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## Yonsei Enterprise Support Foundation

# YONSEI

Leading the Way to the Future



## Sung Joo Bae

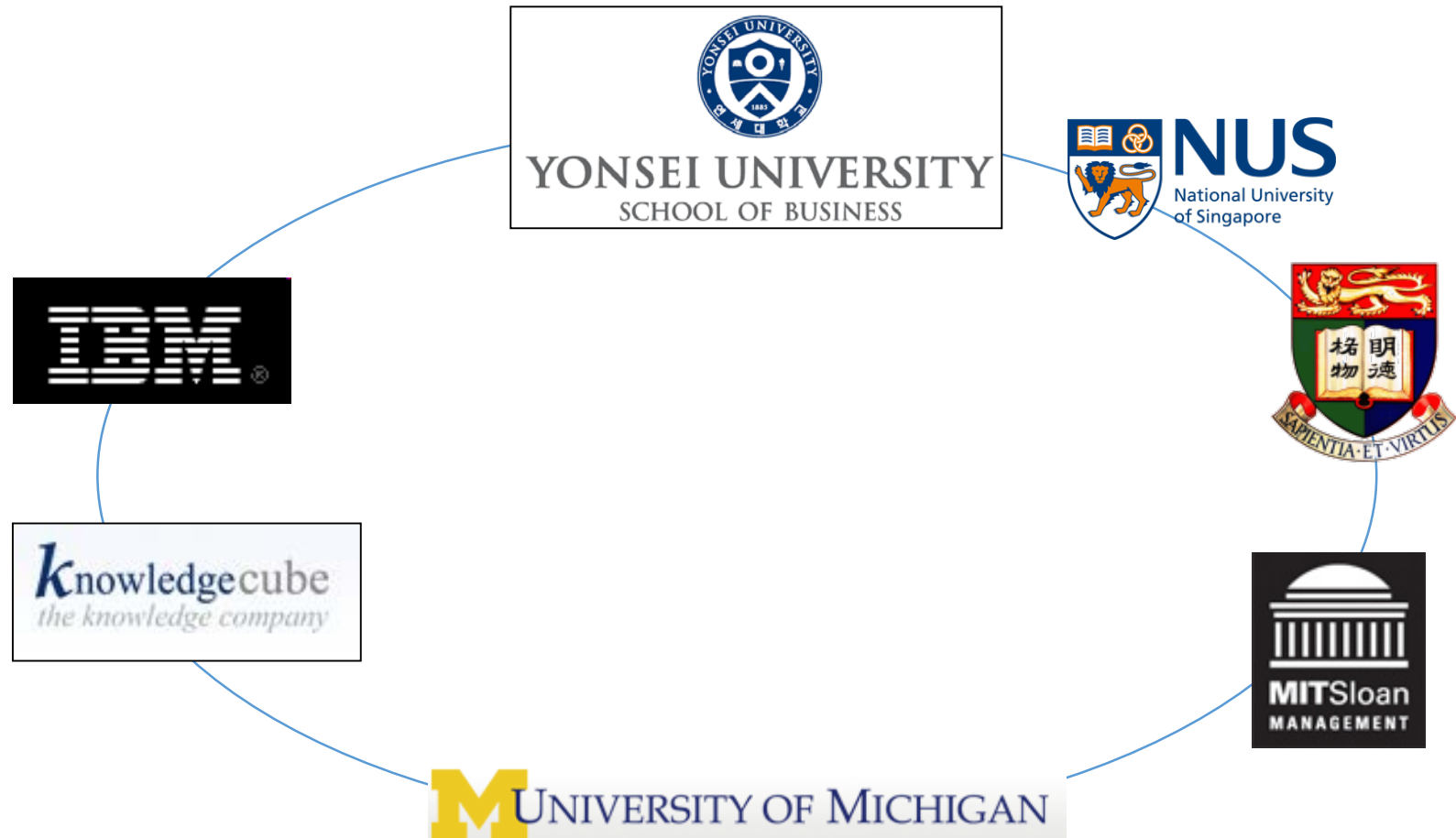
**Professor of Technology Management, School of Business, Yonsei University**

**Associate Director, Yonsei Enterprise Support Foundation  
Associate Dean, Sangnam Institute of Management**

**2019. 4. 10.**



YONSEI UNIVERSITY



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01

# YESF Philosophy

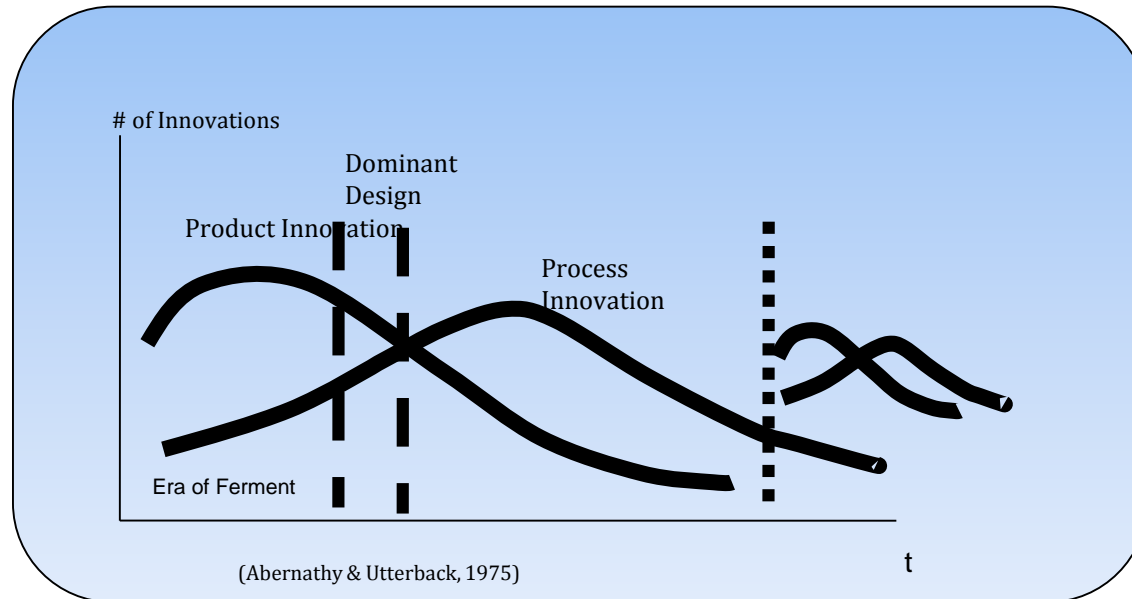




## Variation-Selection-Retention Model

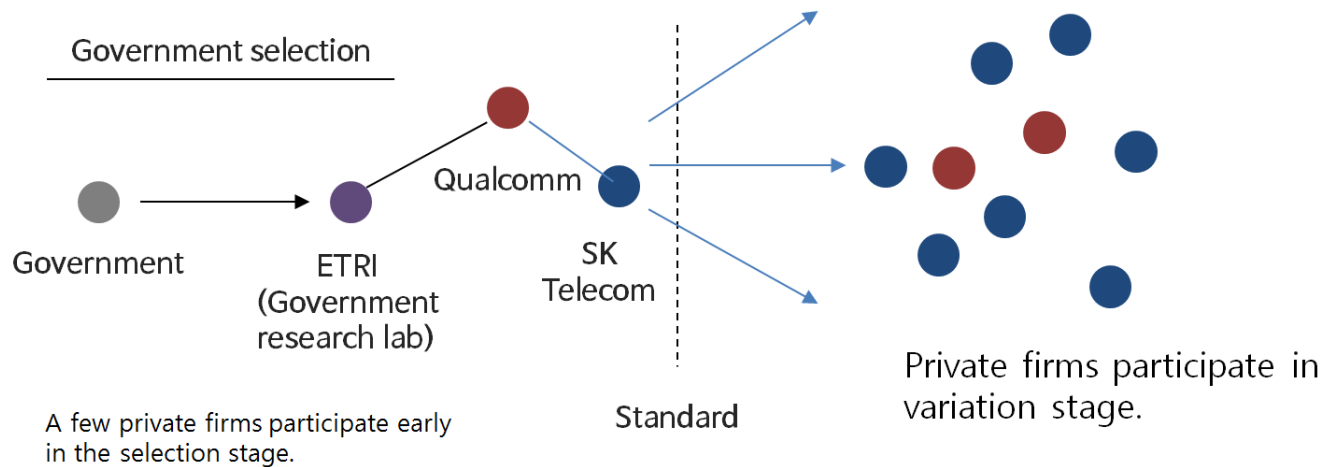
- **Variation:** Creation of a novel technical or institutional forms
- **Selection:** Occurs principally through competition among the alternative novel forms
- **Retention:** Involves the forces that perpetuate and maintain certain technical and institutional elements selected in the past

