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## Yonsei Enterprise Support Foundation

# YONSEI

Leading the Way to the Future



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2019. 4. 10.



YONSEI UNIVERSITY



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01

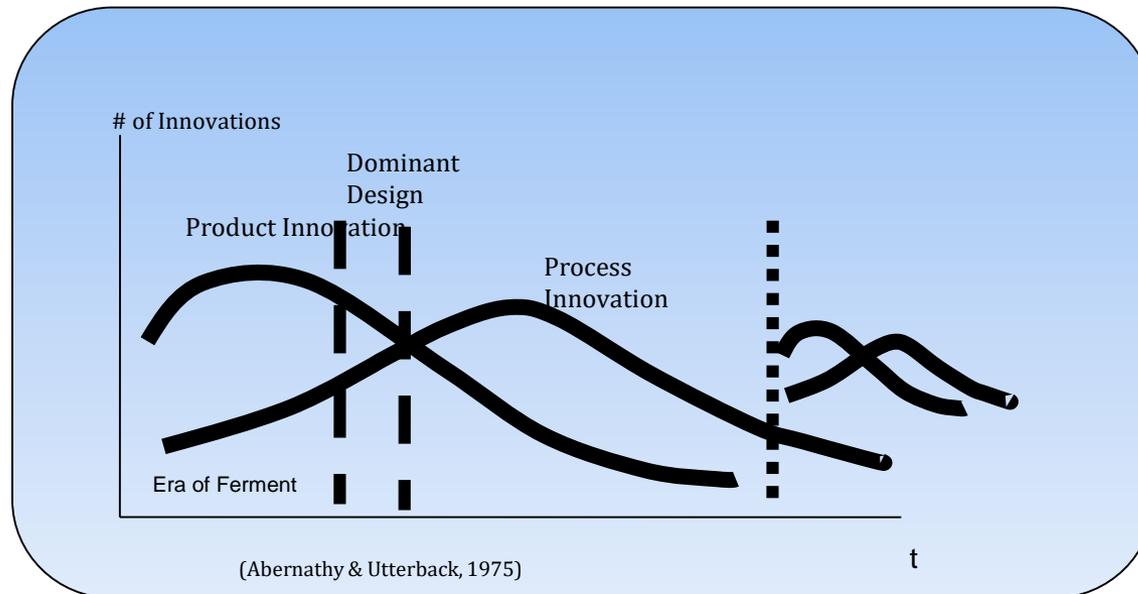
# YESF Philosophy



## Variation-Selection-Retention Model

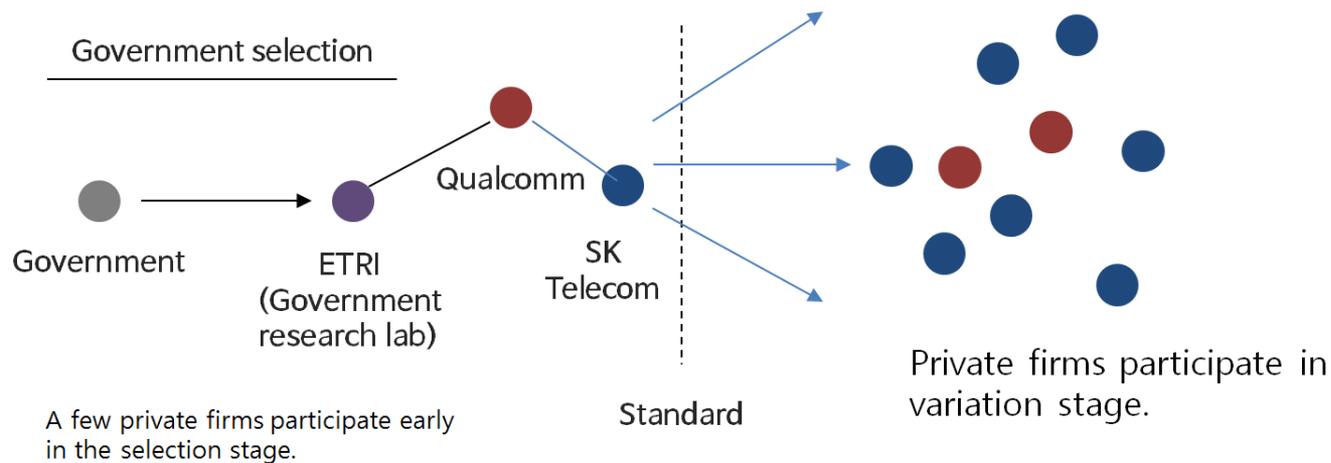
- **Variation:** Creation of a novel technical or institutional forms
- **Selection:** Occurs principally through competition among the alternative novel forms
- **Retention:** Involves the forces that perpetuate and maintain certain technical and institutional elements selected in the past

(Campbell, 1965; Van de Ven and Garud, 1994)



## Technology evolution in developing countries

- The selection force at the initiation of technology development is especially prevalent in **'latecomer countries'** such as Korea (Cho et al., 1988; Choi, 1986; Lee, 1988). China is following the same strategy.



- Important technological breakthroughs from government-initiated R&D consortia – government as a strong selection force in Japan as well
  - HDTV by NHK, Japan (1990, Office of Technology Assessment)
  - Development of VLSI in Japan (Sakakibara, 2001; Sakakibara & Cho, 2002)

Many industries in Korea were developed successfully following the pattern of reverse technological evolution

### National strategic investment – selection & variation

**Shipbuilding**

<b>1970's</b> Government Driven	<b>1980's~90's</b> Private Investment - Increasing the private lab. - Engineering tech.	<b>2000's</b> World No.1 M/S - 40.4%('06)
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**Semiconductor**

<b>1980's</b> Government Driven - 4M/16M DRAM	<b>1990's</b> Private R&D - 64M/256M DRAM	<b>2000's ~</b> World No. 1 M/s - MS10.2%('13)
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**Cellphone**

<b>In the early 1990</b> Government Driven - CDMA	<b>In the later 1990</b> Expanding the market - Technology push	<b>2000's</b> World No. 1 M/s - MS 37%('13)
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### Strategic roles and cooperation between Gov. and private.

**Display**

<b>1990's</b> Industry-academic cooperation in R&D - Supplying R&D Seed Money	<b>In the early 2000's</b> Private Investment - Global Mass production	<b>Present</b> World No.1 M/S - 40.4%('13)
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**Mobile Internet**

<b>In the early 2000's</b> Gov.-Pri. Co-R&D - WiBro	<b>In the middle 2000's</b> World Standard and global development	<b>Present</b> Rapid market expanding - Increasing aver.20%
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### Localizing the core technology

**Nuclear Energy**

<b>1970's</b> Introduction of oversea tech.	<b>1980~1990's</b> Intensive R&D Development of Korean standard nuclear reactor	<b>1990~</b> Foundation for economic development
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# Selection-Variation-Retention (SVR) Model

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- In the case of latecomer countries, *selection force* is strong from the government and a few private firms

Government drives **selection-variation mechanism**, the reverse evolutionary process that is the opposite direction of natural evolutionary process (variation-selection-retention) and firms follows this pattern.

Kim, Bae and Yang (2014)

- Several **benefits** of selection force (Kim et al., 2014)
  - Time saving to develop technology at certain level.
  - Reduce competition and redundant investments in the market.
  - Reduce the failure from overlooking promising innovations.

