

# Establishment and Operation of the Daedeok Innopolis Special District

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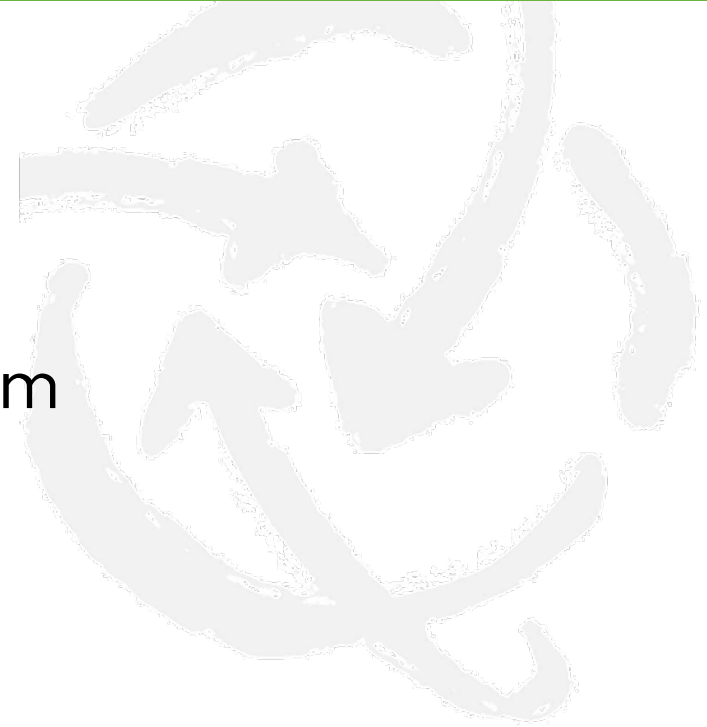
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# I. Background

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# Underlying Context

## Formation of the Seoul R&D Complex at Hongreung

- A nest of newly established modern research institutes such as the Korea Institute of Science and Technology (KIST), the Korea R&D Information Center (KORDIC), the Agency for Defense Development (ADD), the Korea Advanced Institute of Science (KAIS), the Korea Development Institute (KDI), the Atomic Energy Research Institute (AERI)
- Not based on long-term planning, limited space for further expansion, growing worse in research environment due to continued urban development

## Establishment of specialized government-funded research institutes in the 1970s

- Need of a new research complex to host newly established government-funded research institutes and to move some government or public research institutes apart from Seoul
- Initiative by the MOST, and interest and willingness by the President

# Policy Objectives

**1st phase: To construct a research and academic city to cope with the dispersion and expansion of research institutes and to attain synergy effects of R&D activities**

- Effective linkage of research institutes with education institutes, improvement of research and education environment, human and information exchange, fostering collaborative research, public use of information and electronic facilities, utilization of joint facilities, dispersion of over population in Seoul metropolitan area, etc. (A basic plan for the construction of the 2nd research complex by the MOST)

**2nd phase: To provide fertile ground for national R&D and to stake out ground in the world market by turning R&D results into commercial success by exploiting advantages as an R&D special district**

- Providing favorable environment to share implicit S&T knowledge among industry, academia, and research institutes
- Achieving cost savings in realizing knowledge generation to commercialization by fostering knowledge sharing and communication
- Accelerating high speed innovations and raising quality of innovations

## II. Description of the Program

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# Establishment of a Research Complex as a Nest for Research Institutes (1973-1992)

## Building up Infrastructure

- To intend a self-sufficing city at the initial stage with benchmarking the Tsukuba Science City in Japan
- To concentrate only on dispersing research institutes into local area without a comprehensive plan on building physical and social infrastructure
- To bring problems from isolated placement of research facilities as well as lack of functional linkage between the Daedeok Science Town and surrounding areas of Daejeon City

