THE EXPERIMENT OF UNIVERSITY OF SCIENCE AND TECHNOLOGY IN THE FIELD OF QUALITY ASSURANCE FOR ACADEMIC PERFORMANCE

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ABSTRACT: During the last 10 years, University of Science and Technology (UST) in Yemen has developed a special model for quality which has been inspired from the international experiments in the field quality in higher education taking into consideration the privacy and the culture of the zone. This paper presents this model which involves several tools, procedures, quality measures, and Key Performance Indicators (KPIs). The model was developed based on the organizational model so that it involves 4 dimensions of the UST educational system: inputs, processes, outcomes, and feedback. This model is implemented since the academic year 2003/2004 until now and it has subjected to continuous developing and enhancement. As a result of applying this model, a remarkable quality of service has achieved and the UST has grown dramatically in terms of number of students, colleges, programs and international partnerships.

Keywords: *Quality Assurance, Academic Accreditation, University of Science and Technology, UST, Quality Model, KPIs, CAQA*

1. INTRODUCTION

University of Science and Technology (UST) is considered the first private university in the Republic of Yemen. UST was established in 1994 in the capital of the country (Sana'a). Currently, UST has about 20,000 students divided between regular (about 8000 students) and open learning (about 12,000). Most of UST students come from the Arab Gulf countries, Yemen, and the neighbour African countries. UST consists of 7 regular colleges, a college for open learning and distance learning, a branch for girls, 6 branches in the main 6 governorates of the country, and tens of coordination offices in all Yemeni governorates, Arab Gulf countries, Jordan, Syria, and the neighbor African countries. The concept of quality has been addressed early by UST since the year 1999 when the unit of quality was established in UST and it was the first unit in the country concerning academic quality (now it is called Quality Assurance and Accreditation Management (QAAM)). The aim of QAAM in UST is to enhance the educational service quality and develop the service delivery procedures including all components of the educational system in UST such as teaching, curricula, staff, students, infrastructure, equipment, regulations, operations, and administration. Currently, QAAM consists of 4 units in the main office and 9 units in 8 colleges and the Girls Branch. In 2004, the Steering Council of Quality has been established in UST to figure out the strategies and polices of the UST quality. During the last 10 years, QAAM in UST has developed a special model of academic quality assurance which has been inspired from the international experiments in the field quality in higher education taking into consideration the privacy and the culture of the zone. This paper presents this model which involves several tools, procedures, and quality measures, and Key Performance Indicators (KPIs). The model was developed based on the organizational model so that it involves 4 dimensions of the UST educational system: Inputs, Processes, Outcomes, and Feedback. This model is implemented since the academic year 2003/2004 until now and it has subjected to continuous developing and enhancement. As a result of applying this model, a remarkable quality of service has achieved and the UST has grown dramatically in terms of number of students (from thousands to 20000), colleges (from 3 to 8), programs (from less than 20 to 40) and the international partnerships. In the field of accreditation, UST recently launched the project of international accreditation and three pilot programs are ready to register for the international accreditation on 2014. These programs are Pharmacy, Computer Science and Business Administration. When these three pilot programs are accredited, the rest of programs in UST should follow the same process to be accredited in couple of years. This paper presents the experiment of UST in the field of academic quality assurance especially, the structure of UST quality model in details, KPIs, assessment procedure, and the enhancements during the last 10 years.