# Selection-Variation-Retention (SVR) Model

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## ■ What's missing in the selection-variation

- Technology selection occurs through trial and error (variation) to find the best solution (Vincenti, 1994)
- Selection occurs in the market (Nelson and Winter, 1977 & 1982)

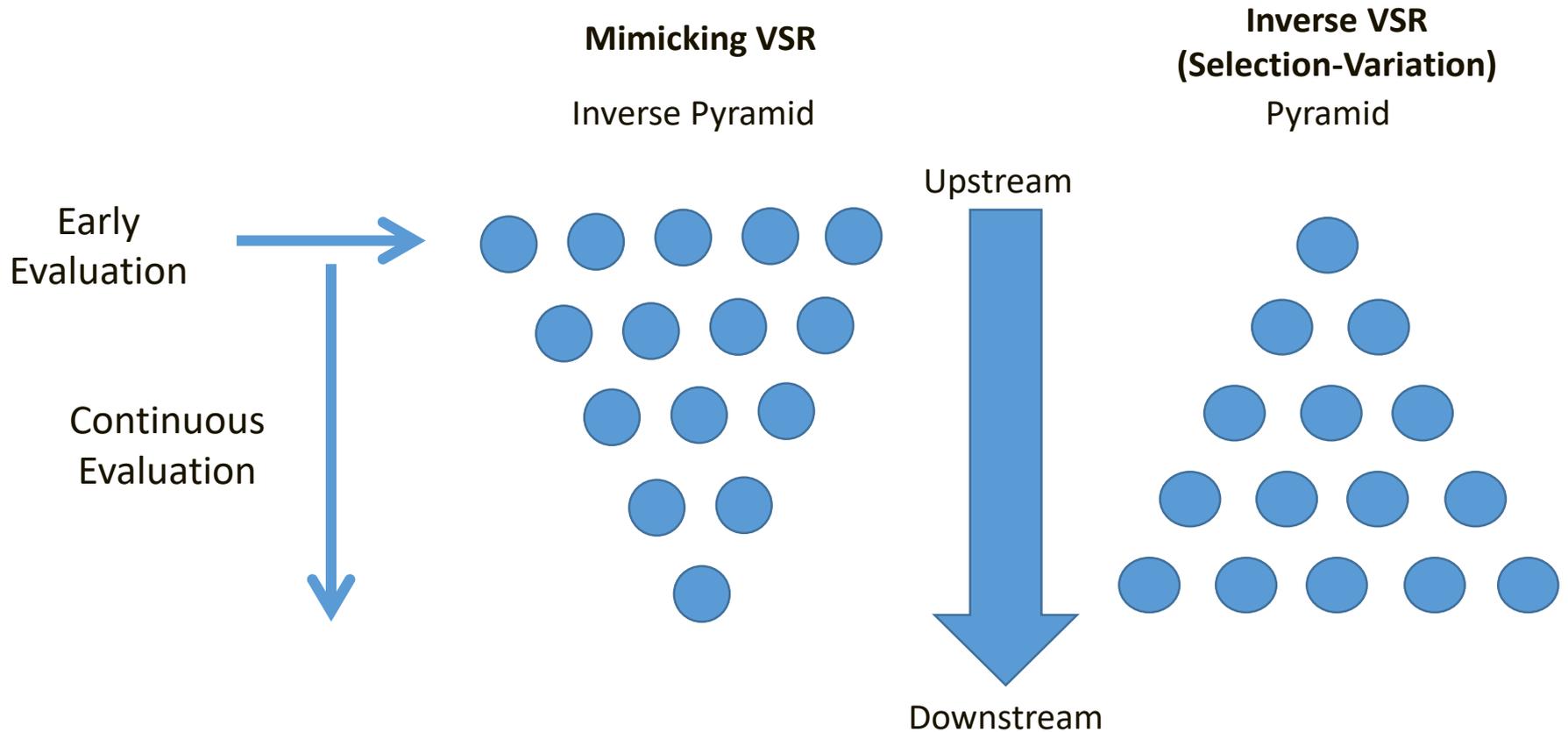
*When **selection** comes  
first...*

- From the technology perspective, learning process is often shortened
- From the market perspective, market evaluation process is omitted

## ■ By maintaining SVR for many years, negative symptoms can unveil

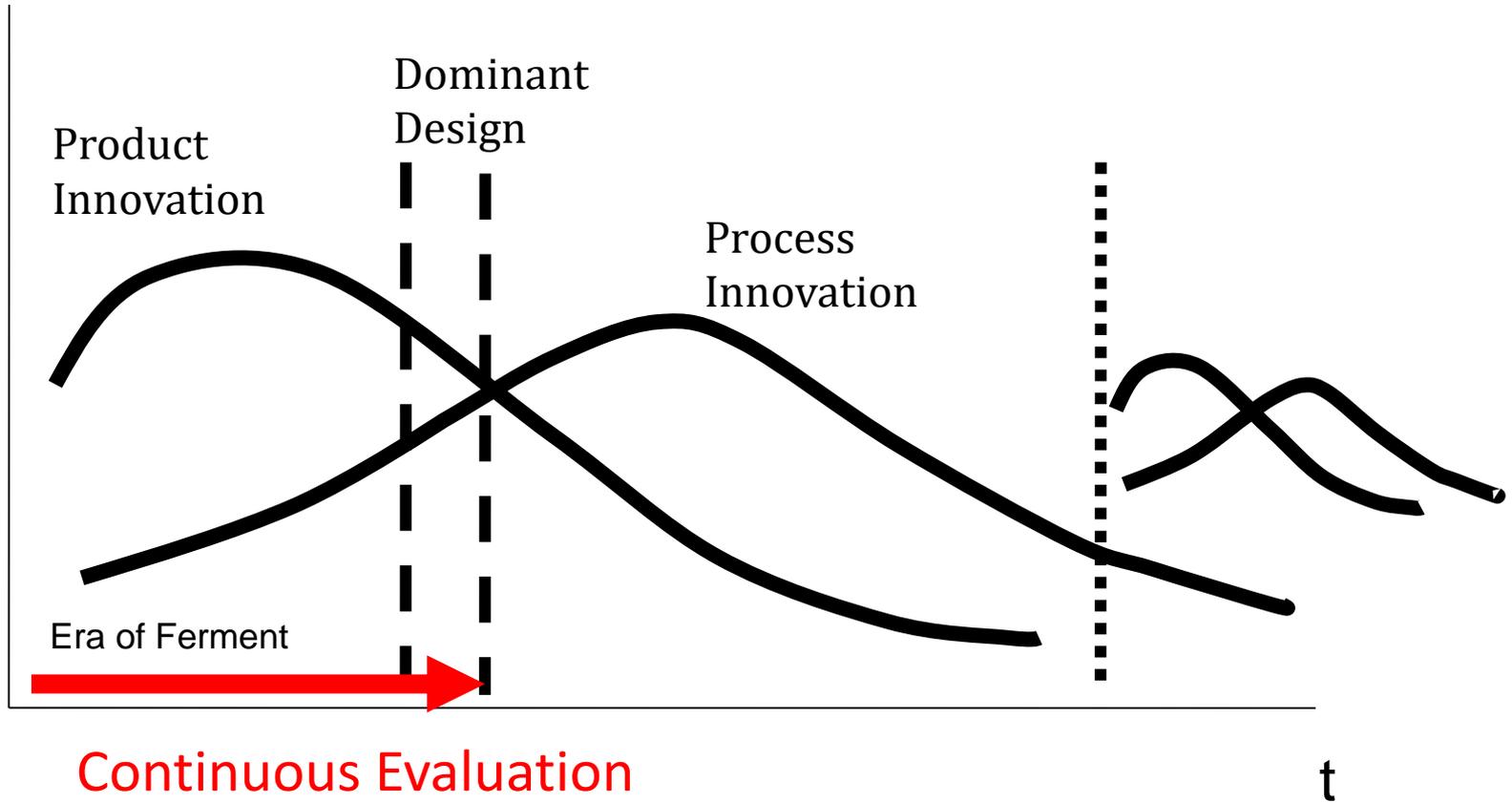
- Weakness in basic science / enabling technology
- Narrowed technological scope
- Inefficiency created from government-oriented new technology development

# Organizational Arrangement & Timing of Evaluation



(Kim, Bae, & Yang, 2014)