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



## Technology evolution in developing countries

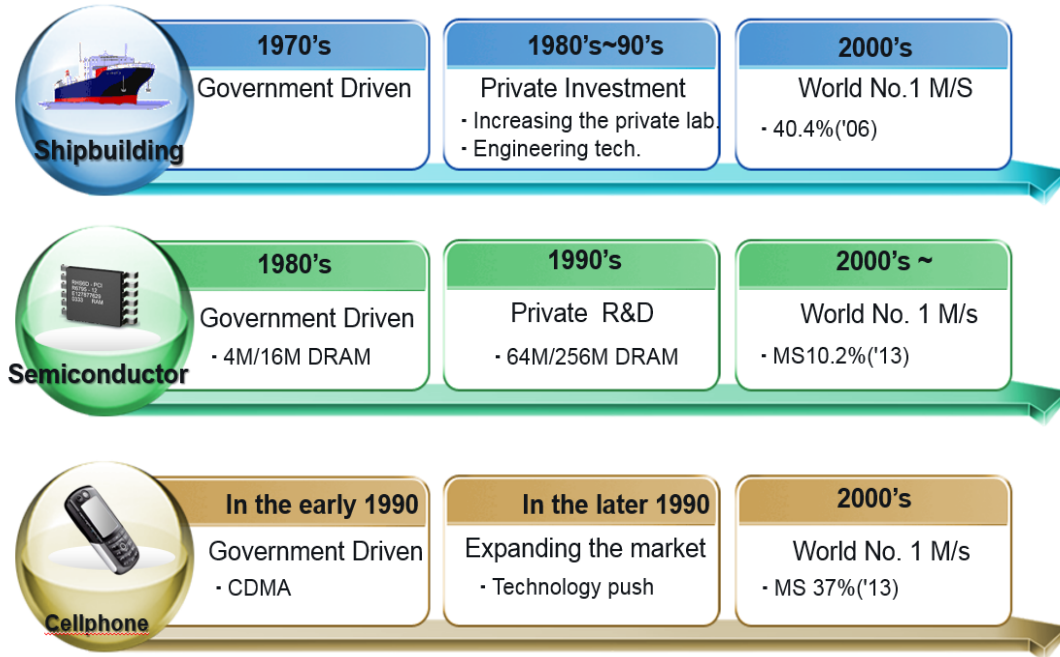
- The selection force at the initiation of technology development is especially prevalent in **'latecomer countries'** such as Korea (Cho et al., 1988; Choi, 1986; Lee, 1988). China is following the same strategy.



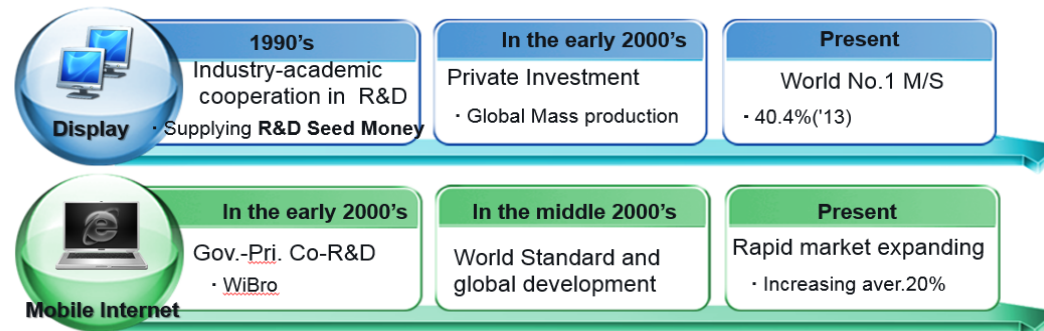
- Important technological breakthroughs from government-initiated R&D consortia – government as a strong selection force in Japan as well
  - HDTV by NHK, Japan (1990, Office of Technology Assessment)
  - Development of VLSI in Japan (Sakakibara, 2001; Sakakibara & Cho, 2002)

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

## National strategic investment – selection & variation



## Strategic roles and cooperation between Gov. and private.



## Localizing the core technology



# 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.

Bae and Lee (2019, forthcoming), 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)

