

### The Executive Summary Report on Quality Assurance for the Academic Year 2007







Quality Assurance Subdivision Academic Support Division Suranaree University of Technology

#### Forewords

This self-assessment report was compiled with the aim to report and analyze the operational results of Suranaree University of Technology using indicators and criteria for quality assessment laid down by The Commission on Higher Education (CHE) and Suranaree University of Technology (SUT) during academic year 2007 (May 2007-April 2008). This report is intended for SUT and its stakeholders, especially the supervising body and the public in order to develop quality and educational standards of the university into a higher level.

Suranaree University of Technology has established a policy for continuous educational assessment to create corporate culture within the SUT beginning with educational assurance since academic year 1998 with the suitable system and mechanism for educational assurance in harmony with the major SUT policy of "Centralized Services, Coordinated Tasks". The educational assessment and assurance have been improved and revised continuously up until 2006. In 2007, CHE set forth higher education standards for internal quality assurance and SUT has implemented the standards in its quality assessment aiming to be an institution that emphasizes on producing graduates and research. The SUT has annexed CHE 9 quality factors and 41 indicators with another 5 SUT indicators making it a total of 9 quality factors and 46 indicators. Besides, SUT has complied data and facts concerning indicators set out by The Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) to integrate both internal and external quality assessment, and to prepare additional data for the next round of ONESQA assessment as well.

To implement PDCA in the academic year 2007, SUT arranged for the educational quality assessment by an external assessment committee at a departmental level in September 2008, and then at a SUT or institutional level in October 2008. In addition, SUT held a QA Forum in November 2008 to brainstorm, exchange ideas, and create a better understanding and awareness of educational quality assurance. From these activities, SUT has prioritized and put into practice the results of an assessment in determining the SUT policy in order to strengthen its outstanding features and improve those inferior features, based on the indicators, and in preparing a strategic plan for the university.

On the other hand, different units and departments of SUT have utilized in full or in parts the benefits of self-assessment, quality assessment inspections, and the strategic plan as a reliable source of data to prepare action plans, projects/activities, during the fiscal year 2009 and 2010, that will lead to concrete implementation and optimum achievement which in turns will improve and develop the quality of educational management into a more efficient, effective, and continuous manner.

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### Contents

	Page
Forewords	Ι
The Report on Quality Assurance for Academic Year 2007 Executive Summary	1
Results of Quality Assessment by Factors at Institutional and Academic Institutes Levels	11
Conclusions on Evaluation According to Quality Factors, Higher Education Standards and Administrative Management Perspectives	17

### The Report on Quality Assurance for Academic Year 2007 Executive Summary

Suranaree University of Technology (SUT) has been enjoying the status of the first state autonomous, non-bureaucratic university in the form of "a government-supervised university" which stresses on teaching science and technology, and research, essential for national development, under the guiding principle of "Centralized Services, Coordinated Tasks". This university has introduced and implemented the quality assurance in education at the undergraduate level continuously since the academic year 1998. In the academic year 2007, the university revised and readjusted the indicators to make it compatible with those of The Commission on Higher Education (CHE) classifying itself as an institution with the main emphasis on quality graduate production and research, using all CHE 9 quality factors and 41 indicators (except the indicator of graduate production and social development, and the indicator of graduate production and arts and culture preservation) and annexed them with another 5 indicators determined by SUT, totaling 46 indicators in the academic year 2007 (May 2007-April 2008). Suranaree University of Technology has so far carried out the assessment of educational quality with details of factors, indicators, and levels of assessment results in each indicator, as appeared in Chapter 2, and a summary of outstanding features/ promotional features and weak areas/solutions in the overall picture of the university, as appeared in Chapter 3, which can be summed up as follows:

Overall Results of Educational Quality Assessment

- 1. In its overall picture, the implementation results of the university were ranked at a "very good" level in terms of quality, with the average of 2.88 out of 3 by CHE indicators, and 2.74 out of 3 by the combination of CHE and SUT indicators.
- 2. Based on 46 indicators, it was found that 38 indicators received a standard assessment result (full 3 scores) or were classified as outstanding features as explained below.

