

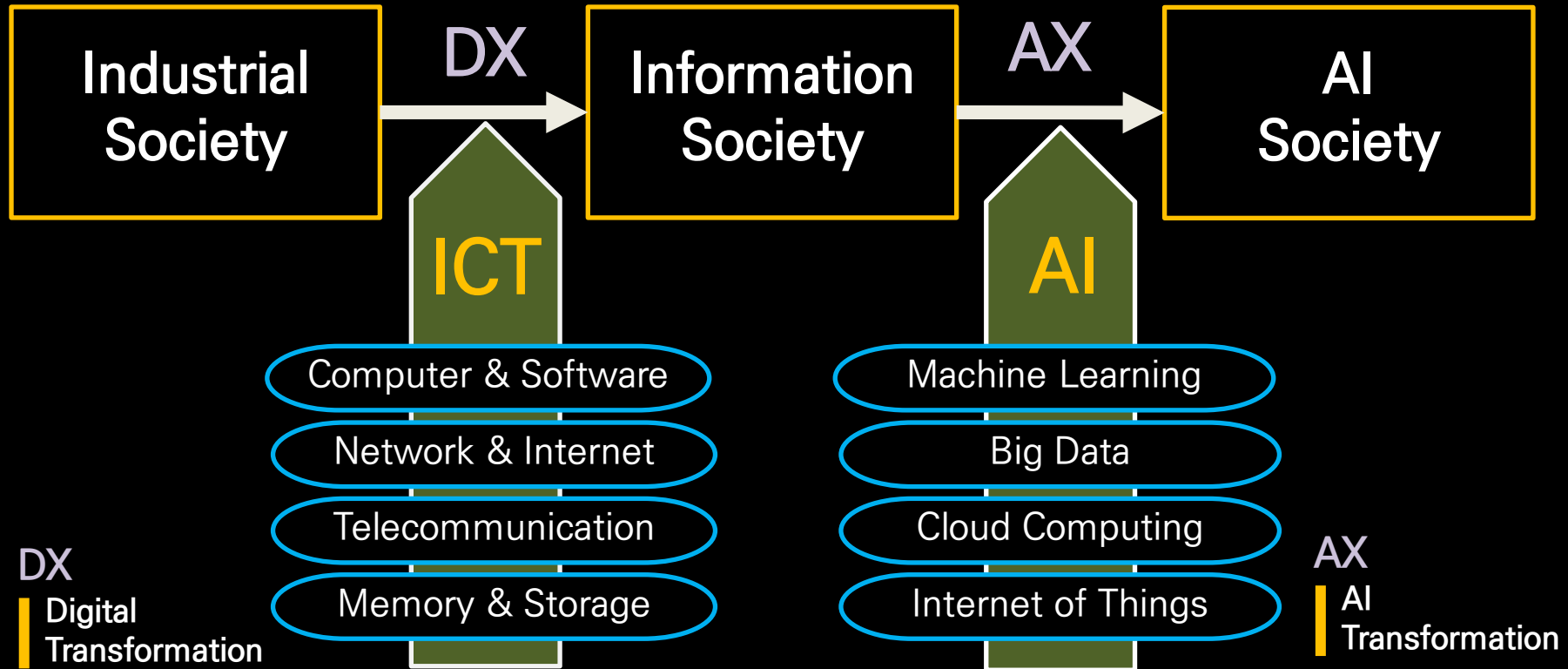
2025 Global
Public HR
Conference

Digital Stewardship of Public Officials for the Successful and Sustainable AI Transformation

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AX vs DX



Technical Understanding of AX



Misunderstanding

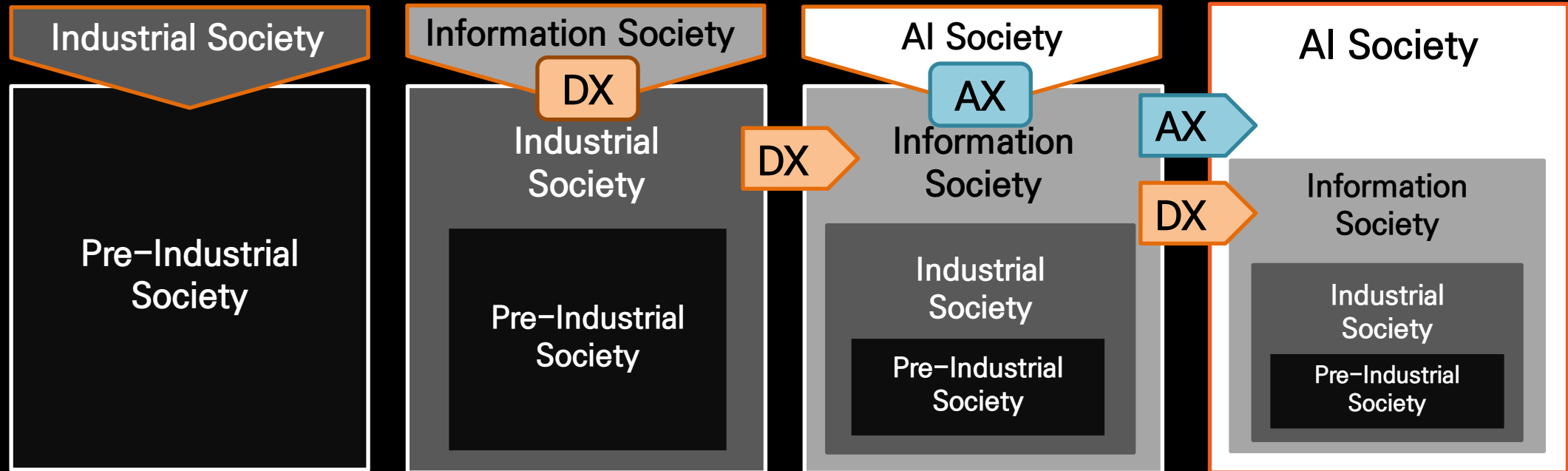
1. AX replaces DX.
2. AX succeeds as technology advances.
3. AX brings far more positive changes.



