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AI Governance: Overcoming the Problems of AI : Regulation & Alternatives Approaches-

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Presentation Overview

- Problems
- US Regulation
  - Executive Orders
- International Treaties
- Positives of AI
- Alternatives to Regulation
  - Self-Regulation
  - Market Competition
  - Common Law Approach
  - Public Ownership, Public Utility, Public Support


DANGER OF
ARTIFICIAL
INTELLIGENCE

Potential Negatives

By AI

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Harms to Society

- Human loss of control
- Bias in algorithms
- Class divide
- Environmental impact
- Disruptive cultural change
- Weakening domestic culture
- Increase in sensationalism and content of sex, violence, and hate
- Further monetization of basic human activities
- Unaccountable and non-transparent curators and algorithms

Harms to Individuals

- Reduced personal knowledge and analytical abilities
- Fantasy and reality intermingling
- Addiction to online activities
- Loss of individuality, empathy, creativity
- Manipulation by businesses, including in advertising
- Violations of personal safety, privacy, security, identity

Harms to Democracy

- Electoral politics even more money-dominated
- Disinformation and fakes
- Governmental and private platforms restricting speech on controversial issues
- AI information bubbles
- Governmental surveillance, monitoring, and refined control mechanisms
- Unintended military actions

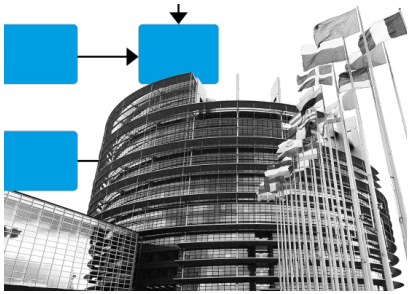
Harms to the Economy

- Loss of control over the financial system.
- Loss of employment
- Limited Interoperability of AI platforms
- Unreliable information and conclusions
- Theft of intellectual property

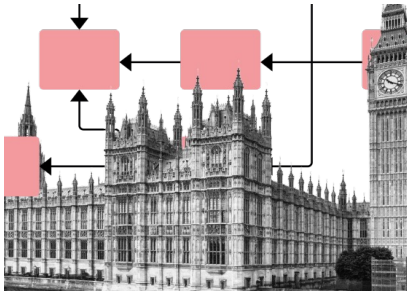
Harms to Competition

- Global market power by AI platforms over an all-controlling technology
- Vertical integration of content and conduit
- Favored use of sponsored content
- Limited presence of non-profit AI
- Individualization potential creates refinements in discrimination and manipulation

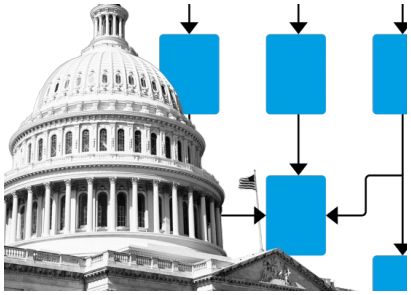
Approaches to AI Regulation



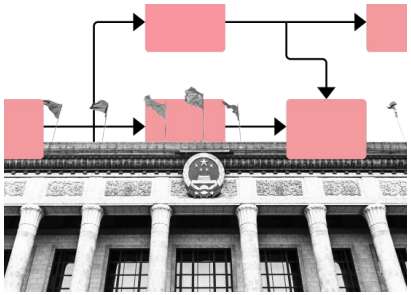
• 1. EU



2. UK



3. U.S.



3. China

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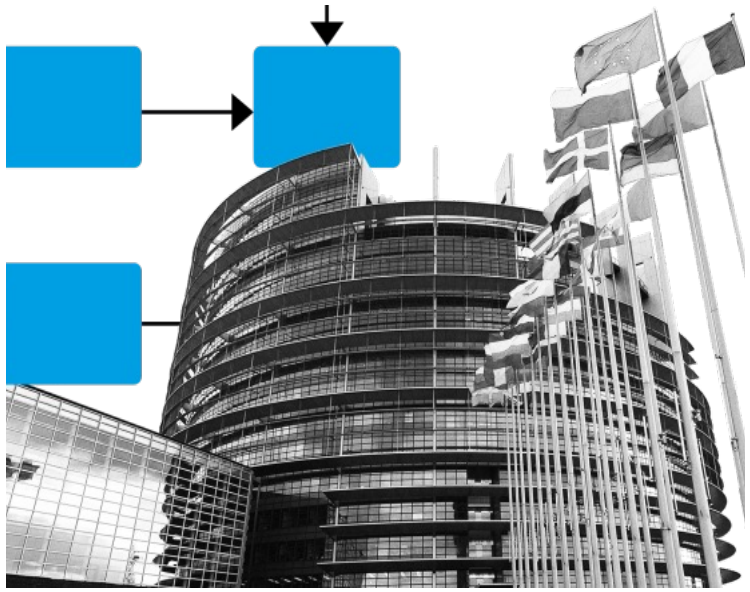
The EU AI Act

— Approach:

- Regulates underlying technology



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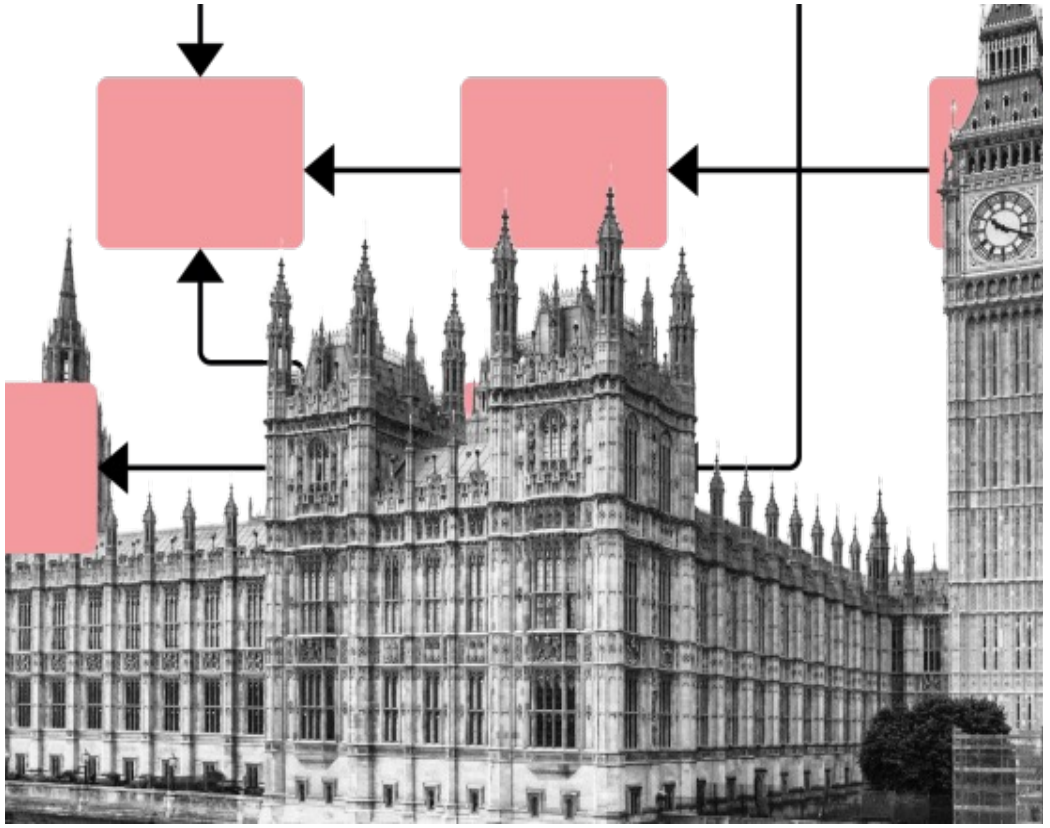
The UK approach