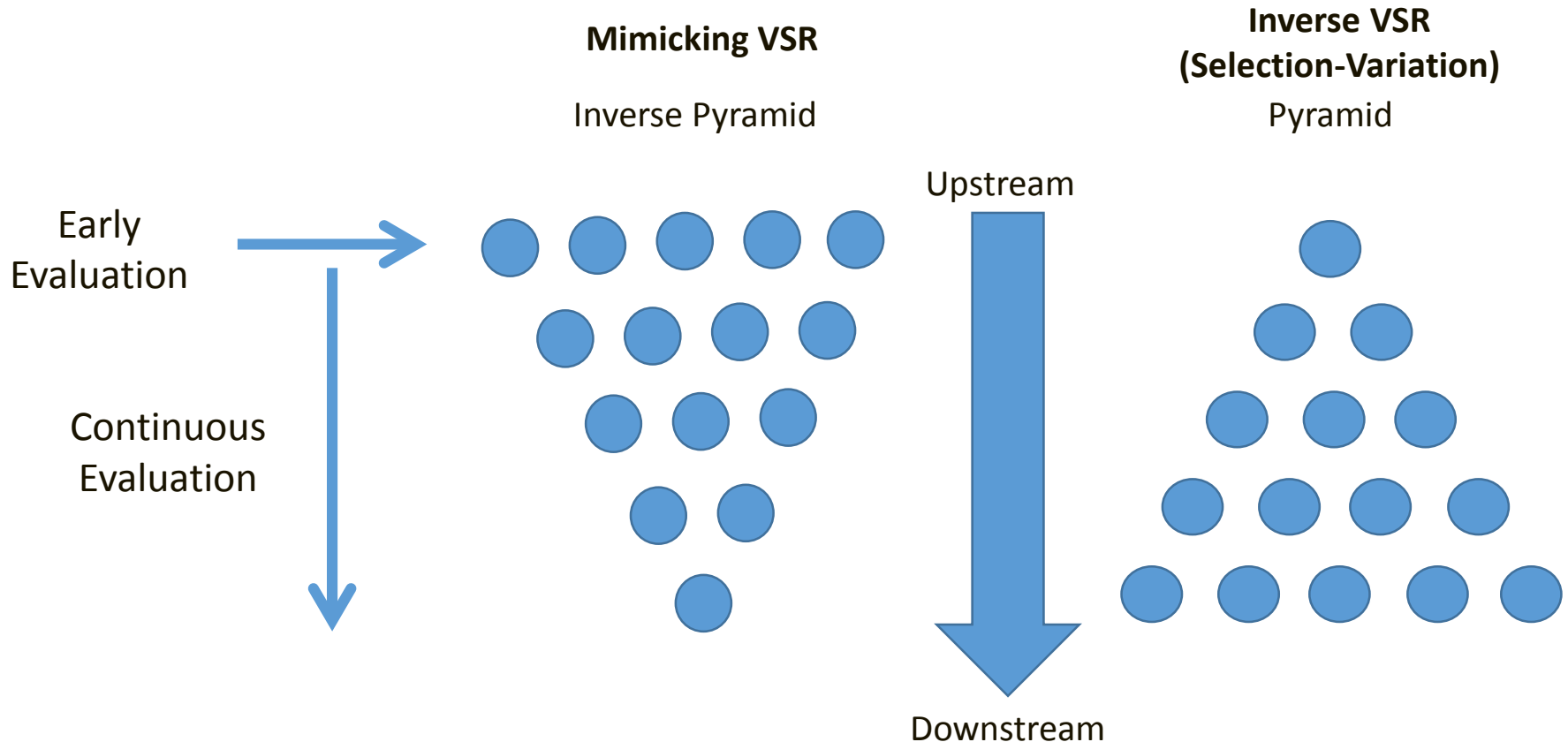
*When **selection** comes  
first...*

- 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

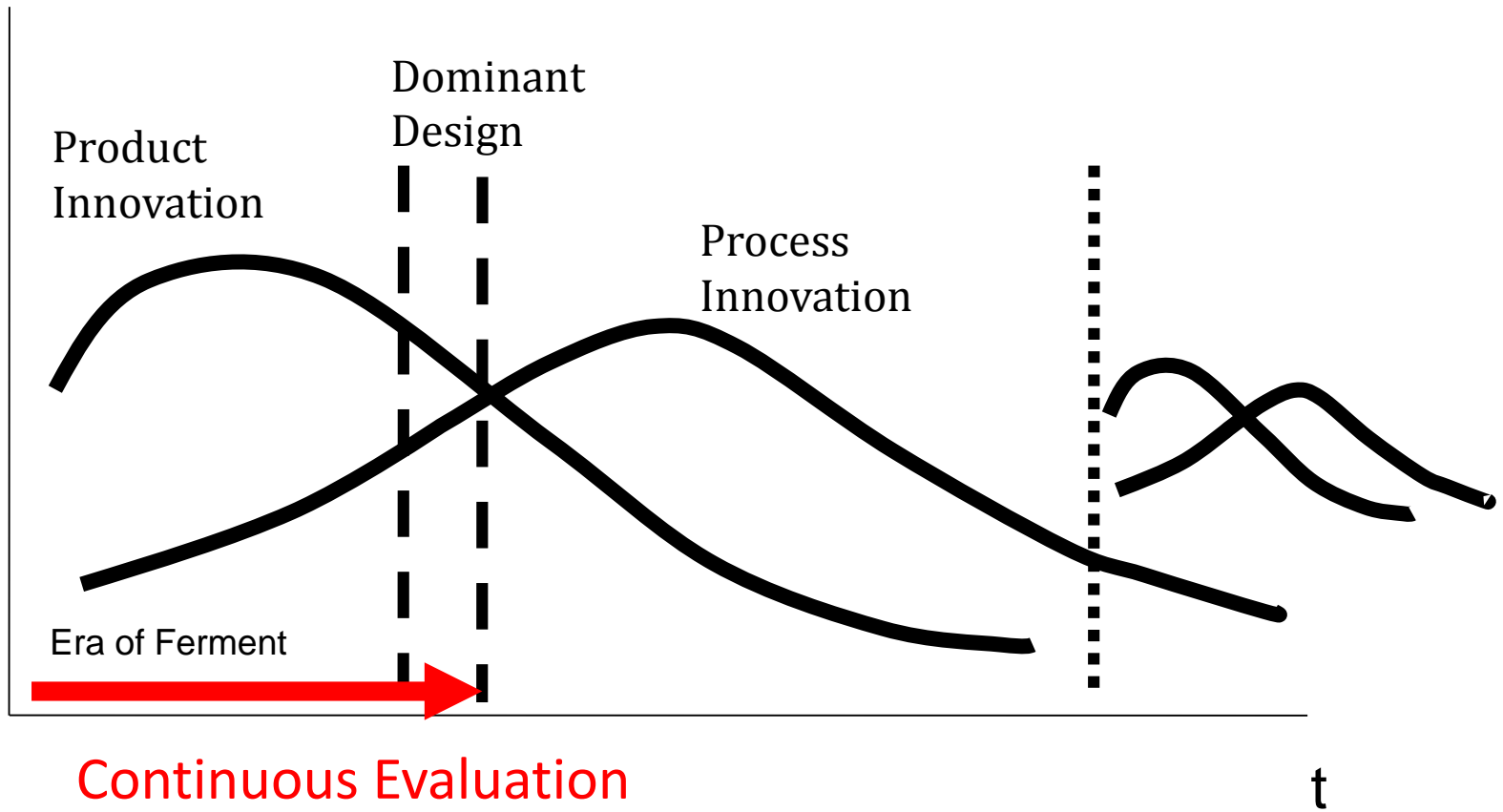
- Weakness in basic science / enabling technology
- Narrowed technological scope
- Inefficiency created from government-oriented new technology development

# Organizational Arrangement & Timing of Evaluation



(Kim, Bae, & Yang, 2014)

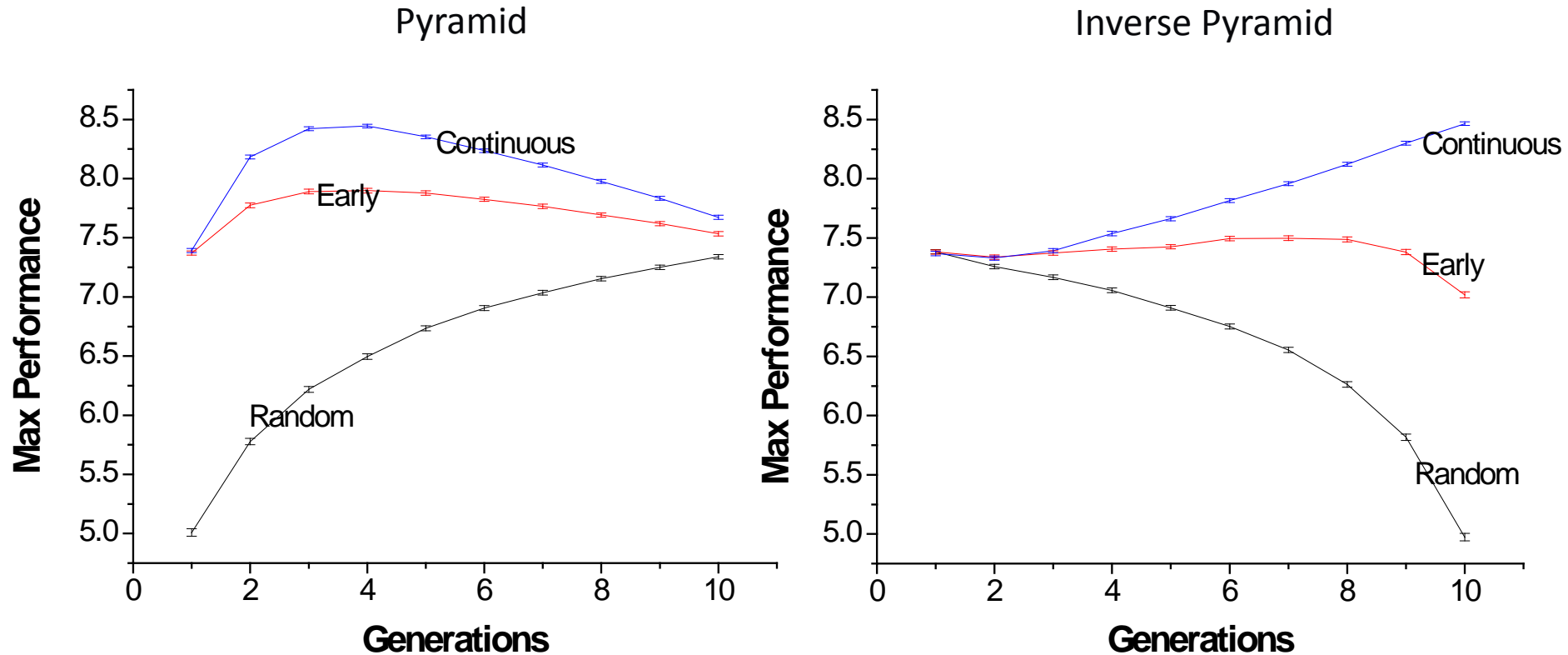
# of Innovations



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)

