

IITP



Institute of Information & Communications
Technology Planning & Evaluation

DIGITAL KOREA

DIGITAL HRD

Competency Development
for Lifelong Learning
and Future of Jobs

2024.7.

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I INSTITUTE FOR ICT PLANNING & EVALUATION (IITP)

II DIGITAL TRANSFORMATION

III DIGITAL HRD STRATEGY

IV HRD COLLABORATIONS





IITP OVERVIEW

โครงการการพัฒนาระบบ-
Competency Development
for Lifelong Learning
and Future of Jobs



ESTABLISHMENT & FUNCTIONS



STRUCTURE R&D BUDGET AND SCOPE



01 • ESTABLISHMENT & FUNCTIONS

PURPOSE / HISTORY

TECHNOLOGY and INDUSTRY PROMOTION through ICT R&D

Article 32 Special Act on Promotion of ICT and Promotion of Convergence

2015
JUN

**Institute for ICT
Promotion**

Unification of Korea's IT R&D Functions to IITP
(NIPA, KCA, KEIT, KIAT, KOCCA)

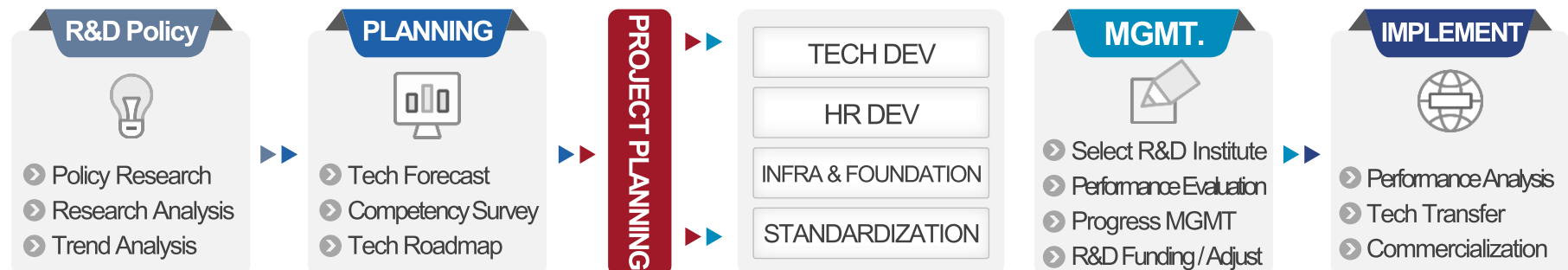
2018
DEC

**Institute of ICT Planning
& Evaluation**

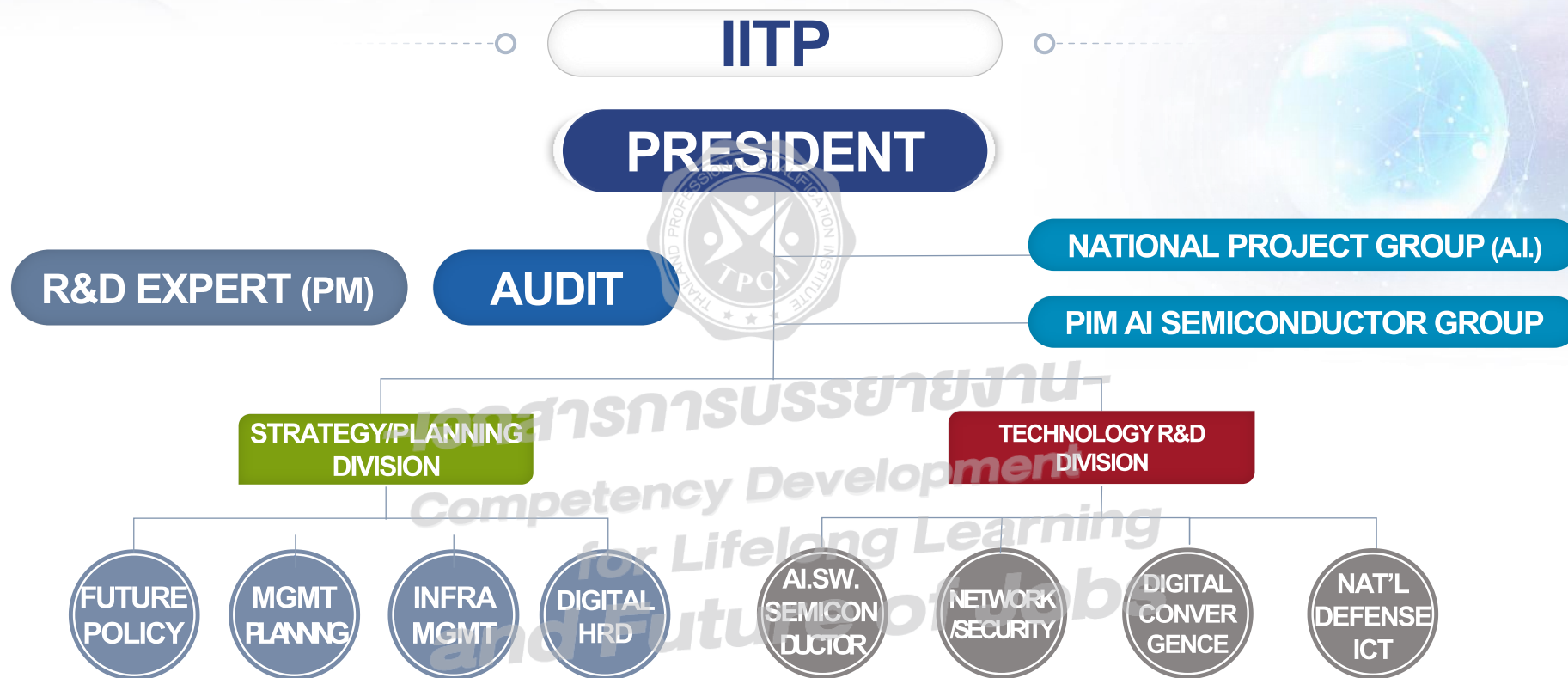
Name Change Due to
INCREASE in Scale and Roles

FUNCTIONS

FULL CYCLE of ICT R&D: Policy / Tech. Planning, Management, Evaluation, and Implementation



02 • STRUCTURE



* Project Manager : ① Digital Society, ② Communications/Network, ③ Broadcast Satellite, ④ AI/data, ⑤ SW / Self-Driving, ⑥ Media/Contents, ⑦ Security/Blockchain, ⑧ Semiconductor/Quantum, ⑨ ICT

