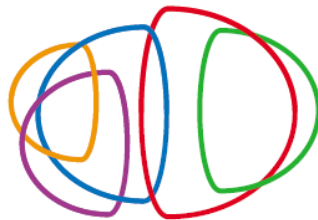




Casestudy of Korea

Science and Technology Park, Incubation Center and University



DAEDEOK
INNOPOLIS

24 de noviembre de 2011



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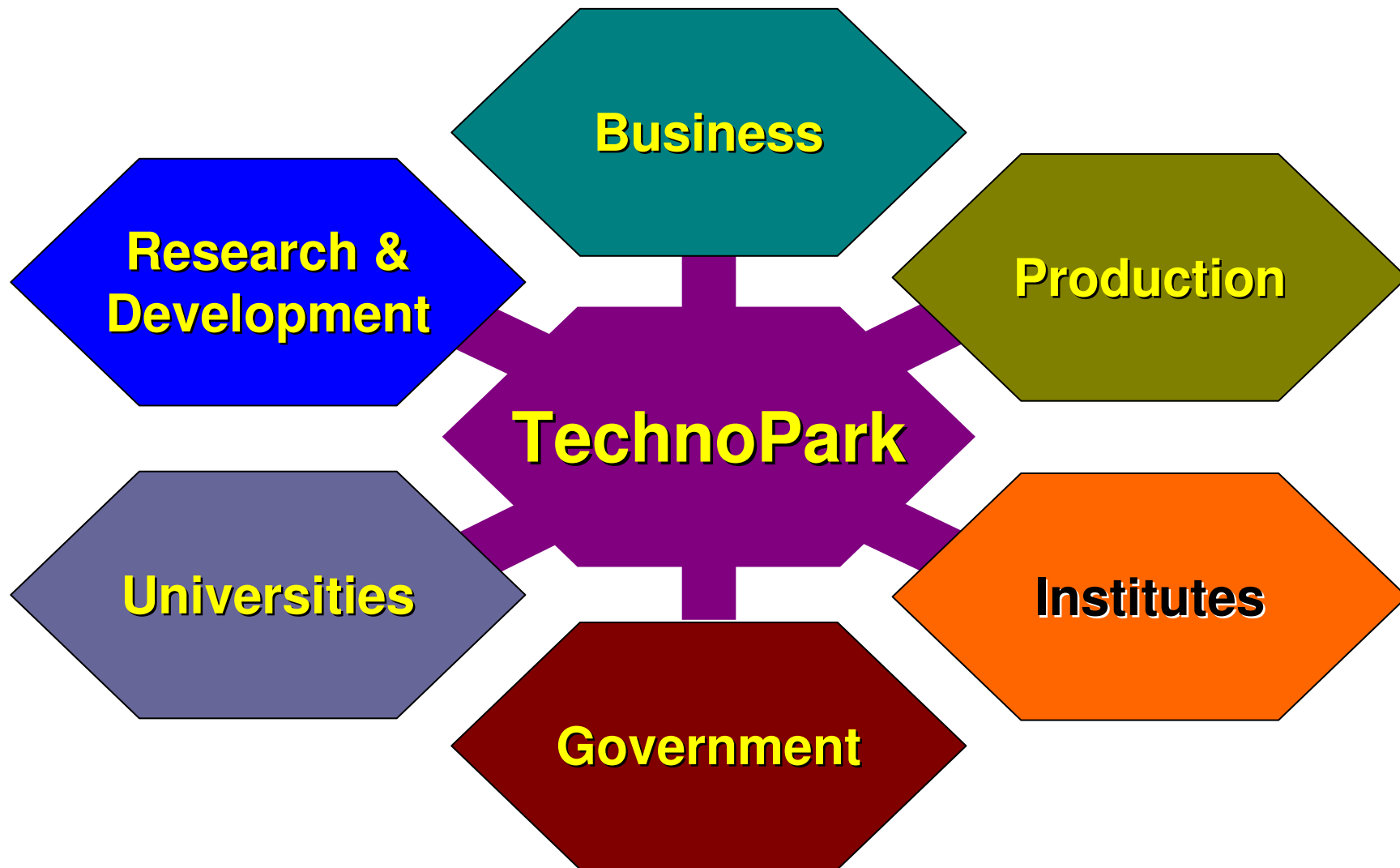
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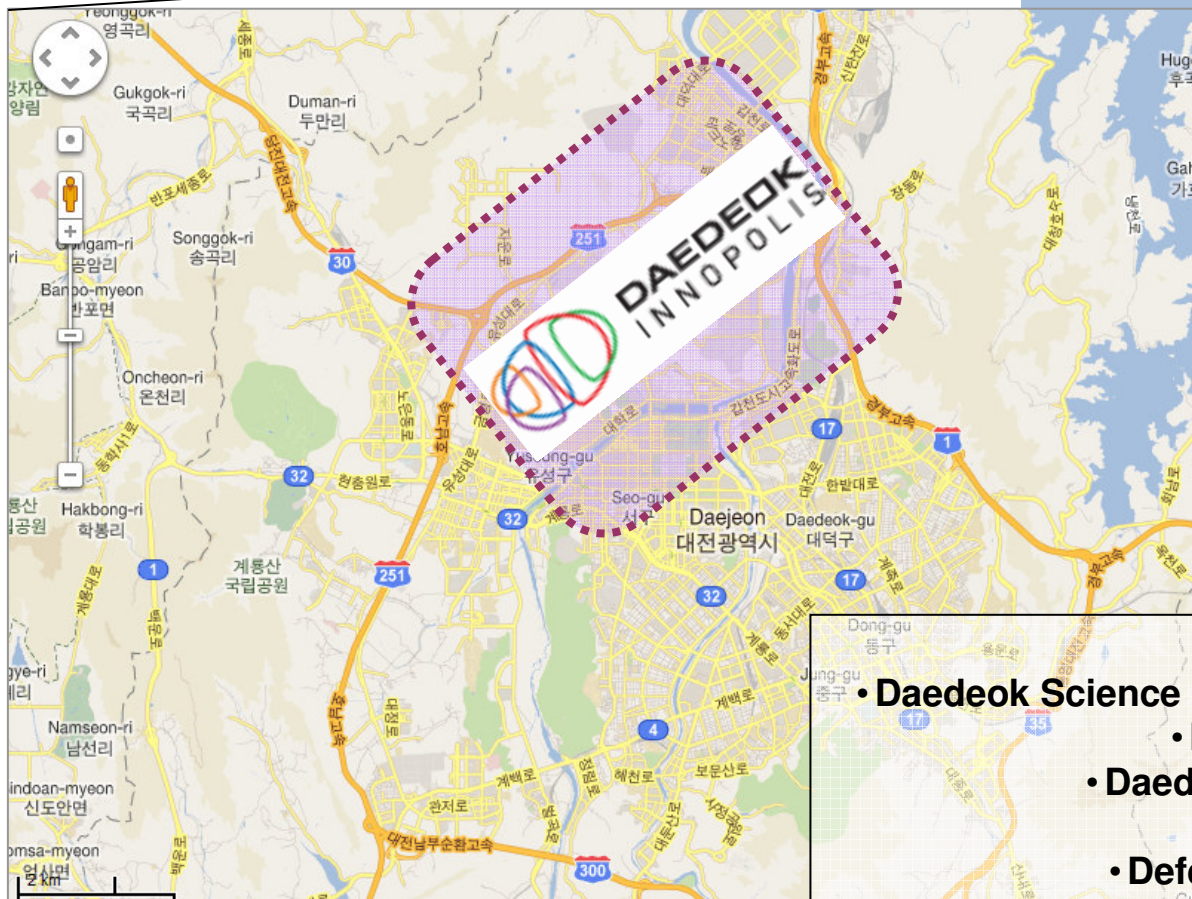
1.1 Science and Technology Park