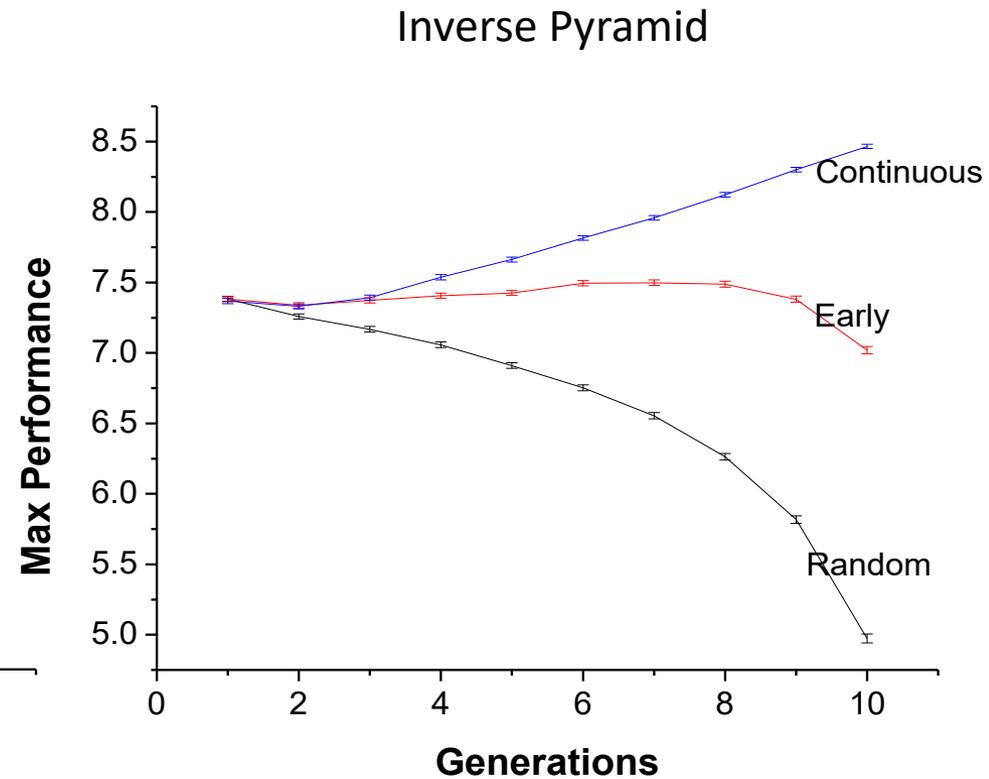
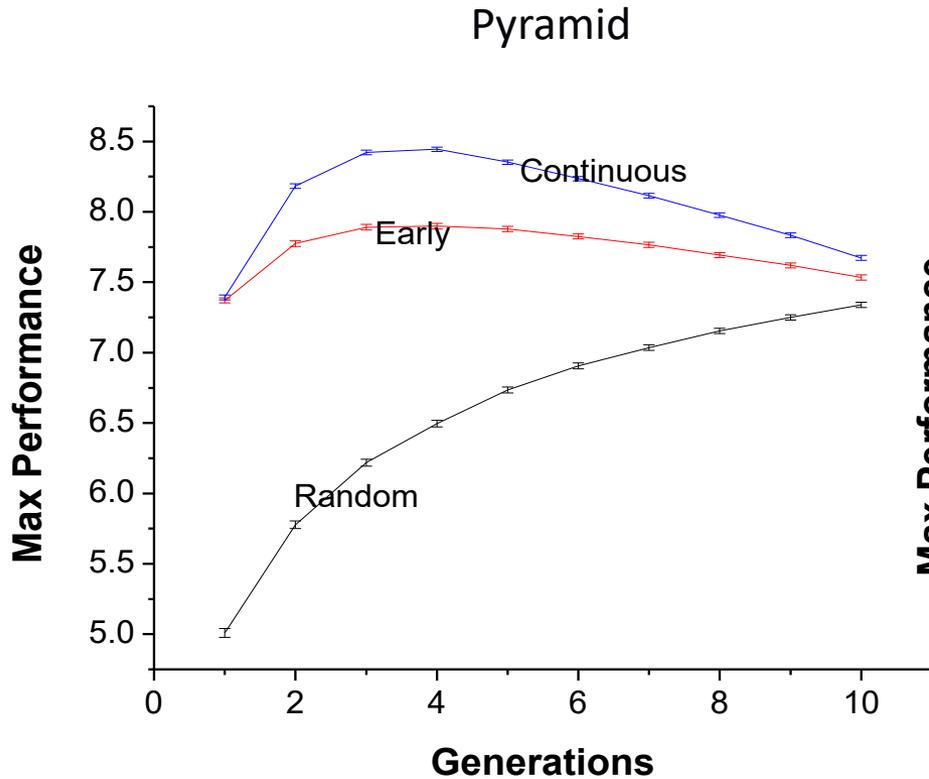
# of Innovations



Continuous Evaluation

(Abernathy & Utterback, 1975)

# Pyramid vs. Inverse Pyramid



- $m=10$ ;  $G=N=10$ ;  $P_0=0.5$ ; Average from 10,000 independent runs

# Summary of the Main Results

- Performance (Continuous) > Performance (Early)

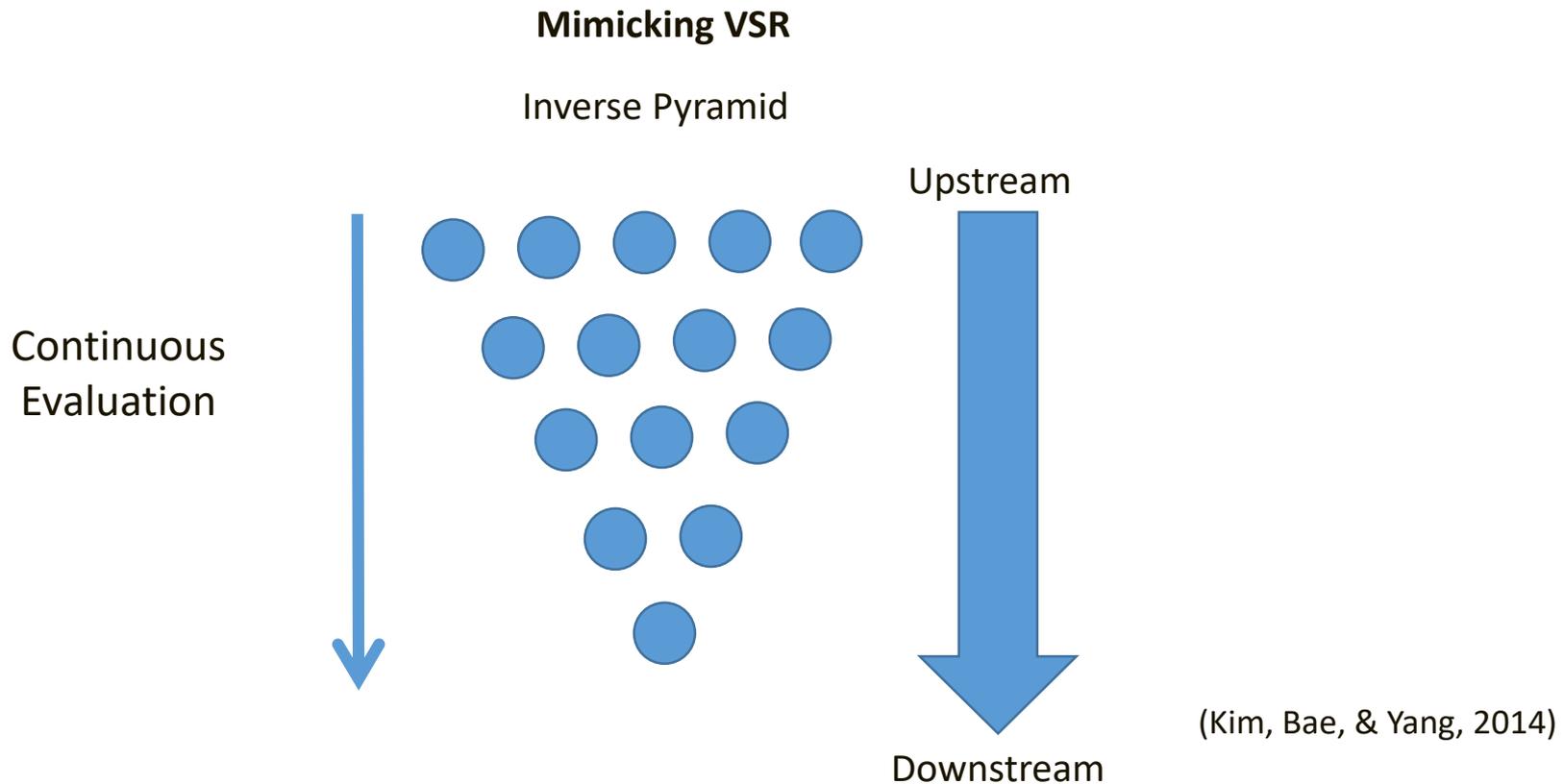
		Evaluation	
		Early	Continuous
Arrange -ment	Pyramid	3	2
	Inverse Pyramid	4	1