2. QUALITY ASSURANCE AND ACCREDITATION IN YEMENI HIGHER EDUCATION

This section reports the efforts of the Ministry of Higher Education and Sscientific Research in Yemen concerning quality assurance and academic accreditation. Since the last two decades, the ministry has developed the official manuals and regulations for the "opening license" that is required for new universities to open. However, the first significant effort regarding quality assurance and academic accreditation in the Yemeni higher education was addressed in 2008 during the second scientific conference of the ministry of higher education and sscientific research. The conference has issued many recommendations to the Yemeni universities with regard to developing procedures of periodic review for the academic programs and updating the courses periodically to fulfil the labour market needs taking into account quality standards (Hamza A. A., 2012) . In 2009, the third scientific conference of the ministry of higher education and sscientific research has issued new recommendations to the Yemeni Government to provide a sort of support to the universities to enable them developing their individual quality systems (Kweeran A. A. et al., 2010) . The third conference has also issued a very important recommendation to the government concerning the establishment of the Council of Academic Accreditation and Quality Assurance (CAQA) as a high steering council within the the Ministry of Higher Education and Sscientific Research in Yemen. In 2010, CAQA was established by the gevernmet to take place in the near future with crises in the Arab Spring Countries. In 2012, a director has been appointed to CAQA and many regulations and manuals have been issued during the last two years regarding quality assurance and academic accreditation in the Yemeni higher education (MHESR. 2009). Additionally, CAQA has executed extensive workshops sponsored by the World Bank to achieve a good level of training for quality team works and awareness for the top managers of the Yemeni universities concerning quality assurance and academic accreditation.

During the year 2013 and as a pilot experiment, UST has been chosen by CAQA along with other 3 universities to apply the first stage of academic accreditation which is called "Beginning" which should be followed by other 3 stages: "Foundation", "Accomplished", and "Distinguished". Each stage of them has different requirements that should be fulfilled to get the accreditation. As shown by the brief history of quality assurance and academic accreditation in the Yemeni higher education, we can remark that the experiment of quality assurance and academic accreditation in UST is older than the experiment of all other universities in the country and even the experiment of the Ministry of Higher Education. While the first unit of quality assurance in UST has been established during 1999, the UST model of quality is applied since 2003, and the procedure of international accreditation is followed up since 2010 for 3 pilot programs in UST, we can remark that CAQA has been established on 2010 and activated on 2012 which is too late experiment compared to the UST experiment. Even though the Ministry of Higher Education in Yemen has early developed manuals and regulations for the "opening license", however quality assurance and academic accreditation standards were not taken into consideration in that old regulations.

Regarding the other universities in Yemen, most of them have recently joined the project of CAQA for local accreditation because they have realized that the big challenge for a university in the future is not just the course delivery and the teaching process but how it can provide an educational service with high quality so that it can fulfill the requirements of community and labour market. Additionally, many factors have affected and cause a direction to adopt the systems of quality assurance and academic accreditation in the higher education institutes. These factors can be summarized as follows (Albelawy H.H. et al., 2008):

1. The variation of objectives in higher education institutes.
2. Increasing the request on higher education services.
3. New models of higher education institutes have been created.
4. The numerous of education environments.
5. Decreasing of governmental funding for the higher education and the increasing of private institutions.
6. The social responsibility of the universities toward the community (Khanfer E. A. et al., 2011).
7. The need for enhancing an academic culture regarding the development and modernization (Qawi B. et al., 2011).

3. UST MODEL FOR ACADEMIC QUALITY

As per the mission of UST, the university looks forward to be a pioneer on the level of the zone as it has achieved that on the level of the country. To achieve that mission, QAAM in UST has developed its own model of academic quality assurance by inspiration of the international experiments in quality assurance of higher education such as the requirements of Quality Assurance Agency (QAA) in UK and the standards of ISO 9001/2000 taking into account the privacy and culture of the zone (UST, 2010). This section presents this model involving several tools, procedures, quality measures and KPIs based on the latest enhancement in the model which has been accomplished during the academic year 2009/2010. The model is usually achieved using an assessment manual that consists of different tools with standard KPIs which has been developed by QAAM such as the following (QAAM, 2010):

1. Figuring out relative weights for all assessment types, fields and aspects.
2. Involving a field of assessment for the Action Plan of the faculties and Academic Departments.
3. Involving an assessment tool for the Head of Department (HoD), dean and deputy dean of the faculty within the assessment of the faculty.