Understanding

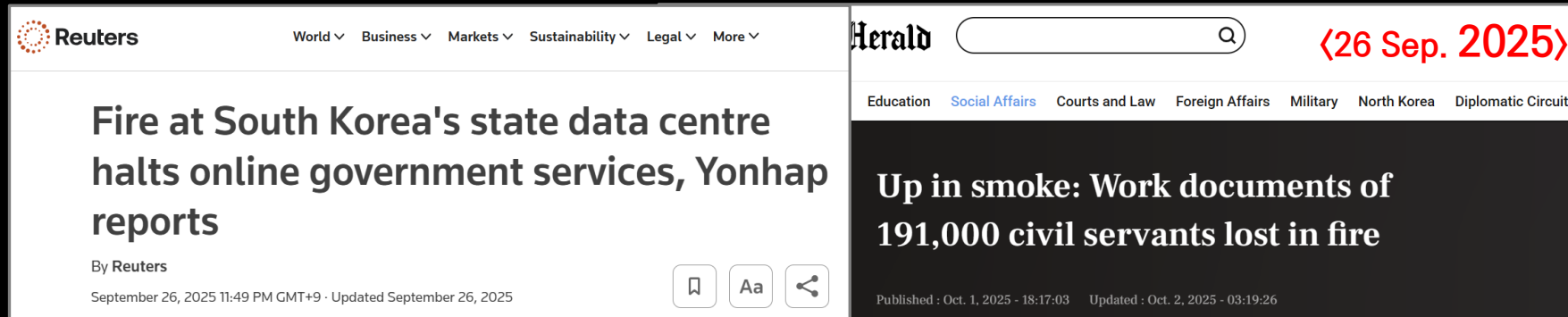
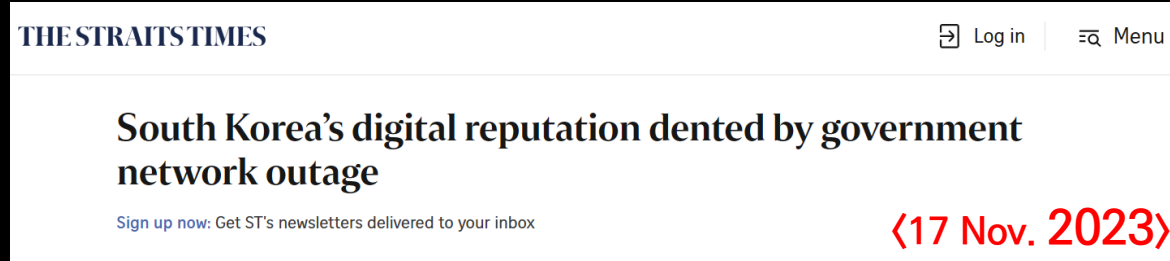
1. AX operates on top of DX.
2. AX succeeds as citizen's trust grows.
3. AX has a stronger duality than DX.

AX operates on top of DX



- **AI** is defined as *software* under EU AI Act (EC's first draft version).

AX operates on top of DX



“The higher the building, the deeper the foundation.”

- Robust ICT infrastructure is **the foundation** of AX success.
- ICT Infrastructure maintenance is **not a cost** — it's a long-term investment **beyond politics**.

AX succeeds as citizen's trust grows

Over the next decade, only about **5%** of jobs are expected to be fully replaced — or even significantly supported — by AI. In the near future, it is **unlikely** that people will entrust real work to AI, because today's systems still suffer from **trustworthiness** issues.

