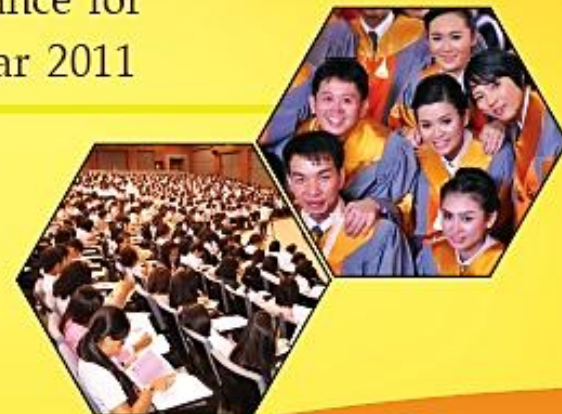The Executive Summary Report
on Quality Assurance for
The Academic Year 2011

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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 2011 (May 2011-April 2012). 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 2011, SUT has implemented educational quality assessment both at a departmental level during July 9-20, 2012, and at an institutional level during August 6-8, 2012. 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 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.

P. Suebka.

(Professor Dr. Prasart Suebka)

Rector

Suranaree University of Technology

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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 4.82 out of 5, which was 96.40% (with 20 out of 23 indicators meeting the standards)

   2) 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).

   3) 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 4.54 out of 5, which was 90.80% (with 36 out of 47 indicators meeting the standards).

2. Based on the 50 indicators (excluding the OHEC indicator 15), it was found that the implementation of the 46 indicators (44 indicators + 2 sub-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

Note * refers to SUT indicators added to the OHEC indicators

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

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

There were 2 indicators that should needed 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 per cohort

    a) undergraduate level

    b) graduate level

There was 1 indicator that needed to be improved to meet the standards (the score is 1 point), or classified as a weakness, which was:

1) 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 per cohort
   a) undergraduate level
   b) graduate level

2) Indicator 2.10* Percentage of undergraduate students graduating on time in each cohort

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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

- Proactively develop a recruitment program focusing on prospective high-ability students, such as students from the Academic Olympic Camp, the Promotion and Development of Mathematics and Science High Ability Camp, as well as students from various special programs.

Process Measures

- Improve systems and measurements for tracking the performance of students' study and providing concrete solutions to their study problems, as well as increasing the roles of faculty advisors through the Faculty Development Academy resulting in the development of more efficient professional faculty members capable of offering immediate and effective advise.

- Increase class time or tutoring time for fundamental courses for low-performance students to adjust their knowledge base in subjects such as calculus, physics, and chemistry.
- Constantly engage in classroom research, especially in medium and large sized classrooms to investigate the causes of students' failures, develop solutions, and immediately implement the results of such research.
- The SUT Academic Affairs and Institutes should solve the problems of students' GPAX being lower than the target (GPAX 2.34 : Set Target $\geq$ 2.50), of disqualified undergraduate students per cohort being higher than the target (percentage of 12.73 : Set target < percentage of 5), of disqualified graduate students per cohort being higher than the target (percentage of 3.43 : Set target < percentage of 1), and of lower graduation rates of undergraduate graduation within the time schedule per batch (percentage of 32.05), with more serious solutions to the problems and concrete results.

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 a personal development plan for the career advancement of faculty members through support systems, such as yearly teaching plan/workload and plan for developing teaching materials/books. In addition, the university should provide advisory support and motivate faculty members with no academic titles or those seeking promotion to bring more academic achievements in the forms of textbooks, books, and publications in quality journals.