## Expansion of Research Bases

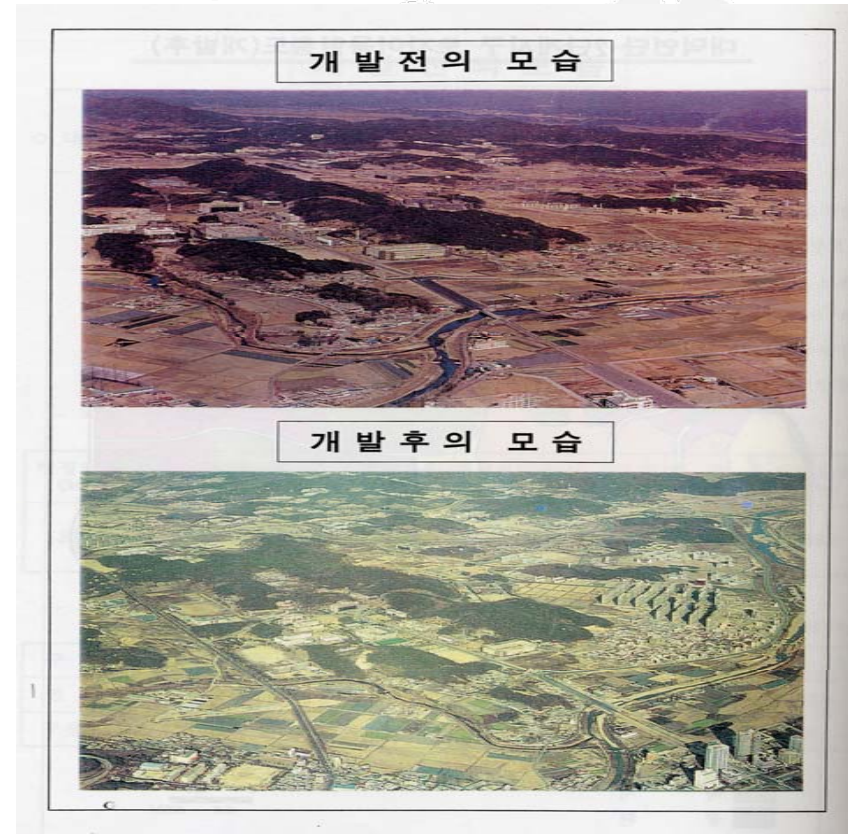
- To start the construction of residential district for researchers with the location of government-funded research institutes
- To become active in construction with revision of its function as a sub-center of Daejeon City 1n 1983
- To promote public development in 1984 by changing main promoter of the project from the Industrial Zone Development Corporation to the Korea Land Corporation
- To aim at building up the city of science, technology, and culture by adopting the concept of research complex with regarding Daejeon City as the mother town
- To speed up the construction since Daejeon City was selected as a host of 1993 EXPO

# Pictures

Groundbreaking Ceremony of  
the Daedeok Research Complex



Daedeok Research Complex  
Before & After 2nd Phase





# Transformation into Technopolis and Proclamation of the Daedeok Innopolis Special District (1993-2004)

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## Transformation into Technopolis Based on Industry-Academia-Research Institutes Linkages

- Increase of location of companies' R&D laboratories and enactment of fostering cooperative R&D
- Establishment of high-tech. venture center at KAIST to foster start-ups in 1994
- Permission of technology commercialization zones in the research complex in 1996
- Emergence of organizations to support for the venture businesses such as Daedeok Valley Venture Association in 1996, Daejeon Software Support Center in 1997, etc.
- Extension of the establishment of technology business incubators in government-funded research institutes such as the ETRI

## Development of the Daedeok Valley to Form Innovation Clusters

- Getting rid of the problem of 'research-production separation' with both permitting production activities and supporting cooperation complex for SMEs in the research complex in 1999
- Integration of R&D, production and commercialization along with proclamation of the Daedeok Innopolis Special District in 2000
- Venture boom created after the financial crisis in the late 1990s
- Active role of the local government to promote high-tech. venture businesses

# Pictures

**Vision Proclamation of  
the Daedeok Innopolis Special District**



**A View of the Daedeok Innopolis Special District**



# Designation of the Daedeok Innopolis Special District for the Development as an Innopolis



**Designation of the Daedeok Innopoli Special District in 2005 to Aim an R&D-pull Innovation Cluster Deriving Effective Generation, Transfer, and Utilization of S&T Knowledge**

## 2015 Goal

- To leap into world class innovation cluster through converging research with business effectively in the virtuous cycle of R&D, commercialization, and reinvestment

## Three Focused Projects

- Promotion of R&D to pursuit commercialization in competitive technology areas of the District
- Creation of venture ecology through upbringing R&D companies
- Activation of technology financing