4. Involving a field of assessment for the examination system and course assessment in Academic Department.
5. Involving descriptive standards for the assessment of Program Specification Document (PSD) of each
1. program in the department.
6. Involving descriptive standards for the Course Portfolio of each program in the department.
7. Involving assessment tools for staff member performance assessment which is assessed by students (teaching and assessment performance), HoD (teaching, research, administrative performance), peer-review (teaching performance), and self-assessment (teaching and research performance). Students are involved in the assessment of staff with a relative weight of 40% and the 60% is distributed between the other assessors.
8. Involving standards for the assessment of the curricula by students in order to allow them to somehow contribute in the development of curricula.
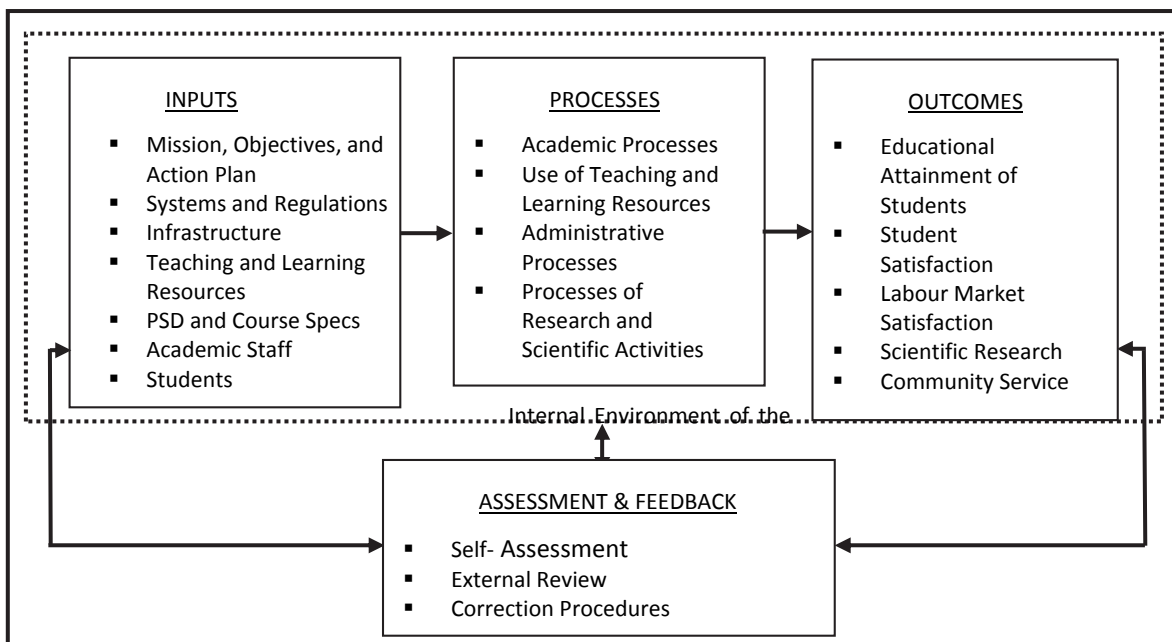

Figure 1. UST model for academic quality assurance

As shown by Figure 1, the model was developed based on the organizational model so that it involves 4 *Components* of the UST educational system: *Inputs, Processes, Outcomes, and Assessment & Feedback*. Each *Component* consists of a set of *Fields* and each *Field* has a set of *KPIs*. This model is implemented since the academic year 2003/2004 until now and it has subjected to continuous developing and enhancement. In the following, we present the Fields of each component within the model. KPIs will be presented later in the next section. As shown by Figure 1, the model is usually affected by the internal and external environment of the system.

3.1 Inputs Component

As shown by Figure 1, *Inputs Component* consists of 6 *Fields* as follows:
- Mission, Objectives, and Action Plan
- Systems and Regulations
- Infrastructure
- Teaching and Learning Resources
- PSD and Course Specifications
- Academic Staff
- Students

3.2 Processes Component

Figure 1 also shows the aspects of *Processes Component* which consists of 4 *Fields* as follows:
- Academic Processes
- Use of Teaching and Learning Resources
- Administrative Processes
- Processes of Research and Scientific Activities

3.3   Outcomes Component

As shown by Figure 1, the *Component* of *Outcomes* consists of 5 *Fields* as follows:
- Educational Attainment of Students
- Student Satisfaction
- Labour Market Satisfaction
- Scientific Research
- Community Service

