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25 Years Anniversary

Unlocking the Uncertainty

How does AI affect job markets

BUSI4658 - FinTech Regulation and Data Protection

2026.04.10

University of Nottingham

THE HOOK & SITUATION

Hollywood’s 2023 strike made AI a labour issue

The first iconic AI labour dispute was about control over creative work, likeness and voice.

SAG-AFTRA strike
Los Angeles, July 2023

Human labor has erupted in systemic resistance for the first time due to AI usage rights

Phenomenal Collision

Non-Traditional Pay Dispute

The SAG-AFTRA strike in mid-2023, which has shut down the film and television industry, **centers on access to artificial intelligence** rather than traditional disputes over pay and contract terms.

Core Pain Points

Screenwriters are concerned that AI-generated content will devalue human creativity, while actors are protesting against **unauthorized digital replication of their portraits and voices**. The digital rights of workers are facing unprecedented threats.

Strategic Insights

The structure of the labor market is by no means determined by technology alone; **regulatory arrangements and interest distribution mechanisms are equally critical**. This strike reveals the deep logic of employment governance in the AI era.

THE HOOK & SITUATION

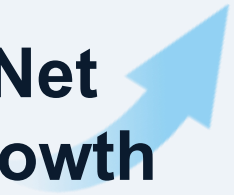
A macro paradox hides a structural mismatch

The labour market can show net job growth while still failing millions of workers in transition.

40%

Global employment exposed to AI impact according to IMF framing.

Net growth



WEF expects total jobs to increase between 2025 and 2030.

01 Skill Structure Mismatch

There is a **severe mismatch in skill requirements** between disappearing positions and newly created ones, making it difficult for laid-off workers to directly fill new roles.

02 Spatial Distribution Imbalance

Emerging positions are concentrated in tech hubs, while **traditional manufacturing regions face the risk of hollowing out.**

03 High Transition Costs

Cross-industry adjustment costs are extremely high, and workers require extensive retraining to adapt to new positions.

! Macro statistics ignore actual transition resistance; surface prosperity masks fatal structural imbalances.

Capital is flowing towards heavy assets, not white-collar absorption

The HALO investment into data centres, energy systems and chips — while squeezing knowledge-intensive work.

$650B+

Massive Investment

It is projected that the capital expenditure of the five major US tech giants in 2026 **will exceed $650 billion**, potentially surpassing the cumulative investment before the AI era.

A Goldman Sachs report points out that AI is driving capital to shift towards **"Heavy Assets, Low Obsolescence (HALO)"** sectors, with tech companies making massive investments in **data centers, energy networks, and semiconductors.**

Job Creation

Heavy asset investment creates **physical infrastructure positions**: data center construction, grid expansion, cooling systems engineering

Replacement Pressure

Intensifies **knowledge worker automation**: software engineers, IT services, data analysis

