KOREA DIGITAL DAYS 2023

Introducing Korea's AI Policy and Measures for Partnership with the World Bank

THE WORLD BANK
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Ministry of Science and ICT

nipa 정보통신산업진흥원
National IT Industry Promotion Agency

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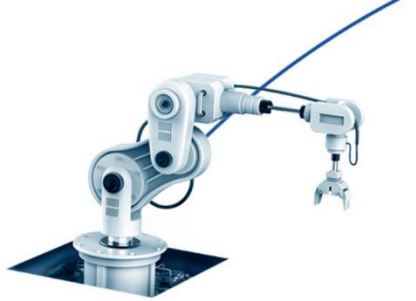

Chapter 1
About NIPA

I About NIPA

Ministry of Science and ICT

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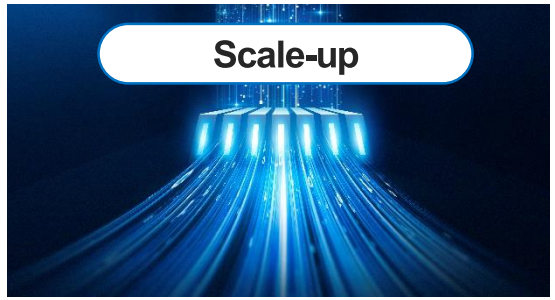
National IT Industry Promotion Agency

(NICE Promotion Agency)

NIA	KISA	Kdata	IITP
informatization	Cyber Security	Data	R&D

Other Agencies

Supporting digital and AI technology business



Domains to support

- AI
- Cloud computing
- Digital healthcare
- Metaverse
- IoT
- Software

Personnel

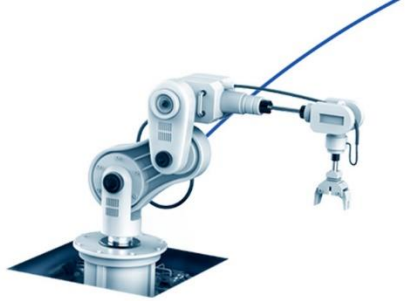
496 at present

Annual budget

$664 million

(in 2023)

02



Chapter 2
Korea's Digital Strategy

2.1 Digital Korea : Key Success Factors

2.2 New York Initiative and Digital Strategy

2.3 Highlights of NIPA Programs

Ⅱ.1 Digital Korea : Key Success Factors

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Digital KOREA

Strong policy drive

New York Initiative(2022), National Digital Strategy(2022)
AI Integration & Industrial Advance Plan(2023)

Superior Human Capability

Highest post-secondary education rate in OECD (2022)

Creative competition in private Sector

Bigtech

SAMSUNG, LG, kt, NAVER

Startups

Riiid, Lunit, Azar

Korea Context

Early adopters(open innovation)
Turning AlphaGo and Covid-19 into a new opportunity

Advanced ICT Infra.

5G

(Opensignal, 2022)

World's best high-speed internet subscription rate /
Fastest 5G and wired internet speed

Ⅱ.2 New York Initiative and Digital Strategy

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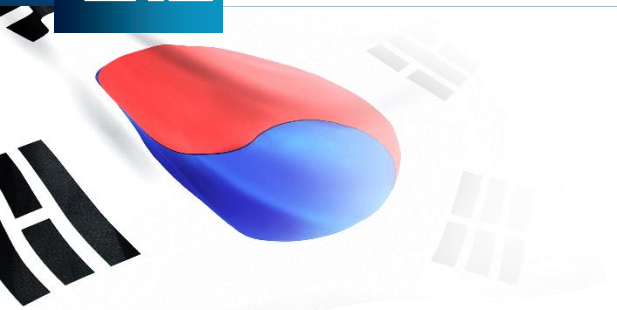


Digital Vision Forum

(New York Initiative. Sep 21, 2022)

New York Initiative: Solidarity for the Freedom of Digital Citizens (Sep 21, 2022)
As a leader in advanced digital technology, South Korea aims to share its achievements with citizens and developing nations worldwide.