1.2 Why Science and Technology Park?

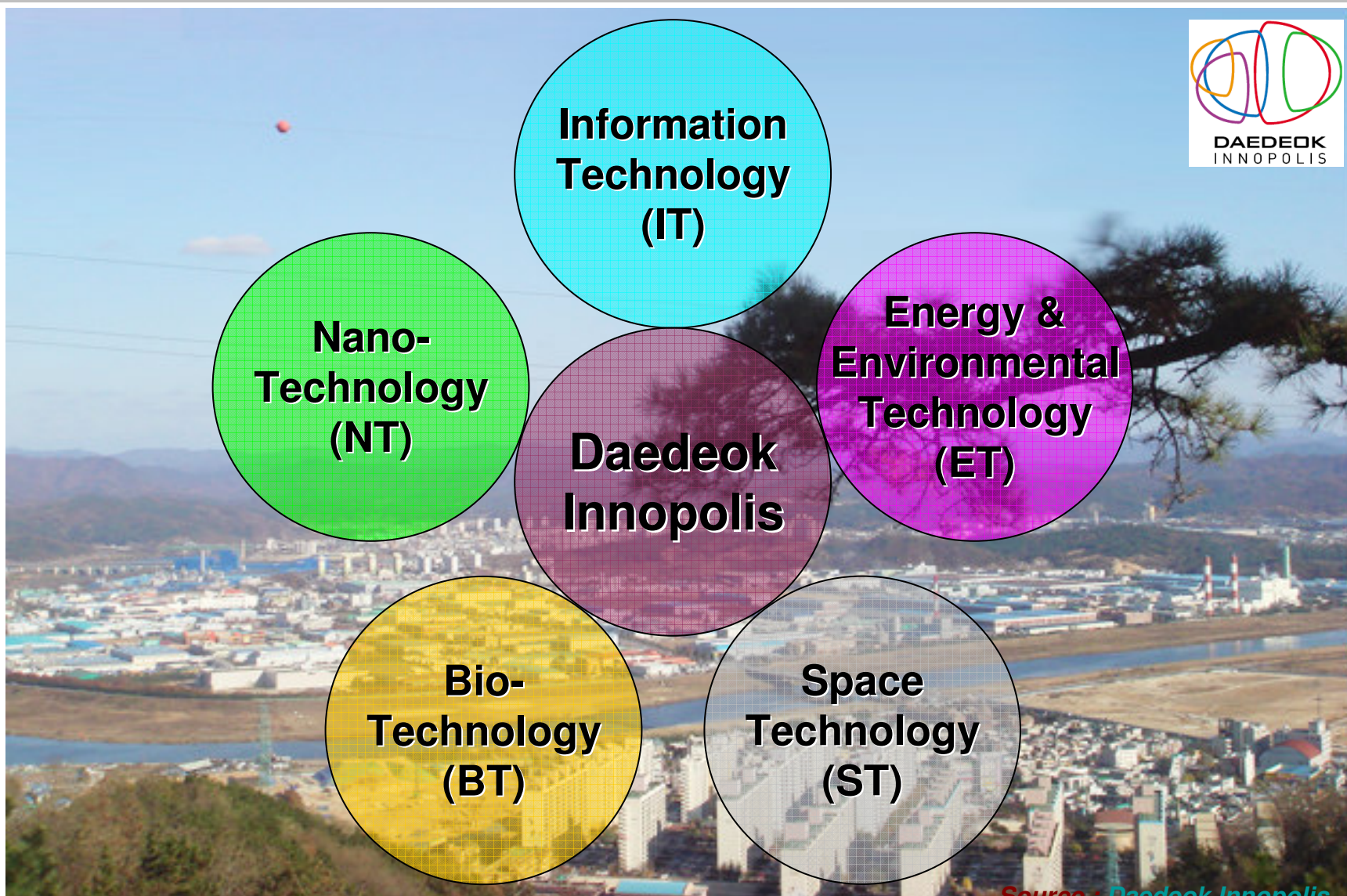
- **The perfect habitat for businesses and institutions of the global knowledge economy**
- **Promoting the economic development and competitiveness of regions and cities by:**
 - Creating new business opportunities and adding value to mature companies
 - Fostering entrepreneurship and incubating new innovative companies
 - Generating knowledge-based jobs
 - Building attractive spaces for the emerging knowledge workers
 - Enhancing the synergy between universities and companies

1.3 Daedeok Innopolis (DDI)



- Total Area 70.4km²
- Daedeok Science & Technology Complex 27.8km²
- Daedeok Techno Valley 4.3km²
- Daedeok Industrial Complex 3.2km²
- Greenbelt Area 31.2km²
- Defense Research Institute 3.9km²

Source : [Daedeok Innopolis](#)



Innovation Cluster

- 5 Government Agencies
- 5 Universities
- 56 Research Institutes
 - 18 National Research Institutes
 - 38 Private Research Institutes
- 9 Public Corporations
- 1,000+ Venture & **Research Companies**(*)
- Partners
 - International Partners
 - Domestic Partners

(*) a company which is established in Daedeok Innopolis with the **investment of more than 20% of its capitalization to commercialize its technologies independently or collaborately.**



Korea Institute of Toxicology (KIT)

- Promotional video for KIT, Korea's largest preclinical trial facility; tour of laboratories where preclinical trials are in progress
- Viewing of facilities and video feeds for the primate testing facility
- Tel_ +82-42-610-8167



Korea Institute of Energy Research (KIER)

- Introductory video, building-integrated zwing-style solar cell
- Green building, hydrogen station, super energy-saving building, tour of Zero Energy Town
- Tel_ +82-42-860-3262



Korea Basic Science Institute (KBSI)

- Guide to research functions and roles, promotional video viewing
- Introduction of KBSI's four representative apparatuses and accompanying lecture
- Tel_ +82-42-865-3930~4



National Fusion Research Institute (NFR)

- Introductory video
- KSTAR research device assembly procedure video viewing
- PowerPoint presentation on nuclear fusion energy
- Tour of exhibit hall (model and mock-up) and KSTAR device
- Tel_ +82-42-879-6233



Korea Research Institute of Bioscience and Biotechnology (KRIBB)

- Promotional video viewing, early diagnosis and treatment development for cancer-related diseases, understanding the Human Genome Project, bioclips/sensors, diagnosis kits, test animal type cultures, tour of research facilities, etc.
- Tel_ +82-42-860-4733



National NanoFab Center (NNFC)