390 Employees

02 • BUDGET (2023) ⁽¹⁾ R&D TYPE

BUDGET BY SECTOR

\$1.39BILLION USD

* AVG 12% ANNUAL INCREASE (2020) \$1.02B → (2021) \$1.16B → (2022) \$1.32B

TECH DEV



66.4%

\$923.6MILLION

HR DEV



20.0%

\$277.6MILLION

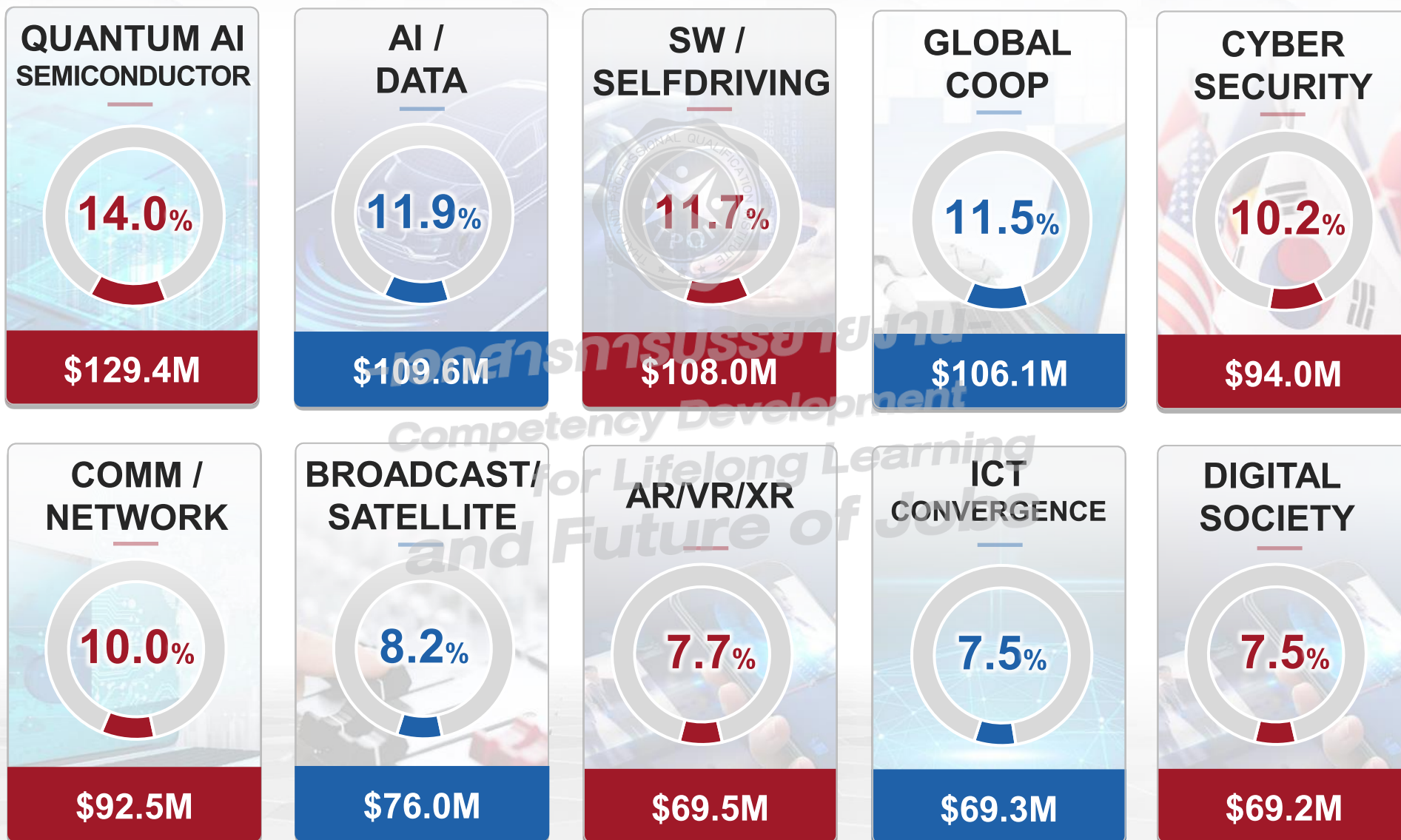
INFRA / COMMERCE



13.6%

\$189.5MILLION

02 • BUDGET (2023) (2) TECH TYPE



II

DIGITAL TRANSFORMATION

- 1 WORLD IS DIGITALIZING
- 2 KOREAN DIGITAL HRD
- 3 GOVERNMENT DUTY

01 • WORLD IS DIGITALIZING (1)

[MS, Nvidia, Apple, Alphabet(Google), Amazon = **30% of S&P500**]

2009 Market Capitalization

NO.	COMPANY	TYPE
1	PetroChina (CN)	Oil
2	Exxonmobil (US)	Oil
3	Microsoft (US)	IT
4	Bank of China (CN)	Finance
5	Walmart (US)	Retail
6	China Construction Bank (CN)	Finance
7	BHP Group (AU)	Resource
8	HSBC Holdings (EN)	Finance
9	Petrobras (BR)	Oil
10	Alphabet (US)	IT

2024 Market Capitalization

NO.	COMPANY	TYPE
1	Microsoft (US)	SW, Cloud, AI
2	Nvidia (US)	GPU, AI
3	Apple (US)	iDevice, AppStore, AI
4	Alphabet (US)	Search, Cloud, Mobile, AI
5	Amazon (US)	E-Commerce, Cloud, AI
6	Aramco (SA)	Oil and Gas
7	Meta Platforms (US)	SNS, VR/AR, AI
8	TSMC (TW)	Semiconductor.. for AI
9	Berkshire Hathaway (US)	Investment
10	Eli Lilly (US)	Pharmaceutical

01 • WORLD IS DIGITALIZING (2)

TREND

1% OF FOCUSED INNOVATION DRIVES DIGITAL COMPETITION

ARTIFICIAL INTELLIGENCE

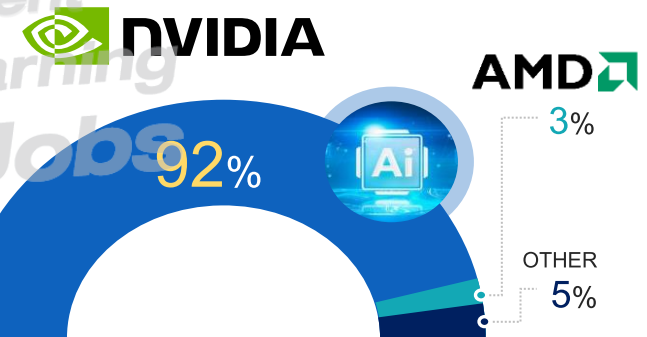
SEMICONDUCTOR

TIME UNTIL 100M USERS



» FASTEST GROWTH

SEMICONDUCTOR MARKET SHARE



» AI PLATFORM

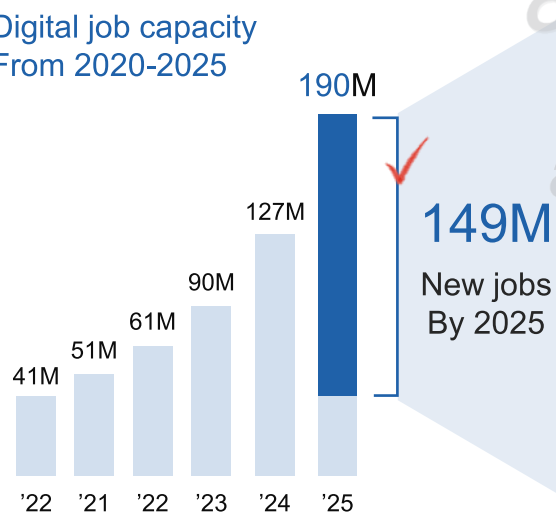
01 • WORLD IS DIGITALIZING (3)

