



The Executive Summary Report on Quality Assurance for The Academic Year 2012



Quality Assurance Subdivision
Academic Support Division
Suranaree University of Technology



Foreword

This self-assessment report is compiled for the purpose of analyzing and reporting the performance of Suranaree University of Technology (SUT) using the indicators and criteria set for that purpose by the Office of the Higher Education Commission (OHEC) and Suranaree University of Technology during the academic year 2012 (May 2012–April 2013). This report is intended for SUT and its stakeholders, especially the advisory board and the public in order to develop a higher level of quality and educational standards for the university.

Suranaree University of Technology has a policy of continuing educational assessment designed to create a quality organizational culture within the university. We began the educational quality assurance since the 1998 academic year, with the system and mechanism for educational assurance matching the university policy of “Centralized Services, Coordinated Missions”. Educational assessment and assurance have been improved and revised continuously up to now. In academic year 2011, SUT has used all 23 OHEC indicators that accentuate input and process, and included 18 indicators, set out by the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA), which focus on output/outcome. In addition, SUT has incorporated 2 indicators of the “3D Policy for Educational Institutes (3D)”, and added 8 SUT indicators, making it a total of 11 components with 51 indicators. Based on the Second 15-Year Long Range Plan on Higher Education (2008-2022), the university has applied these components as the main standards in its quality

assessment for a Research/Graduate University with major emphasis on advanced research and production of quality graduates especially at the doctoral degree level.

For academic year 2012, SUT has implemented educational quality assessment both at a departmental level during July 1-9, 2013, and at an institutional level during August 5-7, 2013. The appointed Educational Quality Assessment Committees consisted of external and internal distinguished scholars and experts. In addition, the university has organized an annual QA Forum, aiming to identify issues, brainstorm, exchange, and develop mutual understanding, and awareness of the value of educational quality assurance. From these ongoing activities, the university has taken into account its assessment results in determining SUT policy in order to strengthen its distinctive features, and, based on the indicators, correct those features in which it is lacking behind. Moreover, each individual unit of SUT has developed a plan; based on the weak points of its self-assessment and quality assurance process; in order to improve and correct performance in its development. This leads to concrete implementation and optimal achievement, resulting in the improvement and development of quality educational management in a more efficient, effective and ongoing manner.



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Rector

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Report on Quality Assurance for Academic Year 2012

Executive Summary

Suranaree University of Technology (SUT) is Thailand's first public autonomous, non-bureaucratic university in the form of a "government-supervised university" focusing on teaching and research in areas of science and technology essential for national development identified under the administrative principle of "centralized services, coordinated missions". The university has implemented educational quality assurance in an ongoing manner since academic year 1998. In academic year 2007, the university adjusted its indicators to make them consistent with the indicators set by the Office of the Higher Education Commission (OHEC) for advanced research and graduate-oriented university, particularly at the level of doctoral degrees. In academic year 2010, the OHEC revised its indicators and criteria to modify them from a 3-point scale to a 5-point one. As for the quality assurance process for academic year 2011, the university has integrated all 23 OHEC indicators on input and process, and 18 indicators, set by the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA), on output/outcome in order to cover input, process and output/outcome. In addition, 2 indicators from the "3D Policy for Educational Institutes (3D)" and 8 SUT indicators were added to its quality assurance process, resulting in a total of 11 components with 51 indicators covering all factors affecting the university's quality which are input, process, and output/outcome. Such quality assurance indicators can be summarized as follows:

1. Component 1: Philosophy, Commitments, Objectives, and Implementation Plans (3 indicators)
2. Component 2: Graduate Production (16 indicators)
3. Component 3: Student Development Activities (2 indicators)
4. Component 4: Research (6 indicators)
5. Component 5: Academic Services to Society (5 indicators).
6. Component 6: Preservation of Arts and Culture (3 indicators)
7. Component 7: Administration and Management (7 indicators)
8. Component 8: Finance and Budgeting (1 indicator)
9. Component 9: System and Mechanism for Quality Assurance (2 indicators)
10. Component 10: 3D Policy for Educational Institutes (2 indicators)
11. Component 11: Technology Adaptation, Transfer, and Development (4 indicators)

The university has implemented its educational quality assurance, with details of components, indicators, and level of appraisal results for each indicator presented in Chapter 2. A summary of strengths/suggestions and weaknesses/solutions for the university provided in Chapter 3 can be summarized as follows:

Overall Results of Educational Quality Assurance

1. The performance results of the university can be summed up as follows:
 - 1) According to the OHEC indicators, the performance results of the university were at a “very good” level in terms of quality, with an average of 4.83 out of 5, which was 96.60% (with 20 out of 23 indicators meeting the standards)
 - 2) According to the integration of the OHEC, ONESQA, and SUT indicators, the performance results of the university were at a “very good” level in terms of quality, with an average of 4.57 out of 5, which was 91.40% (with 36 out of 47 indicators meeting the standards).
 - 3) According to an integration of the OHEC and ONESQA indicators, the performance results of the university were at a “very good” level in terms of quality, with an average of 4.80 out of 5, which was 96.00% (with 31 out of 37 indicators meeting the standards).
2. Based on the 50 indicators (excluding the ONESQA indicator 15), it was found that the implementation of the 46 indicators were at “good” and “very good” levels (4 and 5 points), or classified as distinctive features as explained below:

- 1) Indicator 1.1 Plan Development Process
- 2) ONESQA Indicator 16 Results from the Institution's Development Based on its Identities
 - 16.1 The Institution Administration Results that Have Become the Identities
 - 16.2 The Graduates Development Results Based on the Identities
- 3) ONESQA Indicator 17 Results from the Institution's Development Based on its Focuses and Strengths Reflecting the Institution's Characteristics
- 4) Indicator 2.1 System and Mechanism for Curriculum Development and Administration
- 5) Indicator 2.2 Full-Time Instructors Holding a Doctorate Degree
- 6) Indicator 2.4 System for Faculty and Support Personnel Development
- 7) Indicator 2.5 Library, Educational Equipment and Learning Environment
- 8) Indicator 2.6 System and Mechanism for Teaching and Learning Management
- 9) Indicator 2.7 System and Mechanism to Develop the Educational Achievements According to Graduate Characteristics
- 10) Indicator 2.8 Success Rate of Morality and Ethics Edification for Students

- 11) Indicator 2.11* Students' GPAX.
 - b. graduate level
- 12) ONESQA Indicator 1 The Graduates with Bachelor's Degrees Who Have Jobs within One Year
- 13) ONESQA Indicator 3 Works (Including Papers) Created by the Graduates with Master's Degrees, which Have Been Published or Disseminated
- 14) ONESQA Indicator 4 Works (Including Papers) Created by the Graduates with Doctoral Degrees, which Have Been Published or Disseminated
- 15) ONESQA Indicator 14 Professional Development
- 16) Indicator 3.1 System and Mechanism to Provide Information Advice and Services
- 17) Indicator 3.2 System and Mechanism to Promote Student Activities
- 18) Indicator 4.1 System and Mechanism to Develop Research or Creative Work
- 19) Indicator 4.2 System and Mechanism to Manage the Knowledge Gained from Research or Creative Work
- 20) Indicator 4.3 Funds for Research or Creative Work per Full-Time Instructor/Researcher

