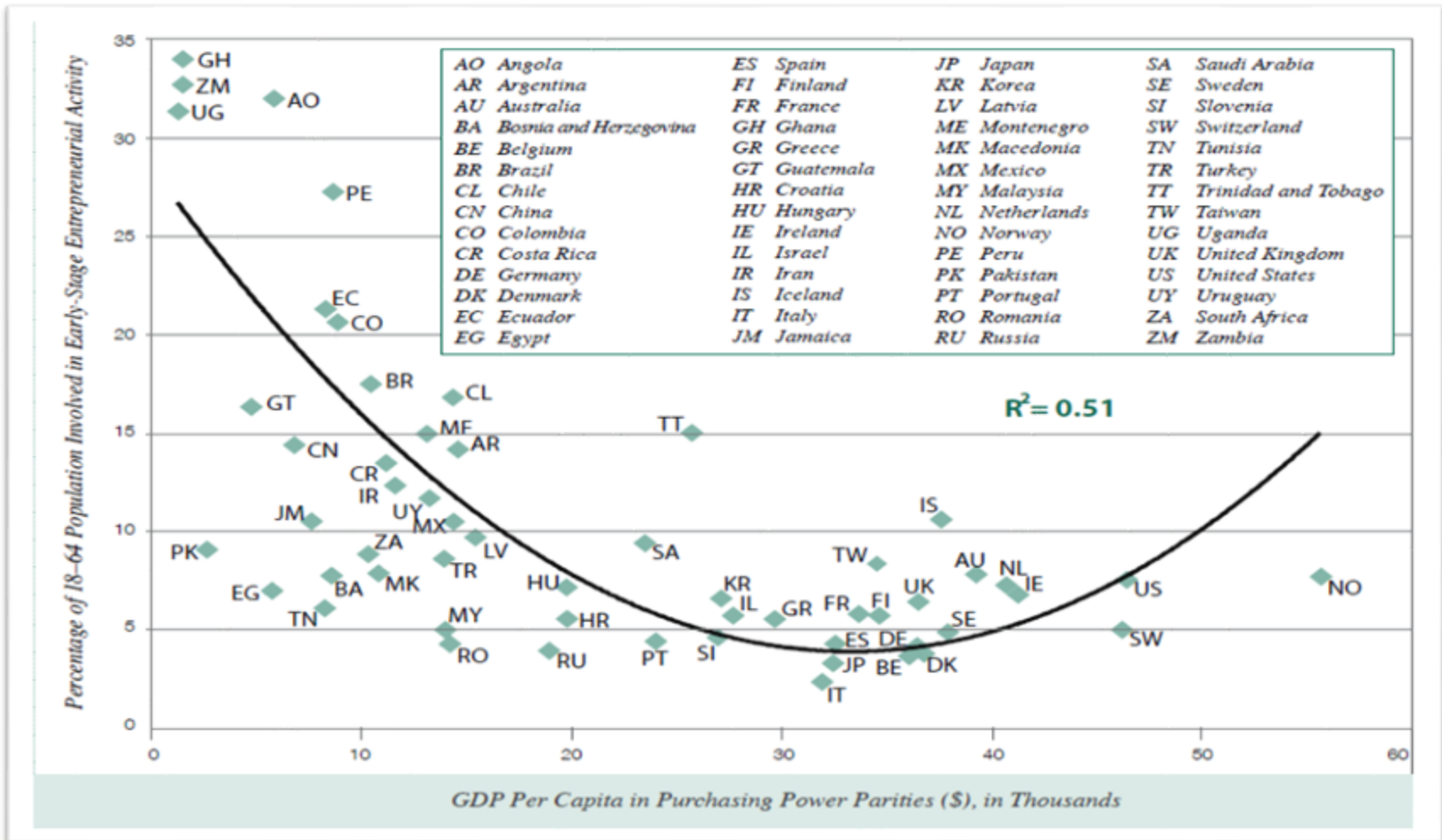


Innovative Startup Promotion Policies and Programs of Korea

Prof. Jongwoon Kim (Hannam Univ.)