⟨Dec. 2024⟩

The Simple Macroeconomics of AI*

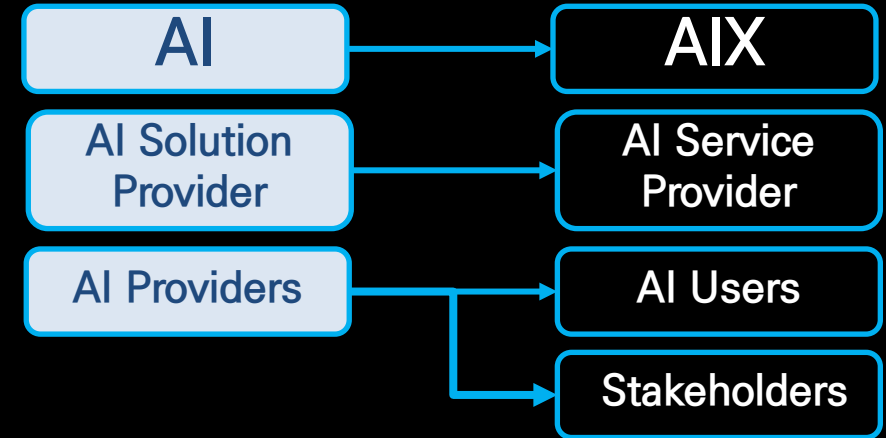
Daron Acemoglu
Massachusetts Institute of Technology
April 5, 2024

Abstract

This paper evaluates claims about the large macroeconomic implications of new advances in AI. It starts from a task-based model of AI's effects, working through automation and task complementarity. It establishes that, so long as AI's microeconomic effects are driven by cost savings/productivity improvements at the task level, its macroeconomic consequences will be given by a version of Hulten's theorem: GDP and aggregate productivity gains can be estimated by what fraction of tasks are impacted and average task-level cost savings. Using existing estimates on exposure to AI and productivity improvements at the task level, these macroeconomic effects appear nontrivial but modest—no more than a 0.71% increase in total factor productivity over 10 years. The paper then argues that even these estimates could be exaggerated, because early evidence is from easy-to-learn tasks, whereas some of the future effects will come from hard-to-learn tasks, where there are many context-dependent factors affecting decision-making and no objective outcome measures from which to learn successful performance. Consequently, predicted TFP gains over the next 10 years are even more modest and are predicted to be less than 0.55%. I also explore AI's wage and inequality effects. I show theoretically that even when AI improves the productivity of low-skill workers in certain tasks (without creating new tasks for them), this may increase rather than reduce inequality. Empirically, I find that AI advances are unlikely to increase inequality as much as previous automation technologies because their impact is more equally distributed across demographic groups, but there is also no evidence that AI will reduce labor income inequality. AI is also predicted to widen the gap between capital and labor income. Finally, some of the new tasks created by AI may have negative social value (such as design of algorithms for online manipulation), and I discuss how to incorporate the macroeconomic effects of new tasks that may have negative social value.

JEL Classification: E24, J24, O30, O33.

Keywords: Artificial Intelligence, automation, ChatGPT, inequality, productivity, technology adoption, wage.



2024 Nobel Prize Laureate in Economics



Daron Acemoglu



Simon Johnson



James A. Robinson

AX has a stronger duality* than DX

2024 Nobel Prize Laureate in Chemistry



David Baker



Demis Hassabis



John Jumper

* **Duality**: the nature of offering both great benefits and significant risks at the same time

More serious than the fear of a **Jobpocalypse** is the challenge of preventing **malicious actors** from gaining access to powerful AI systems.

