



INNOVATIVE OPERATION IN A PRIVATE UNIVERSITY OF TECHNOLOGY-- AN APPLICATION OF STRATEGY MAP ON BALANCED SCORECARD

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ABSTRACT

Under the severe competition in higher education market currently, the universities of technology must seek their competitive strengths from every relevant segment as enterprises and improve their operation strategy. This case study aimed to explore the present operation strategies used in the subject school, estimated if the strategies were developed according to the goals and vision of the school, and finally the strategy map oriented on balanced scorecard was designed. The research was conducted by literature reviewing, interviewing method, SWOT analysis, and concluding the results with the strategy map oriented on BSC. The study suggested subsuming the standard operation procedure into the administration procedure, it will be beneficial to achieve the goals and vision of the school development and improve school administration efficiency.

Key Words: Balanced scorecard, Strategy map, Case study

INTRODUCTION

As a result of population sharp decline tendency, higher education sector is presently facing a significant challenge with regard to supply and demand (Chen & Hsiao, 2009, Chen, Yang &

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Shiau, 2006). Lawrence and Sharma (2002) indicated that in many countries, governments began reducing financial support for higher education institutions. Higher education institutions are required financial independence and should look to private sector models of operation strategies in order to meet the quality issues (Cullen, Joyce, Hassall, & Broadbent, 2003). The new managerialism such as the total quality management (TQM) and the balanced scorecard (BSC) have been tested in some universities. The administrators of the higher education institutions confront the great challenge how they plan the school administration well to benefit school operation and create additional value for students. The need of integrating the education and the labor market is the focus of social attention. The higher vocational education acts country modernization key role and has the responsibility of training high-tech personnel. Hence, to revise the operation strategy is urgent need and is relevant for the higher vocational education institutions currently.

Schools are the nonprofit organizations which emphasize on the goal of displaying the “value”, not focus on the “profit” as the main goal. The school ought to take the value activities to create the school’s competitive strengths and maintain its competitiveness (Porter, 1980). After reviewed the literature of the relevant researches, we found most of them only explained and described the situation of applying the BSC, which didn’t build any possible strategies or assign any school as the research subject. Umashankar and Dutta (2007) indicated that the BSC offers an institution the opportunity to formulate strategies to translate the mission of knowledge creation, sharing and utilization into a comprehensive, communicable and mobilizing framework. This study aimed to explore the practicability of applying the BSC to reform the school administration system via the specific strategy procedure, method and actual mode of operation. According to the implementation procedure of applying BSC in school, this study demonstrated feasible strategies of the subject school. The purposes of this study included:

1. From the view point of applying the BSC, the operation strategies of the subject school was investigated and the suggestions of improvement were provided.
2. According to the whole operation structure of the subject school, the strategy map of applying the BSC was designed.
3. The research results of applying strategy map and BSC were advanced as the reference of improving operation model in higher vocational education institutions.