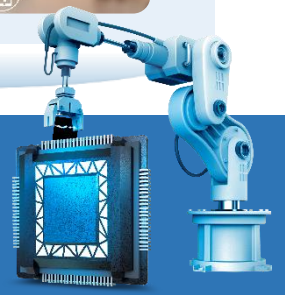
Korea's Digital Strategy

Vision	Setting a global best practices by establishing Korea as a digital leader
Goal	Promoting prosperity for all through a digital economy and society

Five Pillars

World's best **digital capabilities**	Expanding **digital economy**	Inclusive **digital society**	Serving citizens with **platform government**	Innovative **digital culture**

Spreading digital values through solidarity



Five Digital Pillars and NIPA Program Goals

Digital Strategy (September 28, 2022)

Five Pillars

Step 01 World's best **digital capabilities** (R&D, resource sharing, Capability building…)

Step 02 Expanding **digital economy** (Digitizing primary, secondary, and tertiary sectors)

Step 03 Inclusive **digital society** (Digital social benefits and balanced regional development)

Step 04 Serving citizens with a **platform government** (Transforming how government works and ensuring safety)

Step 05 Innovative **digital culture** (Creating laws and regulations and expanding global partnerships…)

NIPA Program Goals

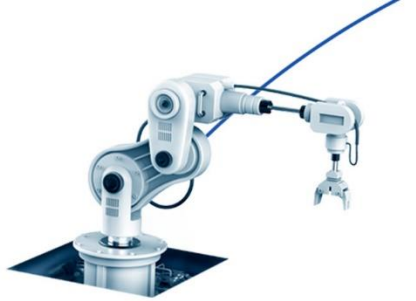
01 Establishing robust digital ecosystems

02 Applying the digital economy in all domains

03 Fostering ICT Capability building and Inclusiveness

04 Going global from digital Korea

03



Chapter 3

Major AI Programs of NIPA

3.1 Establishing robust AI ecosystems

3.2 Applying the digital economy in all domains

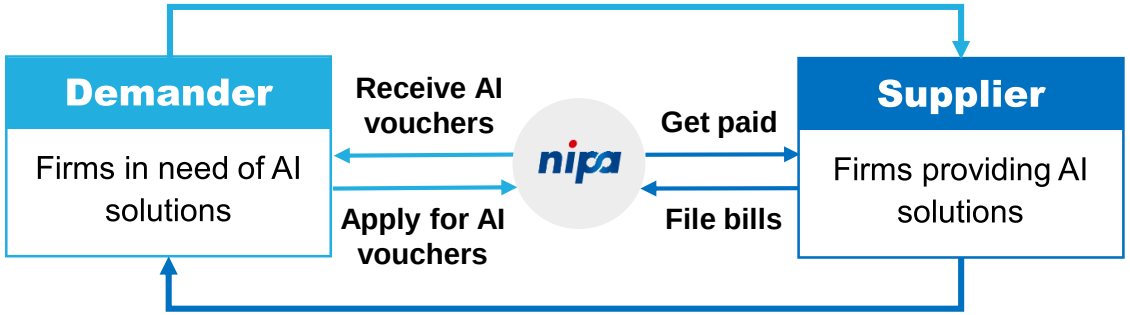
3.3 Fostering ICT Capability building and Inclusiveness