- Semiconductors (CMOS)
- Tour of equipment (NEMS/MEMS, etc.) and clean room
- Tel_ +82-42-879-9642



Daedeok Tech Biz Center (TBC) Biz Gallery

- Promotional exhibit hall representing Daedeok Innopolis
- Exhibits of products from resident enterprises and screening of promotional video
- Tel_ +82-42-865-7081



Advanced Science and Technology Center (ASTC)

- Tour of national R&D results from 17 resident government research institutes
- Tel_ +82-42-864-0055



Electronics and Telecommunications Research Institute (ETRI)

- On-site programs on robots, digital actor technology, 4G wireless communication technology, human body communication, ubiquitous world, etc.
- Promotional video viewing
- Tour of ETRI IT Exhibition Hall
- Tel_ +82-42-860-3901



Korea Atomic Energy Research Institute (KAERI)

- Tour of exhibit hall and promotional video viewing
- Tour of research facilities - HANARO facility, radioactive isotope facility, KAERI Underground Research Tunnel, etc.
- Tel_ +82-42-868-2798



Korea Institute of Machinery and Materials (KIMM)

- Promotional video viewing
- Introduction to large-area nanolithography technology, tailor blank laser welding system, DPF recycling plasma burner technology, and deep freeze; trial ride on the Urban Maglev system
- Tel_ +82-42-868-7861



Korea Astronomy and Space Science Institute (KASI)

- Program for understanding the current state of Korean astronomical research and viewing ancient and present-day observation equipment
- Introduction to KASI; tour of Astronomy Experience Exhibit, ancient astronomical equipment, International GPS control points, Taeduk Radio Astronomy Observatory, KASI Sunspot Telescope, etc.
- Tel_ +82-42-865-2004



Korea Research Institute of Standards and Science (KRISS)

- KRISS promotional video viewing
- Special lecture: Introduction to measurement standards
- Tour of promotional exhibit (Sejong Hall)
- Measurement experience and tour of Newton's Apple Tree
- Tel_ +82-42-868-5596



Source : [Daedeok Innopolis](http://www.daedeokinnopolis.com)

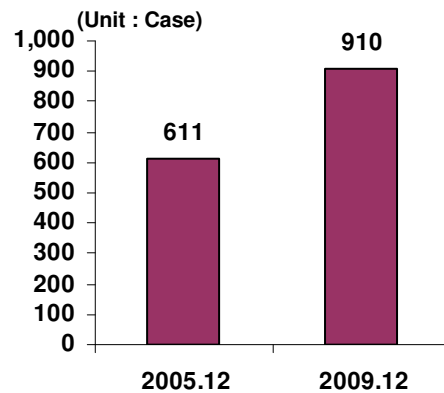
Human Resources

Year	Research and Technology personnels (A)				Production and Administrative personnels (B)	Number of employee (A+B)
	Ph.D.s	Master's degrees	Bachelor's degrees and others	Total		
2009	7,661	8,191	4,670	20,522	25,004	45,526
2008	6,783	7,253	4,173	18,209	23,429	41,638
2007	6,800	7,669	4,327	18,796	21,542	40,338
2006	6,495	9,145	2,892	18,532	18,692	37,224
2005	6,236	7,561	2,962	16,759	6,799	23,558

Statistics

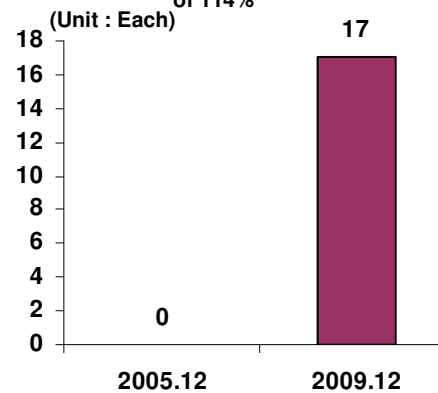
Technology Transfer

- Annual average increase of 11%



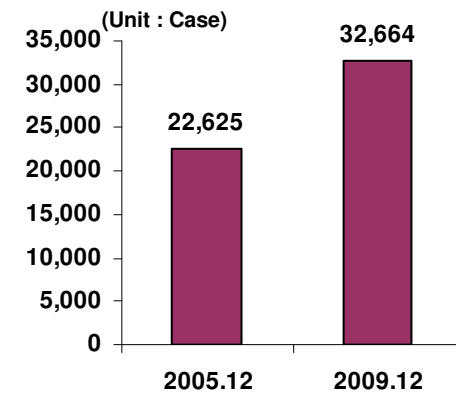
Research Enterprises

- Annual('06-'09) average increase of 114%



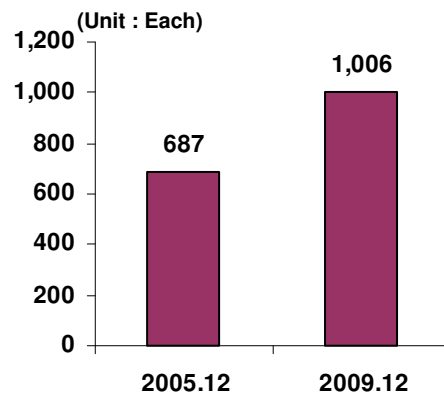
Domestic Patents Registered (Cumulative)

- Annual average increase of 10%



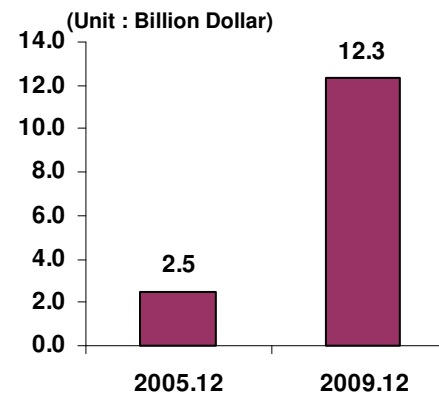
Resident Enterprises

- Annual average increase of 10%



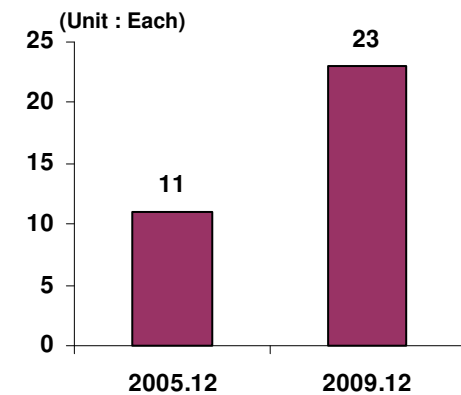
Sales

- Annual average increase of 60%



KOSDAQ Listed Companies

- Annual average increase of 21%



Source : [Daedeok Innopolis](#)

History

**Over 40 trillion KRW(40 billion USD) invested almost 40 years
A Key Milestone in Korea's Scientific and Technological Advancement**

1970s

1973-1977 Developing the Infrastructure

Establishment of a foundation for strengthening Korea's R&D capacity

- Plans finalized for Daedeok Science and University Town (1973)
- Construction begins on Daedeok Science Town Infrastructure and Research Institutes (1974)