- Investigates regulation of AI by sector
- Regulates how AI is used, not software itself



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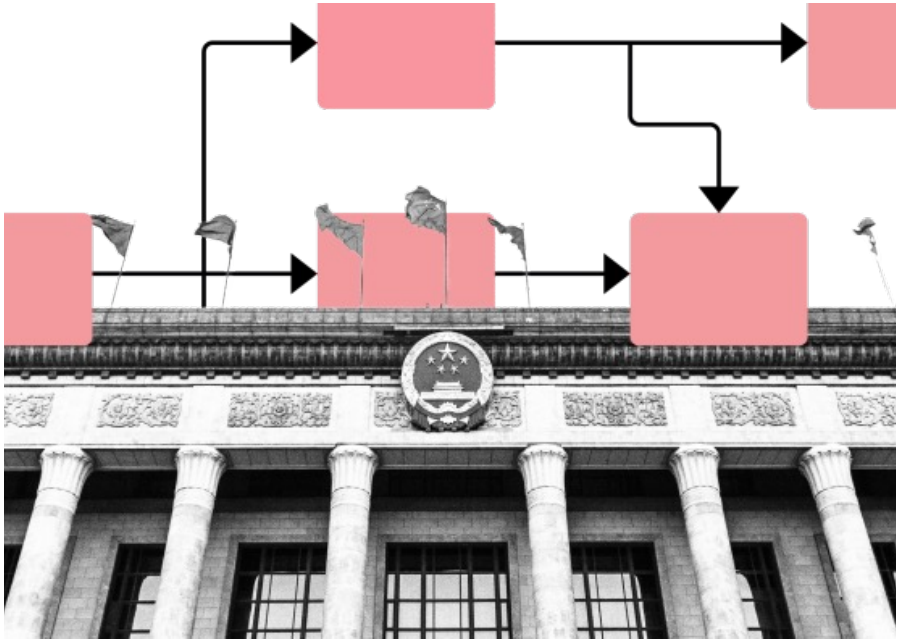
The China Approach

- Targeted regulation
- Focus on recommendation algorithms & AI



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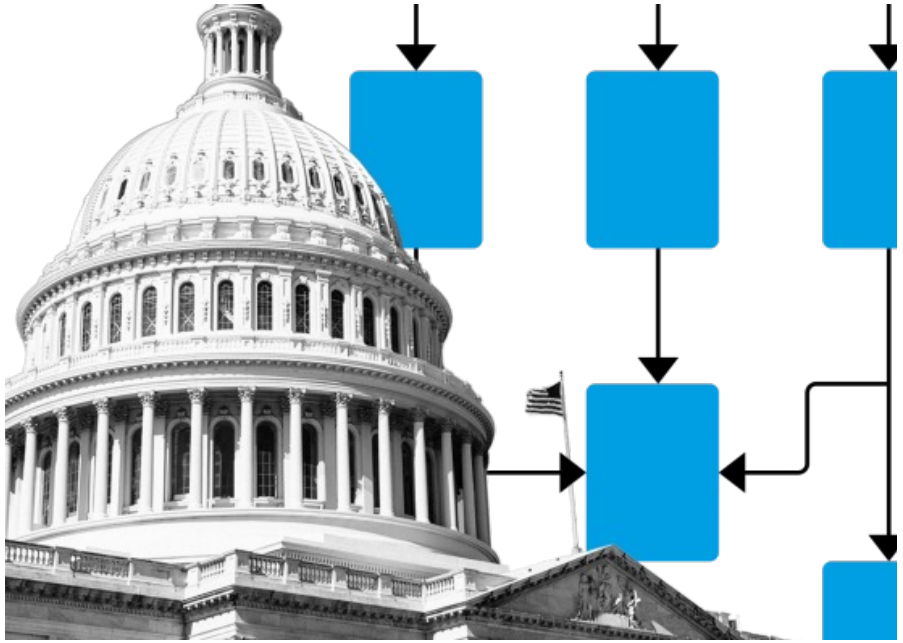
The U.S. Approach

- Self-regulation
- Executive Orders
- State Regulation



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Executive Order 13859

Maintaining American Leadership in Artificial Intelligence

President Donald Trump, February 11th, 2019

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Principles of the EO

- Work to invest in R&D for the development of AI across non-Federal entities, industry members, academia, and international partners.
- Provide access to data models while keeping data safe, secure, and private.
- Reduce barriers to use of AI while protecting American interests.
- Minimize attack vulnerabilities.
- Train researchers and workers in the skills needed to develop AI
- Develop an action plan to keep the United States' advantage as the leader in AI and technology.

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Executive Order 13960

Executive Order on Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government

President Donald Trump, December 3rd, 2020

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Instructs Agencies to Design Policies Under a Common Concept that Includes:

- Respect the values of the United States, including being consistent with the Constitution.
- The benefits of the use of AI should significantly outweigh the risks, which should be assessed.
- Ensure that the use of AI is consistent with the purpose the AI was trained for.
- Ensure safety, security, and resiliency in AI applications.
- Agencies should make sure that the work on AI is understandable by experts, including on outcomes.
- Roles and responsibilities must be clearly defined.
- Regular testing and other mechanisms to monitor for inconsistent outcomes should be performed.
- Agencies shall act in a manner that is transparent about the use of AI to Congress and to the public at large.
- Regular audits should be conducted.

