases.

AI, Like Digitalisation, Offers Both Opportunities and Risk

Democratic and autocratic governments both promote e-government,
one to empower and the other to control





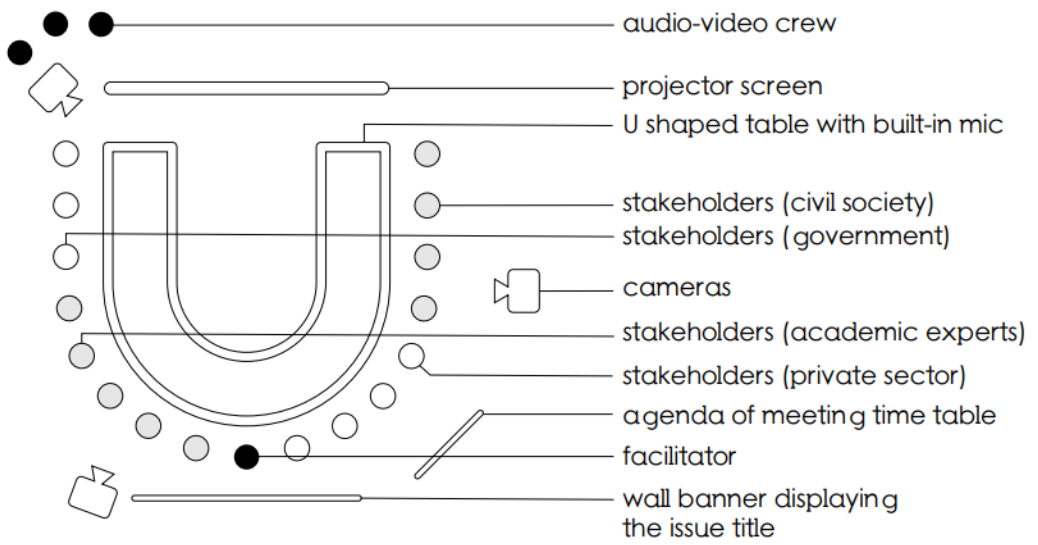
Sources: WDR team, based on Polity IV 2015; UN 2014; Open Net Initiative 2013. Data at http://bit.do/WDR2016-FigBO_6_1.

Source: WDR 2016, Digital Dividends, Chapter 3

Case Study 1: An Empirical Study of Open Consultation Process in Taiwan (vTaiwan)

- vTaiwan is an open consultation process that brings Taiwan citizens and government together to craft national digital legislations. The "v" in vTaiwan stands for "vision", "voice", "vote" and "virtual", as vTaiwan embarks on a "virtual venture" of open consultation processes with the citizens.

Layout of the meeting room



- The vTaiwan process consists of four successive stages:

Proposal → Opinion → Reflection → Legislation

Source: Hsiao, Lin, Tang, Narayanan and Sarahe (2018)
file:///C:/Users/Deepak%20Mishra/Downloads/vtaiwan-empirical-study.pdf

vTaiwan (contd.)…

Stage 1: Proposal Stage

vTaiwan hosts weekly mini hackathons—an online-offline open community taking shape as a hackathon—to welcome all opinions from all walks of life, including programmers, designers, public servants, journalists, scholars, legal specialists, students and so on.

Stage 2: Opinion Stage

After ensuring accountability, vTaiwan initiates the opinion stage to launch online opinion collection.

