

10 Years of Lessons Learned with Korea

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Outline

1. What has Carnegie Mellon done in Korea?

2. What is the impact within Korea, and across industry?

1. What has CMU done?

Since 1994-95, Institute for Software Research of Carnegie Mellon has created programs with

- Korean universities,**
- Korean industry, and**
- Korean government.**

Many Collaborations with Korea

**MOUs with two Ministers of Information and Communication
(2000 and 2001)**

eCommerce programs (Samsung, LG, Kolon) in 2000-01

**Advanced Software Engineering Program to develop software
engineering experts in 2000-03 (SEEK)
and with Hyundai Motors R&D Center in 2004**

**Master of Software Engineering program extended to Korea
(began in 2001) with Information and Communication University**

**Established new agency (Korea Software Institute)
To introduce CMM / CMMI to Korea (from 2002)**

**Government Executive Program in IT Policy & Strategy
A collaboration with Carnegie Mellon's Heinz School (2002-)**

**CMU Master's in eBusiness Technology
Students are sponsored by Korea International Trade Association
(since 2003)**

Entertainment Technology Center ("ETC Korea")

**CIO Forum created with Ministry of Government Administration
and Home Affairs**

Collaboration in Software Engineering

MOUs with two Presidents of

- **Information and Communications University (ICU)**

with support from the

- **Ministry of Information and Communications (MIC).**

2000: ICU Pres. Yang came to Carnegie Mellon.

2001: ICU Pres. Ahn came to Carnegie Mellon.

(Both were Minister of Information and Communications.)

By today, ICU/CMU produced about 70 Masters graduates

SEEK Program

SEEK is "Software Engineering Evangelists for Korea" (also called the Advanced Software Engineering Program for Korea) delivered with KIPA/KSI and MIC:

- **8-to-10 week program at Carnegie Mellon**
- **Offered in summer 2000, 2001, 2002, 2003**
- **35 participants each year, from**
 - ***Universities around Korea***
 - ***Large and small software businesses***
 - ***Research institutes and government***
- **Today, there are 140 total SEEK alumni, who created an association and held conferences.**

KSI Opening Ceremony, Mar. '02



2008년 11월 21일

Carnegie Mellon University

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KSI: To introduce CMM to Korea

ISRI assisted Korea to create new agency

- **the Korea Software Institute (KSI)**
- **Opened in March 2002**
- **to train lead assessors, create local experts**

In 2002, very little use of CMM in Korea

- ***About 2000 CMM assessments were completed worldwide, but very few in Korea***
- ***Cooperation between CMU, KSI, and MIC to bring benefits of CMM (CMMI) to Korea***
- ***Cooperation would extend to other topics in the future***
- ***By 2004, there have been more than 60 assessments done in Korea***
- ***Today, process Improvement activities are prevalent throughout industry***

ICU: Bringing the MSE to Korea

With MIC as initial sponsor, Carnegie Mellon created a collaborative Master's degree program with ICU:

- 1. A license of courseware from Carnegie Mellon's Master of Software Engineering program ("MSE")**
- 2. Each ICU faculty spent a semester at Carnegie Mellon, working with MSE faculty, to learn how the MSE program is taught at Carnegie Mellon**
- 3. Carnegie Mellon faculty also visited ICU in Korea**
- 4. The MSE students from ICU complete:**
 - some courses taught by ICU faculty (as CMU "adjunct")**
 - some courses taught by CMU by distance education**
 - one semester at Carnegie Mellon in Pittsburgh**
- 5. CMU and ICU create an annual implementation plan**

Software Engineering Education

The Effects:

Not only 70 Master's graduates

Korean companies sponsored their engineers to attend, and many other students attended at their own expense

Korean companies sponsored practical student projects which benefit the education process and the company

Korean companies compete to hire the grads.

Examples: Samsung, Hyundai, Bank of Korea, LG group, POSCO, etc.

eBusiness Programs

From Carnegie Mellon's Master's programs...

ISRI provided training for

- ***Samsung and Kolon (over 200, in 2000-01)***
- ***LG e-Institute (about 1500, in 2000-02)***
- ***In 2001 and 2002, summer programs with ICU provided courses for 120 graduate students***
- ***Newest: Korea International Trade Ass'n. sponsors scholarships for students to attend Carnegie Mellon eBusiness Master's program***

For Samsung Group



**2000-01. eCommerce & Global eBusiness.
Collaboration with Samsung Corp. HR Dept.**

Included:

- ***Samsung employees to CMU for Master's***
- ***Special 4-week program for internet business managers (6 times, about 200 trained)***
 - ***Managers from trading company, Samsung Electronics, Samsung Life Insurance, and other Samsung companies***

In 2000, also delivered to Kolon Corp.

Government Executive Programs in Information Policy & Strategy

In 2003-04, collaboration with KIPA / IITA (& Carnegie Mellon's Heinz School) for:

- education programs for government executives and managers

Topics:

- *Information and communications policy*
- *Information resource management*
- *Information security and privacy*
- *Role of the CIO in the U.S. government*

2. What's the Impact?

What is the impact to a company?

ISR selected 5 Korean companies to review for ISR collaboration with Korea

- To identify specific and measurable benefits**

What is the broader impact of government sponsored programs?

- In SEEK, ICU's MSE program, KSI... short term and long term impacts**

5 Selected Korean Companies

ISR selected 5 companies based on their size to review the impact of collaboration between CMU and Korea in 2004

- 2 Large companies (7,000 employees and 5,000 employees)
- 1 Mid-size company (900 employees)
- 1 Small size company (300 employees)
- 1 Venture company (60 employees)

The result was that we found each company showed its capability meeting its SPI efforts.

Impact of Government Sponsored Program

Government sponsored programs can drive the industry, academia, and society

- **SEEK program produced 140 industry experts in software engineering evangelists to promote software engineering in society**
- **KSI and its support on CMM/CMMI generated industry alerts in the importance of SPI in software, and created software company's own efforts to improve its capability**
- **ICU's MSE program has stimulated software engineering programs and education among other Korean universities**

Recommendation for Vietnam

Refer to the Initiation by Korean Government with 3 layer approach

Society level to promote software engineering in general through training the evangelists (SEEK)

Providing practical training and education focused on SPI aimed at companies (KSI)

Creating and supporting formal education in Software Engineering through collaboration with Carnegie Mellon University

Statements of support from...

- Minister of Information and Communications**
- Legislature**
- Industry Associations**

Factors for Success

Long-term success is influenced by:

- **Actions by leadership and champions**
- **Resources invested and specific activities planned and managed**
- **Specific actions of participants**
 - **Preparation, selection, expectations, and using new knowledge & skills on-the-job**
- **Organizational support for implementation**
- **The general socio-economic environment**
- **Other parties and stakeholders**
 - **Other organizations, government**