Executive Order 14110

Executive Order on Safe, Secure, and Trustworthy Development and Use of AI
President Joe Biden, October 30, 2023

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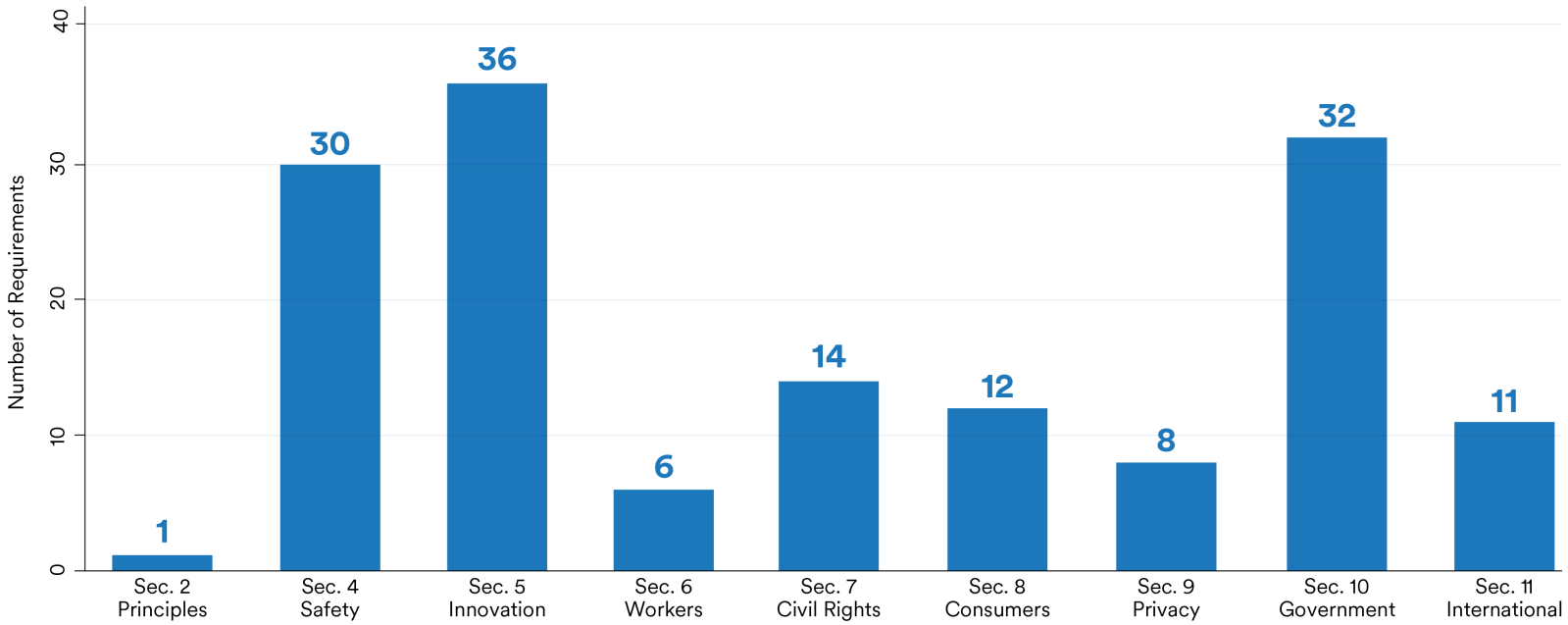
Expands on the Previous EOs to Include that Agencies:

- Ensure that AI systems are secure, using evaluations and tests for systems to operate as expected.
- Develop labeling recommendations to identify when something is generated by AI.
- Investing in programs that develop AI skill sets, including attracting individuals who work in AI to emigrate to the United States.
- Ensuring that job training and support of education are covered, and that workers will be positively impacted by AI, not undermined or harm market competition.
- Any AI policy developed by an agency must be dedicated to advancing civil rights and equality, and avoid bias.
- Enforcing existing consumer protection laws and protect user privacy.
- The collection of data used for AI must be lawfully obtained, kept secure, and keeps risks about privacy and confidential as much as possible. Also, agencies should use technical tools to protect against risks.
- Take steps to attract individuals from underrepresented communities into the regulation and oversight of AI.
- When negotiating with other nations, agencies should seek to promote AI safety, and to ensure that AI benefits rather than harms the world.

Distribution of requirements across substantive sections (Executive Order 14110)

Source: Stanford HAI, RegLab, CRFM, 2023



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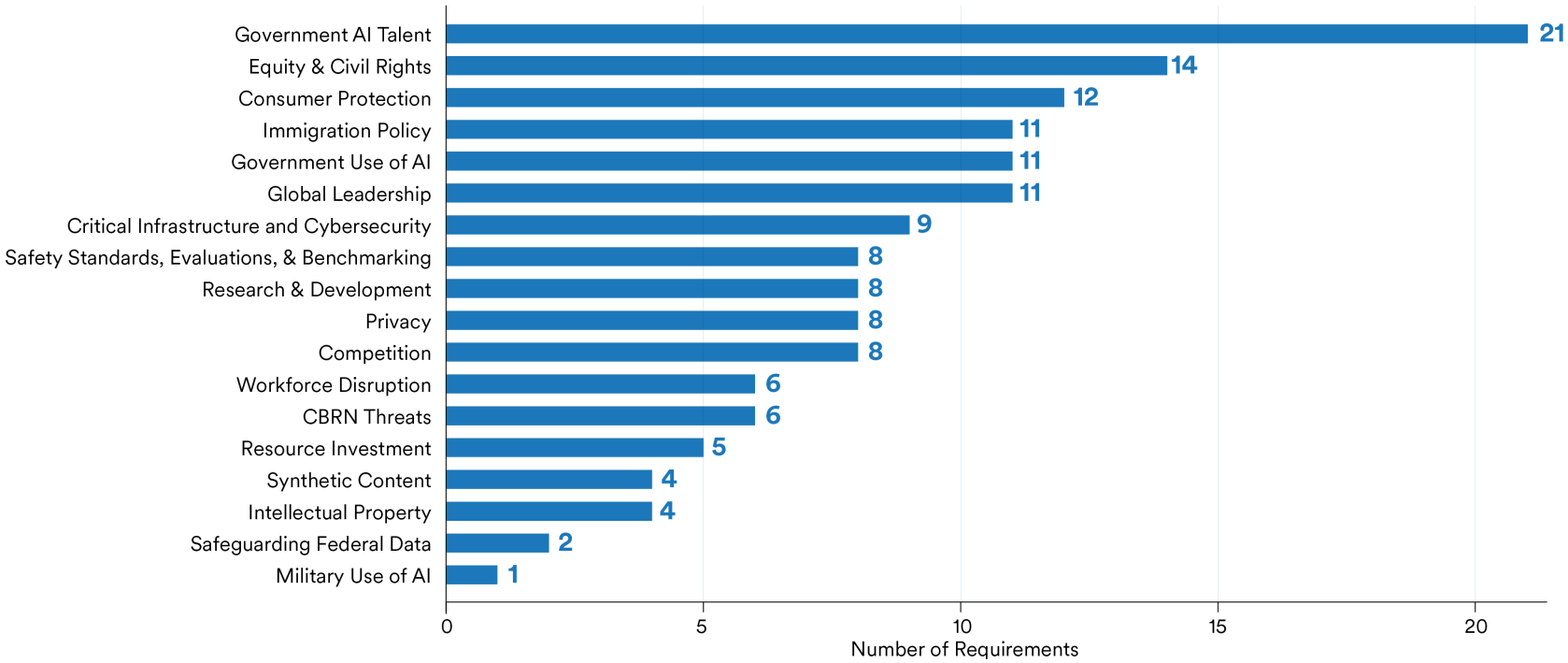
Distribution of requirements across policy issue areas (Executive Order 14110)

