

The 13th Korea-OECD International Forum on Budgeting: The Role of AI in Fiscal Policy

Facilitating AI Investment by Public Policies

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1. Investment for Innovation and Inclusion

- + The rapid development and spread of **Artificial Intelligence (AI)** technology is having a significant impact on **productivity improvement** and **economic growth**.
- + This makes AI Investment that pursues goals such as innovation, productivity improvement, and maintaining and strengthening competitiveness very important.



1. Investment for Innovation and Inclusion

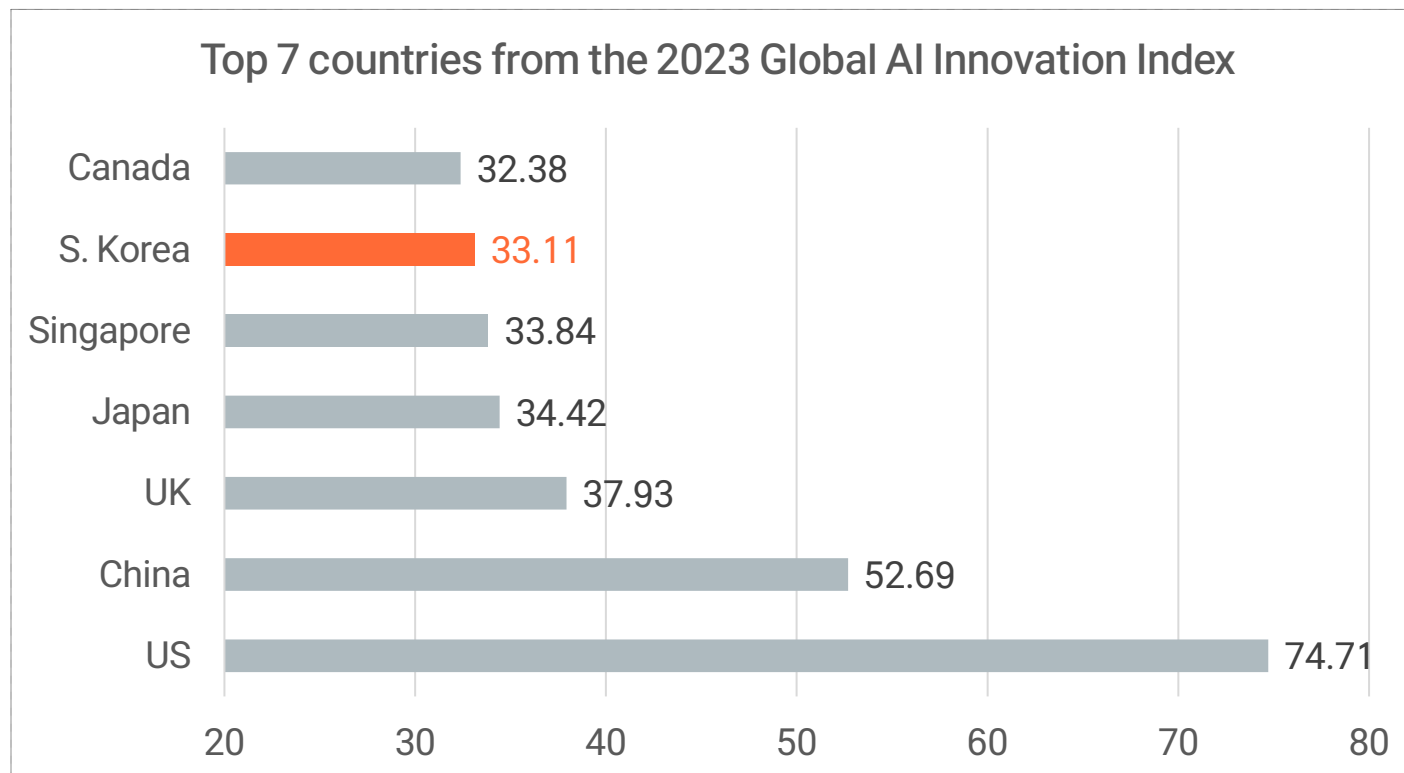
AI Competitiveness has a significant impact through various channels