〈June 2025〉

Successful and Sustainable AX

Understanding

1. AX operates on top of DX.
2. AX succeeds as citizen's trust grows.
3. AX has a stronger duality than DX.

Learning
from past failures

Successful

Sustainable

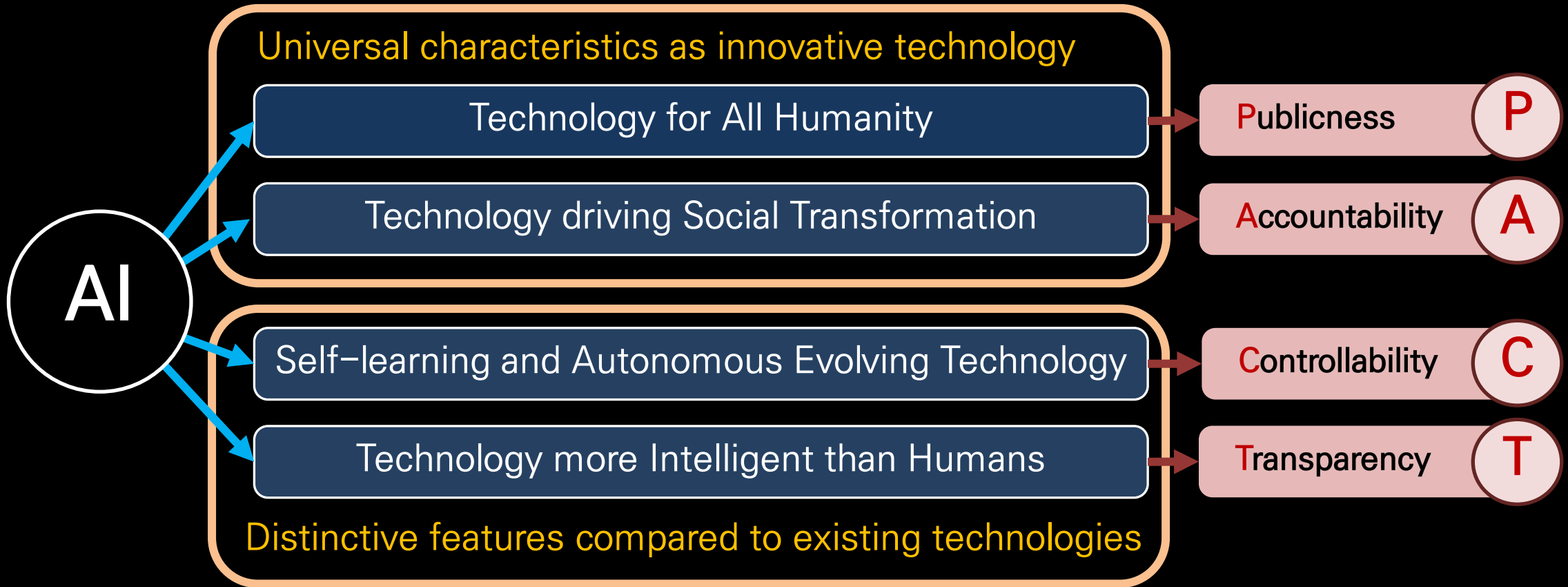
Thinking of
the next generation

AX

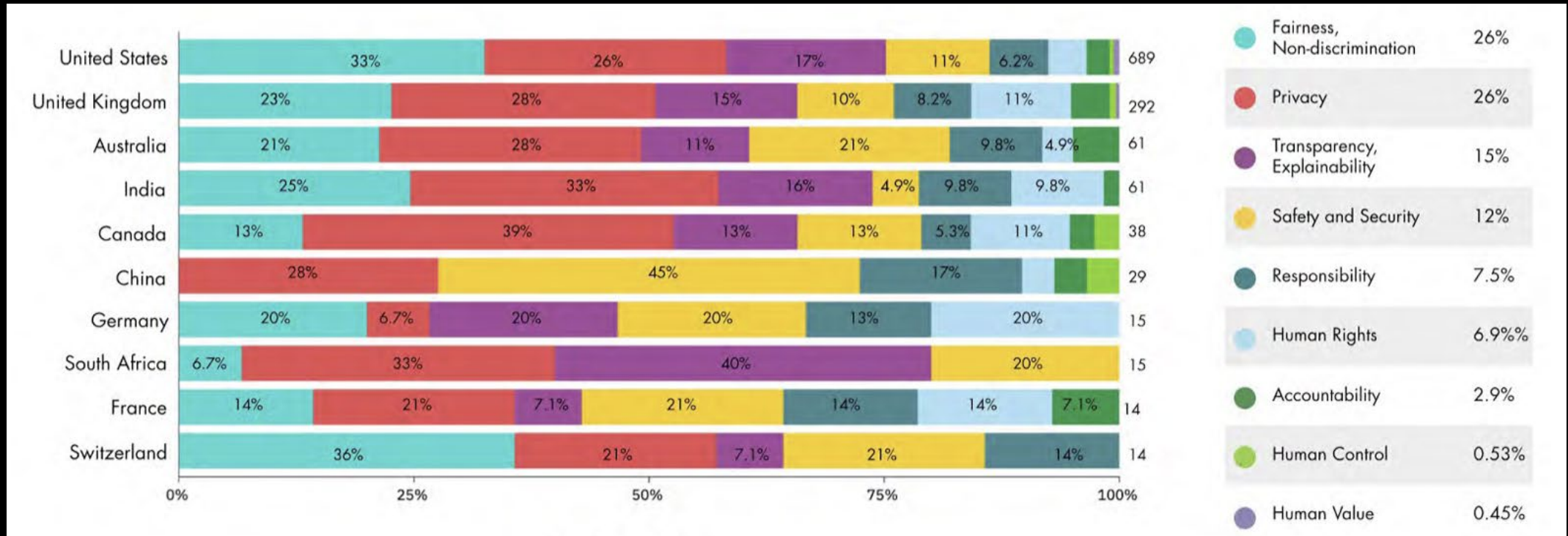
- We need an **ethics-based** approach to mitigate the risks of powerful AI.
- Public officials must define their role
as wise **stewards** with a long-term vision.