# III. Pursuit of the Program



## Daedeok Research Complex

- Tsukuba Science City in Japan: A new research and academic city with the aim of decentralizing population, industrial facilities, research, and S&T away from the large cities like Tokyo
- Construction to meet the needs of building technopolis surrounded by high-tech. industrial clusters, academia-research institutions, testing and research institutes with attractive living environment

## Daedeok Innopolis Special District for the Development as a Innovation Cluster

- Innovation cluster to combine R&D with production: Silicon Valley in the U.S., Zhonnuanchun Science Park in China
- Innovation cluster to emphasize production: Hsinchu Science-based Industrial Park in Taiwan, Kista Science City in Sweden

## Success Factors of Innovation Clusters

- Strong research capacity, high-quality human resources, business-friendly atmosphere and infrastructure, sufficient investment funds, S&T-friendly culture and open business environment, transparent management and clear visions, globalization, institutional supports for venture, etc.

# Operating Steering Body

## Comprehensive S&T Council

- Coordination of roles and tasks among ministries

## Steering Committee for Construction of Daedeok Research Complex

- Advice to the Minister of the MOST concerning the construction of the research complex
- Main advisory functions: master plan for construction of a research and academic city, institutional relocation and new establishment plan, institutional arrangements plan within the research complex, plan for establishing and operating common infrastructure, etc.

## Steering Committee for Heavy and Chemical Industry

- Comprehensive planning: MOST
- Securing budget and implementation: related ministries
- Upgrading efficiency of the construction : Presidential Office of Secretariat
- Closing after 1979. 10 and returning the mission to MOST

# Enactment of Promotion Act

## Rationale of the Enactment of the "Daedeok Research Complex Management Act"

- "Act on Industrial Sites and Their Development" were not able to reflect the uniqueness of the Science Town

## Main Provisions of the "Daedeok Research Complex Management Act"

- Establishment of a management plan of the research complex
- Classification of land use
- Approval and cancellation of occupancy
- Operation of administration headquarters, etc.

## Problems of the "Daedeok Research Complex Management Act"

- Benefits for regional innovation are not realized.
- No provisions concerning the overall management for an innovation cluster
- Failure to support dynamics of industry-academia-research institutes network

## New Enactment of the "Special Law on Fostering Daedeok Innopolis Special District"

- Main provisions: establishment of a special R&D district committee chaired by Deputy Prime Minister for S&T, establishment of R&D companies, special exemptions for high-tech. companies and foreign-invested enterprises, execution of Innopolis R&D projects, establishment of Daedeok Innopolis Support Headquarters, etc.

# Daedeok Administration Office and Supporting Systems



## Daedeok Research Complex Management Office Established in 1979

- Establishing and implementing basic plans for Daedeok administration
- Establishing and implementing sector plans for land use and landscape
- Planning relocation and occupancy and providing construction support management
- Supporting constructions on infrastructure
- Promoting and supporting government-funded research institutes and located institutions
- Accelerating and supporting linkages between research institutes and enterprises
- Supporting technology development in the private sector
- Introducing Daedeok Science Town and building cooperation with foreign research complexes

## Daedeok Innopolis Support Headquarters Established in 2005

- To efficiently support commercialization of R&D results and venture businesses
- To build technology commercialization network and mutual exchange and cooperation
- To promote domestic and foreign investment and cooperation projects
- To procure, supply, and lease land, buildings, facilities, and equipments



## IV. Evaluation

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# Achievements

- To serve as a key point of creating and supplying S&T knowledge based on a large-sized R&D cluster
  - Center to conduct national R&D, diffusion of human-embodied S&T knowledge to industries, universities, and other research institutes
- To contribute to enhancing technological and innovative competencies of the industry and to become a focal area of creating innovation clusters in the nation
  - Cooperative R&D with enterprises, technology spin-offs and venturing business, etc.
- To be insufficient in openness of R&D activities related to industrial activities
  - Lack of linkages with regional innovation activities

# Implications

- Establishing and implementing a flexible plan with a vision of long-term development are important.
  - Readjustment of development concept in line with changing environment for science, technology, and innovation
- Development of focusing on research institutes is insufficient
  - Regarding an "isolated island" for a long time

Thank You

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