3.4   Assessment & Feedback Component

As shown by Figure 1, the *Component* of *Assessment & Feedback* consists of 3 *Fields* as follows:
- Self- Assessment
- External Review
- Correction Procedures

4.   UST MANUAL FOR PERIODIC ACADEMIC ASSESSMENT

As mentioned in the previous section, UST model of academic quality assurance is implemented since the academic year 2003/2004 until now and it has subjected to continuous developing and enhancement. QAAM in UST has developed a manual that includes a periodic academic assessment which is a comprehensive institutional assessment. UST has another assessment for programs self-assessment which is out of scope of this paper and it will be introduced in a future paper. The comprehensive institutional assessment was carried out annually since 2003 to 2009, then it has become carried out each 3 years while some KPIs still carried out annually to monitor the progress and the achievement of short-term objectives. This manual has become a reference for quality assurance and it consists of a set of tools (forms) as follows (Al-Shargabi A. et al., 2013):

4.1   Field Assessment of Academic Departments Performance (Assessor: Field Assessment Committee)

The first tool (form) in the manual is concerning the field assessment of Academic Departments performance and it is almost derived from the quality model mentioned early in this paper. As shown by Table 1, the 4 components of the model are still found in this form. Also, most fields of the model are still found in this form while other fields have been merged or measured by other tools (will be presented letter). As shown by Table 1, this form consists of 125 KPIs distributed on 13 Fields that belongs to the 4 Components of UST Quality Model.

Table 1: The form of the field assessment of Academic Departments performance

Component	No.	Field	KPIs/Field	KPIs/Component
Inputs	1	Mission, Objectives, and Action Plan	14	59
	2	Organizational Structure, Systems, and Regulations	5	
	3	Teaching and Learning Resources	13	
	4	PSD and Course Specifications	9	
	5	Academic Staff	13	
	6	Students and Registration	5	
Processes	1	Academic Processes in the Department	31	49
	2	Use of Teaching and Learning Resources	6	
	3	Administration Processes	8	
	4	Processes of Research and Scientific Activities	4	
Outcomes	1	Academic Outcomes	12	14
	2	Finance Outcomes and Community Service	2	
Feedback	1	Correction Procedures	3	3
Total number of KPIs				125

4.2   Assessment of Library Service Quality (Assessor: Student)

The second tool (form) in the manual is concerning the assessment of library service quality and it consists of 17 KPIs distributed on 3 Aspects related to some Fields of Inputs, Processes, and Outcomes Components in the UST quality model as shown by Table 2. The first Aspect is Administration Services (related to the Field of Systems and Regulations in the Inputs Component, the Field of Administrative Processes in the Processes Component, and the Field of Student Satisfaction in the Outcomes Component) with 8 KPIs. The second Aspect is Educational Resources (related to the Field of Teaching and Learning Resources in the Inputs Component, and the Field of Use Teaching and Learning Resources in the Processes Component) with 5 KPIs, and the third Aspect includes Environment, Furniture, and Equipment (related to

the Field of Infrastructure in the Inputs Component and the Field of Student Satisfaction in the Outcomes Component) with 4 KPIs.

Table 2: The form of the library service quality assessment

Field/Component	Aspect	KPIs/Aspect
Systems and Regulations/Input Administrative Processes/Processes Student Satisfaction/Outcomes	Administrative Services	8
Teaching and Learning Resources/Input Use of Teaching and Learning Resources/Processes	Educational Resources	5
Infrastructure/Inputs Student Satisfaction/Outcomes	Environment, Furniture, and Equipment	4
Total number of KPIs		17

