



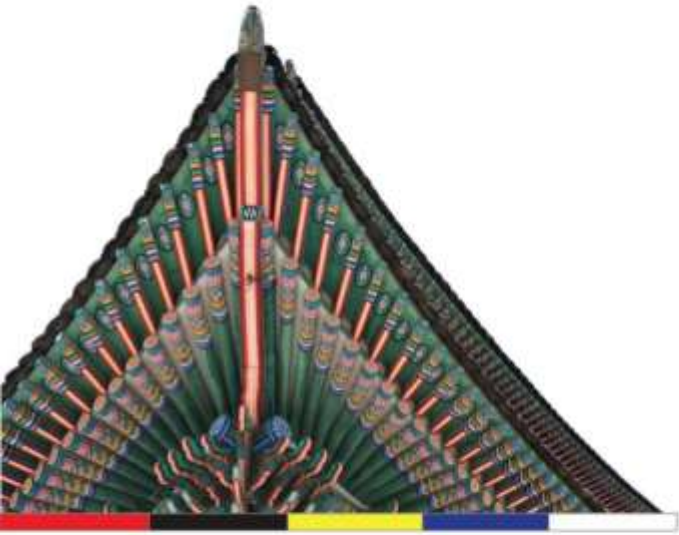
Higher Education Reform Programs to enhance University-Industry Collaboration in Korea

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Introduction

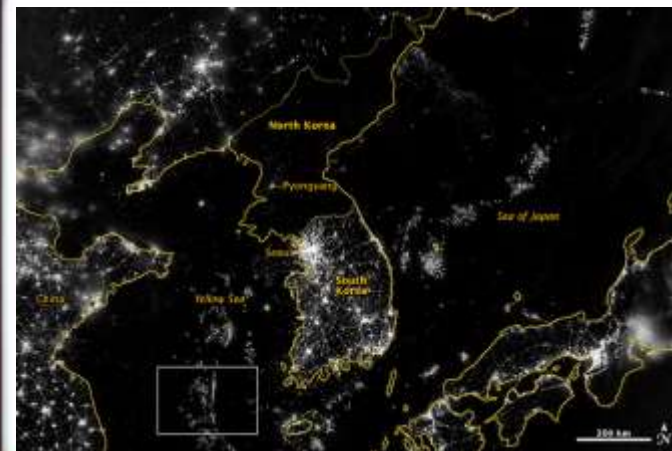


Introduction to Korea



- **Within 3 hrs distance from Seoul,**
 - 1) 61 metropolitans having more than 1 million population
 - 2) 1/3 world population
 - 3) 20% of World GDP
 - 4) Purchasing power more than USA

