

Fostering Regional Innovation through STI Parks: The Case of Korea

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The paradigm shift in regional development policy

Korea is one of few recent examples of a country that has managed to transform its domestic economy **from agriculture into that of several knowledge intensive fields.**

	Traditional paradigm (1962 ~ 1996)	New policy paradigm (1997 ~ Present)
Role of regional policy	Eradicating spatial problem	Acceleration of development
Objectives	Pursuing economic efficiency (Economy of scale)	Stimulating competitiveness
Implementation	Central government initiatives	Local government and private sector initiatives
Policy priority	Balanced economic growth	Innovation capability

Progressive development strategy



The paradigm shift in regional development policy

The sustainability of growth patterns is linked to the capacity to shift the production structure toward sectors with higher increasing returns and higher dynamic capability

Sectoral contributions to growth from textiles to cars and electronics



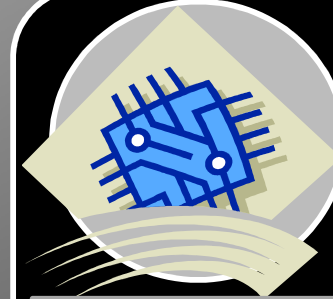
1960s~80s
First phase
of
industrialization

- Infant industry protection
 - Restriction on imports/Supporting exports
- Relax regulation on construction of factories
- Support R&D activities & the development of skilled manpower
- Increase competitiveness
 - Wage fixed by law
 - Export growing : 8.6%



1960s~90s
Brand
development
'Made in Korea'

- Design stage to production
- National car brands
 - Hyundai, Kia, Daewoo etc
- Govt. gradualist approaches
 - **60s** : Import restriction to create domestic demand and incentives
 - **70s** : Long term plan for promotion of automobile industry
 - + Mass production system
 - + Vertical & horizontal integration of large and SMEs
 - **80s** : Competition policies
 - **90s** : Industrial reconstruction
 - + Private sector plays a leading role



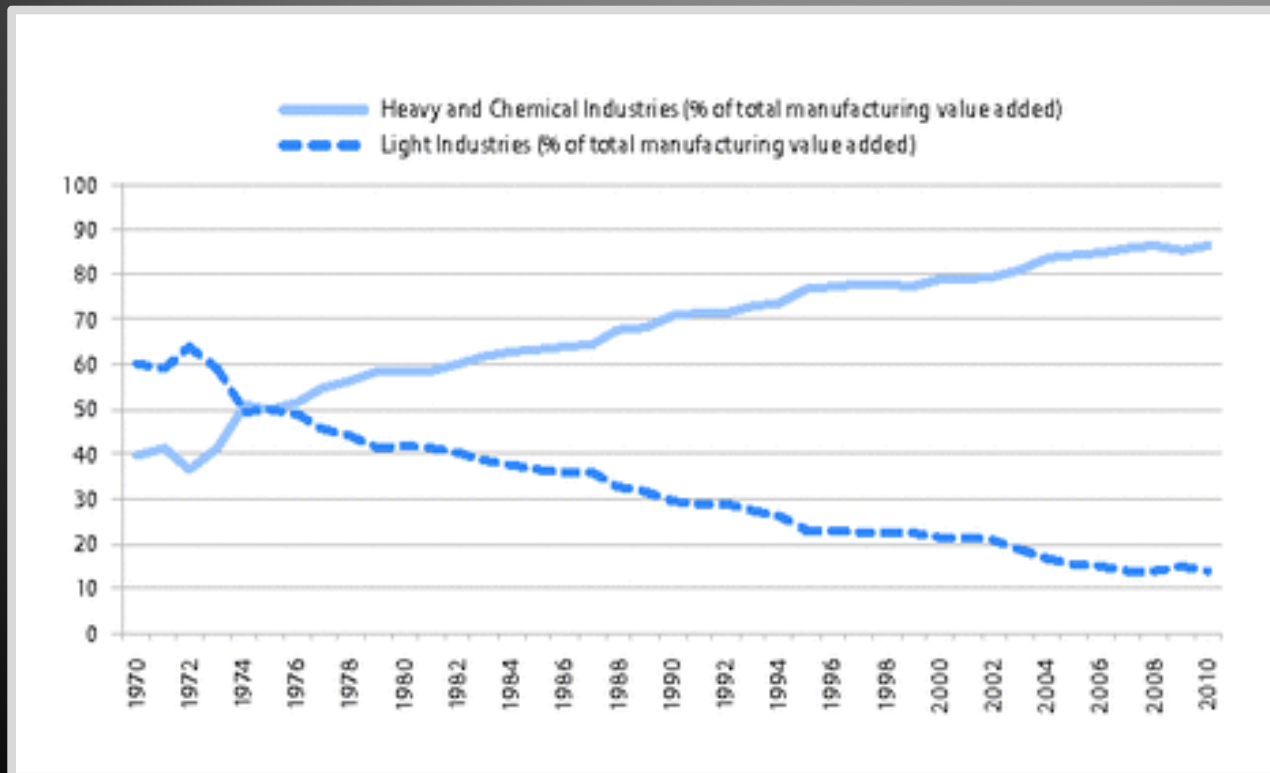
1970s~90s
Engine for next
generation

- Enacted the law of promotion of Electronic industry
- Formulated the plan of fostering the electronic fields
- Govt. played a pivotal role
 - **60s** : Assembly by low waged labor
 - **70s** : National champions selected
 - + Samsung, LG and Hyundai
 - + Government R&D program support
 - **80s** : leapfrogging stage at DRAM
 - **90s** : Dynamic growing at DRAM
 - + Generic technology for next generation
 - + Highly skilled manpower to sustain competitiveness

The paradigm shift in regional development policy

The shift from an agriculture-based economy to an industrialized one helped to sustain productivity growth

Structural change from light to heavy and chemical industries
KOREA, 1970 ~ 2010



• Light industry



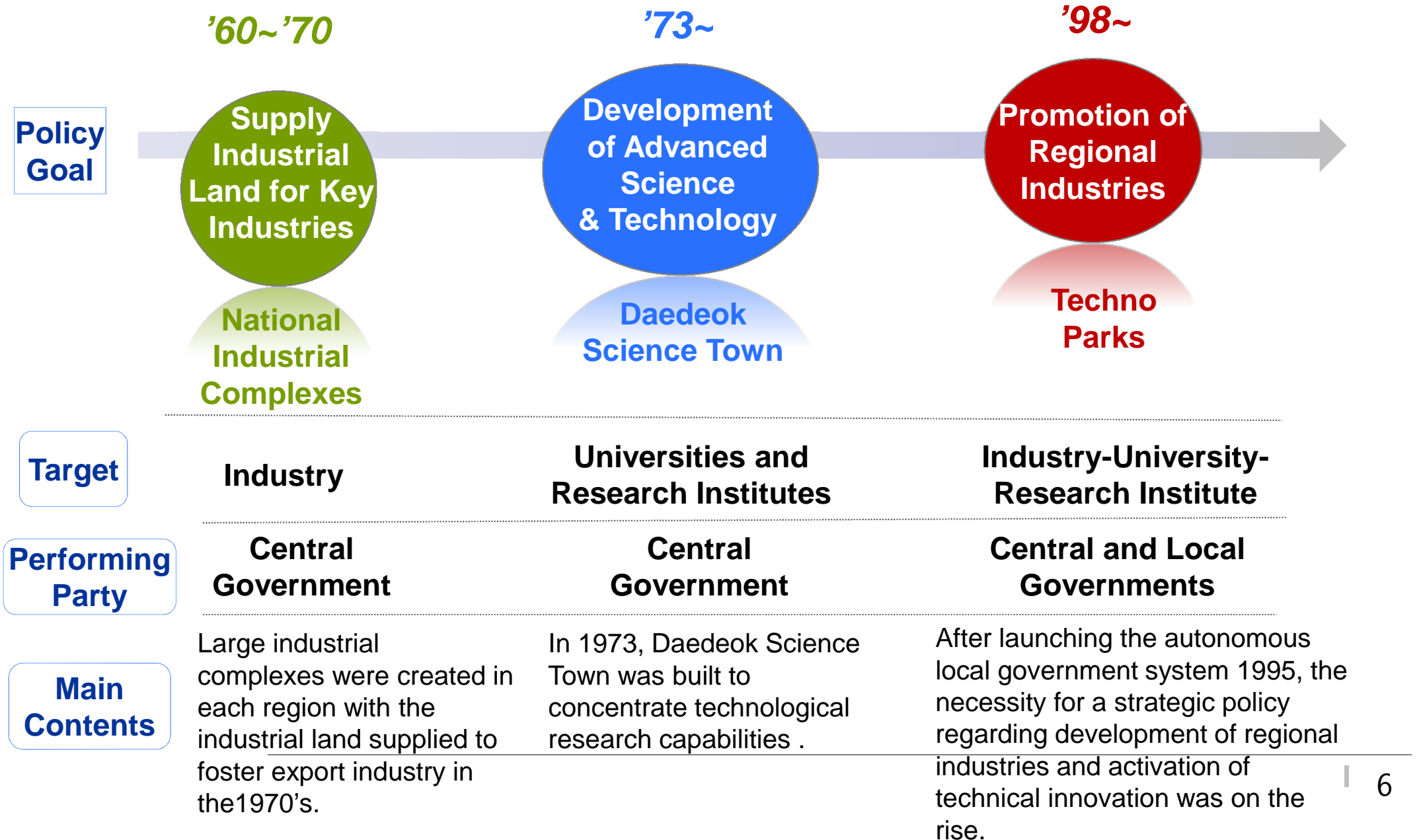
Food, beverages, tobacco, textiles, furniture, printing, wood etc