4.3 Assessment of Academic Staff Satisfaction (Assessor: Staff Member)

The third tool (form) in the manual is concerning the assessment of Academic Staff Satisfaction (and the assistant staff) and it consists of 35 KPIs distributed on 7 Aspects related to some Fields of Inputs and Processes Components in the UST quality model as shown by Table 3. The first Aspect is Salary and Bonus (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 5 KPIs. The second Aspect is Training and Qualifying (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes and Processes of Research and Scientific Activities in the Processes Component) with 5 KPIs. The third Aspect is the Work Circumstances (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 6 KPIs. The fourth Aspect is the Direct and The Top Managers (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 6 KPIs. The fifth Aspect is Policies and Procedures (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes and Processes of Research and Scientific Activities in the Processes Component) with 4 KPIs. The sixth Aspect is Services and Facilities (related to the Fields of Systems and Regulations, Academic Staff, and Teaching and Learning Resources in the Inputs Component, Administrative Processes and Processes of Research and Scientific Activities in the Processes Component) with 3 KPIs. The seventh Aspect is the General Environment (related to the Fields of Systems and Regulations, Academic Staff, and Teaching and Learning Resources in the Inputs Component, Administrative Processes and Processes of Research and Scientific Activities in the Processes Component) with 6 KPIs.

Table 3: The form of academic staff satisfaction assessment

Field/Component	Aspect	KPIs/Aspect
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Salary and Bonus	5
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes Processes of Research and Scientific Activities/Processes	Training and Qualifying	5
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Work Circumstances	6
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Direct and Top Managers	6
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes Processes of Research and Scientific Activities/Processes	Policies and Procedures	4
Systems and Regulations/Inputs Academic Staff/Inputs Teaching and Learning Resources/Inputs Administrative Processes/Processes Processes of Research and Scientific Activities/Processes	Services and Facilities	3
Systems and Regulations/Inputs Academic Staff/Inputs Teaching and Learning Resources/Inputs Administrative Processes/Processes Processes of Research and Scientific Activities/Processes	General Environment	6
Total number of KPIs		35

4.4   Assessment of Academic Leaderships (Assessor: Student)

The fourth tool (form) in the manual is concerning the assessment of Academic Leaderships (Faculty Dean, Deputy Dean, Head of Department) and it consists of 50 to 65 KPIs (depends on the position type and level) distributed on 5 Aspects related to some Fields of Inputs and Processes Components in the UST quality model as shown by Table 4. The first Aspect is Position Occupying Requirements (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 17-22 KPIs. The second Aspect is Administration Skills (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 19-24 KPIs. The third Aspect is Professional Skills (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 4-7 KPIs. The fourth Aspect is Research Skills (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Academic Processes and Processes of Research and Scientific Activities in the Processes Component) with 3-4 KPIs. The fifth Aspect is Personal Skills (related to the Fields of Systems and Regulations and Academic Staff in the Inputs Component, Administrative Processes in the Processes Component) with 7-8 KPIs.

Table 4: The form of academic leaderships assessment

Field/Component	Aspect	KPIs/Aspect	
		From	To
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Position Occupying Requirements	17	22
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Administration Skills	19	24
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Professional Skills	4	7
Systems and Regulations/Inputs Academic Staff/Inputs Academic Processes/Processes Processes of Research and Scientific Activities/Processes	Research Skills	3	4
Systems and Regulations/Inputs Academic Staff/Inputs Administrative Processes/Processes	Personal Skills	7	8

4.5   Assessment of Staff Teaching Performance (Assessor: Student)

The fifth tool (form) in the manual is concerning the assessment of staff teaching performance (and assistant staff). This tool is used by students to assess a staff member in term of his/her teaching performance. There are other tools have been developed to assess a staff member by HoD, Peer-review, and Self-assessment. The assessment grade of a staff member performance is distributed between the four parts mentioned above. The form shown by Table 5 is concerning student assessment for the staff member and it will be presented here as a sample and the details of the other three parts will presented in a future paper. Student assessment for the staff member weights 40% of the total assessment and the 60% is distributed between the other three parts. The form shown by Table 5 consists of 39 KPIs distributed on 5 Aspects related to some Fields of Inputs, Processes, and Outcomes Components in the UST quality model as shown by Table 5. The first Aspect is Teaching Preparation (related to the Fields of Teaching and Learning Resources, and PSD and Course Specifications in the Inputs Component, Student Satisfaction in the Outcomes Component) with 5 KPIs. The second Aspect is Teaching Skills (related to the Fields of PSD and Course Specifications in the Inputs Component, Student Satisfaction in the Outcomes Component) with 13 KPIs. The third Aspect is Assessment Skills (related to the Fields of Teaching and Learning Resources in the Inputs Component, Academic Processes in the Processes Component, Educational Attainment of Students and Student Satisfaction in the Outcomes Component) with 6 KPIs. The fourth Aspect is Academic Support (related to the Fields of Mission, Objectives, and Action Plan, Teaching and Learning Resources in the Inputs Component, Academic Processes in the Processes Component, Student Satisfaction in the Outcomes Component) with 6 KPIs. The fifth Aspect is The Course (related to the Fields of PSD and Course Specifications in the Inputs Component, Academic Processes in the Processes Component) with 9 KPIs.