Global Digital Workforce Demand Outlook

- ✓ **Within 5 years, 150 million digital jobs** are expected to be created (Microsoft, 2020)
 - Software Development (65.8%), Cloud/Data (15.4%), Data Analytics and AI (13.4%)
 - ✓ **Within 10 years, US auto industry will create 115,000 new jobs, with 230,000 (26.1%) are computer/software-related graduates** outnumbering traditional engineering
- HYUNDAI** : Expand SW and Invest \$10B by 2030, **VW** : Employee 10,000 SW specialists by 2025
GM : Employ 7,000 SW specialists by 2022

Digital HR Demand Outlook

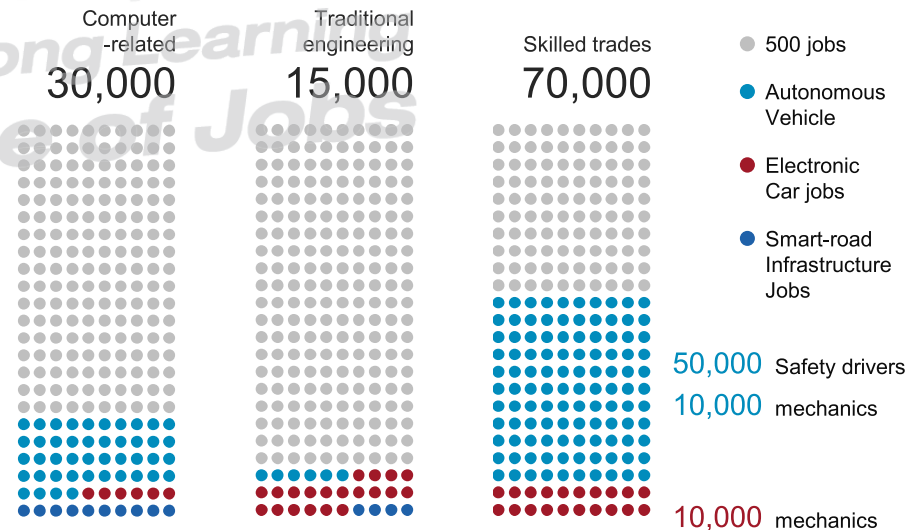
Digital job capacity
From 2020-2025



1M Privacy and trust
 6M Privacy and trust
 20M Data analysis, machine learning and AI
 23M Cloud and data roles
 98M Software development

※ Source : Microsoft(2020)

Auto Industry SW HR Growth



※ Source: BCG(2020)

01 ■ WORLD IS DIGITALIZING (4)

PLAN FOR SECURING DIGITAL TALENT

- ✓ Digital Transformation relies on **ACQUISITION OF TALENTS WITH SOLID FOUNDATION**

Biggest Challenges of CEOs in Digital Transformation



HRD is the core of Science and Tech



[US] Legislation to restore global leadership

Invest \$200B in AI/Semiconductor HR, establish Tech Innovation Bureau (Semiconductor Science Act 2022)



[CN] Digital Talent Development Policies

Attract high-quality foreigners (10,000 Talents Plan 2008~), and foster 10,000 specialists (2012~)



[EU] Digital Transformation Compass (Blueprint)

20 million IT professionals by 2030 (currently 7.8M), at Least 80% of adults have basic digital skills

02 • KOREAN DIGITAL HRD (1)

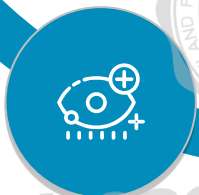
....

LOW NO. OF STUDENT

Low population leads to re-allocation, re-education of students and curriculum



DIRE SITUATION



....

HR SHORTAGE

In-house training to resolve qualitative mismatch

TECH COMPETITION

Securing innovative talent is key to technological survival

SW-AI SHORTAGE

Non-IT companies' exponential Demand surge in SW/AI workforce

Competency Development
for Lifelong Learning
and Future of Jobs

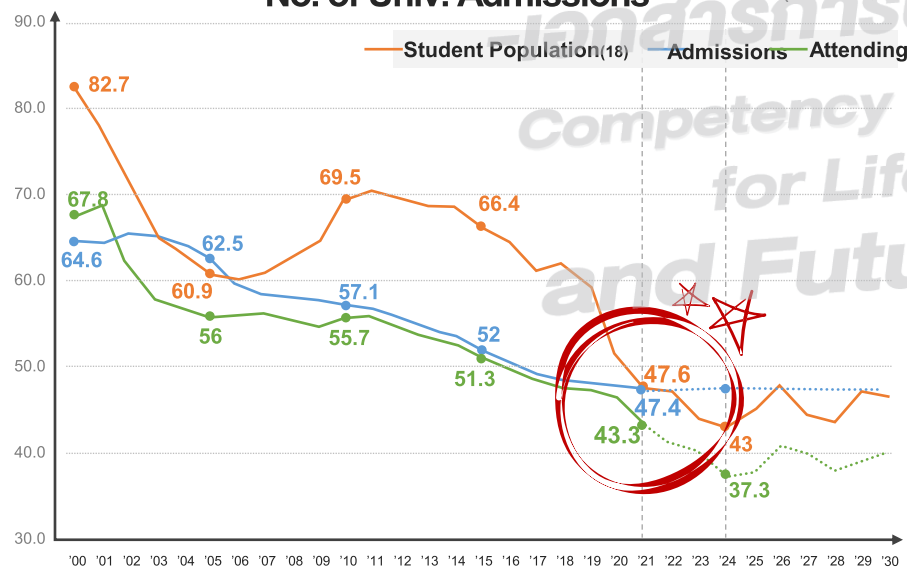
02 ▪ KOREAN DIGITAL HRD (2)

