

Top Global University Project (Type B) Shibaura Institute of Technology

1. Outline

【 Name of project 】

Design and Implementation of a Human Resource Development Model for Engineering and Sciences Focusing on Value Co-Creative Education - Contribution to Global Sustainability

【 Future vision of the university planned in TGU project 】

With the goal of “fostering global engineers and scientists who can learn from the world and contribute to global sustainability”, we promote improvements in education, research activities and creation of innovation in parallel. We build a model for private science and technology oriented university, and share it with Japanese and overseas universities.

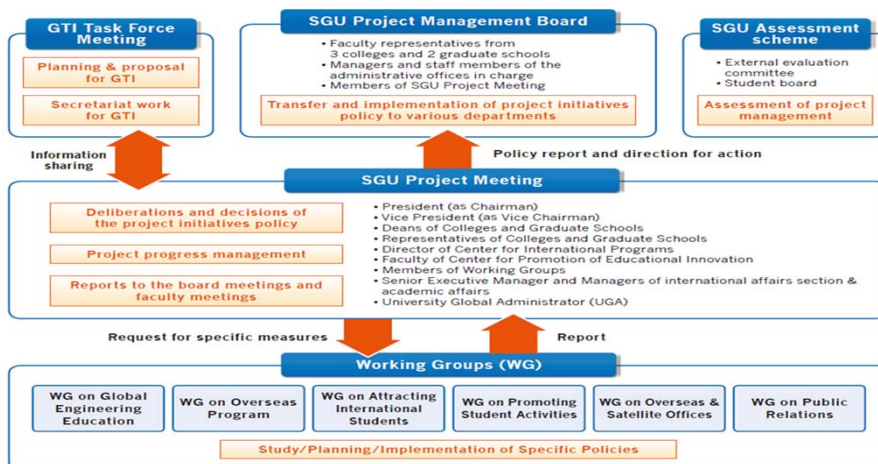
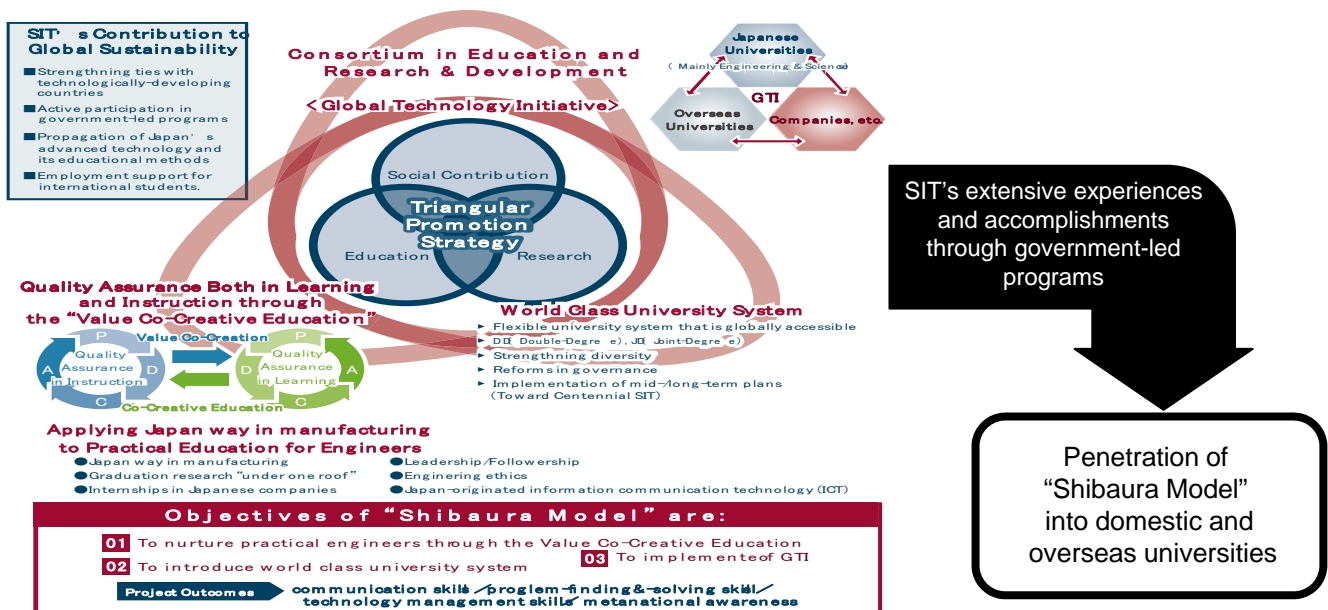
【 Summary of Project 】

We promote this project with three pillars of “Quality Assurance Both in Learning and Teaching through Value Co-Creative Education”, “Establishment of World Class University System” and “Organizing and Steering Global Technology Initiative (GTI) Consortium”.