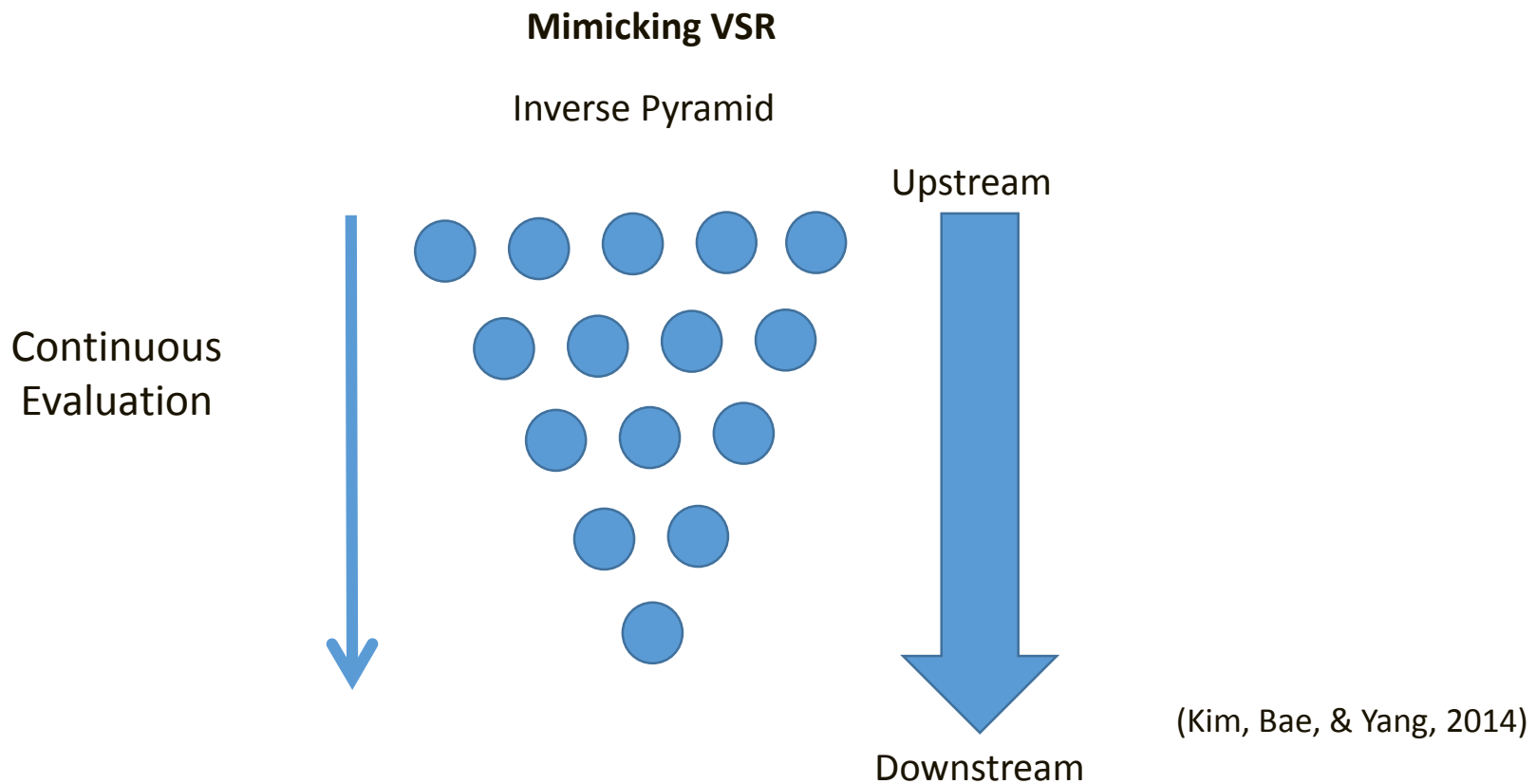
		Evaluation	
		Early	Continuous
<b>Arrange -ment</b>	Pyramid	3	2
	Inverse Pyramid	4	1