- + Enhancing Productivity (World Economic Forum, 2020)
- + Improving Environmental Impact (IEA, 2019; McKinsey Global Institute, 2018)
- + Promoting Innovation and High Value-added Industries (OECD, 2021; Bessen, 2019)
- + Improving Labor Market Transition and Skills (Autor et al., 2023)
- + Competitive Advantage (Schwab, 2016)
- + Inclusive Growth and Welfare System Innovation (Frey, 2017)

2. Imbalance between Korea's AI Technology and Investment

Current Status of Korea's AI Competitiveness

- Korea ranked 6th overall in AI Technology among 83 countries evaluated, placing it among the top tier.
- Strong performance in areas such as **Development (3rd)**, **Government strategy (4th)**, and **Infrastructure (6th)**



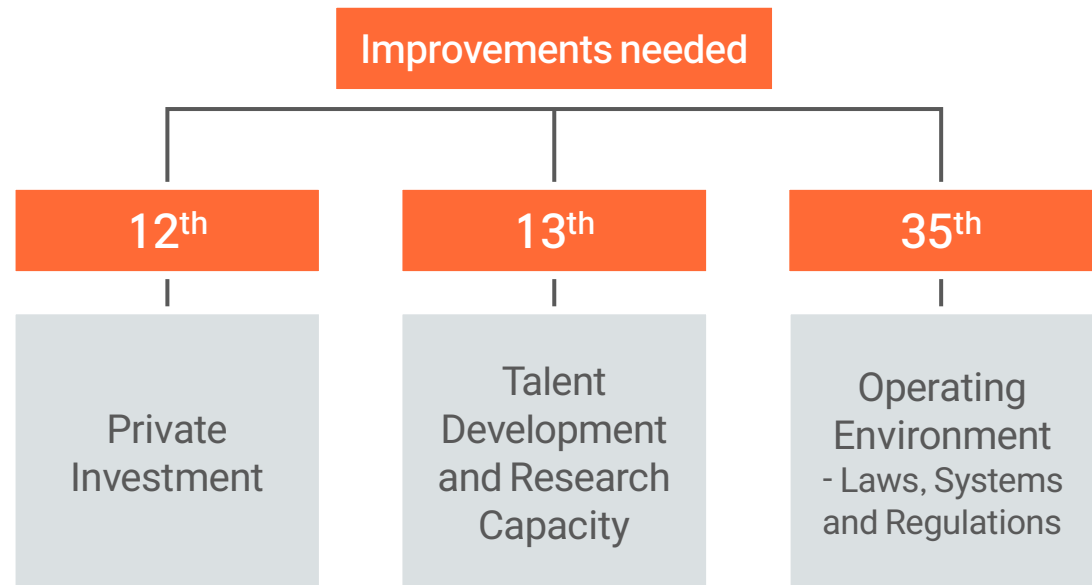
2. Imbalance between Korea's AI Technology and Investment

Gap with Global Leaders

+ AI Technology Assessment

	Rank	Score
US	1	100
China	2	54
Korea	...	27

- Many areas in Korea's AI competitiveness that require urgent improvements were identified, showing a very slow pace.

