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Using Balanced Scorecard (BSC) to Improve Quality and Performance of Vocational Education and Training (VET): A Case Study in Singapore

Tiew Ming YEK

ITE College West

Singapore

Dawn PENNEY

Edith Cowan University

Australia

Alice C H SEOW

ITE College West

Singapore

Abstract

As the first education institution to win the prestigious Singapore Quality Award in October 2005, the Institute of Technical Education (ITE) in Singapore can be considered as a world-class Vocational Education and Training (VET) institution (ITE, 2006, p. 17). Its world-class status was further corroborated when ITE clinched the global IBM Innovations Award in Transforming Government in September 2007 (IBM, 2007). This paper presents a case study of ITE using Balanced Scorecard (BSC) as a strategic management system to improve quality and performance of the VET that it provides to some 23,000 full-time pre-employment students. The case study utilises the personal knowledge of first author as Principal of ITE College West, which is one of three colleges within ITE, and other documentary sources to explore: (i) relevance of BSC for ITE as a VET institution from a macro-system perspective; (ii) key considerations in adopting and adapting BSC; (iii) effectiveness of implementing BSC in the institution; (iv) internal impact of BSC implementation; and (v) 'lessons learnt'. In addition, prospective application of BSC in other VET settings is discussed.

Introduction

The focus of this paper is *quality and performance management of Vocational Education and Training* (VET), specifically in Singapore, where the Institute of Technical Education (ITE) is the national institution responsible for providing VET to some 23,000 full-time pre-employment students. The paper aims to explore and enhance understanding of what the notions of *quality and performance* entail with regard to VET in Singapore and how best to measure, manage, and realise them using Balanced Scorecard (BSC) as a strategic management system.

Quality and performance can mean different things in different contexts and to different people. People have intuitive understanding of these terms but may be hard pressed to define them. Yek (2007, pp. 1-3) discusses this issue extensively and presents *quality and performance* as related concepts. A VET institution that delivers high quality education and training is deemed more able to achieve good performance. In the specific context of VET in Singapore, high quality is taken to mean that the education and training received by students is relevant to the needs of industry, authentic and rigorous, resulting in graduates who are ready for employment. Hence quality is measured by the graduates' employability and employers' satisfaction (an index which assesses the performance or competency of graduates they hired). A VET system that is performing well is thus one that is able to attract school leavers and adult learners to join the system as well as find meaning and purpose to complete the education and training successfully. Performance is therefore measured by the intake rate of school leavers (percent of secondary school leavers taking up VET) or enrolment as a proxy and the success rate (percent of students completing their course of study with full certification). As such, a VET institution that delivers high quality education and training will have graduates who are well prepared for employment and valued by employers. With good employment prospects for its graduates, the institution is in turn able to attract more students and offer them meaningful VET for future employment.

The focus on *VET in Singapore* represents a unique setting and context for educational research focusing on quality and performance. Singapore is a small island city-state established 43 years ago with an outstanding history of economic development. Several publications have reviewed the phenomenal economic growth of Singapore (Lee, 2000; Chiang, 1998; Huff, 1994) and articles citing the success of Singapore's economy and education can be readily found on the web (Thatcher, 1993; Ng, 2001; Cavanagh, 2005; Inkpen & Wang, 2006; Al Jamal, 2006). Today, Singapore is a notable cosmopolitan city where English is the language for business and government as well as for common communication. Like Singapore as a nation, VET in Singapore has a relatively short history. A national system of training was adopted primarily to support the human resource needs associated with industrialisation after independence. Since then, VET has undergone several transformations (Law, 1996) and ITE (the Institute of Technical Education), a post-secondary institution, was established in 1992 as the national institution responsible for providing VET to school leavers and working adults. It is now an integral part of the national system of education and training, and caters for about 25 percent of the cohort leaving their secondary education with lower academic achievements. It provides practical hands-on training to equip students with skills for employment and an

education environment designed to develop students into confident, independent and thinking practitioners. Although VET is perceived as having a lower status the world over as compared to its academic counterpart (Metzger et al, 2001), ITE has largely overcome this 'image' problem. Today, Singaporeans embrace VET as an accessible and choice alternative, enjoying a cohort participation rate of 27 percent compared with a national target of 25 percent (ITE, 2005, p. 37).

As the first education institution to win the prestigious Singapore Quality Award in October 2005 and one of only 22 organisations to win the award since it was launched in 1994 (ITE, 2006, p. 17), ITE can be considered a world-class VET institution. Its world-class status was further affirmed on September 25, 2007, when the Ash Institute for Democratic Governance and Innovation at Harvard University's John F. Kennedy School of Government announced ITE as "the winner of the (US) $100,000 IBM Innovations Award in Transforming Government." (IBM, 2007, ¶ 1) This achievement can be attributed to ITE's tradition of performance measurement since its inception in 1992, which has, in turn, led to the formal adoption of BSC as a strategic management system since 2002 in an endeavour to enhance quality and performance within the institution. The section below expands upon the development and previous applications of the Balanced Scorecard in business and educational settings.

Literature Review on Balanced Scorecard

Literature reviewed shows that studies examining effectiveness of BSC for the private commercial sector are numerous, with mixed findings. Empirical studies by Ittner and Larcker (2003), Evans and Jack (2003) as well as Davis and Albright (2004) found that proper usage of BSC led to improved financial performance. Other studies including Dumond (1994), and Forza and Salvador (2000 & 2001) noted that usage of BSC promoted other positive effects such as employee satisfaction and understanding of the business. On the other hand, empirical investigations by Handfield and Ghosh (1995), Neely, Kennerley and Martinez (2004), and Malina, Nørreklit and Selto (2005) found no discernible performance improvement. Moreover, theoretical analyses by Nørreklit (2000) as well as Marr and Adams (2004) questioned the key principles behind BSC.