Note * refers to SUT indicators added to the OHEC indicators

- 21) ONESQA Indicator 5 Published or Disseminated Research or Creative Works
- 22) ONESQA Indicator 6 Useful Research or Creative Works
- 23) ONESQA Indicator 7 Quality-Accredited Academic Works
- 24) Indicator 5.1 System and Mechanisms for Academic Services to the Society
- 25) Indicator 5.2 Academic Service Process for the Benefits of the Society
- 26) ONESQA Indicator 8 Results from Applying Knowledge and Experiences Involving Academic Services for Teaching/Learning and Research Development
- 27) ONESQA Indicator 9 Results from Learning and Strengthening Local Communities or External Organizations
- 28) ONESQA Indicator 18 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats
 - 18.1 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats in Issue 1 (Inside the Institution)
 - 18.2 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats in Issue 2 (Outside the Institution)
- 29) Indicator 6.1 System and Mechanism for the Preservation of Arts and Culture

- 30) ONESQA Indicator 10 Promoting and Supporting Arts and Cultures
- 31) ONESQA Indicator 11 Developing the Aesthetics of Arts and Cultures
- 32) Indicator 7.1 Leadership of the Institution Council and Administrators at all Levels of the Institution
- 33) Indicator 7.2 Institutional Development towards Learning Institution
- 34) Indicator 7.3 Information System for Administration and Decision-Making
- 35) Indicator 7.4 Risk Management System
- 36) Indicator 7.5 * Satisfaction of Service Receivers on “Centralized Services, Coordinated Missions”
- 37) ONESQA Indicator 12 Performance of Institution Council in its Designated Roles and Responsibilities
- 38) ONESQA Indicator 13 Performance of Institution Administrators in Regard to their Roles and Responsibilities
- 39) Indicator 8.1 System and Mechanism for Finance and budgeting

Note * refers to SUT indicators added to the OHEC indicators

- 40) Indicator 9.1 System and Mechanism for Internal Quality Assurance
- 41) Indicator 10.1 3D Policy for Educational Institutes
- 42) Indicator 10.2 Implementation Results of 3D Policy on Learners' Knowledge, Attitude, and Behaviors as Determined by the Goals of Desired Learners' Characteristics of 3D
- 43) Indicator 11.1* System and Mechanism for Technology Adaption, Transfer, and Development According to the University's Goals
- 44) Indicator 11.2* Percentage of Full-Time Faculty Participating in Suitable Technology Adaptation, Transfer, and Development
- 45) Indicator 11.3* Percentage of Activities/Projects in Technology Adaptation, Transfer, and Development Appropriate to for Full-Time Faculty members
- 46) Indicator 11.4* Satisfaction of Service Receivers on Technology Adaptation, Transfer, and Development

Note * refers to SUT indicators added to the OHEC indicators

There were 3 indicators that should be improved in order to meet the standards (the score is 2 points), or classified as weaknesses. They were:

- 1) Indicator 2.3 Full-time Instructors holding an academic position
 - 2) Indicator 2.9* Percentage of dismissed students who failed to meet the minimum academic standard per cohort
 - a) undergraduate level
 - b) graduate level
 - 3) Indicator 2.10 * Percentage of undergraduate students graduating on time in each cohort
3. Based on the indicators in need of improvement in order to meet the standards, when arranged in order of importance in accordance with the administrative management perspectives of Balanced Scorecard (BSC), such indicators can be classified into 3 categories as follows:
- 3.1. Students and Stakeholders consists of 2 indicators:
- 1) Indicator 2.9 * Percentage of dismissed students who failed to meet the minimum academic standard per cohort
 - a) undergraduate level
 - b) graduate level
 - 2) Indicator 2.10 * Percentage of undergraduate students graduating on time in each cohort

Note * refers to SUT indicators added to the OHEC indicators

Suranaree University of Technology and all its departments involved with performance assessment should develop measures designed to support and encourage students' learning achievements, resulting specifically in a decrease in the number of dismissed students and an increase in the number of students' graduation rates within the normal time scale. To achieve these goals, the university should apply the following input and process measures:

Input Measures

- The university should publicize its alumni news, student recipient of awards, and the university's strength through various channels such as the print media, the SUT website, radio and television so as to make SUT's strong reputation more visible and therefore attract more outstanding students.

Process Measures

- The SUT Academic Affairs and Institutes should solve the problems of a students' GPAX currently being lower than the university target (GPAX 2.36 : Set Target \geq 2.50), the academic dismissal rate of undergraduate students who failed to meet the minimum academic standard per cohort, is higher than the university target (percentage of 13.13 : Set target $<$ percentage of 5), the academic dismissal rate of graduate students who failed to meet the minimum academic

standard per cohort, is higher than the university target (percentage of 2.69 : Set target < percentage of 1), and the lower graduation rate of undergraduate students within the time schedule per cohort (percentage of 45.75). In doing to achieve these goals, the university should develop systems and mechanisms for assisting and supporting at-risk students by organizing on a regular basis fundamental knowledge preparation camps and providing higher level academic study skills for first year students. Moreover, the students' academic problems should be studied and analyzed for concrete solutions through institutional research projects.

3.2. Human resources, Learning, and Innovations has 1 indicator:

1) Indicator 2.3 Full-time Instructors holding an academic position
The university should arrange an Individual Development Plan (IDP) for the career advancement of faculty members and establish a plan to encourage mutual development of faculty members throughout all schools and institutes.

3.3. Internal Processes have 1 indicator:

1) Indicator 2.1 System and Mechanism for Curriculum
Development and Administration

3.3.1. Fourteen academic programs have been reviewed. As a result, they are currently being improved to comply with the Thai Qualifications Framework for Higher Education (TQF: HEd), namely:

- 1) Institute of Sciences with 8 programs:
 - (1) School of Biochemistry i.e. Biochemistry (Master and Doctoral programs)
 - (2) School of Chemistry i.e. Chemistry (Master and Doctoral programs)
 - (3) School of Mathematics i.e. Applied Mathematics (Master and Doctoral programs)
 - (4) School of Laser Technology and Photonics (Master and Doctoral programs)
- 2) Institute of Social Technology with 1 program:
 - (1) School of Management Technology (Bachelor, Master, and Doctoral programs)
- 3) Institute of Agriculture with 5 programs:
 - (1) School of Plant Production Technology (Bachelor, Master, and Doctoral programs)
 - (2) School of Animal Production Technology (Master and Doctoral programs)

In 2013, all 14 programs have been improved in line with the Thai Qualifications Framework for Higher Education (TQF: HEd).

Results of Quality Assessment by Quality Components at the Institutional Level (Academic Years 2010-2012)

Component 1 : Philosophy, Commitments, Objectives and Implementation Plans

1. SUT has an annual operation plan and various projects that comply with its missions and vision as well as the national strategy, and that can respond to both internal and external changes. Besides that, there were the strategic plans that accord with SUT's missions, vision, and university council's policy, the 11th National Economic and Social Development Plan (2012-2016), the 2nd revision of the Strategic Plan for Higher Education Reform, and the Second 15-Year Long Range Plan on Higher Education (2008-2022). Currently, the SUT 10-Year Strategic Development plan (2012-2021), the SUT's 11th Development Plan (2012-2016), and the Annual Action Plan-Fiscal year 2013 have been implemented through routine operation and projects. For example, the analysis of the effects of using proactive public relations for student recruitment in order to increase the number of high-ability students, and the analysis of the effects of the ASEAN Community to prepare SUT for the ASEAN Community. Specifically, the university has organized a recruitment plan that attracts more high-ability students, allocated enough scholarships, and developed various projects concerning the university's preparation for the ASEAN Community. In addition, the SUT Strategic Development Plan and the

SUT Development Plan are evaluated by the Delphi technique for every fiscal year with results used for improving the university plans and projects.