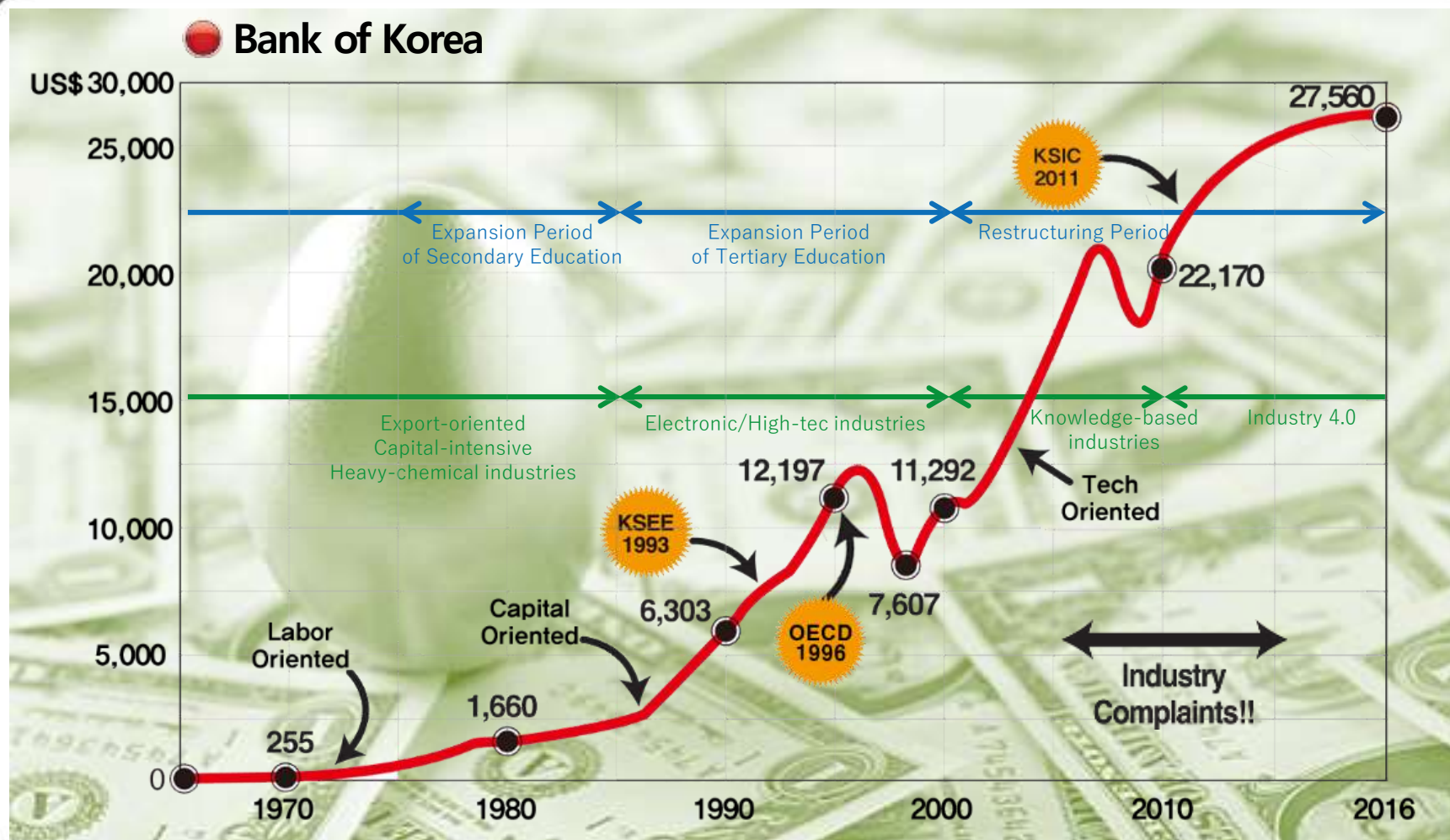
- Area : 99,720 km²
- Population: 49,040,000
- GDP : 11th in the world in 2017
- Global Companies : Samsung, Hyundai, LG,
- Web connection : over 80% of the households