LITERATURE REVIEW

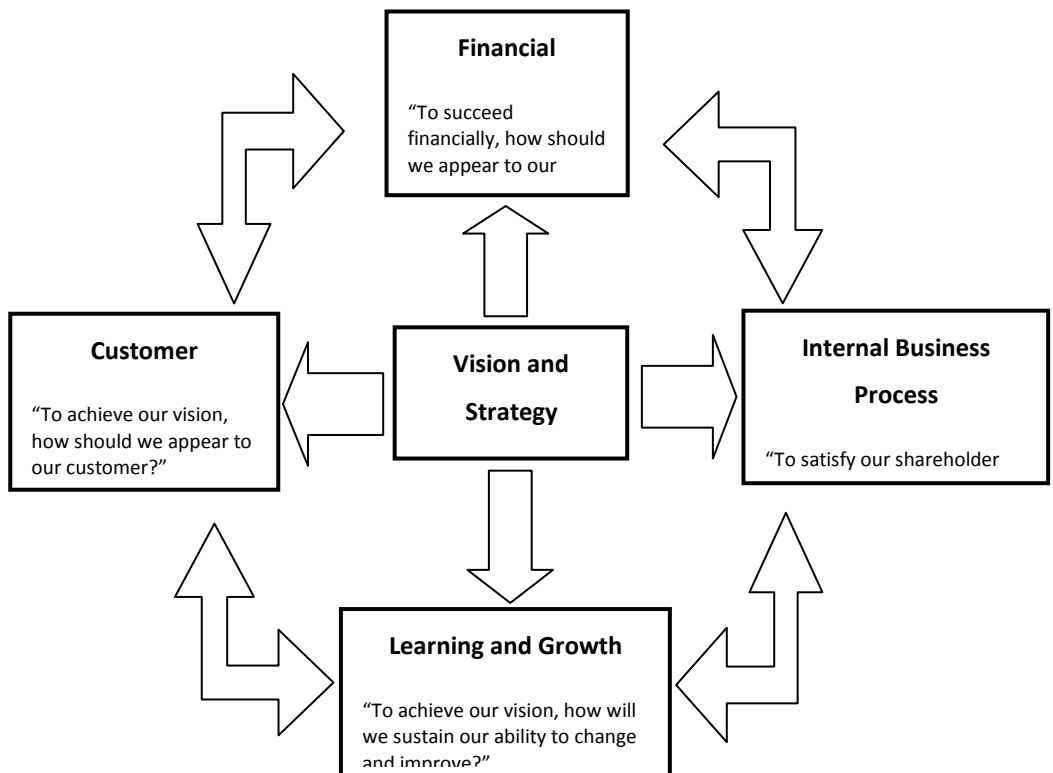
Balanced Scorecard

The traditional strategy planning emphasizes on the short term goals rather than long term demand in the enterprise. Consequently, the previous business deal is presented but the suggestions of improving the next business deal are not provided. The operation strategies may be relevant to the company competition strengths. They don’t focus on satisfying with the customer’s demand and

encouraging staff's innovation and learning. The BSC was utilized firstly from a research conducted by David Nolan, the CEO of Nolan Norton Institute, and Robert Kaplan, a professor of Harvard University in 1990. Their research results (Kaplan and Norton, 1992) aroused great echo from the public. The thesis was honored as one of the most authoritative administration strategy in the last 75 years by the Business School of Harvard University in 1992. Many enterprises worldwide identified with the utilization of the BSC gradually (1996). Over fifty percent of the listed companies utilizes the BSC and approve the method commendably so far.

The BSC focuses on all-round manners for operation administration. It emphasizes that financial and nonfinancial measures must be part of the information system for employees at all levels of the organization. The objectives and measures view organizational performance from four perspectives: financial, customer, internal business process, and learning and growth. These four perspectives provide the framework for the BSC (see Figure 1). The BSC encourages a dialogue between business units and corporate executives, not just about shot-term financial objectives, but about the formulation and implementation of a strategy for breakthrough performance in the future.

Figure-1. The framework of the BSC to translate a strategy into operational terms



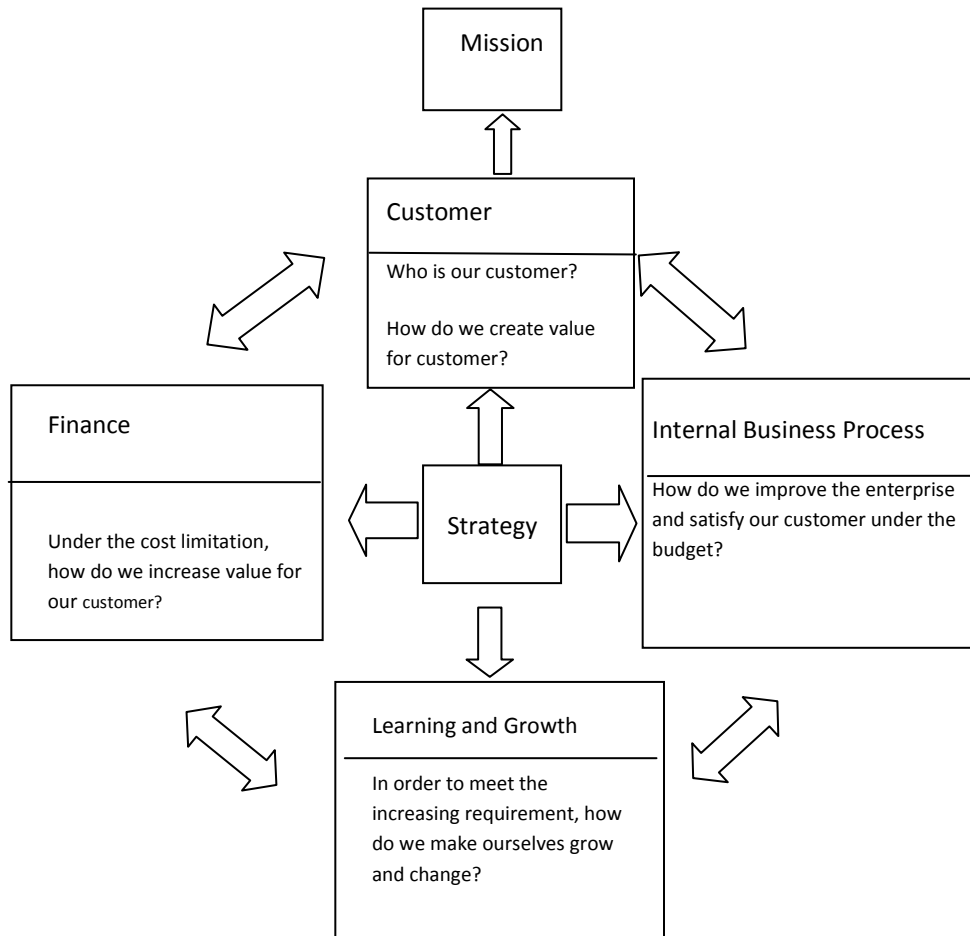
Sources: Kaplan and Norton (1996), "The Balanced Scorecard Translating Strategy into Action", Harvard Business Review (1996):76, p.9.