3.4 Going global from Digital Korea

Ⅲ.1 Ecosystems : AI Vouchers

Program Overview

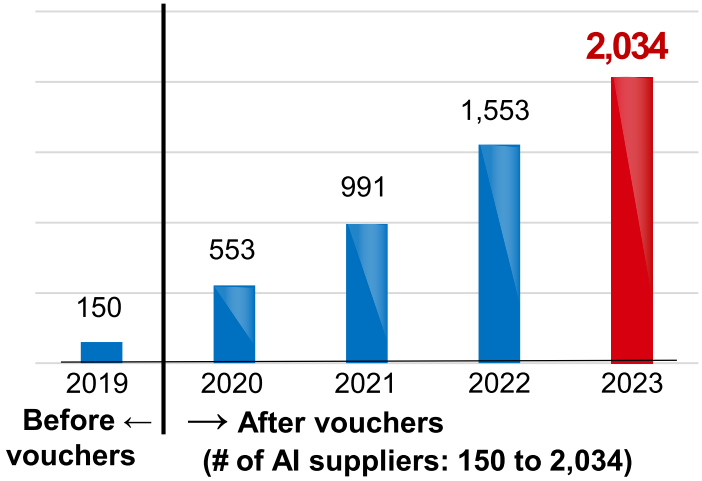
Using vouchers to purchase AI solutions



Providing optimized solutions

Meeting private-sector demand

Promoting rapid growth And Capability of AI

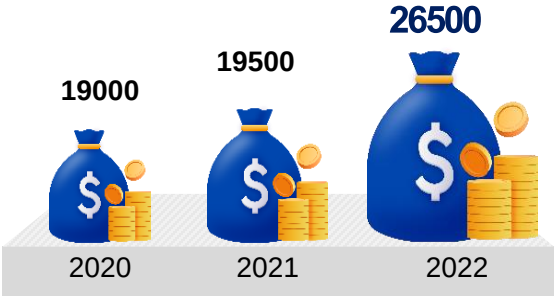


Outcomes

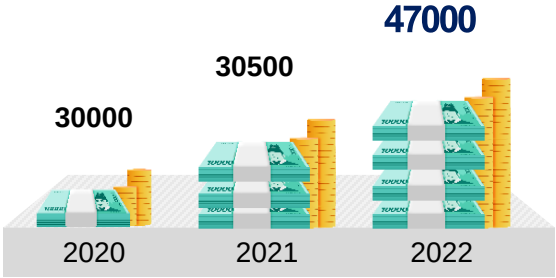
Growing revenue and investment

Digital transformation increases revenue and fosters the AI market.

1. Revenue (unit: 1 thousand $)



2. Investment (unit: 1 thousand $)



*** Exports: $510K USD in 2021 to $1.29M USD in 2022**

Improving productivity and quality

AI helps upgrade product quality

1. Annual Average 38.7% Productivity improvement

2. Annual Average 47.5% Reduction in defect rate

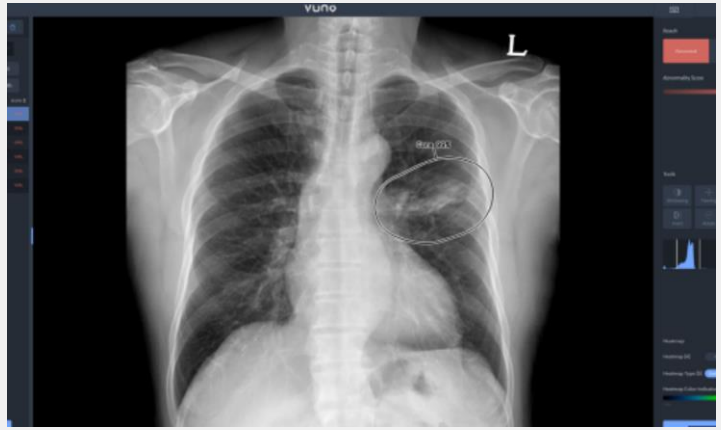
Examples of AI voucher-driven services

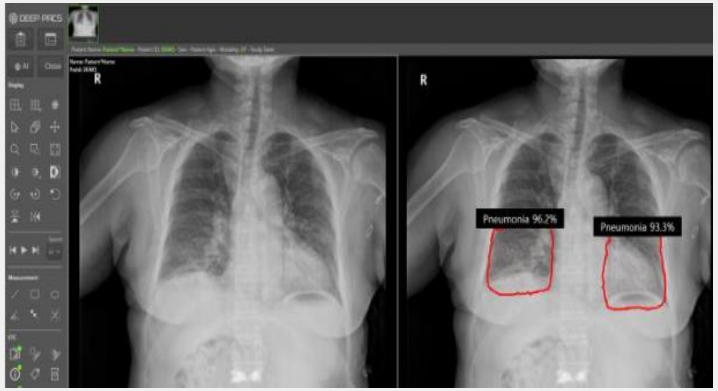
AI-based automatic oral shape controller

klleon

CES INNOVATION AWARDS 2023

AI image analytic platform for diagnoses





DEEP NOID

AI solution for enhanced farming productivity

intflow

Ⅲ.1 Ecosystems : Infrastructure

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Increasing demand for cloud services

Supporting SME's ERP, CRM, Groupware, etc.

