

Challenges in Establishing an American Global Campus in Korea

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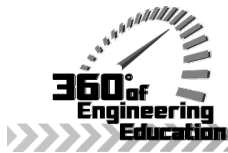
Being the Director of the Manufacturing and Automation Laboratory (MAL) at Stony Brook, he conducts research in the areas of Microsystems and MEMS, intelligent fault detection and diagnosis, robotics, intelligent contact interface, stiffness control, wafer manufacturing, and wafer slicing using wiresaw. Prof. Kao served as an Associate Editor of the IEEE Transaction of Robotics and Automation.

Dr. Yacov A. Shamash, Stony Brook University

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Dr. Shamash is Vice President for Economic Development and the Dean of the College of Engineering and Applied Sciences at Stony Brook University. As Vice President, Dr. Shamash supervises the University's three incubators, two New York State Centers for Advanced Technology, the Center of Excellence in Wireless and Information Technology (CEWIT), the Advanced Energy Research and Technology Center (AERTC), the Small Business Development Center, and the workforce development programs of the Center for Emerging Technologies. The College of Engineering and Applied Sciences has more than 2,000 undergraduate and 1,300 graduate students. During his tenure, College research expenditures have increased six fold to \$30M per year. In 1994 he helped establish the highly successful state-wide SPIR program (Strategic Partnership for Industrial Resurgence). During the past ten years, working through the SPIR program, the College has partnered with more than 395 companies to assist them with more than 2,127 projects. Dr. Shamash is responsible for starting several program, including degree programs in SUNY Korea.

Prior to joining SUNY Stony Brook in 1992, Dr. Shamash served as the Director of the School of Electrical Engineering and Computer Science at Washington State University when he established the National Science Foundation Industry/University Center for the Design of Analog/Digital Integrated Circuits.



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1. Introduction

The State University of New York at Stony Brook (SBU) launched a global campus in the Incheon Free Economic Zone (IFEZ) of South Korea. Specifically, the College of Engineering and Applied Sciences (CEAS) at SBU opened selected graduate programs in 2012 and an undergraduate program in 2013. More degree programs are scheduled to follow. Several challenges encountered while implementing the global campus will be addressed.

The first challenge is the complexity of establishing a global campus on Korean soil. In order to establish an academic institute and offer degree programs, an application needs to be submitted to the Ministry of Education (MoE, previously MEST: Ministry of Education, Science and Technology (MEST) of the Korean government. Once the application is received, it takes between several months to more than a year for the application to be approved through a thorough review process. Various requirements need to be met. Although an American university, SUNY Korea is constrained by the rules and policies set by the South Korean Government. It is subject to a special law for foreign educational institutions, but does not receive all the benefits available to Korean universities.

The second challenge pertains to the faculty. It is difficult to attract faculty internationally due to the language barrier in Korean society and the financial constraint. The Department Chairs were sent by the home campus, but there were not enough professors at the home campus. The school attempts to keep the balance between the international faculty and the local faculty. The final decision in faculty hiring and decisions of academic matters are made by the home department in cooperation with SUNY Korea. Since faculty members were not allowed to submit a grant proposal to certain funding agencies in Korea, the university had to appeal to the government. This continues to be a struggle as the government tries to facilitate the establishment of global universities in IFEZ while maintaining consistency with existing laws and regulations.

The third challenge is about student and student recruiting. It takes a long time for a new institution like SUNY Korea to acquire name recognition. There have been tremendous efforts in recruitment both locally and internationally. The final admission decisions are made by the academic departments (graduate admission) or the Undergraduate Admissions Office at its home institute in New York using the same standards of admissions. SBU and SUNY Korea have decided to maintain academic quality of students, thus, enrolling fewer than the student quota allocated by the MoE in the first few years, while maintaining the diversity of the student body.

This paper is organized as follows: Section 2 provides the history of SUNY Korea and Songdo Global Campus. Sections 3 to 5 address the changes listed above. Section 6 gives a conclusion.