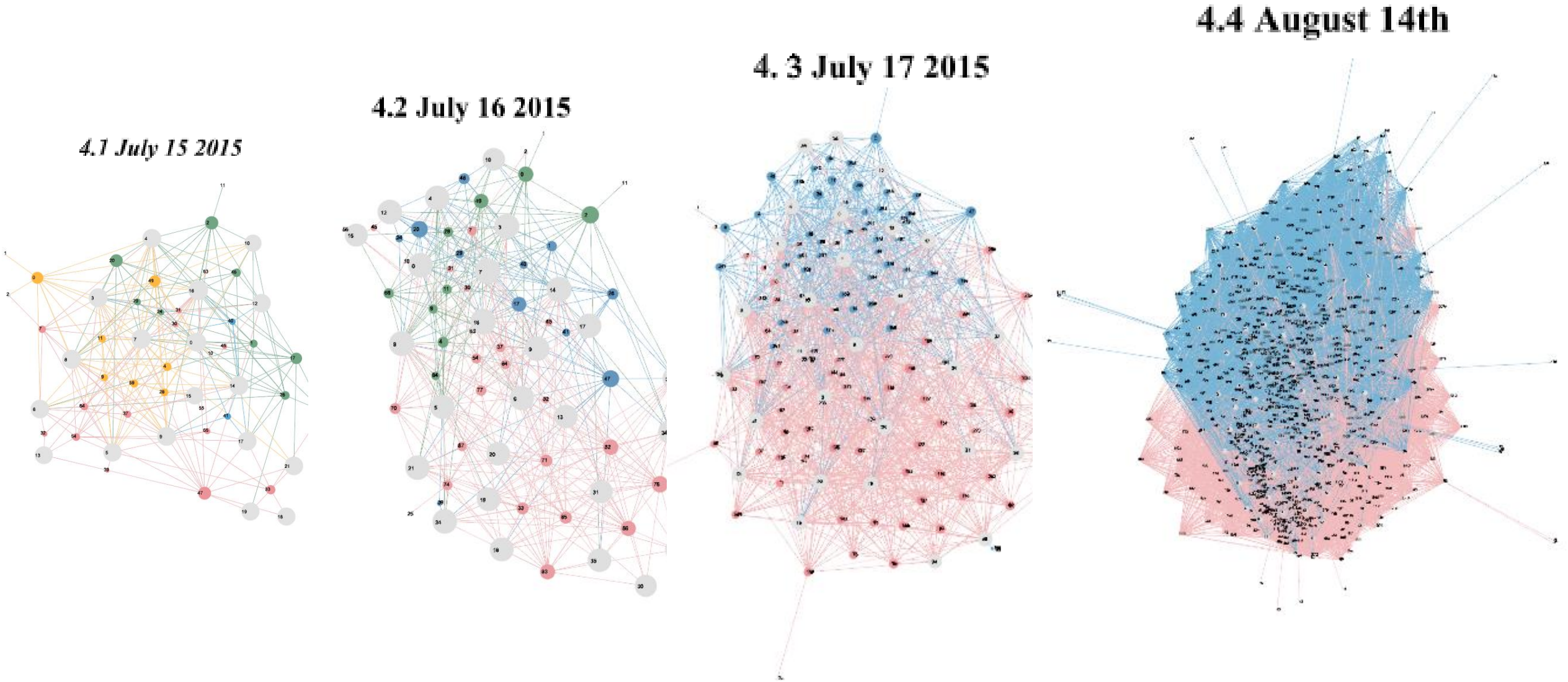
Stage 3: Reflection Stage

In this stage, the facilitator hosts an online-offline in-person consultation with stakeholders, including scholars, public servants, private sector representatives and community participants.

Stage 4: Legislation Stage

vTaiwan then moves to the legislation stage and presents the consensus on the policy or legislative solutions. In some cases, the issue is resolved with a guideline, a policy or a statement by the competent authority. In other cases, it could be formulated into a draft bill sent to the Legislative Yuan

vTaiwan (UberX case study)…



Source: Moats and Tseng (2024)
https://www.tandfonline.com/doi/epdf/10.1080/1369118X.2023.2230286?needAccess=true

Challenges facing vTaiwan

- Few proposals by citizens
- Funded by the government, vTaiwan struggles to retain autonomy in the selection of topics
- If a government authority refuses to discuss a public issue, the sensitive topic will not go through the vTaiwan process
- Not all cases on vTaiwan lead to regulation reform
- vTaiwan struggles to balance between retaining the freedom to experiment and regulating the process of participation and collaboration

Case Study 2: Exploring AI Capabilities in Participatory Budgeting within Smart Cities: The Case of Sao Paulo, Brazil

❑ **Objective**

The digital participatory budgeting initiative of the municipality of São Paulo allows citizens to submit proposals for inclusion in the annual municipal budget and to express their opinions on them through non-binding voting.