# 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



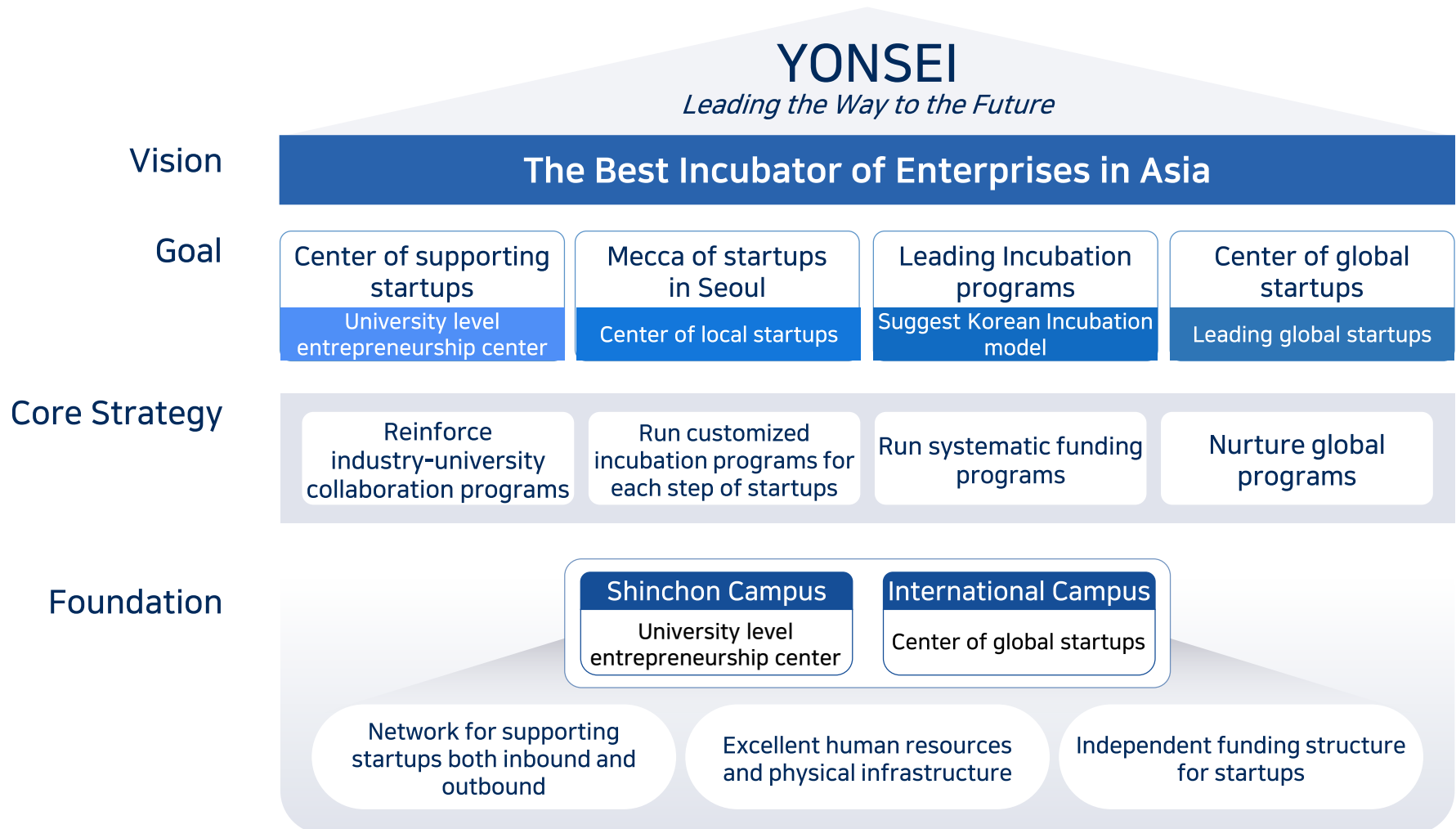


02

# What we do at YESF

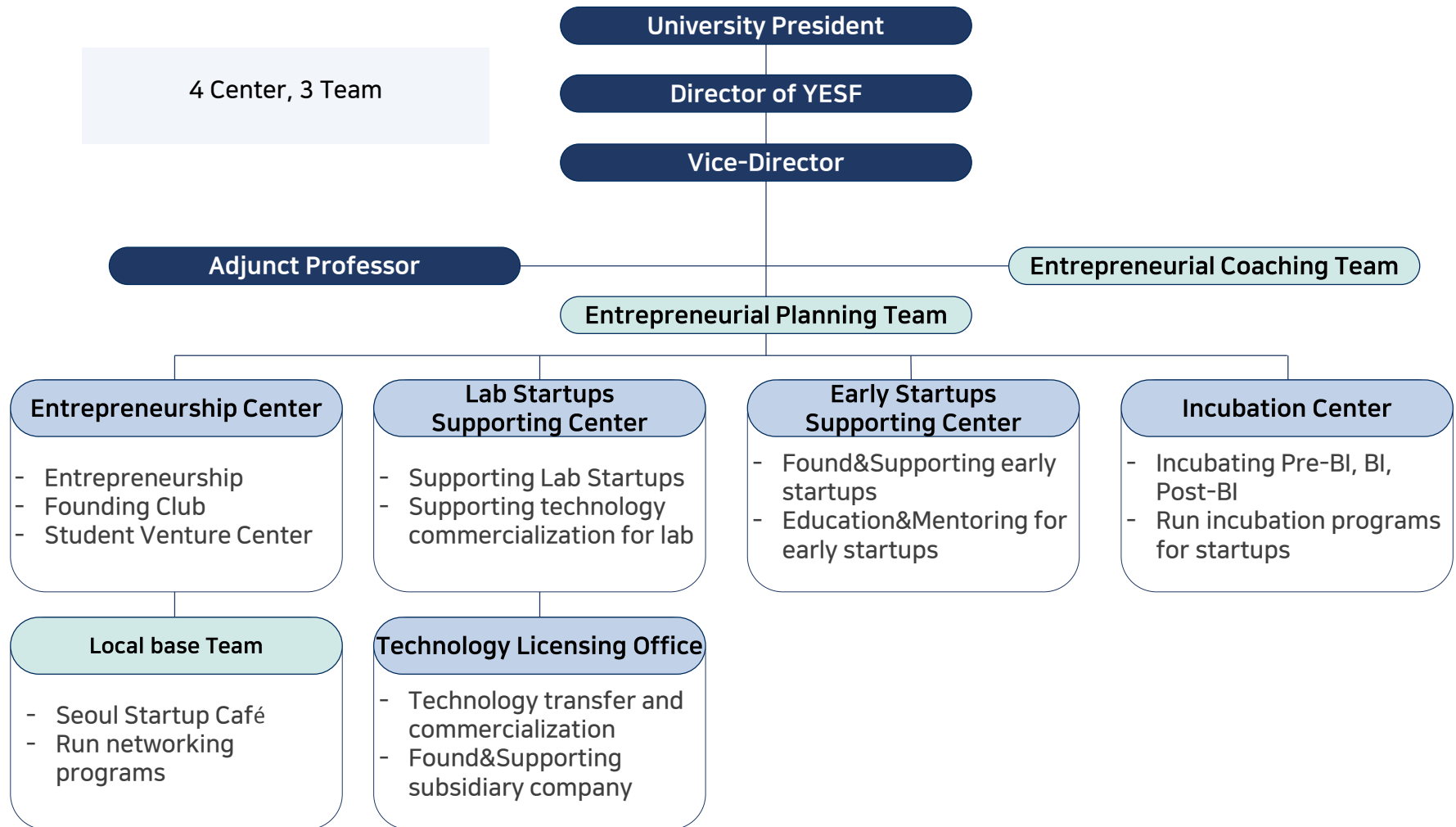


## Vision of YESF

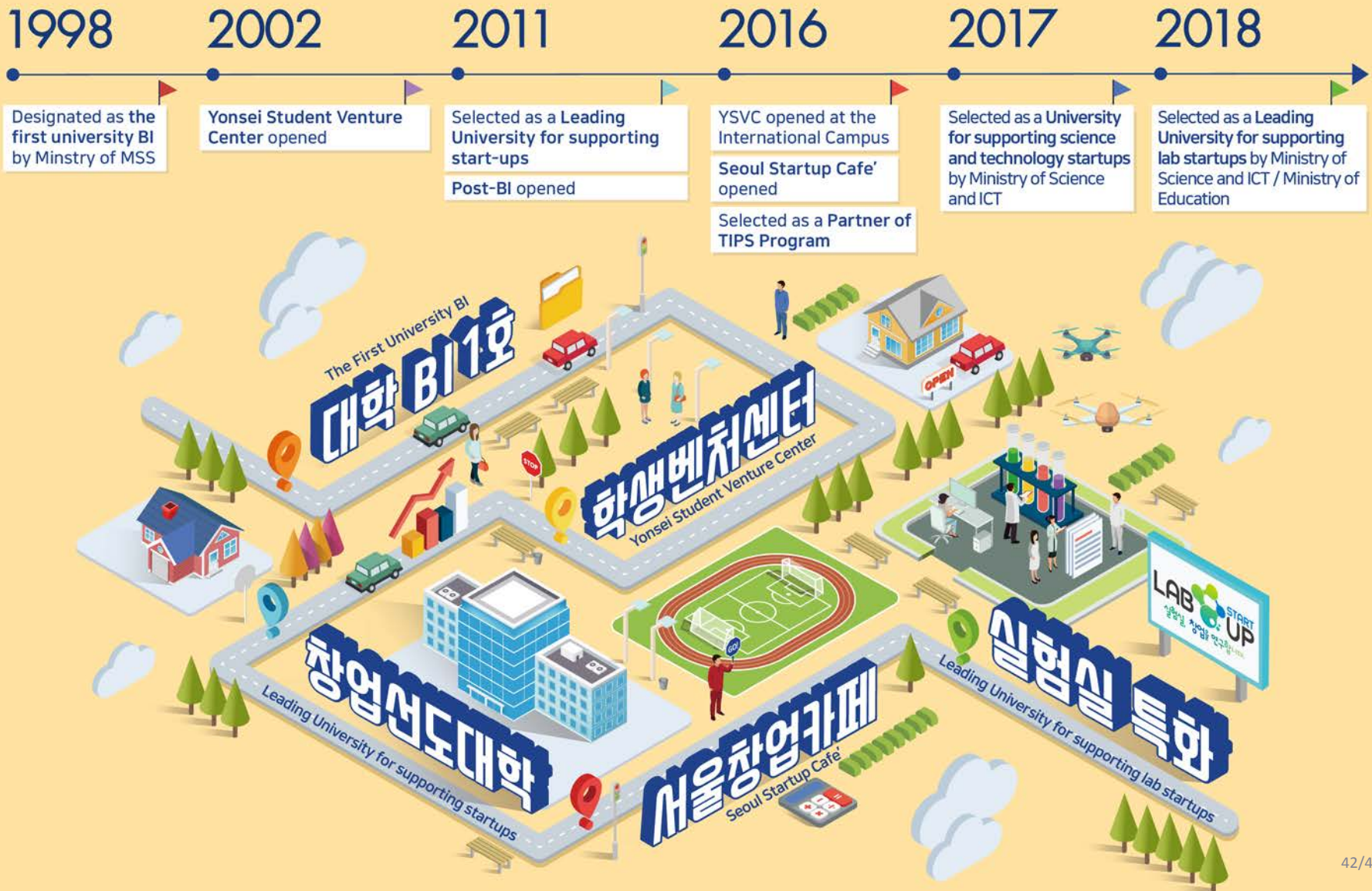


# Organization of YESF

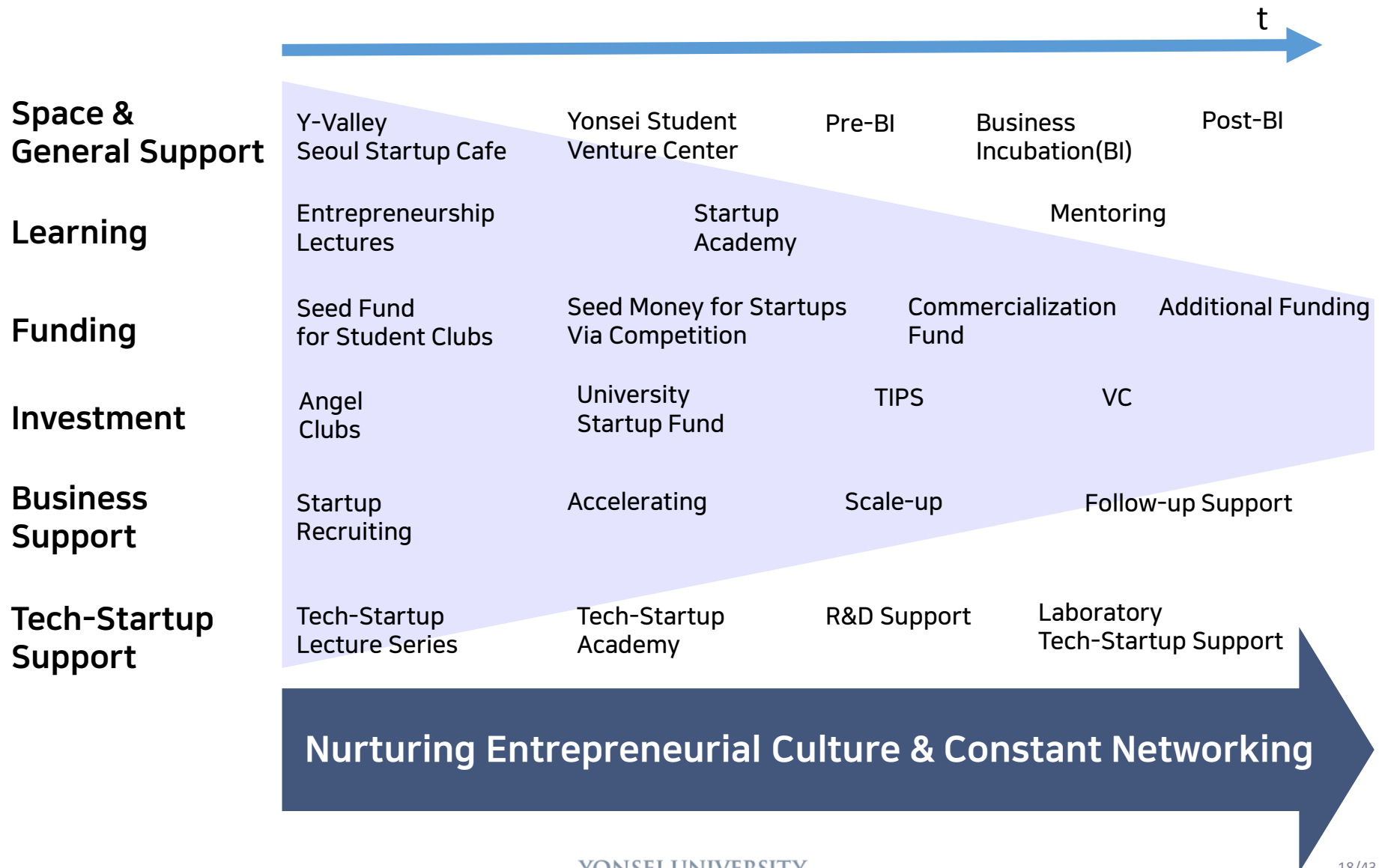