2. The university has adjusted measures or methods for following, auditing, and appraising its achievements at the unit and personal levels to be in accordance with the annual action plan. These measures have been concretely and clearly implemented. There is a committee responsible for carrying out a follow-up of budget utilization and stimulate operations specified in the action plan every quarter. Besides, there is a committee from the University Council to follow, audit, and assess the university's performance twice a year. In addition, follow-up and assessment according to the educational quality assurance system have been performed annually while an internal audit has been carried out four times a year with its results used for SWOT analysis. The university also has a Risk Management System which is assessed by the Office of the Auditor General of Thailand once a year.

Component 2 : Graduate Production

1. SUT has followed the students' learning outcomes and uses the results of the students' evaluation of instructors' teaching performances to adjust teaching and learning constantly and with concrete results.

2. The university has carried out institutional research to investigate issues in developing teaching and learning, discovering the causes of learning problems and identifying solutions for teaching (http://web.sut.ac.th/dpn/index.php?option=com_content&view=article&id=34:2011-02-08-09-26-49&catid+3:2010-07-22-13-46-44&Itemid=49), for example, large-classroom learning models, factors affecting SUT students' learning achievements in certain courses, causes of program dropouts in first year students, a comparison of students factors affecting four-year completion rate and over four-year completion rate, the study of academic achievement of re-entry students in academic year 2006. Other examples include articles on “The Development of Structural Model for the Retention of Suranaree University Students”, and “The Relationships among the High schools and the University Records and the Entrance examination scores of the Suranaree University Students, Academic Year 1997-2000”.
3. The university has developed modern and standardized curricula by adding innovative courses, especially at the graduate level which has a selected topics course that enables instructors to keep up with current and up-to-date content and teach it each trimester. Besides, the university has strictly implemented the quality control of the curricula which has been continuously well-recognized by the academic/professional sector. In so doing, the university has focused on the involvement of academic units, including the public and private sectors producing concrete results.

4. The university is proactive in publicizing its curriculum in various forms, such as the Educational Marketing Exhibition, SUT Curriculum Public Relations for Target School, and using information technology to reach the target group.
5. The university has conducted a needs analysis for the new curriculum. A public hearing and the assessment of its current curricula have been conducted to adjust and develop curriculum that is suitable for education and the national development's direction. Besides, implementing the Cooperative Education Training System increases the employment rate and salary of SUT graduates. In addition, the university has been recognized at an international level through its appointment as a satellite office in the Asian region for the World Association for Cooperative Education (WACE).
6. The university has more faculty members holding Doctoral degrees and maintains its standard in recruiting high potential lecturers by implementing a teaching test, a teaching evaluation (<http://fda.sut.ac.th>), and a performance appraisal (<http://mis.sut.ac.th/MISPublic/Default.aspx>). The university has also supported intellectual personnel with moral support in the form of awards such as an excellent teaching award, an outstanding research award, and an innovation of excellence award.
7. The university provides support for faculty holding Master degrees to pursue their studies at the doctoral level, with internal and external scholarships and sabbatical leave.

8. The SUT Teaching Support Unit to Faculty Development Academy (<http://fda.sut.ac.th>) has organized various trainings programs related to teaching techniques such as student-centered learning, large-classroom learning, life-long learning, and deep and active learning to increase students' satisfaction with faculty's teaching as well as to sustain faculty's need to develop high-quality teaching.
9. The university supports faculty of higher academic rank by encouraging and providing support for conducting quality research, implementing One Instructor One Product Project, adjusting payment for faculty's academic rank, publication of research articles in international academic journals, and publication of textbooks and teaching materials.
10. The university has a faculty and a research mentoring system.
11. The university has organized training on Techniques for Higher Education's Study and a Basic Science Knowledge Preparation Camp for freshmen in order to introduce them to the university learning system that requires a quality of self-reliance (<http://web.sut.ac.th/das/>). In addition, the university has offered tutoring classes, taught by graduate students or teaching assistants, to undergraduate students having problems understanding lessons during class time.
12. The university has taken measures for attracting more students with excellent academic records from both inside and outside the university, and allocated the following scholarships:

- 1) Scholarships for Outstanding Undergraduate Students
- 2) Scholarships in Celebration of the 84th Birthday Anniversary of His Majesty the King
- 3) Scholarships for students participating in the Academic Olympiads Camp, Promotion and Development of Mathematics and Science High Ability Camp, and students from various special projects.
- 4) Scholarships for Honors Program
- 5) Her Royal Highness Princess Maha Chakri Sirindhorn Scholarships
- 6) Scholarships for Students in the Southern Border Provinces of Thailand
- 7) SUT Athletic Scholarships
- 8) Scholarships for outstanding students in music and dance
- 9) SUT-Ph.D Scholarship Program for ASEAN (nine scholarships granted to students of higher education institutions in ASEAN countries)
- 10) Scholarships for outstanding students to study in a graduate program
- 11) Scholarships for potential students to study in a graduate program
- 12) Thesis Support Funds (30,000 baht for a Master's Degree and 50,000 baht for a Doctoral Degree) and funding in support of academic paper presentation (3,000 baht/person/year)
- 13) Graduate Scholarships for university faculty who have been granted outside research funding
- 14) SUT-Ph.D Scholarship for university faculty in support of Ph.D. production

Component 3 : Student Development Activities

1. SUT has organized activities to support students' development, leading to more student participation. The university has assigned no class on Friday afternoon and provided a budget for conducting various activities. This has resulted in a high level of student satisfaction and concrete benefits for the community.
2. The university has placed importance on students who have good academic records and also participate in university activities, and those who achieve outstanding performance in sports, to be a role model for other SUT students. In doing this, the university has granted scholarships, certificates for students with outstanding activities, and awards for excellent sporting achievement.
3. SUT has realized the importance of its alumni, thus the university academic institutes have regularly organized SUT Alumni Relations Program in the university and outside. In addition, SUT alumni, from the School of Metallurgical Engineering, School of Mechanical Engineering and School of Civil Engineering for example, have established education funds for students with limited money.

Component 4 : Research

1. SUT has been selected as one of the nine National Research Universities despite being the youngest university, thus indicating a great development in a short period of time.

2. The university has a clear direction for more research work that responds to local and national needs. As a result, research activities have been conscientiously conducted through research units and centers in which researchers work collaboratively and effectively as a team.
3. The university motivates its faculty members to produce more quality research work at national and international levels, through various measures such as the provision of matching funds, and the development of a research support infrastructure. In addition, there has been support for research activities through various internal funding sources. These include the SUT Research and Development Fund and Her Royal Highness Princess Maha Chakri Sirindhorn Innovation and Invention Fund, which emphasize high quality research work leading to innovation and invention. The university has also initiated standard measures in determining instructors/researchers' work load by equating their teaching loads with research loads. Instructors who conduct significant amounts of research teach less.
4. The university has a research mentoring system and allocates Research Grants for New Researchers, 100,000 baht/new instructor. The university also provides research training to enhance faculty's research skills leading toward national development.