Source: Stanford HAI, RegLab, CRFM, 2023



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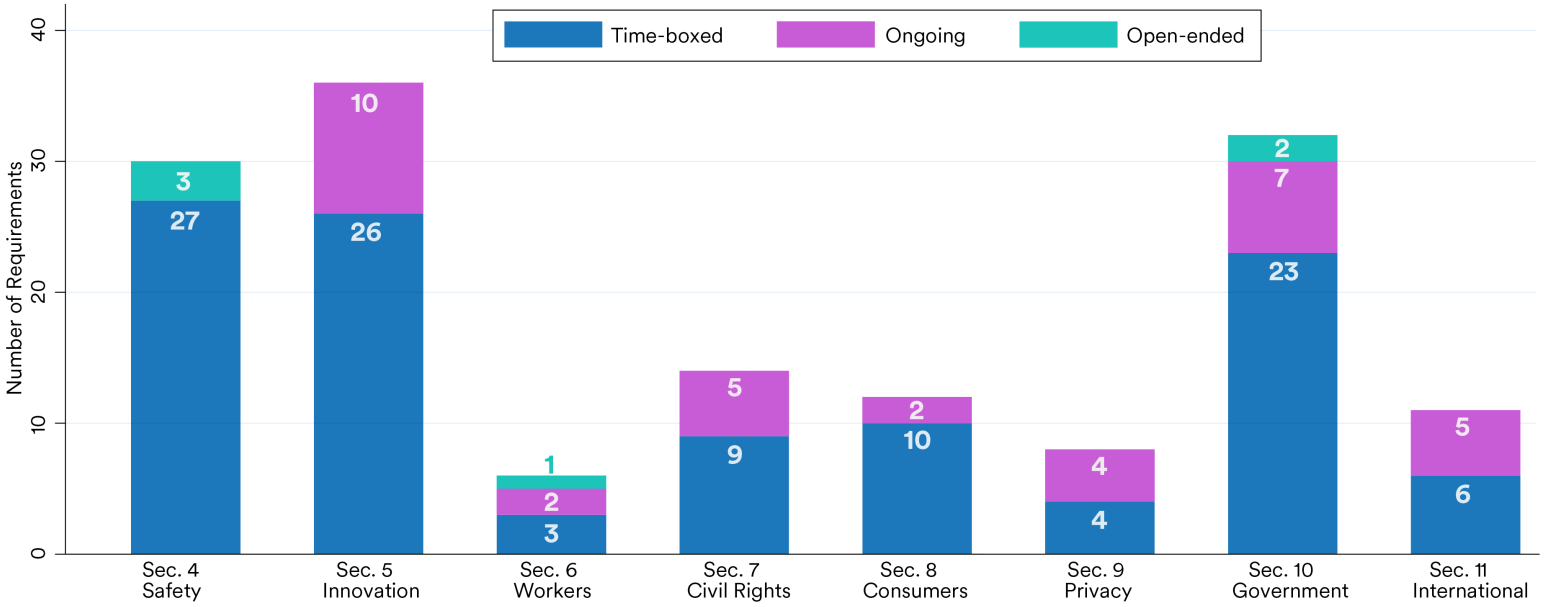
Breakdown of requirements by type of requirement per substantive section* (Executive Order 14110)

Source: Stanford HAI, RegLab, CRFM, 2023



* Note: Requirements that have both the "time-boxed" and "ongoing" label are categorized as "time-boxed"

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Global Treaty on AI

The Bletchley Declaration on AI Safety

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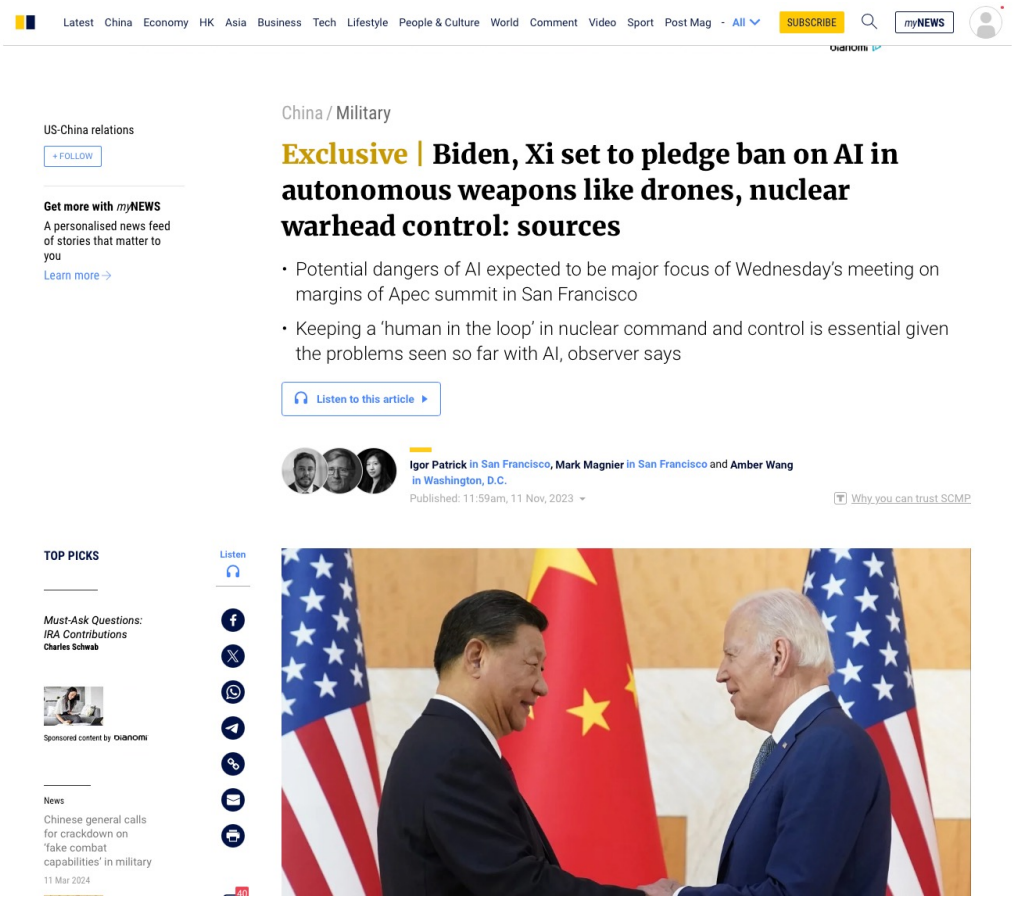
- **Shared goals:** Recognizes the vast potential of AI for improving human well-being, peace, and prosperity.
- **Human-centric focus:** Calls for AI development that prioritizes human needs and values.
- **Safety and trustworthiness:** Emphasizes the importance of safe, trustworthy, and responsible AI design and use.
- **Focus on frontier AI:** Highlights the urgency of understanding and managing risks posed by highly advanced ("frontier") AI models.
- **International cooperation:** Acknowledges the global nature of AI risks and the need for international collaboration to address them.
- **Commitment to ongoing research:** Calls for continued research on potential risks and mitigation strategies.