AI Ethics Principles Based on the Nature of AI

– Case Study: Korea's First AI Ethics <Seoul PACT> 2018



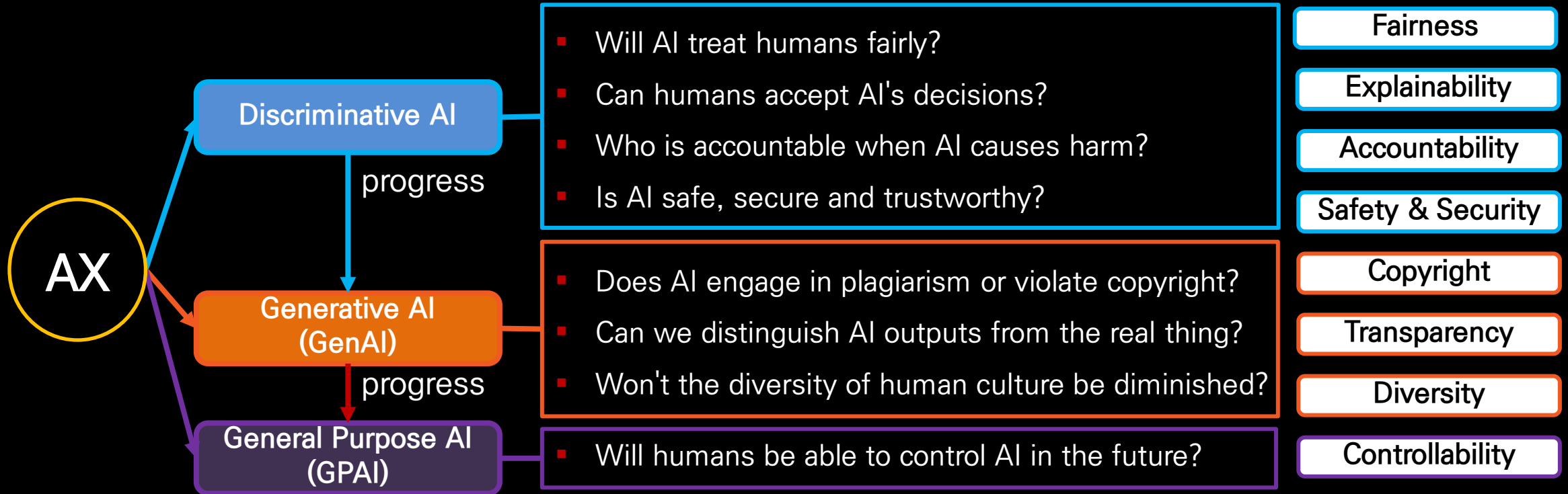
Global Trends in AI Ethics Principles before the Era of Generative AI & GPAI*



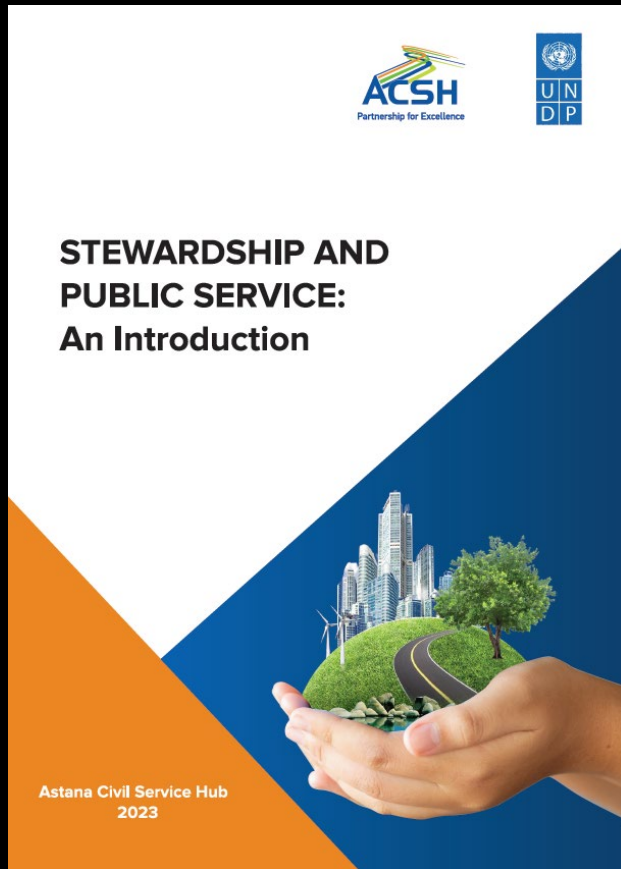
The AI Index Report (2019), Stanford HAI

* GPAI (General Purpose AI)