For “Quality Assurance both in Learning and teaching through Value Co-Creative Education”, we build the scheme that faculty and students enhance the value of education each other by running PDCA cycle.

For “Establishment of World Class University System”, we plan to be in top 10 ranking among Asian technical universities with an international students ratio by 30%, sending all the Japanese students to overseas, offering 600 lessons in English and setting out some degree courses in English language only.

For “Organizing and Steering Global Technology Initiative (GTI) Consortium”, we actively promote cooperation in human resource development and research activities in the academic-industrial alliance by forming a consortium among universities and industries both in Japan and overseas.



【Summary of the 10-year plan】

1. Establishment of Value Co-Creative Education

We establish a model for “Value Co-Creative Education” by practicing the PDCA cycle with faculty and students, and share it with science and technology oriented universities in Japan and overseas.

2. Introduction of World Class University System

We promote the globalization of the university and implement measures to be in top 10 ranking among Asian technical universities as the entire university under the solid leadership and swift decisions by the President.

3. Organizing and steering International Academic-Industrial Consortium

Focusing on South East Asia, we organize and steer an international academic-industrial alliance, Global Technology Initiative (GTI) Consortium, in which we promote human resource development and research activities, and contribute to quality assurance of higher education in science and technology as well as industrial problem solving.

4. Making all Japanese students to have overseas experience while enrolling in university

We enhance our educational and support systems for study abroad programs which enable all Japanese students at SIT (both undergraduate students and graduate students) to have overseas experience at least one time while they are enrolled in the university.

5. Promotion of diversity in university

To achieve an international faculty ratio of 60% and an international student ratio of almost 30%, we promote recruitment of international faculty and students as well as collaborations with new and existing partner universities overseas.

6. Fostering Global Human Resource in science and technology field

To contribute to global sustainability, we foster human resources with communication skills, problem finding and solving skills, meta-national awareness and technology management skills, by implementing the above plans..

【Characteristic approaches (Internationalization, University reform, Education reform)】

Private universities can be considered as the education service industry, where their management makes ends meet by receiving compensation for providing appropriate services. A private university offers higher education service and takes responsibility for building sustainable higher education and research systems with appropriate values so that such an university pushes forward globalization in the long term. The tuition from current students accounts for 70% of the whole compensation. The customer side (student) receives the contents which the provider side (faculty) provides, and education is service to convert the contents into the utility value for the student. At this chance, the experience value and utility value of the contents provided for both students and faculty increase if the students' positive participation (customer participation) is high. This type of process is called value co-creation in the field of business management. We will take these characteristics of a private university as a positive aspect and aim for the university where both students and faculty are always conscious of value co-creative education.

We have pushed forward improvement of a quality assurance of education in conformity with Washington Accord and the educational program by the Plan-Do-Check-Act (PDCA) cycle. In parallel, we have taken in active learning such as cross-cutting system education and/or Project Based Learning (PBL), without solely depending on conventional engineering disciplines in order to offer the practical education. We will be carrying out an educational reform aiming at the establishment of the value co-creative educational model, which assures the quality of learning/education as well as the expansion of practical subject taking in value co-creative education. We also aim to spread the educational model to domestic and foreign educational institutions.

In the governance of SIT, our Board of Directors has decided to entrust education management to the President, the top of education, aiming the integral operation by both the Board of Directors (management side) and faculty. The President in this way holds authority of personnel and budget management for education. Strengthening his leadership in this way enables the President to implement quick decision making.

In addition, we as a private university have positively cooperated with various intergovernmental projects. In particular, we have pushed forward strong cooperation with science and technology oriented universities in Southeast Asia. We have been exchanging students with those universities actively as a leader university of South East Asian Technical Universities Consortium (SEATUC).