5. The university has produced various applied research outputs:

Plastic Waste to Fuel Oil Conversion Machine Using Microwave Frequency, Research and Development on the Prototype of Infectious Waste Treatment Using Plasma-Arc Technology, the Mini Prototype Ethanol Production, The Prototype Waste to Alternative Energy in the Communities (to handle 3-5 tons of waste per day), The Development of the Breed of Korat Broiler Chickens and Korat Wagyu cattle (Japanese Black Cattle) pedigrees, Sex reversal of Nile tilapia, Low Calories and High Fiber Alginate Gel Product, Bakery Products and Resistive Starch Made from Thai rice, Development of Bacillus and Trichoderma Products in plant disease control, rhizobium and PGR for soybean growing against global warming, Micro-biotic Seeding Technology for Reducing the Fish Sauce Fermenting Duration, the Development of microorganisms for L-Lactic and D-Lactic acid production from cassava, Preparing Dense and Fermented Food for Goats Diets, Producing Organic Fertilizer and Chemical Organic Fertilizer form Local materials, The Three-Ring Compaction and Direct Shear Testing Mold, Intelligent Traffic Light System, Microstructure of Material Specification and Novel Material Research, The Production System Development of Organic Acid and Solvent in the Industrial Level, Mixing Co-enzyme Q 10 in Rice Bran Oil Process, Intelligent City Management System Model, Ready to Brew Black Sesame Powder Product, Ready to Eat Eri Silkworm Pupae Production Process, Calculation of Pregnancy Age and Delivery Software on a Mobile Phone, Bed Time Milk, High Efficient Electrospinning system for

producing nanofiber and nanostructure, High Performance Engineered Wood, Biopolymer-based packaging materials for hot and frozen packaging, Thai Herbal Treatment for Erectile Dysfunction in Men, the Mini CLC Lightweight Concrete Production Set, Landmark Voice-Report Systems, Position-Reporting GPS System Using GPRS Network, Low Temperature Stoneware Product, Production Process of Orange and Lemon Power with Spray Drier and Freezer, Bat Repelling System Using High Frequency Wave, Vehicle Speed Detector, Suranaree 473 Sunflower Breeder Seed, Environmentally Friendly Mosquito Larva Exterminator.

6. The university has established an Intellectual Property Management Office (IPMO-<http://www.sp.sut.ac.th/ipmo/>) that leads to operations of commercial intellectual property such as the Serisin Protein from Silk Cocoon Production Process, Rice Pasta Production Process, and Mini CLC Lightweight Concrete Production Set, including a publication of related intellectual property regulations.
7. The university provides funds to support faculty's research presentations both in Thailand and abroad, making SUT researchers and the university become well-recognized and playing major roles on the international stage, as evidenced by an increasing number of invited speakers and keynote speakers from SUT instructors/researchers or by those taking part in the organization of international academic conferences held abroad and hosting international academic conferences in Thailand or at SUT.

8. The university encourages faculty members to publish their research articles in well-accepted journals in their fields and pays a financial bonus to those whose research article is published in international journals without and with impact factors appearing in an international database (SCOPUS or ISI) based on the research quality and Journal Citation Report. That is, the university will give additional income to the corresponding author whose affiliation is SUT at a progressive rate from 4,000-40,000 baht. The university, moreover, provides the maximum of 80,000 baht per faculty per year for published research output according to the quality of the research and the journal.

Component 5 : Academic Services to the Society

1. SUT provides various forms of community services through the Technopolis, the Public Academic Service Unit, the Institute of Agricultural Technology (<http://csu.sut.ac.th/>), academic institutes, centers/institutes and divisions, including coordinating services of the university with public and private sectors.
2. The university has constantly developed a service system such as a “one stop service” that increases the satisfaction levels of various service recipients.
3. The university has continuously organized activities to promote relationships within SUT, nearby communities, and the Nakhon

Ratchasima province. The university, therefore, promotes a policy that encourages executives, faculty members, and staff in the support sections to collaborate in community services. For example, hosting the University Games of Thailand, co-hosting The 24th SEA Games, Loy Kratong Festival including various activities organized by Higher Education Network in the Lower Northeast, taking part in Day of Ya-Mo's Victory, Thirty-Two Districts Thirty-Two Doctors Project, Promotion of Academic Olympiads and Development of Science Standard Project, Science Classroom in University Affiliated School Project (SciUS), Academic and Scientific Camp, Development of Enterprise Quality Systems and Management. Development of Industrial Human Resource Potential, Agricultural Potential Development, and Laboratory Service.

Component 6 : Preservation of Arts and Culture

Although SUT is classified as a technology-oriented university, it also places prime importance upon the arts and cultural preservation and promotion by organizing the following activities: Wai Khru (paying respect to teachers) Ceremony, Loy Krathong Festival, Phalang Day, the Baisri Soo Khwan (a regional welcoming ceremony for new students), the Rod Nam Dam Hou, Songkran Festival (Thai New Year), the Tod Krathin and Tod Pha Phaa (making merit), and

Regional Thai Kite Competition. The university has also allocated budget for research on regional technology, Thai house hi-tech, Thai Studies and Anthropological Collection Room that collects and disseminates knowledge of northeastern arts and cultures, the Ancient Thai Technology Museum that displays thousands of ancient Thai technological tools useful for educational purposes and development ancient knowledge, and Nakhon Ratchasima Network (NARNET) of Center for Library Resources and Educational Media, which provides Nakhon Ratchasima' s local knowledge information services.

Component 7 : Administration and Management

1. The university has provided a training program for new generation executives to learn about the system and mechanisms, and administrative directions of the university in various aspects through experienced executives from internal and external organizations. The training also develops teamwork skills among new generation executives to strengthen their relationship and reduce problems and potential friction of collaboration.
2. The university has developed a Management Information System (MIS) for continuous use, with an emphasis on sustainable self-development. The SUT-MIS Database Unit takes direct responsibility for MIS and publicizes its use for effective administration and management to university faculty and personnel.

3. The university has developed a system and mechanism for collecting and reporting data according to the quality assurance criteria, in order to be able to use such data on-demand. In doing this, the SUT-MIS together with the Academic Affairs has developed an information system for generating online Self Assessment Reports (SAR) for university units and institutes. This system is convenient for the educational quality assessment committee from the Office of the Higher Education Commission (OHEC) and the Office for National Education Standards and Quality Assessment (ONESQA) to get access to the implementation results according to the quality assurance indicators. In addition, the university administrator can look at the implementation and assessment result of all the university units at any time. All university units have been entering data through the SAR online system since academic year 2012.

Component 8 : Finance and Budgeting

1. SUT has followed the finance regulations based on the principle of “Centralized Services, Coordinated Missions”, and developed a plan for utilizing shared resources between internal and external organizations.
2. The financial information of the university has been continuously used for the analysis of expense, financial status, and stability of the university. The information is as follows:

- 1) Total expenditure per number of full-time equivalent students.
- 2) Fixed assets per number of full-time equivalent students.
- 3) Percentage of net income in proportion to the operation budget

All this information is used as a supplement to decisions on implementation as planned and on university spending in order to maintain the stability of the university's financial status. In addition, the university has appointed a committee to plan financial strategy by collecting, studying, and analyzing information using SWOT Analysis to make the budget allocation reflect the university vision and commitments.