- 1) Indicator 1.1 : There is philosophy, pledge or commitment, process of strategic development, implementation plan, and setting of key performance indicators for measuring all target achievements.
- 2) Indicator 1.2 : Percentage of target achievement of key performance Indicators.
- **3) Indicator 2.1 :** There are systems & mechanisms of developing and administering curriculum.
- 4) Indicator 2.2 : There is student-centered learning process.
- **5) Indicator 2.3** : There are projects/activities to encourage curriculum and teaching-learning development with participation from external individuals, organizations, and community.
- 6) Indicator 2.5 : Proportion of full-time lecturers holding Bachelor degrees, Master degrees, and Doctoral degrees or equivalent in proportion to the total number of full-time lecturers.
- 7) **Indicator 2.7** : There is the process of promotion in compliance with professional ethics for lecturers.
- 8) **Indicator 2.8** : There are system and mechanisms to encourage full-time lecturers to conduct researches for teaching-learning development.
- 9) Indicator 2.9 : Percentage of Bachelor graduates who can secure jobs and who can be self-employed within one year.
- **10) Indicator 2.10 :** Percentage of graduates who receive their starting salaries as per the standard.
- **11) Indicator 2.11 :** Levels of satisfaction of employers/business operators or entrepreneurs, and graduate users.

- **12) Indicator 2.12 :** Percentage of students or alumni who receive awards citation or recognition in academic field/ profession/ ethics/ sports/ health/ arts & culture/ and environment at the national or international level within the past 5 years.
- **13) Indicator 2.13 :** Percentage of full-time lecturers at the graduate level who are qualified advisors serving as thesis advisors.
- 14) Indicator 3.1 : There are services for students and alumni.
- **15) Indicator 3.2** : There are promotion and encouragement of all round activities for students corresponding with the attribution of preferred characteristics of graduates.
- **16) Indicator 4.1 :** There is development of systems and mechanisms for encouraging the staffs to conduct researches and innovations.
- 17) Indicator 4.2 : There is knowledge management system in research and innovation.
- **18) Indicator 4.3 :** Amount of external and internal research and innovation funds in proportion to the total number of full-time lecturers.
- **19) Indicator 4.4 :** Percentage of research and innovations published, patent and intellectual property registered or utilized at the national and international levels in proportion to the total number of full-time lecturers.
- **20) Indicator 5.1 :** There are system and mechanisms of academic services in line with the SUT goal.

- 21) Indicator 5.2 : Percentage of full-time lecturers participating in academic services, thesis advisors, thesis committee members at other institutions, and serving as academic and professional committee members at the national or international level in proportion to the total number of fulltime lecturers.
- **22) Indicator 5.3** : Percentage of academic and professional service activities/projects responding to the need for developing and strengthening the society, community, country and the international community in proportion to the total number of full-time lecturers.
- 23) Indicator 5.4 : Percentage of students/stakeholders' satisfaction level.
- 24) Indicator 6.1 : There are system and mechanisms for Arts & culture preservation.
- **25) Indicator 7.1** : University Council has good governance for management & administration, and push for the SUT benchmarking as the global standard.
- **26) Indicator 7.2** : Leadership of all levels of the university administrators.
- 27) Indicator 7.3 : There is development of the university into a learning organization.
- **28) Indicator 7.4** : There are system and mechanisms of human resources management to develop and maintain qualified and efficient staff.
- 29) Indicator 7.5 : Capability of database system for a) management,b) teaching and learning, and c) research

- **30) Indicator 7.6 :** The accomplished level of giving opportunities for outside stakeholders to participate in developing the university.
- **31) Indicator 7.7** : Percentage of full-time lecturers who receive academic or professional awards at national or international levels.
- **32) Indicator 7.8** : There is an introduction of risk management system for educational administration.
- **33) Indicator 7.9** : Level of success in transferring indicators and goals at the organizational level to personal level.
- **34) Indicator 8.1** : There are effective system and mechanisms for allocating budget, expenditure analysis, and finance and budget auditing.
- **35) Indicator 8.2** : There is sharing of both internal and external resources.
- **36) Indicator 9.1** : There are internal quality assurance system and mechanism as part of educational administration process.
- **37) Indicator 9.2** : There are system and mechanism to provide knowledge and skills in quality assurance for students.
- **38) Indicator 9.3** : The successful level of internal quality assurance.

In addition, it was also found that there are 5 indicators and 1 subindicator that need to be improved according to the result of assessment (= 2 scores). They are:

- 1) Indicator 2.14\* : Percentage of disqualified students per class.
  - a) Undergraduate level
  - b) Graduate level

Note: \* refers to SUT indicators added to CHE existing indicators.