1. LOW NO. OF STUDENT

Decrease in student population
LIMITS DIGITAL WORKFORCE

< No. of student population and
No. of Univ. Admissions

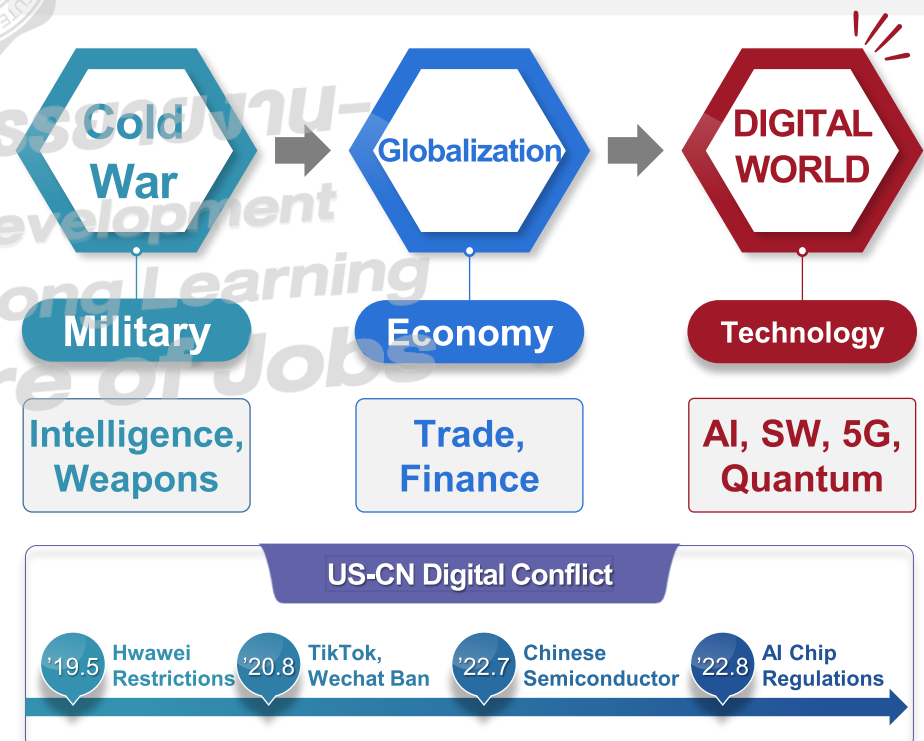
(Unit : 10,000)



* Data beyond 2022 is mere estimate

2. TECH COMPETITION

Technology is key to economic security
SECURING TALENT DETERMINES SURVIVAL



02 · KOREAN DIGITAL HRD (3)

3. SW·AI SHORTAGE

IT / non-IT (Manufacturing, finance, etc.) Accelerated Digital Transform → Convergence Talent Demand

FINANCIAL SECTOR DESPERATE FOR

2022. 05. 20 |

Banks constant digital talent search / recruitment

SAMSUNG BET ON FOREIGN

2023. 01. 30 |

GE, Intel, Apple Mass Recruit Regardless Of gender or nationality

Hyundai, SW-Driven Vehicle (SDV)

2022. 10. 12 |

Endless evolution of SW in A

Microsoft Protection from Amazon: Money

2022. 05. 17 |

MS to increase compensation for IT/Digital HR



4. HR SHORTAGE

COMPETENCY MISMATCH of workforce supply vs demand
→ Companies push for RE-training



FAST-PACED
TECH TREND

VS

SLOW/STALE
EDUCATION



SAMSUNG
SW Academy



LG AI
Masters



Naver (Line)
Boostcamp

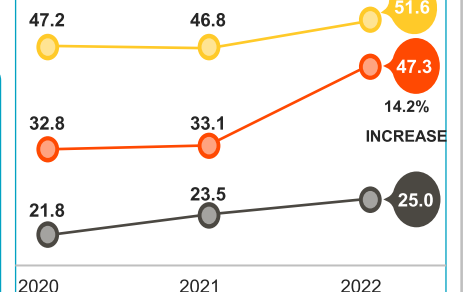


NHN
Academy

< 2022 Recruit >

EXPERIENCED Employment

(Unit: %) ● Conglomerate ● Large ● SME



03 · GOVERNMENT DUTY (1)

GOVERNMENT

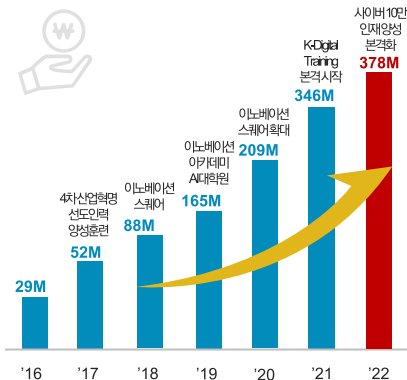
- ✓ Government is drastically **INCREASING INVESTMENT** in accordance of digital transformation
- ✓ In order to supplement the limitations of HRD **DIGITAL TALENT DEVELOPMENT MEASURES** are being prepared

2018.03	2019.12	2020.07	2021.04	2021.06	2022.08
Compulsory SW Elementary	Nat'l AI Strategy	100,000 AI/SW Talent Strategy	BIG3+AI HR Strategy	Public-Private SW Talent	Digital Talent HRD Plan

Government Investment

Digital Transformation HRD Investment

Last 5 years (2018~)
Increase of **OVER x4.5**



New Projects for Digital Talent

- Innovation Academy, AI Graduate School, Global Talent
- AI Competency Mentorship, ICT innovation Talent 4.0
- AI-Centered Convergence, AI Innovation Hub
- Metaverse Graduate School, Global HRD Training, Corporate SW Camp, SW Professional, National Defense AI
- AI Semiconductor Talent

PRIVATE SECTOR

- ✓ **Drastic Salary Increase and Welfare Improvements** to attract the best Digital Workforce
- ✓ Digital Workforce **In-House Training Program**

Private Sector Digital HRD

Company	Program	Features
SAMSUNG	SSAFY	1 year program for those under 29 (Coding Education for Basic and Advanced)
SK HYNIX	SK Hynix Youth High Five	4 week program for those under 34 (Job Training and Specialized Training)
Crafton +KAIST	SW Academy (Jungle)	5 month course for those under 34 (Science & Engineering intensive training)
NHN	NHN Academy	7 month course for those under 34
Naver (Line)	Boostcamp	5 Month Immersive Education
KT	KT Alive School	5.5 Month Program with 2 Tracks
LG	Aimers	2 month online program for unemployed 19~29 regardless of major (AI Training, Hackathon)

03 • GOVERNMENT DUTY (2)

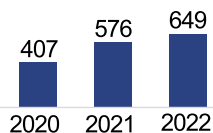
GRADUATE SCHOOL

IT Research Center (2000~), Regional Innovation (2016~) IT Graduate Level Research Competency Development

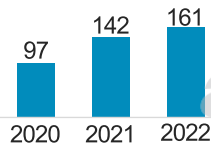
- ✓ 2017~2021 Korea's 15%(4,467) of Graduates are IT
- ✓ 2017~2021 Case of 2,133 SCI, 2,390 Patents, Tech Fee \$28.2M
- ✓ 12 case of OUTSTANDING research in the last 5 years (2018~2022)
And cemented as Nation's Most Important HRD Program

Facilitate Faculty and Talents Through AI Graduate School ('19), AI Hub ('21)

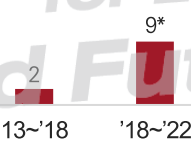
AI Graduates



AI Faculty



World Top 500 Univ.