4 Center, 3 Team



## History of YESF

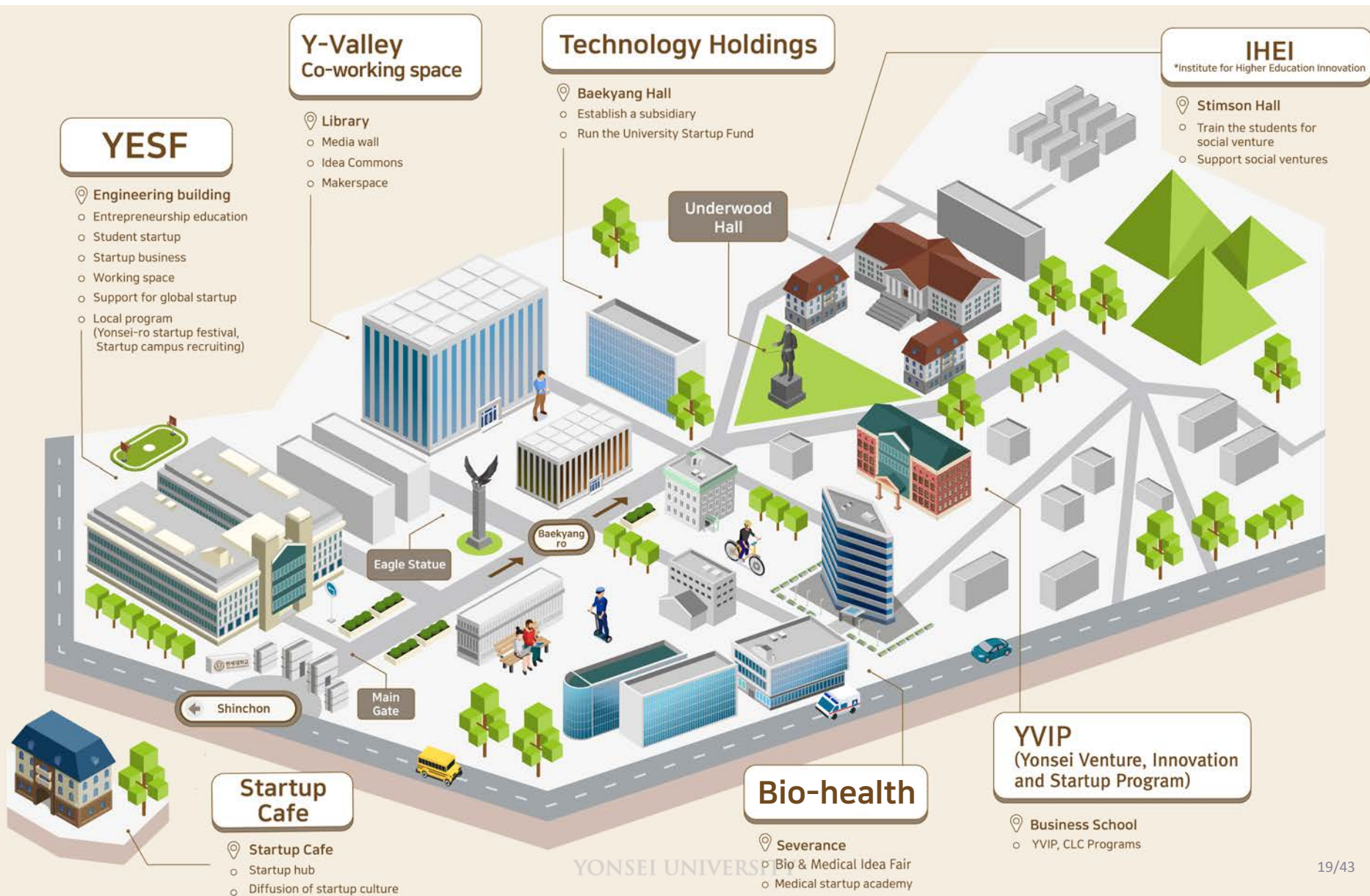


# Programs



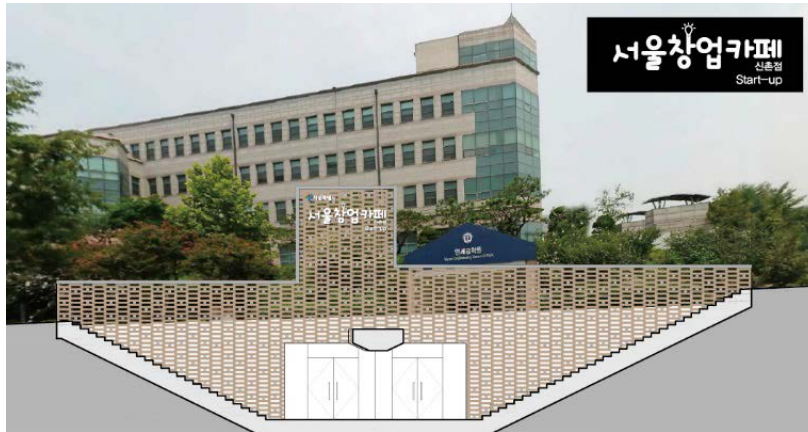


# Entrepreneurial Space & Culture



## 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)

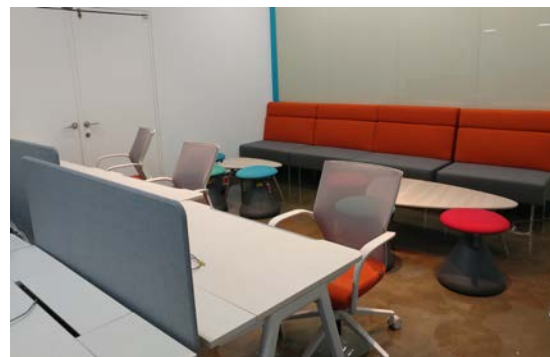


(Shinchon Campus)