- 2) Indicator 2.15\*: Percentage of undergraduate students who graduate within the time schedule per class.
- 3) Indicator 2.16\* : b) GPA of graduate students each year.
- 4) **Indicator 4.5** : Percentage of cited research articles in refereed journals or in national or international databases in proportion to full-time lecturers.
- 5) Indicator 4.6\* : Number of research articles published in acceptable journals relevant to the fields of study with peer review in proportion to full-time lecturers.
- 6) Indicator 7.10\* : Satisfaction of clients under the "Centralized Services, Coordinated Tasks" principle.

There are still 2 more indicators and 1 sub-indicator that need to be improved according to the result of assessment (= 1 score). They are:

- 1) Indicator 2.4 : Number of full-time students in proportion to full-time lecturers.
- 2) Indicator 2.6 : Ratios of full-time lecturers holding the academic ranks of lecturers, assistant professors, associate professors, and full professors.
- 3) Indicator 2.16\* : a) GPA of undergraduate students each year.

**Notes: Indicator 2.4** Number of full-time students in proportion to full-time lecturers achieved only 1 score result of assessment since it has the value of 42.70:1 which is much higher than the CHE standards. But when considering the SUT identity, it was found that this indicator may probably not be suitable for SUT which has the policy of managing classrooms by bringing in different types of

Note: \* refers to SUT indicators added to CHE existing indicators.

technology to support teaching-learning activities with better quality where students can have access all the time, such as e-Learning and other support systems through Educational Media Development and Production Project, Borderless Education Project, and Teaching Assistants to promote students' skills and knowledge. Besides, majority of lecturers are Ph.D. degree holders with high capability in all missions; they are regularly and concretely evaluated by their students through Teaching Efficiency Promotion Unit that leads to higher effectiveness in teaching as can be witnessed from the past achievements in terms of high ranking of students' satisfaction at both undergraduate and graduate levels, employees, entrepreneurs, and graduate users' satisfaction, percentage of graduates' employment, independent careers, and official starting salary.

- 3. From the quality assessment by the improved indicators and the indicators yet to be improved, when arranged in order of importance according to the principles of risk management and balanced-score card, can be classified into 3 groups as follows:
  - 3.1 Students and stakeholders' group consists of 3 indicators as follows:
    - 1) Indicator 2.14\*: Percentage of disqualified students per class.
      - a) Undergraduate level
      - b) Graduate level
    - 2) Indicator 2.15\*: Percentage of undergraduate students who graduate within the time schedule per class.
    - **3)** Indicator 2.16\*: b) GPA of graduate students each year.

SUT and its concerned departments should bring out measures to promote and encourage higher achievements by students continuously with the main focus on how students can achieve higher GPA, how the number of disqualified students can be decreased, and how the number of students who graduate within the time schedule can be increased, with the following inputs and process factors:

Note: \* refers to SUT indicators added to CHE existing indicators.

#### More Aggressive Input Measure, such as:

- Public relations campaign focusing on target groups of students with high capacity, for example, students on Scholarships for Developing and Promoting Outstanding Gifted Students in Science and Technology (SDPST) and students from special projects. This campaign has to be conducted all year round by assigning the responsibility to a direct body in the form of "School Relations Division" to work closely with the faculty/teaching staff.

#### **Other Measures, such as:**

- More variety of funds and scholarships with more worthiness, for example, First Top 1% Scholarships for students who obtained A in 5 subjects, with tuition waive in the next trimester, Tutor Scholarship, and Research Scholarship for high caliber students to become the "key instrument" in acting as "Friends Help Friends" in study and in bringing fame and reputation to the university.
- Determine and set up procedures or approaches for made up examinations for course that have the record of students' man failures such as Calculus, Physics, Engineering Static, and Materials Engineering, at undergraduate level, to reduce duplications of study in those courses and allow students more continuous flow of their study.
- Regularly follow up on students' study results to assist and improve their performance, and increase the soles of advising lecturers making them closes to students than before.
- Arrange an evaluation and assessment system that helps reduce student's tensions, such as more examinations in between and reduction of subject matters, to make students become more active.
- Utilize classroom research process, especially in medium and large classes, to investigate causes of students' failures, find out solution, and put them into immediate practice

In the long term, SUT should spell out the causes of students' GPA being lower than the target each year, of students being disqualified higher than the target at both undergraduate and graduate levels each class, and of lower rates of graduation within the time schedule of undergraduate students by an institutional research to compare it with other universities with the same characteristics, find the specific causes, determine measures/solutions, and prioritize them into the Plan of Action for a more serious solutions to the problems with concrete results. To achieve this goal, a responsible body and time frame should be assigned.

