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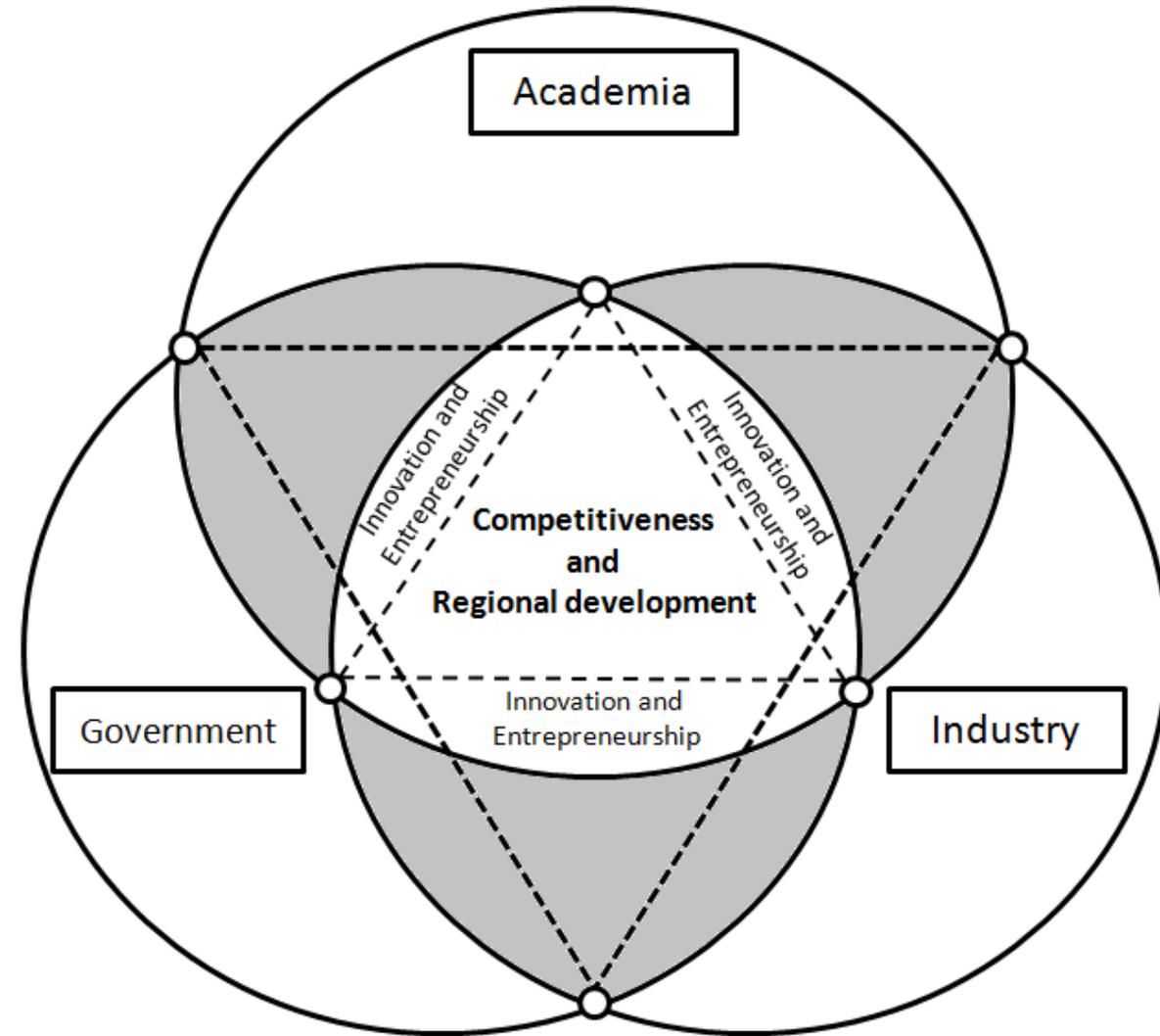
We Will Walk You Up: How Korean Government Support University Entrepreneurs

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Background: Academic Innovation

- Innovation through university entrepreneurship
 - Technology + Business
 - Triple Helix Model
- Identity shift
 - Researcher to Entrepreneur
 - Scientist to Entrepreneur
 - Student to Entrepreneur
- Attention shift
 - Unique to legit
 - Creative to viable
 - Prominent to feasible
 - Formulation to Implementation



Government-Led Academic Innovation in Korea:

Historical Milestones

- **Started with university-industry collaboration (2003)**
 - Adopting a triple helix model to foster innovation from universities
 - Restructuring undergrad curricular / Clinical Professorship
 - Structural separation between education/research and industrial relations
- **Governmental initiatives through project grants (2012)**
 - University-industry collaboration for technological transfers, transactions, and commercialization
 - Fostering information sharing, networking, and informal interactions between universities, research institutes, and industries
- **Educational Initiatives from universities (2013)**
 - Developing entrepreneurship education systems across universities
 - Entrepreneurship-friendly course maps
 - Support for universities in non-metropolitan areas to develop entrepreneurial education programs

