9 Summary, Conclusions and Recommendations

9.1 Chapter Introduction
During the initial synopsis presentation at Jain University, the panel recommended that while the KPIs are being developed, it should be viewed from the perspectives of the three main stakeholders (i.e) Students/ Staff and the Management. This is the final chapter of this thesis work, and the thesis is summarized and conclusions are drawn and recommendations based on the study are made.

9.2 Thesis work done
As per the report (Bjørkquist, 2009) stakeholders have interest and influence in the Higher Education Institutes.

On this basis 56 KPIs have been developed – The starting line is the Mission and Vision statements of the college. Key words from the Mission and Vision statements are picked up as cues for the tasks to be achieved and Key Performance Indicators that would reflect these tasks are identified. Progressively, the goals of the college form the next level of platform for further identification of KPIs. Guidance from other Institutions that have developed KPIs from their respective mission and vision statements were also studied through literature review.

Surveys/ interviews were conducted to get the three stakeholders perspectives for selection of these KPIs.

Surveys Conducted: The KPIs developed are from the three main stakeholder’s viewpoints. Initially a survey was conducted- Annexure 3- to understand the interests and the difficulties of learning by the students( One of the stakeholders). A total of 132( out of 2000) students participated voluntarily in the survey carried out through the software’ Survey Monkey’. As a connection to this survey a very brief survey for the staff was also done. Fifty five teaching staff members out of a total of 100 participated in the survey.

The reflection from the survey is more in understanding the students as one of the main stakeholders. The graphical results of the survey are given in annexure 3. Yet another survey was
conducted among students who have been scoring consistently 3 GPA and above. The main purpose of the survey was to find if there are any special methods adopted by these students in being academically successful. About 85 students participated in this survey. The survey questionnaire is given in the annexure 10. This again is more to understand the profile of the stakeholder better in the context of this thesis.

The existing education quality set up and framework in the Sultanate was studied. It was observed by yet another survey conducted among the Engineering colleges about the status of implementation of KPI system in the Engineering Colleges in the Country as already referred and as in appendix B.

Interviews held: Interviews were also held with the system team in charge of implementing KPIs in SQU. Based on further discussions with QAA staff and with MoHE staff responsible for implementing KPIs in private colleges.

An interview was also held with the registrar of Middle East College of Information and Technology about the status of KPI implementation in their college.

Discussions were also held with Manager, QA in Caledonian College of Engineering.

Based on these discussions and the response from the survey for KPI implementation, it is observed that the system of implementation in the colleges is in its infancy stage of development. There was also reluctance among the colleges to part with the information relating to KPI development.

Development and Validation of KPIs for the Engineering College:

Totally 56 KPIs have been developed for the college, based on the college Mission/Vision statements and the Goals of the college. These KPIs have been classified according to Kaplan’s BSC and Strategy map. In addition the KPIs developed is put in the form of a questionnaire annexure 11 and sent to the Dean and the associate Deans offices for assigning the weightages in 3 point scales - Very important, important and not so important. The weightage so arrived are entered in BSC software for tracking the performance. The data values for the software are assumed from experienced staff, as the college is yet to adopt the KPI system.
A questionnaire survey was also conducted among the Academic and Administrative heads of staff about the data availability for the KPIs so formed.

A null hypothesis is formed to test the KPI effectiveness.

Null Hypothesis: The KPIs developed do not help in improving the performance monitoring system of the college.

All the HoDs of the following departments have been personally met and the questionnaire as attached was filled up by them. As mentioned in chapter 9, the respondents, unequivocally agreed that establishing KPIs help in improving /establishing a better monitoring system.

9.3 Objectives Vs Outcomes

At this juncture, we go back to the first chapter, we listed the objectives vide paras 1.41 and 1.42 which are reproduced below:

Objectives:

For the sake of easy readability, the same referencing as in chapter 1, is quoted in the following:

- Develop a system of Key Performance Indicators incorporating with a tracking and monitoring process to compare with the institutes mission and vision statements.

- To ensure that the Key Performance Indicators cover the students, staff and the management of the teaching institutes for effective mentoring of the KPIs.

- To validate the Key Performance Indicators so designed by conducting a survey amongst the staff of the college.

Outcomes:

In respect of 1.41-A system of KPIs has been identified (Totaling to 56) originating from the Mission and Vision statements and from the strategic goals of the college. A Monitoring and Tracking software (BSC developed by AKS labs) is identified and the available data is entered as a sample method.
With reference to 1.42-All the KPIs have been established from the perspectives of Students/Staff and the Management and they are listed together in Tables 7.1 and 7.2. The outcomes also include recommendations made to the college Management as per para 5.7.

For the objective 1.43- A survey was conducted among the key operating staff members of the college and all the survey members expressed their opinion that the KPI system would help in monitoring the goals of the college.

9.4 Conclusions

Based on surveys, interviews and literature, we can list the main conclusions:

1. KPI system of performance measurement is popular across USA, Europe and Australia. In Middle East, it is yet to gain momentum and in Sultanate of Oman, the system is in its early stages of implementations. Appendix K gives a glimpse of Universities worldwide adopting a system of KPIs for performance Measurement.

2. Journal papers are available from the developed nations on the practice and implementation of KPIs in Universities and Colleges. But, it appears that there are practically no journal papers from the Gulf on this subject.

3. It is understood that one of the purposes of KPI development and implementation is also to guide the Government in allocation of resources to these colleges based on ranking. The ranking itself is done on the basis of the KPI data.

4. Besides, KPIs are also used in ranking the Universities/Colleges across the world. A popular website QS lists the ranks of universities by Region, by subject area, or based on factors such as reputation or research citations. (Top Universities, 2014)

At present in the Sultanate of Oman, as the KPI system is still in its infancy, the resource allotment is not yet based on the performance measurement of the institutes of higher education.