- 3.2 Staff, Learning and Innovation group consists of 3 indicators as follows:
  - 1) **Indicator 2.6** : Ratios of full-time lecturers holding the academic ranks of lecturers, assistant professors, associate professors, and full professors.
  - 2) Indicator 4.5 : Percentage of cited research articles in refereed journals or in national or international databases in proportion to full-time lecturers.
  - **3) Indicator 4.6\* :** Number of research articles published in acceptable journals relevant to the field of study with peer review in proportion to full-time lecturers.

SUT should do the following:

- 3.2.1 Encourage and motivate lecturers who are now with no academic ranks or who want to move up in ranks to bring out academic achievements in the forms of textbooks, books, and publications in quality journals.
- 3.2.2 Promote, stimulate, and support lecturers to get published continually in national and international academic journals with peer review, acceptable in the field of study, for examples, by:

Note: \* refers to SUT indicators added to CHE existing indicators.

- Funding/Facilities/Equipment for promising lecturers with high calibre to produce quality research with high impact factor in a refereed journal or in national and international database.
- Determination of workload with research conduct as part of the performance evaluation.
- 3.2.3 Invitation of well-known scholars, especially in hot issues as visiting professors to teach, investigate, and conduct research to build bodies of organized knowledge and research and human resources databases for the SUT.
- 3.2.4 Selective recruitment of highly potential faculty (only with Ph.D. degrees or academic ranks) who are able to produce research articles to be published in a refereed journal or in national and international database in the field needed by the university and with clear individual KPIs.

#### **3.3** Internal Process group has 1 indicator.

1) Indicator 7.10\*: Satisfaction of clients under the "Centralized Services, Coordinated Tasks" principle.

SUT and all of its departmental units should improve their performance to raise the level of client satisfaction with better performance evaluation in a continuous manner by, for instance, including the evaluation results of their client satisfaction, internal process, finance, learning, and innovation in planning, developing, and improving the implementation of their respective units.

Note: \* refers to SUT indicators added to CHE existing indicators.

# **Results of Quality Assessment by Factors at Institutional and Academic Institutes Levels**

Suranaree University of Technology has conducted an internal quality assessment at the university or institutional level by appointing Internal Quality Assessment Committee consisting of external and internal distinguished experts in accord with The Commission on Higher Education's criteria, SUT has implemented the internal quality assessment within SUT at institutional level in the academic year 2007 from 15-16 October 2008 by examining and analyzing the results from the reports of institutional self assessment and related documents, visiting academic institutes, and support units, such as centers/ institutes, projects, and various divisions under the Office of the Rector, including opinions of concerned staff. The processing of data at institutional and academic institutes levels can be divided by factors as follows:

Summary	of Education	Quality	Assessment	at	Institutional an	d
Academic 1	Institutes Leve	els (only	by CHE indi	icat	ors)	

University	Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine
(301)		Technology	Technology		
2.88	2.71	2.63	2.60	2.50	2.38
Very	Very	Very	Very	Good	Good
Good	Good	Good	Good		

From this summary and when considering the 9 factors, the external achievement of SUT stood at "Very Good" (2.88), Institute of Science gained "Very Good" (2.71), Institute of Social Technology "Very Good" (2.63), Institute of Agricultural Technology "Very Good" (2.60), Institute of Engineering "Good" (2.50), and finally Institute of Medicine "Good" (2.38)

University		Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine	
(301)		Technology	Technology			
3.00	3.00	2.50	2.00	3.00	3.00	
Very	Very	Good	Fair	Very	Very	
Good	Good			Good	Good	

Factor 1: Philosophy, Pledge, Objective, and Implement Plans

The SUT has firm pledge to maintain its excellence in all tasks and one of the major tasks, which is very important, in the creation of innovation, modifications, transfer, and development of appropriate technology for completion and self-reliance.