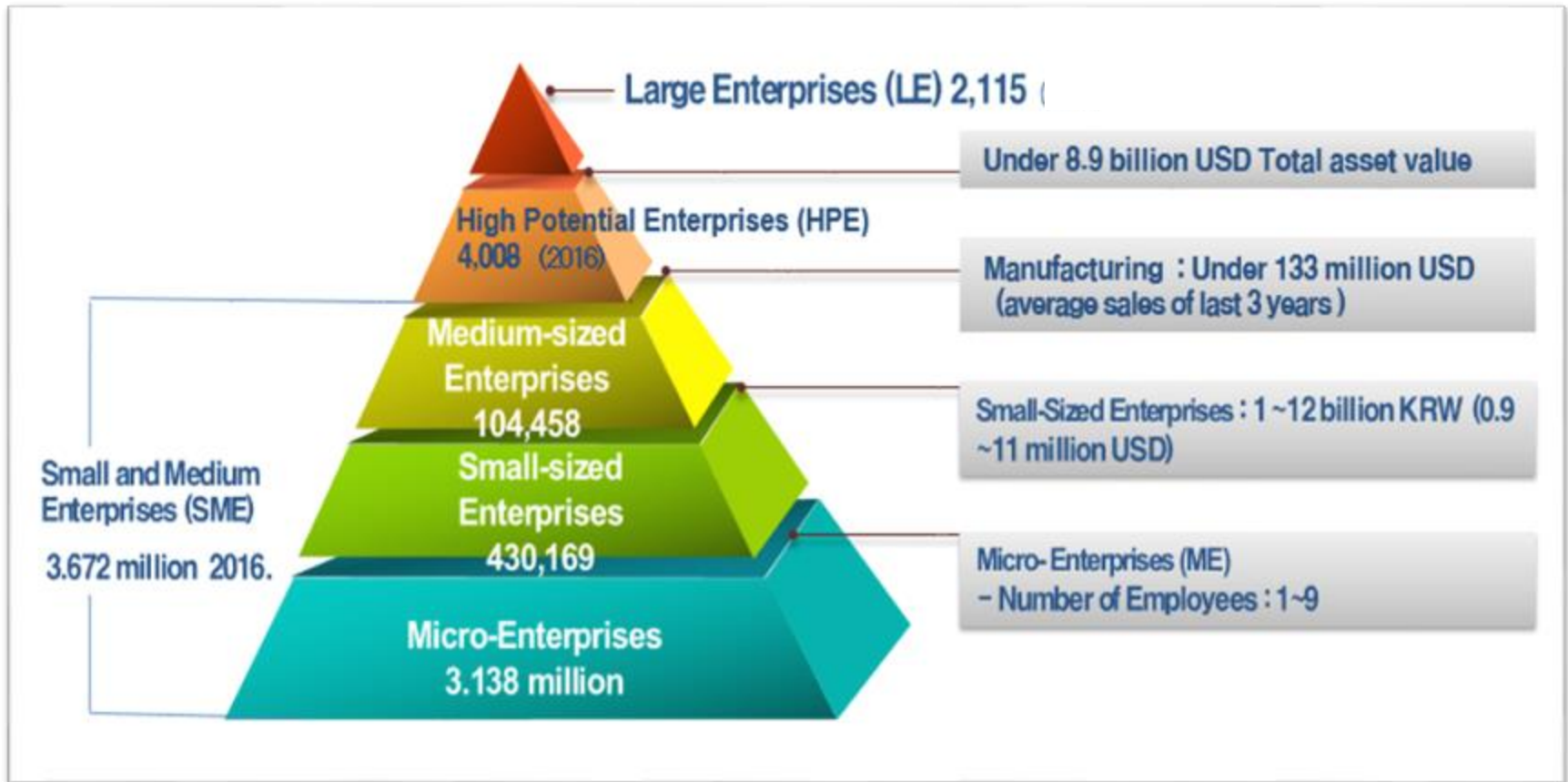
I. Introduction

Innovative Startups & Economic Growth (GEM Analysis)



I. Introduction

Size-based Business Composition in Korea



I. Introduction

Roles of SMES (innovative startups) in Korea

- **Changes in SME Roles**
 - (1960s~1980s: Fast-growing Economy) Vendors for Large Set-makers
 - (1990s~mid-2000s: Growth Slowed Down) Innovators & Globalization Facilitators
 - (mid-2000s~) Major Engine for Job Creation
- More Resources for R&D and Globalization to Strengthen SME Global Competitiveness

I. Introduction

Startup Statistics in Korea

- Around 1.3 Million startups each year (200 thousand tech startups)
- Around 100 thousand corporations each year (20,000 in manufacturing sectors)

No. of Startups	2016	2017	2018
Total Startups	1,190,177	1,256,267	1,344,366
Tech Startups	190,674	198,911	212,237
Startup Corporations	96,155	98,330	102,042
Manufacturing Sectors	19,037	20,629	18,954