(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

# Learning - Entrepreneurship Classes (26 classes)

## Startup 305 : X-Design

Meaning of  
Entrepreneurship  
Classes

Meaning the stage of startup  
Numbering open courses

Subject name





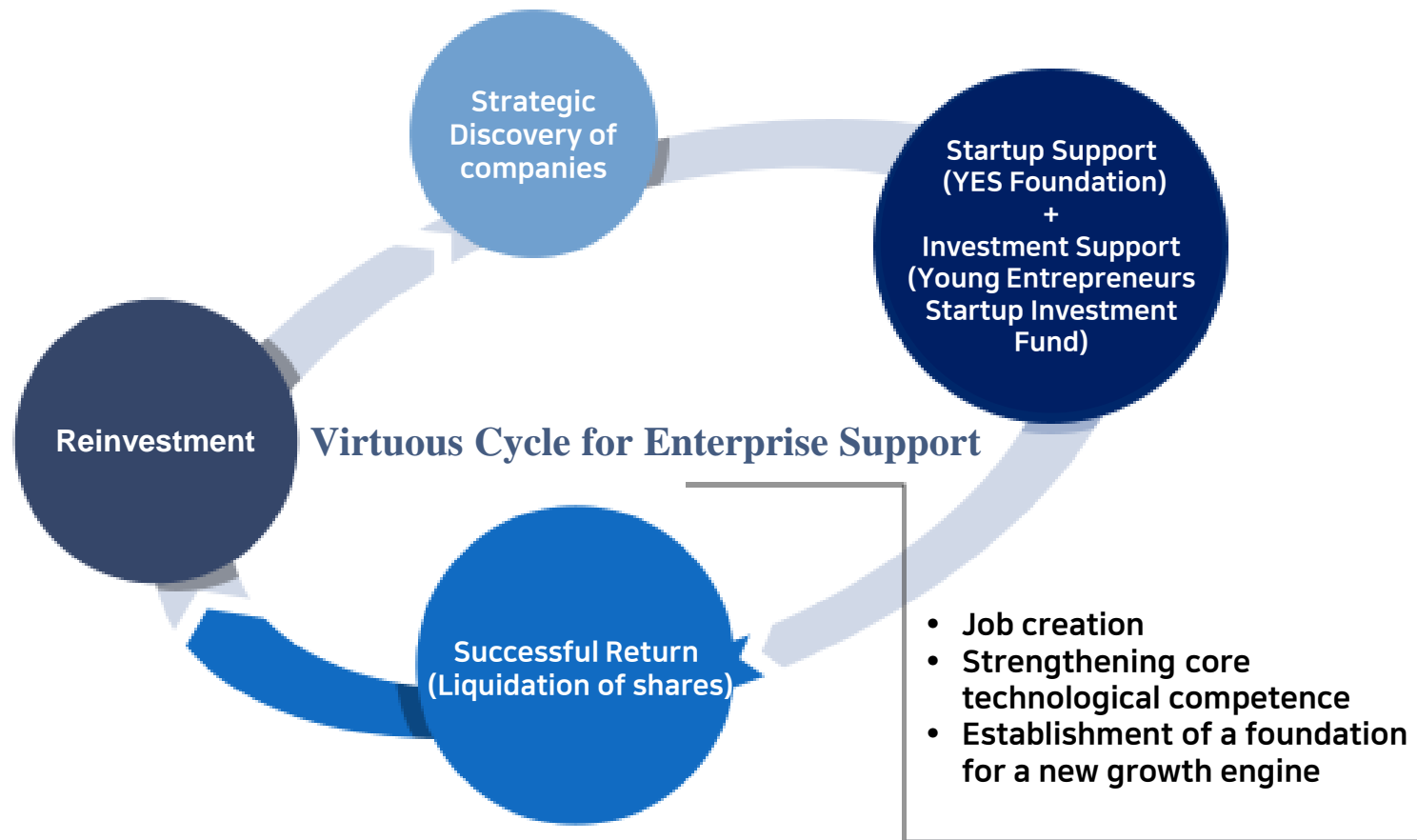
## Transition to Actual Business at Business Incubation (BI) Center



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

Laying the Foundations	Pre-BI	BI	POST-BI
<b>Preparation Stage</b> <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>	<b>Pre-Enterprise Stage</b> <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>	<b>Startup / Growth Stage</b> <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>	<b>Startup Stabilization / Second Growth Stage</b> <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>