• Heavy industry

Petroleum, non-ferrous metals, machinery, electronics, precision etc

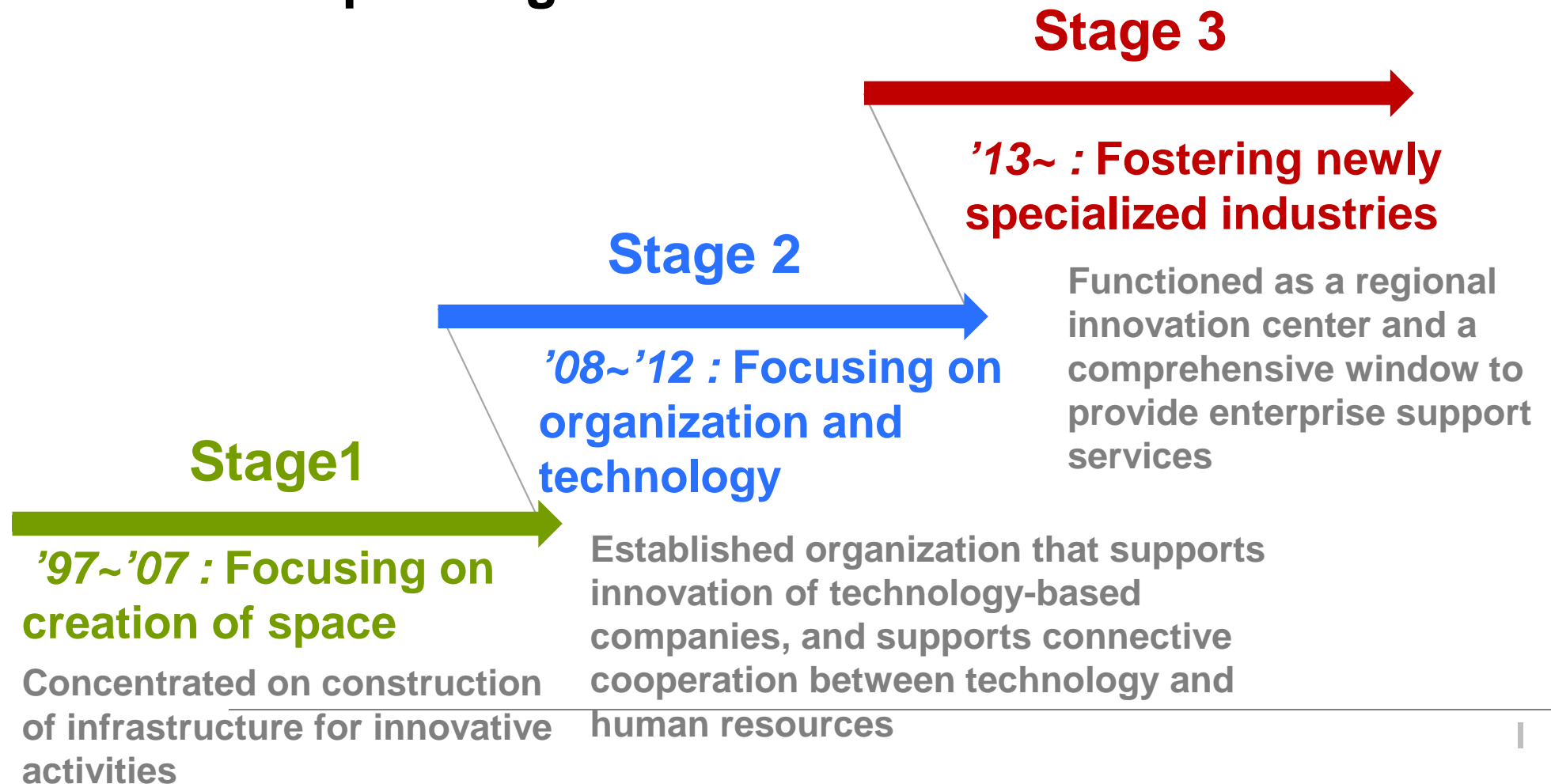


History of Korean Techno Parks: Background of Korean TP Projects

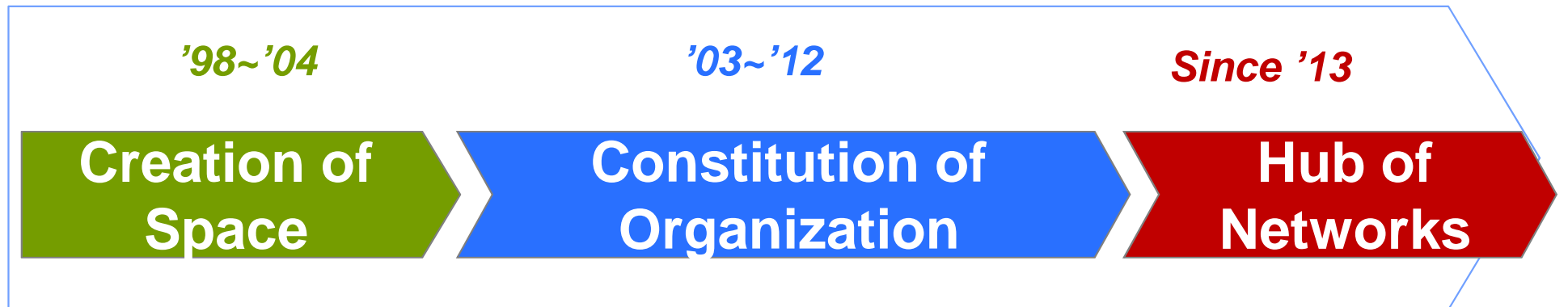


History of Korean Techno Parks: Stages of TP Projects

- Creation of TPs began in 1997
- 18 TPs are operating as of 2015.



History of Korean Techno Parks: Three Stages of TP Development



Creation of Advanced Innovation Space

- Established space for promotion of regional industries and shared facilities and equipment .

Promotion of Regional Strategic Industry

- Organized think-tanks for promotion of regional industries and expanded basic organization to support companies in the region.

Establishment of Business Support System

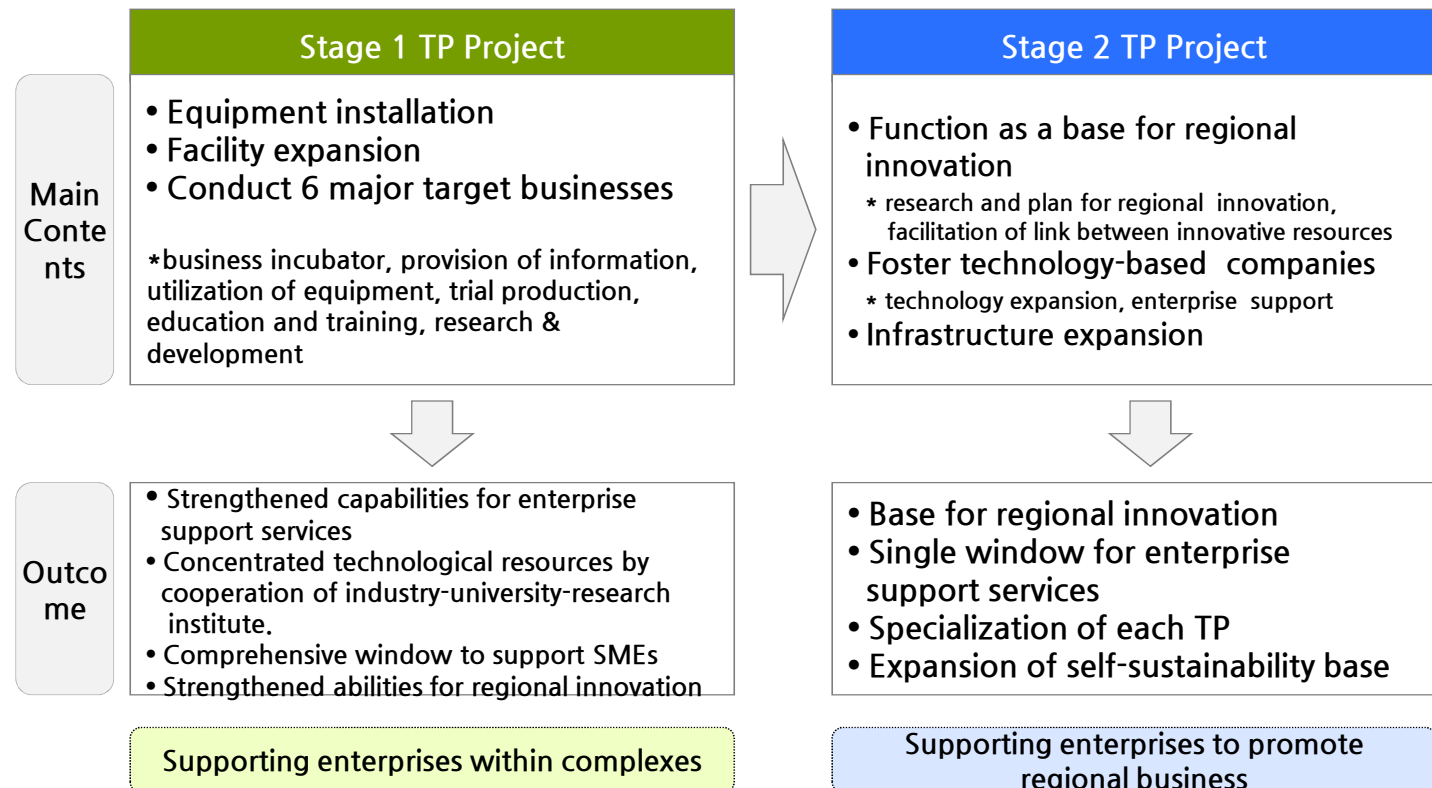
- Linked company support groups by each industry to provide user-oriented enterprise support programs.