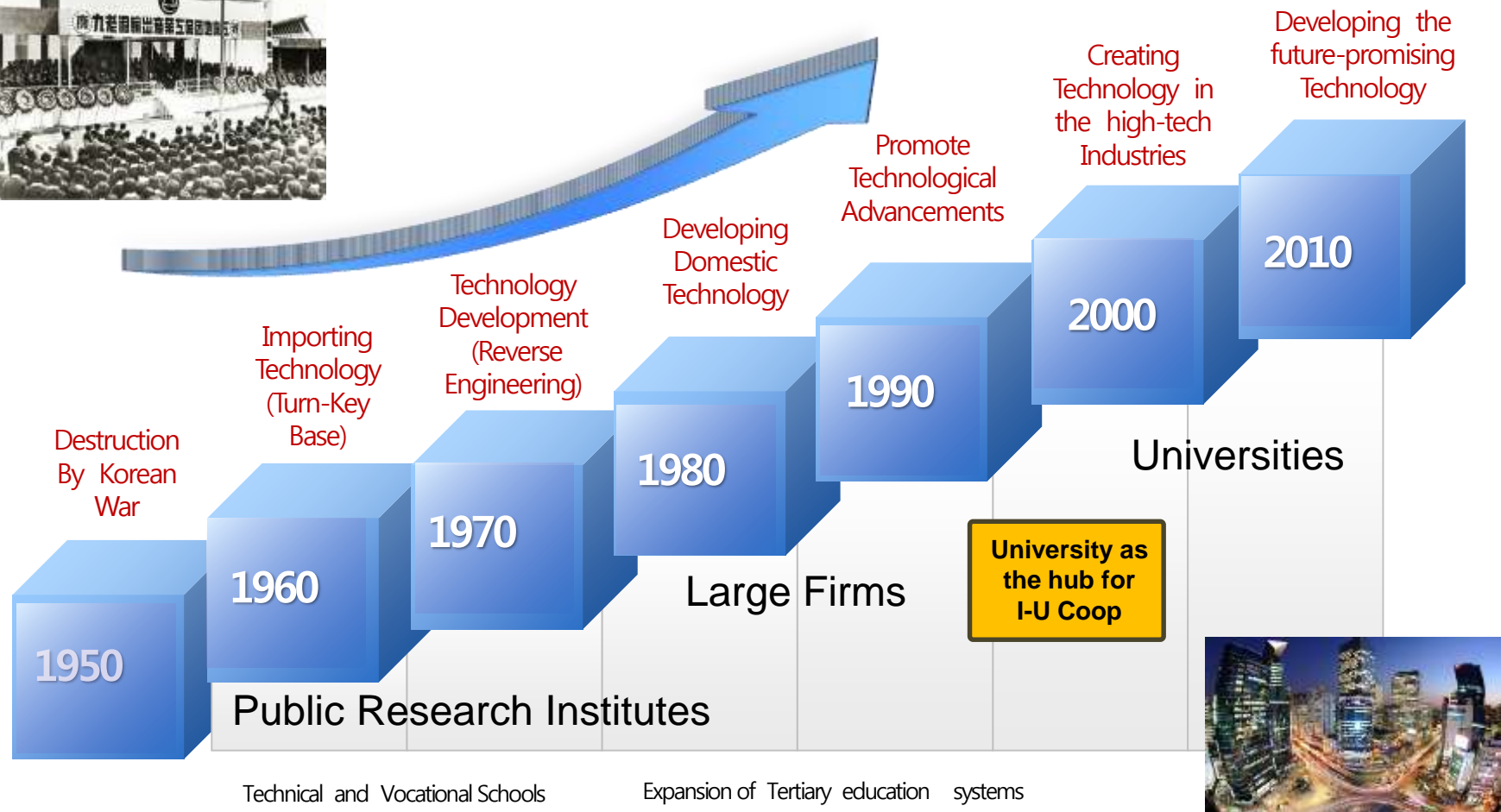
N. K
1.0K
25M

S. K
27K
49M

GNI Trend of S.Korea



Development of Technology and I - U Cooperation



Challenges in Education by Academia

- Decrease in College-Eligible population
- High school science curriculum and teaching pedagogy
 - Not enough science subjects are offered
- Research-emphasized faculty evaluation system
 - Research is emphasized regardless of each college's research infrastructure and capability
- Curriculum is designed to give the basics of each field, but not enough to get in-depth and/or broad knowledge of the field.
- Lack of opportunities for hands-on experience and research
 - Low quality lectures and equipments for undergraduate laboratory

Challenges in Education by Industry

- Training a new engineer to be self-sufficient takes an average of 3 years
- Mismatch of supply and demand in engineering disciplines and levels of skills
 - Lack of IT engineers vs. overflow of engineers in conventional fields
- Engineering curriculum
 - Insufficient up-to-date industrial examples in course materials

Reference:

The Status of Engineering Education in Korea and Suggestions for the Future, National Academy of Engineering in Korea (2010)

University-Industry Collaboration

● Engineering led economic growth in the 1970s and 1980s!

Now?