According to Kaplan and Norton's construction, the main action of each perspective signifies as following:

1. Finance perspective: In order to gain the shareholder's investment successfully, how do we persuade the shareholders by instituting the proper performance evaluation, such as the revenue growth and mix, cost reduction, productivity improvement, asset utilization, and invest strategy?
2. Customer perspective: In order to achieve the organization vision, how do we persuade the customer by instituting the proper performance, such as customers' target measurement including market share, customer retention, customer acquisition, consumer satisfaction, and consumer profitability?
3. Internal business process perspective: In order to satisfy with the shareholder and customer's request, how do we perform the enterprise administration procedure by instituting the proper performance, such as such as percentage of sales from new products, percentage of sales from proprietary products, new product competitors, manufacturing process capabilities, and time to develop next generation of products?
4. Learning and growth perspective: In order to achieve organization's vision, how do we change and improve the enterprise's administration continually by instituting the proper performance, such as employee productivity, employee satisfaction, and employee retention?

Kaplan and Norton (1996) argued that BSC could be applied to the nonprofit organizations from Laura Downing and Marissa Hendrickson's service experience in Massachusetts Special Olympics. Niven (2003) suggested that the completed BSC method can be applied in the nonprofit organization. Ruskov and Todorova (2008) pointed out that BSC strategic program can facilitate faculty and staff of education institutions to formulate and measure strategic management decisions and to create competitive advantages at the university. The operation strategies of higher education institutions should be correlated with social responsibility and emphasize on efficiency, effectiveness and concerns of the higher education institutions (David, Abreu, Carreira, & Goncalves, 2010). The structure of applying the BSC to the nonprofit organization is shown in Figure 2.

Figure 2: The structure of applying the BSC to nonprofit organization (Niven, 2003)



Although the application of the BSC in business sector is well documented, very little research has been reported regarding the adaptation or application of the BSC in the education sector (Karathanos & Karathanos, 2005). In this study, we aimed to explore the practicability of applying the BSC to reform the school administration system via the specific strategy procedure, method and actual mode of operation. Then, the strategy map oriented on BSC was demonstrated finally.

Why applied in case study

Yin (2008) indicated three conditions of using case study properly: (1) the research questions of the study were “how” and “why” questions, (2) the researcher can’t control on the subject obviously, (3) the research focuses on the present event, not the past. Furthermore, in the process of the research, the research design can be adjusted and modified, not limited to the original research plan. Due to being consistent with the above conditions, this study applied the case study research method. The reasons of applying case study were described carefully below:

1. One research question of this study was “why” the subject school needed to implement the BSC. Due to the BSC is a kind of strategic administration tool, which aims to achieve the

connection of strategy and vision of the subject, the other research questions were “how” the subject could propose the appropriate strategies.