History of Korean Techno Parks:

Stages of TP Development

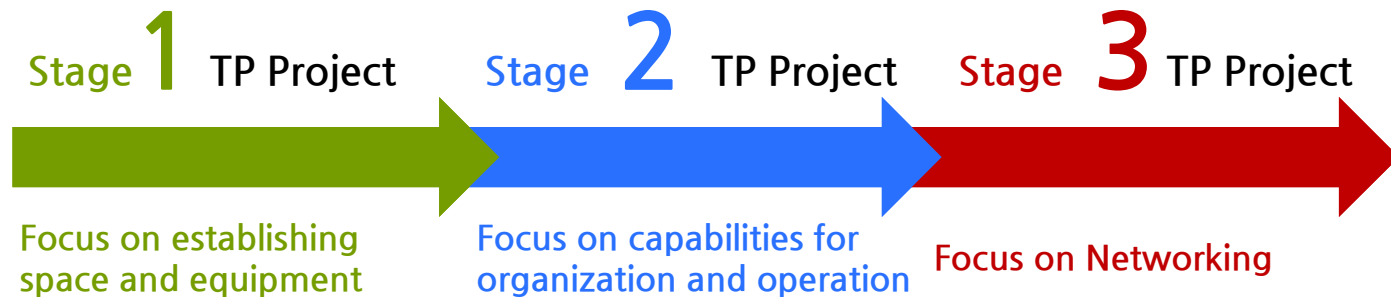
- Stage 1 aimed at constructing TP complexes and supporting occupied companies.
- Stage 2 established the policy to promote strategic industries in the region and changed its role as the base for administration.

Primary Comparison of TP Projects in Stages 1 & 2



History of Korean Techno Parks: Stages of TP Development

Analysis TP Projects' Development Stages



Concentrate on enterprise support within TP complexes

Focus on construction of space

Establish and operate enterprise promotion organizations

Industry-university-research institute council (occupant-oriented)

Concentrate on establishing industry promotion policy within region

Focus on shared equipment installation

Establish and operate industrial planning organizations

Industry-university-research institute-government council

Concentrate on linking enterprise support agencies within region

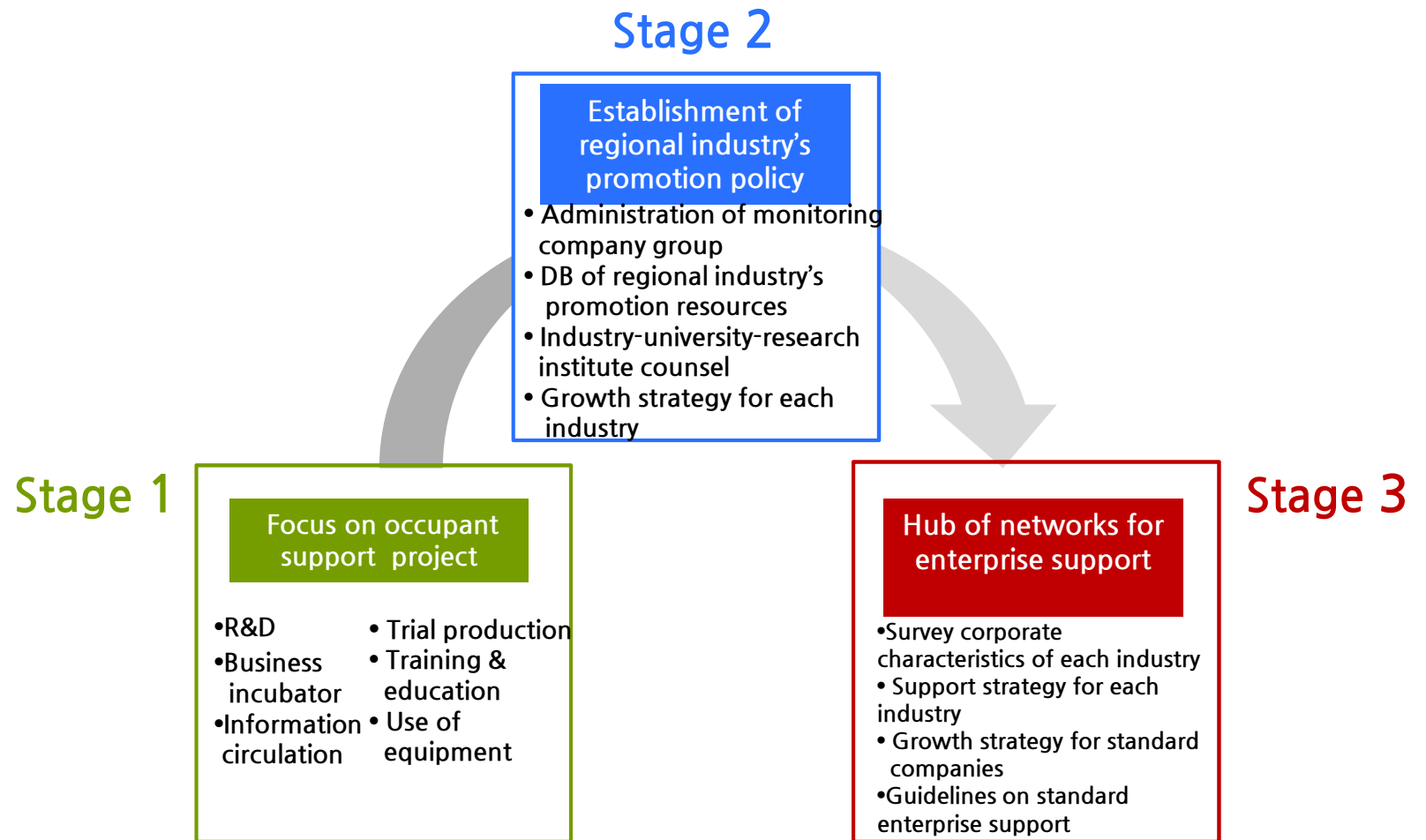
Focus on sharing information of equipment within region

Cooperation system between promotion organizations

Industry-university-research Institute council (of each industry)

History of Korean Techno Parks: Stages of TP Development

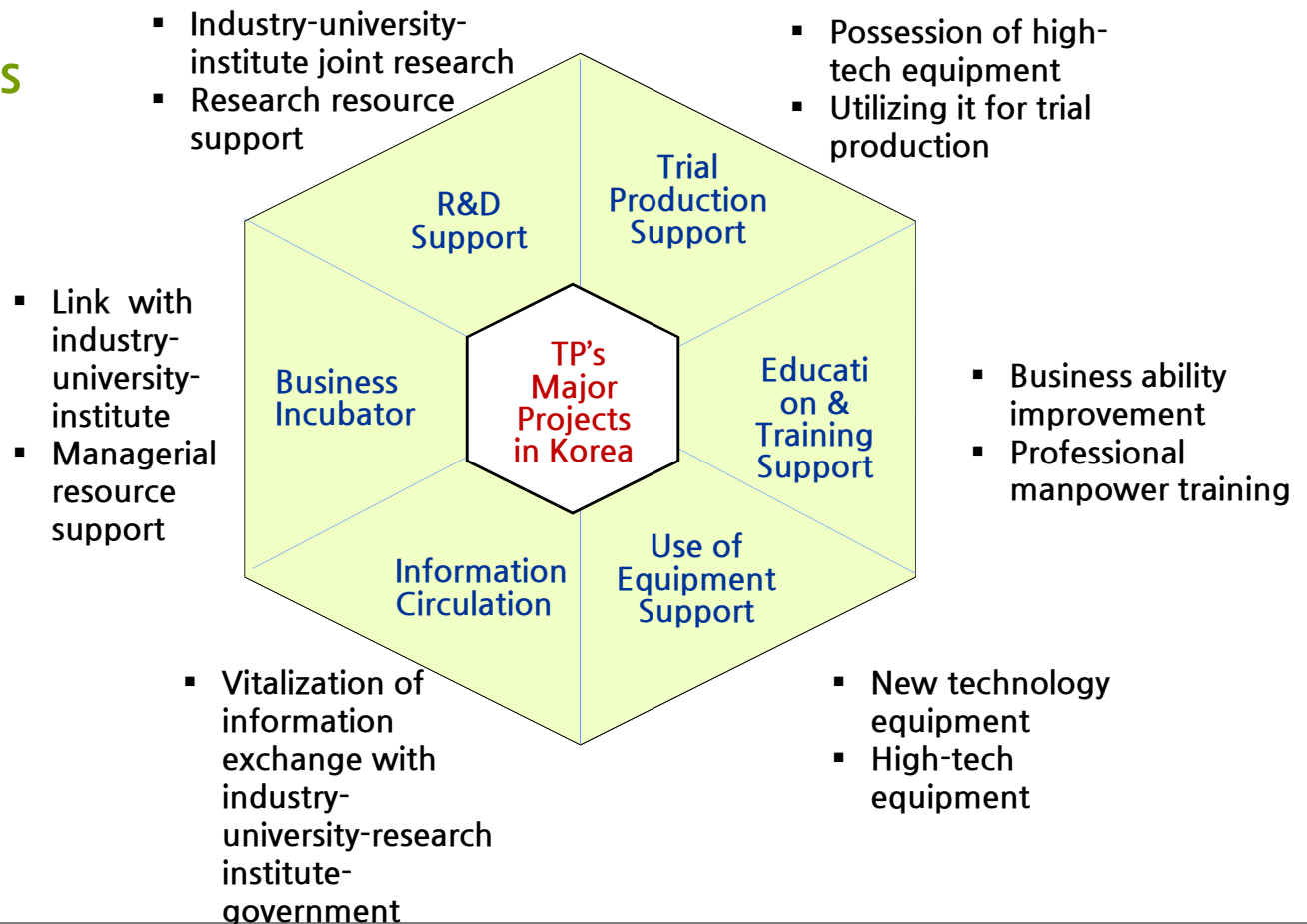
▪ Phased Development and Key Projects of TP