Professors



Concentrate on researches, but the application of results are restrictive

Students



lack of practical skills and knowledges

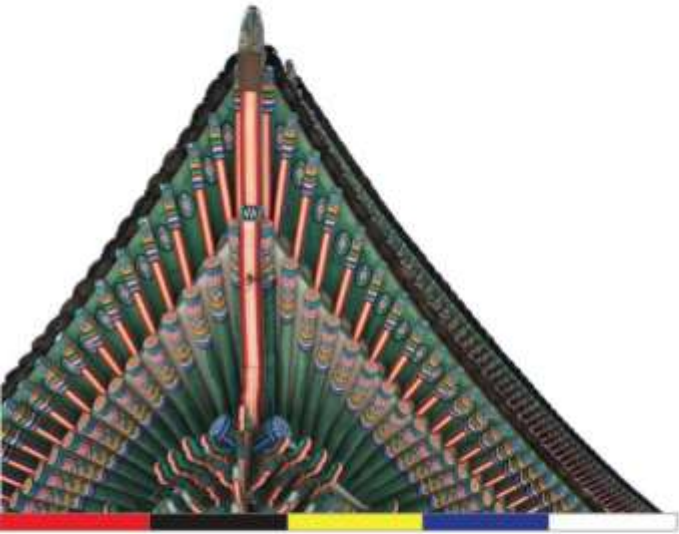
Companies



complain to university, but passive for cooperation with university



How should the changes take place?



Leaders in INdustry - university Cooperation (LINC) Project by MOE



Government Sponsored Project(I)

LINC (Leaders in INdustry-university Cooperation)

- Launched in 2004 (HUNIC - Hub University for Industrial Collaboration)
2012-2016 (LINC - Leaders in Industry-university Cooperation)
- Main Objective: to develop engineering education programs and strategies to enhance collaboration with regional industries.
- Total university : 86 Universities(4-years: 56, 2-years: 30)
- Total budget : USD \$260 Million
- Main Programs

- Human Resource Training for Industry-University Cooperation
- Industry Support for Enhance the competitiveness of enterprises
- Program Support for University Specialization



Government Sponsored Project(II)

● LINC+(Leaders in INdustry-university Cooperation+)

- Reorganization of university system to industry-university cooperation friendly system
- Operation of industry-university cooperation friendly curriculum (Internship, Capstone Design)
- Reinforcement of enterprise network
- Construction of local community ecosystem

- Duration : 2017~2021 (2 years+3 years)
- Participants : 99 Universities nationwide (4-year : 55, 2-year : 44)
- Total budget : \$327 Million / year
- Support Organization : Ministry of Education (MOE)



National Research Foundation of Korea (NRF)

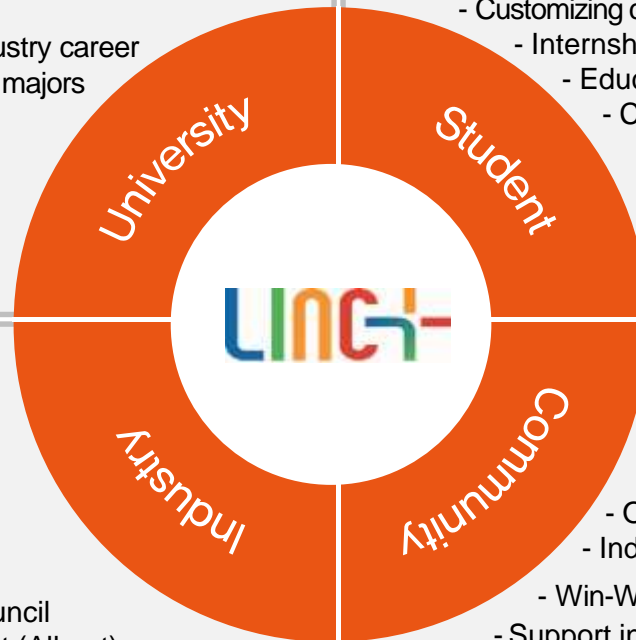
Overview of LINC+ Project Programs

• Reorganization of University system to industry-university cooperation friendly system