Component 9 : System and Mechanism for Quality Assurance

1. SUT has an internal quality assurance system for editing and assessing performance at the institutional level and unit level, by distinguished experts, from both internal and external institutions.
2. The results of internal and external assessment is taken into consideration in improving work performance and in determining the university plan. There is also quality assurance committee to monitor the university's operations based on its quality assessment results.
3. The university has disseminated its quality assurance system through the university's website (<http://www.sut.ac.th/qa/>).

4. The Student Affairs and the Academic Affairs have organized a workshop on Educational Quality Assurance for SUT students.
5. The university has a system to support the establishment of networks for educational quality assurance between internal and external organizations, by having SUT's educational assurance system under the administrative system of "Centralized Services, Coordinated Missions". Additionally, the university takes part in establishing Educational Quality Assurance Networks with various institutions, as evidenced in a meeting of 13 public autonomous universities' rectors and 17 higher education institutions' rectors in the Lower Northeastern Region, Educational Quality Assurance Committee, Subcommittee of Teaching and Learning Development of Higher Education Institutions' Network in the Lower Northeastern Region. In addition, the university has established the C - Internal Quality Assurance (C-IQA) for higher education network in the lower northeast to cooperatively develop solid quality assurance systems, exchange information and learn about educational quality assurance. This supports mutual shared resources and encourages an exchange of knowledge and learning through various projects/activities, thus establishing a strong internal quality assurance development network within the university and between universities.
6. The Office of the Higher Education Commission (OHEC) has implemented a pilot project on 2009-2010 Education Criteria for

Performance Excellence (EdPEX) to develop excellence in higher education quality. Many universities were invited to participate in this project and can be grouped as a group of institutions receiving certificates of honor from an internal quality assurance of higher education competition; a group of institutions achieving external quality assurance period 2 at excellent level; a group of 9 research universities, and a group of 82 institutions having experience in applying these standard criteria. For SUT, the Institute of Social Technology was selected as one of the 15 universities to join this project. Institutions participating in the project had to implement it for 18 months from June 2010 - December 2011. The Institute of Social Technology was also selected as one of the 18 universities to participate in the fast track project. In addition, other institutions has observed the activities on sharing lessons learning organized by OHEC and then applied for the project. The selection criteria for being in the project were assessed through the quality of Organization Profile (OP) submitted, and through the OP submission within the specified time.

Moreover, the Institute of Social Technology was selected as one of the 7 organizations to join the 2nd EdPEX project. The 7 organizations participating in the 2nd project are: the Institute of Social technology, Suranaree University of technology; the Faculty of Dentistry, Mahidol University; the Faculty of Engineering, Kasetsart University; the Faculty of Scienc, Naresuan University; the Faculty of Nursing, Walailuk

University; the Faculty of Fashion and Textile Design, Rajamangala University of Technology Phra Nakhon; the Faculty of Humanities and Social Sciences, Phuket Rajabhat University.

Component 10 : 3D Policy for Educational Institutes

To comply with the 3D Policy for Educational Institutes and to benefit student development, the Student Affairs was assigned, by SUT, the responsibility of studying the policy specified for being a 3D Educational Institute. With university decree No. 327/2010 of April 29, 2010 relating to the appointment of a committee for policy planning on institution development according to the 3D Policy for Educational Institutes, a working group is responsible for setting policy and creating a university development plan that complies with the 3D Policy. Therefore, relevant academic units can operate on the basis of the policy and indicators of the development plan, by providing training and organizing activities on democracy, decency, and freedom from drugs. Such activities were implemented by academic institutes and student activity clubs on an ongoing basis as follows:

1. **Democracy** is to be aware of the importance of and hold forth faith and confidence in a Democratic system with a constitutional monarchy, contempt for corruption and protesting against vote-buying and selling. The university has carried out various activities to promote such characteristics, i.e. the election of a Student Council Administration Organization, the election of the Student Clubs' Committees, the Student Dormitory Committees, including activities for honoring the Royal Highness.
2. **Decency** is to have moral value, ethics, decency, conscientiousness, and pride in the Thai ways of life, as well as to practice and adopt them as part of students' life styles. There are activities/projects to promote moral value and develop the ethics of students and faculty members and staff such as making merit, listening to sermons, practicing dharma, wearing traditional Thai costumes to Thai festivals like on Songkran Day and Loy Krathong Day.
3. **Drug-Free** is to understand and know about the dangers of drugs, and how to avoid them. The university has organized activities/projects to educate and to campaign students to be aware of the effects of drug abuse, with support in terms of budget, resource, facilities, and operational staff.

In the academic year 2012, SUT organized 3 learning activities on democracy, 55 ethical activities, and 10 anti-drug activities.

Component 11 : Technology Adaptation, Transfer, and Development

SUT has carried out technology adaptation, transfer, and development through the Technopolis in order to coordinate and provide support for faculty to exploit their knowledge and experience in offering academic services, namely the Industrial Technology Assistance Program (iTAP), the Suranaree University of Technology Business Incubator (SUTBI), the Suranaree University of Technology Science Park (SUTSP), the Research Center for Cassava and Products (RCaP), the Suranaree University of Technology Intellectual Property Management Office (SUT-IPMO), and the 32 Districts 32 Doctors Project. In addition, the university has various forms of research output: inventions, and innovations for concrete development and problem solving of the nation, for example:

1. Mosquito larva eradication, Solar powered drinking water filters, “Life-Saving Boat” for flood victims, Disposal of flood debris for assistance to the flood victims.
2. The Development of the breed of SUT and Korat Broiler Chickens and Korat Wagyu cattle (Japanese Black Cattle) pedigrees, Reducing the fish sauce fermenting duration using micro-biotic seeding, Surimi freshwater fish products, Bakery products and resistive starch made from Thai Rice, Alginate Gel, the Development of instant reformed rice for functional food, the Design of modified atmosphere packaging and

prediction of fresh vegetable and fruit shelf life to enhance value for agricultural products, Planting vegetables and fruit without soil or hydroponics, Preparing concentrated and fermented goat diets, Mushroom cultivation and processing, Fertilization and soil for cassava cultivation, Remedy of Streptococcosis outbreaks in Nile tilapia, Biogas pool construction, Producing and using of Bio-organic fertilizer, Azolla & BOF-System of Rice Intensification, SRI.

3. Poly-hydroxyl alcanoate biodegradable plastic (PHA) from cassava starch, oil from plastic waste producing machines by using microwave and heat transferred via UHT aluminum foil cartons, High efficient small incinerator, comprehensive community waste management for use as a renewable energy, an Intelligent traffic light system that coordinate light signals using time based from GPS.
4. Phage antibody for the use in fungus toxic contamination from screening, the making of enzyme deodorizing spray, the use of synchrotron light to confirm the development of stem cells into liver cells, Medical Imaging Software for Diagnosis and Medical Research for the use in hospital radiology department, Pragnancy Age Computing and Delivery Determining (PREG-CAL) Program on a Mobile Device, Standard public utilities in Nakhon Ratchasima for elderly construction models. These are the research for health.