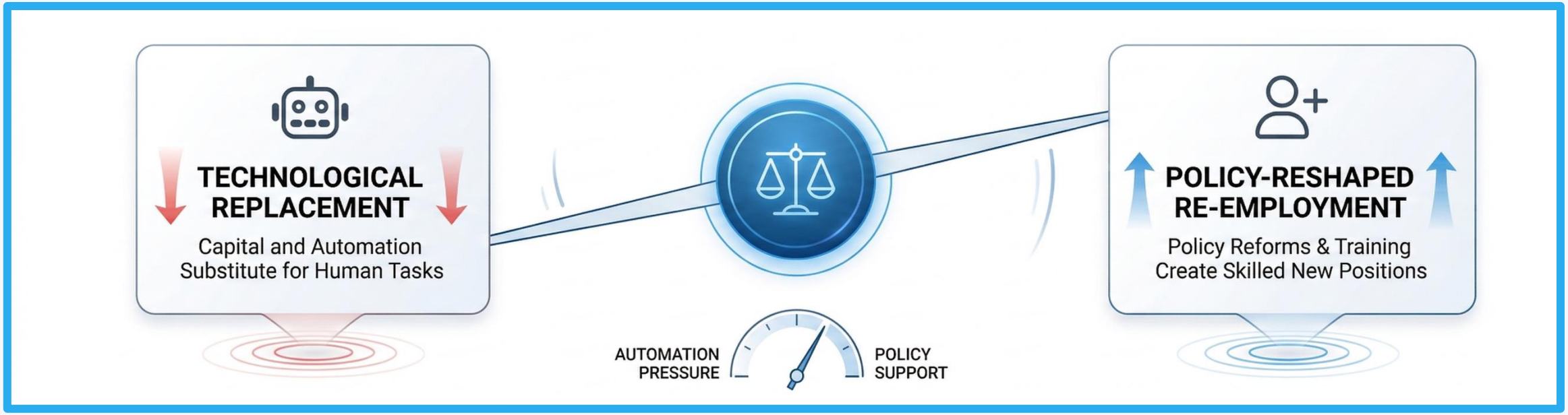
Class Divide

This capital flow is ruthlessly **squeezing the living space of knowledge workers**, exacerbating class division.

The end point of technology is institutional design

AI employment outcomes are path dependent: the balance between substitution and re-employment is politically shaped.

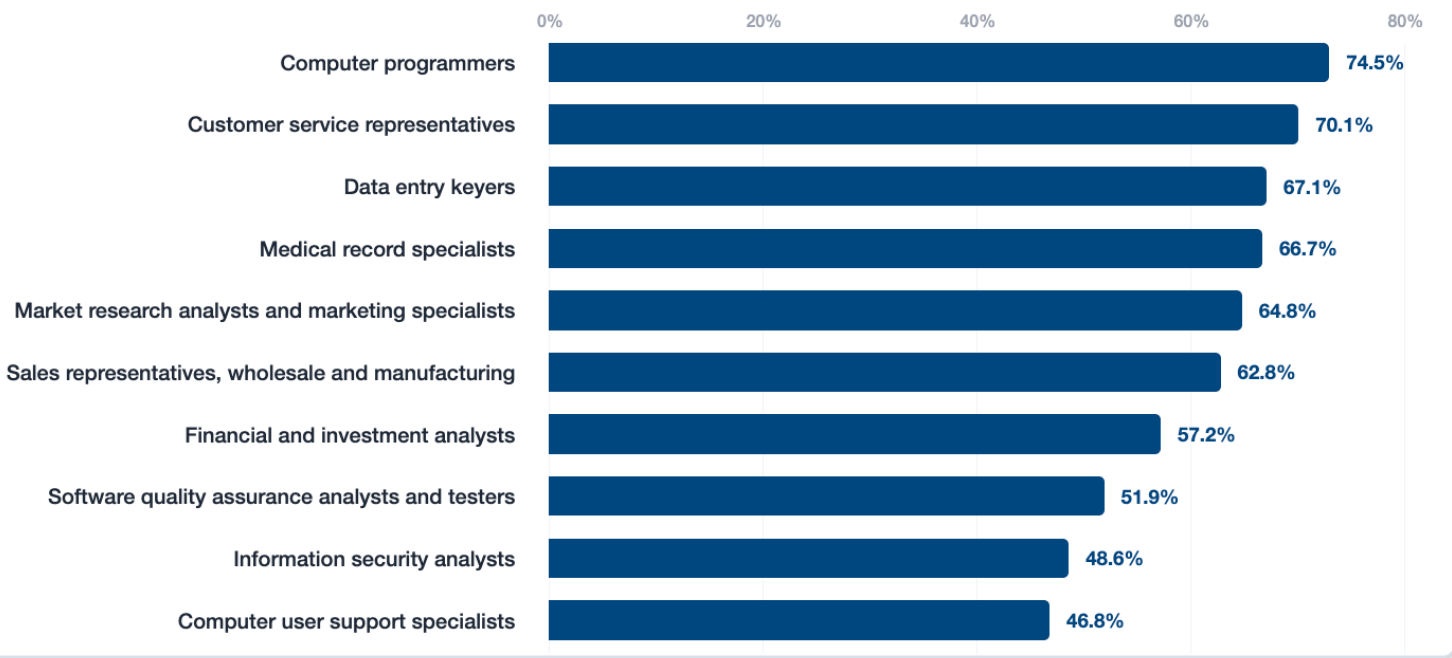
The impact of AI on employment shows ***significant path dependence***
and its final effect depends on regulatory policies, labor market institutions and social security arrangements.