US-China

Attempt to Regulate the use of AI in Weapons, Including Nuclear Arms



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APEC San Francisco November 2023

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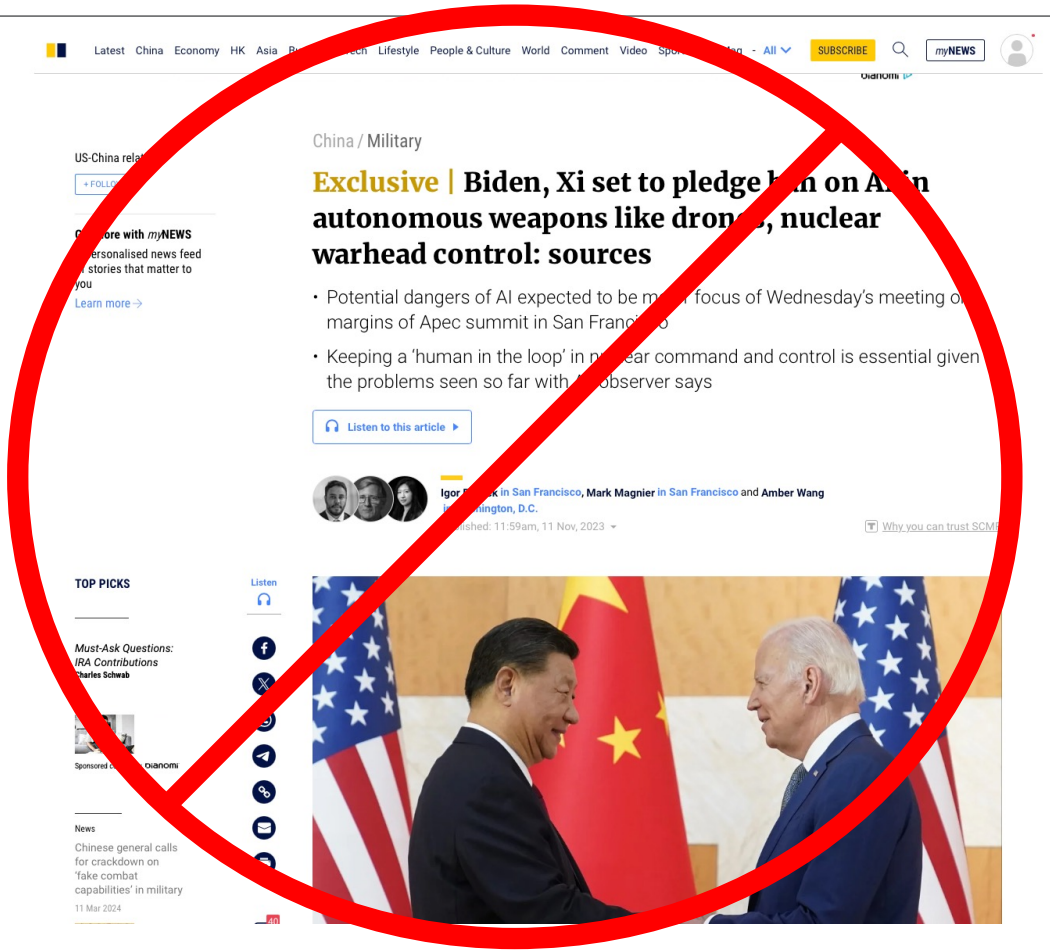

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Potential Positives

Through AI

Gains for the Economy

- Faster control over financial shocks
- New types of jobs
- Efficiency in R&D and acceleration of innovation
- Efficiency in management, finance, HR, compliance, supply, security, and production
- Efficiency in market analysis, marketing, pricing, customer experience
- Increased worker productivity, reduction in repetitive tasks
- Upgraded infrastructure for communications, transportation, and energy

Gains to Society

- Analytics to identify and reduce bias and discrimination
- Tools to reduce human environmental impacts
- New tools for creative activity, new types of content, and new creators
- Improved and targeted public services, health care, and education

Gains to Individuals

- Greater individual selectivity of information, with active search and verification, including of political and commercial messages
- Better informed decision making
- Greater ability to create and distribute content
- Lower isolation by relating to personal AI bots
- Tools for the protection of one's personal data

Gains for Democracy

- New forms of participation and mobilization
- Political disinformation more subject to verification
- Better polling
- New tools to bypass governmental and corporate control of information

Gains for Competition

- New markets and new entrants
- Consumers use of intelligent searches reduces dominance of established brands
- Competition in AI quality

Alternatives

To Governmental Regulation

1. Self-regulation

Alternatives to Governmental Regulation

Self-Regulation: Positives

- A faster, better informed, and more flexible process run by experts and companies and not by government bureaucrats under slow procedures.
- An ability to control areas where governments have limited authority, such as speech. However, that is also a serious negative, especially when it is induced by governments without direct authority.

Self-Regulation: Negatives

- Potential for anti-competitive industry coordination and cartels
- potential absence of due process protections.

Self-Regulation

- In US, 7 major AI firms launched an industry-led body to develop safety standards
- The industry group advocated a set of principles for safe AI, such as third-party security checks and watermarking of AI-generated content, to reduce the spread of misinformation.
- Many of these practices had already been adopted by OpenAI, Google, and Microsoft.