Groundbreaking ceremony for KRIS (1976)

1980s

1978-1992 Expanding the R&D Foundation

Relocation of government-funded research institutes

- Ministry of Science & Technology's Daedeok Administration Office installed (1979)
- Daedeok Science Town annexed to Daejeon (1983)



KAIST Campus Move-in (1989)

1990s

1993-1998 Creating Innovation

Relocation starts for corporate research institutes, laying of groundworks for industry-academia-research collaboration

- Act the Administration of Daedeok Science Town established (1993)
- Daejeon EXPO (1993)
- Daedeok Science Town Administration Center established (1994)
- Formation of technology commercialization district within Daedeok Science Town approved (1996)



Groundbreaking ceremony for KNFC fuel processing facility (1994)

2000s

1999-2009 Forming Innovation Clusters, Evolving to the Next Level

Creation of a scientific-technological activity network and R&D innovation cluster

- Act on the Administration of Daedeok Science Town amended (production functions) (1999)
- Relocation begins for high-tech enterprises (2000)
- Technology Transfer Promotion Law (2000)
- Special Act on the Fostering of Daedeok Innopolis, etc. enacted (2005)
- Daedeok Innopolis Support Headquarters established (2005)



Announcement of the vision for Daedeok Innopolis (2005)

2010s

2010- Forming Creative Innovation

Establishment as the world's No. 1 innovation cluster at the vanguard of global technology commercialization

- Construction Infrastructure comprising the Tech Biz. Center, Research-Production Integration Facilities, etc. (2010)
- Rapid rise of knowledge-intensive premium venture companies
- Globalization of a Korean model for science parks



Daedeok Tech Biz Center (TBC) (2010)

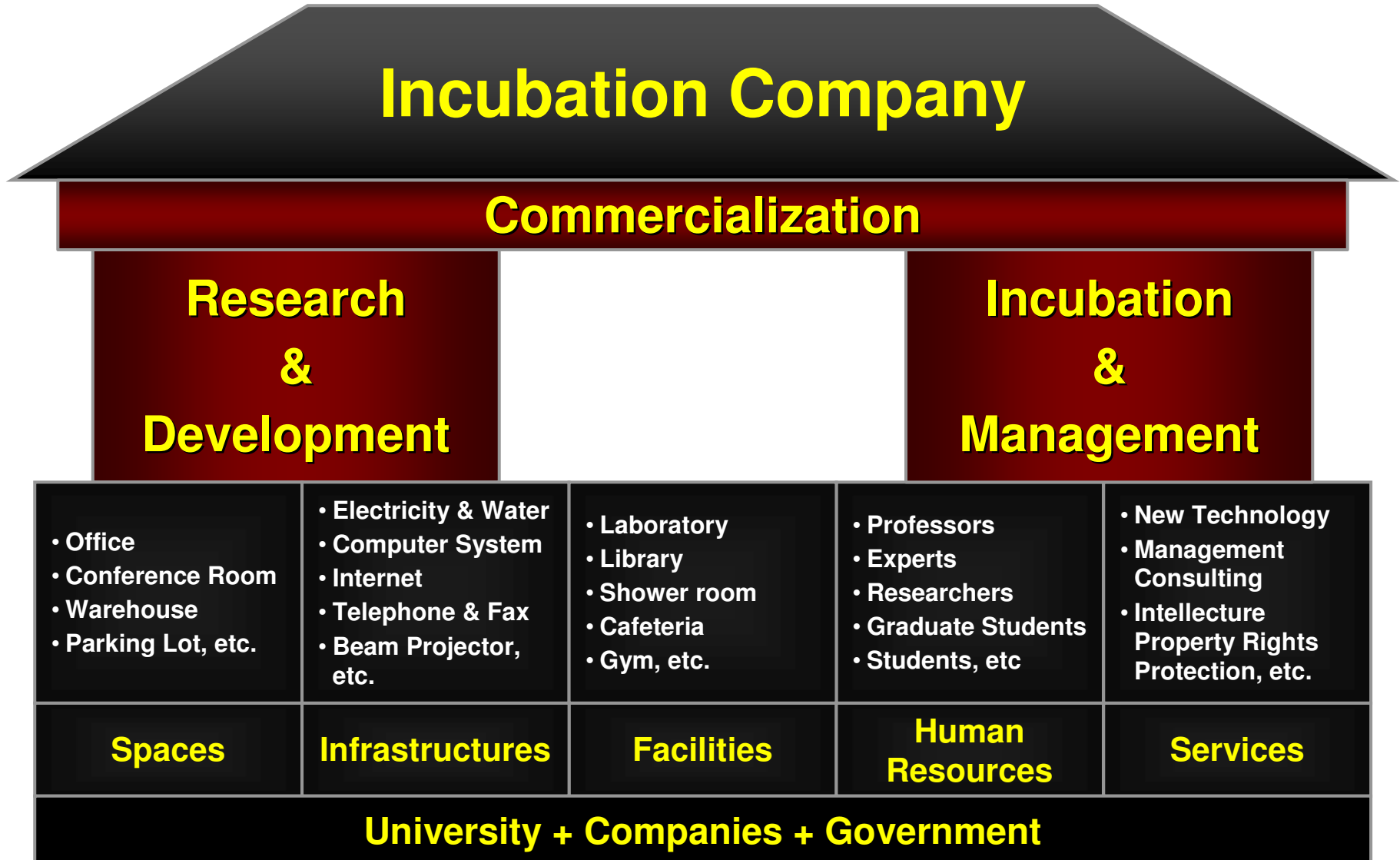


Hosting the International Association of Science Parks World Conference (2010)