Most studies have focused on the use of BSC in private for-profit manufacturing and service-oriented businesses. While some studies like Andersen and Lawrie (2002), Moore

(2003) and Szarycz (2004) analysed how BSC can be adapted for effective public sector usage, few focused on its actual effectiveness therein. Of these, even fewer examined the relevance and effectiveness of BSC usage in the field of education in general, and none was found looking at VET specifically. Thus, Karathanos and Karathanos (2005) noted: "Although the concept of BSC has been widely adopted and used in business sector, the education sector apparently has not embraced BSC concept widely, as indicated by the dearth of published research on this topic" (p. 225).

Grayson (2004) illustrated the formulation of BSC for a high school using a hypothetical example. Cribb and Hogan (2003) examined BSC usage in a private university library with emphasis predominantly on the implementation process. Hafner (1998) had a similar focus in exploring the University of California's use of BSC across its nine campuses. Karathanos and Karathanos (2005) provided a general and brief survey of the differences between business and education scorecards (with outlines of BSC for three Malcolm Baldrige National Education Quality Award[1] winners), which appeared useful as a broad framework to guide the BSC adaptation. Stewart and Carpenter-Hubin (2001/02), and Ruben (1999) both provided detailed analysis of how a research university could adapt BSC for its use and offer broad framework for quality and performance management. In general, there was little discussion of issues concerning the use of BSC in education and training as well as a lack of documented findings regarding its relevance and effectiveness. Literature on the applicability of BSC to VET institutions is even sparser given its specialised nature.

Overall, the literature review shows that BSC has been around since 1992. As a management tool, BSC is well accepted by many businesses and for-profit organisations. It is also gaining acceptance by public as well as the not-for-profit organisations. However, the adoption and use of BSC in VET institutions is relatively new with little research carried out. Hence, a case study of BSC being used as a strategic quality and performance management system in a VET institution is both timely, worthwhile and would add to the growing body of knowledge on BSC.

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[1] Malcolm Baldrige National Education Quality Award is the equivalent of Singapore Quality Award in the USA. Details can be obtain from the Baldrige National Quality Program Web site: (http://www.quality.nist.gov/index.html)

The Case Study in Singapore: Using Balanced Scorecard in ITE

In early 2002, ITE formally adopted BSC as a strategic management system for quality and performance. Although the BSC application has a relatively short history, ITE has established a tradition of performance measurement since its inception in 1992. This subsequently evolved into BSC. The BSC framework has also gone through a few modifications and can be considered as having been improved based on practical experiences and considerations. With the background and context for *VET in Singapore* introduced earlier, the coming sections address the focus of this case study.

The Relevance of Balanced Scorecard for ITE

The management of ITE spent considerable time and efforts to examine the relevance of BSC for ITE in recognition of the fact that ITE was not a commercial business and thus had very different priorities and focus. Figure 1 shows the original BSC model developed by Kaplan and Norton (1992; 1993; 1996).
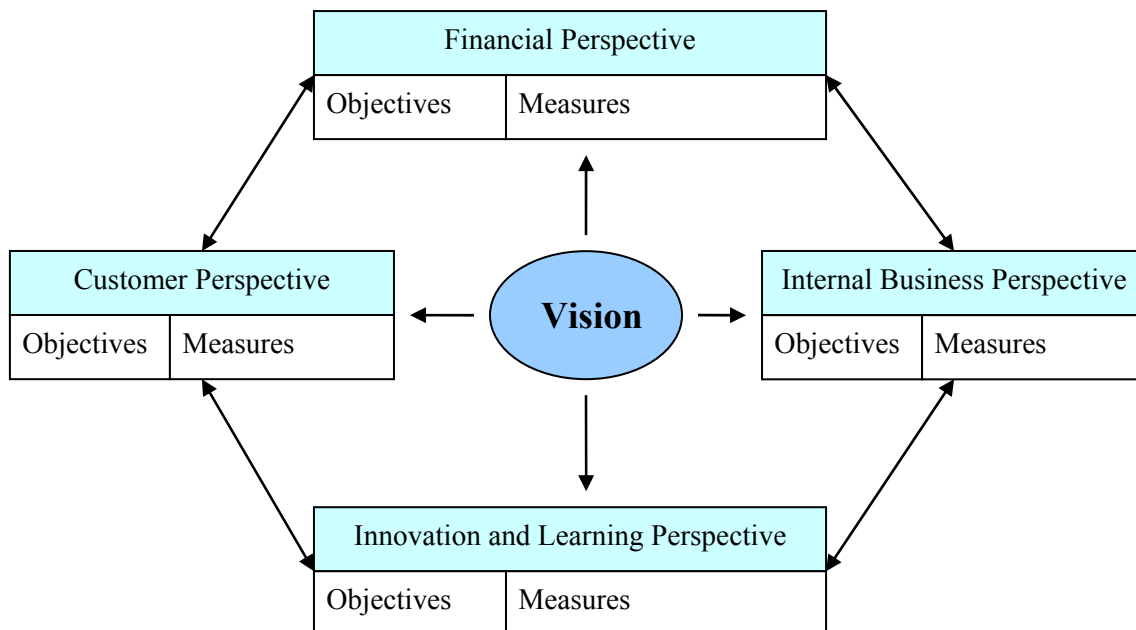

Figure 1:

Original Balanced Scorecard (Kaplan & Norton, 1992; 1996).

With the original BSC model developed from a business organisation viewpoint, it is important to balance measures from the *Financial Perspective* with measures from the *Customer Perspective*, *Internal Business Perspective* as well as *Innovation and Learning Perspective*. However, ITE is a public funded not-for-profit VET institution. So from its viewpoint, while