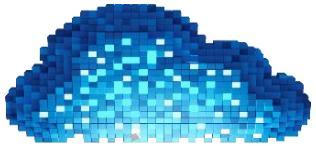
Supporting high-performance computing

Supporting universities and AI startups

S/W	OS	Development language	Development framework	
H/W	GPU	CPU	memory	storage

To lease GPU/NPU From big tech

Promoting SaaS based on hyper-scale AI



Private-sector cloud services

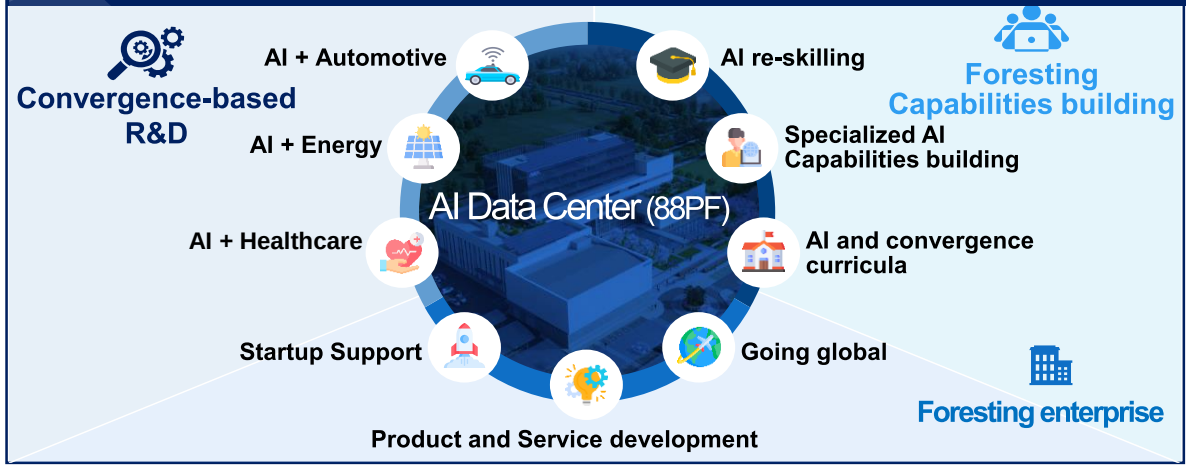
Hyper-scale AI | Data lakes | API platforms

OpenAI GPT-3 | LaMDA | PanGu-Alpha

Services based on hyper-scale AI (AI SaaS)

- Precision medicine
- Intelligent control
- AI education

Gwang-ju AI Cluster



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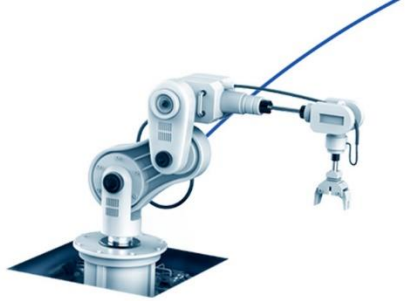

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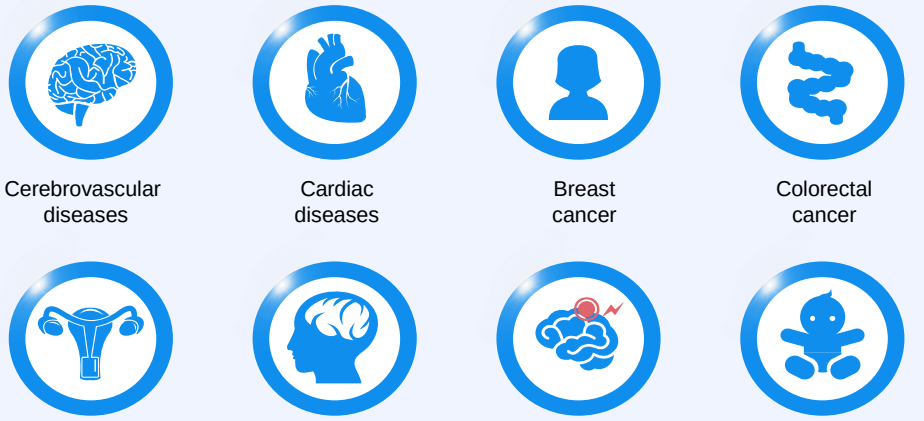
Dr. Answer : AI-based precision medicine

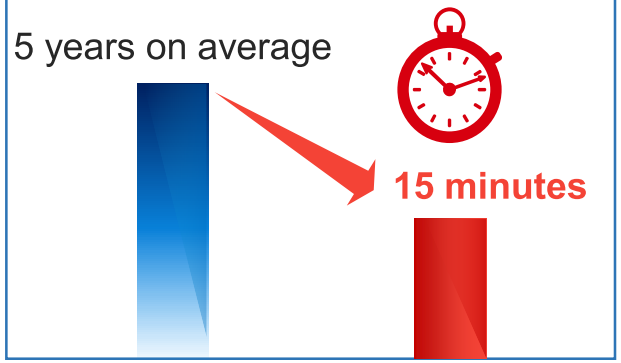
Eight categories of illness with major impacts on public health