(Ministry of SMEs and Startups)

II. Innovative Startup Supports

Functional Distribution of Startup Support Programs

Division	Commercialization	R&D	Incubation	Mentoring, Networking
Budget	816.8	454.6	156.9	91.4
(portion, %)	<i>(22.3)</i>	(12.4)	(4.3)	(2.5)
Programs	172	5	107	112
(portion, %)	(40.4)	(1.2)	(25.1)	(26.3)
Division	Investment (Loans)	Human Resources	Globalization	Total
Budget	2,007.5	47.0	86.5	3,660.7
(portion, %)	<i>(54.8)</i>	(1.3)	(2.4)	(100.0)
Programs	4	11	15	426
(portion, %)	(0.9)	(2.6)	(3.5)	(100.0)

II. Innovative Startup Supports

1. Entrepreneurship Education

➤ **Youth BizCool Program**

- Elementary, middle, and high school students of 495 schools
- Supporting Entrepreneurship education and Startup Training

➤ **Practical Training Program for Entrepreneurs**

- 2,700 Prospective entrepreneurs with startup business items
- Training Idea Development, Business Model, and Marketability Tests

➤ **Online Training Courses**

- Any one can sign up for taking courses for free.
- Business Knowhow: 50 courses, Startup Success: 300 courses

II. Innovative Startup Supports

2. Startup Package Programs

➤ **Starting-up Support Package Program**

- 1,700 would-be entrepreneurs in preparation for startups
- Supporting Startup Training, Mentoring, and Startup Funds (max: 110 million won)

➤ **Early Startup Support Package Program**

- 1,030 startups within 3 years of registration
- Supporting Market-verification, Commercialization, and Marketing (max: 150 million won)

➤ **Growing Startup Support Package Program**

- 1,350 startups between 3 and 7 years of registration
- Supporting R&D, Product Design, and Export (max: 150 m won)

II. Innovative Startup Supports

3. Technology Incubator Programs for Startups (TIPS)

➤ **Purpose**

- Government and Startup Accelerators (successful CEOs) cooperate in funding and business support services provision.
- Focused on technological startups

➤ **Process**

- a) Government selects accelerators for the program funding.
- b) Selected accelerators select startups, invest, and provide business support services.

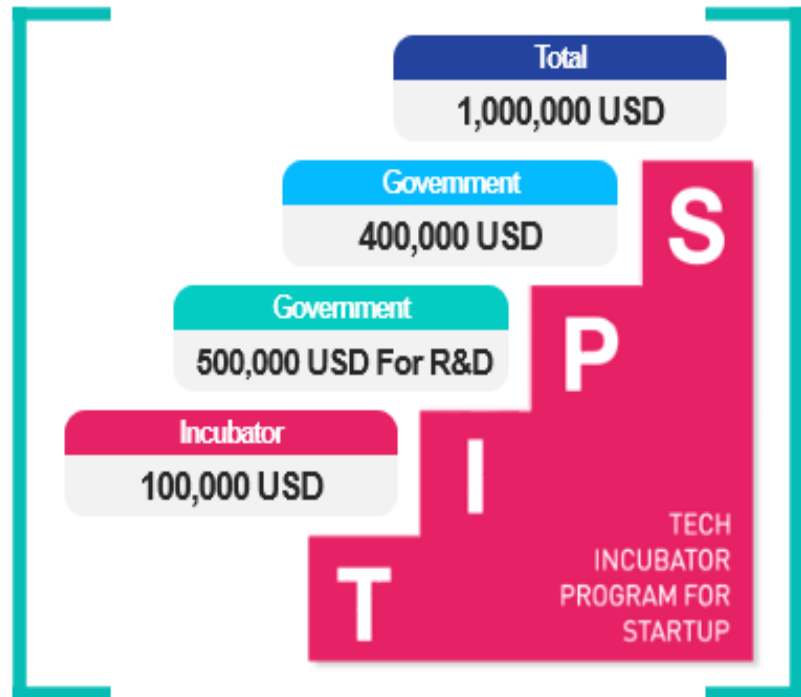
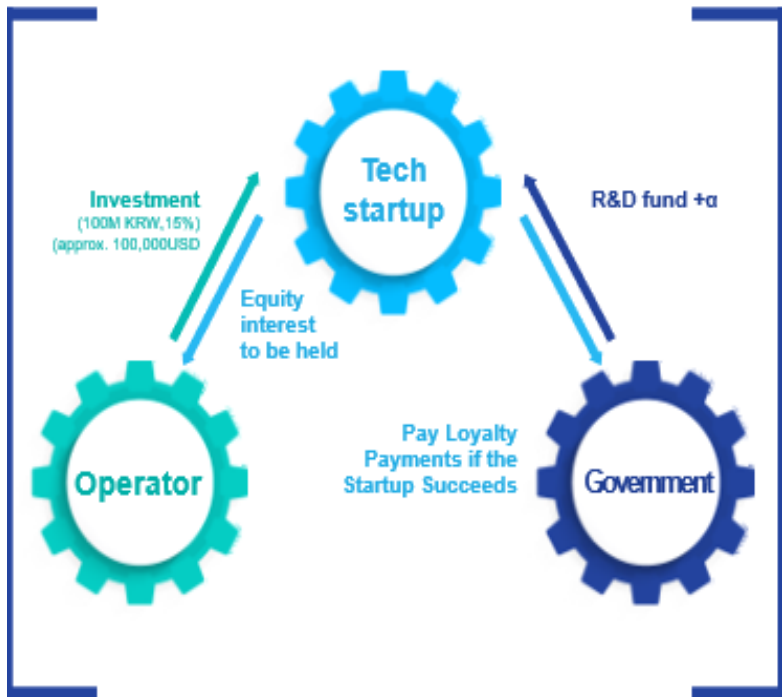
➤ **No. of Startups Supported**