2. This study reviewed the present operation strategies of the subject school and focused on conducting the BSC to the subject school. Then the strategies oriented on the BSC were designed in accordance with improving the present faults. However the study couldn't control the subject school and couldn't force the subject school to implement any BSC related actions.
3. The study focused on the present situation, not the past. The physical data was analyzed and the present situation was evaluated in order to plan proper strategies under the present situation for the subject school.

The research data included school's present vision, mission, the relative subordination data and the primary results of interviewing relevant departments of the subject school. The strategic research plan, SWOT, was also adopted as analyzing competitive strength, inner environment and outer environment.

RESEARCH SUBJECT

The Subject School

The subject school located on the north of Taiwan was established in 1965. At the beginning it only established four departments in that date. In 1968 and 1971 the college extended to two-year day and night programs. In 1997 the school passed the accreditation of ISO 9002. In 2000 it was transformed to a college of technology and established the second campus in Hsin-Chu city, about 50 miles away the main campus. In 2001, the school committee decided to terminate the vocational departments and forged ahead the goal of transforming to a university. In 2003 the scale of the school was achieved to the structure of a university of technology while a research institute was established. In 2004 two more research institutes were established. The school was formally restructured to a university of technology by the resolution from the forth meeting of transforming vocational school held by the ministry of education (MOE) in August, 2005. The school had four academic colleges, three research institutes and seventeen departments in the scale of the university as the date. Then, in order to prepare itself for globalization and diversification, the subject school enhanced the cooperation with the district industry, committed to raise the students' employment rate, and strengthened the curriculum integration continuously.

OPERATION STRATEGIES

Original Operation Strategies

The original operation strategies of the subject school consisted of the teachers and administrative staffs' performance, the quality management and the budgetary control. The further explanation is described as following:

1. The teachers and administrative staffs' performance:

(1) The norm of evaluation: The rules of the performance evaluation were approved by the executive council in 2006. The teachers and administrative staffs' performance could be categorized into five grades. Each grade level had the limited number of persons designated. The preliminary evaluation and the second evaluation were carried out within each department. After compiling all the information from the previous two runs of evaluation, the subject school notified teachers and staffs of the final evaluation results by the end of the semester.

(2) The period of evaluation: The teachers and administrative staffs of the school were evaluated their performance after they had worked for one year before the end of school year. New teachers and administrative staffs who had worked more than six months before the end of school year were evaluated their performance in another way and the others worked less than six months were not evaluated in the year.

(3) Rewards: In order to encourage the senior and excellent teachers and administrative staffs and strengthen the efficiency on their job performance, the subject school commended the excellent and senior teachers and administrative staffs on Teacher's Day yearly. At the same time, the evaluation results were used as vital references to decide whether the teachers and administrative staffs be promoted, given a raise, or fired.

The quality management

The subject school passed the accreditation of ISO 9002 in 1997. That revealed that the subject school had established the quality management scheme and SOP to assure the school operations efficiently, and could satisfy with the requirement of the MOE and the relevant administrative authority.

The budgetary control

In order to obey the regulations of the private school accounting system prescribing by the MOE, the budget plan had to be addressed ahead. All the income and expense items were categorized into general items and capital items. In this study the budgetary control of the subject school was implemented based on the "zero budget" which took the actual expense as the datum point. As the actual expense was not over but equaled to the budget, the budget plan could be expended next year otherwise the actual expense was still taken as the datum point.

The SWOT Analysis

After conducting interviews, the SWOT analysis of the subject school was executed in accordance with the school's strengths, weakness, opportunities and threats. Then the results were taken as the reference base of developing operation strategies. The analysis results were shown in Table 1:

Table-1. The SWOT Analysis of the Subject School

<p>Strengths</p> <ul style="list-style-type: none"> a. The location of the subject school was convenient for transportation, where MRT and bus station could be taken. b. The surroundings of two campuses were elegant. The buildings were designed in an artistic way and the classrooms were well facilitated. c. It sponsored teachers' teaching improvement and research expenditure abundantly d. It guided and encouraged students to strengthen their ability via acquiring certifications actively. e. It was accorded the ISO 9002 accreditation and adopted the SOP processes. f. It was granted the funding of Teaching Excellent Project from the MOE and other supplementary projects frequently. g. It made cooperation between the industry and school, and established communication with the international schools.
<p>Weakness</p> <ul style="list-style-type: none"> a. It was not experienced to manage two campuses and caused inefficient in administration. b. The quality and quantity of journals and database of the library was not enough. c. The image and reputation of the school was required to be improved. d. The total student number who gained the certifications was required to be promoted. e. More cooperation with the industry was required to benefit students' employment in the future.
<p>Opportunities</p> <ul style="list-style-type: none"> a. The development of internationalization and the cooperation with the domestic and international notable schools ought to be processed actively. b. In order to nurture students' concept of internationalization, the training of foreign language and information processing ought to be emphasized. c. Students' could show distinguished features by possessing certifications and second expertise. d. The popularized education and backflow education ought to be valued to benefit the enrollment channel opened by government. e. Diverse curriculums ought to be provided to satisfy the students of in-service program. <p>e. Diverse curriculums ought to be provided to satisfy the students of in-service program.</p>
<p>Threats</p>

- a. Due to increasingly low birth rate, the enrolled students were declined drastically.
- b. Because new universities were established, how to attract new students had become more difficult than ever before.
- c. In order to expand students' vision, students of the subject school ought to be encouraged to communicate with local and international schools.