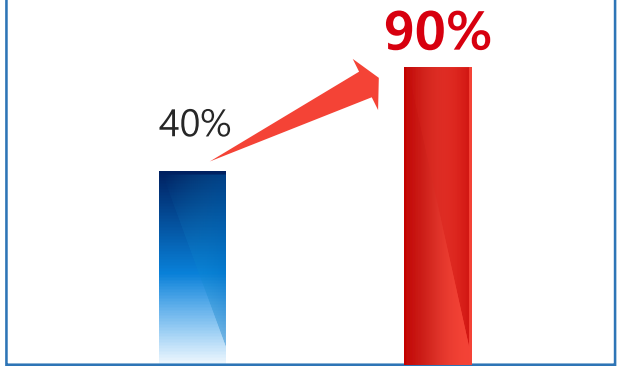
Currently in use at 93 major domestic hospitals

Authorized for use in seven countries, including Saudi Arabia
In use at 13 hospitals overseas, including in France

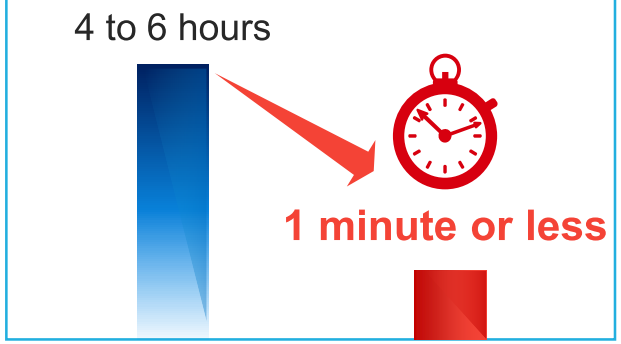
Length of time in diagnosing rare pediatric diseases



Accuracy of rare pediatric disease diagnoses



Length of time in diagnosing senile dementia



Analyzing CT scans of myocardial infarction

Saving $ 482M a year in costs with Dr. Answer (AI Kearney, April 2020)

Ⅲ.2 Digital Economy: AI+X

AI+X — Organizing pioneering projects with the biggest industrial impacts

Manufacturing
1. Intelligent processes
2. Intelligent energy

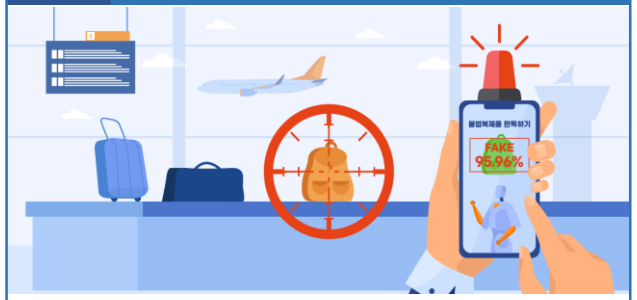
Medicine
3. Smart military healthcare
4. Infectious disease control

Safety
5. AI identification and tracking
6. Coastal security
7. Counterfeit detection

Environment
8. Forest disease control
9. Hazardous chemical detection

Across all industries

Using AI to Detect counterfeit goods



Applying AI to counterfeit detection

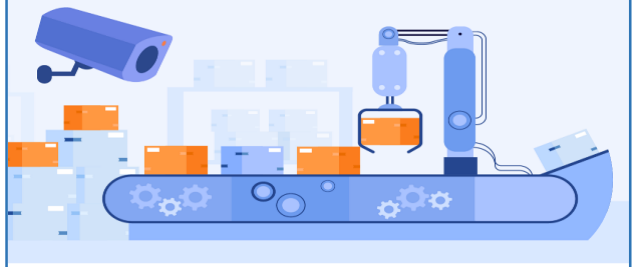
→Detection accuracy increased to 90.1%

Using AI to ensure coastal security

Converging coastal security data with AI

→Object Detection rate increased to 92%

Introducing AI into manufacturing processes



Tailored to factories (33 in total)