Moreover, SUT set out clear, practical, and concrete strategies, and implementation plans, both long and short terms. However, SUT may have to encourage its academic institutes and schools to bring about their own strategies and strategic plans as a road map to excellence in tune with the university major strategies. Likewise, the university should encourage all of its academic institutes to determine their objectives in internationalizing themselves, and establish a clear connection with Graduate Programs of Studies to ultimately develop into a world class university.

University		Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine	
		Technology	Technology			
2.69	2.80	2.46	2.62	2.46	2.25	
Very	Very	Good	Very	Good	Good	
Good	Good		Good			

Factor 2: Learning - Teaching

1) Curricula: SUT offers courses in Science and Technology and interdisciplinary subjects with clear objectives. These courses can be compared to international standards, with cooperative education system, student-centered instructions using PBL (Problem-based learning) approach, undergraduate research support (IRPUS - Industrial and Research Projects for Undergraduate Students, and IPUS - Industrial Projects for Undergraduate Students), and Leaving and Learning Center. However, SUT should increase the effectiveness of its graduate courses, already existing in large number, instead of increasing the number of undergraduate students.

- 2) Lecturers' Qualifications: With a large number of Ph.D. holding lecturers, SUT should arrange a procedure to promote these lecturers to move up in academic ranks as soon as possible, to prepare a pivotal foundation for developing student-centered instruction process, and teaching at Graduate Studies Level (International Programs).
- **3)** Learning-Teaching Process: Each academic institute of the SUT should effectively develop its own e-Learning (Interactive Courseware) on a more serious manner with concrete results, and accelerate the development of student-centered instruction process seriously and continually, to make this a prominent feature of SUT on a permanent basis. Above all, the SUT, should improve the preparedness and readiness of first year students, English skills, IT, and library literacy to further develop technical skills of the graduates.
- 4) Indicator (SUT) of Academic Achievement during the last 4 years: Students' research should be carried out on the impact of each curriculum on time schedule and quality, depending on the quality of admitted students.

University	Academic Institutes				
University (SUT)	Science	Social	Agricultural	Engineering	Medicine
(301)		Technology	Technology		
3.00	3.00	3.00	3.00	3.00	2.00
Very	Very	Very	Very	Very	Fair
Good	Good	Good	Good	Good	

#### **Factor 3: Activities for Student Development**

The SUT is equipped with modern and practicable learning process that relies on student-centered instructions, cooperative education, undergraduate research, e-Learning, and e-Library, supported further by many different activities to fully develop and push for the production of SUT sportsmen to compete in both national and international events. In addition, SUT by its Academic Institutes, Division of Student Affairs, and Division of Academic Support should work hand in hand with one another to develop student's potential in academic innovation (Academic Innovation Club), SUT sportsmen and graduates in terms of academic and career advancement, able to work in ASEAN Community. Besides, SUT should have a plan to develop students to become parts of ASEAN Community. To achieve this, Division of Student Affairs, Cooperative Education and Career Development Project, and Academic Affairs should prepare and encourage students to participate in international activities with neighboring countries, including developing the basic skills in English for students through more extracurricular activities.

Linivorcity	Academic Institutes				
University (SUT)	Science	Social	Agricultural	Engineering	Medicine
$(\mathbf{SU1})$		Technology	Technology		
2.80	3.00	2.00	3.00	2.60	1.80
Very	Very	Fair	Very	Very	Fair
Good	Good		Good	Good	

Factor 4: Research

Suranaree University of Technology possesses a very good system, mechanism, and research funds, in full-cycle, underlying offices, which are ready to develop the university to become an excellent center leading to the national and international acceptance by supporting distinctive research groups, research units, and encouraging the issuance of academic journals.

University		Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine	
		Technology	Technology			
3.00	2.75	3.00	3.00	2.75	2.75	
Very	Very	Very	Very	Very	Very	
Good	Good	Good	Good	Good	Good	

**Factor 5: Public Academic Services** 

Suranaree University of Technology has Technopolis functioning as the coordinator collecting requirements from inside and outside the university. In addition, it has several offices to provide academic services, i.e. academic institutes, The Center for Scientific and Technological Equipment, and Technopolis, of which systems of academic services, and service strategy-offerings need to be organized with clear-cut missions to which offices they belong in the sense that SUT directs integrated cooperation of the offices sharing the same or related missions by setting the same targets or sharing the strategic plans.