Government-Led Academic Innovation in Korea:

Historical Milestones (Cont'd)

- **Reshaping university-industry collaboration (2016)**
 - Attention to entrepreneurship as a solution for addressing unemployment issues
 - Fostering technology entrepreneurship led by universities (undergrad and grad students)
 - Focusing on “Blue Oceans” (niche hacking, market creation, etc.)
- **Reshaping entrepreneurship education (2018)**
 - Entrepreneurship-friendly environment (support systems, culture, etc.) in and around universities
 - Emphasis on academic entrepreneurship (Faculty-led technology entrepreneurship and technological commercialization)
 - Taking a life-cycle approach to entrepreneurship education in universities
 - “Staged” education programs

Government-Led Academic Innovation in Korea:

Milestones Korea Currently Stepping On

- **Scaling-up**

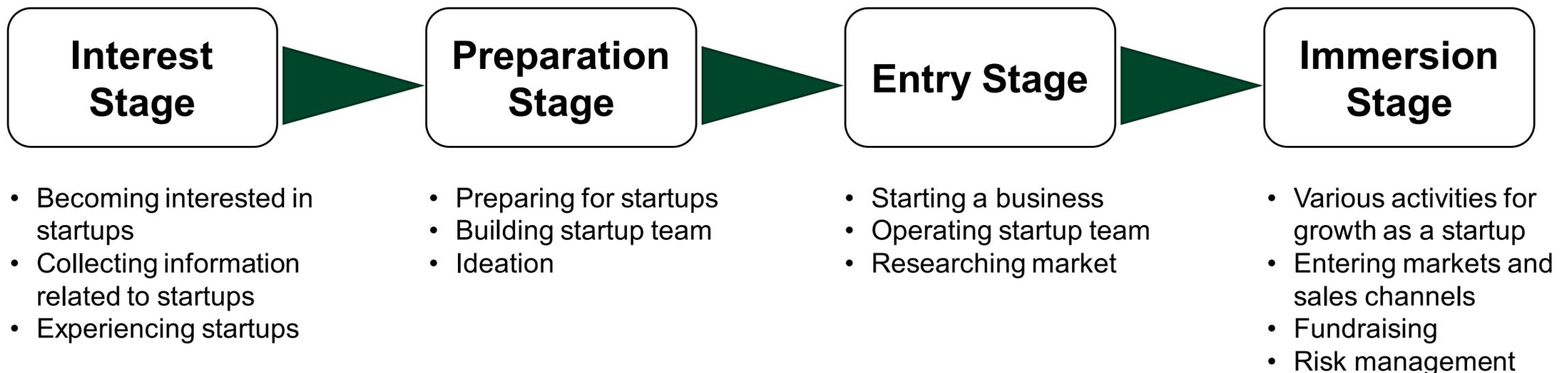
- Seeking for economies of scales and scopes
- Support growing startups through fundings and support programs

- **University-led entrepreneurial ecosystems**

- Empowerment to universities
- Expanding the roles of universities for leading national innovation
- Universities as an intermediary organization
- University-to-university knowledge transfer through “entrepreneurship-frontier universities”

How potential entrepreneurs are supported by Korean government?

- Entrepreneur-centered support (Path to entrepreneurship)
 - A step-wise guide to the journey of starting a business based on lab technologies
 - Seamless transition from students to nascent entrepreneurs
- Let universities take initiatives for the whole transition process
 - Focusing on the process of technology entrepreneurship
 - Technological development – Customer development – Enterprise formation
 - Aligning with Technology Readiness Levels (TRLs)
 - * TRL: A method to assess the maturity of a particular technology