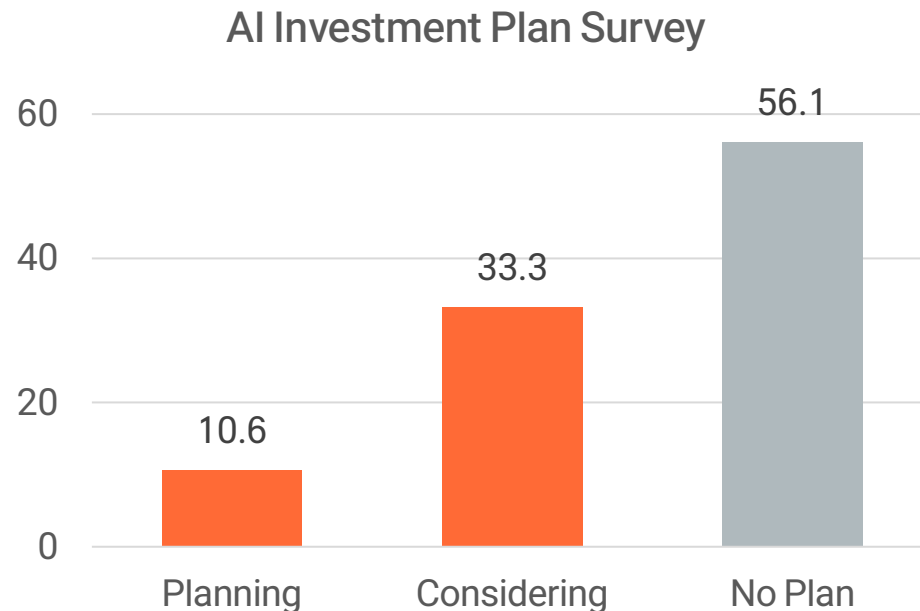


Tortoise Intelligence (2024)

3. Sluggish Private Investment

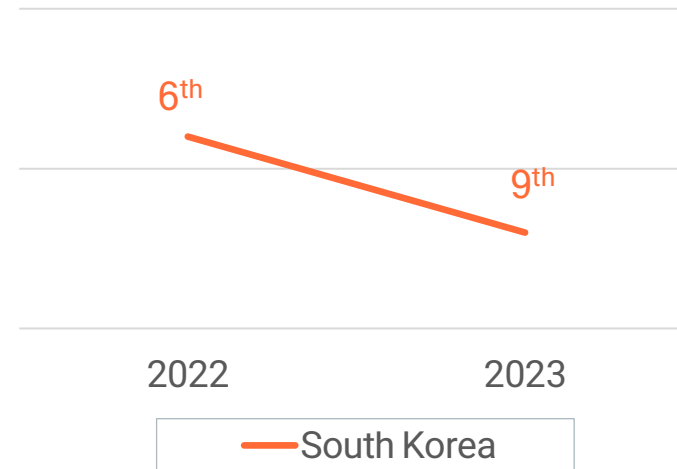
Constraints on private investment

- ✦ Regarding private investment, the listing on the stock exchange and per-company investment scale of AI companies are relatively weak compared to global competitors.
- ✦ The operating environment - laws, systems, and regulations, has been rated very poorly.



Federation of Korean Industries (2024)

Artificial Intelligence Index (2024)
Ranking in Private AI Investment

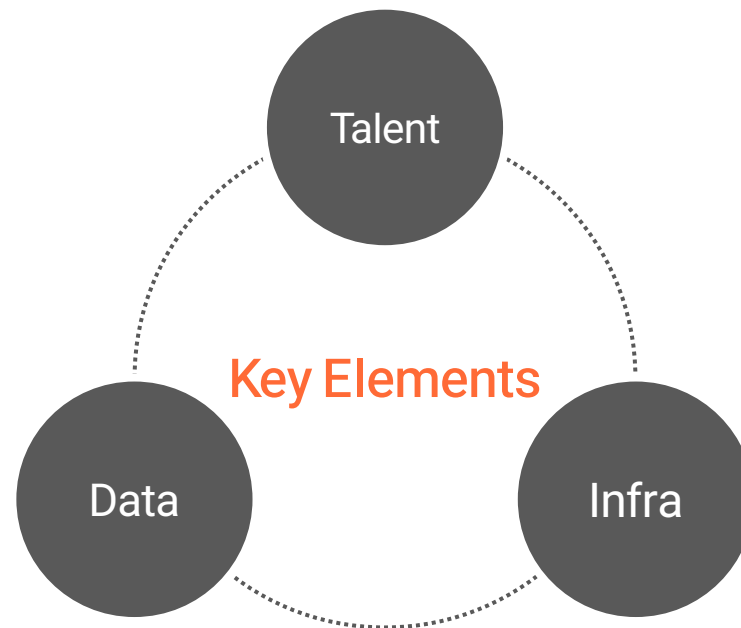


Stanford University (2024)

3. Sluggish Private Investment

Success of AI transition hinges on establishing a solid foundation

- + Three key elements for strategic investment and systematic management – talent, data, and infrastructure, will be crucial factors in determining competitiveness in the AI era.