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2. Market Reponses and Competition

Alternatives to Governmental Regulation

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The Emergence of Personal AI

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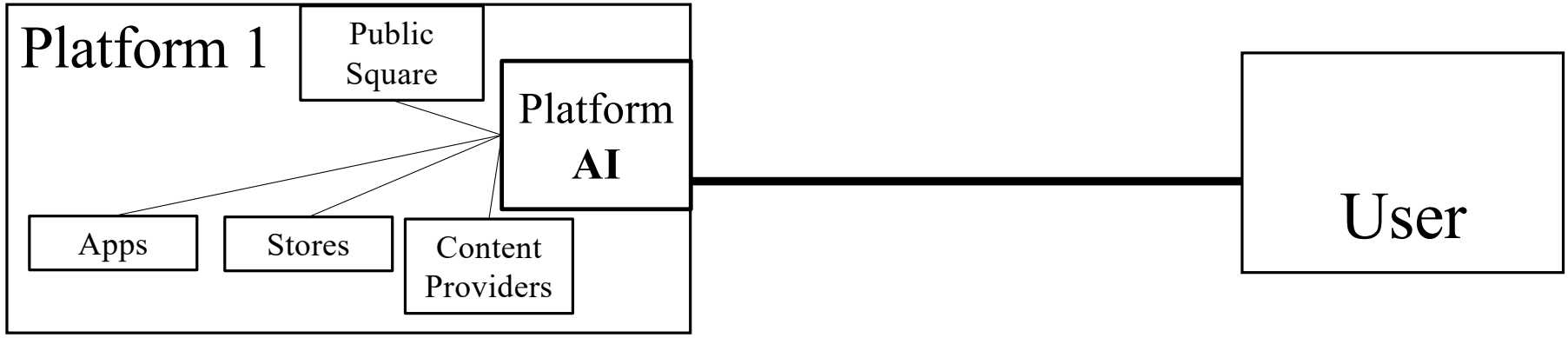
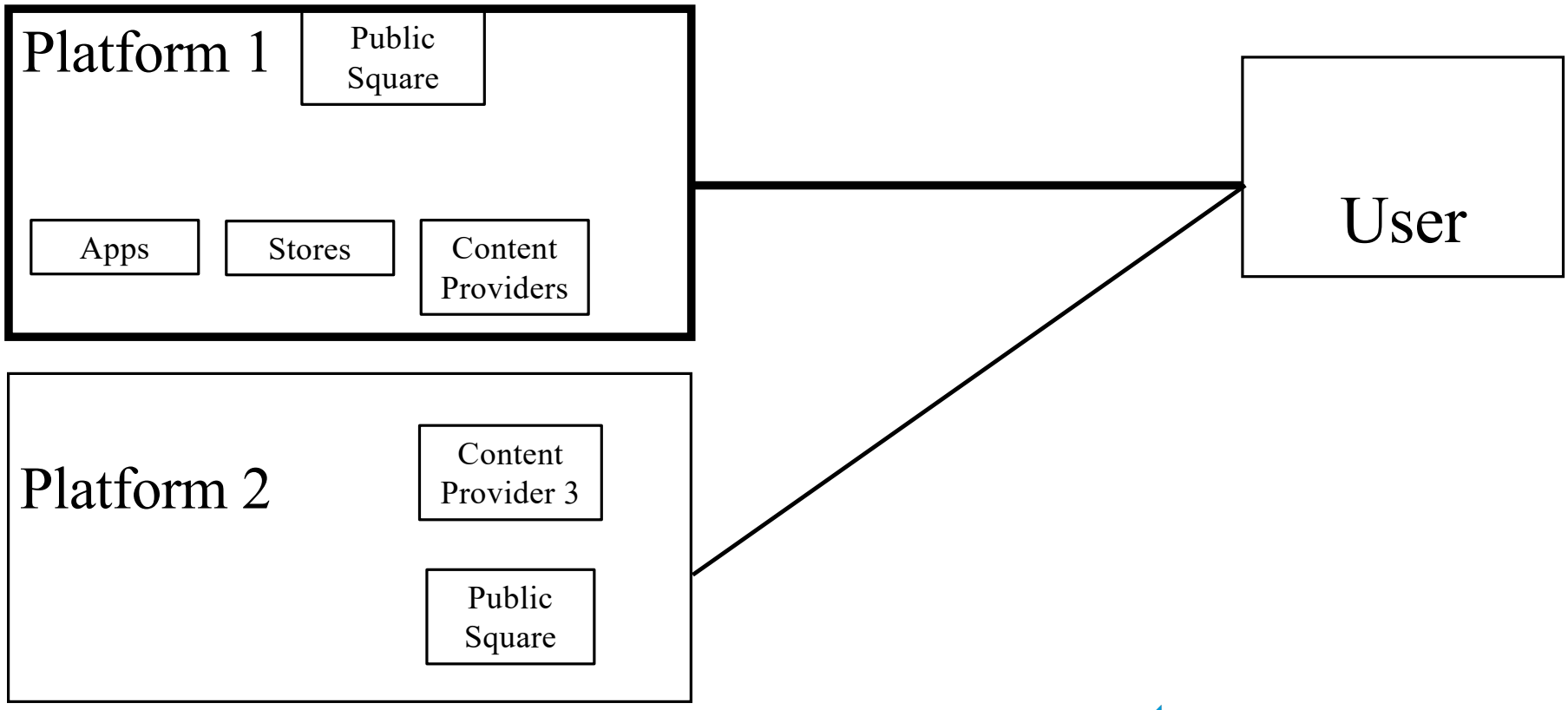
Platform AI