(※ 자료 : CSRankings 2022) * KAIST, 포항공대, 서울대, 연세대, 한양대, 가톨릭대학교, 경북대 UNIST, 고려대

World-class AI Achievements

서울경제
새해부터 AI 달리는 네이버...국제 학회서 역대급 성적표
머신러닝 최고 권위 학회 ICRL서
논문 작년 1건→올해 12건 '광풍'
100회 이상 인용된 논문 수상
서울대 KAIST 함께 본거지 기대
카카오도 일제라 AI 경쟁 속도전

보행의 기자 2022-01-30 07:00:00 비영리/ICT



한국경제
노상혁 울산과학기술원 AI대학원장
IEEE 석학회원 선정

영예 2021-12-07 18:21 수경 2021-12-08 05:21

노상혁 UNIST(울산과학기술원) 인공지능대학원장(사
장)이 국제전기전자공학회(IEEE) 2022년도 석학회원으
로 선정됐다.

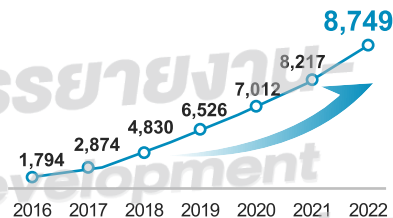


UNIVERSITY SW EDUCATION

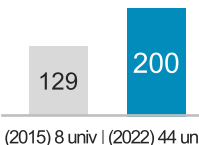
Transform Education through SW Universities (2015~)

- ✓ Encourage Education reforms and curriculum change, including SW related admissions, adjust to industry standard, etc.

Expansion of SW Department Admission



Average of
55.0% per Univ.



(2015) 8 univ | (2022) 44 univ

Internship



Change in perception of once unpopular IT Major

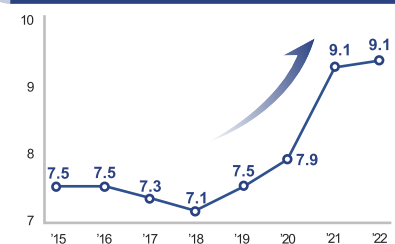
Univ. [Grad. Admission to ICT Department

※ 자료 : 교육통계연보('22.12)

University (Bachelors)



Graduate School (Master, etc.)



03 · GOVERNMENT DUTY (3)

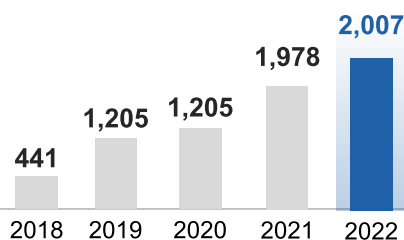
CREATIVE/INNOVATIVE TALENT

**Discover / Nurture SW talents and
Foster / Strengthen Entrepreneurial Competency**

- ☑ (SW Maestro, 2010~) Intensive expert mentoring and in-depth training
Annually 250 experts output

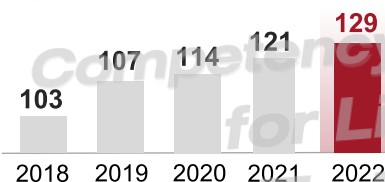
SW Maestro Applicant

<Employment> 93.2% | Last 3 years



SW Maestro Entrepreneur

129 companies established with 1,217 employed (avg 7.6 staff)



SW Maestro Case

- ☑ Startup Company 'Dr. Tail' awarded CES2022 Innovation Award (out of 2,200 companies, 89 Korean companies awarded)

머니투데이

美 온라인 수의사 서비스 '닥터테일', CES 2022 혁신상



**2017 SW Maestro
8th Gen Graduate**

19.7 Cumulative Startup Founders

20.2 Funding awarded to Graduates

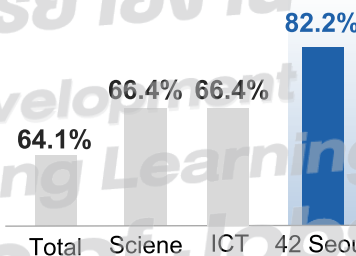
- Funding: \$84K in growth Subsidies
- KR/US patents for global software

JOB COMPETENCY IN SW

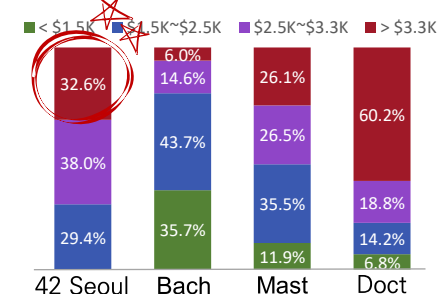
**Strengthen Practical SW Competency
through self-learning, company-linked education**

- ☑ (Innovation Academy, 2019~) NO professor, textbook, tuition program
self-driven learning (**600 trainee annual**)

Employment (2022)



Starting Salary (2022)



Innovation Academy Case

- ☑ IT Major ratio is lowest (37.7%) among HRD projects, but has highest employment rate



○○○ / Int't Trade Major

Job : AIMMO Data Engineer

As a liberal arts majoring student, I wanted to become a developer in data. I learned the overall development through 42 Seoul, and successfully got the job in my dream data center

I was able to get a job in this technological field due to the self-driven learning skill acquired and guidance provided by Seoul42

