A practice to foster knowledge transfer in Korea

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From Research to Business

**Research**
- Plan: Proof of concept
- Develop: Proof of market, Tangible product
- Start-up: Seed, Early stage
- Grow-up: Growth, Maturity/exit

**Researcher**
- Planning, legal support
- Basic research (~0.4 b$, 2016)
- Applied research (~0.2 b$, 2016)

**Development**
- Feasibility test, Pilot test, design
- Prototype
- BM

**Start-up**
- Management consulting
- Entrepreneurship
- Fund for start-up
- Business service
- Growth support policy
- VC fund
- Business consulting
- Culture

**Grow-up**
- VC (~1.6 b$, 2017) with 30% investment goes into early stage

**Fund Sources**
- FoF (~0.3 b$, 2017), growth-ladder fund (~0.7 b$, 2017), innovation venture fund (gov: 0.3 b$, private 0.7 b$), angels/bank/KBO (tech finance, 1.8 b$)

**Challenges**
- Wrong planning
- Difficult in dissemination of results
- Little communication (lab-market)
- Lack of incubation, IPR management
- Lack of incentive for PPP
- Weak technological foundation (85% of start-up depends on entrepreneur's own idea → little tech. transfer)
- Little follow-up research, little risk-sharing, expansion of semi-public sector → limit the accumulation of expertise in private sector

**Weaknesses**
- Tech theft, poaching of skilled workers, lack of globalization, expertise shortage etc.
• “Tech transfer & Commercialization Plan” since 2001, every 3 year, about 12 major ministries involved
  ☞ there are many other policy schemes to foster knowledge transfer.
  – Currently, the 6th plan is being carried out

• Achievements
  – KT Infrastructure and policy initiatives
    • mandate of TLO in PRIs, dedicated tech transfer organization, re-discovery R&D project, National Tech bank, fund for tech commercialization, tax incentives for tech-based M&A, punitive damages, growth-ladder fund

• Challenges
  – Weak tech transfer between the firms)→ preference for in-house and public R&Ds
  – Not many technological innovation based M&A, mostly for business restructuring,
  – Weak intermediary platform (Technology Transfer, technology valuation, intelligence etc.)
○ Provide Technologies held patented by Universities to SMEs as a form of R&D Licensing and help them to get support through R&BD Projects
○ At the moment, about 24 Universities are participating and try to recruit more regional Universities
○ In Seoul Metropolitan area, 8800 SMEs are networked and more than 200 cases of technology matching and commercialization has been successfully carried out
Inferior technological capability
- Poor technological development capability for most of domestic SMEs compared to the big Chaebol
- Urgent need to exploit external capability

Poor Performance for tech transfer and commercialization in spite of excellent patent application and management
- Poor network management for technology marketing

Overcoming simple and direct support for SMEs
→ Fully Exploit the external innovation capacity

- For SMES, enhancing the technological capability to make it easy to tap into the patents owned by Univs
- For Univ, promote the technology transfer to expand the contact areas
Participant

Local Government
- Seoul Metropolitan City

Operation Firm (Private)
- Korea PCP

Tech. Finance Org.
- Korea Tech. Finance Co

Univ.
- Various universities in South Korea

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<tr>
<th><strong>Existing TT Business model</strong></th>
<th><strong>PCP Business Model</strong></th>
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| Some Payment for to open up the patent information hold by Univ/PRIS | No cost to the SMEs
  Customized technology matching service by the experts
  (covered by PCP operation budget) |
| Large risk to the SMEs when the commercialization has failed | Offer the buffer by provide maximum 1-year pre-commercialization test periods before TT contract |
| Stop the support right after the technology transfer contact. The firms takes the responsibility in follow-up stage | Provide proffered Technology finance (guarantee, investment, load) and government R&BD program to promote follow-up commercialization |
R&R and Expected Benefits

**SMEs**
- almost no cost to participate
- expect enhancing technological competitiveness

**Local government**
- Support operation cost
- Provide and Connect R&BD Project to SMEs
- Customized support for SMEs
- enhance the industrial competitiveness

**Univ/PRIs**
- Provide high quality patents/R&BD collaboration
- connect in-house tech commercialization program
- Promote Tech. Transfer
- Obtain the firm networks for technology marketing

**Tech Finance Org.**
- Run Tech Finance Program(IP guarantee, Loan, Investment)
- Connect in-house Tech. Commercialization Program
- Recruit the best SMES for investment
- IP support for existing customer through the PCP scheme

**Private PCP firms**
- PCP operation
- Package Support (firm analysis, patent matching, commercialization etc.)
- Explore new Private-led patent technology commercialization model
## Case: Seoul Metropolitan Government

(‘15. 11. ~ ) : Seoul PCP Program

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<tr>
<th>Area</th>
<th>Seoul Metropolitan City</th>
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<tr>
<td>Beneficiary</td>
<td>SMEs inside Seoul( 50 firms / year)</td>
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<tr>
<td>Period</td>
<td>2015.11-2017.10( total 2 years)</td>
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<tr>
<td>Participants</td>
<td>(Univ) KunKuk, Korea, Gwangwoon, Dongkuk, Seoul National Univ. Seoul S&amp;T Univ. Seongkunkwan, Sejong, Ehwa Women’s, Yonsei, Hanyang etc. (finance instites) KIBO, IDventures / (local government) Seoul, Seongdong-Gu</td>
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| Contents      | - Provide technology matching from 12 universities, support one-year tech. licensing and commercialization  
- interview, tech. matching, tech-market analysis, consultation by the inventors, follow-up commercialization package  
- 2-times technology market(participation : 20 Unisv, 50 SMEs, 200 personnel, 185 technologies TT discussion) |
| outcomes      | - In two-years, 100 firms, 6 cases, 1mil US$-worth tech transfer, 1 joint-venture start-up) |
Thanks