University	Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine
		Technology	Technology		
3.00	3.00	3.00	3.00	3.00	3.00
Very	Very	Very	Very	Very	Very
Good	Good	Good	Good	Good	Good

Although Suranaree University of Technology is classified under the graduate and research group of universities, it places prime importance in arts and cultural promotion and preservation by strongly encouraging students' participation in various arts and cultural activities, and by allotting ample budget for expenses on arts and cultural preservation, development, and uniqueness creation.

University	Academic Institutes				
(SUT)	Science	Social	Agricultural	Engineering	Medicine
(301)		Technology	Technology		
3.00	2.11	2.78	2.00	1.89	2.33
Very	Good	Very	Fair	Fair	Good
Good		Good			

**Factor 7: Administration and Management** 

Suranaree University of Technology has achieved efficient administration using the administrative principle of "Centralized Services, Coordinated Tasks", and stresses on applying knowledge management administration, risk management, and information technology. In addition, to enabling SUT to achieve more efficient administration, meetings among the SUT executives and their chiefs of staff in the line of control for morale support should be urgently organized. Analysis of personnel in the office of the Rector should be conducted in order to cope with increasing tasks due to SUT strategic plans. The management of information system should be developed and updated, especially the newly established office of the SUT, which functions as the center of all the information. The role of this office should be expanded so that all the offices in SUT can bring the information into use.

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Factor 8: Finance and Budget

Linivorcity	Academic Institutes						
University (SUT)	Science	Social	Agricultural	Engineering	Medicine		
· · ·		Technology	Technology				
3.00	3.00	3.00	3.00	3.00	3.00		
Very	Very	Very	Very	Very	Very		
Good	Good	Good	Good	Good	Good		

Suranaree University of Technology has regularly issued financial reports, analyzed and synthesized financial data including the linkage of financial data MIS of the SUT, better enabling the SUT executives to consider the overall performance of the SUT in the sense that SUT may forecast or project budget allocations. This process will help the executives make efficient decisions and also enable them to adjust administrative plans in advance.

University	Academic Institutes					
University (SUT)	Science	Social	Agricultural	Engineering	Medicine	
(301)		Technology	Technology			
3.00	3.00	3.00	3.00	3.00	3.00	
Very	Very	Very	Very	Very	Very	
Good	Good	Good	Good	Good	Good	

**Factor 9: Systems and Mechanism of Quality Assurance** 

Suranaree University of Technology has possessed a good system of and mechanism of quality assurance and it also emphasizes on bringing the evaluation results into improving the implementation seriously and continuously. To achieve this, SUT needs to have a system to transfer and the personnel in any level need to truly understand the quality assurance, which is a part of their routines. This can be done through training SUT personnel to become the SUT internal assessors.

# **Conclusions on Evaluation According to Quality Factors, Higher Education Standards and Administrative Management Perspectives**

Suranaree University of Technology has classified itself in the group of "institutes stressing on producing graduates and researchers". According to the internal quality assurance 2007, SUT has developed indicators for internal quality assurance by following the 9 factors of The Commission on Higher Education (CHE), which consists of 41 indicators. After adding 5 more SUT indicators, there are 46 indicators altogether.

When considering the quality assurance according to the CHE indicators and criteria (41 indicators) and 5 indicators of SUT (46 indicators in total), Suranaree University of Technology received 2.88 (from the full score of 3.00) of self assessment using CHE indicators, and 2.78 (out of 3.00) using CHE and SUT indicators. This can be defined that SUT achieved a very good level of implementation. The details of its implementation are as follows:

#### **1. Overall Assessment Results**

According to the details in Table 7, objectives, implementation, and assessment results by factors and indicators can be concluded as follows:

#### 1.1 Considering by the CHE Indicators and Criteria

Suranaree University of Technology has achieved a very good level in self assessment (2.78 out of 3.00). When assessed by 41 indicators individually, it was found that SUT received a very good level and all were dominant points in 38 indicators, which was 92.68 percent while only one indicator received a poor level and was and inferior point. That indicator was indicator 2.4 - Number of full-time students in proportion to full-time lecturers and the implementation of the 39 out of 41 indicators set for academic year 2007 meet the objectives, which was 95.12 percent (except indicator 2.4 and indicator 4.5 - Percentage of cited research articles in referred journals or in national or international database in proportion to full-time lecturers).