○○○ / English Major

Job : Hyundai BigData Engineer





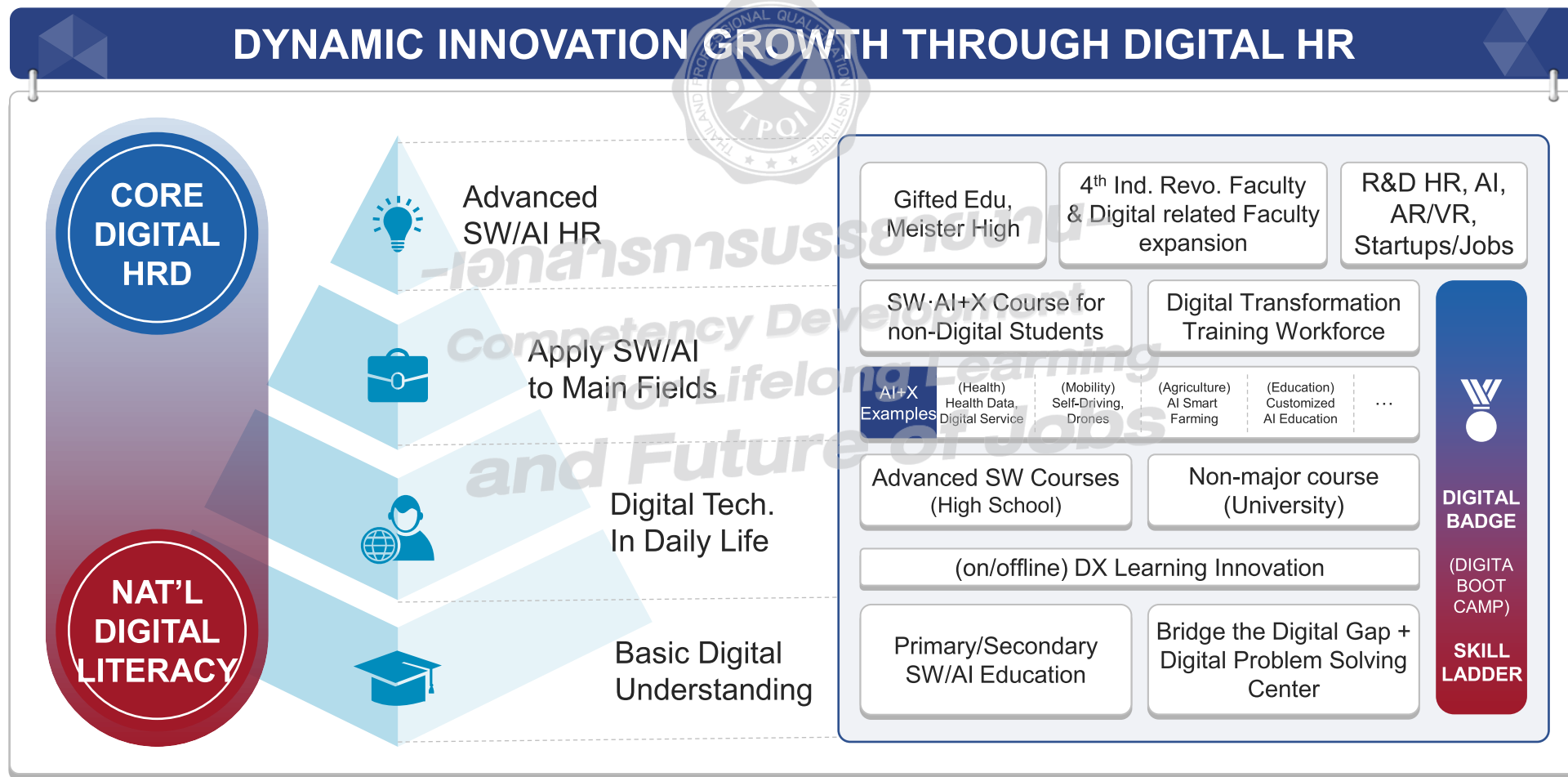
HUMAN RESOURCE DEVELOPMENT STRATEGY

- 1 PRESIDENT'S OBJECTIVE
- 2 MINISTRY STRATEGY
- 3 GOVERNMENT PROJECTS

01 • PRESIDENT'S OBJECTIVE

[1 MILLION DIGITAL HRD (2022~2026)]

DYNAMIC INNOVATION GROWTH THROUGH DIGITAL HR



02 • MINISTRY STRATEGY

VISION

INNOVATIVE DIGITAL HRD FOR A DIGITAL ECONOMY

4 STRATEGIES



MAIN PROJECTS

1. COMBINE EFFORTS OF PUBLIC AND PRIVATE

- ❶ Rapid Growth in Digital HR for the Industry
- ❷ Expand Advanced Education for Potential HR Competency
- ❸ Regional Digital Education for Rural Digital HRD
- ❹ More DX HRD for Digitalizing Industries

2. TRANSFORM UNIV. TO ADVANCED TRAINING

- ❶ Top-Tier HRD to Lead Tomorrow's Advanced Technology
- ❷ Full-Scale University Digital Education Transformation
- ❸ Attract Competent Faculty & Implement Fast-Learning Track

3. DIGITAL COMPETENCIES FOR THE FUTURE

- ❶ Digital Curriculum in Primary, Secondary Education
- ❷ Build Digital Competencies Early and Provide HR to Industries
- ❸ Customized Digital Training for Military Service

4. ESTABLISH FULL-CYCLE HRD SUPPORT

- ❶ SKILLS LADDER for Competency Validation/Growth/Career
- ❷ Promote Data-backed HR Policy-making

03 · GOVERNMENT PROJECTS

1-1

RAPID GROWTH IN DIGITAL HR FOR INDUSTRY

ESTABLISH NEW INDUSTRY-LED PUBLIC/PRIVATE CURRICULUM

1

IND.-UNIV. COLLABORATION CAMPUS SW ACADEMY

Digital Training by Corporation
Within University Campus





2

IND.-UNIV.-GOVT. COLLAB NETWORK CAMPUS SW ACAD

Industry-level Advanced Training
For Each Region





3

SME JOINT TRAINING/RECRUIT CORPORATE MEMBER SW CAMP

SME/Association Consortium For
Training/Recruitment of Graduates




QUICK EXPANSION OF JOINT INDUSTRY HRD

SOLVE INDUSTRY MANPOWER SHORTAGE DIGITAL HR ALLIANCE

SUPPORT IN-HOUSE CORPORATE TRAINING DIGITAL LEADERS CLUB

03 • GOVERNMENT PROJECTS

1-2 EXPAND ADVANCED HRD

1-3 REGIONAL DIGITAL HRD

TRAINING OPPORTUNITY FOR YOUTH

SPECIALIZED CORPORATE TRAINING IN CLUSTERS

DIGITAL TECH. BOOTCAMP TRAINING

REGIONAL DIGITAL INNOVATION BASE

1-4 MORE DX HRD FOR DIGITALIZING INDUSTRIES

CONSULTING

Digital Transformation
of Experts Program
(2024~)

VOUCHER

Digital Transformation
Vouchers for SME
(45 Companies, 2023~)

WORKFORCE TRAINING

DX Training for non-Digital
Industries (i.e. Finance, Services)
(4,800HR, 2022)

03 • GOVERNMENT PROJECTS

2-1 TOP-TIER HRD TO LEAD TOMORROW'S ADVANCED TECH.

GRADUATE SCHOOLS FOR 5 DIGITAL FIELD

AI SEMICONDUCTOR



AI



BIG DATA



METAVERSE



CYBERSECURITY



INTENSIVE NAT'L TECH R&D

RESTRUCTURE UNIV. IT R&D



AI



QUANTUM



SC



CYBER SEC



5G

REGIONAL HRD EXPANSION

14 Cities & Provinces
(10개 → 14 Univ.)

Employee-centered
Contracting

GROWTH THROUGH HIGH-LEVEL ADVANCED R&D HR

AI INNOVATION HUB

- 215 Industry-Academia-Research
- Increase Young Researchers

SW STAR LAB

- Support Core SW Source Tech.
- Support Qualified HRD Labs

39 Labs, 2023 → 60 labs by 2027

GLOBAL CORE TALENT

- Master's and Doctoral Students
- CMU, UT AI R&D

66 Students, 2022

03 • GOVERNMENT PROJECTS

2-2

FULL-SCALE UNIV. DIGITAL EDU. TRANSFORMATION

INCREASE UNIVERSITY SEATS

SW Universities



44

2022

100

2027

Include
Vocational
College

INFO SEC. UNIV.