Platform 1
Public Square
Platform AI
Apps
Stores
Content Providers
User

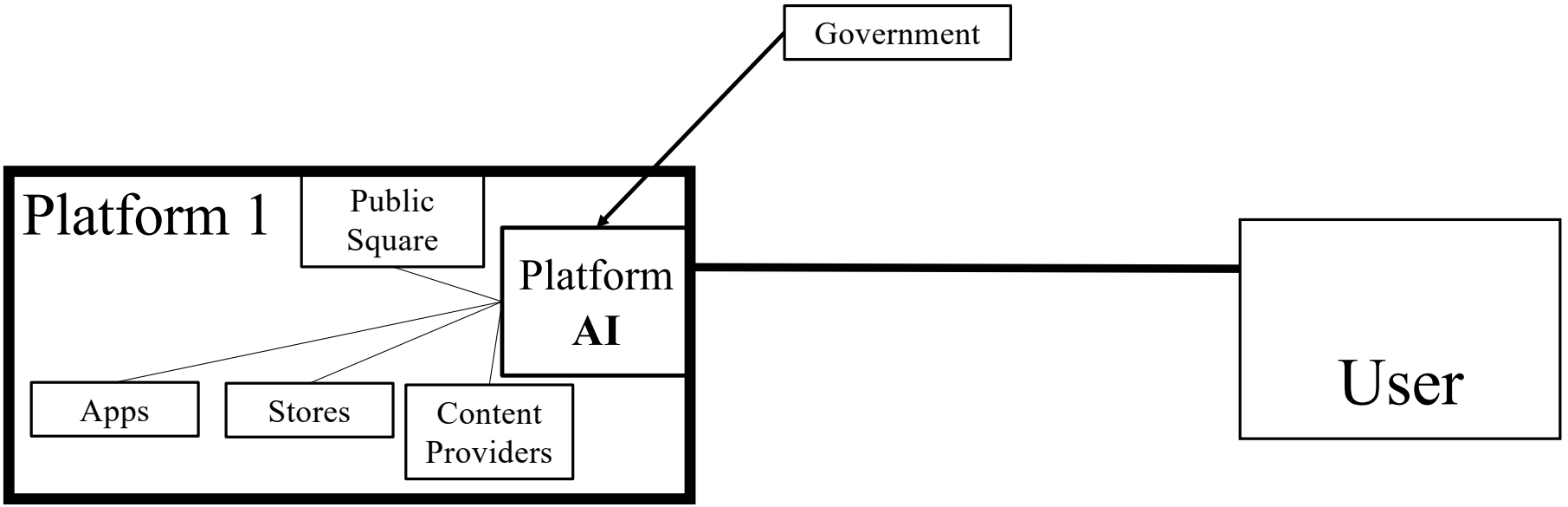
Market Competition

- For the user, one way to deal with gatekeeping power is to have multiple platforms to choose from.
- This is a good concept, but it is difficult for multiple platforms to survive, or for a consumer to search for the content or terms of service they seek.
- It is doable but not convenient.
- Alternative: Governmental regulation