Evolution of AI Ethics Principles Along with Technological Progress

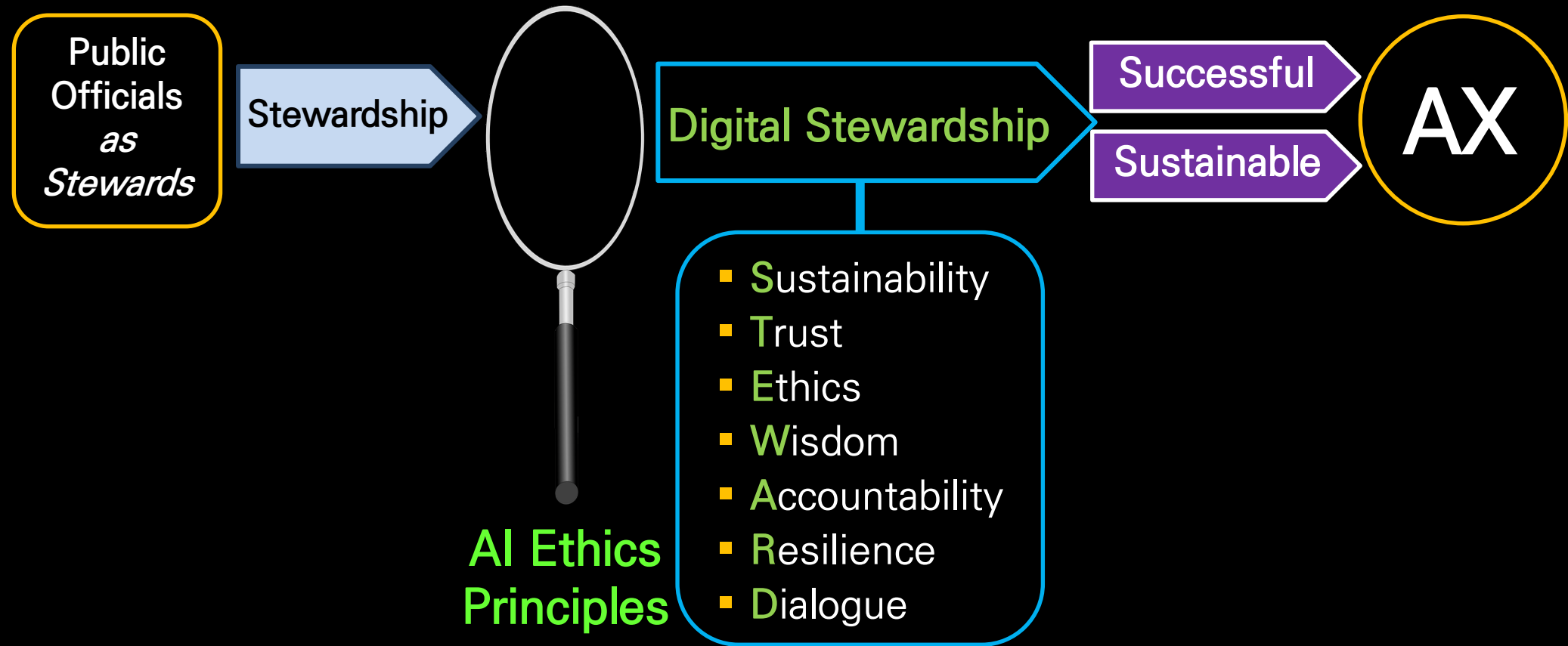


Public Officials as Stewards



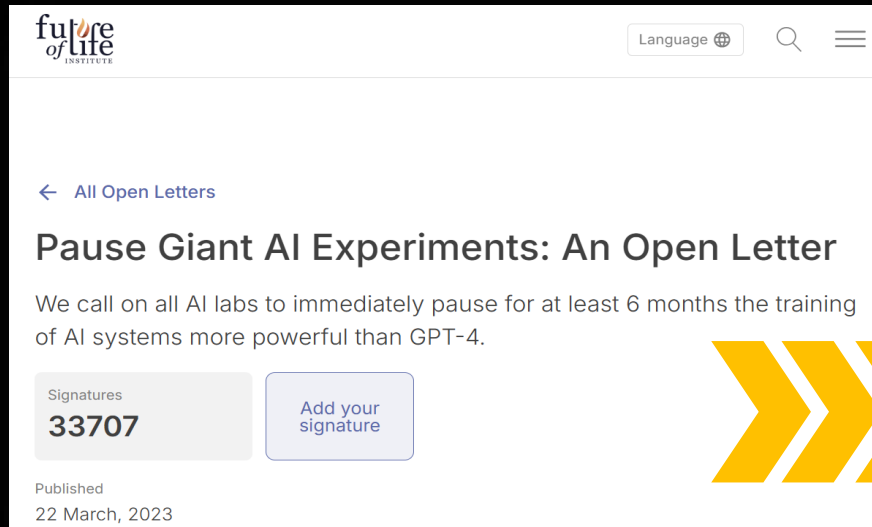
- **Stewardship**
 - Responsible management, over the long view, of assets entrusted for the common good.
- **3 Characteristics of a Steward**
 - A steward has a master who has entrusted them with responsibility. (master ► citizens)
 - A steward is not an owner, but a trustee.
 - A steward must eventually give an account.
- **Public stewardship**
 - Most fundamental aim is to protect the long-term sustainability of a country's system of government.

Digital Stewardship of Public Officials





Sustainability Stewardship



<https://futureoflife.org/open-letter/pause-giant-ai-experiments/>

Let's enjoy a long **AI summer**,
not rush unprepared into a **fall**.