costs are important, it would not be driven by the financial bottom line. It should be driven instead by the needs of stakeholders: students, parents, employers and community. In this respect, Dr Law Song Seng, former CEO of ITE wrote: "The institution has to be committed to the needs of its students, employers in industry who recruit the graduates and the community it serves" (Law, 1996, p. 19). Its latest mission statement: "To create opportunities for school leavers and adult learners to acquire skills, knowledge and values for lifelong learning in a global economy" (ITE Advantage Plan, 2005) also highlights the public service role of ITE. As such, ITE has adapted the BSC model to reflect the difference in priorities. Figure 2 below shows the latest BSC model adopted by ITE.
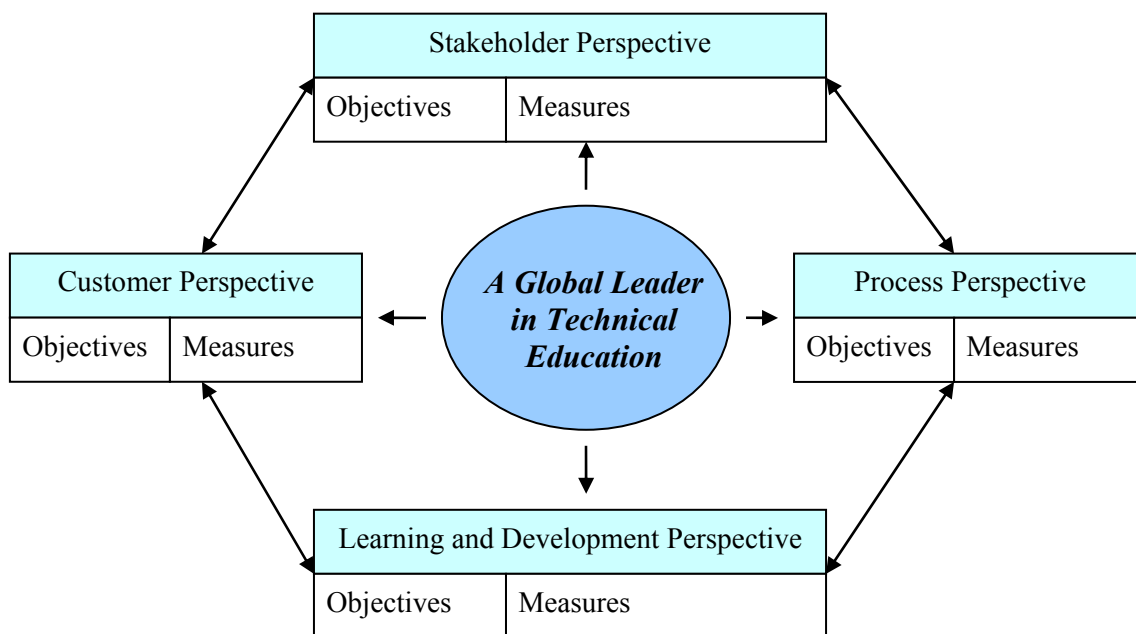

Figure 2:

Latest BSC model adopted by ITE

The adopted BSC model is used as a multi-faceted quality and performance management system incorporating: four perspectives, 12 strategic objectives and 31 measures/KPIs (Key Performance Indicators) as shown in the FY2005 annual corporate scorecard (SQA 2005 Summary Report, 2005, p. 50). Table 1 below presents an outline of the scorecard:

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Table 1:

ITE FY2005 Annual Corporate Scorecard (SQA 2005 Summary Report, 2005, p. 50).

Perspective		Strategic Objective	Key Performance Indicators (KPIs)
A. Stakeholder	Overall	SO1: Brand Favourability	Brand Equity Index
		SO2: High Cohort Capture	Student Cohort Capture Rate
		SO3: Organisational Excellence	Band Score under SQA
B. Customer	Part- & Full-Time	SO4: Programme Acceptance	Total Student Enrolment Total Student Intake Intake Rate (3 sub-KPIs)
		SO5: Education Outcome	Graduates' Employability (3 sub-KPIs) Employers' Satisfaction (3 sub-KPIs)
		SO6: Student Satisfaction	Students' Satisfaction with ITE Education
C. Process	Part- & Full-Time	SO7: Optimal Value Add	Delta Net Economic Value (NEV)
		SO8: Training Success	Success Rate Module Success Rate Module Pass Rate
		SO9: Effective Resource Management	Cost of Training (per student)
D. Learning & Development	Overall	SO10: Favourable Organisation Climate	Staff Satisfaction Index
		SO11: High Employee Involvement	Team Project Ratio Staff Suggestion Ratio
		SO12: Learning Opportunities	% of Staff Attaining 100 Learning Hours
Total :		12 Strategic Objectives	31 KPIs

In the BSC model adopted by ITE, the "bottom-line" priority for ITE (representing VET in Singapore) is *stakeholder perspective*. For ITE to perform well, it must improve its brand favourability, increase cohort capture rate and enhance organisation excellence. Compared with the original *financial perspective,* it is evident that for ITE, gaining stakeholders' acceptance and recognition is as important as making money for shareholders and securing healthy financials are for commercial for-profit organisations. The *survival* of ITE depends on its ability to attract school leavers to the range of VET programmes it offers, and enable them to find meaning and purpose to complete the programme successfully as well as be equipped for employment so that graduates of ITE are valued by employers. In essence, ITE can be considered as a high quality and performance VET institution fulfilling its primary public

service role provided it achieves strategic objectives in the stakeholder perspective and performs well in related KPIs.

In terms of the *customer perspective*, ITE considers its students as customers. It describes *key customers* as: "(1) secondary school leavers… who take up… full-time education at ITE, and (2) ITE graduates and adult learners who enrol in… part-time programmes" (SQA 2005 Summary Report, 2005, p. 3). As an institution that "seeks to build customer-centric culture among staff" as well as encapsulates "care for customer" in its "Core Value – Care" (ibid, p. 39), ITE is systematic in determining customer requirements, building customer relationship and ensuring customer satisfaction. It analyses its own value proposition and segments its customers before determining key customer requirements. It reaches out to potential students (customers) by inviting them to visit and be immersed in the ITE environment for two days under an "Experience ITE Programme." It has a structured "student care framework in place to provide care, guidance, motivation and support to students." It "provides advice and assistance to graduating students on their job search" and continues its relationship with graduates through the ITE Alumni Association. It "determines customer satisfaction through extensive and regular collection of data throughout the academic career of students" using surveys or studies (ibid, pp. 39- 45). Compared with the original BSC "Customer Perspective: How do customers see us?" (Kaplan & Norton, 1992, pp. 128-130) – the need to know how students (customers) see ITE is equally important. Through professional interaction with colleagues, the authors understand that many teachers in ITE are not comfortable with seeing students as "*customers*." To them, commercial attributes of "*customers*" such as '*customer is king* and *customer is always right'* simply cannot be applied to students. Yet there is an unavoidable need to see students as "*customers*" in one sense, since without customers there will be no business; without students there will be no ITE. Overall, while the authors advocate that a *customer perspective* should be presented as a *student perspective* to bring clarity and intent, it is also clear that to associate student with customer brings forth a very important message – *students are very important to ITE,* as customers are to a commercial organisation.