4. MoHE recently (14-05-14) held a work shop on ‘Key Performance Indicators applicable to Private Higher Education Institutes(PHEI) in the Sultanate’. The Ministry revealed that it has identified 116 KPIS for the 30 PHEIs in the country. They have also received the data pertaining to these 116 KPIs from the 30 PHEIs and will be engaged in ranking them according to their
responses. In future, the government resources will be allotted based on the ranking of these Universities/colleges.

Besides ranking and a guide for resource allotment by the Government, the KPI also serve as a means of sharing the good practices of higher education institutes. For this stage of maturity to be attained, the Government should educate the institute more intensely so that KPI data is more in the public domain for exchange of information.

5. The KPIs originate from the Mission and Vision statements of the Institute. It is developed further by the goals set by the Management. The strategy map is evolved by finding the relationship between the goals and establishing what drives these performances. Establishing KPIs by outside agencies—even if it from MoHE- may not tie up the KPIs to the goals of the educational institutes. At present, in the Sultanate of Oman, the KPIs for the colleges are framed by the Ministry of Higher Education. The private higher education institutes fill up the format and send it to the Ministry.

6. The main stakeholders (customers) for the higher education institutes are the students – Their satisfaction measurement can be through the employment opportunities available to them after they complete their studies. Their satisfaction also hinges on the learning and teaching effectiveness. This in turn depends on the quality of the teaching staff. Measurement of this quotient can be only indirect – by judging the knowledge of the staff by the number of journal papers/consultancy and research projects and patents obtained by the college. The installation of KPI system would help the colleges in effectively monitor such aspects.

7. Looking at only the academic performance metrics, (leaving the Centre of Excellence and Going Green goals) the KPIs are summarized as below in Table 9-1.
<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Creativity &amp; Innovation</th>
<th>Employability</th>
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| **Staff**    | Staff.1-Number of Journal papers from the teaching staff.  
               Staff.2-Number of collaborative research projects undertaken  
               Staff.3-Number of active consultancy projects awarded to the college.  
               Staff.4-Number of research proposals submitted.  
               **KPI Sub total for Staff: 4** | Staff.5-Industrial trips undertaken by Mechanical & Industrial Engineering department  
               Staff.6-Industrial trips undertaken by Electronics and Computer Engineering Department.  
               Staff.7-Industrial trips Built and Natural Engineering department.  
               **KPI Sub total for staff:7** |
| **Management** | M.1-Number of staff development programs organized per year.  
                 M.2-Number of staff exchange programs organized per year  
                 M.3-Number of staff taking part per year in the staff exchange programs.  
                 M.4-Number of conferences /seminars organized per year.  
                 M.5-Number of affiliations / Associations valid during the year.  
                 M.6-Number of affiliations/Associations active during the year.  
                 **KPI Sub Total for Management=6** | M.7-Number of companies participating in the job fair.  
                 M.8-Percentage increase in participation compared to previous year.  
                 M.9-Number of occasions when college invited industrial personnel for interaction with students/staff/management  
                 M.10-Number of different industrial personnel visiting college for interaction with students/staff/management.  
                 M.11-Number of companies providing internship to the students.  
                 **KPI Sub Total for staff-5** |

**Table 9.1 KPIs focus on academic objectives**

The above way of organizing the table of KPIs, highlights the first two goals of the Engineering College. The total number of KPIs developed for these two goals is 22.In the staff KPIs for these two goals, there is an intertwining of Learning and Growth and Internal Business Processes of BSC as each of the KPI in the staff perspective can contribute to both these BSC fields.
9.5 Recommendations

1. This thesis focused on the main stakeholders like students, staff and the management of an Engineering college in Muscat, Oman. It is essential that further studies are conducted to develop the KPIs for the Engineering College based on the Employers and the MoHE – who are also major stakeholders when it comes to Institutes of Higher learning.

2. KPI data and information is now preserved, in general within QA departments of the colleges. The initiative to percolate the KPI information and data should come from the Management and the Government.

3. It is important that the KPI data is put in the websites of the colleges for the best practices to be shared across all colleges and to serve as an important feature for the students seeking admission in the colleges.

4. The effectiveness of KPIs lies in the tracking and monitoring mechanism adopted by the colleges. It is critical that the Colleges / Universities develop or use application software of a dash board that would give a visual presentation of the data being monitored.

5. Based on the study, following recommendations were made to the Management of the college:
   a. Creation of interactive web page in college portal for students’ employment.
   b. All graduating students to register in the web page seeking assistance from the college for employment. (Few students may not register –SPT/PT or students going in for higher studies.) This would also give clear idea for the KPI monitoring
   c. Part of the interactive web page should include separate pages for Finishing School and Job Fairs
      i. Finishing school – date of commencement / Duration/Syllabus
      ii. Interested students should be able to register on line for the finishing school.(Facilitates monitoring of KPI)
      iii. Students should be in a position to give the feedback to the college about the finishing school( Feedback for further improvement)
      iv. List of companies taking part in the fair(Facilitates monitoring of KPI)
      v. Brief about the companies taking part in the job fairs
      vi. Students skill set required by the companies taking part
d. The companies should be in a position to access a web page in our college portal to indicate their requirement of students at any point in time – before /during/after the job fair.

e. Each and every student, having internship should be under the guidance of an academic advisor who should be able to guide the students about the possible expectations / and clear any misgivings of students.

f. On similar lines, it is suggested that we also make the industrial visits more effective for students by staff with pre and post assessment of the event.

The Dean of the college accepted the recommendations and advised the ITSC department to implement the suggestions.( evidence attached).