2. Establishment of a Global Campus in South Korea

Stony Brook University was invited in 2007 by the South Korean government to establish a global campus in the newly developing IFEZ in the port city of Incheon which is approximately

35 miles west of downtown Seoul. One of the missions of IFEZ is to create a new growth engine of the country to transform the economic structure of South Korea from manufacturing to knowledge-based industry. [1] IFEZ is located within three and a half hours of flying time to regions that include one third of the world's population. [2] Songdo is a rapidly booming region of IFEZ, which is currently undergoing a period of great expansion. Songdo Global University Campus (SGUC) was established by IFEZ, and SBU became the first university to start the academic program in SGUC. [2] Songdo is a new, 1500 acres of land reclaimed area from the Yellow Sea off Incheon City. Recently the Green Climate Fund (GCF) of the United Nations opened its headquarter. Songdo is less than 30 minutes from the Incheon International Airport by car. The Ministry of Knowledge and Economy (MKE: currently Ministry of Science, ICT and Future Planning) and IFEZ invested hundreds of millions of dollars to build the SGUC campus and the SUNY Korea campus.

SBU opened the branch campus in SGUC after a long period of preparation. Table 1 shows the dates of important events in establishing SUNY Korea. Since the school was invited by IFEZ, SBU formed a task force committee to spearhead the Songdo project. At the same time, a consortium was formed by several American universities who were invited to open their programs in Songdo. In Stony Brook, CEAS showed interest and decided to open its academic programs in Songdo. Initially SBU planned to focus on the undergraduate majors in CEAS with the target enrollment of 2,000 in four years. Due to the global economic downturn, however, Stony Brook's initial plan for starting undergraduate programs was cut back to a smaller scale of graduate programs. The consortium of the universities was also dissolved, and all the other universities gave up the plan.

Table 1. Timeline of the establishment of SUNY Korea

| Date | Events |
|---------------|---|
| October 2007 | MOU signed between SBU and IFEZ |
| May 2009 | Resolution signed by the SUNY Board of Trustees |
| March 2010 | Establishment of SUNY Korea was authorized by the SUNY Chancellor |
| December 2010 | Application for operation of the graduate programs (Technology & Society and Computer Science) was submitted to MEST |
| July 2011 | Operation of graduate programs was approved by MEST |
| December 2011 | SUNY Korea Academic Building opened |
| March 2012 | SUNY Korea started graduate class |
| April 2012 | Application for operation of the undergraduate program in Technology Systems Management (TSM) was submitted to MEST |
| August 2012 | Operation of the undergraduate program in TSM was approved by MEST |
| March 2013 | The first undergraduate class started |
| April 2013 | Application for the undergraduate program in Computer Science and graduate program in Mechanical Engineering was submitted to MoE |
| June 2013 | SUNY Korea produced the first graduate class |
| January 2014 | Operation of the undergraduate program in Computer Science and Graduate program in Mechanical Engineering was approved by MoE |

The Board of Managers (BoM) was formed to oversee the operation of the SUNY Korea campus. The members of the BoM include selected executive administrators and faculty from SBU and the SUNY headquarter. There were two steps in the approval of the SUNY Korea program. The first step was the approval by the Stony Brook Graduate School and the SUNY headquarter. The second step was the approval by MEST. Details of this will be discussed in Section 3.

In addition to providing land and campus buildings, the South Korean central government and IFEZ provide subsidies to the foreign universities in the Global Campus for five years. Furthermore, rent and utility of the campus buildings are free of charge during this initial period. Faculty housing is provided to the faculty from the overseas campus for free of charge during the initial period. Currently the campus has dorms for 2,000 students. The Songdo Global University Foundation (SGUF) manages these dorms and the faculty housing. Figure 1 shows a part of the SUNY Korea campus building (left and right side of the picture), the faculty apartment (the small white building in the middle), and the student dorms (the tall building on the right hand side and the white building between the campus building and the faculty apartment).