3.3. Internal Processes has 1 indicator:

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

3.3.1 Fifteen academic programs are beyond the assessment cycle. They are now being improved to comply with the Thai Qualifications Framework for Higher Education (TQF: HEd), namely:

1) Institute of Sciences with 11 programs:

(1) School of Sports Sciences i.e. Sports Sciences program

(2) School of Chemistry i.e. Biochemistry (Master and Doctoral programs)

(3) School of Mathematics i.e. Applied Mathematics (Master and Doctoral programs)

(4) School of Physics (Master and Doctoral programs)

(5) School of Laser Technology and Photonics (Master and Doctoral programs)

(6) School of Remote Sensing i.e. Geoinformatics (Master and Doctoral programs)

2) Institutes of Engineering with 4 programs:

    (1) School of Transportation Engineering (Master and Doctoral programs)

    (2) School of Computer Engineering (Master program)

    (3) School of Mechatronics Engineering (Master program)

Results of Quality Assessment by Quality Components at the Institutional Level (Academic Years 2009-2011)

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. In addition, the assessment results of the University Development Plan Phase 9 were used for developing the University Development Plan Phase 10 (2007-2011). 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 and Development plan (2012-2021) and the SUT 5-Year Action Plan (2012-2016) have been completely formulated.

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 operational 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 actions specified in the operational 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 and identifying solutions for teaching and learning problems (http://www.sut.ac.th/dpn/reschedthai.html), for example large-classroom learning models, factors affecting SUT students' learning achievements in certain courses, and causes of dropping out of the program among first year students.

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 has publicized 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 morale 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.

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 Student.

    2) 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.

    3) Scholarship for outstanding students to study in the graduate program.

    4) Scholarship for potential students to study in the graduate program.

    5) Thesis Support Funds (30,000 baht for a Master's Degree and 50,000 baht for a Doctoral Degree) and funding for the dissemination of research work (3,000 baht/person/year).

    6) Graduate Scholarship for university faculty who have been granted outside research funding.

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 constantly organized SUT Alumni Relations in the university and outside, including granting year awards for role model alumni in order to be a good example for both current students and the alumni.

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. 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.

4. The university has produced various applied research outputs:

   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, Low Calories and High Fiber Alginate Gel Product, Environmentally Friendly Mosquito Larva Exterminator, The Development of the Breed of Korat Broiler Chickens for Being an Occupation of the Community Enterprises, The Three-Ring Compaction and Direct Shear Testing Mold, Smart Traffic Light System, Microstructure of Material Specification and Novel Material Research, The Production System Development of Organic Acid and Solvent in the Industrial Level, The Prototype Waste to Alternative Energy in the Communities (to handle 3-5 tons of waste per day).

5. The university has established an Intellectual Property Management Office (IPMO-http://www.sp.sut.ac.th/ipmo/) that leads to an operation of commercial intellectual property such as 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.

6. 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.

7. The university pays emolument to faculty whose research article is published in international journals with impact factors appearing in an international database (SCOPUS or ISI) at a progressive rate. That is, the university will pay extra emolument to the corresponding author whose affiliation is SUT.

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 of Higher Education Network in Nakhon Ratchasima, and taking part in Day of Ya-Mo's Victory, Thirty-Two Districts Thirty-Two Doctors Project, and Schools in front of Our Home Project.

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, Ancient Thai Technology Museum, and established Thai Studies and Anthropological Collection Room.

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.

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.

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 are also quality assurance committees 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.

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. All 18 institutions must cooperate in implementing the project for 3 years.

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. In the operational plan for fiscal year 2011, SUT has allocated a budget of 700,000 baht to develop an annual plan to comply with the 3D Policy for Educational Institutes, by focusing on activities/projects for the development of desired learners' characteristics in 3 dimensions, 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 2010, SUT organized 24 learning activities on democracy, 19 ethical activities, and 15 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.

Concerns/Suggestions

1. The university should implement an MIS system links to a major source of quality assurance information to support the university's expansion and the more complicated work system, institution units/personnel.
2. The university should have a system for transmitting its strategic goals and providing mutual understanding to all levels of personnel for effective achievement.
3. According to the assessment results of Component 2, graduate production has been below 3 for a long time, therefore, SUT should find out the causes and determine the solutions more seriously through institutional research. In addition, the assessment results should be a major source for developing policy to solve the problems. This is the most significant SUT agenda in which all institutional sections must earnestly cooperate.