In addition the university has placed an importance on University Social Responsibility (USR) as follows:

- 1. Society and environment** e.g. SUT Sharing in helping flood victims in Prajeenburi and Lopburi Provinces, Back to School III, Thai economic reforestation project, Eco Friendly System (Recycle Bank), Environmental Engineering Camp for local community, Inherit the history of Mee Korat (Korat flat noodle), Scientific Miracle of Baan Kudjit, Sufficient school, Ready for ASEAN, Dream Basketball court, Sustainable development of Mulberry, SUT Screening and medical monitoring of Influenza (H1N1) 2009, Doll donations to young children, We love the Library, and Preservation of Muang Yaa Mo (Korat province) and Korat music legends (Pleng Korat).
- 2. Religion promotion and preservation** e.g. SUT joining the great merit off-season robes offering on “Visakha Bucha Day, Buddha Jayanti Fair 2013”, Joining the merit end-season yellow robes offering “Thot Kathin Sangkhaprachasamakki”, Management Technology (MT) camp, SUT Joining Buddhist practice and volunteer spirit in developing Dharma Practice Ground.
- 3. Quality of life support and development** e.g. Teaching handwashing to young children, Badminton competition for building close relationships within Suranaree Network I, Health Promotion project “beautiful teeth, suitable age, good health”, Health care for foot and

mouth disease, Health promotion for child development and the elderly, Learning Camp, SUT almshouse, Mobile medical care unit, Study of the density of APOE4 gene and pattern of FTIR spectra in Alzheimer patients.

4. **Technology adaptation, transfer and development** e.g. the red electronic box, the 22nd SUT Anniversary of Suranaree University of Technology as society companion university, Academic consultation service to communities such as drip irrigation system for cassava planting, Biogas pool construction, Mushroom cultivation and processing, etc.
5. **Academic services and training** e.g. Organizing NECTEC e-Camp for students, e-Learning and animation development training, SUT Virtual Distance training, Providing useful and practical academic training services for communities, and promoting personnel and students roles for society.

Results of Quality Assessment by Components at Institutional Level Executive Summary

The university's self-assessment results in academic year 2012 achieved an overall level of "very good", with total assessment scores as follows:

Types of Indicators	Score	Assessment Level
Average of OHEC indicators (23 indicators)	4.83	Very good
Average of ONESQA indicators (14 indicators)	4.77	Very good
Average of SUT indicators (6 indicators + 4 sub-indicators)	3.71	Good
Average of OHEC + ONESQA + SUT indicators (43 indicators + 4 sub-indicators)	4.57	Achieved 35 indicators + 1 sub-indicator, with 76.60% Not achieved 8 indicators + 3 sub- indicator, with 23.40%
Average of OHEC + ONESQA indicators (37 indicators)	4.80	Very good

In consideration of SUT's self-assessment results, the overall operational results in accordance with the university's mission indicate the following:

Philosophy, Commitments, Objectives, and Implementation Plans:

The university has clearly set out its philosophy, pledge, objectives, and implementation plan. The university has a good system for follow-up, investigation, and assessment and its assessment results can be used for further operational improvement, thus, resulting in excellent development of the university, as shown in the assessment results of Component 1. In addition, the university has very good administration, graduate development, as well as identity and uniqueness development, according to the OHEC indicators 16.1, 16.2, and 17.

Graduate Production

The university has a successful mechanism for producing graduates, including learning and teaching processes. The university has employed information technology systems to support its commitment and an effective system for nurturing graduate students. SUT graduates has produced much research work as shown in the assessment results of Components 2 and 3 that attained a “very good” level.

However, the dropout rate, the percentage of students graduating on time, the students’ GPA did not meet the goal of SUT indicators 2.9-2.11 in Component 2, getting a “fair” level of its assessment results.

Therefore, the university should analyze its problems and develop a system and mechanism to solve such problem, for example, a system for follow-up on individual student to protect and solve student’s problems.

Research

The university has developed a committee structure and organization to administer and supervise its research policy. These are able to set up policy, allocate budget, and promote research output effectively, resulting in an increase in research cooperation and research output of the university's faculty. According to the assessment results of Component 4, it has attained a level of "very good".

However, the university's budget for operating and supporting research work is not stable due to its limited funding as a national research university. The university, thus, should develop a strategy to strengthen its long-term research funding from outside resources. In addition, it should have a mechanism to develop more interdisciplinary research projects.

Academic Services to the society

The university has a mechanism for providing academic services to the community, to plan, and to effectively implement research policy, thus, have received high recognition at the provincial and the regional levels, as well as from the people and entrepreneurs for its benefits to society. The assessment results for Component 5 were stated to be at a "very good" level.

Preservation of Arts and Culture

The university has attained a “very good” level for the assessment results of Component 6, the preservation of arts and culture. Nonetheless, according to the interview results of SUT students, they suggest that the university should focus on enhancing arts and cultural atmosphere on campus, and also encourage cooperation and participation from students in preserving the environment.

Administration and Management, Finance and Budgeting, Quality Assurance

There are members at all levels of the University Council and administration with outstanding leadership records who administer the university. In addition to the establishment of knowledge units, risk management and the implementation of the university are highly satisfactory. The university also has a solid quality assurance system and systematic operation. So, the university has received an assessment level of “very good” for Component 7 and 9. Although the implementation results of the university finance and budget were effective according to the assessment results of Component 8, which was at a “good” level, the university lacks a financial strategic planning.

Technology Adaptation, Transfer, and Development

According to the assessment results of Component 11 which was at a “very good” level, the university has adapted, transferred, and developed technology to have in effect been commercialized and solved many society problems.

Although the university has various channels in technology adaptation, transfer and development, there should be a platform for brainstorming on solutions to problems, for planning model scheme, or combining many small projects into larger ones with a high impact factor.

The present assessment results of the quality assessment committee were considered from evidence of SUT self-assessment, an interview of participants in and out of the university, and a visit to the university units.

The quality assessment committee hopes that the assessment results and suggestions of the present assessment will be useful for the university’s development in the future.

**Component 1 : Philosophy, Commitments, Objectives, and
Implementation Plans**

Strengths	Suggestions
<p>1. The university has effective systems for follow-ups, audits, and appraisals run by the appointed committee with the support or the manual provided</p> <p>2. There is an explicit written document reporting the follow-ups, audits, and appraisals in line with the indicators and university vision, including the appraisals for achievements and improvement plan for next year.</p>	<p>1. The university should set a more challenging goal to achieve its institutional vision of higher education in the field of science and technology and as a pillar of Thai society. The university should also set Benchmarking criteria in developing the university to become a leading university.</p>
Weaknesses	Solutions
None	None

Component 2 : Graduate Production

Strengths	Suggestions
<ol style="list-style-type: none"> 1. The university leadership has placed great importance on a vision for development and cooperation. 2. The Academic Senate, an important mechanism in monitoring academic issues, has used institutional research as a tool for developing new curricula. 3. The university has academic personnel and administrative staffs who devote themselves to their work and value the university. 4. All information technology systems link to the MIS to support the university's commitment to excellence and are useful for the administration, planning, and development of the university. 	<ol style="list-style-type: none"> 1. To find a clear method for student support and development, the university should have more studies or institutional research, such as the study of the faculty's role in nurturing students, access to and the utilization of the Center for Educational Innovation and Technology, and the effects of using online teaching media. 2. The university should integrate institutional research in a systematic manner in order to be used as a significant tool for academic development, for example, opening-closing certain curricula and curriculum improvement or student admission. These enable the Academic Senate to increase their generative duty mode and strategic duty mode.