For the *process perspective*, ITE regards it as the equivalent of the original "Internal Business Perspective: What Must We Excel At?" (Kaplan & Norton, 1992, pp. 132-133), meant for measures that "stem from the business processes that have the greatest impact on customer satisfaction" (ibid, p. 132). Nevertheless, the term "*process perspective*" arises for two reasons: (1) it is intended for measures stemming from business *processes*, and (2) the term is used so

that there is alignment to the Singapore Quality Award (SQA) framework where the criteria to assess key business processes comes under "category 5: *Processes*" (SQA 2005 Summary Report, 2005, p. 1). In the ITE-BSC model, the *process perspective* looks at key business processes as well as support processes in a "highly-integrated approach… to ensure that its products and services meet customer and operational requirements" (ibid, p. 35). Through its key business processes, ITE has a "strong commitment to quality [which] is exemplified in [its] Quality Policy… – We are committed to providing quality technical education for our customers through the continual pursuit of organisational excellence" (ibid). With three strategic objectives of: optimal value add, training success and effective resource management as highlighted in Table 1 earlier, ITE's key business processes are geared towards delivering high quality and performance VET for its customers (students of ITE).

In the ITE-BSC model, the *learning and development perspective* was adapted from *innovation and learning perspective* in the original BSC model which in essence asks the question: "Can we continue to improve and create value?" (Kaplan & Norton, 1992, p. 134). For ITE as a VET institution, the surest way to continue "to improve and create value" is to engage all staff members (teachers and support staff) in lifelong learning and continual professional development. In this perspective, the ITE-BSC model has three strategic objectives namely: (1) favourable organisational climate, (2) high employee involvement, and (3) learning opportunities as shown earlier in Table 1. These objectives are geared towards engaging staff members in professional learning and development so that ITE can "attract, retain and develop staff with the desired profile and passion to meet ITE's vision and goals" (SQA 2005 Summary Report, 2005, p. 25).

Having looked at all four perspectives of the ITE-BSC model, it is clear that with considered and informed adaptations, BSC has the potential to be a relevant and informative quality and performance management tool for ITE. Below we explore the key issues that shaped the adaptation and adoption of the BSC at ITE.

Key Considerations for Adapting and Adopting Balanced Scorecard

The BSC initiative in ITE was championed by the Organisational Excellence Unit from the headquarters and introduced following its second five-year strategic plan – ITE Breakthrough Plan (2000 – 2004). A prominent consultant in the application of BSC in Singapore, Associate Professor (AP) Hum Sin Hoon, was engaged to guide ITE in the adoption process of BSC using a five-stage approach. Subsequently, AP Hum (2006, pp. 49-56) shared

the "five-stage" approach at an international conference on Vocational & Technical Education organised by ITE. The five stages are: 1) Mapping organisation vision and strategy 2) Formulating strategic objectives and creating measures 3) BSC draft – highlighting the linkages among measures and perspectives 4) Preparing for implementation and 5) Committing to implementation plan (Hum, 2006). For ITE, this approach has been adapted to be an integral part of a highly "integrated and aligned [strategic] planning framework" (SQA 2005 Summary Report, 2005, p. 16).

The use of five-year strategic planning cycles in ITE started in 1995 with the adoption of ITE 2000 Plan (1995-1999). With the second five-year strategic plan, ITE Breakthrough (2000-2004), the organisational vision and strategies had gone through a rigorous "consultative approach [to co-opt] the diverse expertise, knowledge and inputs of staff and stakeholders [and] ensure their buy-in and support" (SQA 2005 Summary Report, 2005, p. 17). They also took account of direction from national political leaders who understood the importance of VET. The mission of ITE was clearly conveyed as: "To create opportunities for school leavers and adult learners to acquire skills, knowledge and values for lifelong learning" (ITE Breakthrough Plan, 2000). And its vision then was: "A world-class technical education[2] institution for a Knowledge-Based Economy (KBE)" (ibid). It was this set of mission and vision that had guided the adoption of BSC. The focus on VET opportunities for school leavers and adult learners was apparent in the mission and the aspiration to reach world-class standards (interpreted as high *quality and performance*) was explicit in the vision. At the time of writing, ITE has already moved on and adopted its third five-year strategic plan, ITE Advantage Plan (2005-2009). With the new plan, the mission statement has remained largely unchanged: "To create opportunities for school leavers and adult learners to acquire skills, knowledge and values for lifelong learning in a global economy" (ITE Advantage Plan, 2005, my emphasis). However, it has set a *new vision,* to be "A Global Leader in Technical Education" (ibid). The ITE-BSC model shown in Figure 2 and the sample scorecard used in Table 1 reflect the latest.

To formulate strategic objectives and create measures for a BSC draft that would highlight the linkages among measures and perspectives, ITE started with examining the goals established by its strategic plan in creating its long-term strategic scorecard. The scorecard then went through extensive discussions and reviews by the strategic planning committee, with members comprising senior management staff and chaired by the CEO, before it was finally

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[2] Technical Education in Singapore is synonymous with Vocational Education and Training (VET) which is more commonly used elsewhere.

approved by the Board of Governors for implementation. As an example, Table 2 below presents an outline of the latest ITE's long-term strategic scorecard.

Table 2:

ITE's Long-term Strategic Scorecard (SQA 2005 Summary Report, 2005, p. 19).