Table 5: The form of staff teaching performance assessment

Field/Component	Aspect	KPIs/Aspect
Teaching and Learning Resources/Inputs PSD and Course Specifications/Inputs Student Satisfaction/Outcomes	Teaching Preparation	5
PSD and Course Specification/Inputs Student Satisfaction/Outcomes	Teaching Skills	13
PSD and Course Specifications/Inputs Academic Processes/Processes Educational Attainment of Students/Outcomes Student Satisfaction/Outcomes	Assessment Skills	6
Mission, Objectives, and Action Plan/Inputs Systems and Regulations/Inputs Academic Process/Processes Student Satisfaction/Outcomes	Academic Support	6
PSD and Course Specifications/Inputs Academic Processes/Processes	The Course	9
Total number of KPIs		39

4.6 Assessment of Academic Supervisors Performance in the College of Open Learning (Assessor: Student, HoD, Self-assessment)

The sixth tool (form) in the manual is concerning the assessment of Academic Supervisors Performance in the College of Open Learning and it consists of 37 KPIs distributed on 5 Aspects related to some Fields of Inputs, Processes, and Outcomes Components in the UST quality model as shown by Table 6. The first Aspect is Teaching (related to the Fields of Teaching and Learning Resources, and PSD and Course Specifications in the Inputs Component) with 9 KPIs. The second Aspect is Administration and Supervision (related to the Fields of PSD and Course Specifications and Academic Staff in the Inputs Component, Use of Teaching and Learning Resources, Academic Processes in the Processes Component, Student Satisfaction in the Outcomes Component) with 15 KPIs. The third Aspect is Research (related to the Fields of Academic Processes, Processes of Research and Scientific Activities in the Processes Component, and Scientific Research in the Outcomes Component) with 2 KPIs. The fourth Aspect is Scientific (related to the Fields of Teaching and Learning Resources, PSD and Course Specifications in the Inputs Component, and Processes of Research and Scientific Activities in the Processes Component) with 7 KPIs. The fifth Aspect is Marketing, Finance, and Community Service (related to the Fields of Mission, Objectives, and Action Plan in the Inputs Component, Academic Processes in the Processes Component, Labour Market Satisfaction and Community service in Outcomes Component) with 4 KPIs.

Table 6: The form of academic supervisors performance assessment in the college of open learning

Field/Component	Aspect	KPIs/Aspect
Teaching and Learning Resources/Inputs PSD and Course Specifications/Inputs	Teaching Aspect	9
PSD and Course Specifications/Inputs Academic Staff/Inputs Use of Teaching and Learning Resources/Processes Academic Processes/ Processes Student Satisfaction/Outcomes	Administration and Supervision Aspect	15
Academic Processes/Processes Processes of Research and Scientific Activities/Processes Scientific Research/Outcomes	Research Aspect	2
Teaching and Learning Resources/Inputs PSD and Course Specifications/Inputs Processes of Research and Scientific Activities/Processes	Scientific Aspect	7
Mission, Objectives, and Action Plan/Inputs Academic Processes/Processes Labour Market Satisfaction/Outcomes Community Service/Outcomes	Marketing, Finance, and Community Service Aspect	4
Total number of KPIs		37