> ***The core task is to balance technological innovation and distribution effects, alleviating the pressure of structural transformation.***

The labour impact of AI travels through four mechanisms

AI is not only a substitute: it can automate, complement and also create entirely new decision tasks.



Safe Haven

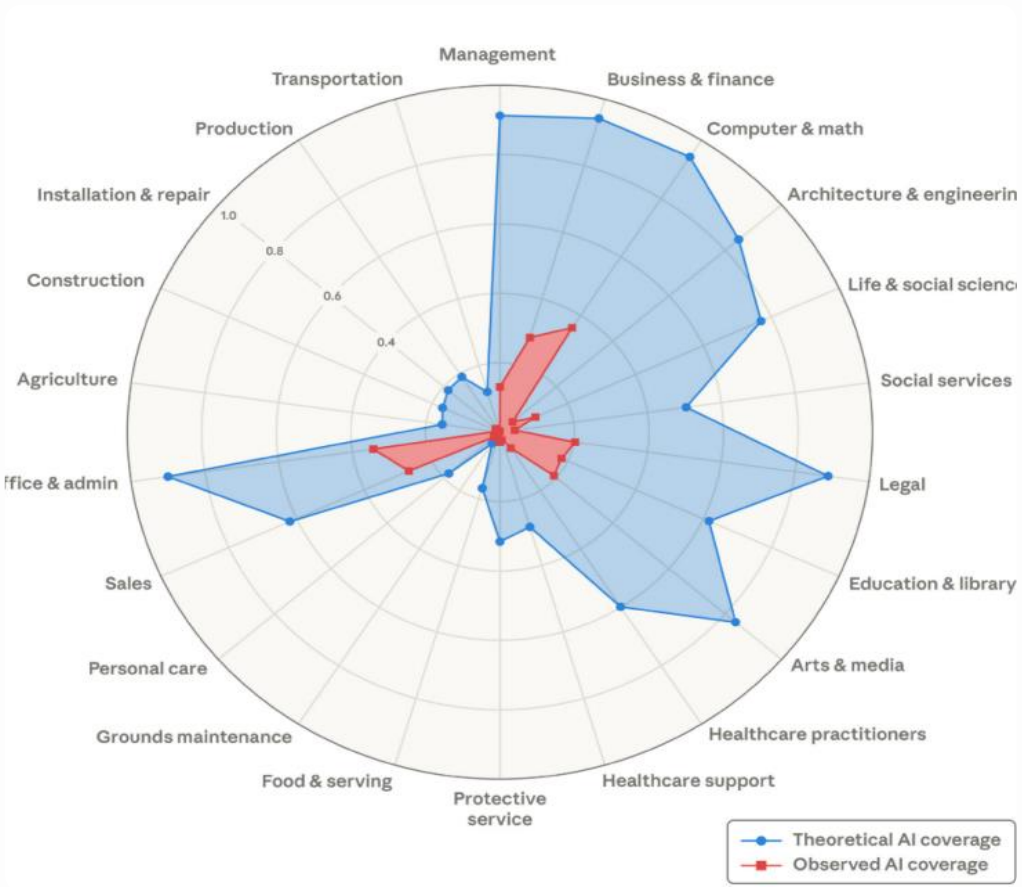
Professions requiring high flexibility, on-site adaptation, and face-to-face service show zero observed exposure

- **Chef**
  On-site operational flexibility
- **Maintenance Worker**
  Complex fault diagnosis
- **Bartender**
  Interpersonal interaction services
- **Lifeguard**
  Real-time situational judgment

Occupations that consist of routine, coding, and information processing tasks are highly susceptible to automation and face higher technology exposure, shattering the traditional perception that automation mainly affects low-skilled workers.

A strategic window exists between capability and deployment

The biggest policy opportunity lies in the gap between what AI could do and what firms have actually implemented.



94%
Theoretical Coverage

33%
Actual Coverage

61% Application Lag

Policy Leverage Points

Legislative Intervention
Formulate forward-looking AI employment regulations

Skills Training
Launch **large-scale retraining programs to** reduce the structural unemployment.

Corporate Transformation
Promote enterprises to **redesign workflows** achieve human-AI collaboration

IT'S TIME TO ACT!