→ 5.7% Productivity improvement

→ 50% Reduction in defect rate

Optimizing energy consumption with AI

Using AI to control energy consumption at 31 local factories

→ Energy usage decreased by 10.4%

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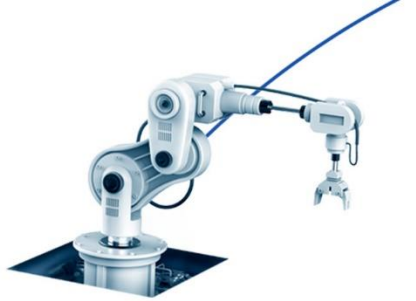

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Ⅲ.3 Fostering : AI Capabilities

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Fostering AI Capability building in Korea

IITP

Regular curricula

AI graduate Courses

Mandatory AI and software curricula in primary, secondary, and postsecondary

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Non-formal education and training

Re-Skilling for employees and students without AI knowledge

Training programs for current AI Capability building

Industries

Service, Finance, Construction, Medicine, Education ...

Current employees

e-Commerce administrator, Bankers, Safety managers, Medical device producers, Education service providers ...

ICT Innovation Square

Provides testing spaces and equipment to help train around 15,000 persons on AI annually.

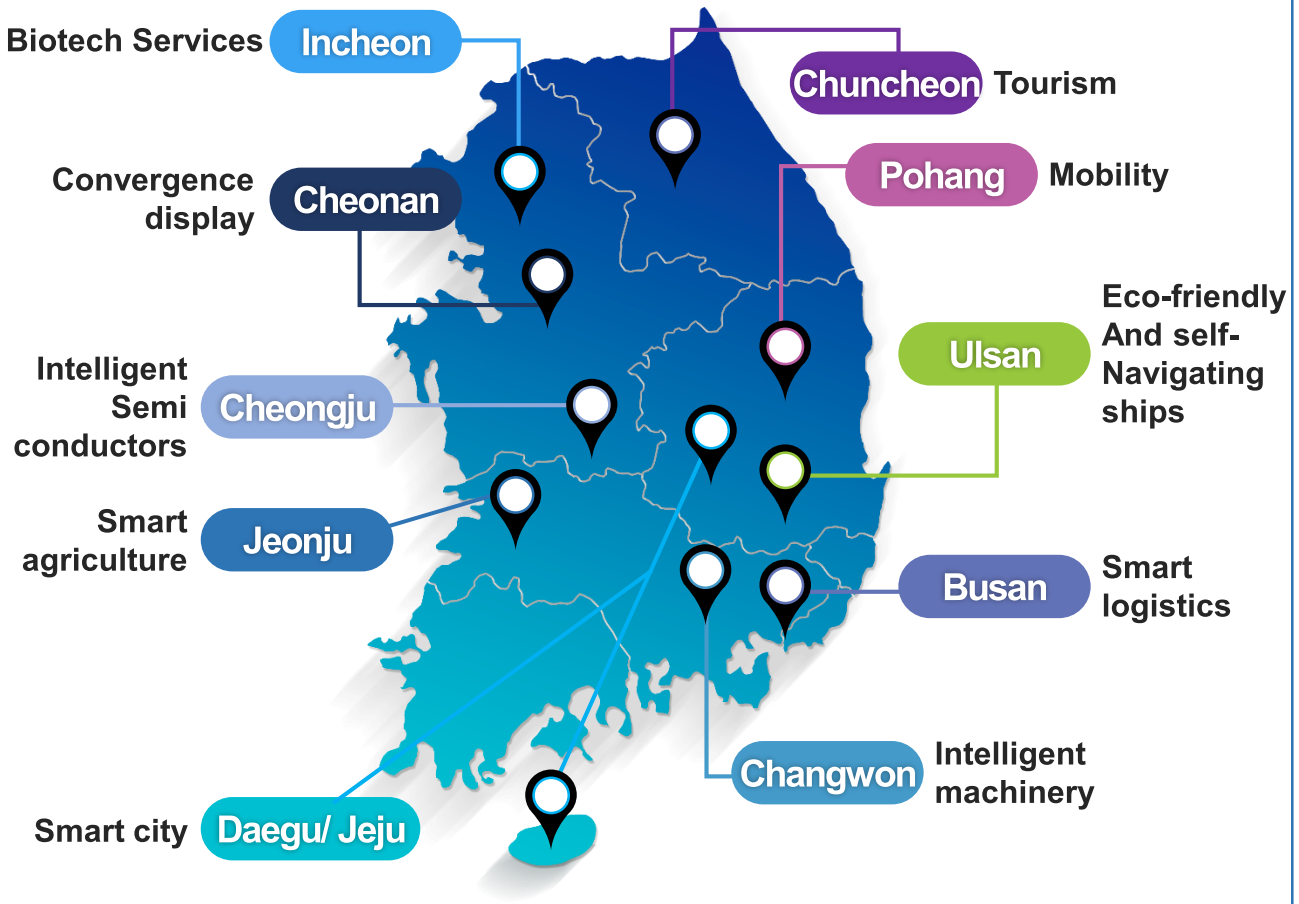
28 training centers in five major regions across the country