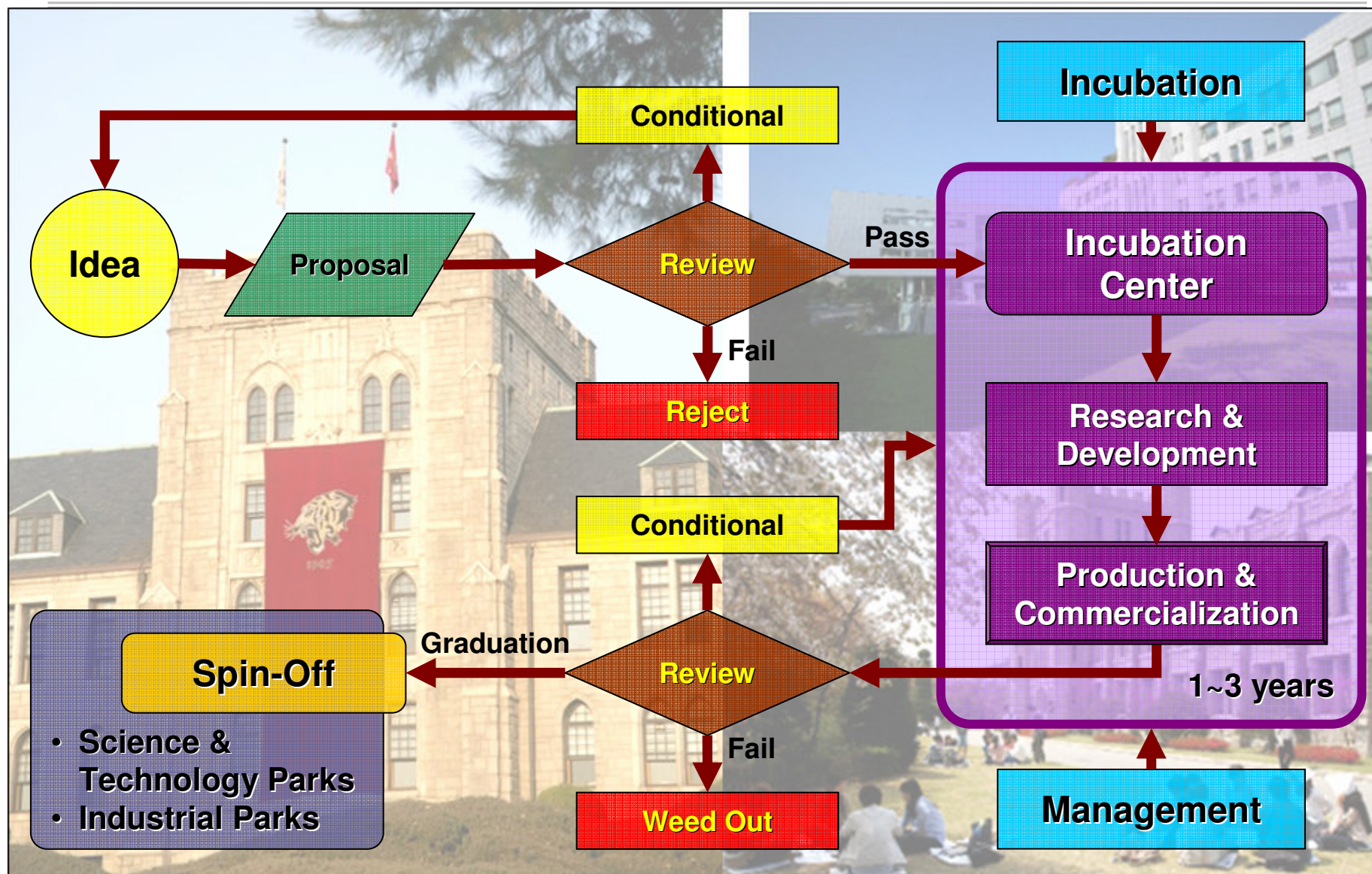
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 3. Recommendations



2.1 University Incubation Center



2.2 Work Process



2.3 KAIST (Korea Advanced Institute of Science and Technology)

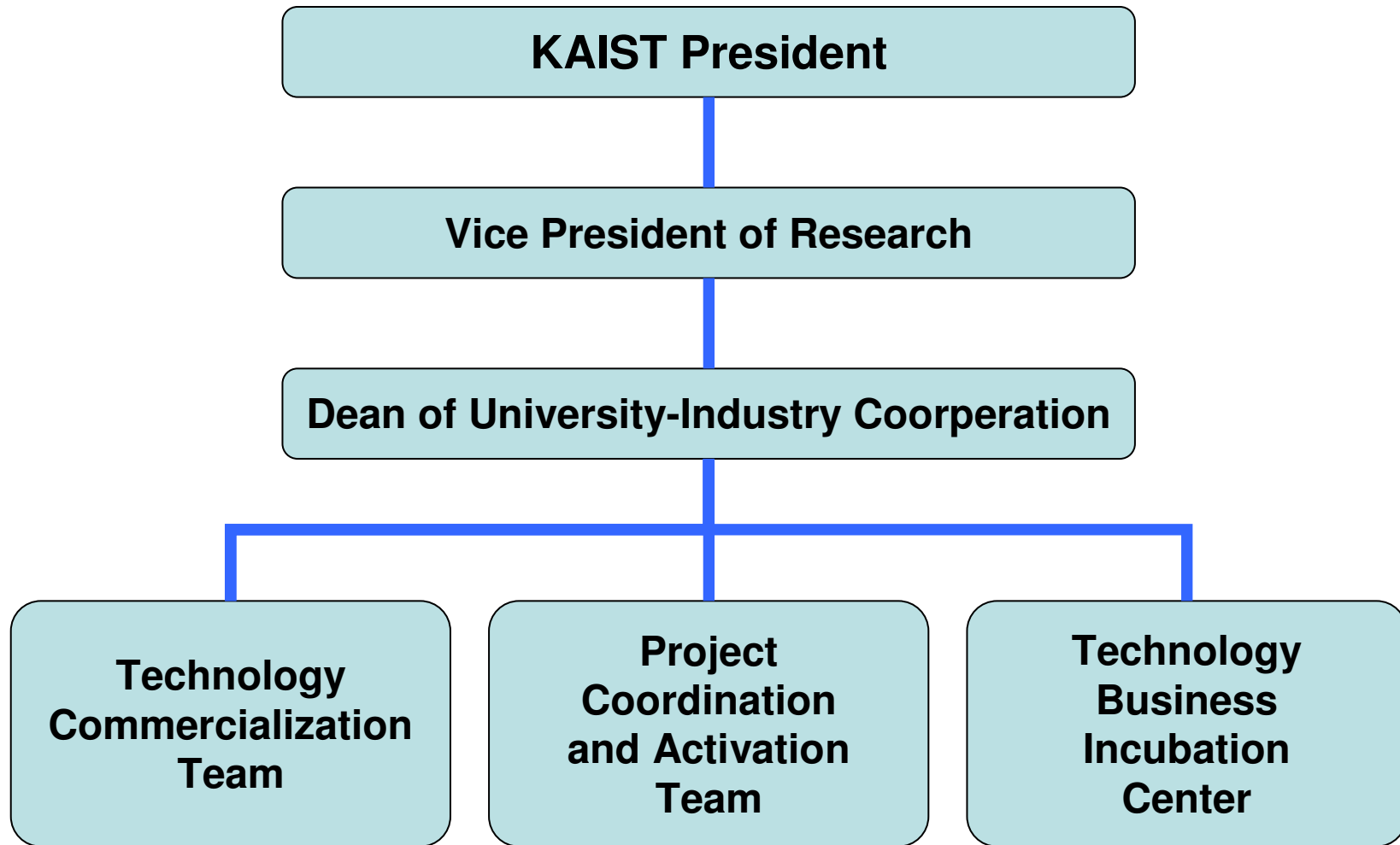


- KAIST OUIIC (Office of University Industry Cooperation)