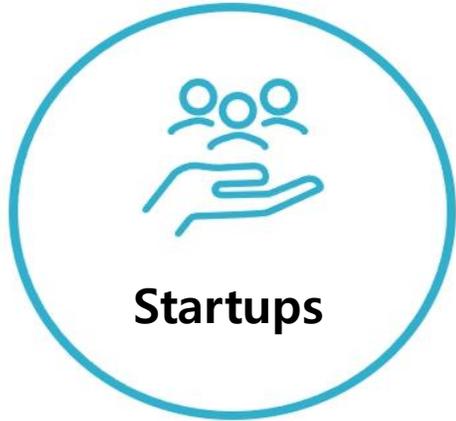


Entrepreneur-centered supports in Universities

Stage	Interest	Preparation	Entry	Immersion
Diagnosis	<ul style="list-style-type: none"> In cases where commercializable technology is being developed, but there is no specific business idea yet More interested in technology development rather than technology commercialization 	<ul style="list-style-type: none"> With having basic theories & experimental results, and considering the possibility of starting a business Possessing commercializable technology based on patents Producing a prototype, review marketability & business feasibility 	<ul style="list-style-type: none"> The stage where feedback from the actual market is being received Technology certification and standardization, acquisition of related licenses Fundraising 	<ul style="list-style-type: none"> Substantial sales generated Building an organizational system as a company Mass production of products or exploration of possibilities Fundraising
TRL	1 Stage	2-4 Stage	5-6 Stage	7-9 Stage
Target	Lab or Research Center - Focus on graduate students and postdoctoral students	As a pre-startup, a lab or lab-based research institute - Even though it is operated as a company, it is used for the purpose of managing research funds - Employment and division of duties can take place - Separation of corporate work and research work (partnership)	Holding company / Subsidiary Corporation establishment/operation - Lab Separation - Faculty participation as CTO or advisory committee member	Corporation
Institutional System	<ul style="list-style-type: none"> Application of regulations related to laboratories and laboratory operations IP development 	<ul style="list-style-type: none"> Application of regulations related to laboratories and laboratory operations IP management 	<ul style="list-style-type: none"> Faculty startup/Holding company regulations Joint venture regulations IP management 	<ul style="list-style-type: none"> Faculty startup/Holding company regulations
Supports	<ul style="list-style-type: none"> Consulting for tech commercialization & transfer Providing information & training related startups 	<ul style="list-style-type: none"> Technology commercialization consulting/mentoring Startup experience like competitions Space support 	<ul style="list-style-type: none"> Growth support Space support Prototype support Matching investment/Networking 	<ul style="list-style-type: none"> Growth support Space support Matching investment/Networking
In Charge	<ul style="list-style-type: none"> Tech Commercialization Center Startup Support Center 	<ul style="list-style-type: none"> Tech Commercialization Center Startup Support Center 	<ul style="list-style-type: none"> Startup Support Center Tech Holding Company 	<ul style="list-style-type: none"> Startup Support Center Tech Holding Company

As a result..

Increase in university entrepreneurship



(As of 2022)

Student startups: \$158M earned; 402 employed
Faculty startups: \$91M; 436 employed

Enhanced technological Commercialization



(As of 2022)

696 newly employed;
\$225M externally funded
564 patented

Expanded funds



(As of 2023)

39 VCs engaged; \$1024M funded
329 university startups benefited

Barriers, Bottlenecks, and Ongoing Concerns (1)

- The multimodal roles of universities in fostering academic innovation
 - Community
 - Interactions among various entities
 - Informal organization to facilitate cross-boundary interactions
 - Social integration as a hub to connect dots
 - Translator
 - Translation issues due to different interests, attention, and perspectives between academia, government, and industries
 - Knowledge integration required
 - Broker
 - Matching between technology and business
 - Dealing with internal conflicts, group tensions, and misaligned goals

Barriers, Bottlenecks, and Ongoing Concerns (2)

- Two Types of Entrepreneurial Ecosystems

	Route 128	Silicon Valley
Initiative	Government	Private
Economic structure	Autarky	Interdependence
Inter-firm communication	Little communication between firms	Routine communication between firms
Within-firm communication	Formal communication within firms	Informal communication within firms
Information sharing	Secrecy	Openness
Demography	Old, experienced company leaders	Young, inexperienced company leaders
Labor mobility	Labor mobility discouraged	Labor mobility seen as normal
Organization	Hierarchy	Community
Main field	Biotech, pharmaceutical	IT, semiconductor

- ***Make it hybrid!***

Barriers, Bottlenecks, and Ongoing Concerns (3)

- Different weaknesses in different entities

Undergraduates	Graduates	Faculty
Enthusiastic; creative	Tech frontiers	Tech frontiers
Low technology and lacking knowledge	Career constraints (What the graduation schools are for?) Heavily dependent on advisors	A researcher rather than a businessman Time constraints
Simple, less viable, and short-sighted business ideas	Less motivation for entrepreneurship	Less commitment

- These entity-specific limitations should be overcome for better academic innovation – another challenge!
- If the results of startups created at universities are not innovative, will startup education and support be sustainable?
 - If universities rely on the government supports valuing startups, we will only be on the periphery

We will walk you up!

- Another role of government, policy makers, and public sectors
 - Make sure that established startups enable potential university entrepreneurs to draw the attractions of entrepreneurial ecosystem
 - Must create a virtuous cycle in which innovative junior startup teams emerge through the performance of senior startups teams
 - Must encourage university entrepreneurs to actively intervene so that the growth of startups teams can be accelerated



THANK YOU!

- Please contact me if you have any questions at s.kim@ewha.ac.kr