# Summary of the Main Results

- Inverse Pyramid x Continuous Evaluation leads to the best performance

		Evaluation	
		Early	Continuous
Arrange -ment	Pyramid	3	2
	Inverse Pyramid	4	1

Best option is to follow the natural evolutionary pattern,  
**creating variations** at the beginning and  
**continuously supporting & evaluating** the development



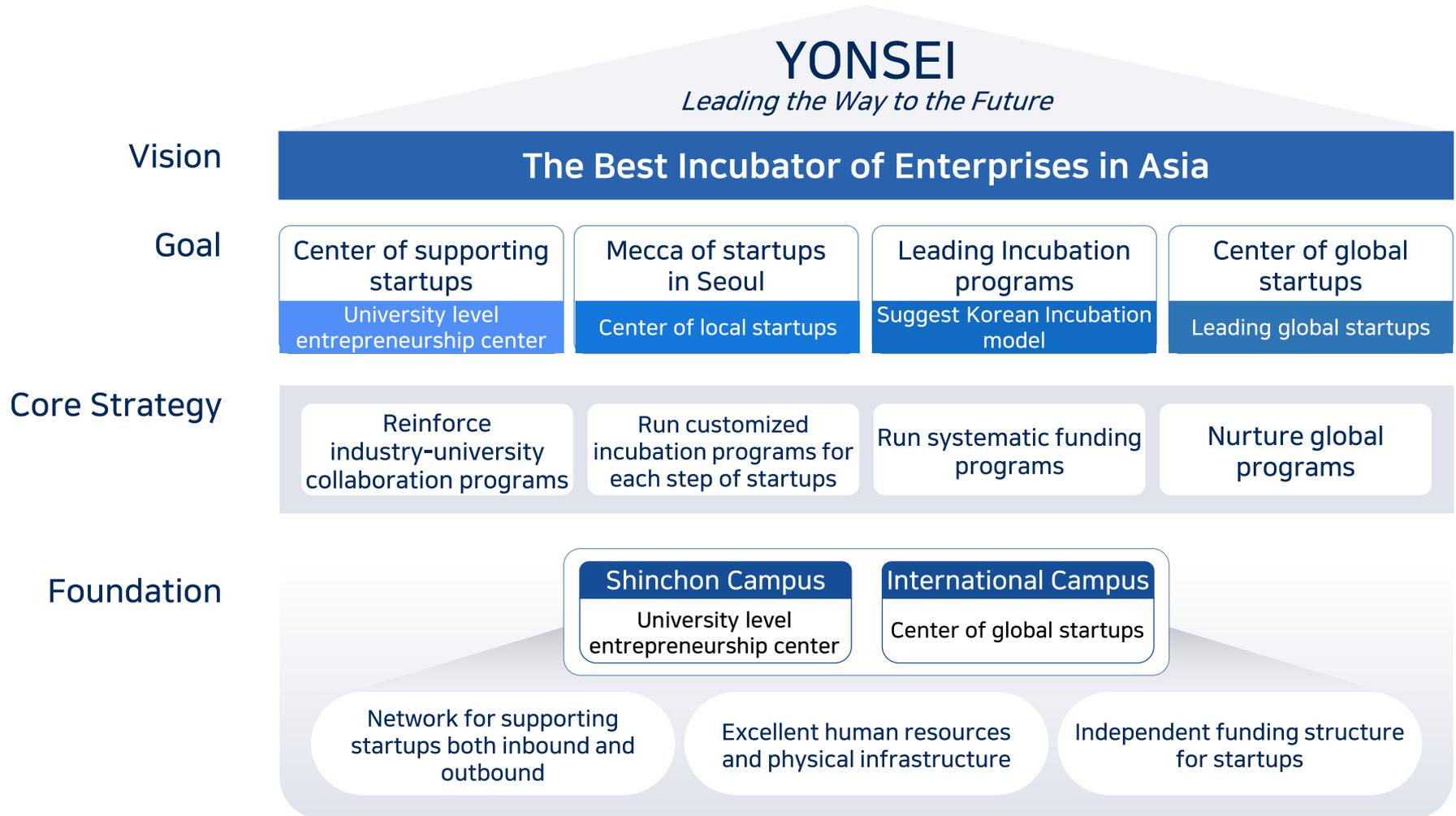


02

# What we do at YESF

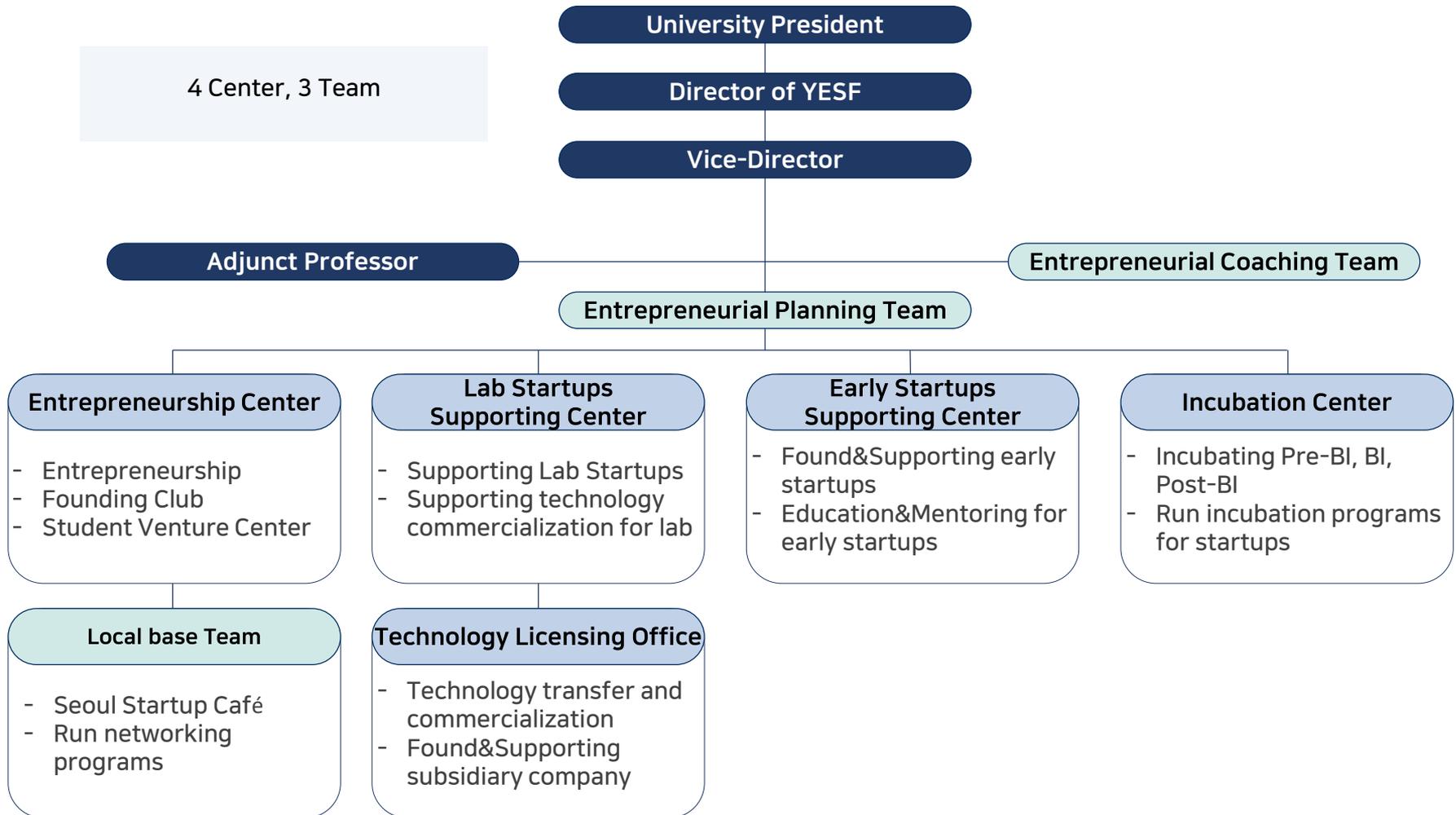


# Vision of YESF



# Organization of YESF

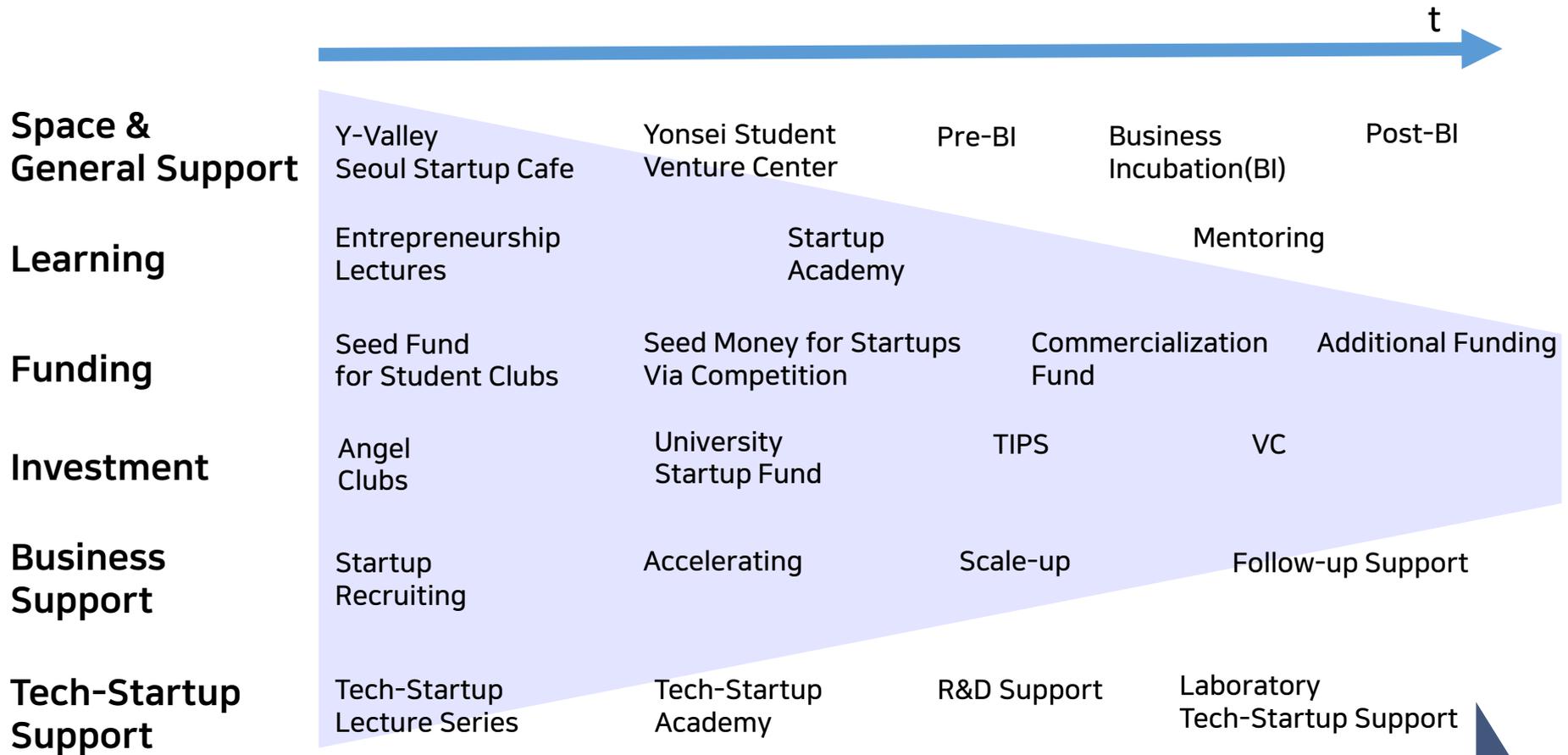
4 Center, 3 Team



# History of YESF

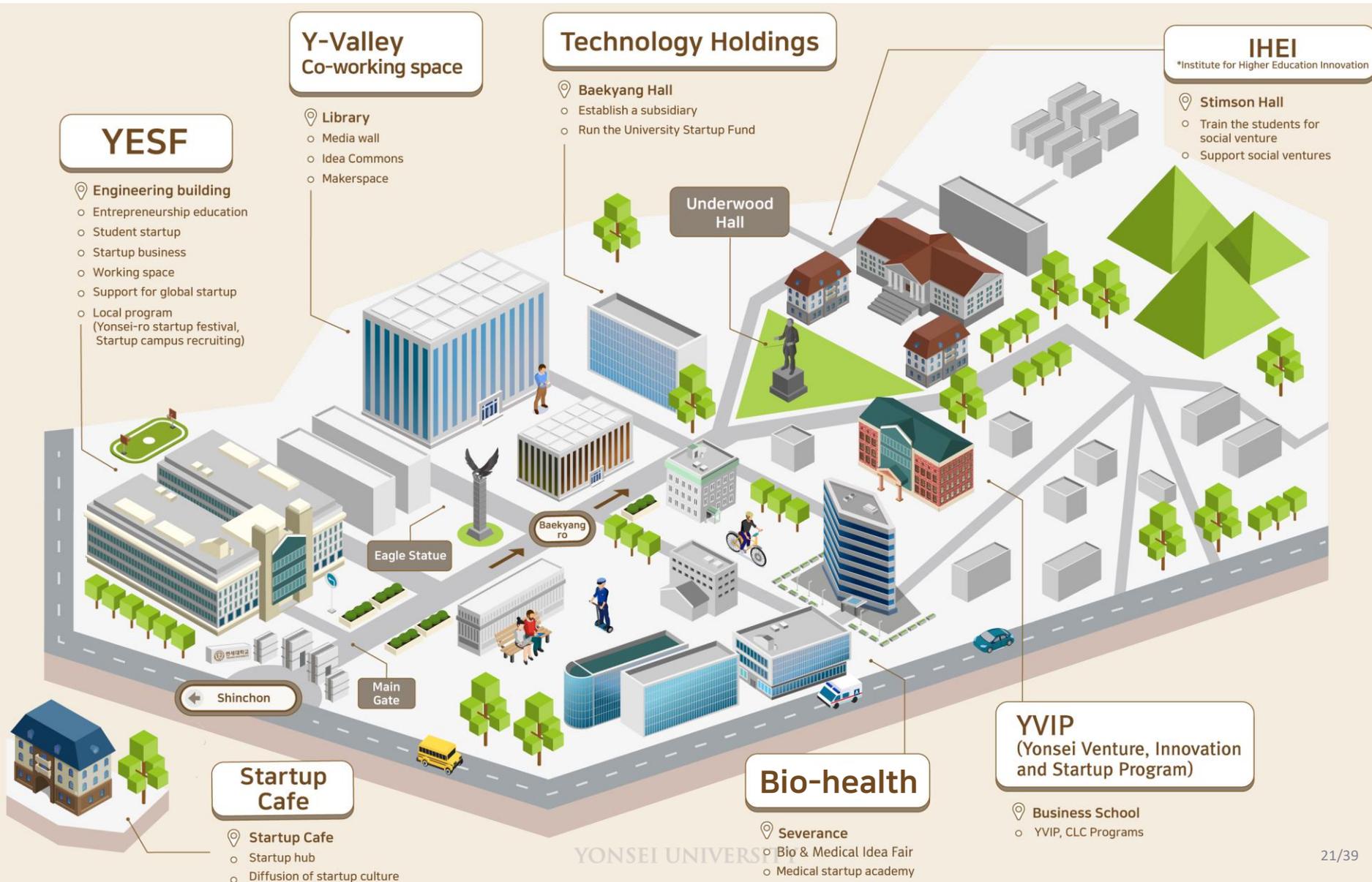


# Programs



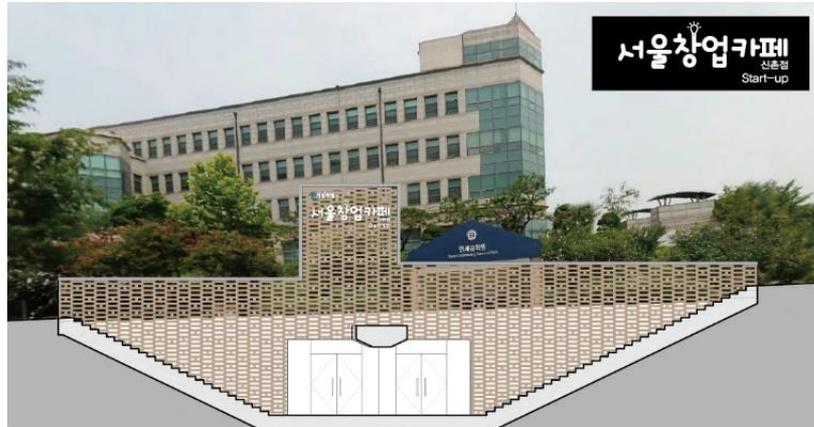
**Nurturing Entrepreneurial Culture & Constant Networking**

# Entrepreneurial Space & Culture



## Creating Variations - Idea Generation

### Startup Cafe



### Y-Valley