Notes: Indicator 2.4 Number of full-time students in proportion to full-time lecturers achieved only 1 score result of assessment since it has the value of 42.70:1 which is much higher than the CHE standards. But when considering the SUT identity, it was found that this indicator may probably not be suitable for SUT which has the policy of managing classrooms by bringing in different types of technology to support teaching-learning activities with better quality where students can have access all the time, such as e-Learning and other support systems through Educational Media Development and Production Project, Borderless Education Project, and Teaching Assistants to promote students' skills and knowledge. Besides, majority of lecturers are Ph.D. degree holders with high capability in all missions; they are regularly and concretely evaluated by their students through Teaching Efficiency Promotion Unit that leads to higher effectiveness in teaching as can be witnessed from the past achievements in terms of high ranking of students' satisfaction at both undergraduate and graduate levels, employees, entrepreneurs, and graduate users' satisfaction, percentage of graduates' employment, independent careers, and official starting salary.

#### 1.2 Considering by the CHE and SUT Indicators and Criteria

Suranaree University of Technology achieved a very good level of self assessment (2.74 out of 3.00). When assessed by 46 indicators individually, it was found that 38 indicators were found to be very good level and all were dominant points (82.61 %), and 2 indicators were found to be poor level (should be improved or inferior). The two indicators were indicator 2.4 - Number of full-time students in proportion to full-time lecturers, and indicator 2.16 - GPA of undergraduate students each year. SUT has achieved the objectives for academic year 2007. The result of the total 40 indicators was found to be 86.96 %.

#### 2. Assessment Results according to the CHE Standards

According to the details in Table 8, objectives, implementation, and assessment results by the CHE standards can be concluded as follows:

#### 2.1 Considering by the CHE Indicators and Criteria

#### **Standard 1: The quality of graduates**

The CHE has 4 indicators. The assessment result was found to be in a very good level. Every indicator received a full score of 3.00, and the implementation achieved the objectives for academic year 2007 in every indicator.

#### **Standard 2: Administration**

The overall assessment result by the CHE indicators and criteria was found to be in a very good level (2.81 out of 3.00) with the following details.

#### A. Good Governance of Higher Education Administration

The CHE has 16 indicators and the assessment result was found to be in a very good level. Every indicator received a full score of 3.00, and the implementation accomplished the objectives for academic year 2007 in every indicator.

#### B. Commitments of Higher Education Administration

The CHE has 19 indicators and the assessment result was found to be in a very good level (2.68 out of 3.00). When considering the indicators individually, the assessment results of 15 indicators were found to be in a very good level and all were dominant points (88.24%), and those of 2 indicators were found to be poor and all were inferior points. The two indicators were indicator 2.4 - Number of full-time students in proportion to full-time lecturers, and indicator 2.6 - Ratios of full-time lecturers holding the academic ranks of lecturers, assistant professors, associate professors, and full professors. The implementation of 17 out of 19 indicators achieved the objectives for academic year 2007 (89.50%).

#### Standard 3: Creation and Development of Knowledge-Based, and Learning Society

The CHE has 2 indicators, and the assessment result was found to be in a very good level. Every indicator received a full score of 3.00. The implementation achieved the objectives for academic year 2007 in every indicator.

#### 2.2 Considering by the CHE and SUT Indicators and Criteria

#### **Standard 1: The quality of graduates**

The CHE and SUT has a total of 7 indicators, and the assessment result was found to be in a good level (2.33 out of 3.00). When considering the indicators individually, the results of 14 indicators were found to be in a very good level and all were dominant points (57.14%), and that of 1 indicator was found to be poor and was an inferior point. That indicator was indicator 2.16 A. - the undergraduate students' annual grade point average. The implementation of 5 indicators out of 9 sub-indicators achieved the objectives for academic year 2007 (55.56%).

#### **Standard 2: Administration**

The overall assessment result by the CHE indicators and criteria was found to be in a very good level (2.77 out of 3.00) with the following details.

#### A. Good Governance of Higher Education Administration

The CHE and SUT has 16 indicators and the assessment result was found to be in a very good level. Every indicator received a full score of 3.00, and the implementation accomplished the objectives for academic year 2007 in every indicator.