Results of Quality Assessment by Components at Institutional Level
Executive Summary

Suranaree University of Technology is at the beginning of its eleventh Development Planning Process with its determination towards new challenges in developing its educational management and research to be recognized at the national and international levels. This includes producing scientific and technological works to be accepted by society and to be a supporter of society, as well as increasing knowledge in nourishing the arts and culture to communities and localities. The university has been implementing with high capabilities of administration management within the university's identities.

The performance results of the university in academic year 2011 considering from the self-assessment achieved a Very Good Level, with a total assessment point of 4.82 for OHEC indicators, 4.80 for OHEC indicators and ONESQA indicators, and 4.54 for OHEC indicators, ONESQA indicators and SUT indicators. In addition, the university attained full point on 9 components from 11 components. Although three components did not obtain a full point, there were two components, Component 2 Graduate Production and Component 7 Administration and Management, at a Very Good Level, and one component, Component 8 Finance and Budgeting, was at a Good Level.

The interview results of SUT personnel indicate that they are determined and loyal to the university.

The interview of the external stakeholders about SUT operations reveals that the university has a good reputation and is well recognized by society in general and communities in Nakhon Ratchasima for its capabilities in science, agricultural technology, and engineering. However, the communities and society around the university have high expectation about the university, and thus request more provision of academic services such as scholarships for their children, and an expansion of the university's public relations effort in relation to all capabilities of the university.

According to the follow-up of the internal assessment results of the university, the internal quality assessment committee (at the institutional level) suggests; as follows:

1. Assessment System

In consideration of SUT self-assessment results during the past years, the operational results of the university have achieved a Very Good Level. The university should develop assessment systems and methods to be in accord with the university's determination towards new challenges, particularly SUT indicator Component 11 Technology Adaptation, Transfer, and Development. Such a component should be an indicator that reflects the outcome from the development direction of the units that conform to the SUT Development Strategies. In addition, each indicator should be adjusted to become more challenging.

2. Overall Systems and Mechanisms of SUT

The follow-up on students at risk of academic dismissal and at risk students who cannot graduate on time should be carried out systematically, starting from taking a proactive approach in the admission process, for example, providing knowledge by field of study to students before they apply to the university, improving teaching and learning development and assessment processes especially the fundamental courses to be more efficient, and providing intensive monitoring of students.

3. Coordination among units

According to the follow-up of the operation results of the university units, their implementation plan, direction, and policy should include integration, brainstorming, cooperating, and sharing responsibilities in order to increase the efficacy of the university policy for coordinated missions.

4. Personnel Development Plan

The university, especially the Rector, has a strong determination to develop the university staff by formulating a concrete personnel development plan and providing mechanism to support new instructors, such as a faculty mentoring system, and a mechanism for

research support. However, to obtain effective implementation results of the personnel development plan on the academic and professional lines of work, SUT should encourage concrete projects that support the achievement of the plan.

5. Internationalization

The university should have a clear international policy in order to catch up with changes in society. Such policy should be disseminated throughout the relevant units for ultimate harmonized cooperation and stimulation.

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

Strength	Suggestion
1. There is a strategic plan and its concrete transmission process, covering all five missions of the university, from the institutional level to university units. This establishes the identity and uniqueness of the university. In addition, the PDCA cycle employed has made SUT identity to be more outstanding in administration management; teaching and learning; research; academic services; technology adaptation, transfer, and development, and preservation of arts and culture.	1. Although the PDCA process and cooperation of community in planning, attention, using various tools such as KM, and institution research have been implemented continuously, there is an improvement only on minor aspects. However, the outstanding identity and uniqueness seem to result mainly from top-down management. Therefore, if the university has an efficient bottom-up mechanism, it might help promote the identity and uniqueness of the university to be more distinctive, answer questions/concerns, and boost morale support for the university staff. For example, question raised from the bottom-up mechanism, such as 'does having a common room in the research room help to increase the research capability of the graduates?', might be answered by the institutional research and be brought into practice.