We try to develop a world-class brand as a private engineering and science university taking advantage of having those assets in Southeast Asia. The brand is realized by establishing the Value Co-creative Education, which assures the quality of learning/education, practical engineering education by utilizing the Japanese craftsmanship culture, and using the Triangular Promotional strategy of education, research and innovation. We also try to establish a world-class university system and organize/manage a consortium for international industry-academia alliances, Global Technology Initiative (GTI) Consortium.

2. FY2014 Progress

■ Common indicators and targets

Internationalization

1. The ratio of International Students

The ratio of international students have increased to 4.3% (361 students) from 1.5% (123 students) in FY2013. We actively accepted students from “Science without Borders” program funded by the Brazilian government. We also participated in study abroad fairs held overseas.

2. The ratio of students with study abroad experience

We enriched the study abroad programs such as the English Language Program and Global Project Based Learning and achieved to increase ratio of students with abroad experience (with credits) to 2.5% (209 students) from 1.7% (138 students) in FY2013. Including no credit program, we sent 550 students. We do continue enhancing projects like Global Project Based Learning which take advantage of our Institution.

3. The number (ratio) of subjects offered in English

The number of subjects offered in English has increased from 4 (0.2%) in FY2013 to 30 (1.1%) in the undergraduate level and from 71 (15.8%) to 74 (16.9%) in the graduate level. The acceptance of students from “Science without Borders” program accelerated the move to increase the number of subjects offered in English.

4. Initiative to assess, manage, and improve students' language level

We have conducted 6 free TOEIC® IP Test a year on campus, as well as the CEFR (The Common European Framework of Reference for Languages: Learning, Teaching, Assessment) to assess students' foreign language proficiencies. In addition to the regular curriculum, we offered students with free online English lessons and special courses for TOEIC® Test.



〈 Party of International Dormitory 〉

Governance Reform

1. Swift decision-making

To integrate the management between Board of Directors and faculty, it has been decided to introduce the system in which the President is appointed by Board of Directors. It enables the President to have an authority for personnel issues and finance management.

2. Clear visions and development of mid-term plans

We set clear visions with goal and performance indicators such as Key Goal Indicator (KGI) and Key Performance Indicator (KPI), and implement PDCA cycles to achieve our goals, heading to 100th anniversary in 2027.

3. Initiative for advancement of clerical staff

We have been proactive in recruiting clerical staff with fluency in foreign languages and experience of working overseas. Also, we offered training to clerical staff to enhance their global awareness.



〈 Led by solid leadership of the President 〉

Education reform

1. Promotion of student participation in assessment of University administration

Class evaluation by students has been carried out in a high ratio of over 95%. In addition, we strove for the expansion of the Students Consulting on Teaching (SCOT), which is one of class consulting systems where students who received training beforehand participate in classes and give feedback to faculty

2. Utilization of Teaching Assistants (TAs)

We employed 566 Teaching Assistants (TAs) to provide assistance to faculty members. This in turn facilitated the growth of TAs and enriched the content of classes. Likewise, we promoted the expansion of the system of Learning Facilitators (LFs) whose additional duties include not only assisting faculty members but also supporting faculty members in educational and research activities.

3. Selection of new students by diversified entrance examination

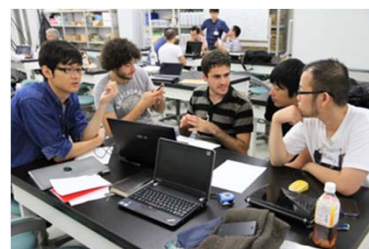
As a result of its participation in study abroad fairs held overseas, SIT saw a substantial increase in the number of applicants through the Examination for Japanese University Admission for International Students (EJU) and the number of enrollment. Furthermore, a scheme of admission on recommendation was created for Shanghai Japanese School, for which we contributed to establish its school.

■ University's own indicators and targets

1. Number and amounts of contract research, joint research and competitive funds (National Research Projects)
Through working with industries and implementing measures for acquisition of National Research Projects, we procured JP¥487 millions for 242 contracts and projects.

2. Number of Global Project Based Learning (gPBL) program participants
About 150 students participated in 12 gPBL programs overseas and about 50 students took part in 5 gPBL programs in Japan. In total, approximately 200 students worked on practical projects, and develop problem-solving skills and international sensibilities.