#### B. Commitments of Higher Education Administration

The CHE and SUT has 21 indicators and the assessment result was found to be in a very good level (2.67 out of 3.00). When considering the indicators individually, the assessment results of 16 indicators were found to be in a very good level and all were dominant points (76.19%), and those of 2 indicators were found to be poor and all were inferior points. The two indicators were indicator 2.4 - Number of full-time students in proportion to full-time lecturers, and indicator 2.6 - Ratios of full-time lecturers holding the academic ranks of lecturers, assistant professors, associate professors, and full professors. The implementation of 18 out of 21 indicators achieved the objectives for academic year 2007 (85.70%).

#### Standard 3: Creation and Development of Knowledge-Based, and Learning Society

The CHE and SUT has 2 indicators, and the assessment result was found to be in a very good level. Every indicator received a full score of 3.00. The implementation achieved the objectives for academic year 2007 in every indicator.

## **3.** Assessment Results from the Administrative management Perspectives

According to the details in Table 9, Objectives, implementation, and assessment results from the administrative management perspectives can be concluded as follows:

#### 3.1 Considering by the CHE Indicators and Criteria

#### **1. Students and Stakeholders**

The CHE has a total of 15 indicators, and the assessment result was found to be in a very good level (2.87 out of 3.00). When considering the indicators individually, the results of 14 indicators were found to be in a very good level and all were dominant points (93.33%), and those of 2 indicators were found to be poor and all were inferior points. The two indicators were indicator 2.4 - Number of full-time students in proportion to full-time lecturers and indicator 2.16 - a) GPA of undergraduate students each year. The implementation of 14 indicators out of 15 indicators achieved the objectives for academic year 2007 (93.33%).

#### **2. Internal Process**

The CHE has a total of 11 indicators, and the assessment result was found to be in a very good level with a full score of 3.00. When considering all the indicators individually, the results of 11 indicators were found to be in a very good level and all were dominant points (100 %) without indicators of a poor level. The implementation achieved the objectives for academic year 2007 in every indicator.

#### 3. Finance

The CHE has 3 indicators, and the assessment result was found to be in a very good level (2.72 out of 3.00). When considering all the indicators individually, the results of all the indicators were found to be in a very good level and all were dominant points. The implementation achieved the objectives for academic year 2007 in every indicator.

#### 4. Personnel, Learning, and Innovation

The CHE has a total of 12 indicators, and the assessment result was found to be in a very good level (2.79 out of 3.00). When considering all the indicators individually, the results of 10 indicators were found to be in a very good level and all were dominant points (83.33%), and the result of only 1 indicator was found to be poor and was an inferior point. That indicator was indicator 2.6 - Ratios of fulltime lecturers holding the academic ranks of lecturers, assistant professors. professors. associate professors, and full The implementation for academic year 2007 achieved objectives of 11 indicators out of 12 indicators (91.67%).

#### 3.2 Considering by the CHE and SUT Indicators and Criteria

#### **1. Students and Stakeholders**

The CHE and SUT has a total of 18 indicators, and the assessment result was found to be in a very good level (2.60 out of 3.00). When considering the indicators individually, the results of 14 indicators were found to be in a very good level and all were dominant points (77.78%), and that of 1 indicator was found to be poor and was an inferior point. That indicator was indicator 2.16 - a) GPA of undergraduate students each year. The implementation of 15 indicators out of 18 indicators achieved the objectives for academic year 2007 (75.0%).

#### 2. Internal Process

The CHE and SUT has a total of 12 indicators, and the assessment result was found to be in a very good level (2.92 out of 3.00). When considering all the indicators individually, the results of 11 indicators were found to be in a very good level and all were dominant points (91.67 %) without indicators of a poor level. The implementation achieved the objectives for academic year 2007 in every indicator.

#### 3. Finance

The CHE and SUT has a total 3 indicators, and the assessment result was found to be in a very good level (2.72 out of 3.00). When considering all the indicators individually, the results of all the indicators were found to be in a very good level and all were dominant points. The implementation achieved the objectives for academic year 2007 in every indicator.

#### 4. Personnel, Learning, and Innovation

The CHE and SUT has a total of 13 indicators, and the assessment result was found to be in a very good level (2.73 out of 3.00). When considering all the indicators individually, the results of 10 indicators were found to be in a very good level and all were dominant points (76.92%), and the result of only 1 indicator was found to be poor and was an inferior point. That indicator was indicator 2.6 - Ratios of full-time lecturers holding the academic ranks of lecturers, assistant professors, associate professors, and full professors. The implementation for academic year 2007 achieved objectives of 11 indicators out of 13 indicators (84.62%).

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