Figure 1. The SUNY Korea campus building and residence buildings

Figure 2 shows the SGUC Buildings located on the other side of the SUNY Korea Academic Building. The picture shows the Guest House (tall building), theatres with 1,800 seats and 500 seats each (right front), and the main building (the arch building) consisting of a gym, 8 lane 25 m indoor swimming pool, main library, cafeterias serving various international cuisines, Student Activity Center, lecture rooms, conference rooms, office rooms, club rooms, etc. The gym hosted numerous sports activities including the International Table Tennis Tournament and 2013 Asian Indoor Martial Arts Games.



Figure 2. Songdo Global University Campus Buildings

In the international business center of the new town of Songdo, major South Korean and international companies including Samsung Biologics and Celtrion built their headquarters or main office buildings. These companies can provide employment and internship opportunities to the students of SUNY Korea. SUNY Korea students have advantage over South Korean university students since many companies seek employees who can fit in the trend of globalization. These companies also provide opportunities of collaborative research and development with academia. Some major universities in South Korea also opened their local campuses in Songdo.

SUNY Korea put an effort to collaborate with top South Korean universities in academics and research endeavor. SUNY Korea received a ten-year research grant on the IT Consilience Creative (ITCC) Project from MKE in 2011 jointly with Pohang Institute of Technology (POSTECH). SUNY Korea receives approximately a million US dollars per year. SUNY Korea also received the Software Specialization grant jointly with Korea University from MKE. SUNY Korea signed MOUs with the College of National Science of Korea University, and the International Campus of Yonsei University.

The Global Campus can contribute to the South Korean economy by recruiting students who initially planned to study abroad. With students staying in their home country, they are spending their education and living costs in the country, while receiving the same level of education as studying abroad. The school recruits students from all over the world. Specifically, the location of the school can be attractive to students in Asia. The campus is a US-style providing research-oriented education. The school's operations are consistent with SBU's academic quality and practices. The curriculum is the same as that of the main campus, and all the instructions are given in English. The registration and enrollment is managed by the Registrar Office of Stony Brook.

Middle States Commission for Higher Education (MSCHE) conducted a site visit and approved SUNY Korea as an additional location of SBU in the year SUNY Korea opened the program. SUNY Korea seeks global as well as domestic collaboration of academia-government-industry, but it is sometimes complex due to the different regulations between the countries. Nonetheless, South Korean government encourages international collaboration.

3. Complexity of establishing a global campus on Korean soil

As shown in Table 1, an application for opening SUNY Korea graduate programs in Technology and Society and Computer Science was submitted to MEST in December 2010, and it was approved in July 2011. The first graduate class started in the spring 2012 [3]. Shortly thereafter, SUNY Korea submitted an application for operating the undergraduate program of Technological Systems Management (TSM) under the Department of Technology and Society, and it was approved in July 2011. This made SUNY Korea the first foreign university on Korean soil to offer both undergraduate and graduate degrees. SUNY Korea has been expanding by adding more academic programs. An application for operation of the undergraduate program in Computer Science and the graduate program in Mechanical Engineering was submitted to MoE in April 2013 and it was approved in January 2014. We can see that the review of the new program by the South Korean government took from several months to almost a year. Although it took 8 months for a review of opening SUNY Korea, the preparation started right after the establishment of SUNY Korea was authorized by the SUNY Chancellor several months before submitting the application.

George Mason University and Ghent University in Netherlands submitted applications of their academic programs to MoE after SUNY Korea started the operation, and these were approved in 2013. George Mason University opened academic programs in the spring 2014, and it offers undergraduate programs of Economics, Management, and Global Affairs. Ghent University is planning to offer Bioengineering, Bio-environmental Engineering, and Food Engineering majors in the fall 2014.