Weakness	Solution
1. Most university units do not have strategic plans, therefore there is no driving force with serious participation or opportunity to create innovations that represent each unit's identity.	2. The university should set up policies for every work unit within the university to develop strategic and operational plans that are in line with and support the development plan of the university.
2. The major tools in driving and determining the university policy, such as a system for entering, updating and validating research information of MIS and the personnel of internal auditing units, are incomplete and need more support in order to be proficient in providing guidance to other units especially in auditing information technology system.	3. The university should support, encourage and formulate a clear operational plan on manpower, budgeting, and time frame.

Component 2 : Graduate Production

Strength	Suggestion
1. The university has academic personnel with high qualifications and capabilities for doing research and in teaching and learning development.	-
2. All curricular programs have a teaching and learning system that focuses on practice in order to prepare students for real practical work.	
3. The university places high value on teaching and learning development by having a support unit that has the potential to develop instructors and students, such as the Faculty Development Academy and the Center for Library Resources and Educational Media.	
4. Many outcomes/graduate students' works have been published and disseminated.	
Weakness	**Solution**
-	-

Suggestions:

1. There should be a system and mechanism for developing and monitoring the curriculum in a complete and concrete manner.

2. There should be a system and mechanism for analyzing, developing, and preserving human resources to support the strategic planning process for the university development in every aspect.

3. The university should provide environment and opportunity that increase academic advancement of instructors to gain an academic title on a sustainable basis.

4. The indicators should be formulated in accordance with the strategic plan in order to emphasize the ultimate assessment results.

5. There should be a more effective system and mechanism for follow-up and assistance for students who are at risk of dropping out and those who are at risk of not graduating on time. For example, students in the Institute of Engineering and the Institute of Agricultural Technology.

6. The university should develop a proactive international policy to increase the opportunity in Asian competition.

7. The university should publicize its information to the public more in order to attract more students, expand other cooperation, and support output.

8. The university should encourage performance assessment of personnel at all levels including students, and take account of the appraisal results for effective and concrete development.

Component 3 : Student Development Activities

Strength	Suggestion
1. There are services for academic advising and life instruction guidance for students. There are also advising and guidance service systems, collaboration among work units within the university, qualified advising staffs, tutoring activities for students having academic problems, and hotline guidance services for students who have critical problems and need help. 2. SUT Cooperative Education and Career Development has potential in organizing activities to develop students' academic experiences and profession, and has been recognized at the national and	1. The university should study and analyze problems on advising and guidance services constantly in order to develop appropriate methods for qualified academic advising and life instruction guidance for students. 2. The university should study and analyze problems and performance results of the activities quantitatively and qualitatively on a regular basis in order to develop methods for organizing qualified activities to develop students' academic experience and profession.

Strength	Suggestion
international levels. In addition, it has continuously provided various activities domestically and abroad.	
Weakness	**Solution**
-	-

Suggestions:

1. In providing academic advising and life instruction guidance to students, the university should collect and analyze information on students' problems and report to the university executive and academic institutes continuously to encourage participation in problem-solving.

2. In organizing activities according to the information on the performance results, the university should analyze the consistency of organizing 5 types of student activities appointed by the university and 5 standard qualification to be more explicit.