Mechanism Deconstruction

A Four-Fold Theoretical Transmission Model of How AI Reshapes the Employment Landscape

01 Substitution Effect

When AI can **complete prediction tasks at a lower cost**, it will directly replace routine cognitive work

Affected Positions

Data entry clerks, basic customer service, junior analysts

02 Complementarity & Enhancement

When AI takes over prediction work, it **highlights the value of humans in the decision-making process**, such as outcome evaluation, risk trade-offs, and ethical judgment

Beneficiary Groups

Doctors, senior lawyers, corporate executives

03 Automated Decision-Making

When **prediction accuracy and feedback speed meet standards**, the entire decision chain can be automated, achieve fully autonomous operation.

Typical Case

Autonomous driving technology

04 New Decision-Making Tasks

By **reducing uncertainty**, AI can commercialize scenarios previously difficult to achieve

Emerging Professions

AI trainers, algorithm auditors, data ethics officers

Business Transmission

Three Dominant AI Business Models and Their Differentiated Employment Shockwaves

Upstream

01. Technology Output Model

Core Capability
Licensed large models, APIs, automation tools

Employment Effect
Dominates "**substitution effect**", eliminating repetitive cognitive positions

Geographic Distribution
US, EU, Japan

Representative Enterprises
OpenAI, Google, Anthropic

Middle stream

02. Platform Model

Core Capability
Intelligent recruitment, algorithm matching, skills assessment

Employment Effect
Dual effect, creating gig work but triggering algorithmic exploitation

Geographic Distribution
Global, especially ASEAN

Representative Enterprises
Grab, Gojek, Uber

Downstream

03. Integrated Solutions

Core Capability
End-to-end AI transformation, process automation, employee retraining

Employment Effect
Dominates "**new task creation**", deriving positions such as AI transformation consultants

Geographic Distribution
Global, especially ASEAN

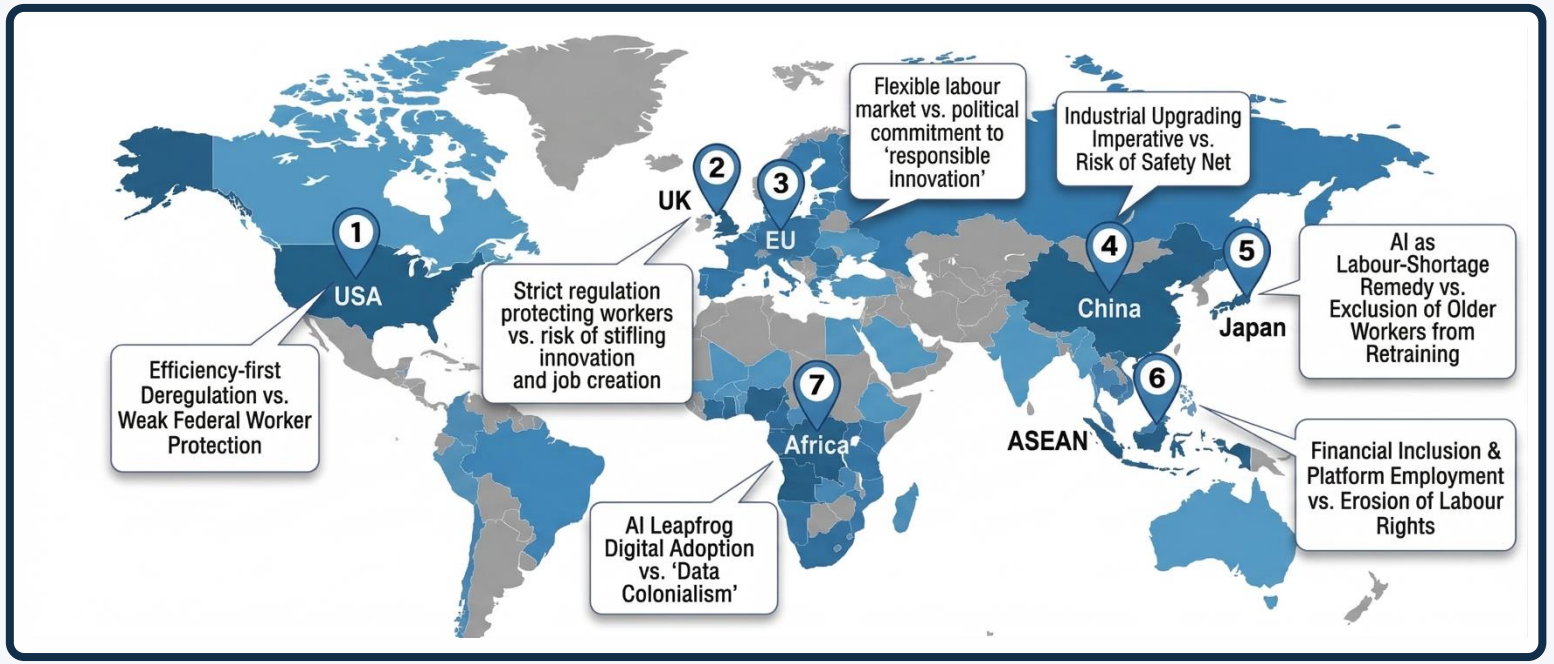
Representative Enterprises
Grab, Gojek, Uber