- Intensifying Competition in Frontier and General-Purpose AI
- The Acceleration of AI Governance: Ethics and Regulation

- Think **beyond short-term** performance.
- Every public policy and AI adoption should consider its **long-term social, environmental, and ethical** impact.
- A **preliminary** impact assessment(**IA**) is necessary.



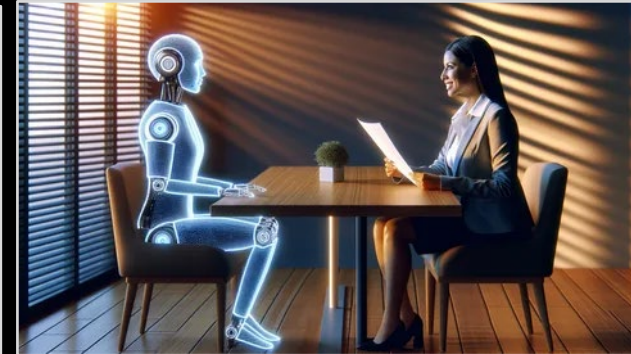
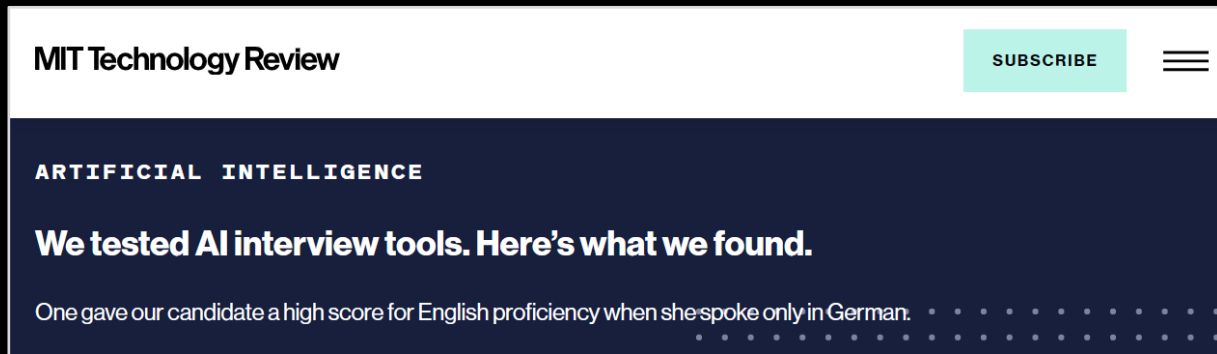
Trust Stewardship (1/2)



- As **custodians** of citizens' data and public resources, public officials must alleviate public concerns about AI use and build **trust**.
- When AI determines citizens' status and rights, public officials must ensure **fairness** and prevent **discrimination**.
- A formal fairness **test** is required before deployment.



Trust Stewardship (2/2)



AI-based Interviewer

AI-based Judge

AI-based Visa Officer

- Public officials must enhance public trust by ensuring **explainability** and **transparency** in AI policy and algorithmic decision-making processes.
- Although technical challenges exist due to the **black-box** nature of AI, explanations should still be provided, even at different levels of detail.
- AI-generated content **detection tools** with low accuracy and no clear basis should not be used



Ethics Stewardship (1/2)



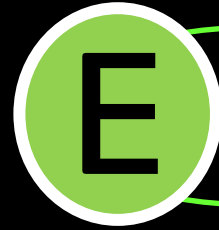
Digital Divide

Digital Inclusiveness
for Digital Disabled

AX

DX

- In all areas of public AI adoption, **human dignity** must come first, and **every citizen** should have equal access to the benefits of AI.
- Bridging the **digital divide** must go beyond access — it must ensure true **inclusiveness** so everyone can share in digital happiness.
- **Able Tech companies** should be supported as part of social welfare initiatives.



Ethics Stewardship (2/2)