## Creating Variations - Idea Generation

### Encouraging Student Ventures

*Give opportunities for students to study and enterprise activities at the same time*

#### Student Venture Club



- 50 clubs per year(average)
- offer space and activity cost(2,000\$)

#### Student Venture Center



- 8-16 teams every year
- Offer co-working space and funds

#### Startup Competition



- 'Yonsei Startup Challenge'
- Annual event
- Prize money for winners

## Continuous Development of Ideas into Business

### Student Venture Center (Working Spaces)

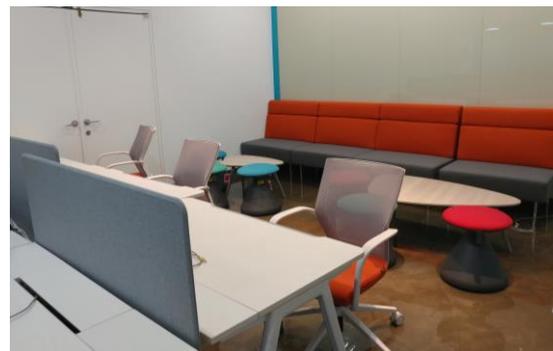


(Shinchon Campus)



(International Campus)

### BI Center (Working spaces)



## ▶ Nurturing the Entrepreneurial Culture

### ▶ Spreading the spirit of entrepreneurship



YONSEI RO  
STARTUP  
FESTIVAL