Component 4 : Research

Strength	Suggestion
1. The university has excellent guidelines, mechanisms and support system that encourage university personnel to create an abundance of research output. 2. The university has many potential researchers. 3. The university has a good and strong organization to monitor research work and to determine the direction for research development.	1. The university should push towards creating core capabilities in conducting research in order to stimulate the development for becoming an excellent research center and moving towards world class research. 2. The university should create certain mechanism to support high quality research to meet the demands of society and nation, especially the urgent issues. The mechanism should also support innovative research for practical purpose and maximum benefits for all academic institutes. In addition, the university should seriously develop research clusters engaged in targeted research.
Weakness	**Solution**
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Component 5 : Academic Services to the Society

Strength	Suggestion
1. In terms of a system and mechanism for providing academic services to society, the university has a policy on criteria for the workload assignment and minimum workloads for instructors for each trimester, with the Technopolis as a major coordinating unit. 2. In terms of a process of academic service provision for society's benefits, the university has a cooperation project between communities and entrepreneurs. In addition, many projects have high impact performance, for example, The Korat Broiler Chickens Project, An Integrated Approach to Management of Municipal Solid Waste Used as Renewable Energy Project, Industrial Technology Assistance Project (iTAP), SUT Science Park Project.	1. The university should develop measures for promotion, auditing, and follow-up the implementation results of the academic services system and mechanism as stated in the university's plan. 2. Academic service project should be an innovation in industrial development.
Weakness	Solution
-	-

Suggestions:

1. The integration of academic services into society, teaching/learning, and research activities should be developed to be a source of knowledge for instructors, researchers, and students in implementing projects or activities for the benefit of various communities and entrepreneurs on a continuing and sustainable basis.

2. The university should revise its administration processes, for instance through the formulation of an action plan for work units and the development of a more effective follow-up plan.

3. The information on the integration of academic services of all academic institutes should be analyzed to see the implementation results. The analysis results are used to stimulate the institutes to produce more integrated results.

Component 6 : Preservation of Arts and Culture

Strength	Suggestion
1. There are systems, mechanisms, and implementations in line with PDCA at the university level. In practice, there is cooperation and participation from many work units.	1. Promote and determine an action plan to disseminate Thai arts and culture to be widely recognized such as at the ASEAN level.

Weakness	Solution
1. No strategic plan on arts and culture at the unit level leads to no opportunity for preservation, promotion, and maintaining arts and culture that show the identity of each unit. Activities on preservation and promotion of local wisdom in sciences, engineering, and medicine should be encouraged.	1. The strategic and action plans for conducting activities at the unit levels should be appointed in the university policy.

Component 7 : Administration and Management

Strength	Suggestion
1. The University Council has systems for follow-ups, audits, and appraisals for achievements. Such systems also follow performance of major missions of the university concretely and continuously.	1. The university should stimulate the formation of a personnel development plan to conform with current and future implementations. 2. The university should encourage personnel to apply for academic positions according to the academic progress as soon as possible, including promoting the support of personnel in acquiring knowledge and self-development continuously.

Strength	Suggestion
2. SUT has flexibility in administration of "Centralized Services, Coordinated Missions" that enables a combination of some work centers for utmost utilization of resources, and an incorporation of potential personnel to develop the university. 3. There is a flexible administration system that enables the university to change the systems and solve problems immediately.	3. The follow-up and assessment results of subcontracting services should be taken into consideration for decision making on hiring any subcontracting services. 4. There should be an evaluation of the executives and self-assessment by members from the institutes, centers, and institution. 5. The university should increase the completeness of Knowledge Management (KM) and of different units. 6. The university should continuously improve its Management Information System (MIS) to operate with full capacity and more effectively. 7. The coordination of units within the university that follows the administration management of "Centralized Services, Coordinated Missions" should be improved to be more efficient by having a

Strength	Suggestion
	flow chart that clearly illustrates administration management of "Centralized Services, Coordinated Missions".
	8. The systems for follow-ups, internal audits, and risk management should be better developed to alleviate the remarks about university performance from Office of the Auditor General of Thailand. The university should have Tenuine economical measures.