3. Number of Overseas Internship program participants & Number of partner universities with Joint-Degree (JD) and Double-Degree (DD) agreements
We sent 31 students on the Global Internship program to 23 private enterprises. Meanwhile, we have mutual Joint Degree (JD) and Double Degree (DD) agreements with 1 university, and plan to sign the agreements with 5 other universities in the near future.



〈 gPBL with Italian students 〉

■ Distinguishing approach based on characteristics of university

1. Promotion of Value Co-creative Education & Practical Education for Engineers

We have proceeded with the quality assurance of education through introduction of Japan Accreditation Board for Engineering Education (JABEE) programs and improvement of educational programs by PDCA cycles. Teaching based on Passive Learning, which has conventionally been performed, is not enough to improve students' ability. Thus, we introduced Active Learning, in which student themselves participate in educational processes. In 2014, 17 gPBL were carried out with partner universities in Japan and overseas, and about 200 students participated. As for the quality assurance of education, the cycle is implemented by faculty, clerical staff and students, followed by the establishment of a system to improve education in a long-term way. In its checking process, we introduced rubrics and Progress Report On Generic (PROG) skills Test for objective assessment of students.

2. Implementation of World class university system

Some of our departments have decided to introduce a quarter system from FY 2015. Also, we launched a study committee to establish a new department for JD and DD programs. Heading to 100th anniversary in 2027, we also set KGI and KPI, in order to be ranked as one of the top 10 Asian technical universities.

3. Organizing and Steering GTI consortium

For organizing GTI consortium scheduled to be launched in 2015, we requested universities, industries and government agencies in Japan and overseas for cooperation. As a result, more than 20 organizations promised to offer support.



〈 Organizing Committee of GTI Consortium 〉

■ Other approach

1. Initiative to improve students' English ability

We have been trying to improve our students' English ability by offering regular curricular classes and extracurricular classes such as free online e-learning lessons and the Short-Term English Language Programs. We have been also increasing the numbers of major subject and liberal arts classes offered in English. In addition, we offered special extracurricular lessons focusing on TOEIC® Test in FY2014. The lessons consisted of schooling and online e-learning. The applicants for the lessons were almost three times as the class capacity. We are introducing additional special extracurricular classes focusing on TOEIC® Test in FY 2015.

2. Faculty Development program for Teaching in English

In order to increase the number of major subject and liberal arts courses offered in English, we invited a lecturer from Montclair State University and held a short-term version of their "Teaching in English" program during 22-24 Mar, 2015. We accepted the participants from other universities that are members of the TGU project to enhance the quality of the higher education in Japan. As a result, 68 people including 26 people from other universities participated the program.



〈 Faculty Development Program 〉

3. FY2015 Progress

■ Common indicators and targets

Internationalization

1. The ratio of International Students

The ratio of international students have increased to 6.0% (501 students) in FY2015 from 4.3% (361 students) in FY2014. We actively accepted students from “Science without Borders” program funded by the Brazilian government and also those from “the African Business Education (ABE) Initiative for Youth” by the Japanese government. We also participated in study abroad fairs held overseas.

2. The ratio of students with study abroad experience

We enriched the study abroad programs such as the English Language Program and Global Project Based Learning and achieved to increase ratio of students with abroad experience (with credits) to 4.4% (358 students) from 2.5% (209 students) in FY2014. Including no credit program, we sent 712 students. Number of Global PBL (Global Project Based Learning) has been increased from 17 (FY2014) to 38 (FY2015). We do continue enhancing international programs which take advantage of our Institution by utilizing GTI framework.

3. The number (ratio) of subjects offered in English

The number of subjects offered in English has increased from 30 (1.1%) in FY2014 to 45 (1.3%) in the undergraduate level and from 74 to 84 in the graduate level. The acceptance of students from “Science without Borders” program accelerated the move to increase the number of subjects offered in English.

4. Initiative to assess, manage, and improve students' language level

We have conducted 6 free TOEIC® IP Test a year on campus, as well as the CEFR (The Common European Framework of Reference for Languages: Learning, Teaching, Assessment) to assess students' foreign language proficiencies. We gave feedback and evaluation of test results to faculty members monthly and encouraged the efforts by faculty and students. In addition to the regular curriculum, we have offered students free online English lessons, special courses for TOEIC® Test and intensive TOEIC courses in Hayama. Such efforts led to upgrade of students' English proficiency.