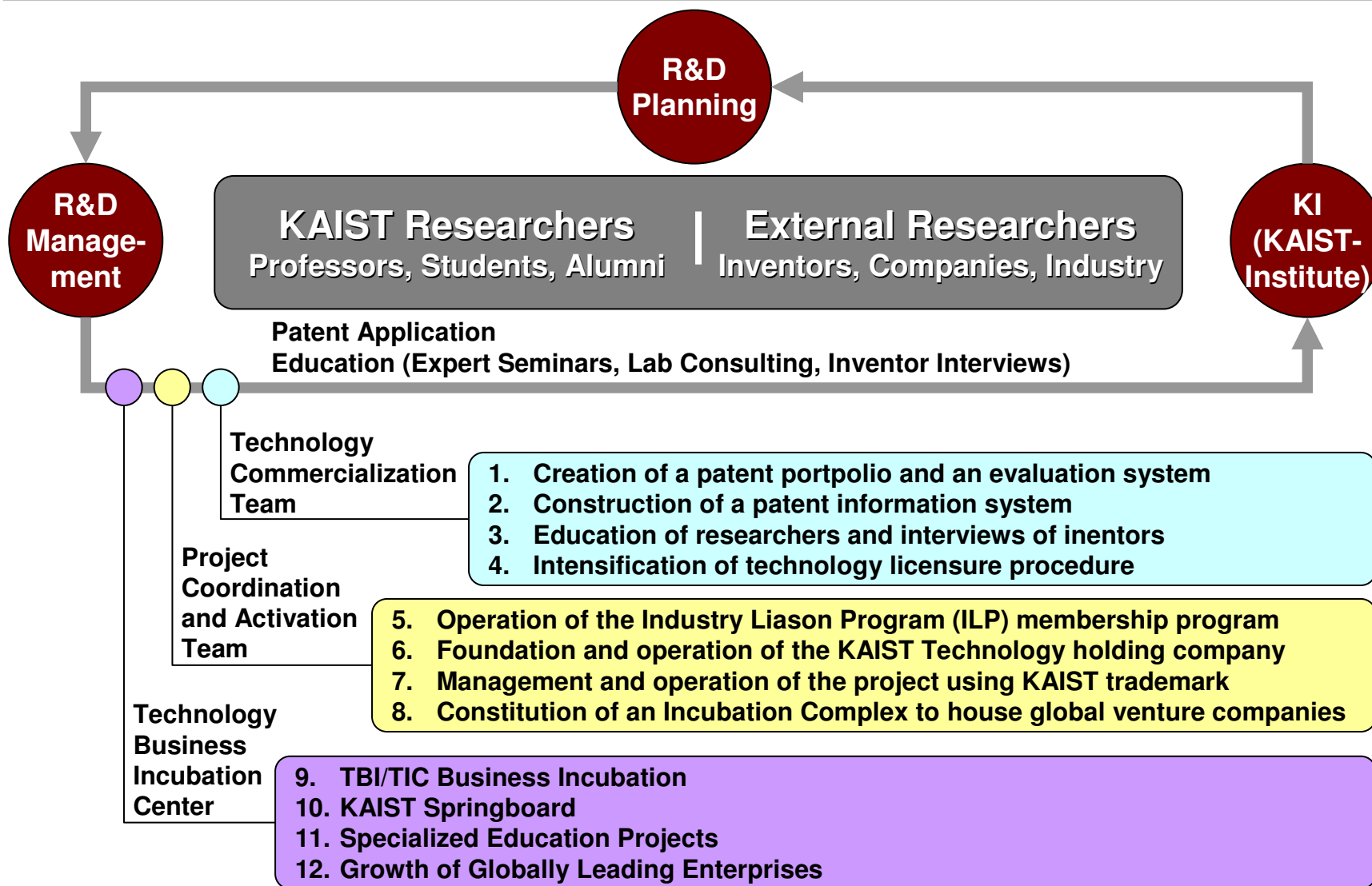
- **History**

- 1994 Technology Innovation Center (TIC) & Technology Business Incubation (TBI) established at KAIST
- 1997 Enlarged and Reorganized as the High-Tech Venture Center (HTVC)
- 2006 HTVC became the Office of University-Industry Cooperation (OUIIC)
OUIIC was designated as a Technology Licensing Office (TLO) supported by the Ministry of Education and Human Resources & the Ministry of Commerce, Industry and Energy
- 2007 The KAIST Business Incubation Center was selected as the best Business Incubation Center in Asia by the Asia Association of Business Incubation (AABI)
- 2009 The ICU (Information & Communications University) Business Incubation Center was merged with the KAIST OUIIC
- 2010 KAIST Business Incubation Center and its tenants relocated to the ICC Munji Campus