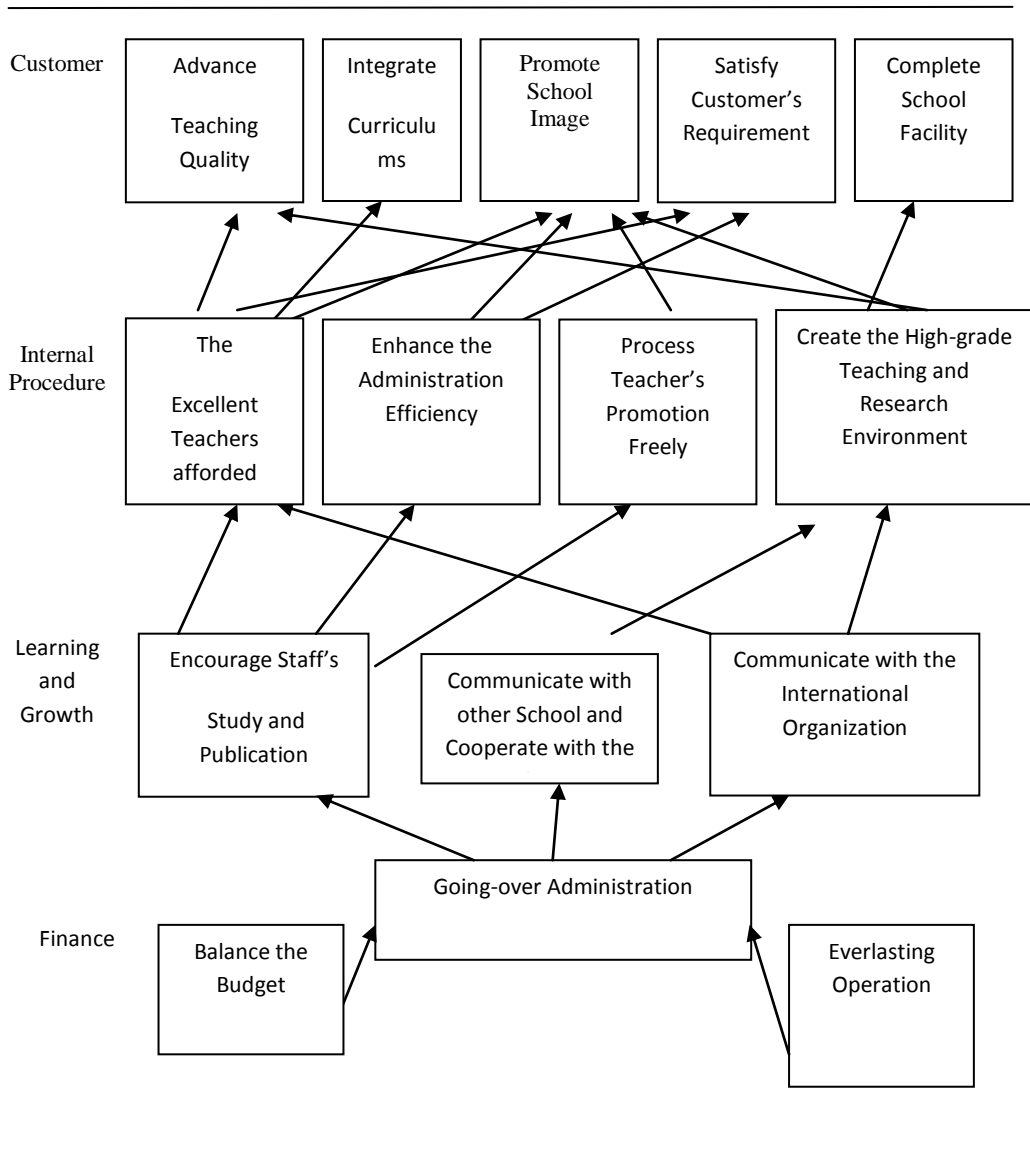
RESEARCH PROCESS

In this study, in accordance with the regulations announced by the MOE, the subject school ought to establish its definite vision, goals and strategies, translate them into the physical actions, and further achieve the entire school goals.

The implementation of BSC can transform organization's strategy into the physical actions. Due to the supports from the higher level administration, the subject school simplified the BSC's primary spirit and practical benefit, and instituted the goals of every aspect in each department of the school to be the basis of implementing the BSC.

Papenhausen and Einstein (2006) pointed out that the BSC approach is well suited to a higher education institution and allows the alignment of a operation strategies with the unique goal and vision of a subject. However, Matherly and El-Saidi (2010) revealed that most universities do not use strategic map to show the linkages among strategies and actions. The subject school was a nonprofit organization. The goal of school operation was to provide students (customers) the best value and quality of education. Therefore the researchers attempted to expand the strategy map in four aspects (financial, customer, internal procedure, learning and growth). The customer aspect was assigned at the top level of the strategy map. The financial aspect was assigned at the bottom level to maintain the basic conditions of the subject school operation. The strategy map of the subject school designed in this study is shown as Figure 3 and the relevant descriptions are listed as following.

Figure 3: The Strategy Map



Vision: Be an outstanding, typical and notable university of technology.

Goal: Provide students the best value and quality of education.

Strategy: 1. Recruit the excellent teachers and students and encourage them to develop themselves versatility.

2. Advance the efficiency of instruction and administration and reinforce some activities based on strengths and opportunities.

Customer

Customers meant the students, students' parents, alumnus, enterprise and the MOE. The value of the customer aspect focused on the three properties which were categorized into the product and service property, the school image property and the relation property. Due to the customers were the resources of the school funds, the highest administration principle, "Customers on Top" was generated naturally. The issues how the subject school maintained the number of students and enhanced the customer percentage of the education market were particular important. The establishment of the good relation between school and customers, and the development of school unique features claimed by customers were the key points. The propositions about customer value were discussed as following:

High-grade Service Property

In case of the subject school, the product and service property, as the previous SWOT analysis, provided the high-grade instruction quality, the diverse curriculum, and the sufficient and completed facilities to satisfy with students' requirement. Further students were guided to motivate their learning and encouraged to win their certifications. The confidence and communication between school and students were established greatly.

Customer Satisfaction Property

The subject school arranged diverse in-service programs and promoted the popularized education to benefit the students and alumnus of the school, and the mass population. The arrangement of the backflow education and the lifelong education also benefited students. Thus the subject school won students' satisfaction, parents' confidence, alumnus's support and enterprise's affirmation. The good relation between school and customers could be created with the good customers' satisfaction.

School Image Property

In case of the subject school, the school image property was identified by the enterprise's affirmation and the appraisal from the public while the school administrated well and performed outstandingly. As the previous SWOT analysis, the school won the opportunity of executing Teaching Excellent Project from the MOE and other supplementary projects frequently. It developed the cooperation between the industry and school, and the communication activities with other local and the international schools actively in order to expand students' vision. The customers of the subject school could be the propagators. So that generated the effect of advancing school image.