➢ **Phase 1: Proposal Submission (April-May)**

In 2025, 2,414 proposals were collected (60% physical format; 40% digital format).

➢ **Phase 2: Prioritization by Participatory Bodies (May-June)**

Municipal Participatory Councils (CPMs) - elected by residents in each district - screen demands and select 10 popular proposals per district based on criteria including alignment with Regional Plans and number of platform endorsements. CPMs can add 5 technical proposals to the list.

➢ **Phase 3: Technical Feasibility Assessment (June-July)**

The 15 prioritized proposals per region undergo evaluation by technical bodies. In 2025, 30% of proposals were deemed unfeasible, primarily due to conflicts with existing sectoral plans.

Source: Sousa, Silva, Machado and Vaz (2025); https://arxiv.org/pdf/2509.16724

Sao Paulo Case Study (contd.)

- **Phase 4 - Appeal (July)**

In this stage, the *Municipal Participatory Councils (CPMs)* in each districts can challenge feasibility analyses they deem inadequate by completing a structured form on the *Participe Mais* platform within five business days.

- **Phase 5 - Public Voting (August-September)**

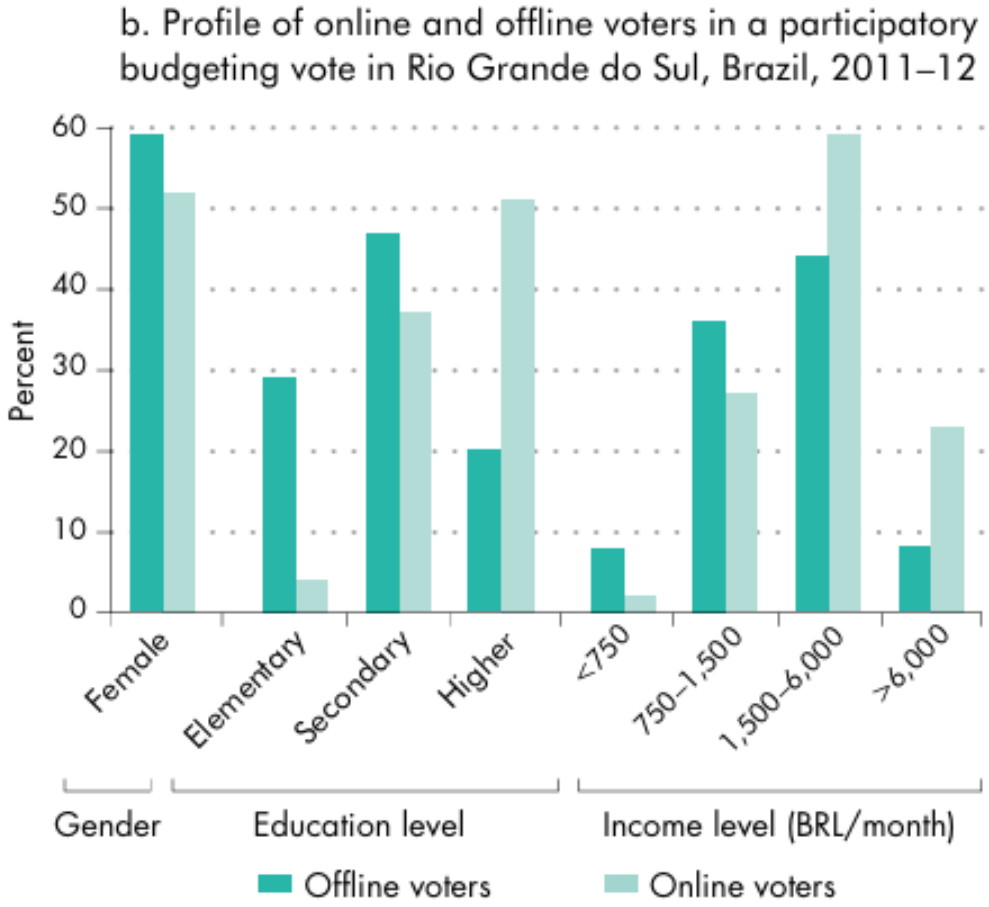
Using a preferential voting system on the *Participe Mais* platform, each citizen can rank up to five proposals per district, with automatic allocation of resources until the R$10 million available per region is exhausted