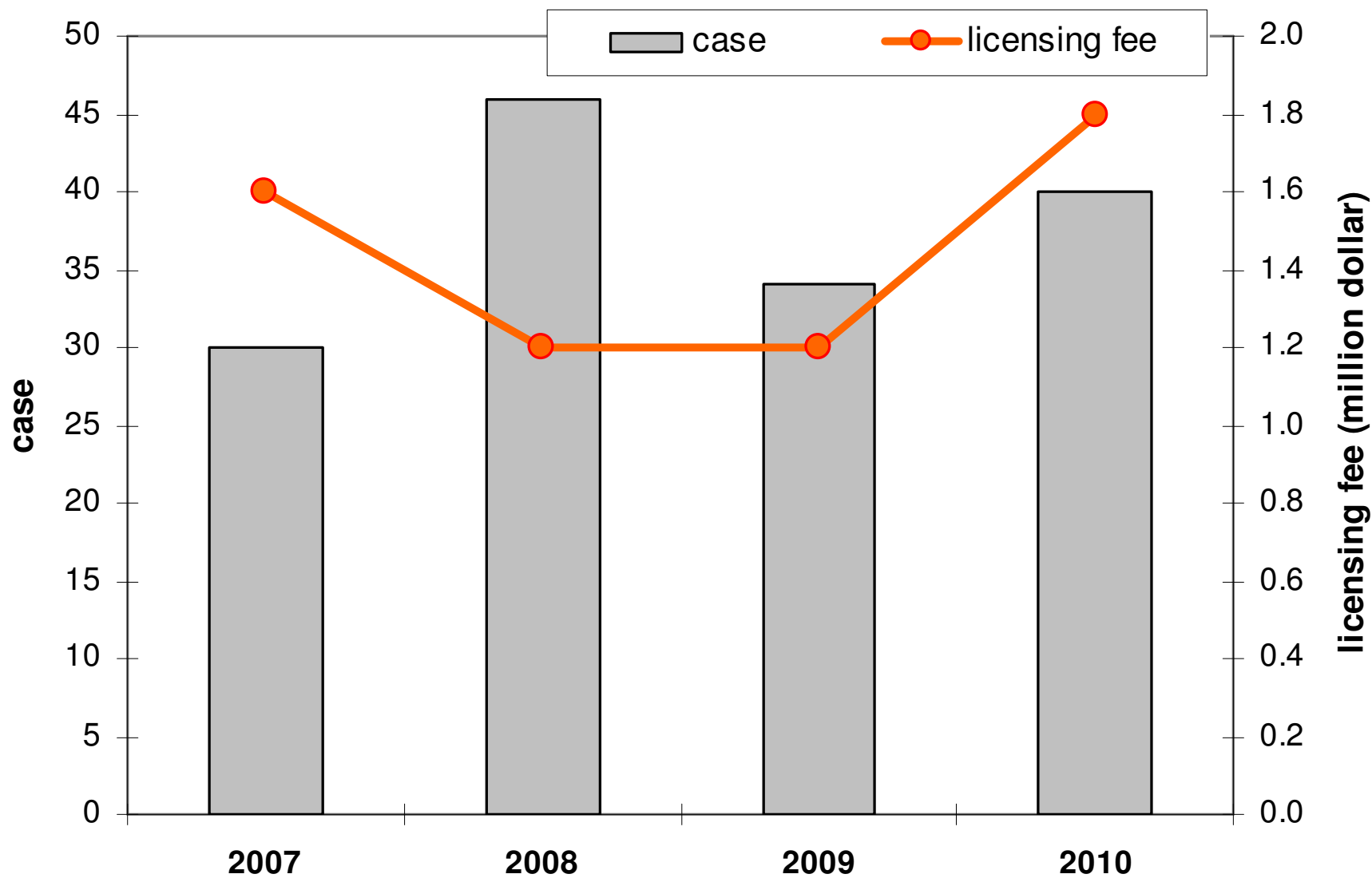
Organization



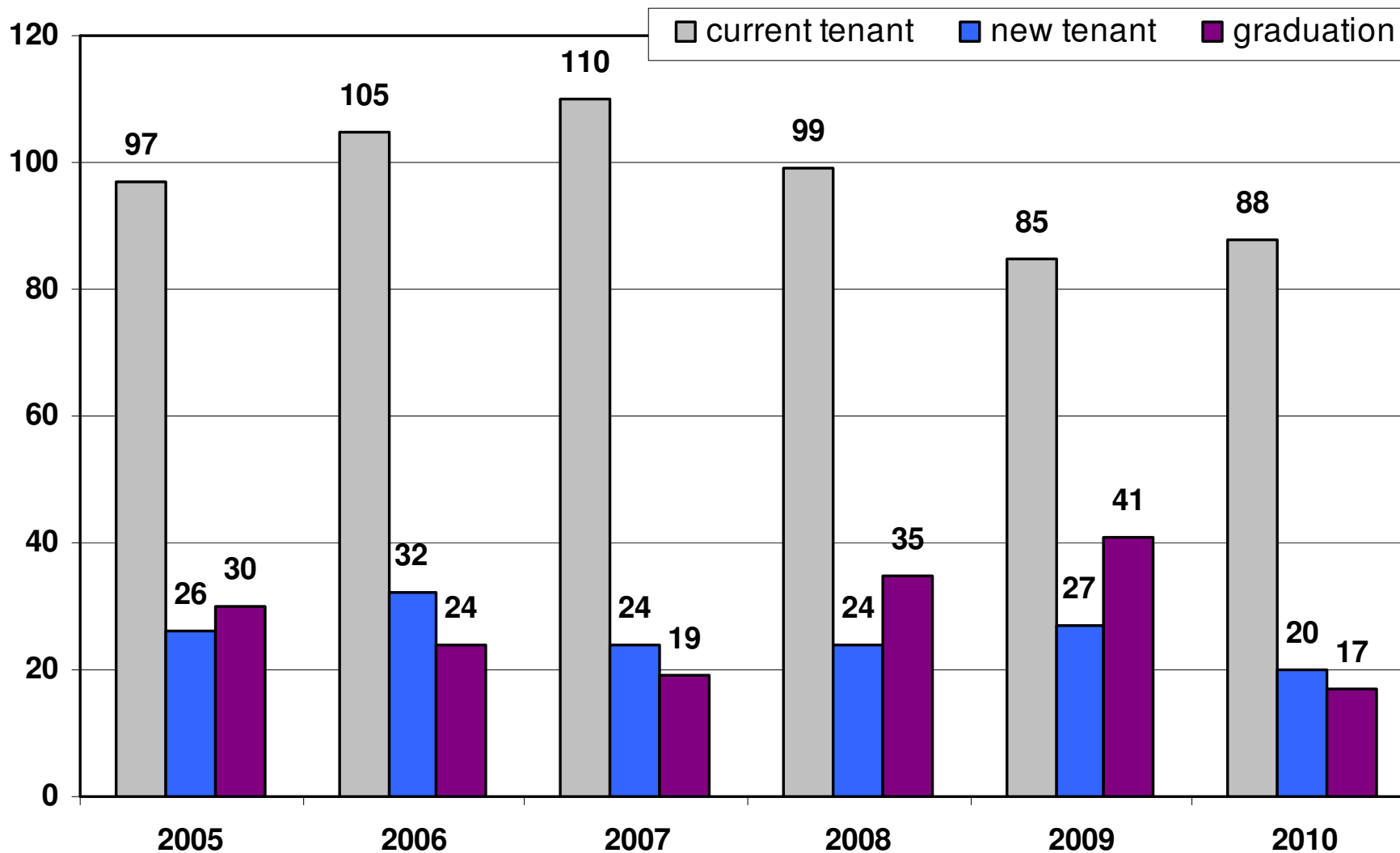
Work Process



Licensing Fee & Number of Tech Transfer Cases



Annual Number of Venture Incubations



2.3 Seoul National University



- [Technology Incubation Network](#)
- **History**

1997 Technology Incubation Network Center established at Seoul National University

Technology Incubation Network Center supported by the Ministry of Information and Communication

1998 Technology Incubation Network Center was designated as a Technology Business Incubation (TBI) Center supported by the Ministry of Commerce, Industry and Energy

1999 Technology Incubation Network Center was designated as a Small Business Incubation (BI) Center supported by The Small & Medium Business Administration (SMBA)