History of Korean Techno Parks: Stages of TP Development

Major Enterprise Support Projects by TPs in Korea

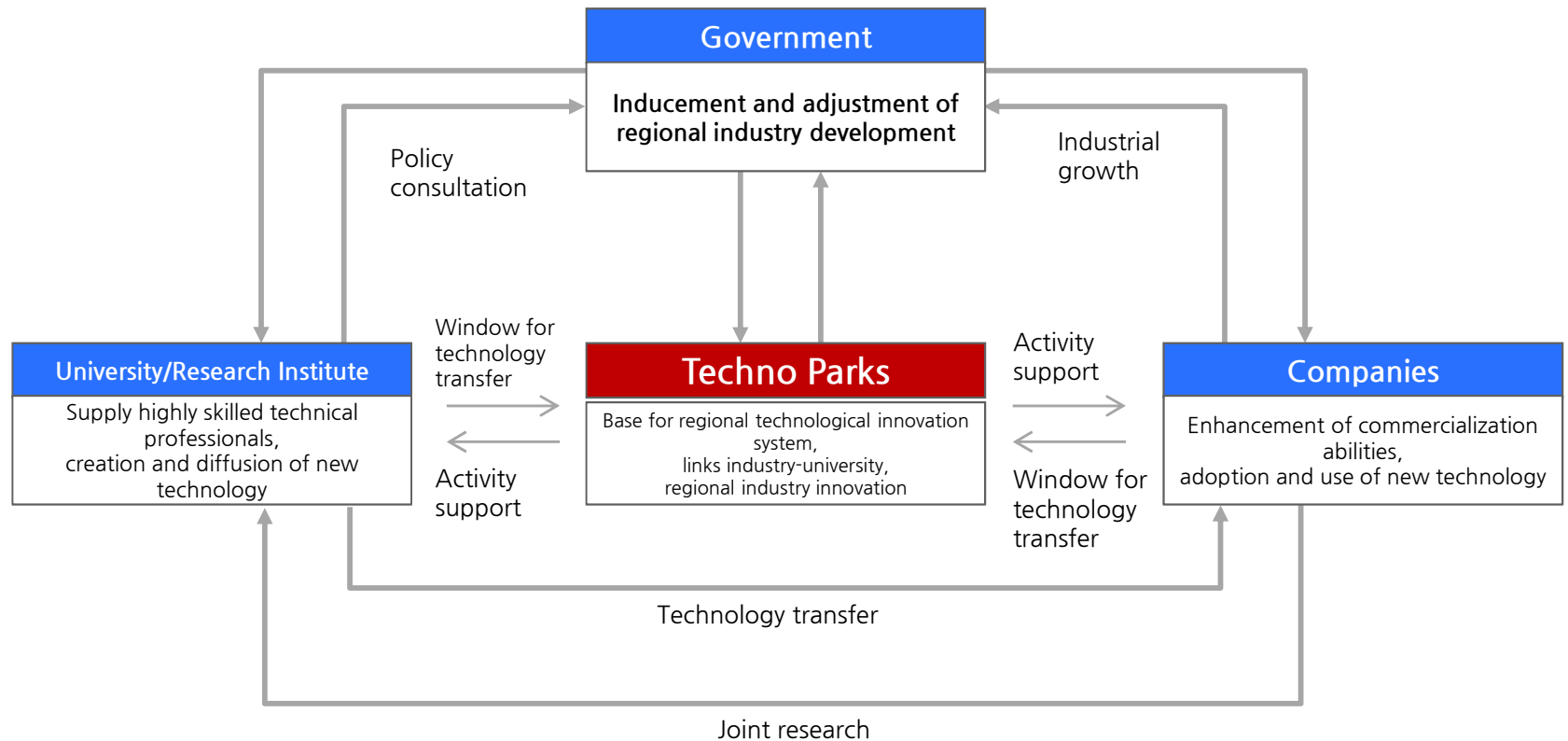
Stage 1 TP Projects



History of Korean Techno Parks: Stages of TP Development

- TP as a planning center for regional industrial policy

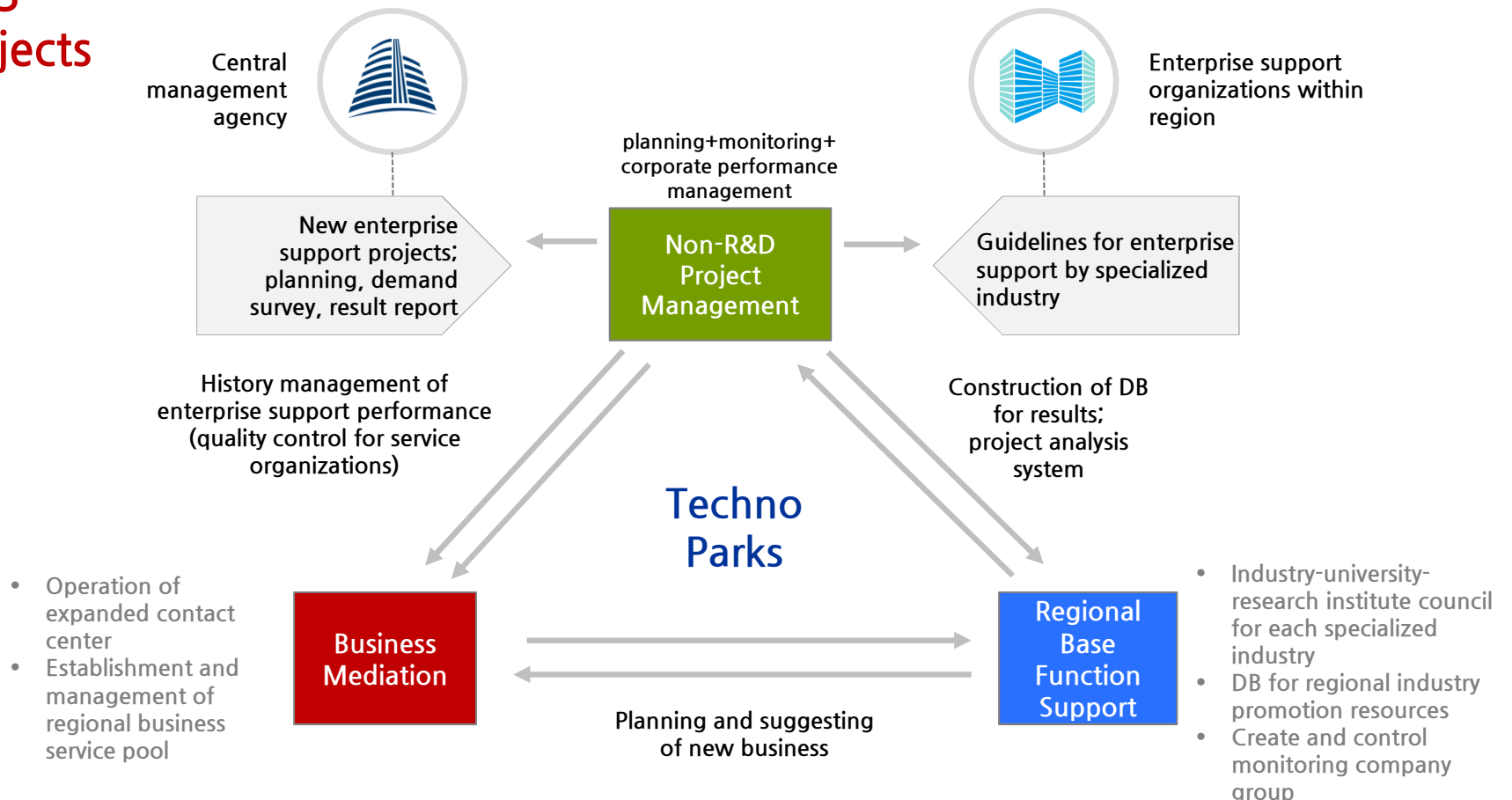
Stage 2 TP Projects



History of Korean Techno Parks: Stages of TP Development

TP as a hub of network

Stage 3 TP Projects

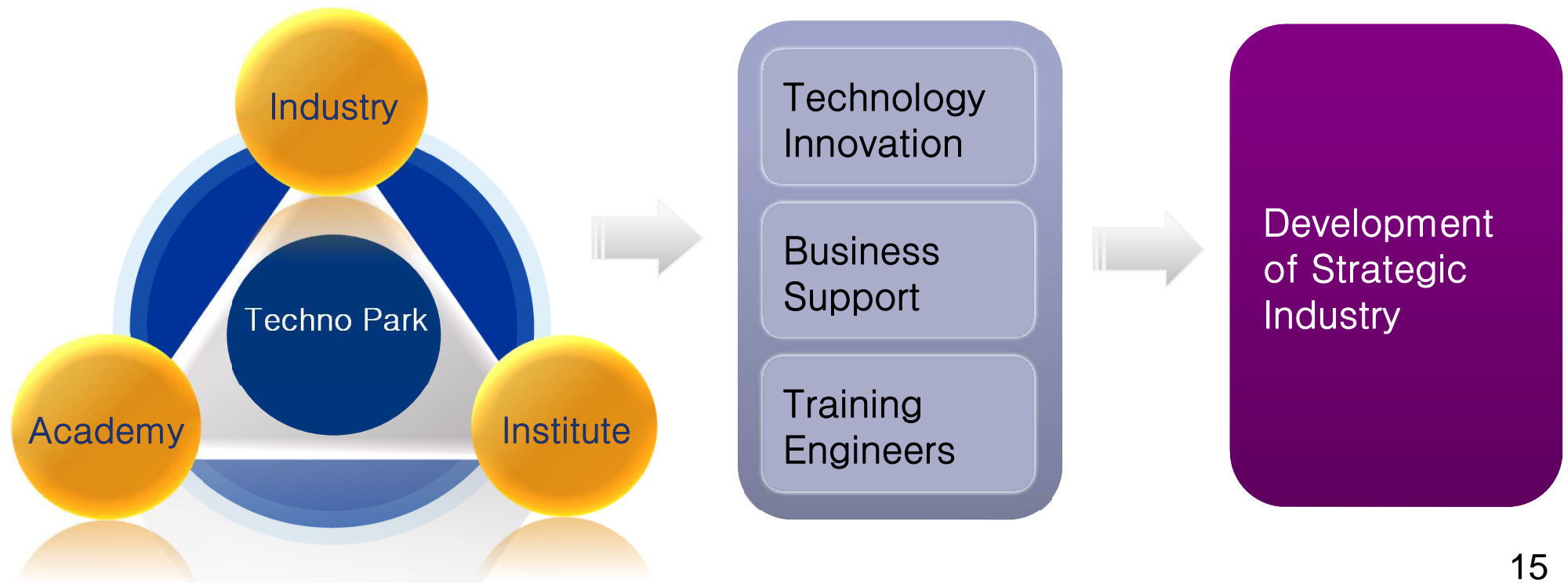


Korean TP Model

Concept

Knowledge Concentrated Industrial Complex to

- ① Stimulate and manage the flow of knowledge and technology amongst universities, R&D institutions, companies and markets