4. Talent and Experts

Multiple levels of expertise needed...

1

Securing and Developing
a skilled workforce

2

Beyond developers and
engineers, capabilities of
field experts capable of
applying AI to real-world
business

3

Enhancing AI literacy
across the whole
organization

4. Talent and Experts

- + The willingness to adopt AI is not enough:
 - Procuring specialized personnel capable of actually implementing and operating AI technology is crucial.
- + AI specialists require diverse levels of expertise, ranging from:



Advanced researchers who research and develop AI technology itself



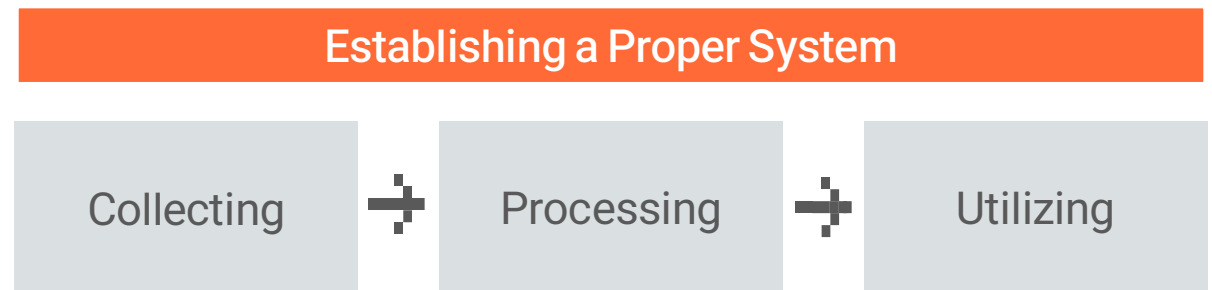
Developers who design and implement AI systems



Practical personnel who utilize AI in industrial settings

5. Data

- + Obtaining and managing high-quality data is crucial.
- + AI performance is directly affected by the quality and quantity of data used for training, making **systematic data collection** and **rigorous quality control** essential.
- + Consideration of **data security** and privacy protection is critical.
- + Since the performance and reliability of AI systems largely depend on data quality, establishing a proper system for **collecting**, **processing**, and **utilizing** industrial data is essential.
- + A high-quality data environment requires industry-specific standardization and the promotion of data trading and sharing.



6. Infrastructure

A stable infrastructure must be established

- + Training and operating AI models require powerful computing capabilities.
 - Hardware and software infrastructure to meet this demand is essential.
- + The **optimal infrastructure**, whether cloud computing or on-premise systems, must be developed and implemented to best suit industry needs.
- + Computing resources and cloud infrastructure for AI development and operation must be secured, allowing companies to utilize them at an affordable cost when needed.

6. Infrastructure

Energy Infrastructure

- Necessary to **secure investment** resources for AI adoption.
- Expansion and establishment of energy infrastructure are essential for the stable operation of AI systems.



Strategic Approach is required

- The massive power consumption required to operate AI systems can be a major barrier to a company's AI adoption.
- Strategic approach to **energy efficiency** and **green AI implementation** is required.

7. Fiscal Investment for AI

South Korea's private AI investment is lagging behind, requires strengthening

- + From 2013 to 2023, South Korea's cumulative private AI investment amounted to \$7.25 billion, far below the levels of the US (\$335.2 billion), China (\$103.6 billion), and Israel (\$12.8 billion).
 - + Last year, global government and private AI investment was estimated at \$141.9 billion, with the **US accounting for 62%** (NIA, 2024).
 - 2nd Place: The European Union (EU) – 8%
 - 3rd Place: China – 7%
-  Showing a significant gap with the US
- + More government investment and inter-ministerial cooperation are needed.
 - Establish a system for inter-ministerial cooperation
 - Coordinate overlapping policies
 - Develop global AI standards & common regulations (National AI Guidelines)

7. Fiscal Investment for AI

Areas

1

Establish a foundation for AI Innovation, including **expanding AI infrastructure**