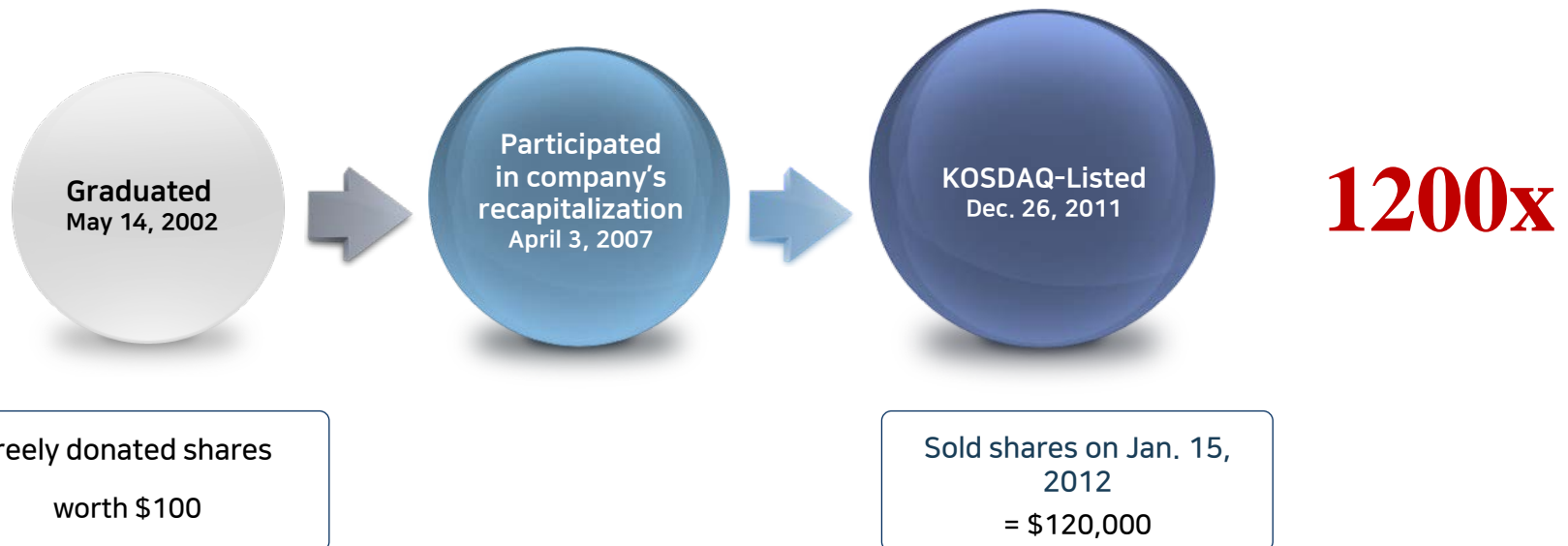
## Virtuous Cycle



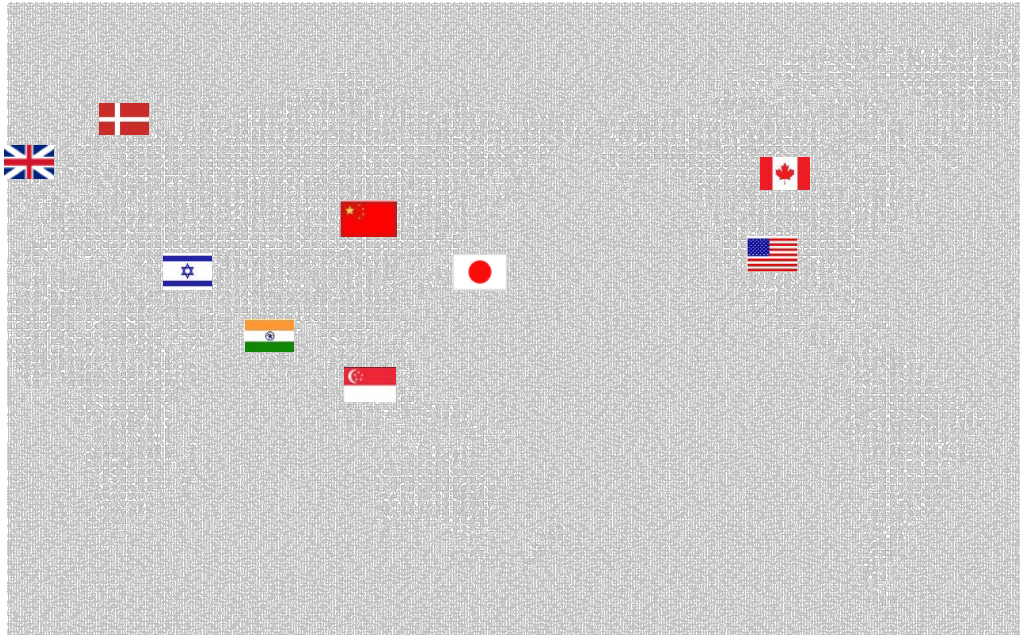
## Startup Companies from BI Center



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



## Global Support



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



03

# Results




## YESF Supporting startups

 Percent.



 MUNE

 databale

 도구공간

 D2S



 MARVRUS

 MarketDesigners.

 머시키

 MSB  
MAGIC STRAWBERRY



 MOBILTECH

 Mongata

 Voithru

 brandazine



 VisualShower®



 SANDBOX



 SENTBE



 SMARTSTUDY



 cizion



 OPENKNOWL

 여행의직구

 WAYSKIN

 WELT

 YOUNIV

 UserHabit

 Erion



 COMENTO

 CLOVERGAMES



## Result of supporting startup\* in 2018

\* Startups incubated since 2016 (109 companies)



Employment

**787** *persons*



Sales Revenue

**\$66** *M*



Export

**\$9.3** *M*



Investment

**\$23.7** *M*



Student  
venture club

**54** *team(599 persons)*

\*17 teams successfully registered

\*10 teams create employment, sales profit and investment

## Successful Startups(since 2009)

# 78 Successful Startups out of 355

### Alumni

- Dongho Kim / Open survey, Korea Credit Data
- Byeonghun Kim / April Skin
- Seongmin Yang / Sold the company to Melon
- Suji Lee / Sold the company to How2marry
- Cheolmin Pyo / Merge with IGAWroks
- Woojin Jeong / Sold the company to T-Money,  
Second startup company: Cosmic Latte

### Startups under YESF

- Quick / Merge with NAVER
- Archbears / Merge with Neptune
- PJTOK / Acquired by Yellow Asset Management
- Croquis / Sold the company to Yellow mobile  
Second startup company: ZIGZAG

### TIPS

- Kidsnote, DANO, V touch, Luxrobo, Lycle, Laftel... etc.

\*TIPS: Tech Incubator Program for Startup

21.9 %



## Mini Unicorn\*

\*M&A, IPO

\*Over \$1M in sales,

\*Large investment from VC



## Success Case

### Yonsei startup CEO



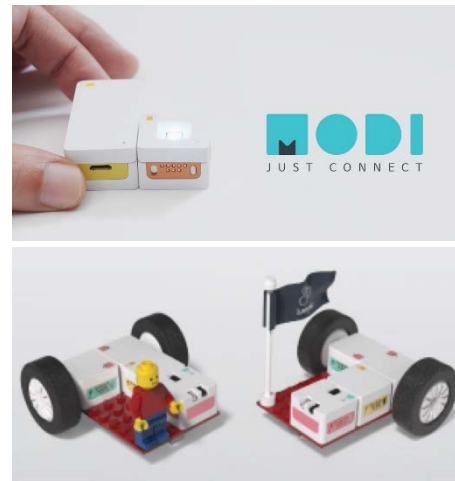
Introduce 20 alumnus supporting  
startups in 2017



Introduce 30 alumnus supporting  
startups in 2018

## Success Case

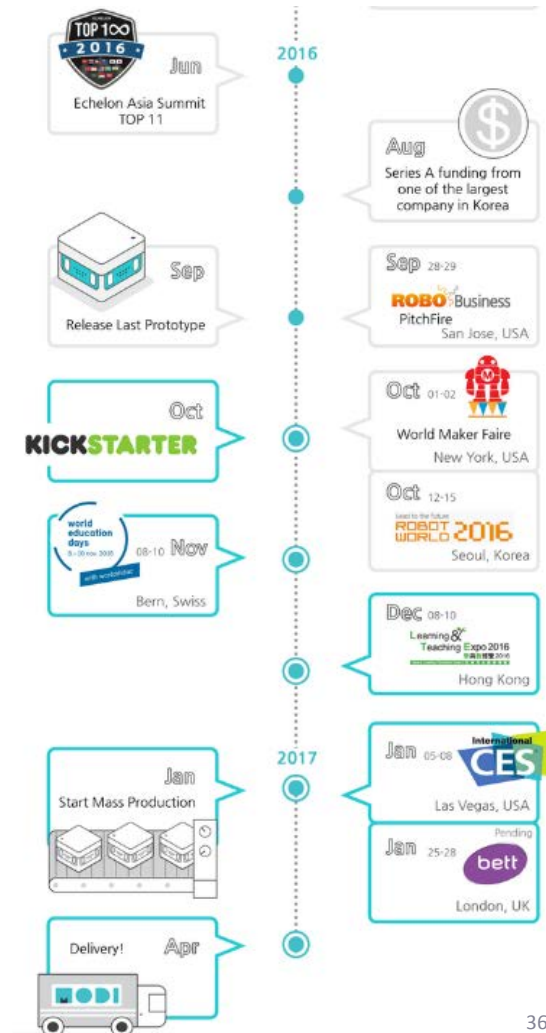
### LUXROBO



**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.
- Employee : 12
- Invest : \$5.5 million

### Major Performance



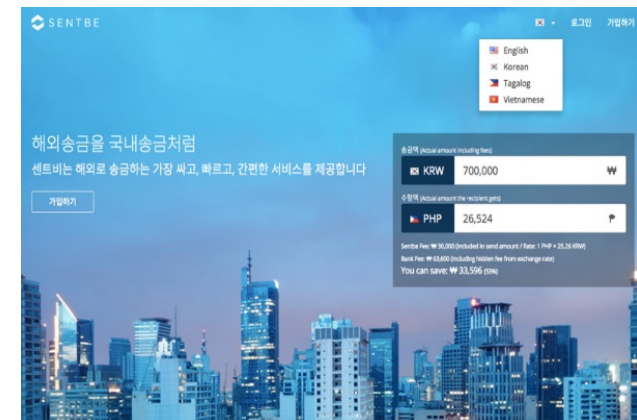
## Success Case

### SENTBE



- Company: Sentbe
- Representatives: Seongwook Choi
- Establishment: 2015.Sep.25
- Item: Money transfer service
- Investment: \$2.1 million
- 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





# Success Case

KCD | 한국신용데이터



*(2016, incubating startup)*

APRILSKIN



*(2015, left school for startup)*



CRATER(111%)



*(2014, incubating startup)*



*(2007, student's venture center)*



*(2012, incubating startup)*



*(2009, incubating startup)*



# Thank you

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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
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### Others

▶ Scholarships (USD)	90 million
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\*as of April 2018, including all campuses and the Health System

# Programs