## Continuous Support

### Startup Campus Recruiting



# STARTUP CAMPUS RECRUITING

*The biggest startup recruiting fair in Korea*

### Number of people attending the fair

- 2016 : 48 startups / 700 job seekers
- 2017(the first half) : 101 startups / 727 job seekers
- 2017(second half) : 84 startups / 1,500 job seekers
- 2018 :78 startups / 2,000 job seekers

## Various Supporting Programs

### Entrepreneurship Lecture Series

26 Entrepreneurship classes  
Lecture series

### Accelerating

Startup Club  
Venture Center

### Global Program

Global Enternship  
Global market research  
Global trailer  
Global Trampoline

### Matching Program

Startup Campus Recruiting  
Startup Internship  
Investor day (IR Pitching)

### Mileage System

Startup Scholarship  
Encourage student participation

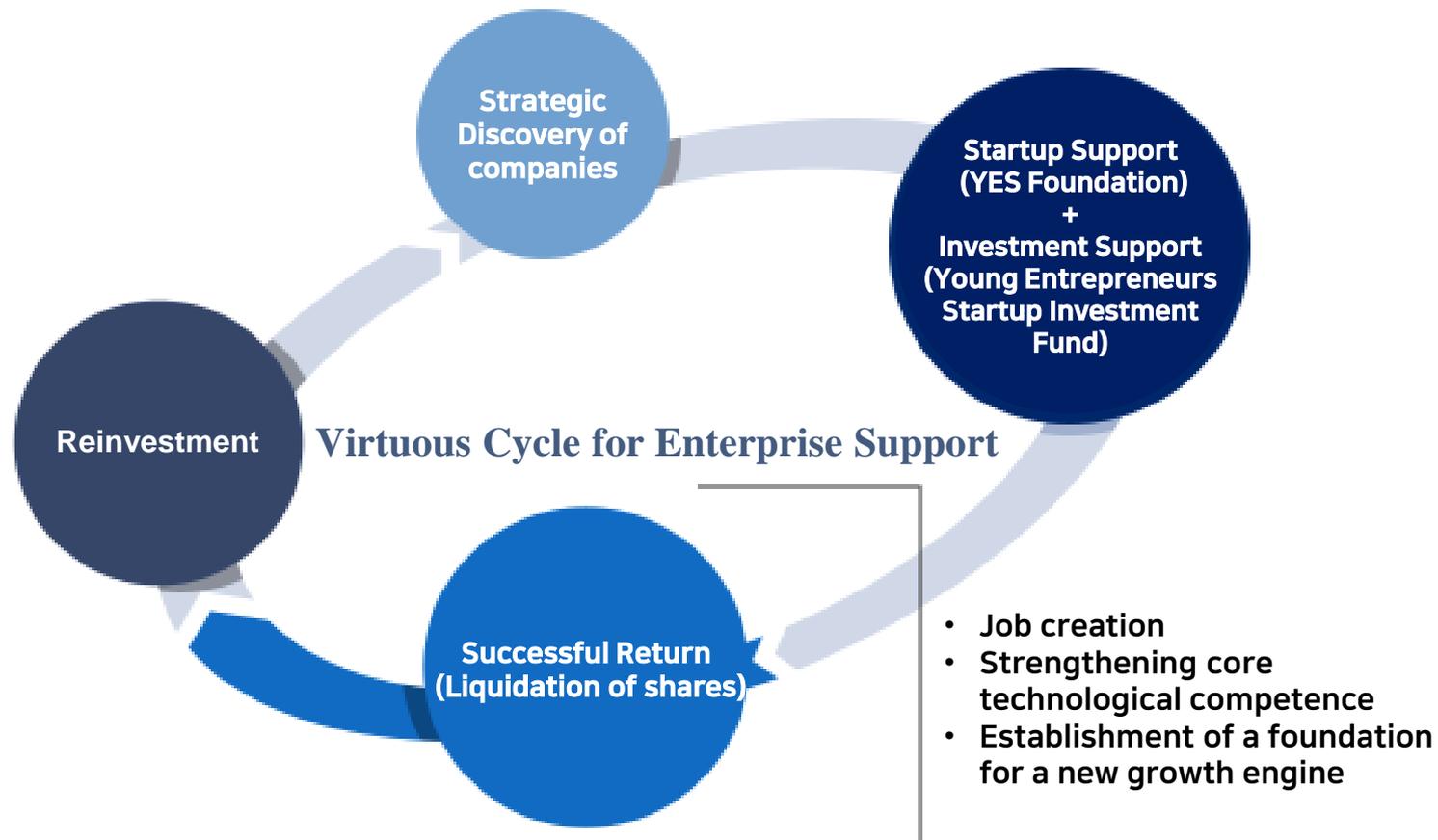
## Transition to Actual Business at Business Incubation (BI) Center