- About 400 startups selected and invested each year.
- Selected startups get max support of 700 million won (for commercialization, R&D, export etc.).

II. Innovative Startup Supports

3. Technology Incubator Programs for Startups (TIPS)

Private Accelerators Select/Recommend Startups
Then, Government Makes Final Selection, **R&D, Commercialization Fund Support**



II. Innovative Startup Supports

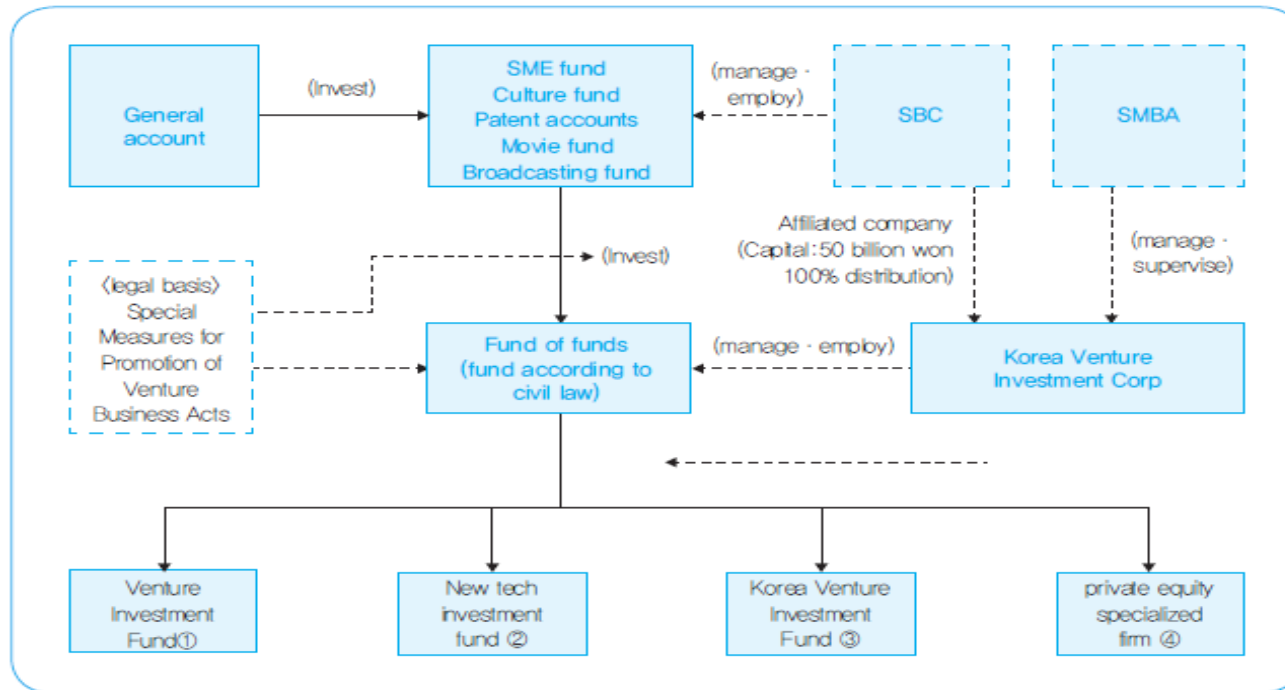
4. Tax Incentives for Startup Investments