An economy's position in the industrial chain determines the specific form of AI's impact on its employment market.

THE COMPLICATION

Governance Failure

Three Major Systemic Defects Facing Current AI Labor Market Regulatory Frameworks



⚠ *Systemic Collapse:*

Regulation is not only lagging behind technology diffusion but is also creating huge arbitrage spaces on a transnational level.

01 Passive Regulation

Current Status

Current labor laws focus on **financial compensation after layoffs**.

Only providing relief after unemployment occurs, lacking forward-looking prevention mechanisms.

02 Extremely Narrow Vision

Current Status

The EU AI Act only regulates **individual-level recruitment decision-making algorithms**.

Focusing on compliance review of individual decision points.

03 Execution Gap

Current Status

Globally **lacks unified standards**, with some regions only having voluntary guidelines.

Regulatory fragmentation, with uneven enforcement.

THE COMPLICATION

Global Status Map

Policy Tensions in Seven Major Economies Responding to AI Employment Shocks

US	Tech Leadership	Tech Giants Dominate	Tech Output + Platform	Efficiency vs Protection	Deregulation	Federal Fragmentation
UK	Strong Financial Creativity	High Service Sector AI Penetration	Tech Output	Flexibility vs Responsibility	Soft Law	Union Rights Game
EU	Regulation First	GDPR + AI Act	Tech Output	Rights vs Innovation	Hard Law	Fines €35m/7%
China	Dual-Engine Growth	Manufacturing + Platform	Full Chain Coverage	Upgrade vs Employment	Hard Law	Gig Safety Net
Japan	Human-Machine Collaboration	Extreme Aging	Tech Output	Remedy vs Training	Soft Law	Elderly Training
ASEAN	Fast Digital Economy	Large Gig Population	Platform-Dominated	Inclusion vs Exploitation	Soft Law (Voluntary)	BPO Threat
Africa	Leapfrog Adoption	Leading Mobile Payments	Data Labeling	Development vs Colonialism	Incapacity	Insufficient Regulatory Capacity

Common Challenges

All seven major economies face the common challenge of **regulation lagging behind technology**, but core contradictions vary due to economic structure.

Divergent Demands

Advanced Economies: Protect white-collar workers and alleviate youth employment stagnation

Developing Economies: Prevent AI from exacerbating inequality; avoid becoming global "data laborers"

AI employment governance requires a dual-track approach: National strategies targeting local economic characteristics + Transnational coordination frameworks

THE COMPLICATION

Regulatory arbitrage

When rules differ sharply, multinational firms can move the riskiest AI deployments to the weakest jurisdictions.

"Data Colonialism" Abyss

Marginal Zone Risks

Regions like Africa face the abyss of becoming **"data colonialism"** for global AI companies to extract cheap data labeling labor.

Vulnerable Conditions

Global tech giants hire **data labelers at extremely low costs** in Africa, with unstable working conditions and a lack of labor protection.

AU Strategy Limitations

Although the African Union's Continental AI Strategy has laid a governance foundation, it **lacks enforcement capacity and funding support**.

Regulatory Arbitrage

Lack of Unified Coordination

Lack of unified regulatory coordination mechanisms has led to a surge in transnational regulatory arbitrage, with fragmented rules creating arbitrage opportunities.

Corporate Strategies

Multinational corporations tend to **exploit rule differences**, intensively deploying high-risk AI tools in regions with the weakest legal binding force.