*YSEF provides a systematic startup program from business training to commercialization support*

Laying the Foundations	Pre-BI	BI	POST-BI
<p><b>Preparation Stage</b></p> <ul style="list-style-type: none"> <li>• Startup Lecture Series</li> <li>• Technology Enterprise Academy</li> <li>• Competitions for entrepreneurs</li> <li>• Startup mileage</li> </ul> <p>✓ <b>Government funds</b></p>	<p><b>Pre-Enterprise Stage</b></p> <ul style="list-style-type: none"> <li>• Startup groups</li> <li>• Student venture</li> <li>• Cultivation of Pre-BI entrepreneurs</li> </ul> <p>✓ <b>Angel Clubs</b></p>	<p><b>Startup / Growth Stage</b></p> <ul style="list-style-type: none"> <li>• Support for technology, management, equipment, facilities, education and funds</li> <li>• Consulting for startup</li> <li>• Connections to venture network</li> </ul> <p>✓ <b>Direct investment</b></p>	<p><b>Startup Stabilization / Second Growth Stage</b></p> <ul style="list-style-type: none"> <li>• Direct investment</li> <li>• Investment attracting (fund creation)</li> <li>• Technology transfer</li> <li>• Corporate M&amp;A,</li> <li>• Free Board, IPO</li> </ul> <p>✓ <b>Investment Fund</b></p>

## Virtuous Cycle

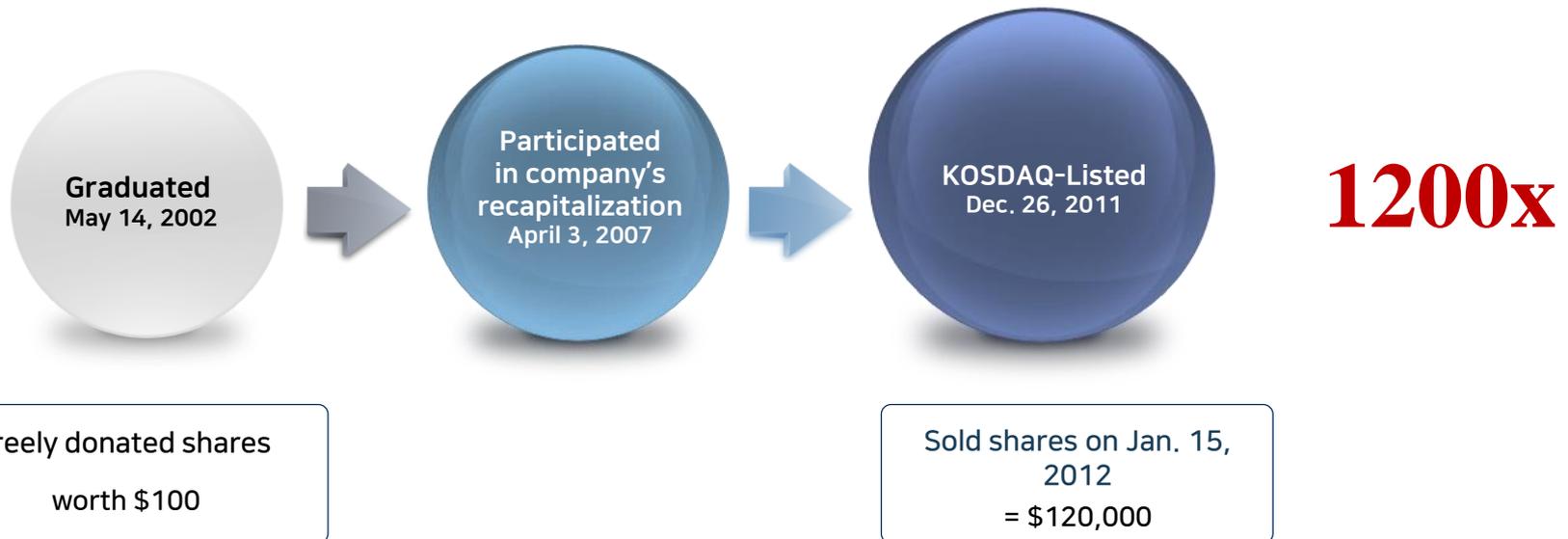


## Startup Companies from BI Center

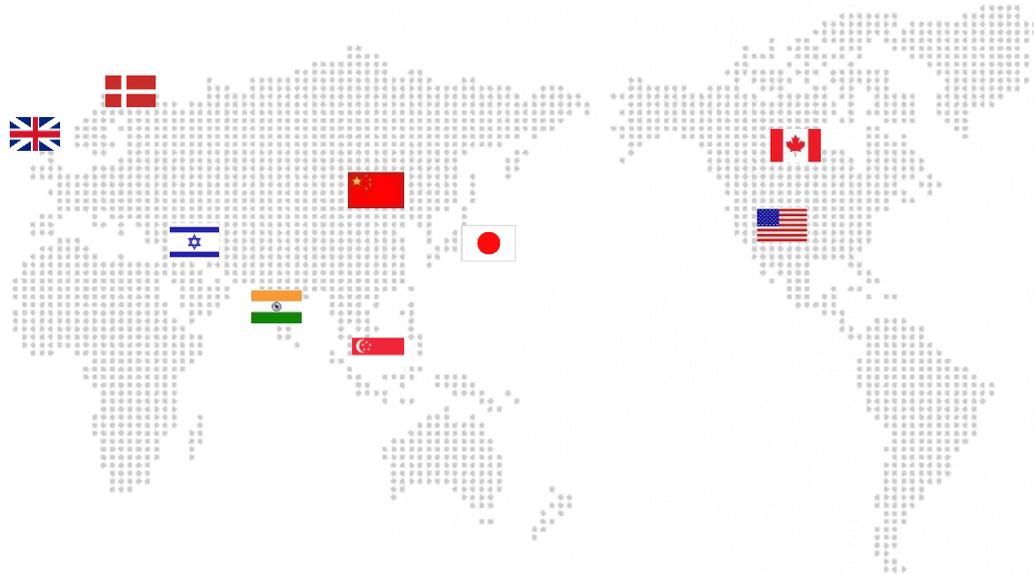


*Graduated companies since 1998*

*\*6 company  
KOSDAQ-  
listed or M&A*



## Global Support



- |                         |   |                      |   |
|-------------------------|---|----------------------|---|
| <p><b>Denmark</b></p>   | <ul style="list-style-type: none"> <li>· University of Copenhagen</li> <li>· DTU(Denmark Technical University)</li> </ul> | <p><b>China</b></p>  | <ul style="list-style-type: none"> <li>· Sinosteel Technology Incubator</li> </ul>  |
| <p><b>UK</b></p>        | <ul style="list-style-type: none"> <li>· Y-accelerator</li> <li>· The University of Sheffield</li> </ul>                  | <p><b>Japan</b></p>  | <ul style="list-style-type: none"> <li>· MOVIDA</li> </ul>  |
| <p><b>Israel</b></p>    | <ul style="list-style-type: none"> <li>· StarTau<br/>(Tel Aviv University Entrepreneurship Center)</li> </ul>             | <p><b>USA</b></p>    | <ul style="list-style-type: none"> <li>· University of Maryland</li> <li>· KIC Silicon valley, Washington</li> <li>· Stanford Research Institute (SRI International)</li> </ul> |
| <p><b>India</b></p>     | <ul style="list-style-type: none"> <li>· IIIT-D<br/>(Indraprastha Institute of Information Technology Deli)</li> </ul>    | <p><b>Canada</b></p> | <ul style="list-style-type: none"> <li>· Ontario Centre of Excellence</li> </ul>  |
| <p><b>Singapore</b></p> | <ul style="list-style-type: none"> <li>· Asia Consulting &amp; Advisory</li> </ul>  |                      |   |