- Tax Incentives for **Venture Capital Investment** (920 funds, 27 Trillion Won)
 - No tax on capital gains from startup investment (directly or indirectly via funds) by venture capital companies
 - Tax credit for investment in venture capital fund upto 30 million won and preferred tax credit for larger investment
- Tax Incentives for **Angel Investment**: 980 funds, 653 Billion won
 - Tax credit for angel investment in startups either direct investment of or thru angel investment funds
 - Tax credit for upto 30 million won and preferred tax credit for larger investment

II. Innovative Startup Supports

5. Korea Fund of Funds

- Korea Venture Fund shares the risk from investment in early stage startups with venture capital companies by co-investing.



II. Innovative Startup Supports

5. Korea Fund of Funds

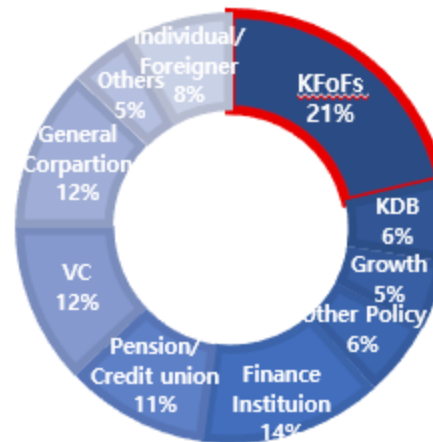
- KFoF was established in 2005 with the purpose of cultivating a sound and resilient venture capital market.
- KFoF has positioned itself as the largest single investor for VC funds in Korea.

Key Figures of KFoF

AUM	\$8.2B
Aggregate Commitment	\$9.93B
# of Committed VC Fund	1,022
Total size of the Committed Fund	\$23.45B

* As of Feb 2022

LPs Breakdown by Commitment Size



Source: KVCA VC Discovery, as of Dec 2019

II. Innovative Startup Supports

6. Designation of Venture Business & Support

< Definitions of Venture Business >

Venture Investor

- When a venture investing institution invests 10% or more of its total capital
- * Minimum 50 million won

Technology Evaluation Guarantee Loan Receivers

- When Kibo provides a venture with loans worth 80 million won or more loans
- Venture with excellent tech. evaluation result

R&D Institution

- A company with an in-house/subsidiary research center
- A company with R&D expense 5% or over of its total sales
- A company with a great feasibility test result

II. Innovative Startup Supports

6. Designation of Venture Business & Support

Benefits for "Venture Businesses"

Tax Benefits for Startups

- Corporate/Income tax cuts (50% for 4 years)
- Registration/Acquisition tax exemption (for 4 years)
- Property tax cuts (50% for 4 years)

Location for Ventures

- Preferential treatment for factory establishment approval
 - * Lab-factory, urban factories in BI etc.,
- Preferential treatment for venture clusters
 - * Financial support for facilities, quasi tax exemptions
 - * Ease of restrictions

Man Power Support

- Providing stock options to more employees
- Easing the condition of R&D center establishment
- Granting opportunities to apply for a defense contractor (twice)

Other Benefits

- Preferential treatment for KOSDAQ listing evaluation
- Electricity bill discount (13.8% of ordinary rate)
- 70% discount for TV advertising

III. Policy Performance

Performance of Innovative Startup Policy

< Number of Venture Businesses >

	Venture Investment	R&D Capability	Technology Potential	Total
No. of Businesses	2,888	2,886	33,651	39,511
Portion (%)	7.3	7.3	85.1	100

(As of December, 2022, Korean MSS)