The review by MoE is comprehensive. The application should include: the pledge agreement, clarification of the relationship between the main campus and the branch campus, corporate body, assets, building and land, facilities and equipment, a list of recruited faculty and a detailed faculty plan, financial plan, charter, academic policy, and academic management. Various requirements such as a high percentage of faculty from home campus, a high percentage of the full-time faculty, and the student-faculty ratio comparable to that of the main campus need to meet. The financial plan needs to provide up to ten years of detailed finance showing sustainability of the program. Plans for securing funding and plans for financial surplus should be addressed. The application in both English and Korean should be prepared, and the English version is required to be notarized. Upon receipt of the application, MoE forms a review committee consisting of members from government, academia, research institutes, and other organizations. The committee may meet multiple times until all the issues raised by the committee are addressed by the applying institute. The review committee visits the campus in Songdo and has a Q&A meeting with the faculty and staff. At the final stage of the review, the committee has a site visit to the overseas main campus. Every time new programs are added to the already approved branch campus, MoE requires a new submission of the application, although some sections of the application may remain unchanged.

The Global Campus can contribute to the higher education in South Korea by providing western style education and world-class research conducted in the branch campus. It can be a western model for South Korean universities to refer to, and help these schools to improve the quality of

the academics and research. Both the global campus and South Korean universities can take the strong points and make up for the weakness from each other by exchanging the programs. However, some South Korean universities consider it as a competition. In the area of engineering, in particular, South Korean universities encounter difficulty recruiting strong students because recently less students are interested in science or engineering than in the past.

4. Faculty

SUNY Korea has two groups of faculty: professors dispatched from the home department in SBU and faculty under the SUNY Korea tenure track. SUNY Korea also hires adjunct professors who teach courses or conduct collaborative research. The Chair of each department is sent from the department at SBU. Usually the initial term of the appointment is two years. The other faculty members are recruited internationally and selected by the hiring committee which is comprised of selected faculty at the home department and SUNY Korea. Retired faculty or faculty who are on sabbatical leave at SBU can consider visiting SUNY Korea. However, it is difficult to attract faculty from the home department because of the language barrier while living in South Korea although there is no problem communicating in English on campus. Professors with children may hesitate to stay in Korea because of education for their children; there are international schools in South Korea, but the tuition is very high. The home department needs a replacement for dispatched faculty to meet the need for instruction. Reappointment, promotion and tenure of the faculty in the SUNY Korea tenure track follow the policy of the home campus.

Although it is difficult to attract faculty from the home department, MoE requires a high percentage of these faculty. MoE also requires a high ratio of full-time versus part-time faculty, and low percentage of Korean faculty. Among the full-time faculty in SUNY Korea, the percentage of the professors with foreign nationality is at least 50% in each department. In addition, there are visiting professors from the States. SUNY Korea also offers a few general education courses including calculus, physics and writing. Visiting professors from the States or India are currently teaching these courses.

SUNY Korea faculty are in a good position to receive international grants funded by the South Korean government. However, there have been constraints in applying for domestic grants because SUNY Korea did not fall in the category of Korean universities. The global universities in IFEZ are under a special law for foreign education institutions. SUNY Korea has made efforts to lift these restrictions. As a result, all three computer science junior faculty who applied for the Young Investigators Award won the grant from the South Korean Research Foundation in 2013. The funding rate of this grant was about 20%.

5. Students

Recently engineering is losing popularity among South Korean students. Even the top Korean universities have difficulty recruiting students to their engineering programs. The professors encourage their undergraduate students to advance to their own graduate program. These schools view SUNY Korea as a competition. Also, companies like Samsung, LG, Hyundai and POSCO

recruit a good number of graduates from these schools. The demographics of the graduate student population in SUNY Korea are different between the Computer Science Department and the Technology and Society Department. A majority of the Computer Science graduate students are foreign Ph.D. students. All Ph.D. students in SUNY Korea receive full scholarships from the ITCC grant. Most of the Technology and Society students are Korean students in the MS program. Many of these students are currently working for South Korean government or the private sector. The enrollment of SUNY Korea graduate programs is below the target. One reason is that SUNY Korea has not have enough time to acquire name recognition by Koreans and students in neighboring countries.