3

2022

10

2027

3 new Universities
with SC Courses

AI SC IN 4 MAJOR INSTITUTE OF SCIENCE



New SC Department
100 Students (2023)



New SC Department
20 Students (2023)



SC Convergence Course
50 Students (2023)



New SC Track
50 Students (2023)

SUPPORT GROWTH IN OTHER DEPARTMENTS

Increase Digital Courses
332 (2022) → 450 Courses (2027)

Basic Digital Education/Training
For all Students

Credit recognition for
lectures in other universities

03 • GOVERNMENT PROJECTS

2-3

ATTRACT COMPETENT FACULTY & IMPLEMENT FAST LEARNING

INFLUX OF INDUSTRY SPECIALISTS

『Intelligent Information Act』 expands scope of regulation for concurrent faculty employment

Level 1

MSIT Project
(2023)



Level 2

ALL univ.
Gov't Projects

Qualified Faculty and Lecturer Pool(2023~)

ACQUIRE GLOBAL EXPERTS

BRAIN POOL + SUPPORT

* \$447K USD to attract foreign Researchers

Recruitment of qualified foreign faculty for domestic university positions(MOE)

* Civil Servants Act Amendment (Mar. 2021)

FAST LEARNING TRACK

**Bachelor's/Master's
Program Package**
(3.5+1.5 years)

*SW University(3.5years) + AI Graduate School(1.5year년)

**Proliferation of 1 –year
Micro-Degree**

*(ex.) KAIST STEM Graduate (2022)

03 • GOVERNMENT PROJECTS

3-1

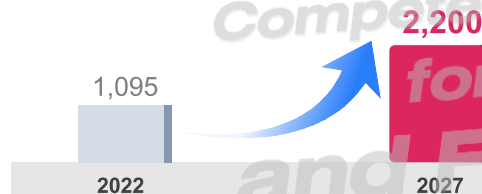
DIGITAL CURRICULUM IN PRIMARY, SECONDARY EDU.

EXPANSION OF DIGITAL EDUCATION

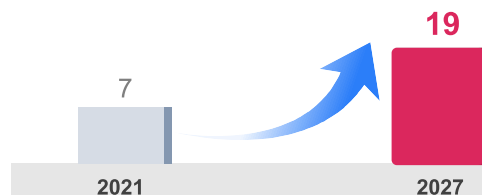
**Increase
Digital
Courses**



**AI
Specialized
Schools**



**K-12
Digital
Course
Textbooks**



INCREASE QUALIFIED TEACHERS

**Assign 1 Digital Expert
as Teacher in all Schools**

Survey Teacher Demand By 2023
Teacher Supply/Demand Plan By 2024



Train Digital Tutors (770 per year)

Assigned as Assistant
Teachers in Schools



**AI School
Teacher Training**

IT Companies provide
Education & Training



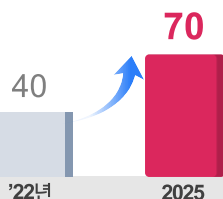
03 · GOVERNMENT PROJECTS

3-2

BUILD DIGITAL COMPETENCIES EARLY AND FEE INDUSTRIES

EARLY DIGITAL HRD OF GIFTED STUDENTS

SW Gifted



STEM Edu for the Gifted



EARLY ENTRY TO INDUSTRY FOR TALENTS

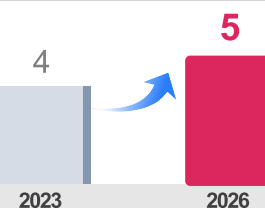
Restructure Special High

Non Digital

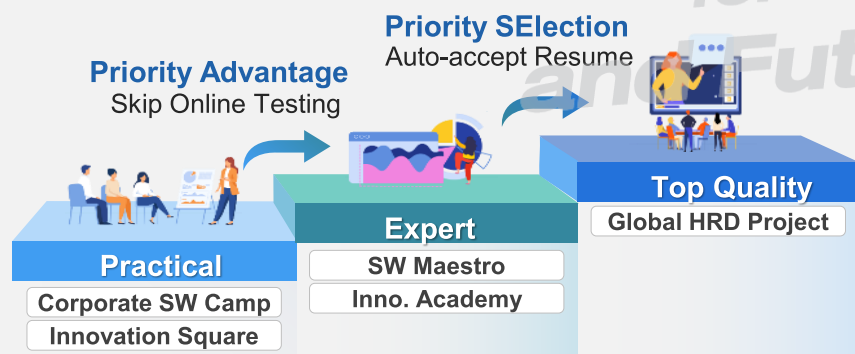
Digital



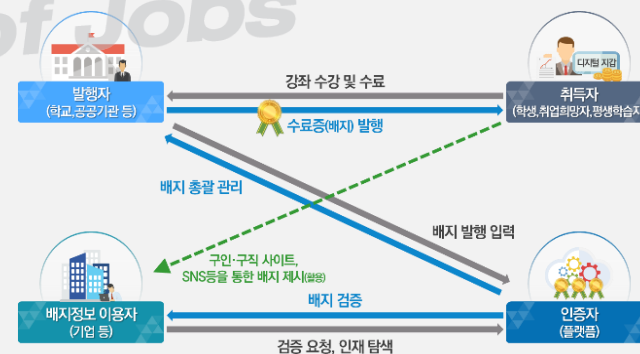
SW Meister High



DIGITAL HRD SYSTEM (SKILLS LADDER)



DIGITAL QUALIFICATIONS (DIGITAL BADGE)



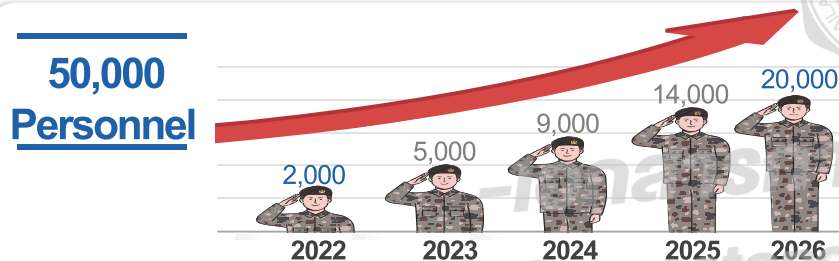
03 · GOVERNMENT PROJECTS

3-3 MILITARY DIGITAL TRAINING

Customized Online SW/AI Training for Soldiers

Training Courses for each Military Level

Cultivate Reserve Manpower for National Defense



AI/SW Training for Military Officers

Compulsory Training on New Digital Technology

Provide AI Graduate School Mentors and assist AI Missions

Military AI Specialist

	2022	2023	2024	2025	2026	Total
 Military Training	53	100	200	300	347	1,000

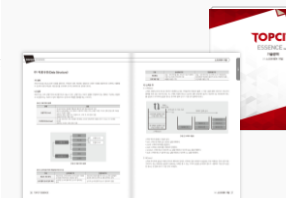
4-1 CUSTOMIZED HR EVALUATION THROUGH TOPCIT

Enhanced Digital Competency Evaluation for each Specialty

- » FIND your talent within
- » RECRUIT new talent
- » UTILIZE PLATFORM for Customized evaluation
- » ACCESS free online learning materials



TOPCIT
SW역량검정
2023년 사업설명회



IIV

HRD COLLABORATIONS

- 1 IITP HRD PROJECT AND
POINTS OF COLLABORATION
- 2 KOREA'S TOPCIT PLATFORM
(Test of Practical Competency in IT)