III. Policy Performance

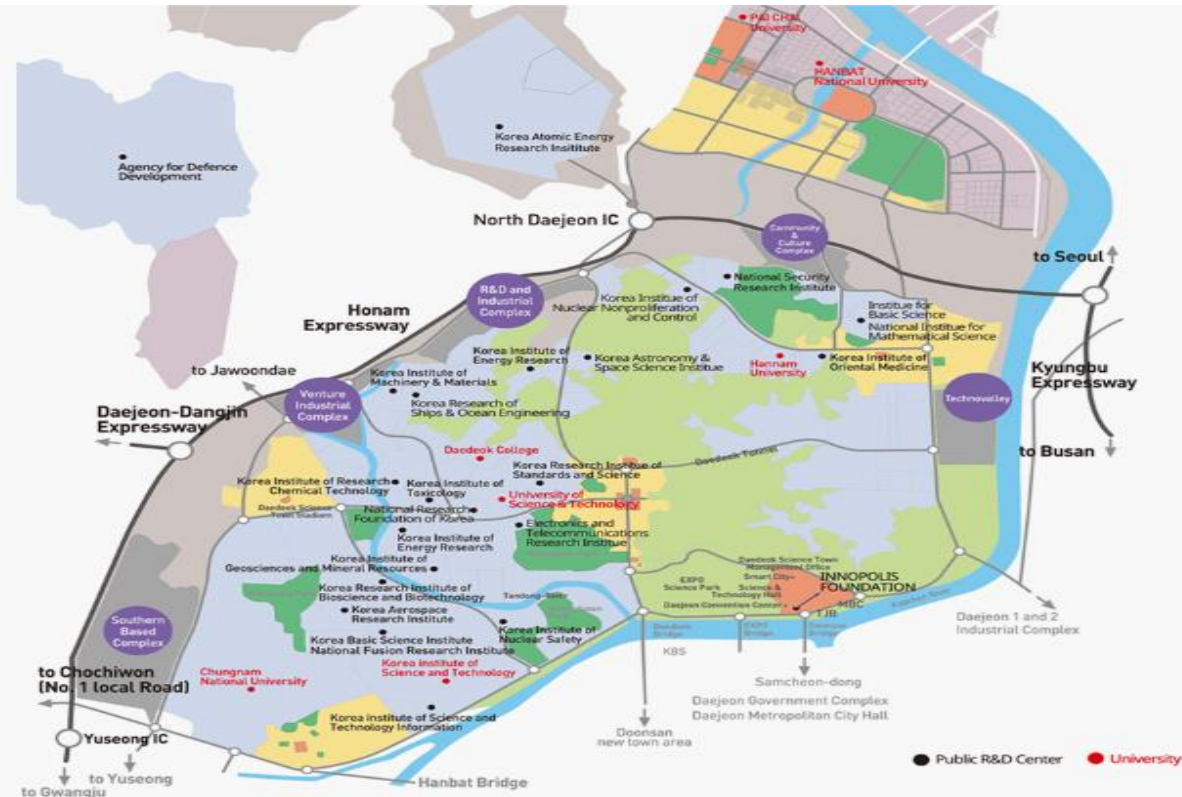
Performance of Innovative Startup Policy

- 633 : “100 Million dollar Venture Club” (17 of them exceeded 1 trillion dollars of sales.) → It took 17.5 years on average.
- They employ 242 thousand workers, and sold 151 billion dollars in 2021.
- **Performance of them** (2021 compared to 2020)

Category(%)	division	LEs	Quasi - LEs	SMEs	100 M\$ Ventures
Growth	Increase in Total Assets	5.4	4.4	12.5	16.0
	Increase in Tangible Assets	2.8	2.0	12.8	7.0
	Increase in Sales	-4.6	-3.5	3.9	10.9
Profits	Operating Profit	4.8	5.0	3.5	10.6
	Net Profit	3.0	3.7	2.6	7.3
	Return on Equity	3.8	5.7	6.1	11.0
Stability	Ratio of Owner' s Equity	50.7	52.0	37.6	58.6
	Debt Ratio	97.3	92.4	166.3	70.5
	Current Ratio	135.7	136.7	147.4	147.5

IV. Local Government Startup Programs

Biggest Research Complex in Korea



26
GRIs



about
1,900
Companies



7
Universities



about
30,000
R&D workers

IV. Local Government Startup Programs

Policy Collaboration with Central Government

- Major startup support programs are implemented by the Central Government through public institutions (eg. Korea Institute for Startup and Entrepreneurship Development).
- Startup infrastructure creation and local startup support programs are collaborated between Daejeon and the related public institutions (eg. Creative Economy Innovation Center).
- New PPP (Daejeon City & Private Companies) launched for local innovative startup (upto 50 million won of startup seed funding).

IV. Local Government Startup Programs

Major Programs for Startup Supports

- Marketing Support for Local Startups (startup education & on-off line marketing supports)
- Startup Incubation Program (R&D, prototyping, certification supports)
- Startup 96 Program (ideation, startup space, mentoring service)
- High School Startups (education, business model competition)
- Youth Startup Support Program
 - for early startups by young entrepreneurs
 - supports operation fund (upto 3 million won)

V. University's Startups in Korea

Introduction

- For over two decades, universities have been recognized for their role as "entrepreneurial universities" in regional development.
- This concept emphasizes universities' active engagement in job creation and value generation by leveraging their intellectual property, either directly or indirectly.
- The Korean government, following the example of the United States and several European countries, has taken steps to provide increased financial support for universities.
- Universities in Korea are now placing a greater emphasis on entrepreneurship education to enhance their competitive advantage.