Arbitrage Routes

Compliant products go to Europe, **high-risk testing is thrown to Africa/Southeast Asia**; localized regulation cannot prevent transnational capital from striking down.

Warning Signals

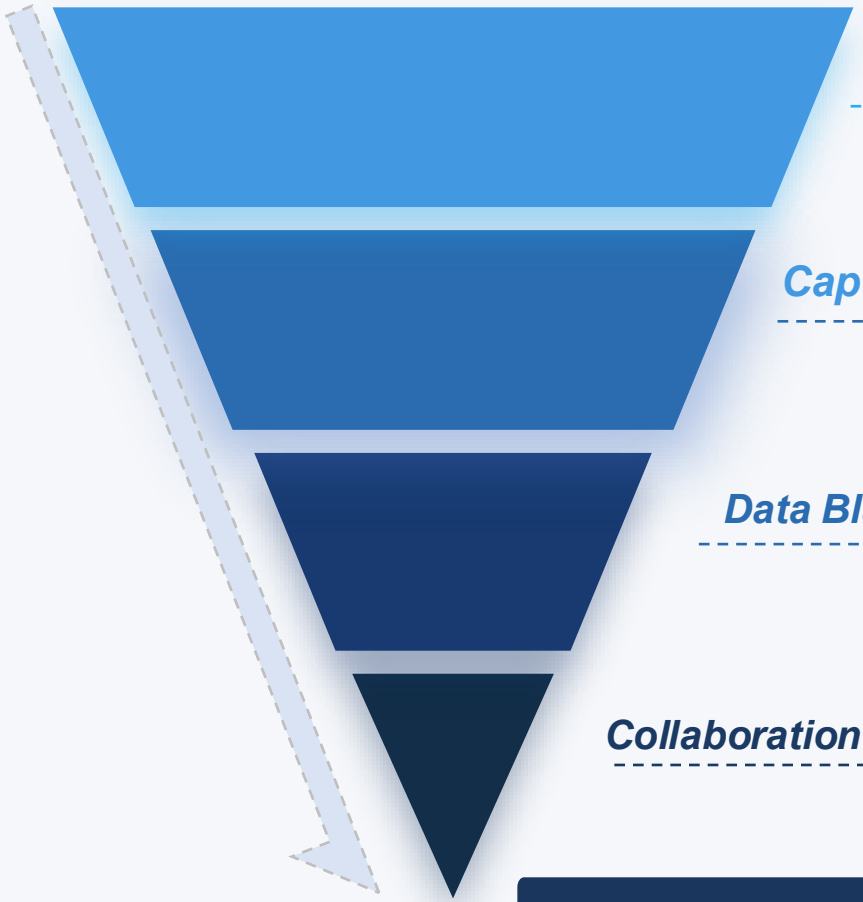
Everyone playing by their own rules has led to an extremely fatal vulnerability.

Developing Economies Need to Be on Guard

Developing economies need to strictly prevent AI from exacerbating inequality and avoid becoming **"data laborers"**.

The regulatory failure has four root causes

The problem is not only legal lag: it is also about capability, transparency and coordination.



Legislative Lag

Problem: Globally **lacks dedicated AI employment legislation**

Consequence: Workers lack redress channels when facing unfair AI decisions

Capacity Shortage

Problem: lacks **professional tools** to monitor the impacts

Consequence: Skills training is disconnected from market demand, accelerating the risk of structural unemployment.

Data Black Box

Micro: workers unaware performance algorithms of **"black box" logic**

Macro: Data from various institutions **lacks sharing**, hindering global labor market insights.

Collaboration Failure

Domestic: Administratively fragmented, information not being shared

International: Lack of **unified coordination mechanisms**, with **regulatory arbitrage** becoming increasingly rampant.