2024 Nobel Prize Laureate in Physics



John J. Hopfield



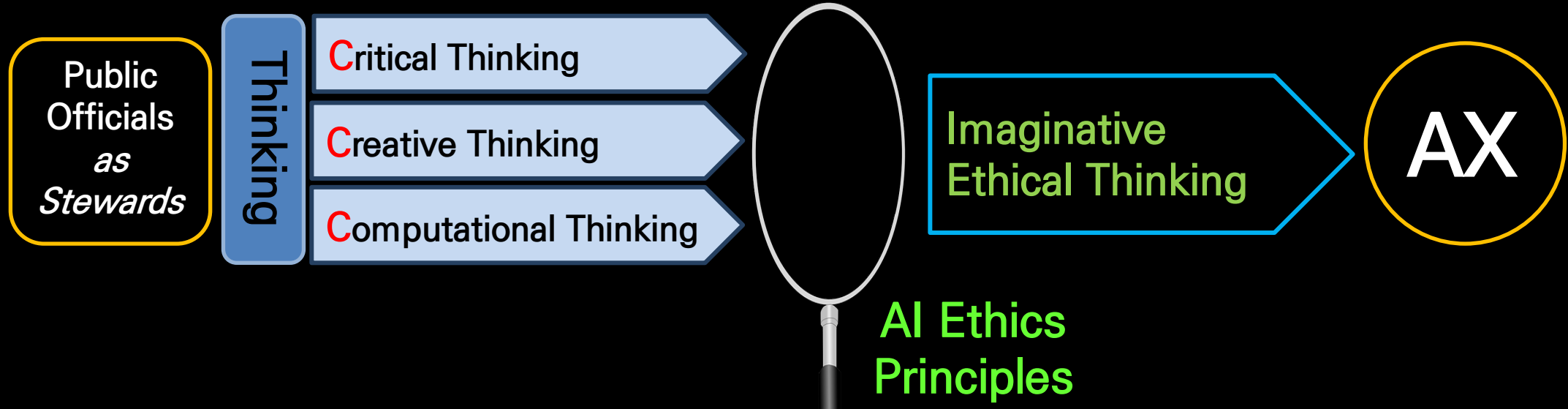
Geoffrey Hinton

AI will bring humanity
unprecedented benefits.
But AI will demand twice the
effort to correct its side effects.
〈May 2023〉

- Public officials must consider both the innovations gained from AI adoption and the policies and measures needed to mitigate its side effects from the very beginning. ► Role Model for AI Literacy
- Because AX is irreversible, ethical imaginations must begin from the very start.



Wisdom Stewardship



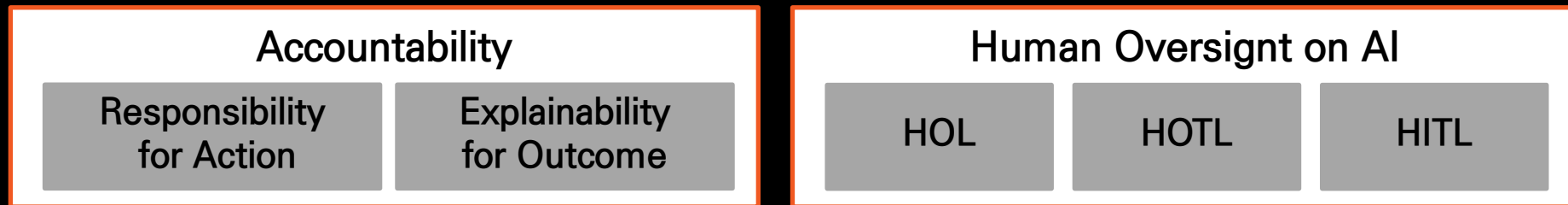
“Direction matters more than strength.”

- Think beyond what others can see.
- Think about how they will affect the people before making policy.



Accountability Stewardship

- Public officials must
 - remain **answerable** for AI-assisted outcomes and
 - uphold the principle of **human oversight**.



- HOL (Human-Over-the-Loop) Humans **design and adjust** AI whenever necessary.
 - HOTL (Human-On-the-Loop) Humans oversee **the overall execution process** of AI.
 - HITL (Human-In-the-Loop) Humans intervene in **every decision-making** stage of AI.
- When the AI's recommendation **diverges from** the public official's judgment, the **ultimate decision** and its **accountability** must remain with *the public official*



Resilience Stewardship

- The capacity and responsibility of *public officials* to **sustain** trust, **adapt** to change, and **recover from disruption** while safeguarding the public good.

Adaptive Governance

- Be agile in redesigning regulations and governance frameworks as AI and digital systems evolve. ► OECD's RIA

Crisis Readiness

- Anticipate, manage, and recover from unexpected disruptions or crises such as AI malfunctions. ► BCP & DRP

Ethical Anchoring

- Uphold moral integrity and ethical standards even under pressure, ensuring that decisions serve the public good.

Continuous Learning

- Learn continuously, not only from success but also from mistakes. ► "Passionate, yet ungrounded in fundamentals."



Dialogue Stewardship

AI connects data;
public officials must connect people.

The strength of **governance** lies
not in authority, but in meaningful dialogue.

- The capacity of *public officials* to **connect** people and **harness** collective intelligence through **collaboration** among government, industry, academia, and citizens during AI transformation. ▶ True Engine of Sustainable AX
- “If you want to go fast, go alone. If you want to go far, go together.”
(African Proverb)
- “In civilized life, law floats in a sea of ethics.” (Earl Warren, 1918–1973)
 - **Laws** may come from the minds of a few, but **ethics** arise from the hearts of many through dialogue, empathy, and understanding

Closing Remarks

- **Public officials** are called to serve as **stewards**
 - A concept shaped by global efforts from UNDP and OECD
- As our society enters the stage of AI Transformation (AX), we must redefine **stewardship** through the lens of **AI ethics**.
- **Digital Stewardship**, composed of 7 key virtues
 - Sustainability, Trust, Ethics, Wisdom, Accountability, Resilience, and Dialogue ► together forming the word “**STEWARD**”
- Further works
 - define each stewardship more precisely
 - develop ways to nurture these stewardships