- ② Facilitate the creation and growth of innovation-based companies through incubation and spin-off processes



Korean TP Model

Korean Techno Park vs. Industrial Park

Techno Park is more focused on **business incubation** and **company support** through **collaboration and linkages of industry, academy, and institute**, while **Industrial Park** is zoned and planned for **production through factories**.



Techno Park

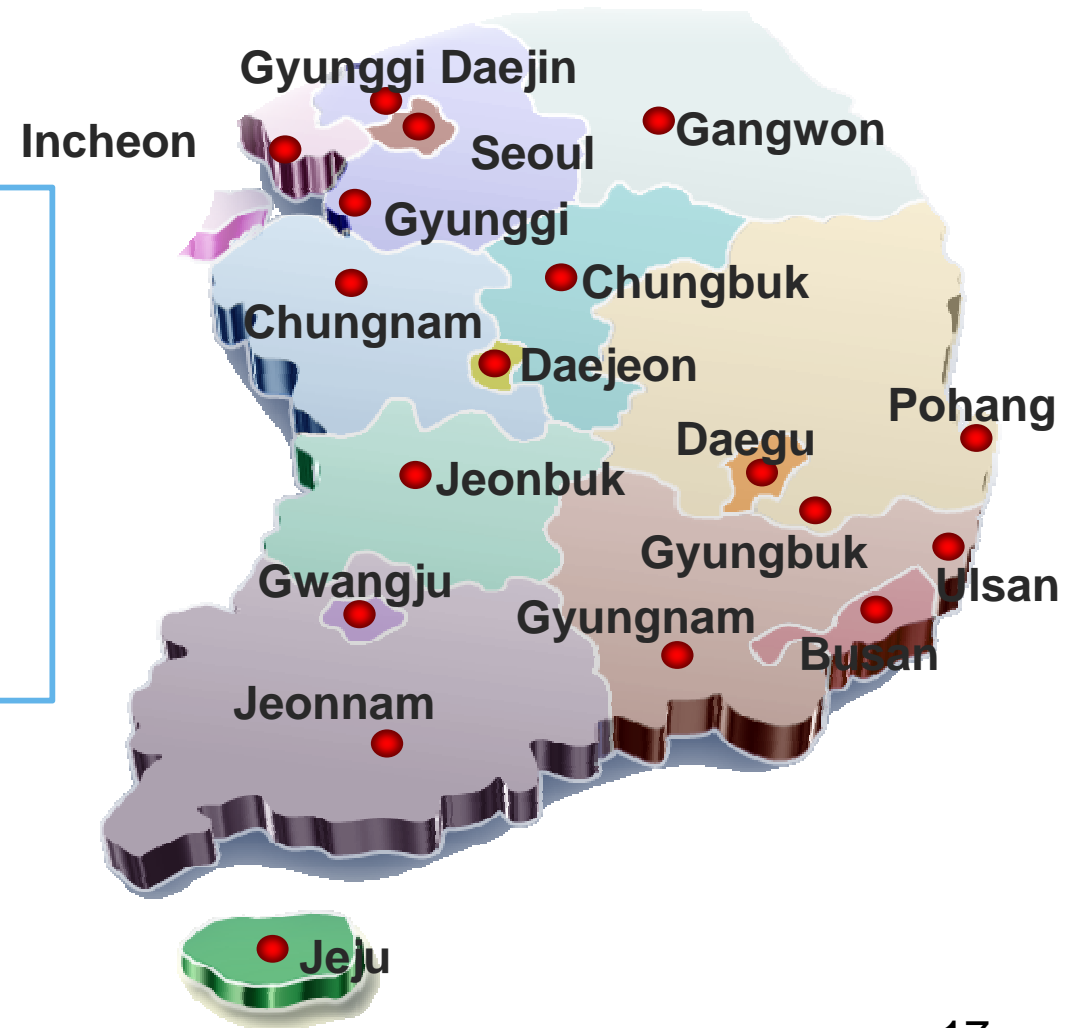


Industrial Park

Korean TP Model

Current Status of Korean Techno Parks

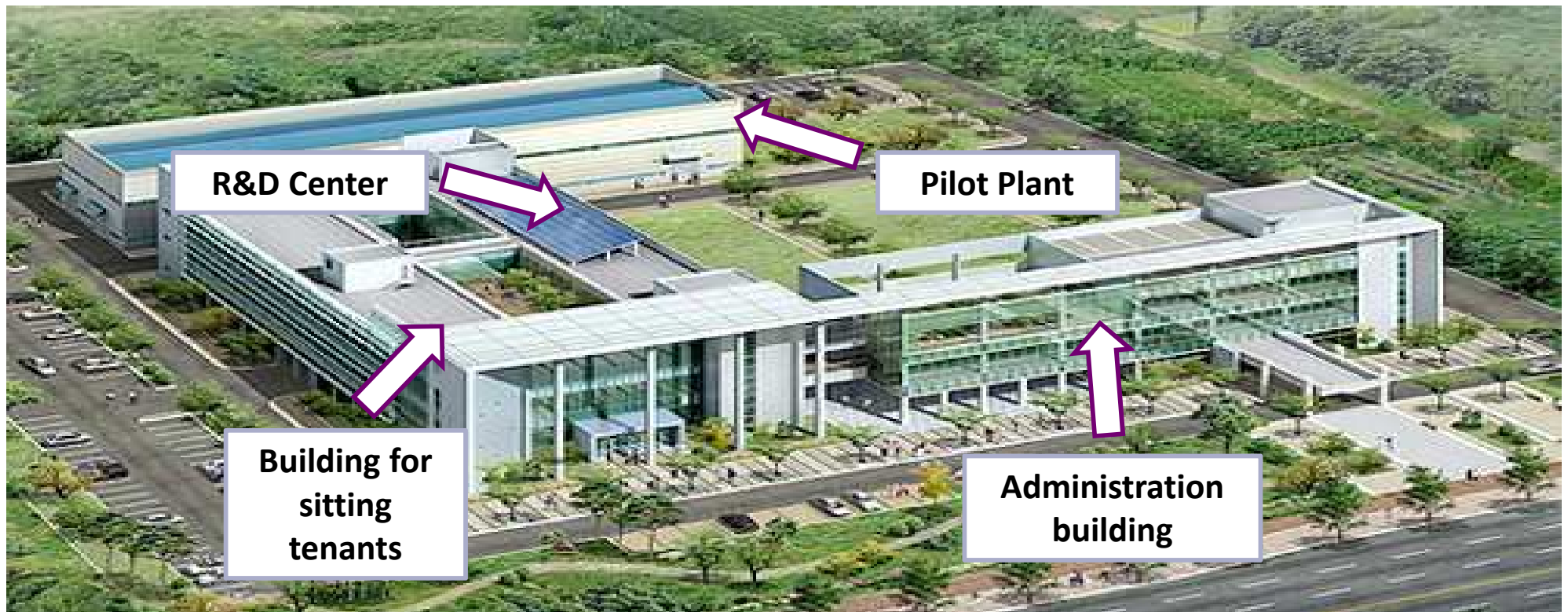
- ① 18 Techno Parks are operating over the country for promoting Local Area Specific Industry
- ② R&D through Techno Parks in Local Area.