4.7 Assessment of Academic Service Quality Provided to Students (Assessor: Student)

The seventh tool (form) in the manual is concerning the assessment of academic service quality provided to students and it consists of 45 KPIs distributed on 8 Aspects related to some Fields of Inputs, Processes, and Outcomes Components in the UST quality model as shown by Table 7. the first Aspect is Infrastructure (related to the Field of Infrastructure in the Inputs Component) with 4 KPIs. The second Aspect is Library (related to the Fields of Teaching and Learning Resources in the Inputs Component, Use of Teaching and Learning Resources in the Processes Component, Student Satisfaction in the Outcomes Component) with 4 KPIs. The third Aspect is Employees in: a)

Admission, registration, and Student Affairs, b) Colleges and Departments with 10 KPIs, 5 for each one of the two parts. This Aspect is related to the Fields of Students in the Inputs Component, Academic Processes, Administrative Processes in the Processes Component, and Student Satisfaction in the Outcomes Component. The fourth Aspect is Admission and Registration Services (related to the Fields of Students in the Inputs Component, Academic Processes, Administrative Processes in the Processes Component, and Student Satisfaction in the Outcomes Component) with 4 KPIs. The fifth Aspect is General services (related to the Fields of Mission, Objectives, and Action Plan, Teaching and Learning Resources in the Inputs Component, Administrative Processes in the Processes Component, Student Satisfaction in Outcomes Component) with 8 KPIs. The sixth Aspect is Students Activities (related to the Fields of Students in the Inputs Component, Academic Processes, Administrative Processes in the Processes Component, and Student Satisfaction in the Outcomes Component) with 6 KPIs. The Seventh Aspect is Intellectual Image of the University (related to the Fields of Mission, Objectives, and Action Plan, Students in the Inputs Component, Academic Processes, Administrative Processes in the Processes Component, Student Satisfaction in Outcomes Component) with 5 KPIs. The eighth Aspect is Personal Development (related to the Fields of Teaching and Learning Resources, Students in the Inputs Component, Academic Processes and Use of Teaching and Learning Resources in the Processes Component, and Student Satisfaction in the Outcomes Component) with 4 KPIs.

Table 7: The form of the assessment of academic service quality provided to students

Field/Component	Aspect	KPIs/Aspect
Infrastructure/Inputs	Infrastructure	4
Teaching and Learning Resources/Inputs Use of Teaching and Learning Resources/Processes Student Satisfaction/Outcomes	Library	4
Student/Inputs Academic Processes/Processes Administrative Processes/Processes Student Satisfaction/Outcomes	Employees in: - Admission, registration, and student affairs - Colleges and departments	5 5
Student/Inputs Academic Processes/Processes Administrative Processes/Processes Student Satisfaction/Outcomes	Admission and Registration Services	4
Mission, Objectives, and Action Plan/Inputs Teaching and Learning Resources/Inputs Administrative Processes/Processes Student Satisfaction/Outcomes	General Services	8
Student/Inputs Administrative Processes/Processes Student Satisfaction/Outcomes	Students Activities	6
Mission, Objectives, and Action Plan/Inputs Student/Inputs Academic Processes/Processes Administrative Processes/Processes Student Satisfaction/Outcomes Labour Market Satisfaction/Outcomes	Intellectual Image of the University	5
Teaching and Learning Resources/Inputs Students/Inputs Use of Teaching and Learning Resources/Processes Academic Processes/Processes Student Satisfaction/Outcomes	Personal Development	4
Total number of KPIs		45

5. GRADING SCALE AND PROCEDURE OF ASSESSMENT

This section presents the grading system of assessment tools that are mentioned earlier in the previous section. The section also presents the procedure and mechanism of the assessment.

5.1 Grading Scale of UST Assessment System

QAAM in UST approved the Likert Scale. A Likert scale is commonly involved in the research employing questionnaire (with 5 grades from 1 to 5) (UNI., 2013). This scale is used in the field assessment of Departments Colleges of UST and the other assessments mentioned in the previous section. The team of assessment write up a grade

of quality for each KPI based on proofs and evidences provided to the team during the assessment session. Table 8 illustrates the assessment grades of UST.