Undergraduate programs have better demand than graduate programs in SUNY Korea. The TSM undergraduate program enrolled students in both the spring and fall semesters in 2013. SUNY Korea was able to recruit a large group of students for the spring semester because the academic year starts in the spring in South Korea. Among undergraduate students in SUNY Korea 30% are foreign nationals and 70% are South Korean nationals. Among foreign nationals, one third are Korean Americans and the remaining two thirds are foreign students from all over the world. The rate of foreign students is growing mostly due to a generous scholarship program. In 2013, SUNY Korea had students from the US, South Africa, Ghana, Kenya, Uzbekistan, Kyrgyzstan, Iran, Pakistan and Sri Lanka in the undergraduate program. Among South Korean nationals, a majority of the students studied in overseas high schools. The remaining Korean students are from international schools, Foreign Language High Schools, and regular South Korean high schools. Thus, most SUNY Korea undergraduate students have studied in an English-speaking environment before they entered college.

The admission rate of the SUNY Korea undergraduate program was approximately one third, and over 70% of the admitted students enrolled in the program in 2013. The undergraduate enrollment in 2013 was 53 students which was below the target of 100. Although over 200 students applied, the enrollment did not reach the target due to quality control. It is, therefore, critical that SUNY Korea receives subsidy from the Korean government to cover the financial shortcomings in the first few years while establishing a campus with quality students and faculty. Due to financial concerns, the South Korean government wanted SUNY Korea to admit more students. South Korean universities fill the enrollment target as long as the number of applicants is more than the enrollment target. Since SUNY Korea did not reach the enrollment target, it may be viewed as a failing program to many Koreans. To maintain the academic standard this challenge is unavoidable.

As a global university, SUNY Korea had to resolve various issues related to the responsibility and benefit of the students. One example is the postponement of military duty of Korean students on campus because SUNY Korea is not categorized as a Korean university.

The graduate admission is carried out by the home department. The undergraduate admission is managed by the Stony Brook Undergraduate Admissions Office, and the final decision is made by this Admissions Office. The standard for admission is the same as that of the home campus. Students submit their online applications to Stony Brook. On the application, they specify which campus they are applying to. Concerning English proficiency, a TOEFL score of iBT 80 or

IELTS 6.5 is required for undergraduate admission, and iBT TOEFL 85 for the MS and 90 for the Ph.D. program.

SUNY Korea has held information sessions in numerous cities in South Korea including Seoul, and had recruiting visits to Asian countries including China. Many of these visits were done jointly with the SBU Undergraduate Admissions Office.

SUNY Korea requires all undergraduate students to reside in the on-campus housing. The dorms are shown in Figure 1. SUNY Korea offers a Residential College program to undergraduate students. All undergraduate students are required to visit Stony Brook for two semesters during their sophomore year. The first cohort of the SUNY Korea undergraduate students is going to Stony Brook in the fall 2014. They are mostly taking general education courses and some major courses while they are staying in Stony Brook. They are paying the tuition to SBU during this period. For scholarship students, SUNY Korea pays the tuition and dorm fee to SBU. All Ph.D. students are also required to visit and stay in Stony Brook for at least a year during their graduate study. Masters students are not required to visit Stony Brook, but some of the students choose to be in the 1+1 program which is 1 year in Songdo and another year in Stony Brook. Some SUNY Korea masters students choose to visit Stony Brook and take short courses during the break.

6. Conclusion

Challenges are expected while establishing a new global campus such as SUNY Korea. As we deal with and resolve these issues, new challenges will undoubtedly come up while building a well-established campus. Academic-government-industry collaborations remain important as we strive for excellence in SUNY Korea.

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