01 · IITP HRD Collaboration

(\$285.9M USD)

R&D

\$128.0M

+

Non-R&D

\$157.9M

★ IITP COLLAB

High School
Vocational

\$7.1M

Bachelors
Practical

\$127.1M

Graduate
R&D

\$119.7M

Global

\$32.0M

EDUCATION/TRAINING

SW Meister High

2.0M

HIGH Speed IT HRD

5.1M

Early SW Talent

★ SW University

69.0M

ICT Credit Internship

2.4M

University SW Education

AI Semiconductor HR

3.7M

Innovation Education

Univ. IT Research Center

32.7M

Regional Innovatio

19.6M

AI Graduate School

16.7M

Convergence Security

5.6M

IT Talent Development

5.0M

IT Innovation 4.0

7.1M

AI Innovation Research

8.3M

SW Starlab

9.6M

AI Convergence Innovatio

8.8M

Metaverse Graduate

2.9M

AI Semiconductor Talent

3.5M

Graduate Level R&D

★ Global Competency Project

3.3M

★ Global ICT Talent

1.7M

Graduate Level Training

K-SW Square

0.3M

US R&D Co-op

SPECIAL

TOPCIT

Innovation Academy

27.6M

SW Professional

14.1M

Corporate SW Camp

10.3M

Private Sector / Unemployed Support

★ Defense SW/AI Training

3.0M

★ Military AI Training

5.3M

Service Member Training

★ SW Maestro Course

10.8M

★ ICT Mentoring

5.1M

Industry Mentorship

★ Test of Practical Competency in IT (TOPCIT)

2.1M

★ IT Talent Foundation

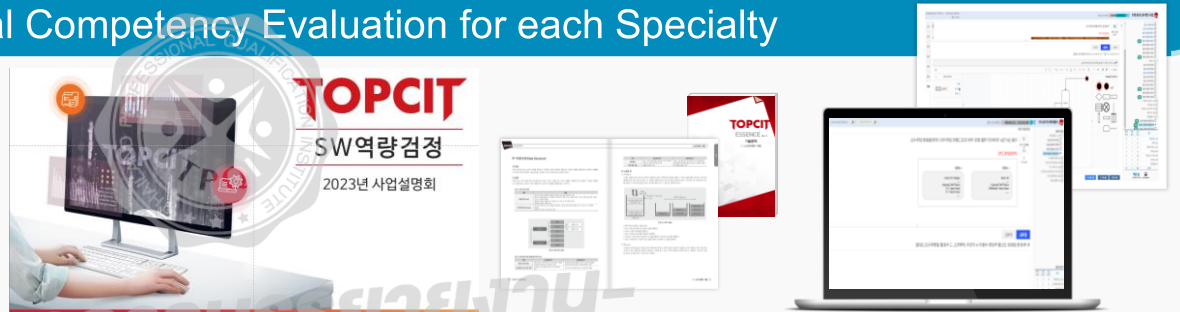
0.5M Talent Outlook

02 • TOPCIT (1)

CUSTOMIZED HR EVALUATION THROUGH TOPCIT

Enhanced Digital Competency Evaluation for each Specialty

- » FIND your talent within
- » RECRUIT new talent
- » UTILIZE PLATFORM for Customized evaluation
- » ACCESS free online learning materials



FUNCTIONS OF TOPCIT

Improve IT/SW education, resolve IT manpower shortage, and expand individual's growth potential



- » IT TREND UPDATE
- » TRACK HR DEMAND
- » Specialized IBT System

- Problem Solving Skills
- Practical IT Competence
- Real Life Test Examples
- AI Algorithm Based Question

TOPCIT UTILIZATION

STUDENTS



- » Career guidance
- » Self-driven learning
- » IT Industry Trend

UNIVERSITY



- » More IT Curriculum
- » Constant Update
- » Industry Demand
- » Students' Level

INDUSTRY



- » Discover IT Talent
- » Better HR Allocation
- » Save HRD Costs

02 • TOPCIT (2)

Question Type

Multiple Choice (19%) + **Short Answer** (12%) + **Long Answer** (21%) + **Critical Thinking** (48%)

* Total of 65 Questions for 2 hours and 30 minutes

BUSINESS

18%

- IT Business & Ethics (9%)
- Project Management & Technical Comm. (8%)

TECHNICAL

57%

- Software (26%)
- Data (15%)
- System Architecture (8%)
- Information Security (9%)

COMPREHENSIVE

25%

- Knowledge & problem solving skills in both Technology & Business (26%)

02 • TOPCIT (3)

SOFTWARE

- › Understanding Software Basics
- › Data structure and algorithm
- › Software analysis and design
- › Software implementation and testing
- › Software management
- › Trends in software development

DATA

- › Understanding of data and databases
- › Database design
- › Database programming
- › Database operations
- › Data analysis and application

SYSTEM ARCH.

- › Overview of systems architecture
- › System-based technologies
- › Application technologies of systems architecture
- › Network-based technologies
- › Application technologies of networks

INFORMATION SEC.

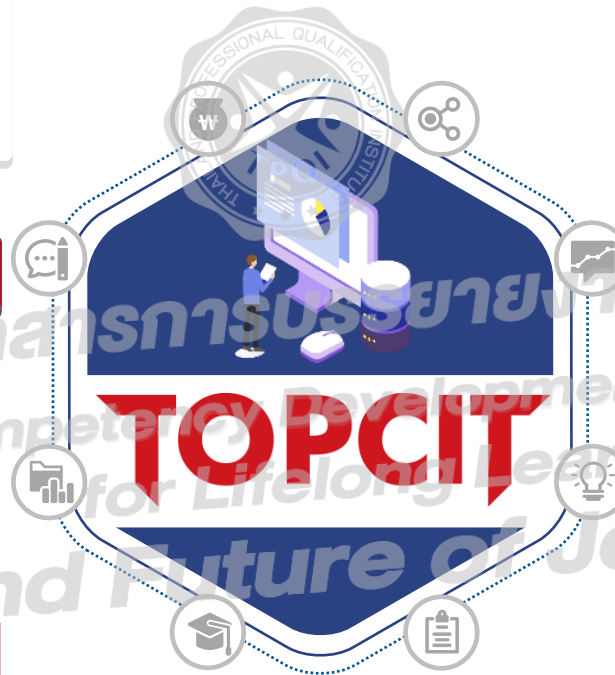
- › Understanding of information security
- › Practice of information security

IT BUSINESS/ ETHICS

- › Understanding of IT business
- › Planning IT business
- › Execution of IT business
- › Trends in IT business
- › Ethics of IT business

PM and TECH. COMM.

- › Business communication
- › Technical communication
- › Presentation
- › Understanding / mgmt. of projects
- › PM Scope, tools and evaluation



Competency Development
for Lifelong Learning
and Future of Jobs

JOIN KOREA NOW IN HRD
DIGITAL TRANSFORMATION

THANK YOU

*Competency Development
for Lifelong Learning
and Future of Jobs*