Korean TP Model

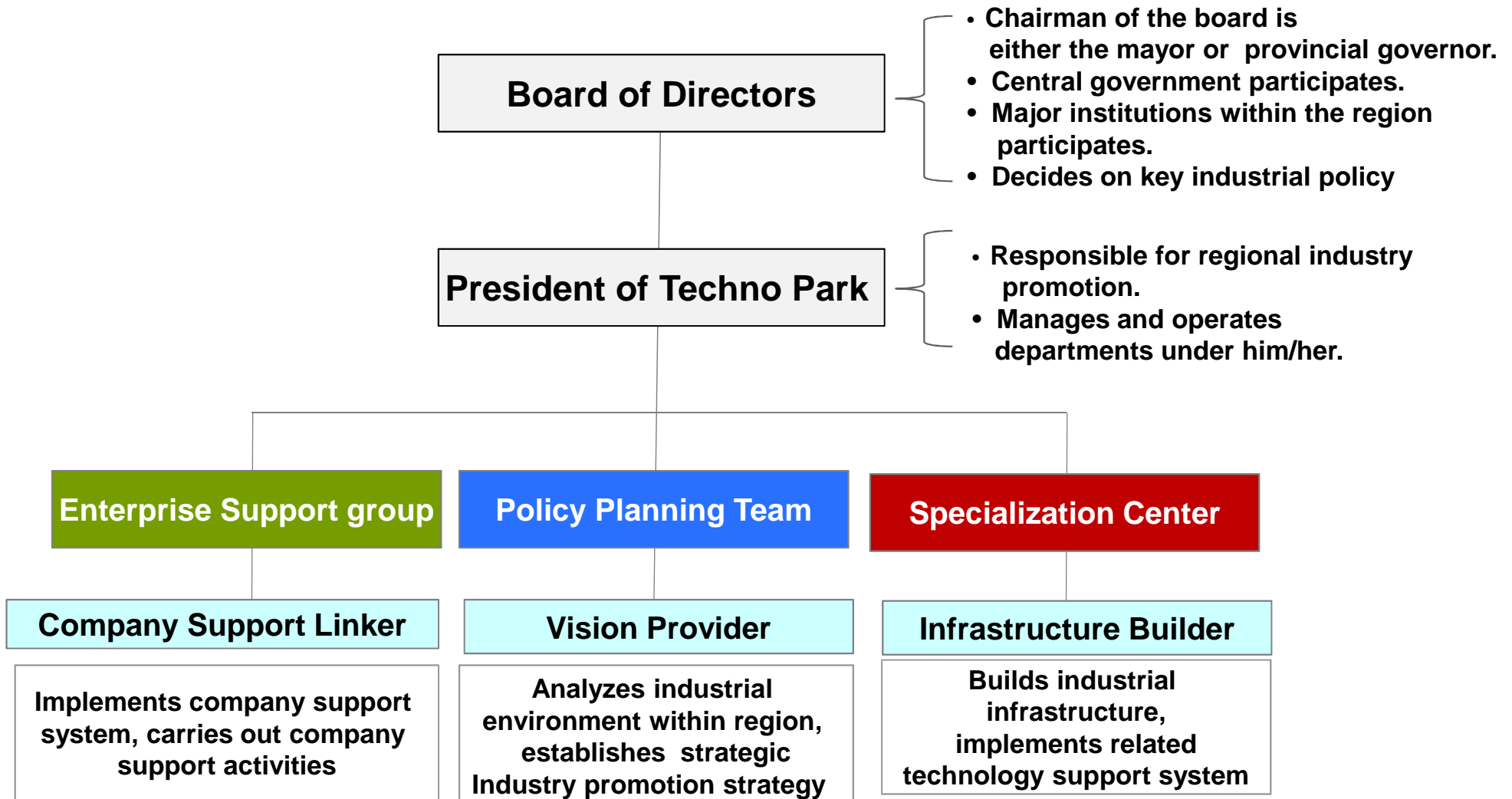
Major Facility of Techno Park

- Basic Techno Park consists of 3~4 buildings of different functions.
- Expansion of Techno Park: Universities and research institutes can be integrated with Techno Park



Korean TP Model

• Key Role of Major Departments in Korean TP



Korean TP Model

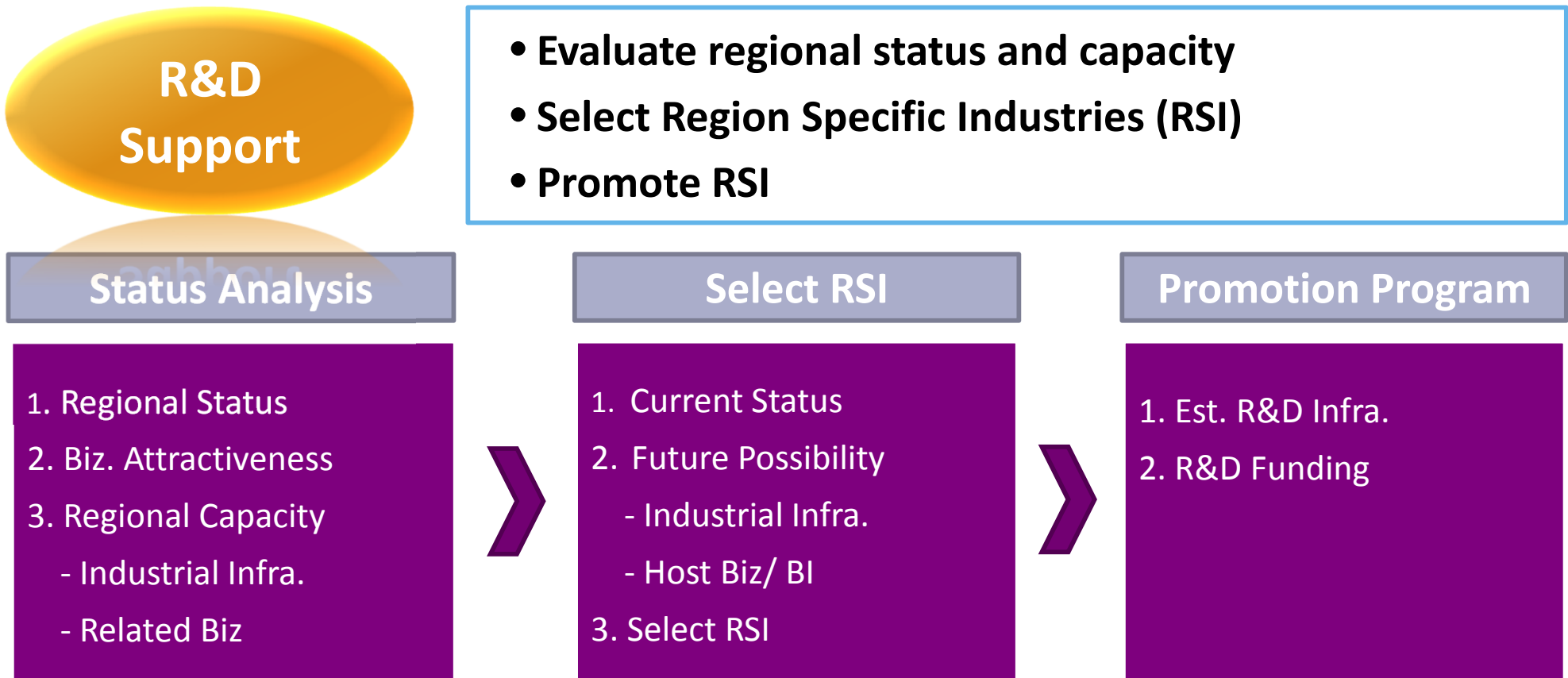


- **Korean Techno Park focus on Business Support for Company's Growth**

(Through the growth period of 1970s~1990s, start-ups have been invigorated in Korea and Techno Park has strengthened business support service to make start-ups leap forward.)