Internal Procedure

When the BSC was established, the subject school, the nonprofit organization ought to confirm its strategy definitely as the enterprise to satisfy with the value of the target customer. Then the school internal procedure was restructured in accordance with the school strategy. The customers'

concerns were firstly regarded as the most important items to achieve the greatest satisfaction. However the establishment of value chain was crucial in the internal procedure. According to the value chain of the internal procedure, two properties were discussed individually below:

Innovative Operation Procedure Property

In the present situation that many local and foreign colleges are established, it is hard to recruit students to enroll in the school which has no features. The school has to integrate resources to present its features. The features of the internal procedure include:

1. High-grade research and teaching environment: The environment of the campus was quiet and beautiful. The school buildings were magnificent in the new campus. The facilities were advanced. The teacher's research space and facilities were improved. Teacher's research ability and teaching quality were promoted.
2. The channel of staff's promotion unobstructed: The channel of the promotion was fair and open. The whole and fair evaluation system was established.
3. Teacher's structure and quality: Teacher's specialty cooperated with the goal of nurturing students, curriculum design and the goal of department development. The school teachers were encouraged to study future. The qualified teachers with PhD degrees were recruited to enhance teacher's quality and improve the ratio of teachers to students.

Service Procedure Property

Under the spirit of ISO accreditation, the school had to reform entirely, be computerized, and pursued school's operation rationalized and institutionalized in order to enhance the service quality. In order to advance the efficiency of the administration and strive for the identification of the customers, the staffs were encouraged by the administrator to learn the new knowledge. The school administrator also established the detailed items of the SOP and the administration regulation, and processed administrative work computerized entirely.

Learning and Growth

The goal of learning and growth aspect was the basis of the other three aspects, which was assistance of driving the other three aspects to be outstanding. How to create a sustainable environment for innovation and growth, the most important thing was to invest heavily in the staffs and adjusted the institution structure and procedures in accordance with the vision and goal.

Teacher's research and technology development had the physical effect and were directly associated with instruction and student's practical training. It was inspected by several dimensions including: teachers published their research thesis; teachers acquired the patents; teachers obtained the professional and practical experiences; teachers participated in the local and the international academic research and conference. Teachers also were encouraged to strive for the projects of National Science Council and other government organizations in order to advance the image of the school.

The communication among the school departments or with other schools was strengthened. The alignment with other notable international schools was developed continually in order to upgrade the communication ability of teachers and students.

Finance

In the nonprofit organizations, the profit is not the main goal. The financial goal is to exist everlastingly. Different financial strategies were cooperated with the different stages during school development. The subject school was not only achieved the budget balance, but also executed efficiently.

The donation and contribution from the alumnus were abundant. The backflow education, the popularize education and the lifelong education associated environment development were enhanced. So that school could be promoted and school resources could be expanded. The financial income could be increased. The finance of the school would be improved and independent.

CONCLUSION AND SUGGESTION

Conclusion

BSC conducting in higher education sector can be successful, must be supported by senior supervisors to assess the achievement of targets (Chen, Yang, & Shiau, 2006, Gabrovo, 2008). The subject school implemented the BSC after evaluating the existed problems and solving them.

After the administrator's support of the subject school was gained, the introduction meeting of the BSC was held in order to introduce the benefit and goal of inducting the BSC to thirty administrators of the departments. Then twenty-four administrators and staffs united to institute the "project motivation group". This group aimed to strengthen the staff's basic concept, enhance the identification and participation, plan and hold a serial of training programs, which spent 2400 hours per person and cost four millions NTD for training and business trip. During the implement of the BSC, the working attitude of the administrative staffs was changed to be active and positive. The administrators of the departments could cooperate with other departments well. As the subject school was implementing the BSC, the strategies oriented on BSC were required to be adjusted properly via the learning and feedback system. The subject school had to use its competitive strengths and rise to the challenge of the competitive education market.

The subject school strived for becoming a notable university of technology in the long term as the school's vision. The subject school was required to be improved in many aspects to nurture the excellent students. For example, it was necessary to invest more money to construct good equipments, recruit the excellent teachers, lower the ratio of students to teachers, establish the resource center for student learning, develop more school's features. While the goal of the vocational education is to nurture the talent of practical technology, the students of the school had better to focus on both practicality and theory. It is preferable that the knowledge students have learned is closed to their jobs. Consequently improving school education and cooperating with the

change of the society and students' requirements are the goal that the vocational school ought to achieve. However in order to obtain the students and society's identification and promote to be a notable university of technology, the image of the subject school is required to be improved.