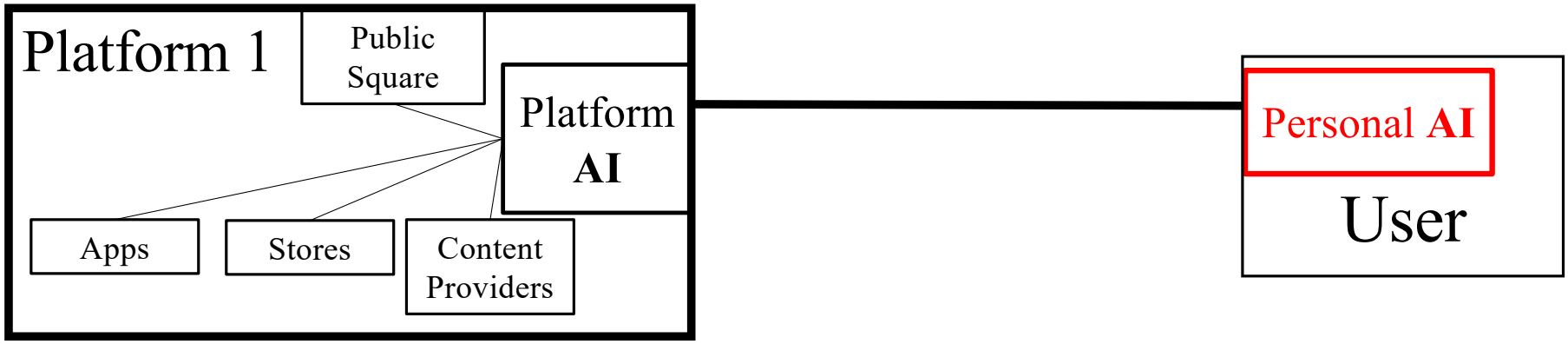
Alternative Platforms



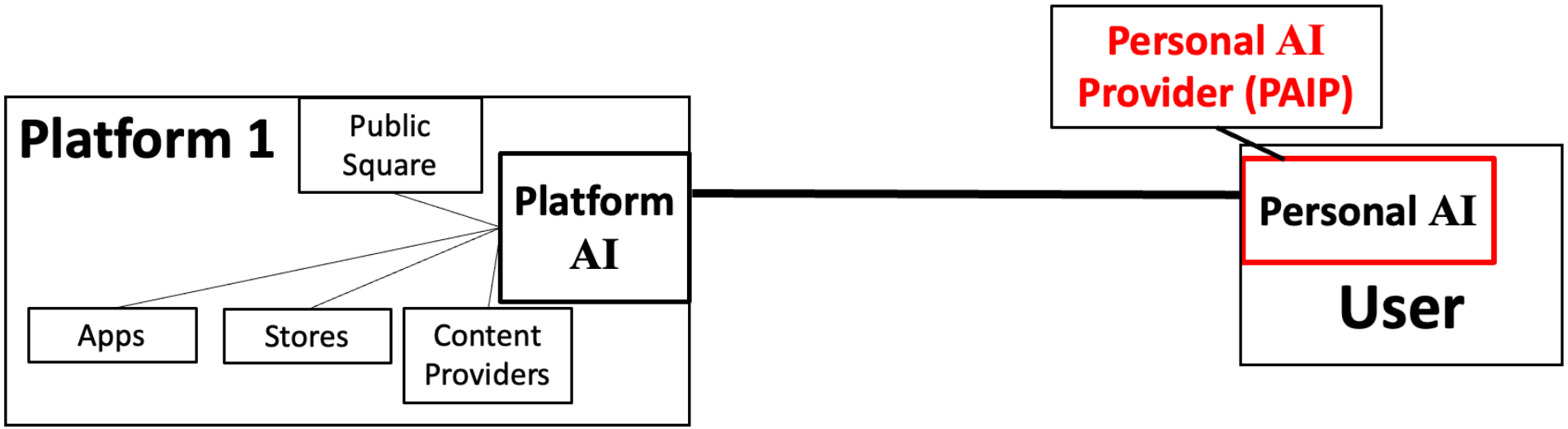
Government Regulation



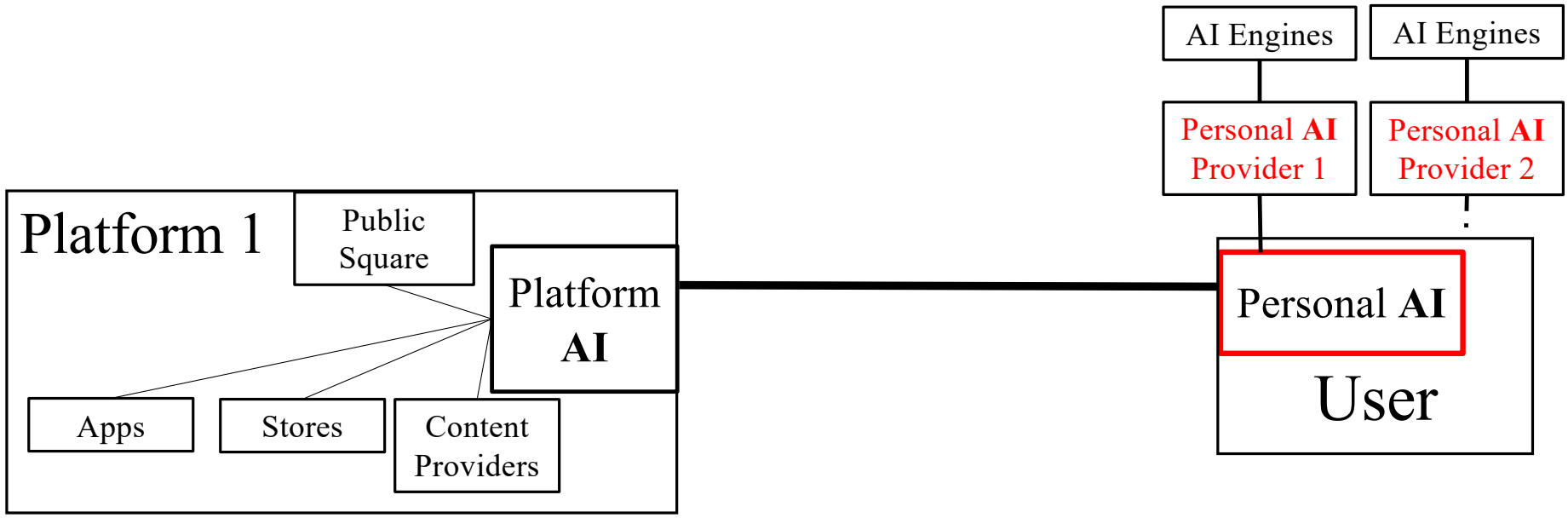
Personal AI (PAI)



Personal-AI


Platform 1
Public Square
Platform AI
Apps
Stores
Content Providers
Personal AI Provider (PAIP)
Personal AI
User

Alternative Personal-AI Platforms



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Market Competition: Personal AI

- Personal AI does changes the imbalance of power between individuals and large organizations.
- changes the rationale for some forms of regulation that were premised on that imbalance

- Market power in Personal AI provision?
  - Towards consumers
  - Towards suppliers
  - Towards rival content

Problems with Personal AI

- Market power in Personal AI provision (PAIP)
- Non-Fiduciary Activities by PAIPs
- Political Silos/Filter Bubbles
- Counter-Restrictions by Platforms
- Misuse of Personal AI by Users

3. The Common Law Approach

Alternatives to Governmental Regulation

The Common Law Approach

- In the US, the leading edge of regulatory policy has been through the courts and regulatory agencies, with regulatory cases creating a gradual rule-making.
- Cases have included issues of discrimination, copyright, autonomous cars, privacy, and more.
- This is the classic approach of common law, which prefers an *ex-post* resolution of actual conflicts instead of the ex-ante anticipation of potential ones, as in the EU approach.

The Common Law Approach

- Not broad general and high-sounding principles, but fact-based specifics in the gray zones.
- For example, would a company be liable if its AI technology caused an accident?
- Or, if a company *failed* to deploy a safety-enhancing AI technology?
- What the extent of responsibility and liability of an AI platform is for misdeeds by its users?
- What if an AI system makes humans take a wrong purchasing decision, provides a flawed medical diagnosis, or breaches a contract in their behalf? Or, what would constitute ‘fair use’ by an LLM platform?

The Common Law Approach

- A flexible and dynamic case-by-case adjudication must play an important role in establishing a societal framework for dealing with the emerging technology
- This does not mean the absence of relevant statutory laws and regulations: many already exist, as developed over decades and centuries.
- Court cases take time, but fixing flawed legislation can be even costlier and slower.

4. Public Ownership, Public Utility, Public Support

Alternatives to Governmental Regulation

Public Ownership, Public Utility, Public Support

- Government establish or support alternative AI platforms.
  - subsidies to private or non-profit entities,
  - joint public-private ventures
  - outright public operations.

Public Utility Status

- Government can reduce the independent scope of private companies by making them public utilities
  - Requirement to serve everyone under similar conditions.
  - Requirements of access and interoperability move an AI platform in the direction of a public utility.

Public Ownership, Public Utility, Public Support

- The question is whether these platforms are essential infrastructure and might therefore be treated as public utilities.
- Overall, given the rapid and dynamic trajectory of the AI sector, neither public ownership nor public utility status seem promising approaches.
- They better fit stable and slow-moving industries such as water, electric power distribution, or rail transport.

Public Ownership, Public Utility, Public Support

— A more promising approach is that of a direct governmental role through support subsidies and through private-public partnerships.

Examples for government support of AI operations (beyond R&D support)

- South Korea: The Ministry of ICT, Science, and Future Planning invested almost US$200 million to stimulate a government-led IT ecosystem.
- China: Shanghai municipality put $1.5B towards metaverse development.
- France: A €500 million initiative to create “AI champions”.
- United Kingdom: $125 million to build nine AI research hubs to support projects in education, policing, and regulation.

Examples for government support of AI operations (beyond R&D support)

- Germany: €1.6 billion initiative to develop skills and fund AI companies. This includes a $30 million investment in a company trying to capture and train real-time brain data for use in AI.
- Singapore: A digital twin lets users visualize in 3D how the city will develop in response to population growth and construction.
- Saudi Arabia: builds a $500B city, "Neom", with digital twin to allow citizens to experience the city before it is fully functional.
- India: a PPP plan for the government to provide AI companies with a cluster of thousands of GPUs for shared processing.

Examples for government support of AI operations (beyond R&D support)

- Pittsburgh, PA: Smart Traffic System with adaptive traffic signals, aiming to reduce travels delays in Pittsburgh by about 20 percent.
- Santa Monica, CA: AI-based social app, providing an interactive map to digital experiences and shopping in the city's retail district where people can collect tokens as they move around the city.
- New York: a $20 million public investment in a PPP between IBM, New York State, and several universities in various AI projects.
- New York: Seed funding to create Generative AI Avatars.
- Connecticut/California: a federally-funded PPP of private company and university developing the use of AI to create and produce enzymes to recycle plastic.

To Conclude

- The US has been racing forward in AI innovation, not in regulatory action.
- It relies, so far, on self-regulation and step-by-step decision-making
- Partly this is a reasonable response in a fast-changing environment

Combining the Best-of-the-Best

- Significant reliance on existing laws
- Very broad legal public-interest principles for AI
- Specifics to be worked out gradually by agencies and courts
- Governmental protection against market power in AI
- Governmental support programs to create public-interest AI

Thank You!

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