Korean TP Model

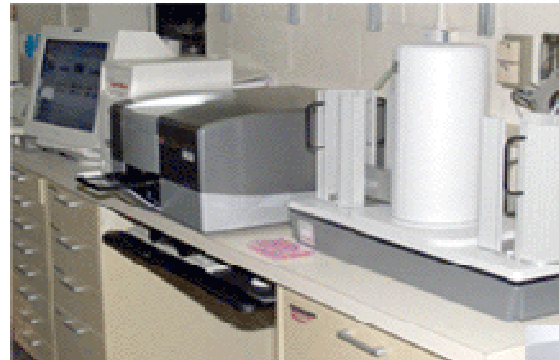
R&D Support on Region Specific Industry



Korean TP Model

R&D Support on Region Specific Industry

- ① Techno Park is equipped with research equipment of Region Specific Industries
- ② Techno Park provides companies in the region with the research equipment
- ③ Techno Park supports joint R&D among industry·academy·research



To overcome shortage of R&D personnel and equipment



Techno Park plays a vital role as a core organization

Korean TP Model

Business Support for Company's growth

Business Support

- Provide space and pilot production facility for POST BI companies
- Supply other comprehensive service

4 Steps of Business Incubation

Labs

Univ. BI

POST BI

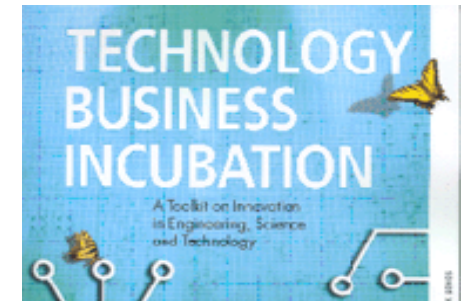
Plant

● Labs : Invigorate start-ups through contest & investment

● BI Center in Universities : Assist operation cost

● POST BI : Provide services on technology, marketing, finance, etc

● Plant : Assist to settle in the region by supporting plants set-up



Korean TP Model

Business Support for Company's growth

Consulting Service

Contact Point for
Consulting services

- Consult on management strategy & technology
- Support consulting on bottleneck technology
- Solve the problem in the production process

Assistance for Commercialization

Commercialization of
Technology

- Support for patent application
- Support for technology transfer
- Establish and run a technology holding company

Marketing Service

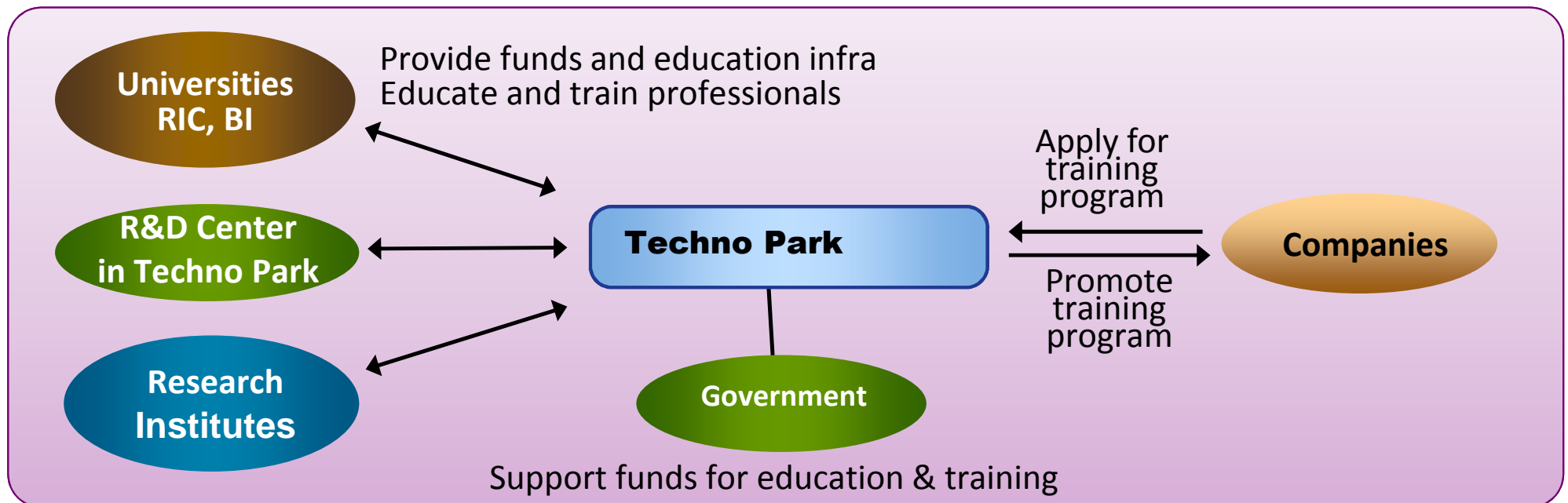
Domestic & Overseas
Marketing Services

- Domestic Marketing
 - Market Survey
 - Products Exhibition
 - Connecting Buyers
 - Biz-matching
- Global Marketing
 - Overseas Road show & Exhibition, etc.

Korean TP Model

Technical Professionals Training

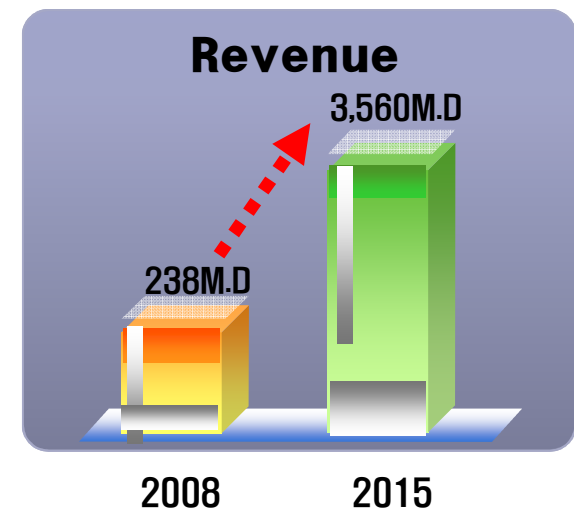
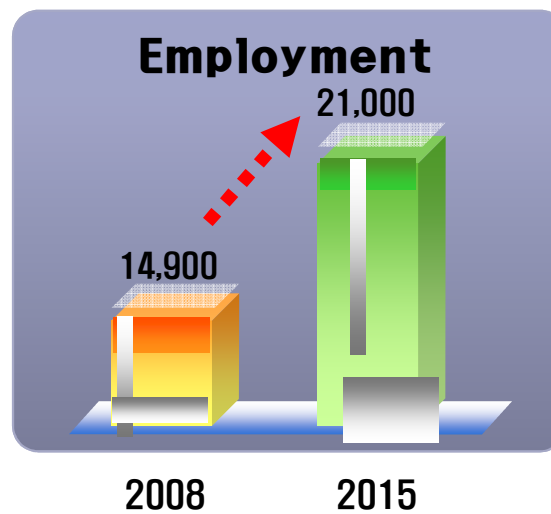
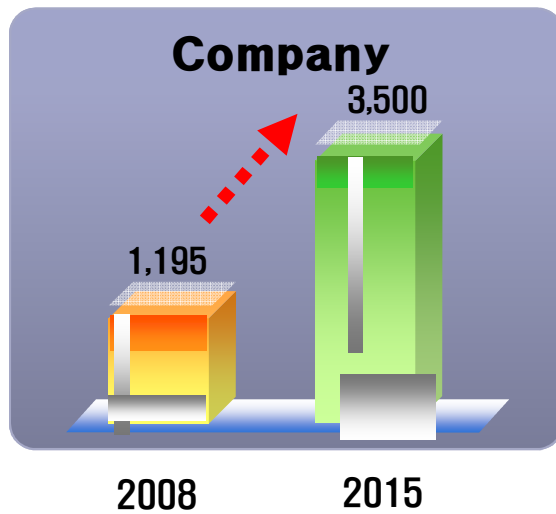
- **Education and training program is designed and provided based on demand from companies.**
- Education and training is provided through Universities, research Institutes and R&D center of Techno Park in the region
- **Field engineers are the target group of this training program**



Korean TP Model

Expected Achievements

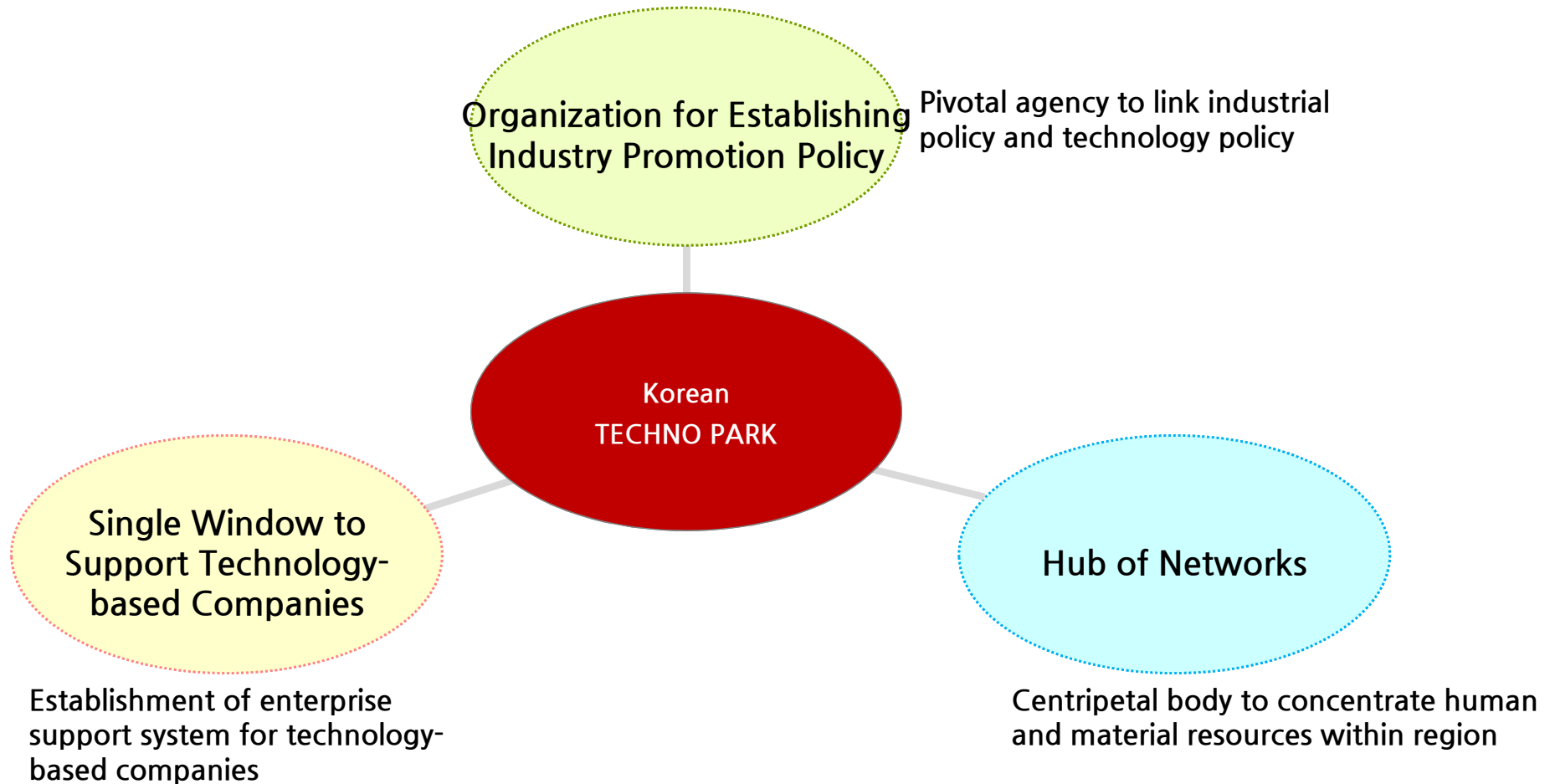
Year	Company	Employment	Revenue
2008	1,195	14,900	238 Million Dollars
2015	3,500	21,000	3,560 Million Dollars