V. University's Startups in Korea

University Startup Trend

- 470 startups by faculty in 2022, with annual increase of 13.5% for the recent 5 years
- 1,826 startups by students in 2020, with annual increase of 3.5% for the recent 5 years

	year	Number of Startups	Sales (Million won)	Employees
Faculty Startups	2018	250	3,091	337
	2022	470	12,153	436
Student Startups	2018	1,534	15,332	336
	2022	1,826	24,655	402

V. University's Startups in Korea

Major Programs for University Startups

- **LINC** (Leaders in Industry-university Cooperation: Min of Edu)
 - Types : Technology Innovation (13 Univ)
Business Scale-up (53 Univ)
Collaboration Infrastructure Building (10 Univ)
 - Supports: 2.0~5.5 Billion won/year for startup & scale-up supports, and other university-industry collaboration projects
- **Startup-Centered University** (Ministry of SMEs & Startups)
 - Selection & Financial Supports: 9 Universities (approx. 400 billion won/5 years)
 - Commercialization & Scale-up (Startup Education, Management Services, Investment, Marketing etc)

V. University's Startups in Korea

University Startup Policies & Issues

- **Ownership** of Technologies created by public funding(USA's Bayh-Dole Act in 1980)
- **Double-Job permission** (for startup CEO) for university professors by university management (Korea's Special Act for Venture Business Promotion in 1998)
 - * University's benefits: contribution to social development & financial gains from the startups' shares (around 5%)
- **Resources** for startup creation & scale-ups (public venture funds or private venture fund investment)
- **Student Startups' Focus:** Education or Real Business Creation?

VI. Hannam University's Startup Supports




Startup Incubation Zone



VI. Hannam University's Startup Supports

Startup Facilities & Infrastructure

- ✓ **Largest startup incubation facilities** among universities in the country
- ✓ **Achieved 2nd place in entrepreneurship index** in 2022
- ✓ **Top grade for management evaluation** in startup incubation center

			
<p>[Science Park] 2718m²</p> <ul style="list-style-type: none">▪ Features : Bio & Chemicals▪ Specialization<ul style="list-style-type: none">- Instrument facilities- Networking hall	<p>[Inno-biz Park] 3517m²</p> <ul style="list-style-type: none">▪ Features : IT, Consulting▪ Specialization<ul style="list-style-type: none">- Incubation center- Lecture hall	<p>[Factory] 3564m²</p> <ul style="list-style-type: none">▪ Features : Bio & Chemicals▪ Specialization<ul style="list-style-type: none">- Material processing- Pilot production line	<p>[Ojeong Center] 1364m²</p> <ul style="list-style-type: none">▪ Features : Services▪ Specialization<ul style="list-style-type: none">- Mentoring room- Startup supporting team
<p>Daedeok-Valley Campus</p>			<p>Ojeong-dong Campus</p>

139 Offices (77 companies)

VI. Hannam University's Startup Supports

Hannam Design Factory: Innovatin Platform



Expanding the creativity of students by utilizing the design thinking process



Focus on multidisciplinary team-based projects (Convergence of design-engineering-business)



Strengthen internationalization capabilities by conducting joint projects with DFGN



VI. Hannam University's Startup Supports

Hannam Design Factory



VI. Hannam University's Startup Supports

Vision & Objective

VISION

**Central Organization for Regional Economic Growth
Through Start-up**

Core Objective

**Realizing a Start-up Centric University that leads the innovative growth of
the regional economy by building a regional Start-up support and
nurturing ecosystem**

Performance Indicators & Goals

722	240B	2.3K	47.1B	370	15	400	1
Company	Revenue	Employment	Investment	Intellectual Property	IPO	Partner Organization	K-Unicorn

VI. Hannam University's Startup Supports

Success Cases

ALTEOGEN Inc.

- Main Business: Biosimilar R&D
- Capital Stock: 3,600 million KRW
- **Number of Employees: 125**
- **2022 Revenue: 28.8 billion KRW**
- * Listed on the KOSDAQ stock market

LegoChem Biosciences Inc.

- Main Business: Medicinal Chemistry R&D
- Capital Stock: 1,000 million KRW
- **Number of Employees: 135**
- **2022 Revenue: 33.4 billion KRW**

* Listed on the KOSDAQ stock market

Paintpam Inc.