VISION: A Global Leader in Technical Education			
Strategic Goals	Expected Outcomes	Perspective	Key Performance Indicators (Goal Level)
Goal 1 – An ITE Education for a Global Economy	Our graduates will be market-relevant, enterprising and adaptable in a globalised economy	Stakeholder	Cohort Capture Rate
		Customer	Graduate Employement Rate

Employers' Satisfaction with ITE Graduates (3 sub-KPIs)

Students' Satisfaction with ITE Education |
| | | Process | Training Success |
| Goal 2 – Lifelong Employability for ITE Graduates | Our graduates will remain lifelong learners for lifelong employability | Customer | Participants' Satisfaction with Part-time programmes |
| Goal 3 – An Increased Global Presence for ITE | Our brand name will be recognised not only locally, but globally | Stakeholder | Brand Equity Index

No of Active Overseas Partners |
| Goal 4 – An Enhanced Capability for Organisational Excellence | Our Staff have the capabilities to pioneer and set new benchmarks in VTE | Stakeholder | Band Score under SQA |
| | | Learning & Development | Staff Satisfaction Index |

The implementation of five-year strategic plans is supported by a "comprehensive short-term (annual) work plan process" (SQA 2005 Summary Report, 2005, p. 18). The annual process includes environmental scanning to ensure that national directions (example - introduction of gaming industry), global influences (example – rise of China and India) and social factors (example – aging population) are considered when senior management sets "an annual Corporate Theme for the new FY [Financial Year] at the annual senior management strategic review workshop" (ibid), normally between October and November. At these workshops, ITE senior management would use the long-term strategic plan as broad directions while drawing on performance review information and stakeholders' inputs to carry out external PEST (Political, Economical, Socio-cultural, and Technological) as well as internal SWOT (Strengths, Weakness, Opportunities, and Threats) analyses. An example of the corporate theme is FY2005's "New Vision, New Inspiration – A Global Perspective" (ibid).

The top-down corporate theme that provides focus for the year is complemented by bottom-up inputs from representative staff members and union members (number totalling 400 or 20 percent of total staff strength) who deliberate on the theme, work out strategic objectives, define specific programmes for the year and determine KPIs as well as targets for the annual corporate scorecard in a work plan seminar held between December and January. An example of the strategic objectives (12 in total) is shown in the ITE FY2005 corporate scorecard provided at Table 1. The annual work plan and corporate performance review are then deliberated at the corporate review forum involving all the senior management staff between February and March before submission to the Board of Governors for approval between March and April. The new scorecard should thus be ready for implementation in a new Financial Year starting April 1 year n to March 31 year n+1 (ibid).

The structured process used ensures that all staff members and stakeholders are engaged in reviewing as well as developing the annual work plan and scorecards. It ascertains that the BSC is up-to-date and ITE as an organisation stays focused on the right priorities. It allows strategies, goals and programmes to be monitored and reviewed in a timely manner while the consultative approach facilitates good buy-in and committed actions.

The Effectiveness of Balanced Scorecard in ITE

The ITE experience shows that implementing BSC has a transformational effect on the organisation and creates a strong positive impact on the *quality and performance* of its core business. A World Bank consultant for TVET (Technical & Vocational Education and Training) studies 2005 South Asia Region; Pillay (2005) was cited as having commented:

> I am impressed with the Transformation and Achievements of ITE in the past decade, and your corporate Mission, Vision and future Goals under *ITE Advantage*. ITE has been outstandingly successful… You do indeed have a great contribution to make to the world community (SQA 2005 Summary Report, 2005, front inside cover page).

An editorial in The Straits Times (a reputable local daily in Singapore) highlighted ITE's achievements on October 18, 2004 as follows:

> ITE's name is now up in the lights. Its certificate graduates are having such a good run in the job market… that ITE should just be taken to mean, "It's The Entrée"… The acknowledgement is well-earned and the marketplace is the best judge of the worth of its [ITE] graduates (Entrée It Is for ITE, 2004).

As ITE has adopted the SQA framework in its pursuit of organisation excellence since 1999, the *quality and performance* of its VET has also been regularly assessed by independent SQA assessors – in year 1999, year 2001, year 2003 and finally year 2005 when ITE won the SQA. According to a statement by Dr Cham Tao Soon, Chairman, Singapore Quality Award Governing Council in 2003: "SQA assessors… [are] experience in quality management… Most are from organisations that are role models, such as past SQA winners" (Cham, 2003, ¶7). On the stringent SQA standards, Dr. Cham commented: "On the average, a team of assessors [6 or 7] spends 600 man-hours to assess an application and prepare a feedback report" (ibid, ¶15). The assessment process includes a three-day site visit by the entire team of assessors who look into all aspects of the organisation. With ITE becoming the first and only education institution in Singapore to win the prestigious SQA 2005 award, it is evident that the independent SQA assessors agreed with the authors' assessment on ITE having delivered *high quality and performance VET* for its stakeholders.

The improvement in *quality and performance* of VET at ITE is also clear with the trend of actual results achieved over the last 10 years. Improvements were especially significant in the last five years after the adoption of BSC in early 2002. A number of KPIs tracking its core business (providing VET in Singapore) has shown consistent and significant improvements. Data sources are: ITE Annual Reports (00/01 to 05/06) and SQA 2005 Summary Report. For example:

(1) Brand Equity Index
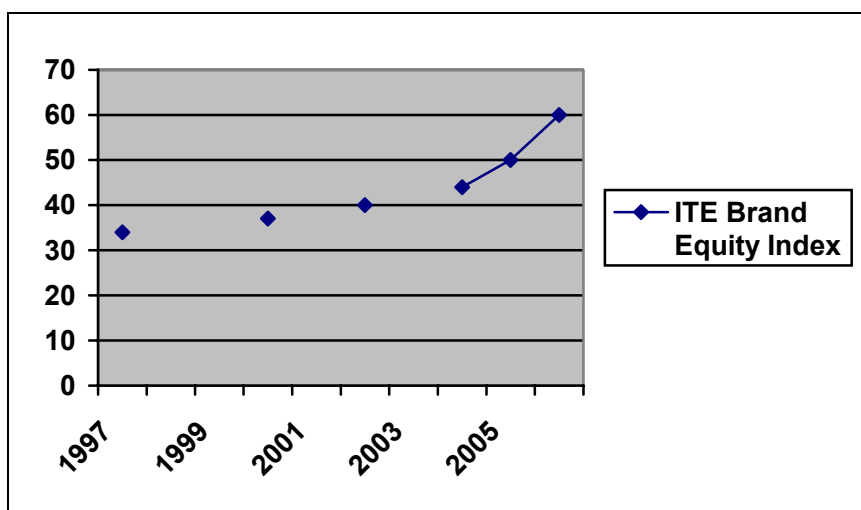
ITE identified "Image" or "Brand" as an important factor in improving the quality and performance of its core business during the mid-1990s. It then worked with a reputable market research company (AC Nielsen) to develop a measurement model