Korean TP Model

- Korean TPs play a greater role in establishing, implementing, and managing industry development policy within region, unlike the STPs in advanced western countries.

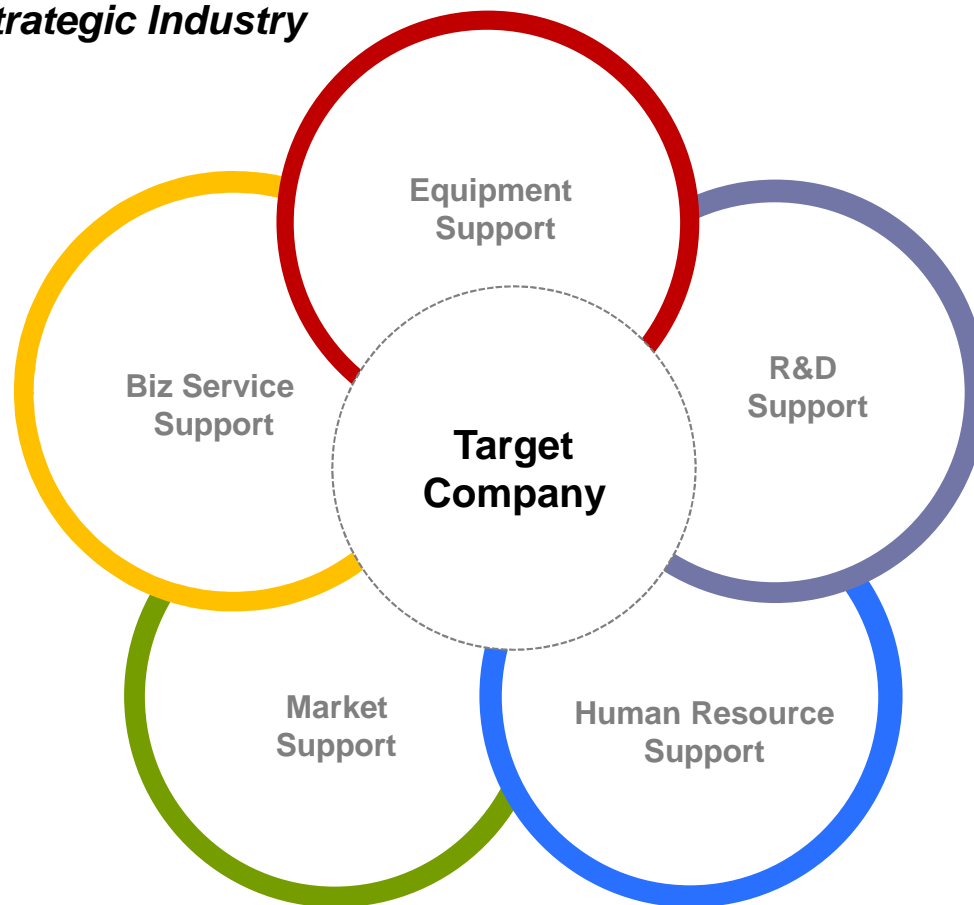
▪ Background of Korean TPs' Establishment and Visionary Scheme



Korean TP Model

- Key roles of Korean TPs for promoting strategic industries are vision provider, infrastructure builder, and company supporter.

Strategic Industry



Key Role 1

Infrastructure Builder

Construct and link industrial infrastructure

Key Role 2

Vision Provider

Establish of regional industry promotion policy

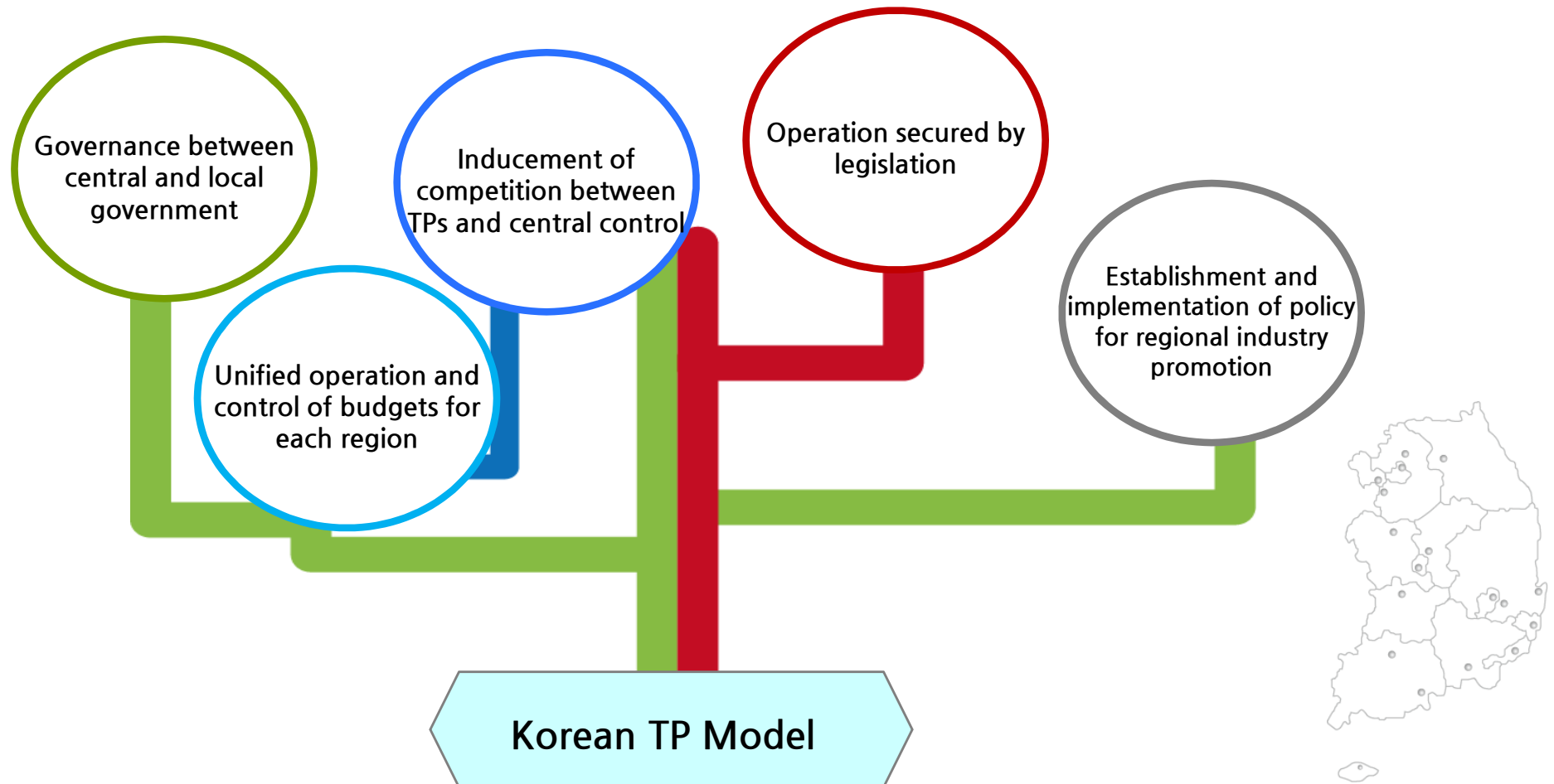
Key Role 3

Company Supporter

Establish and link company support system

Korean TP Model

▪ Main Features of Korean TP Model





Muchas Gracias!