- Business Type: Total Paint (Manufacturing)
- Main Items: Specialty paint
- Number of Employees : 8
- **2022 Revenue : 2,503 million KRW**
- Company History:
 - (2018) Entered the Business Incubation Center
 - (2019) Transferred technology from Hannam University, engaged in joint R&D projects, and received business support.
 - (2020) Awarded **special recognition** by the Ministry of SMEs
 - (2021) Awarded **innovation startup** company by the Mayor of Daejeon City
 - (2023) Received a **best prize** from the Chairman of the Korea Business Incubation Association (Exceptional Startup)

* Current Occupants of the Business Incubation Center

VI. Hannam University's Startup Supports

Future: HNU Campus Innovation Park

■ Objectives

- Fostering high-tech industries
- Revitalizing regional economy
- Innovative venture company town
- Urban advanced industrial complex



■ Potential Facilities

- 250 companies, 1,500 jobs
- High-tech facilities
- Maker space, test beds
- Joint labs with int'l organizations



(+) A Research on University Startups

Table 5 - Estimates of the three models

Variables	< Model 1a > Professor Startup Counts	<Model 1b > Professor Startup Employment	< Model 2a > Student Startups Counts	< Model 2b > Student Startups' Employment	< Model 3a > Organizational Startup Counts	< Model 3b > Organizational Startups' Employment
<u>Intellectual Properties</u>						
- SCI Papers	-.00002 (.0004)	.00041 (.0006)	.00044 (0004)	.00170 (.00086)**	-.00075 (.00047)	-.00217 (.00064)
- Int'l Patent Applications	.00058 (.0011)	.00062 (.0016)	.00005 (.0009)	.00500 (.00219)**	.00196 (.00115)*	.005836 (.00157)***
<u>Financial Resources</u>						
- Research Fund	.21488 (.0556)***	.39314 (.0847)***	.25985 (0271)***	.76207 (.06098)***	-.10508 (.07023)	-.04568 (.08865)
- Commercialization Fund	.01065 (.0103)	.01732 (.0157)	.01425 (.0095)	-.04650 (.0289)	.03606 (.01147)***	.04939 (.01424)***
<u>Organizational Resources</u>						
- Number of Startup Staff	.01169 (.0043)***	.00397 (.0064)	-.00977 (.0036)***	-.00136 (.0087)	.01121 (.00481)***	.00156 (.00657)
- Research Facilities	.00030 (0006)	.00007 (.0009)	-	-	.00158 (.00061)***	.00012 (.00088)
- Startup Space	.000085 (.00003)***	.0006 (.0005)	-.00003 (.00003)	-.00001 (.00006)	-.00001 (.00004)	-.00004 (.00005)
- Technology-Holding Com	.35322 (.1079)***	.44114 (.1587)***	.17358 (.0799)***	.87746 (.19544)***	6.6142 (.52752)***	7.26905 (.44819)***
<u>Startup Education</u>						
- Startup Courses	-	-	.00028 (.00016)*	.00301 (.00115)***	-	-
- Startup Course Students	-	-	.00013 (.00002)***	.00008 (.00007)	-	-
- Startup Clubs	-	-	.00709 (.0016)***	.00164 (.00347)	-	-
<u>Personnel Policy</u>						
- Professor Startup Leave Period (months)	.00424 (.0015)***	.00026 (.0024)	-	-	-.00005 (.00174)	.00231 (.00236)
<u>Professor Startup</u>						
	-	-	.04202 (.0143)***	-.00106 (.03349)	-	-
<u>Control Variables</u>						
- QS Ranking 100	-.09607 (.2052)	.05694 (.2481)	-.04366 (.1670)	-.25660 (36743)	.09525 (.21329)	.11669 (.31610)
- Number of Professors	.00033 (.0003)	-.00004 (.00005)	.00015 (.0003)	-.00086 (.00056)	.00077 (.00036)**	.00134 (.00049)***
- University Type(public)	-10.3686 (665.21)	-.05184 (.3962)	-13.0636 (3333.49)	-11.4185 (416.54)	14.054 (722.64)	1.3041 (1150.54)
Constant	-4.0565 (.8876)	-6.8275 (1.3751)	1.1215 (.2165)***	1.2649 (.70081)*	-3.8528 (1.2174)***	-4.7695 (1.4759)***
Log Likelihood	165.24	417.32	1892.65	7201.40	1990.83	10000.00

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Thank you!