Weakness	Solution
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Component 8 : Finance and Budgeting

Strength	Suggestion
1. The university follows financial regulations determined by the university under the administrative principle of "Centralized Services, Coordinated Missions", and has a plan for mutual use of resources from internal and external organizations. 2. The university's revenue comes from capital investment through an Asset Management Company with high yield investment.	1. The university should provide training at the unit level to increase knowledge and understanding of the university's finances including budgeting, budget proposal, and financial reporting on expenses, in order for the units to be aware of and to make use of them. 2. A financial strategic plan in conformance to the university's medium and long-term development planning process should be initiated at the university and unit levels, so that the budget allocation reflects the university vision and missions. 3. Cost analysis of units of the university should be developed on continuing basis.

Weakness	Solution
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Component 9 : System and Mechanism for Quality Assurance

Strength	Suggestion
1. The university has a systematic mechanism for administration and management of educational quality assurance. In addition, there is a clear process for implementation to achieve the set goals of educational quality assurance in the unit and university levels, as evidenced in mutual understanding of operation, definition of the indicators, results of the operation, exchange of knowledge among units, monitoring of operation, and development according to the appraisal results. 2. SUT executives place importance on an operation of educational quality assurance by monitoring it continuously. 3. The Division of Academic Support serves as a facilitator for transmission and operation of educational quality assurance at the unit and university level. The operation results of QA are well recognized.	1. The university's performance results are continuously at a "very good" level according to OHEC standard criteria and the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA). Therefore, high potential units of the university should develop more challenge educational quality assurance in order to be a leader in operation of education quality assurance at the international level especially at the ASEAN Community. 2. The university should determine mutual practices for the development of data storage systems for individual units to be up-to-date and on time. 3. The format of writing SAR should be the same for all units in the university and the references should link to all of their websites.
Weakness	Solution
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Suggestions:

The university should have efficient QA practices for operational development.

Component 10 : 3D Policy for Educational Institutes

Strength	Suggestion
1. The university has promoted the 3D Policy for Educational Institutes by issuing an announcement on the addition of 3D Policy for Educational Institutes in the system. A working group responsible for this has been appointed under the Division of Student Affairs. In addition, the university has implemented operational plans for academic years 2011 and 2012.	1. In response to the 3D Policy for Educational Institutes announced by the Ministry of Education in 2010, the university should develop indicators, assessment criteria, and assessment processes to support the implementation of the 3D Policy.
Weakness	Solution
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The assessment results of the 3D Policy on students should be used to improve the assessment criteria to indicate learners' knowledge, attitudes and desired 3D characteristics.

Component 11 : Technology Adaptation, Transfer, and Development

Strength	Suggestion
1. SUT has involved the Technology Adaptation, Transfer, and Development in its missions, with Technopolis responsible for a formulation of policy, strategy plans, and operational plans by cooperating with the SUT Science Park, the Suranaree University of Technology Business Incubator (SUTBI), the Suranaree University of Technology Intellectual Property Management Office (SUT-IPMO), the Industrial Technology Assistance Program (iTAP), the SUT Network, and the Research Center for Cassava and Products (RCaP) to implement activities for society.	1. The university should review structure, resources, and rules and regulations to help facilitate the operation and increase the effectiveness of administrative management.

Weakness	Solution
1. The number of full-time faculty who participate in Technology Adaptation, Transfer, and Development did not achieve the set goal of Indicator 11.2 Percentage of Full-Time Faculty Participating in Suitable Technology Adaptation, Transfer, and Development.	1. The university should develop measures for promotion, auditing, and follow-up the implementation results of the academic services system and mechanism as stated in the university's plan.

Suggestions:

1. Among SUT missions on technology transfer/general advisement, specific advisement, and development/adaptation/extended research, the development/adaptation/extended research has the least activities/projects (12.69%). Therefore, the university should develop its plans and goals to increase the number of projects/activities to achieve the Indicator 11.3 Percent of Activities/Projects in Technology Adaptation, Transfer, and Development Suitable for Full-time Faculty Members.

2. Even though the results of Indicator 11.3 achieved most of the set goals, these goals should be adjusted to be in line with the operation results while continuing to set challenging goals.