What Are We Fighting Against? Four Mountains

Breakthrough Architecture: RegTech Ecosystem

Shifting from Passive Administration to Proactive Data-Driven

automatic algorithm filing and audit system	Employment Tracking Platform	Employee Grievance Platform	Cross-Border Collaboration Platform
System	***Platform***	***Platform***	***Platform***
Source compliance verification	Scrapes global recruitment data	Employees can challenge automated decisions	Real-time synchronization of information across departments
Combined with internal and external automated audit	Accurately identifies high-substitution-risk industries	Standard appeal pathways	International audit consensus
Improve accuracy	Develops real-time early warnings	Breaks the algorithmic black box	Plugging transnational arbitrage

> In the face of systemic debacle, the traditional document has become ineffective.The only solution:
>
> **A RegTech ecosystem.**

Paradigm Shift

Shifting regulation from **passive administrative processes** to **proactive data-driven systems**

- RegTech -

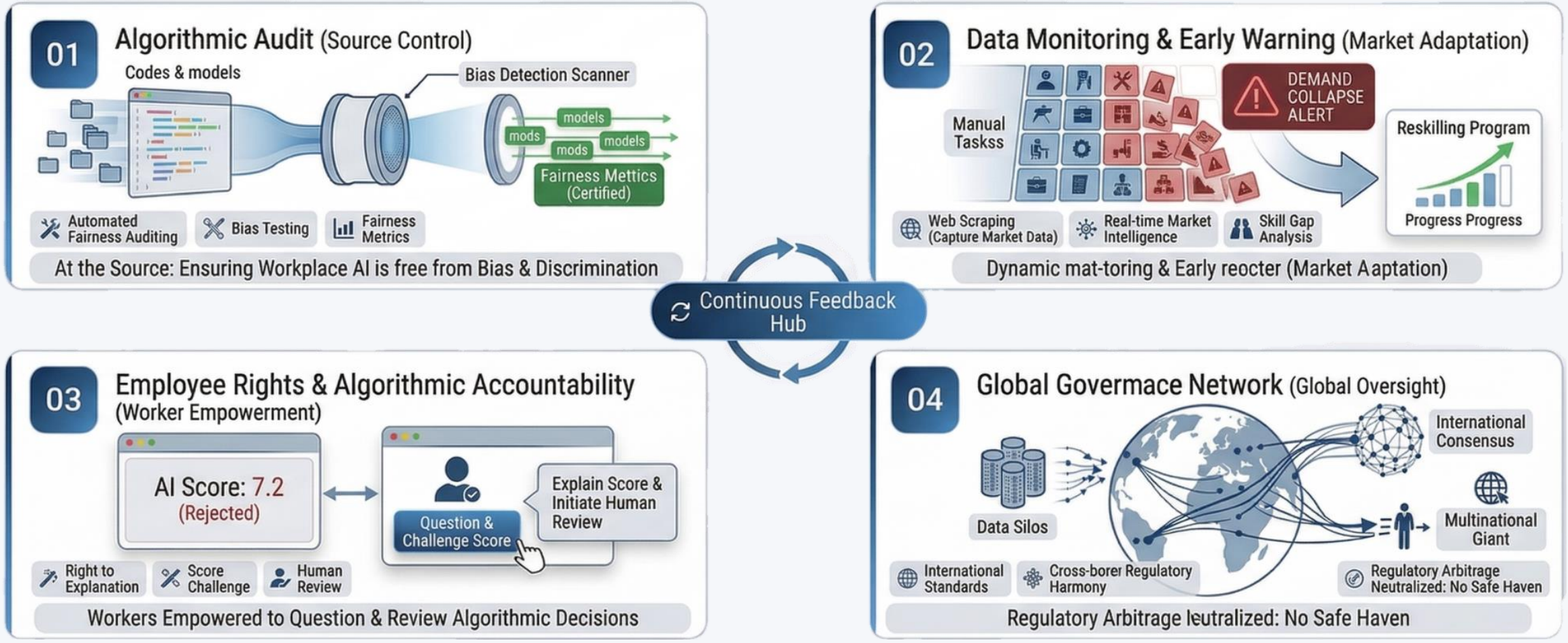
Tech vs. Tech

Use **technology's magic** to defeat technology establish a data-driven intelligent regulatory ecosystem

THE RESOLUTION

Breakthrough Architecture: RegTech Ecosystem

A Synergistic Framework for Source Control, Market Adapation, and Global Oversight



Source Control | **Early Warning** | **Worker Empowerment** | **Global Oversight** — **Building Trust**

THE RESOLUTION

What governments and enterprises should do next

Buffer periods, retraining obligations and transparency requirements convert abstract governance into operational policy.

State Intervention

Mandatory Buffer Period

Mandate a **6-12 month buffer period** for occupations with an exposure rate exceeding 50%.