and survey tool to carry out longitudinal studies and track market recognition and acceptance of ITE with a composite index known as ITE Brand Equity Index. From the results, it can be seen that the index started taking off after year 2004, two years after ITE has adopted BSC.

(2) Total student enrolment in ITE
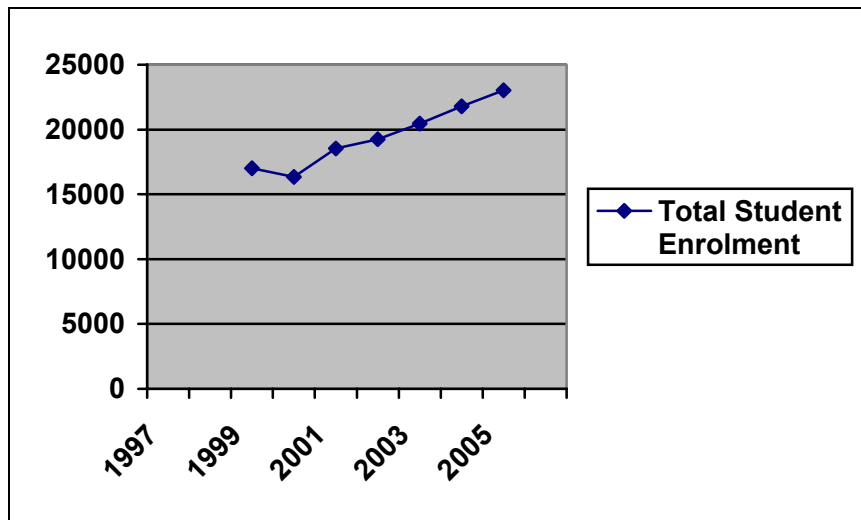
Total student enrolment is a proxy indicator measuring the ability of ITE to attract school leavers to join its programmes as well as find meaning and purpose to complete their training successfully. Results show that ITE has done well with enrolments reaching record highs in the last few years.

(3) Student Satisfaction with ITE Education and Training
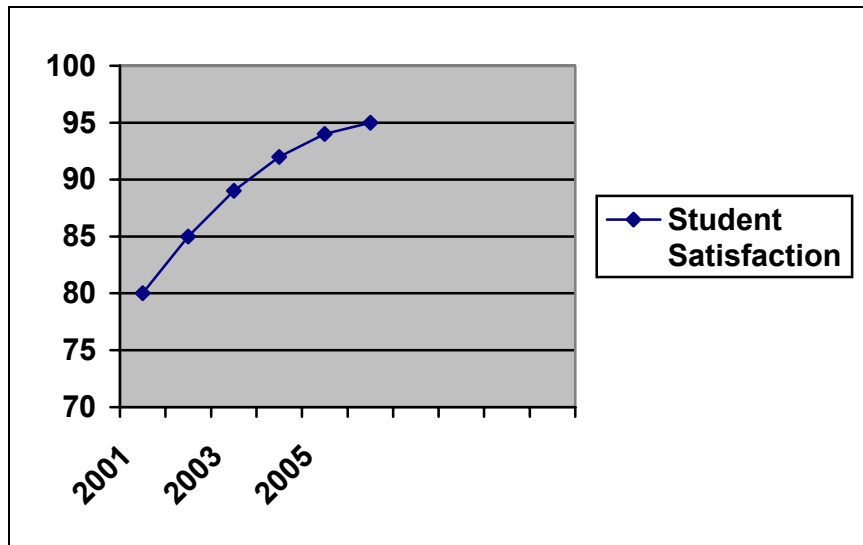
In 2001, ITE started measuring and tracking students' satisfaction through annual surveys covering all students as part of the BSC initiative.

(4) Overall student success rate in ITE
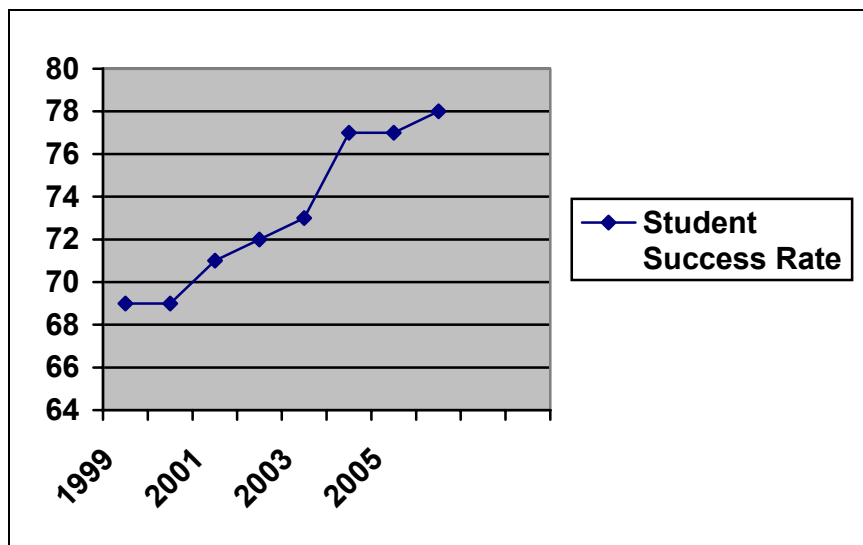
Student Success Rate is defined as the number of graduates (students who successfully completed their training with a full certification) versus the number of students taken in during registration. Again, the results show that the rate has consistently improved since 2000.