Strengths	Suggestions
<p>5. There are systems and mechanisms for developing the academic personnel to become further professionalized from the beginning of their appointments. There are also processes for providing consultations and support in conducting research, initial academic appointments, and resolving teaching/learning and assessment problems.</p> <p>6. There is a knowledge management system to support professionalizing university faculty and generating appropriate knowledge.</p> <p>7. The university has adequate educational support systems to meet students' needs. Its learning environment also promotes self-learning by the students.</p> <p>8. The university has a policy for driving internationalization and various operations, such as providing funds for graduate students from 9 ASEAN countries.</p>	<p>3. The university should have a concrete personnel development plan gearing towards internationalization.</p>

Weaknesses	Solutions
<ol style="list-style-type: none"> 1. The concrete follow-up and student development process is vague. 2. The communication, connection and continuity between academic institutes, centers, institutes, and support units in operation are not clear enough. 3. There is no course committee to plan, improve, and develop the teaching/learning and assessment process of interdisciplinary courses. 4. Data of the university units have not been updated in the MIS, analyzed and used for planning and developing their units and commitment at full capacity. 	<ol style="list-style-type: none"> 1. There should be a concrete follow-up and student development process to monitor individual students. The university should also apply a proactive policy to prevent potential problems and to provide guidance and timely assistance to students. 2. The university should encourage communication/connection and continuity in operation between the academic institutes, centers, institutes, and support units in order to enhance seamless workspace. For example, between academic institutes and Center for International Affairs, academic institutes and Center for Educational Services, academic institutes/ centers and Division of Personnel, SUT-MIS Database Unit and other university units.

Weaknesses	Solutions
	<p>3. Interdisciplinary courses must have a standing committee consisting of academic faculty of related institutes to plan, improve, and develop teaching /learning and assessment processes together on a regular basis, in order to reach shared goals in a concrete manner. For examples, Preclinical course of the Institute of Sciences and Institute of Medicine, courses of Institute of the Nursing and Institute of Medicine.</p> <p>4. There should be a system and mechanism for encouraging the university units to update their data on MIS, analyze, and use the results for planning and developing their units and commitment at full capacity.</p>

Remarks/Suggestions:

1. The non-completion rate of students is high (491 students or 23.45% at undergraduate level with 275 students or 13.13% failed to meet the minimum academic standard, 156 students or 7.45% left the program, and 60 students or 2.87% failed to pay the tuition fee/register and disappeared; 116 students or 26.01% at graduate level with 12 students or 2.69% failed to meet the minimum of the academic standard, 62 students or 13.90% left the program, and 42 students or 9.42% failed to pay the tuition fee/register/graduate in a timely fashion). The overall undergraduate students' GPAX of 2.36 indicates that their knowledge development has not been effective although the university has provided a learning environment that promotes students' learning, and improved ratio of faculty per students with 1:32.
2. From the admission of the undergraduate students by quota, without any written test, the students' basic knowledge or readiness is unequal to those of national admission. To resolve this problem or weakness, the university has organized extra classes for the students. However, this approach was implemented only after the students had been admitted to SUT. Therefore, the university should have various proactive/approach strategies to solve problem sustainably, for example:

- Early recruitment
- Support for schools to produce qualified students
- Professional development of high school teachers to have solid academic qualifications

Component 3 : Student Development Activities

Strengths	Suggestions
<p>1. SUT students have engagement with the student development program teaching them to have self-discipline. This is because the Student Union and the Student Council have authority to organize various activities that promote teamwork.</p> <p>2. The activities organized by the Center for Cooperative Education are systematic and useful. Students gain benefits from knowledge codification of various courses to real work. The Cooperative Education system work together with external organizations to strengthen student' skills through an actual working environment.</p>	<p>1. The university should take the results from systematic analysis and resolve student's problems as stated in the manual and student's activities to monitor the students in effective ways.</p> <p>2. The university should encourage students to participate more in public consciousness activities by brainstorming ideas from the students in organizing the activities and operating the university clubs.</p>

Strengths	Suggestions
<p>3. There is a manual for recording student's problems and activities called "A record to success". The recording process has to be performed by the students themselves.</p> <p>4. There are student activities relating to public consciousness.</p>	<p>3. The university should have a strategy to promote and enhance the participation of students in building public consciousness and environmental awareness. According to the information from SUT alumni, the current students are different from students in the first 10 years of SUT's existence, in that the last 10 years have had more solid energy to organize the university society and environment than is currently the case.</p>
Weakness	Solutions
<p>1. The activities organized by the Student Union have no short-term and long-term goals.</p>	<p>1. The university should set the assessment goals conforming with the student activities such as determining the short-term and long-term goals of the activities like sporting activities. For example, an assessment to see whether student's health and academic performance have improved after playing sports should be conducted.</p>

Weakness	Solutions
	<p>2. In explaining Component 6, Indicator 3.2, although the university has taken the assessment results to improve its plans or activities for student development, this should be more explicit (demonstrating integrated activities or projects).</p>

Suggestions:

1. The university image should be developed to attract more students to study at SUT. According to the student's feedback, SUT is not their priority in pursuing their degree because it is in a remote, and inconvenient area of cassava fields which are quite hot. In addition, admission without any written test at SUT reduces their self-esteem. They feel they are admitted easily but might not be able to graduate.
2. The university should promote its image on its well equipped technology, teaching and learning, high qualification academic faculty, and as a university specialized in science and technology.

Component 4 : Research

Strengths	Suggestions
<ol style="list-style-type: none"> 1. The university has solid work units and a central committee to monitor research policy that encourages university academic personnel to create an abundance of research output. 2. The university has explicit short-term and long-term goals. 3. There is an effective mechanism for research development and allocation of research funds. 	<ol style="list-style-type: none"> 1. The university's budget for operating and supporting research work is unstable due to its limited funding as a national research university. The university, thus, should develop a strategy to strengthen its long-term research funding from outside resources. In addition, it should have a mechanism to develop more interdisciplinary research projects.
Weaknesses	Solutions
None	None

Component 5 : Academic Services to the Society

Strengths	Suggestions
<p>1. The university has fully implemented its academic services' commissions according to the PDCA cycle and has achieved very good results (Annual Report 2012, p.124-136). SUT academic services cover from community to regional provincial and national levels, especially in the Nakhonchaiburin area. In addition, many services have conformed to the university vision of being a dependable university for the community as well as the "Centralized Services, Coordinated Missions" principle, for example, co-resolving cassava mealybugs' problems, and SUT 32 Districts 32 Doctors Project.</p>	<p>1. The university units responsible for research commitment, technological adaptation and transfer, and academic services to society, e.g. Institute of Research and Development, Center for Scientific and Technological Equipment, and academic institutes, should have a platform for determining major problems in integrating commitment in initiative mode in order to increase explicit results on society, as in the case of The Cassava and its Product Research Center, for example.</p> <p>2. The university has been providing much support of modern scientific and technological equipment supplies. It should , therefore, develop an</p>

Strengths	Suggestions
	integrated action plan on teaching and learning, research, and academic services in order to worthily use the supplies and stimulate effective results in teaching/learning, research, and academic services in leaps and bounds.
Weaknesses	Solutions
None	None

Component 6 : Preservation of Arts and Culture

Strengths	Suggestions
1. There is an admission system for undergraduate students through the arts and culture quota, and the sport quota.	1. There should be a mechanism to increase the target number of admitted students through the arts and culture quota and the sport quota.