Automation Tax

Promote the implementation of an **"automation tax"** to provide continuous funding support for transition guarantee programs.

Social Security Reform

Expand the coverage of unemployment insurance to include **AI-related unemployment in the safety net.**

Corporate Responsibility

Information Disclosure

Tech output companies must **publicly disclose affected occupations and transition resources** before release.

Algorithm Transparency

Platform companies must **ensure algorithmic mechanism transparency**, publicly disclosing scoring and appeal processes.

Retraining as Standard

Make **employee retraining a standard component of AI transformation,** included in the standard components of transformation services.

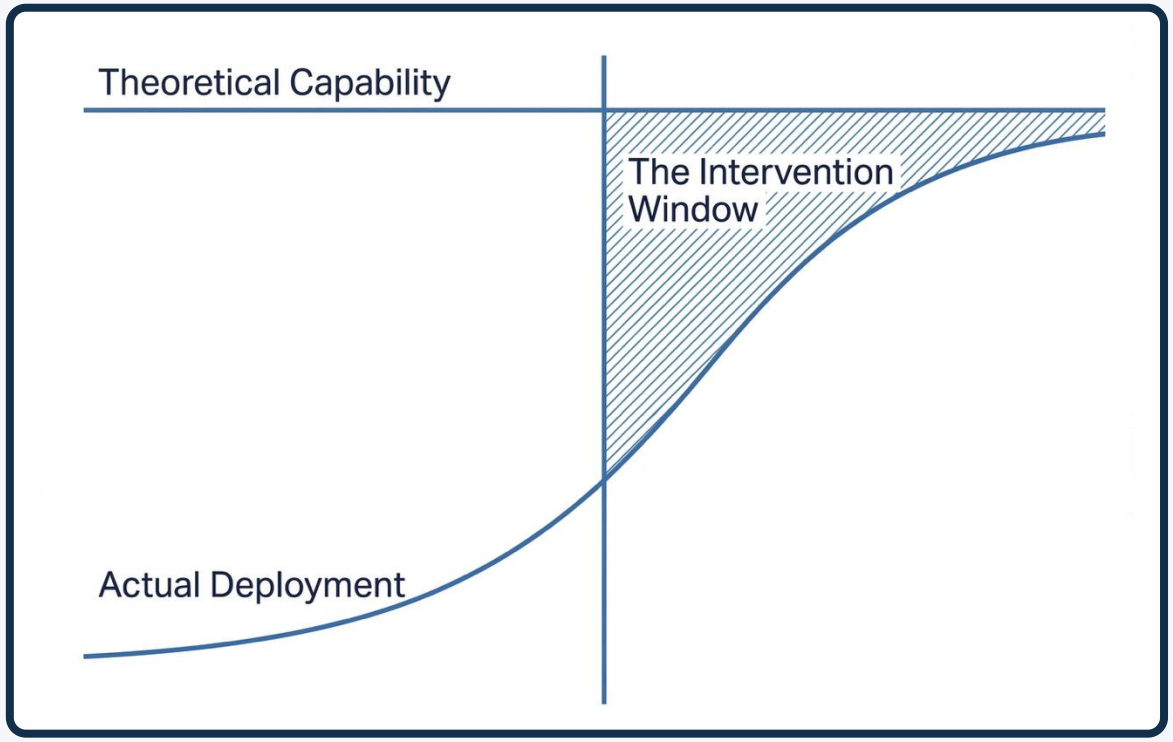
Reduction in Layoffs ***-58%***

Increase in Employee Retention ***+42%***

THE CONCLUSION

Seizing the Strategic Moment

Closing the Deployment Gap to Shift Governance from Passive Compensation to Proactive Oversight



Strategic Timing

Policy and technology must evolve simultaneously; AI's **"application lag"** leaves a strategic window for reshaping rules. The 61% gap is our last chance.

Paradigm Shift

Multi-dimensional algorithm auditing and real-time tracking shift governance from **passive compensation to proactive intervention**, from administration to data-driven approaches.

Take ownership of technology, restore distributive justice and economic resilience

Vision

“

The employment landscape in the AI era

should never be determined solely by technological forces.

What ultimately determines the future

is not the computing power in servers,

but the wisdom and warmth of our institutional design.

”

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Thank You for Listening

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