〈 TOEIC Awarding Ceremony 〉

Governance Reform

1. Swift decision-making

To integrate the management between Board of Directors and faculty, it has been decided to introduce the system in which the President is appointed by Board of Directors. It enables the President to have an authority for personnel issues and finance management.

2. Clear visions and development of mid-term plans

We set clear visions with goal and performance indicators such as Key Goal Indicator (KGI) and Key Performance Indicator (KPI), and implement PDCA cycles to achieve our goals, heading to 100th anniversary in 2027.

3. Initiative for advancement of administrative staff

We have been proactive in recruiting administrative staff with fluency in foreign languages and experience of working overseas. Also, we offered training to administrative staff to enhance their global awareness. In addition, we have introduced the skill up support system to improve English proficiency.



〈 Led by solid leadership of the President 〉

Education reform

1. Promotion of student participation in assessment of University administration

Class evaluation by students has been carried out in a high ratio of over 84.5%. In addition, we strove for the expansion of the Students Consulting on Teaching (SCOT), which is one of class consulting systems where students who received training beforehand participate in classes and give feedback to faculty

2. Utilization of Teaching Assistants (TAs)

We employed 584 Teaching Assistants (TAs) to provide assistance to faculty members. This in turn facilitated the growth of TAs and enriched the content of classes. Likewise, we promoted the expansion of the system of Learning Facilitators (LFs) whose additional duties include not only assisting faculty members but also supporting faculty members in educational and research activities.

3. Selection of new students by diversified entrance examination

As a result of its participation in study abroad fairs held overseas, SIT saw a substantial increase in the number of applicants through the Examination for Japanese University Admission for International Students (EJU) and the number of enrollment. Furthermore, a scheme of admission on recommendation was created for Shanghai Japanese School, for which we contributed to establish its school. We also continued to accept students with TOEFL score as an evidence to prove English language skill.

■ University's own indicators and targets

1. Number and amounts of contract research, joint research and competitive funds (National Research Projects)
Through working with industries and implementing measures for acquisition of National Research Projects, we procured JP¥713 millions for 297 contracts and projects in FY2015.(JP¥487 millions for 242 contracts and projects in FY2014)

2. Number of Global Project Based Learning (gPBL) program participants
288 students participated in 29 gPBL programs overseas and about 137 students took part in 9 gPBL programs in Japan. In total, 425 students worked on practical projects, and develop problem-solving skills and international sensibilities.

3. Number of Overseas Internship program participants & Number of partner universities with Joint-Degree (JD) and Double-Degree (DD) agreements
We sent 35 students on the Global Internship program to 25 private enterprises. Meanwhile, we have mutual Joint Degree (JD) and Double Degree (DD) agreements with 1 university, and plan to sign the agreements with 5 other universities in the near future.



〈 gPBL 〉

■ Distinguishing approach based on characteristics of university

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2. Implementation of World class university system

Some of our departments have decided to introduce a quarter system. Also, we launched a study committee to establish a new department for JD and DD programs. Heading to 100th anniversary in 2027, we also set KGI and KPI, in order to be ranked as one of the top 10 Asian technical universities.

3. Establishment of GTI (Global Technology Initiative) consortium
GTI Consortium was launched in December 3, 2015. With Shibaura Institute of Technology (SIT) as its incorporator and Japanese and Southeast Asian universities and private companies as members, the Consortium aims to bolster cooperation among government agencies, academic and industry members, training of new engineering talents, promoting innovations and the competitiveness of the technological industries in the region. About 150 institutions has already been registered as members. (March 2016)



〈 GTI Consortium Symposium 〉

■ Other approach

1. Initiative to improve students' English ability

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2. Opening of GLC (Global Learning Commons)

We have decided to launch GLC, a facility for intercultural exchange and promotion of diversity, in Omiya campus. GLC has just opened in April 2016. At GLC, students are able to receive counseling for study abroad programs from the staff including student staff, interact with partner universities through a TV meeting system and etc. GLC is expected to function as the core space for 1. Diversity

2. Encouragement for participating Global activity 3. Facilitation of Cross-cultural activities 4. Generation of Peer Support (spirit of mutual aid for study) culture.



〈 Global Learning Commons 〉