- Employing faculty members with industry career
- Offering convergence interdisciplinary majors
- Designing education programs incorporating industry cooperation

• Nurture skilled manpower to reinforce industry-university cooperation

- Customizing curricula according to the industry demands
- Internship and capstone design course
- Education on startup and career planning
- CSI (CT,ST,IT) specialized programs



• Customized support for competitive enterprises

- R&D
- Employee training
- Utilizing the public equipment
- Industry-University cooperation council
- Customized total enterprise support (All-set)

• Creating a local community ecosystem

- Operating community council
- Industry-University cooperation council
- Win-Win cooperation agreement with community
- Support in education, employment, business start-up
- University-Community-Industry Interactive Cooperation

LINC+ Project - University System

Sub-project Title	Contents
Faculty Evaluation System Emphasizing Industry Cooperation	<p>Reflection of industry cooperation achievements in faculty evaluation</p> <ul style="list-style-type: none"> -Addition of industry activity evaluation item to three evaluation categories (education, research, industry cooperation) -Heavy weight on industry activity for promotion and reappointment
Employing Faculty with Industry Career	Hiring faculty members with industry career to innovate university education, enhance the employment rate, and encourage startup
Designing Education Program Incorporating Industry Cooperation	<p>Merge the master and doctorate program to remove the barrier against industry cooperation</p> <p>Customize curricula according to the industry demands and open curricula by the industry contract</p>



LINC+ Project – Education Programs

Sub-project Title	Contents
Offering convergence interdisciplinary majors	<p>Open industry-demand interdisciplinary majors</p> <ul style="list-style-type: none"> -Design engineering, e-commerce, culture planning, consumer science, etc -Techno-management convergence, startup, art-engineering-management convergence
Industry-driven track	<p>Curricula based on industry demands</p> <ul style="list-style-type: none"> -Department : multi-media engineering -Track: multimedia contents and signal processing, entertainment computing, wire/ wireless network and information processing, display arts, movie making technology
Internship and capstone design course	<p>Found an internship support center supervising the internship process</p> <ul style="list-style-type: none"> -Investigation on demands on field placement, prior education, field instruction, education, training/ employment connection -Field placement : more than 4 weeks (160hrs, 40 hrs/ week) -Capstone Design : 3, 4th year students/ subject name "Capstone Design"
Education on startup and career planning	<p>Found an entrepreneurship education center to encourage to start venture companies</p> <ul style="list-style-type: none"> -Evaluation on the number of entrepreneur, space for startups, financial support for entrepreneurship and its staff
Specialized program	<p>HR training, technology development and commercialization for specialized program of University</p> <ul style="list-style-type: none"> -Program : nurturing the next-generation convergence culture contents industry -HR training : art-engineering-management convergence education, media convergence contents education -Research and commercialization : Engineers Atelier (EA), Contents value-up

LINC+ Project – Industry & Community Support Programs

Sub-project Title	Contents
Industry-University Cooperation Council	<p>Operation of council through grouping according to the Industry with University</p> <ul style="list-style-type: none"> -Specialized group between professors and industries -Support for activities including conference, seminar, technical consulting, education employee training etc
Customized Total Enterprise Support (ALLSET)	<p>Solve the problems of the Participating Companies</p> <ul style="list-style-type: none"> -Solving the problem of labor, taxation, accounting, management, patent and investment
R&D	<p>Activation of research, commercialization for development of cutting-edge convergence industry</p>
Employee Training	<p>Re-training of Participating business and support for education on new technology improvement</p>
Public use of equipment	<p>Operation of public facilities and equipment for supporting product development and project of Participating businesses</p> <ul style="list-style-type: none"> -Supporting motion capture device, 3D printer/ scanner, 2D/ 3D video editing equipment, 3D diagnosis scanner, video-related equipment, BT-related device for mid/small sized businesses with cheap price

LING+



Thank you

dongguk
UNIVERSITY 