2001 The 3rd Venture Competition

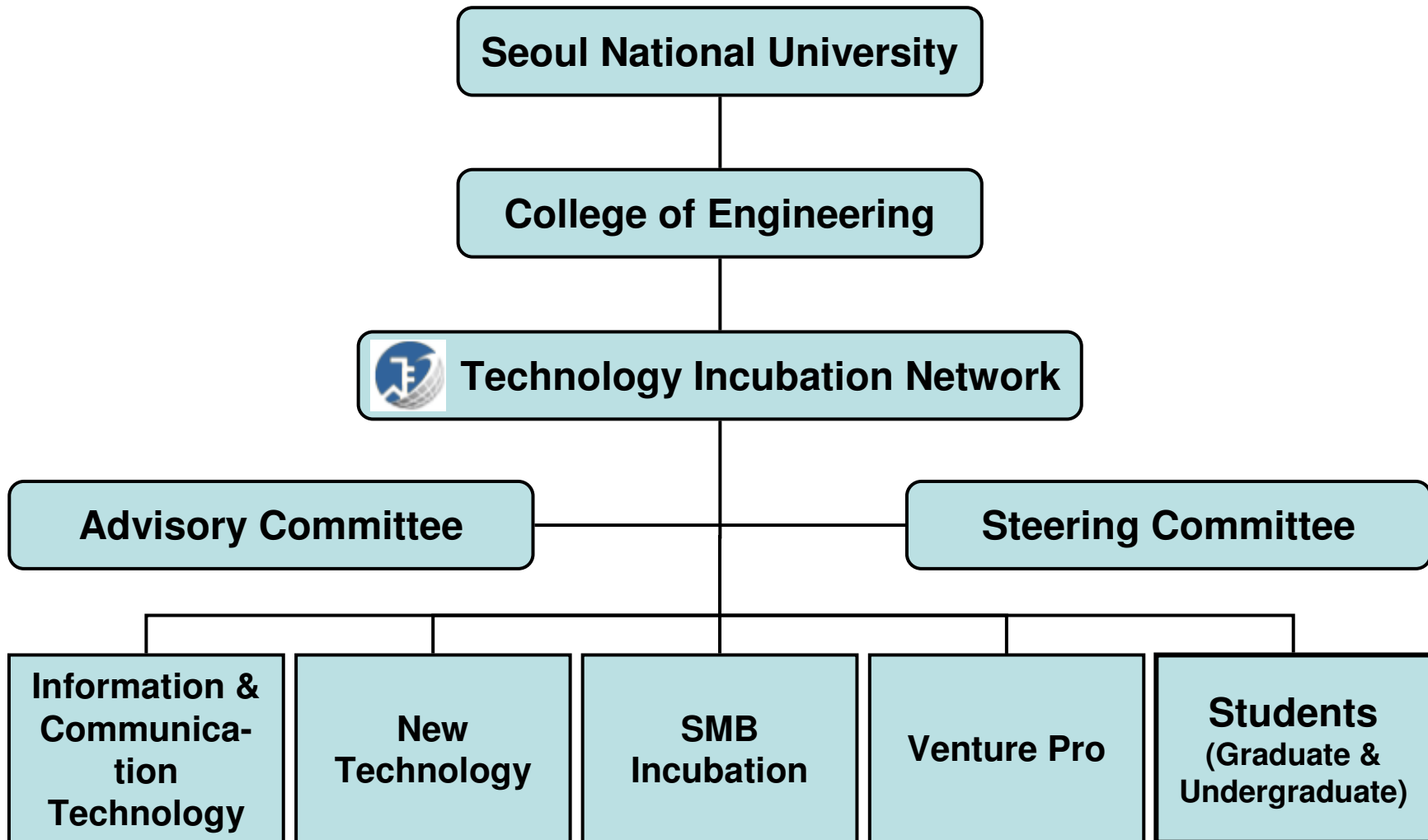
2007 Korea Venture Competition & The 8th Venture Competition

2008 The 1st College of Engineering Venture Idea Competition

2009 The 2nd College of Engineering Venture Idea Competition



Organization



2.3 Korea University



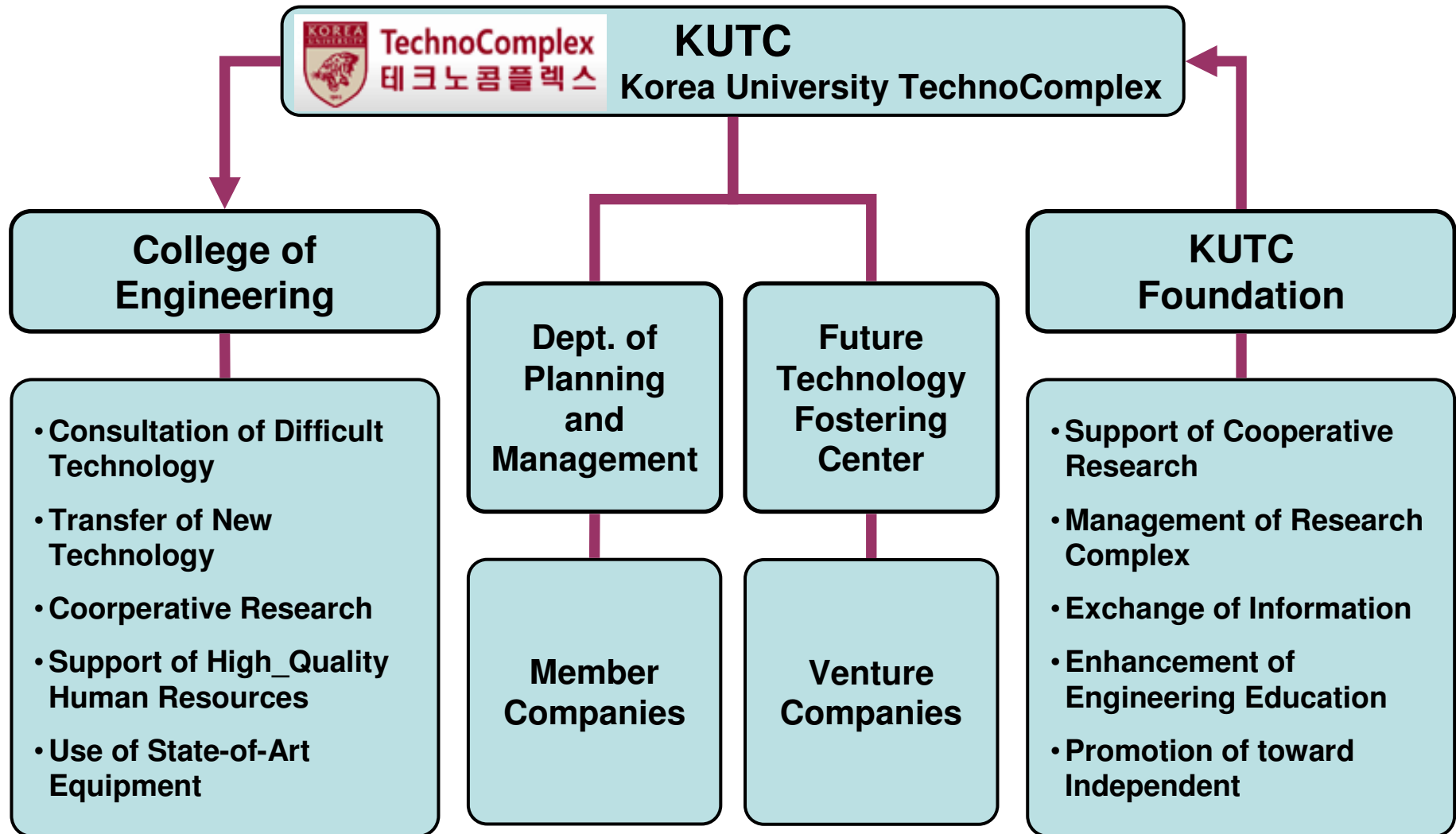
- [KUTC \(Korea University TechnoComplex\)](#)

- **History**

- 1992 The Plan for the Industry-Academy Collaborative Research Center was announced
- 1993 The Foundation Committee was formed
The KUTC established at College of Engineering
- 1994 New Research Complex (1st Project) Construction Groundbreaking
- 1995 The KUTC was designated as a Cooperative Open Research Center supported by the Ministry of Trade and Industry (10years)
- 1996 The construction of the first two buildings were completed
 - Academic & Industrial Wing : 16,860m²
 - Engineering Wing : 18,512m²
- 2003 The construction of the 3rd buildings were completed
 - Creation Wing : 18,182m²
- 2011 KUTC has approximately 20 member companies, including Samsung Electronics, LG Electronics, KT, POSCON and Samyang, etc.



Organization



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3. Recommendations

- **Human resources**
- **Selection and Concentration**
- **Long-term Fostering**
- **International Cooperation**
- **Government Support**
 - **Policies**
 - **Laws**
 - **Systems, etc.**

Muchas Gracias por la Atención

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