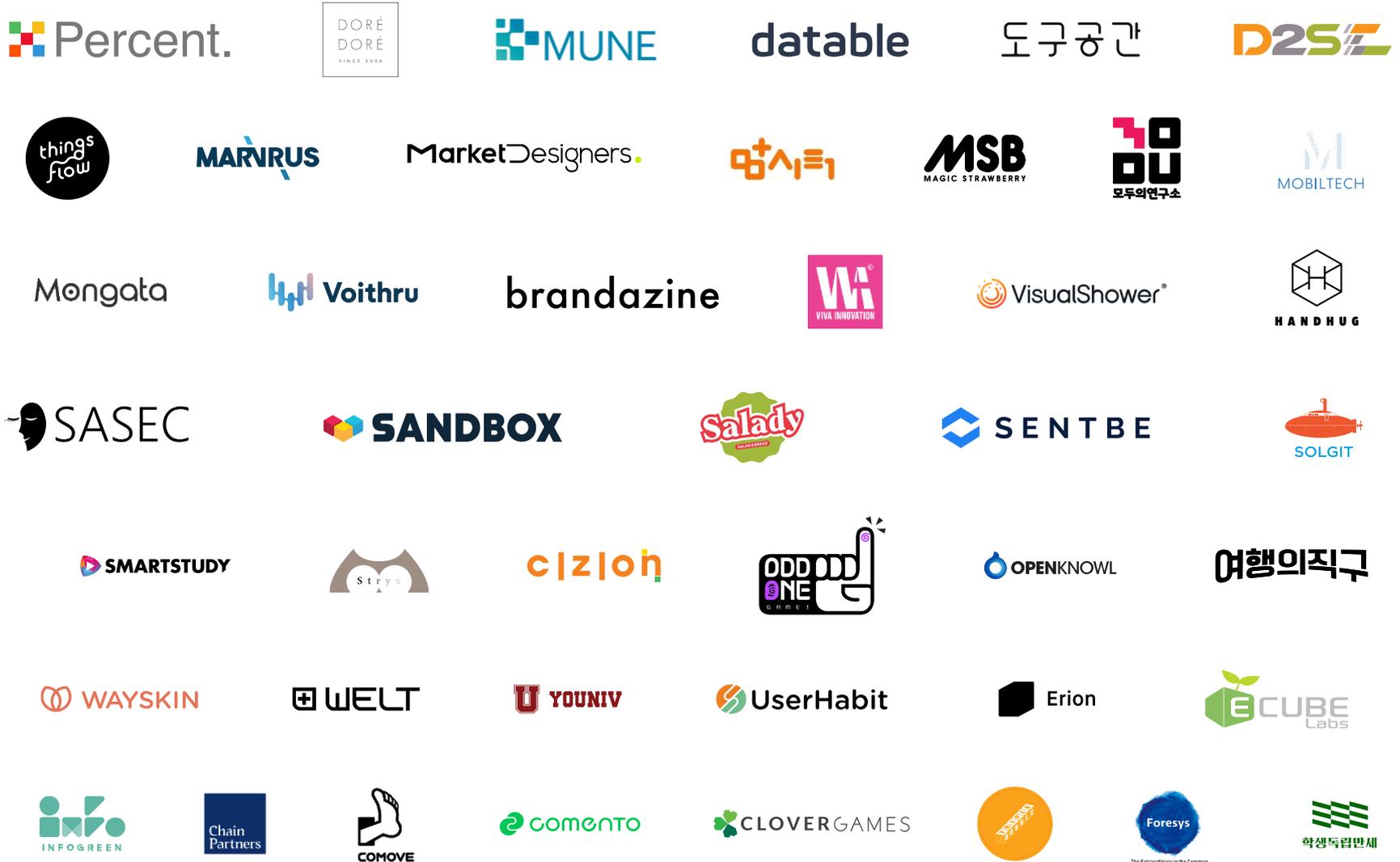


03

# Results



# YESF Supporting startups



## Success Case

### Yonsei startup CEO



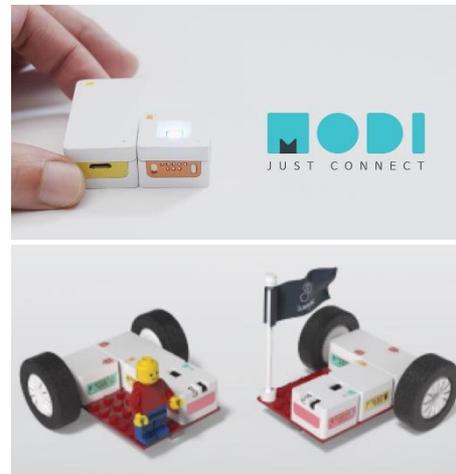
Introduce 20 alumnus supporting startups in 2017



Introduce 30 alumnus supporting startups in 2018

## Success Case

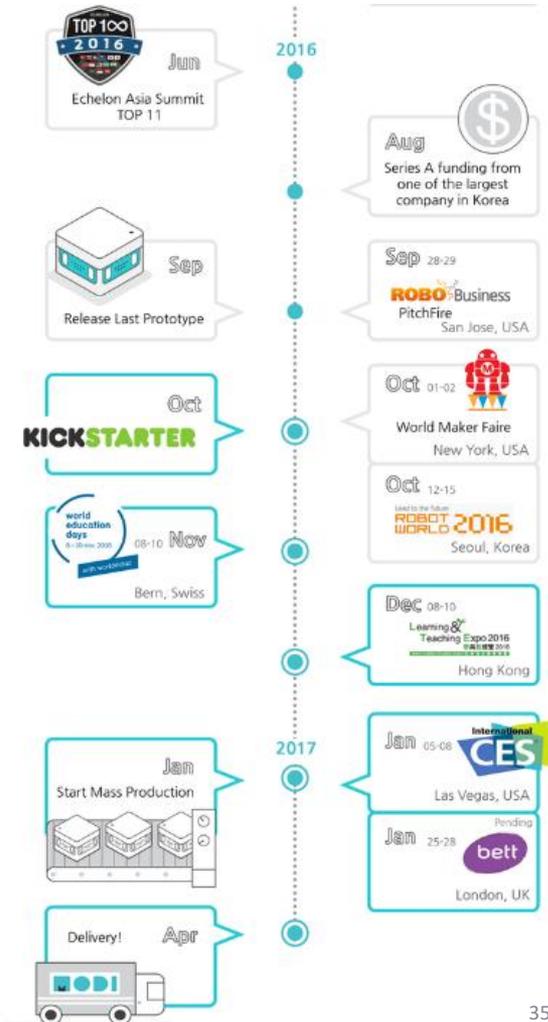
### LUXROBO



MODI is a modular device for DIY IoT, and robotic creations. Just Connect and Build with MODI module.

- Company: Luxrobo
- Representatives: Sanghun Oh
- Establishment: 2014.Nov.14
- Item: a modular device for DIY IoT and robotic creation.

### Major Performance



## Success Case

### SENTBE



- Company: Sentbe
- Representatives: Seongwook Choi
- Establishment: 2015.Sep.25
- Item: Money transfer service
- Major Performance:
  - 1<sup>st</sup> prize in the MK Fintech Award
  - Made a presentation at Fintech Demo day in London
  - Selected as a speaker at the Korea Startup Demo Day in New York
  - Launch the service in Philippine, Vietnam, etc.

## A better way to transfer money abroad



# Thank you



연세대학교  
YONSEI UNIVERSITY

## Profile of Yonsei University



### Students & Others

- ▶ Under. / Grad. 36,042
- ▶ Administrative Staff 1,121



### International Students

- ▶ Undergraduate 1,177
- ▶ Korean Language 1,379
- ▶ Exchange/Non-Degree 582

**Total 3,140**



### Faculty

- ▶ Full-time Faculty 1,696



### Others

- ▶ Scholarships (USD) 90 million

\*as of April 2018, including all campuses and the Health System

# Programs