Suggestion

According to the plan and the process of the BSC implementation described above, the suggestions of implementing the BSC for the subject school in the future include:

1. Cooperate with the reward institution: The performance evaluation ought to cooperate with the reward institution in order to generate the effect of encouragement. The administrators of the subject school compete with each other fairly and peacefully to pursue the continued progress as the new performance evaluation institution is implementing. It benefits to achieve school's goal and strategy.
2. Encourage administrators to study further: Through the enhancement of professional knowledge, the aspect of learning and growth is established, and the basic theory and the actual benefit related with implementing the BSC are understood by the administrators. It can advance the efficiency of administration and enhance the identification and participation of the new operation strategies.
3. Solve the customers' requirement and their problems: As the whole environment change, the school ought to acquaint with the customers' requirement. Therefore the survey of customer's background is necessary in order to provide the proper service that can meet customer's requirement. For example, students' employment guidance, schooling loan, certification obtaining guidance and so on.

In addition, each school has its diverseness. As school's vision and strategy is changed, the content of the strategy ought to be inspected and adjusted in time according to the short, medium, and long-term school development plans.

REFERENCES

- Chen, S. H., C. C. Yang, and J. Y. Shiau, (2006)** "The application of balanced scorecard in the performance evaluation of higher education" *The TQM Magazine* Vol.18, No.2, pp.190-205.
- Chen, Y. F. and C. H. Hsiao (2009)** "Applying Market Segmentation Theory to Student Behavior in Selecting a School or Department" *New Horizons in Education* Vol.57, No.2, pp.32-43.
- Cullen, J., J. Joyce, T. Hassall, and M. Broadbent (2003)** "Quality in higher education: from monitoring to management" *Quality Assurance in Education* Vol.11, No.1, pp. 5-14.
- David, F., R. Abreu, F. Carreira, and S. Goncalves (2010)** "Performance indicators and corporate social responsibility: evidence from Portuguese higher education institutions" *International Journal of Banking, Accounting and Finance* Vol.2, No.3, pp. 251-274.
- Gabrovo, B. (2008)** "Building the academic strategy program" Abstract from ACM International Conference Proceeding Series Vol.374 archive. Proceedings of the 9th International Conference on Computer Systems and Technologies and Workshop.

- Kaplan, R.S. and D.P. Norton (1992)** “The balanced scorecard measures that drive performance” Harvard Business Review Vol.70, No.1, pp. 71-79.
- Kaplan, R.S. and D.P. Norton (1996)** “Linking the balanced scorecard to strategy” California Management Review Vol.39, No.4, pp. 53-79.
- Kaplan, R.S. and D.P. Norton (1996)** “Using the balanced scorecard as a strategic management system” Harvard Business Review Vol.74, No.1, pp. 75- 85.
- Kaplan, R.S. and D.P. Norton (1996)** “The Balanced Scorecard: Translating Strategy into Action” Harvard Business School Press: Boston, MA, pp. 9.
- Karathanos, D. and P. Karathanos (2005)** “Applying the Balanced Scorecard to Education” The Journal of Education for Business Vol.80, No.4, pp. 222-230.
- Lawrencea, S. and U. Sharmab (2002)** “Commodification of Education and Academic LABOUR—Using the Balanced Scorecard in a University Setting” Critical Perspectives on Accounting Vol.13, No.5-6, pp. 661-677.
- Matherly, L. L. and M. A. El-Saidi (2010)** “Implementation of a strategic group map and balanced scorecard in a university setting” International Journal of Management in Education Vol. 4, No. 2, pp. 216-231.
- Niven, P. R. (2003)** Balance Scorecard Step—by—Step: Maximizing Performance and Maintaining Results. John Wiley and Sons: New York.
- Papenhausen, C. and W. Einstein (2006)** “Implementing the Balanced Scorecard at a college of business” Measuring Business Excellence Vol.10, No.3, pp. 15-22.
- Porter, M. (1997)** Competitive strategy: Techniques for Analyzing Industrial and Competitors, Simon and Sc: New York.
- Umashankar, V. and K. Dutta (2007)** “Balanced scorecards in managing higher education institutions: an Indian perspective” International Journal of Educational Management Vol.21, No.1, pp. 54-67.
- Ruskov, P. and Todorova, Y. (2008)** “Application aspects of computer systems and technologies table of contents” Abstracted from ACM International Conference Proceeding Series; Vol. 374 archive. Proceedings of the 9th International Conference on Computer Systems and Technologies and Workshop.
- Yin, R. K. (2008)** Case Study Research: Design and Methods, Sage Publications, Inc: CA.