Weaknesses	Solutions
<ol style="list-style-type: none"> 1. Students admitted on a quota system of arts and culture quota, and sport quota have problems with academic performance. 2. General students have not much experience or roles in preserving arts and culture. 	<ol style="list-style-type: none"> 1. The university should apply more resources in monitoring students admitted through the arts and culture quota, and the sport quota in order to increase the achievement of their academic performance. 2. The university should create an artistic and cultural environment within the university, such as wearing traditional local costume, playing local sports (Thai boxing, fencing) at Thai festivals.

Component 7 : Administration and Management

Strengths	Suggestions
<ol style="list-style-type: none"> 1. The implementation of SUT University Council is highly effective because its meeting consist of a coordination of four councils of; Suranaree University of Technology, Walaiak University, 	<ol style="list-style-type: none"> 1. The university should develop the SUT-MIS system on a regular basis, e.g. getting real time data. 2. There should be methods of extending results to other university units to use as a good model.

Strengths	Suggestions
<p>Sukhothai Thammathirat Open University, and Thepsatri rajabhat University, leading to an exchange of knowledge and administration.</p> <p>2. SUT- MIS system is highly effective</p> <p>3. Some university units have explicit systematic administration and use the administrative tools in a suitable way, particularly EdPEX, Employment engagement and Student Engagement, thus becoming good model.</p>	
Weaknesses	Solutions
<p>1. The evaluation of service users' satisfaction with some university units has not been implemented.</p> <p>2. The university marketing and branding is not strong enough.</p> <p>3. The evaluation system of professional and general administration personnel, as well as merit judgment do not reflect real performance.</p>	<p>1. For the benefits of service development, every university unit should conduct the evaluation of service users' satisfaction by classifying the service users into different groups, such as faculty members, students, and external users.</p>

Weaknesses	Solutions
	<p>2. The Division of Public Relations should formulate a master plan to create visibility of the university or determine explicit directions of public relations. Its proactive public relations to create university branding is insufficient. In addition, the result indicators especially in the levels of output and results should be explicitly stated.</p> <p>3. The university should find methods, systems and mechanisms for performing results evaluation of professional and general administration personnel, and a judgment on the merits, that reflect the reality of their performance.</p>

Component 8 : Finance and Budgeting

Strengths	Suggestions
<ol style="list-style-type: none"> 1. The university has efficient financial data that can be analyzed in terms of its expenditure, financial status, and stability, on a regular basis. 2. The control of personnel expenditure against budget allotment is effective, i.e. less than 40% of the operation budget. 3. The university has been allocated the DPL budget for 769 million baht. 	None
Weaknesses	Solutions
<ol style="list-style-type: none"> 1. The financial strategic plan is not fully completed. 2. The university need additional money for construction especially for large projects. 	<ol style="list-style-type: none"> 1. The university has much opportunity to expand, particularly the SUT Medical Center and Public Health. The university has a large area so it should consider the area master plan along with the business plan in order to earn long-term income.

Weaknesses	Solutions
	2. The university should have plans and directions for earning sufficient income, otherwise it will affect financial stability in the future.

Remarks/Suggestions

1. Curriculum or academic institutes indicating the proportion of faculty member and students, that is having a professional autonomy, will result in a high expenditure.
2. The expenditure on public utilities is high, thus, the university should have strict measures to save it. If not, the university might face a water shortage in the future. However, the university has realized the seriousness of this problem and has formulated an explicit resolution plan in the future.

Component 9 : System and Mechanism for Quality Assurance

Strengths	Suggestions
<ol style="list-style-type: none"> 1. Many supporting organizations have use the PDCA cycle in implementing their missions. It consists of planning for doing, checking or evaluating, and acting or adjusting the plan, in a concrete manner. 2. The university has a strong unit that responsible for quality assurance. 	<ol style="list-style-type: none"> 1. The university should plan to use an educational assurance system for sustainability such as EdPEX or TQA. 2. The university should have systems and mechanisms that enable the academic institutes to achieve a “very good” level of appraisal results.
Weaknesses	Solutions
<ol style="list-style-type: none"> 1. Some activities of the academic institutes appear on the unit responsible for KPIs, not the institutes, although they co-organized the activities. 2. Some academic institutes have attained continuity of low assessment results, 1-2 points for many years and possibly permanently because they do not focus on these commitments. 	<ol style="list-style-type: none"> 1. The university unit should submit KPIs and all activities to the academic institutes before the annual internal assessment. 2. There should be an explicit agreement between the university and the academic institutes on canceling the commitments with no emphasis or reducing target values for those which are not objects of. However, if the set target values

Weaknesses	Solutions
	<p>are attained, the academic institute will get more credit.</p> <p>In addition, they should agree on setting the target values for the commitments that the academic institutes aim to increase, and should also give assessment points according to the target value of the academic institutes rather than those of the university.</p>

Component 10 : 3D Policy for Educational Institutes

Strengths	Suggestions
<p>1. The university has cooperated with the public sectors in the provincial areas in developing the 3D policy for educational institutes. For example, there was a coordination effort and collaboration among SUT and ‘Po Klang’ police station and work units at a provincial level to resolve the 3D (drug - free) problem, especially in entertainment places and liquor stores around the university.</p>	<p>1. The university should have proactive projects explicitly focusing on reducing, abandoning, quitting smoking and drinking.</p> <p>2. Problems of at-risk students should be identified in the First-year of admission in order to provide any specific resources to solve their problems more effectively.</p>

Strengths	Suggestions
2. The university has conducted an evaluation of student's problems in their First-year of admission.	
Weaknesses	Solutions
1. The 3D campaign launched by the Student Union does not have enough volunteer spirit to make changes to student's behavior. That is, "Their power has not been stimulated". Besides, the trimester system is inadequate for the time students have to do or participate in university activities.	<p>1. The university should include the participation of the students in the 3D operation.</p> <p>2. The assessment of the students who are at risk for problems associated with cigarette smoking and alcohol drinking should be done before attending cooperative education program. This is to formulate plans for adjusting their behaviors and life styles to the working environment, so as to achieve the utmost effectiveness of cooperative education and to maintain the positive image of the university.</p>

Component 11 : Technology Adaptation, Transfer, and Development

Strengths	Suggestions
<p>1. The university has implemented many commitments of Technology Adaptation, Transfer, and Development, and gained concrete effective results in the local, community, region and national levels, especially in the fields of agricultural technology and engineering (Annual Report 2012, p.137-148). In addition, the university has conducted an overall assessment for the past 20 years of its operation, and set new commitments focusing on innovation and creation, after the service commitment has been settled.</p>	<p>1. SUT, with Technopolis should organize a platform between internal and external organizations to analyze issues technology adaptation, transfer, and development required in the local areas, communities, regions, and countries. This will increase the integration of various disciplines, an emergence of new projects, and a combination of small projects into big projects. All these will lead to a higher impact.</p>

Weaknesses	Solutions
<ol style="list-style-type: none"> 1. The patents cosigned with the funding organization were not counted in the assessment process, promoted or made effective use of them. 2. Some academic institutes lack activities or projects relating to technology adaptation, transfer, and development. 	<ol style="list-style-type: none"> 1. In order to gather its evidential accomplishments, the university should coordinate and collect joint patents with the external funding, and it should also encourage the transfer of technology as well. 2. Technopolis as a main unit responsible for technology adaptation, transfer, and development should provide assistance to academic institutes that lack achievements, for example offering opportunities to work with institutes that have many achievements.

Uniqueness :
University of Innovation

Identity :
Science and Technology Graduates with Knowledge,
Moral Ethos, and Wisdom



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