(5) Employment Rate of fresh ITE graduates
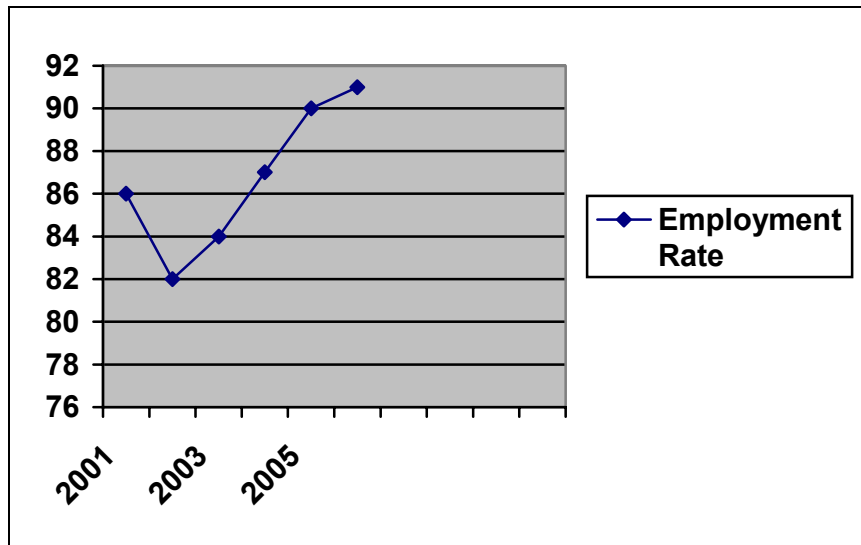
The quality of VET received by students determines their employment prospects on top of other prevailing factors such as economic conditions and employment market for specific sectors. The employment rate for fresh ITE graduates has been consistently above 80 percent over the past six years including 2002 when it was a lull year for Singapore economically.

The Internal Impact of Balanced Scorecard Implementation

Turning to the impact of BSC: How did the implementation of BSC as a quality and performance management system in ITE help to bring about the significant improvements highlighted? Yek (2007, pp. 10-12) notes that there are many factors influencing the quality and performance of VET in Singapore. These factors are multidimensional, complex and can be unpredictable. The VET system in Singapore represented by ITE is a large organisation with approximately 23,000 full-time students, 1,800 academic staff, and 1000 administrative as well as support staff. So what role does BSC play in ITE such that an intricate web of factors interacts to bring about improvements in quality and performance?

As a senior management member in ITE since 1998, the first author has walked the BSC journey in ITE from 2002 when the organisation began its implementation. From this vantage position, he sees the greatest impact of BSC adoption in ITE as bringing about more communication; that is active communication within a focused and clear BSC framework. Five broad themes have emerged through reflection and systematic document review for this study:

1. Active communication bringing about deep common understanding

2. Active communication promoting professional development
3. Active communication resulting in great teamwork
4. Active communication inducing organisational coherence
5. Active communication identifying clear priorities and performance targets

Active Communication Bringing About Deep Common Understanding

The importance and power of a shared vision to the success of any organisation has been emphasised by different authors (Méndez-Morse, 1993; Erwin, 2004; Donaldson, 2006). For ITE, the five-year planning cycle and structured consultative process are fundamental to the identification of an effective and shared vision which propels the organisation forward to achieve its goal. Its current vision is to be "A Global Leader in Technical Education" (ITE Advantage plan, 2005). The ITE-BSC model as an integral part of the overall planning process engages staff members to bring about deep common understanding of how the various strategic objectives, programmes and measures adopted are connected to the overall vision of the organisation resulting in shared commitment to actions. As a mission-driven organisation committed to VET for public good, this common understanding helps to elicit passion and committed actions.

Active Communication Promoting Professional Development

The annual planning and half-yearly (mid-year and year-end) review cycles for the scorecards following the adoption of BSC in ITE promote active communication and professional engagement down and up the management chain in the form of coaching and dialogue. With the scorecards, communication sessions to review progress and performance are more focused and less contentious. Fullan (2003) commented that "[p]erformance management at its best provides opportunity for dialogue, coaching, trying out, [and] therefore building belief in professional judgment" (p. 84). The ITE experience suggests that the planning and review processes using the scorecards promote positive professional engagement. It promotes professional development of individuals and helps them grow and mature professionally as a result of dialogue and coaching.

Active Communication Resulting in Great Teamwork

The implementation of BSC requires every member of the team to communicate and engage with each other deeply when they participate in developing strategies and programmes as well as identifying measures and setting targets. The ITE experience suggests that the common understanding that comes with active communication and engagement in addition to a

better view of the big picture often lead teachers as professionals to embrace common goals and mission. As professionals, they certainly understand the benefits and value of collaborating with one another. As such, one effect of having active communication and engagement is better understanding and more collaboration resulting in great teamwork within the organisation.

Active Communication Inducing Organisational Coherence

Active communication induces *organisational coherence* in the programmes, projects and day-to-day activities of a complex organisation. The consultative approach in the BSC implementation at ITE allows everyone in the organisation to be part of the processes. Participation entails *active communication* so that each and every staff member in the organisation is able to see the bigger picture and share the vision. On the same token, Fullan (2003) called for government action to allow "visible involvement of teachers in developing strategy… [and] allow teachers … to see the bigger picture" (p. 85). Such *active communication* brings focus as well as clarity and hence *organisational coherence*. Fullan (2003) emphasised the importance of "coherence making" (p.25). He highlighted two examples of successful reform because of organisational coherence: "National Literacy and Numeracy Strategy in England… and improving the teaching profession [in Connecticut]." He contrasted them with "California [which] had limited success… because it did not focus on coordinating the three major policy levers." In other words, policies implemented were not coherent. He noted that coherence making "is crucial for large-scale reform and sustainability" and to ensure success, it was important "to connect the dots" (pp. 25-27).