Table 8: The assessment grades of UST

Grade	Grade Expression	Grade Level
5	Excellent	90% or more
4	Very Good	80% to less than 90%
3	Good	65% to less than 80%
2	Pass	50% to less than 65%
1	Weak	Less than 50%

Regarding the whole assessment of the faculties and departments, the assessment system of UST has given a relative weight for 7 assessments based on the assessment structure that is mentioned above in the previous section. Table 9 shows the assessments and the individual relative weights.

Table 8: The assessments and the individual relative weights in UST

Assessment of the Faculty Performance		Assessment of Academic Department Performance	
Assessment	Weight	Assessment	Weight
The Performance of Academic Departments Belongs to the Faculty	60%	Field Assessment of Academic Department	45%
Quality of Library Service	8%	Student Academic performance	15%
Staff Satisfaction	10%	Academic Service Quality Provided to Students	10%
Deanship	5%	Performance of Staff/Academic Supervisors	10%
Academic Service Quality Provided to Students	5%	Head of the Department	5%
Reports of Action Plans	7%	PSD	9%
Quality of Examinations and Course Assessment	5%	Course Portfolio	6%
Total	100%	Total	100%

5.2 Procedure and Mechanism of UST Assessment System

The assessment undertaken in this paper is regarding to the comprehensive institutional assessment which focuses mainly on the academic performance of the departments and faculties of the university. UST has another assessment for programs which is out of scope of this paper and it will be introduced in a future paper. As mentioned earlier in this paper, the institutional assessment was carried out annually until the year 2009, then it has become carried out each 3 years. However, some KPIs still carried out annually to monitor the progress and the achievement of the short-term objectives.. Here we present the procedure and mechanism of the assessment as follows (QAAM. 2010):

1. The president of UST issues a decision of the Field Assessment Committee that should involve internal and external reviewers.
2. The field assessment tools are sent to all Academic Departments within the faculties in order to prepare and get ready for the assessment session with the committee.
3. A time plan for field assessment should be prepared by the committee and then the plan is sent to all departments.
4. The committee starts applying the process of field assessment based on the time plan and using the assessment tools mentioned in Table 8. The committee follow up the forms and asks for the proofs and evidences, then it write up the grades individually by each member, then it writes up the comments, shortcomings, and the best practices that could be found applied by the department.
5. HoD then starts the process of staff performance assessment which is done by the HoD himself/herself, students, peer-review, and self-assessment by the staff member himself/herself especially for the research activities.
6. The next step is the assessment of the examinations and course assessment in each department.
7. Then, the process of academic leadership assessment starts for the dean, deputy dean, and heads of departments in each faculty. This assessment is done for each leadership by the staff and at the direct managers of each one.
8. All documents of all assessment types mentioned in Table 8 should be processed statistically.
9. The results then should be analyzed.
10. Finally, the periodic report of the academic performance for the whole university is prepared by QAAM and submitted to the university president.

6. CONCLUSION

The UST leadership has being interested in quality issues since 1999 through establishing special unit for quality assurance and enhancement in academic and administrative dimensions. Supporting this unit came from its vision and responsibility towards excellence. The unit totally assessed the whole academic process in 2003/2004 within the quality model adopted in the university. This model was periodically developed after every assessment process specially the part of the KPIs. As a result of applying this model, a remarkable quality of service has achieved and the UST has grown dramatically in terms of number of students (from thousands to 20000), colleges (from 3 to 8), programs (from less than 20 to 40) and also the international partnerships. Nowadays, the assessment process is directed toward program self-assessment and all the university units either academic or administrative. The UST vision was being translated through many actions in the strategic plan for the university 2009/2010 – 2014/2015. For example, UST started offering and equipping the educational process based on the national accreditation KPIs and, with the end of the strategy, the programs should be accredited by the CAQA, and international accreditation agencies. These actions are rephrased as 4 projects out of 36 stated in the strategic plan 2009/2010 – 2014/2015. These projects are quality manual for academic system, quality manual for administrative system, program accreditation, and institutional accreditation. These projects are in their way of accomplishment such as many agreements between the UST and CAQA as well as UST and different accreditation agencies such as ABET and AACSB.

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