Provide subsidies, loans for private investment project that build industry-specific AI infrastructure
(ex. hardware, cloud services, data centers, high-performance computing facilities, 5G networks) suitable for AI solutions

2

AI **R&D** and **Human Resource Development**

Support industry-specific AI technologies and internal talent training

3

Development and Implementation of **AI Ethics** and **Governance Standards**

Funding for the development of ethical AI practices and standards, data privacy standards, and a transparent governance framework

4

Research on AI innovation **Strategies** and **Policies**

Research on the current status of AI innovation in industry, performance measurement, and institutional improvements

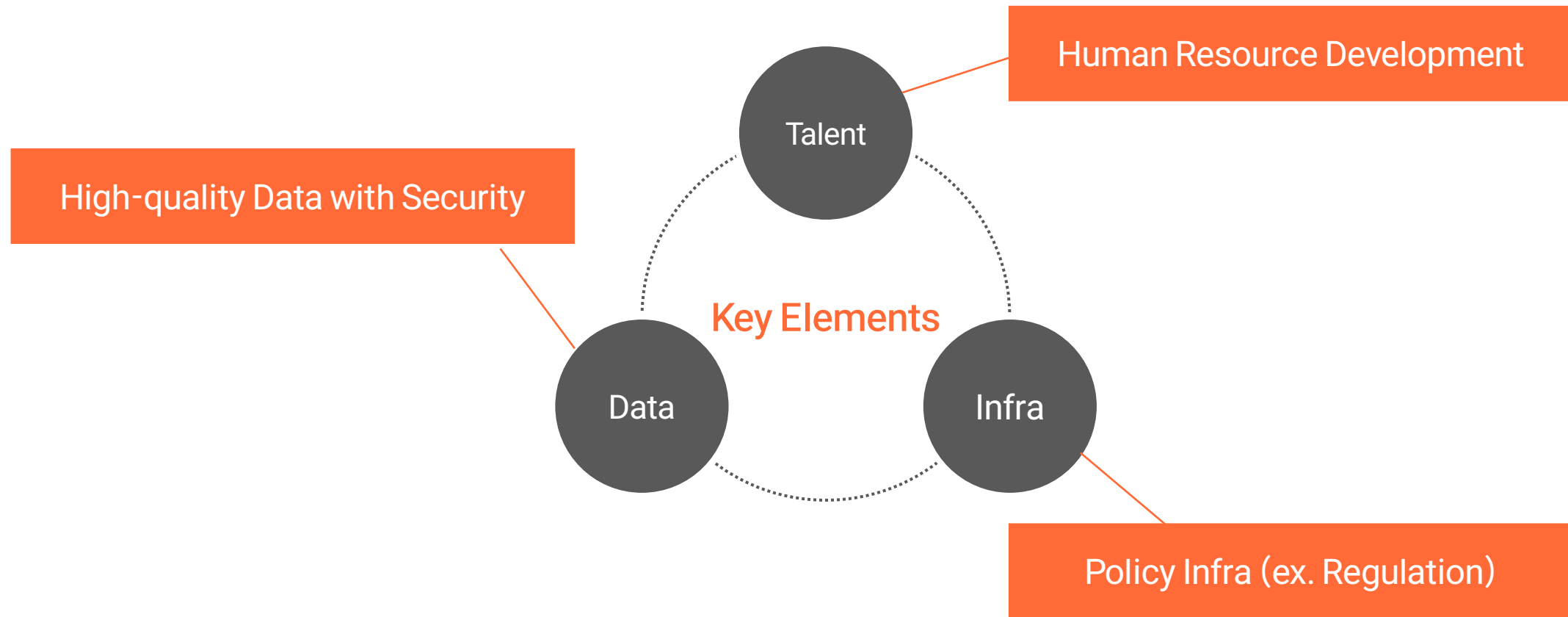
7. Fiscal Investment for AI

Energy Supply

- + The viability of the AI industry hinges on the timely provision of power infrastructure.
 - For instance, AI data centers, which consume vast amounts of electricity, require a stable and sustainable power supply at an economical cost.

7. Fiscal Investment for AI

Fiscal Investment for Innovation and Inclusion



Thank You