Ⅲ.3 Fostering : Regional AI Hubs

Digital ecosystems concentrated in Seoul-Gyeonggi region

Seoul-Gyeonggi region		
No. of ICT firms	26,846	(78.3%)
Revenue($)	106.8 billion	(91.8%)
No. of workers	386,042	(87.0%)

Innovating local industries



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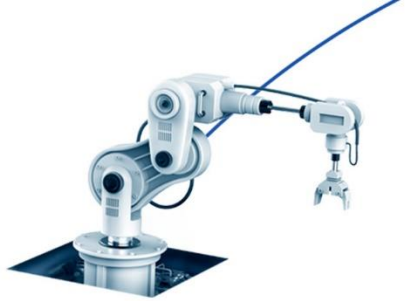

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과학기술정보통신부 Ministry of Science and ICT

Ⅲ.4 Going Global : Human Resources Development

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K-Startup Grand Challenge

- 50 teams selected — Competition rate 44:1
- Accele rating 15 weeks — Settlement Fund
- Winning Prize $270,000 — Prize up to 1st~5th
- Top20 follow up support — Networking with Korean major company

Diversification of startup ecosystem by attracting top class startup

Trevor Owens Rocketship

If you want to come to Asia and
If you see the potential of being in Korea,
KSGC is the best option,
There could not be a better network
To help your business get launched in the Korean market

Rocketship
2020
Technical field : Internet, Education
http://www.onrocketship.com/

2nd Winner in 2020 (USA)

Expect to fostering GC-World by expanding partnerships in Indonesia, Vietnam, Laos, UK, etc.

*** NIPA supports 309 startups in 150 countries from 2017 to 2022**

Korea IT School (KITS)

3 months ICT Training

3 months Internship

Become a talented ICT expert

420 Hours Programming Class + 33 Hours Korean Enterprise's Culture + 72 Hours Business Language

Intend to expand KITS to Southeast Asia, Africa, and South-Central America in partnership with the World Bank

*** NIPA supports the training of 27 software developers & 5 project managers through KITS Hanoi in 2022**
→ 27 internship opportunities & 22 full-time employment afterward at 9 Korean companies

Ⅲ.4 Going Global : ODA

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K-Lab

Creating and operating digital makerspaces in developing countries to help train youth

* NIPA supports Myanmar (2016 -2020), Laos (2021 - 2026), Uzbekistan (2023 - 2028), Bolivia (2023-2028)

World Friends NIPA Advisory Program

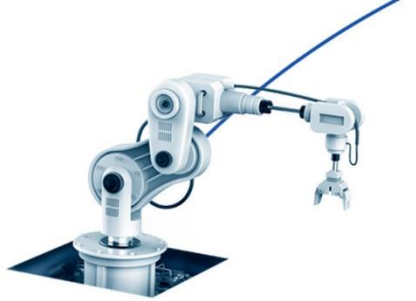
Advice on e-learning system development in Guatemala

Advice on development of cultural heritage information system in Bolivia

Deploying retired ICT experts to serve as policy consultants in partner countries

* NIPA supports 927 experts deployed to 49 countries from 2010 to 2022

04



Chapter 4
Wrap-up

VI Wrap-up

Korea is ready to share its achievements and knowledge with global citizens and developing Countries

Promoting AI convergence

E.g.) Applying AI to landmine detection in conflict areas
Introducing AI-based diagnostic and analysis systems in countries with poor health infrastructure

Fostering AI capabilities

E.g.) Creating AI learning centers and deploying trainers to countries lacking AI training infrastructure

Discovering new opportunities for global partnership

E.g.) Developing new support programs for developing nations based on the spirit of participation and solidarity embodied by the New York Initiative

Enlighten the world with NIPA

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Ministry of Science and ICT