Active Communication Identifying Clear Priorities and Performance Targets

The ITE-BSC model and integral approach taken to develop the scorecards within a structured planning and review framework means that there is wide consultation among the stakeholders and active participation by every staff member in the development of strategies, programmes and measures that eventually make up the scorecards. This leads to clear understanding and buy-in for subsequent implementation. Active communication of the scorecards ensures each and every staff member identifies with priorities and performance targets set for the organisation.

Lessons Learnt

The authors see that the ITE experience in using BSC as its quality and performance management system has been a positive one. From the literature reviewed and experience gained, there is arguably no prescriptive formula for adopting and implementing a successful

BSC in any organisation – public or private. However, the ITE experience shows that there are lessons for similar VET institutions to be drawn. These lessons are presented by order of importance in the authors' opinion:

1. Kaplan and Norton (1992) initially conceived BSC primarily as a "performance measurement system that gives top managers a fast but comprehensive view of the business" (p. 123). While BSC has evolved as a strategic management system and used by ITE as such, the ITE experience discussed earlier shows that the greatest impact of BSC adoption is in inducing active communication within a focused and clear framework. The experience shows that BSC, when applied properly, establishes focused channels and processes to ensure effective communication throughout the organisation. Active communication helps every staff member reach common understanding of the organisational vision, strategies and goals as well as points them to the programmes and desired outcomes. It brings about consistency and organisational coherence and enables buy-in of everyone in the organisation towards a shared vision resulting in committed actions. In organisations without a proper framework and communication channels as well as processes, it is often assumed that employees understand the organisation's vision and priorities which seem straight forward and easy to understand. The importance of proper communication – sustained, active and effective – is apparent with the famous quotation "Nothing is so simple that it cannot be misunderstood" (Albert Einstein).

2. There is a need to engage every staff member in the institution right from the start. The ITE case has extensive involvement of senior management and staff from all levels in its "long-term (5-year) strategic planning" and "annual corporate planning" cycles (SQA 2005 Summary Report, 2005, pp. 17-18). In another BSC case study, the less than successful outcome was attributed to poor ownership, Cobbold (2001) wrote: "Without the active endorsement and support of managers using it [scorecard], it is unlikely that a management system [BSC] will be able to drive required changes within an organisation" (p. 5).

3. The views of stakeholders and customers are critical to the success of any organisation as these inputs reflect their needs and expectations. In the VET sector, the ITE experience illustrates the importance accorded to stakeholder and customer perspectives. The ITE-BSC model has placed *stakeholder perspective* to be the equivalent of *financial perspective* in a for-profit commercial organisation. In fact, from the first author's vantage viewpoint, stakeholder's perception of ITE as measured by the Brand Equity

Index, a KPI of stakeholder perspective, is 'key' to the success of ITE in delivering high quality and performance VET in Singapore.

4.   It is important to bear in mind that implementing BSC is a progressive and ongoing process involving constant change along with active participation and sustainable communication. ITE has regularly reviewed its long-term strategic plans through annual workshops involving senior management. Besides engaging staff members and stakeholders in the planning and review processes, ITE has also gathered inputs and engaged them through extensive and regular surveys or studies. Some examples are: annual graduate employment surveys, biennial employer satisfaction surveys, annual student (customer) satisfaction surveys and triennial Brand Equity studies.

5.   If the manager or leader of any project is asked whether the team has enough resources or time to complete all allocated tasks satisfactorily, the likely answer is 'NO'. Nevertheless, a clear planning process incorporating BSC would help the team to prioritise the tasks at hand and allocate needed resources to implement specific strategy.

6.   The dangers of trying to do too much, aiming for too high an achievement, seeing everything as important and trying to track too many KPIs were encountered during the first two years when BSC was adopted in ITE. Experience shows that in order to create impact and be effective, it is important to stay focused and keep the total number of strategic objectives and measures (KPIs) to approximately 10 (two or three per perspective) and 30 (two or three KPIs per strategic objective) respectively.

7.   BSC is viewed as a critical part of the organisation's overall performance management process. In ITE, BSC is found to have contributed positively to quality and performance management as an integral part of its "highly integrated and aligned planning framework" (SQA 2005 Summary Report, 2005, p. 16). It is also viewed as a key building block in its Total Organisation Excellence framework with the SQA model of Organisation Excellence as its benchmark (ibid, pp. 10-12). This view can also be found explicitly or implicitly in other literature reviewed (Hafner, 1998; Pupius, 2006).

Conclusion

This case study of ITE using BSC as a quality and performance management system reveals that there are significant improvements in quality and performance of VET delivered by ITE as a result. These improvements have been observed through qualitative assessments by

independent SQA assessors as well as others and are reaffirmed by quantitative data over the period. The authors have argued that BSC can be adopted as an effective quality and performance management system in a VET institution like ITE with appropriate adaptations and approaches. For example, in considering the BSC model for implementation in ITE, it was recognised that ITE was not a commercial business and would have very different priorities. Hence, the BSC model was adapted to reflect the 'bottom line' priorities as stakeholder rather than financial perspective. This was done in the belief that for VET in Singapore to progress, it needed to overcome the image barrier among its stakeholders (measured by a special Brand Equity Index). ITE further implemented BSC as an integral part of the existing highly "integrated and aligned planning framework" (SQA 2005 Summary Report, 2005, p. 16). The implementation involved every staff member in the organisation and key external stakeholders using a structured consultative approach which brought about active communication within a focused and clear BSC framework. Through consultation and discussion, everyone could see and understand fundamental concerns: What are the priorities? What are measurable and being measured? How are the priorities addressed and translated into goals and objectives? And why are these priorities chosen? With active communication came deep common understanding, professional development, great teamwork, organisational coherence as well as clear priorities and performance targets. Ultimately, a focused and aligned organisation with a shared vision and concerted actions is assured of improvement in the quality and performance of its core business or mission. The authors believe that ITE essentially succeeded with BSC because of these crucial reasons: it adopted BSC as an integral part of an existing planning framework which was already well structured; it was consultative and engaged every staff member in the organisation to develop the scorecards, strategic objectives and measures which helped promote teamwork as well as created buy-in and alignment.

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