- **Phase 6 - Incorporation into the Annual Budget Bill (September)**
- **Phase 7 - Feedback Hearings (October)**
- **Phase 8 - Monitoring (Following Year)**

Source: Sousa, Silva, Machado and Vaz (2025); https://arxiv.org/pdf/2509.16724

Challenges facing DPB initiatives

1. Low participation and inequalities in citizen engagement, combined with evident digital exclusion of peripheral populations;
2. The high rate of technical unfeasibility of proposals, resulting from disconnects between popular demands and administrative possibilities;
3. Weaknesses in monitoring and accountability, which undermine the credibility of the process;
4. Difficulties citizens face in formulating technically consistent proposals; and
5. Technological limitations of the digital platform, which does not incorporate more recent developments, especially in Artificial Intelligence.



Source: Sousa, Silva, Machado and Vaz (2025); https://arxiv.org/pdf/2509.16724

Case Study 3: China's Social Credit System (SCS)

- China's Social Credit System (SCS) is a digital reputation-based regulatory system that collects and integrates information about the behaviour of individuals, firms, and government entities in order to assess their "trustworthiness" and enforce compliance with laws, regulations, and social norms through rewards and penalties.

- Importantly, the SCS is not a single national score like a credit score. It is better understood as a network of databases, blacklists, redlists, and regulatory mechanisms managed by multiple government agencies and sometimes supplemented by private platforms.

The Social Credit System operates through four main components.

1. Data Collection

Information is gathered from multiple sources: court records, tax authorities, regulatory agencies, financial institutions, administrative penalties, and compliance with laws and contracts

2. Blacklists and Redlists

The core mechanism is a list-based system. Entities that violate laws or court judgments (e.g., safety regulations) are placed on blacklists. Entities demonstrating exemplary compliance may be placed on redlists and receive benefits.

China’s Social Credit System (contd.)

3. Joint Sanctions

Once an entity is blacklisted, multiple government agencies impose coordinated penalties, known as “joint disciplinary measures.” Examples include: restrictions on obtaining loans, limits on government procurement eligibility, bans on high-speed train or airline travel for certain defaulters, and restrictions on public procurement contracts.

4. Incentives and Rewards

Entities with good compliance records may receive: easier access to credit, preferential treatment in government contracts, and simplified administrative procedures.

Pros: Strengthening Market Trust; Better Enforcement of Regulations; Financial Inclusion; Lower Transaction Costs; and Improved Government Efficiency

Cons: Surveillance Concerns; Lack of Transparency; Risk of Arbitrary Enforcement; Data Privacy Risks; and Potential Social Inequality

Key takeaways from today's class

- New economy does not necessarily mean new economics; Old economic principles are often good enough to understand new economy.
- AI use in government holds massive promise as well as significant risks.
- Most government AI efforts exist in exploratory or pilot phases, with limited scaling and documentation
- The key to successful use of AI in public economics has little to do with technology and everything to do with people and practices (the "analog" foundation complementing the digital revolution).

What to expect from the next class?

- Digitalisation and AI economy in India
- Digital Public Infrastructure (DPI)
- AI use studies in public finance
- What does the future hold?

Thank You!

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