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**ITE INDUSTRY LINKAGES AND COLLABORATIONS**

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**Introduction**

- 1 The Washington-based Business Environment Risk Intelligence (BERI) in its 2005 report rated Singapore workers top for technical skills. This is the fifth year running that Singapore had earned a perfect score for technical skills. This achievement is a result of prudent skilled manpower planning undertaken by the Singapore government as early as the late 60s and has seen continual reviews until now.
- 2 In anticipation of the new challenges posed by an emerging global and knowledge-based economy in recent years, the Singapore government has taken proactive measures to ensure that its 2.2 million workforce and new entrants continue to remain relevant to these new challenges. At the national level, a National Manpower Planning Council chaired by the Minister for Manpower sets the broad targets for numbers to be trained in the major industry sectors by the various post-secondary educational institutions (PSEIs). The close linkages that the PSEIs have with the Singapore Economic Development Board (EDB) and industries also enable them to be nimble in introducing new courses to meet emerging needs.

- 3 As a major technical training provider and a key agency for skills certification, the Singapore Institute of Technical Education's (ITE) primary mission is to "Create opportunities for school leavers and adult learners to acquire skills, knowledge and values for lifelong learning in a global economy". With a network of 3 colleges, ITE today offers a comprehensive range of training programmes in the business, engineering, information technology and applied & health sciences areas. In FY2004, ITE had an enrolment of some 22,000 full-time students and another 30,000 working adults undergoing its various programmes. ITE is a statutory board under the Ministry of Education and is fully funded by the government. It takes in students who have completed 10 years of education, that is, 6 years in primary and 4 years in secondary education.
  
- 4 This paper presents the strong symbiotic relationship that ITE has established with its industry partners in leveraging on each other's strengths to create training opportunities, to raise the profile and capabilities of the workforce and to enhance ITE's training competencies.

### **Need for Collaborations with Industry**

- 5 Collaborations and partnership with industry is essential as they will be the ones employing ITE's graduates. The linkages enable ITE to keep abreast with key developments in industry, in particular technological areas, to ensure that its training programmes and curriculum continue to remain relevant to market needs. It is also not possible for ITE to train graduates for all sectors of the economy, wherever possible, company in-house training capabilities should be developed and encouraged. Let me highlight in greater detail the key driving forces in forging such partnerships to achieve win-win outcomes:
  - 5.1 Firstly, the emergence of new industries bring with it new skills requirements. For the government to continue to attract

investments into Singapore, new skills training programmes will need to be developed at all levels to prepare a ready pool of skilled manpower to support them, thus structured feedback systems through industry advisory committees are essential;

- 5.2 Secondly, the industry possesses a wealth of technology and capabilities which could be tapped on to supplement institutional training. In some instances, it will be costly and highly impractical to replicate capital intensive equipment in an institutional set up, for example training in the aerospace and port industries;
- 5.3 Thirdly, companies, especially the bigger companies, while committing to training of their workers, needs to balance it with the need to minimise disruptions to production schedules. To circumvent such challenges, companies may adopt structured on-the-job training programmes which may lead to the award of in-company or ITE certifications depending on the scope and nature of the training programme;
- 5.4 Fourthly, collaboration between institutions and industries provide a platform for companies to strengthen their in-house training capabilities with enhanced pedagogic as well as training supervision and assessment skills. Such industry trainers and supervisors now possess the skills and tools to tailor training programmes to meet specific skills requirements of their workforce; and
- 5.5 Fifthly, by working together, both ITE and companies are accorded greater recognition. Companies are recognised by ITE through various partnership certificates given out for the duration of the partnership. At the same time some world-renown companies such as Microsoft and Cisco Systems allow

for joint certification training programmes with ITE, thus enhancing the employability of ITE's graduates.

### **ITE's Industry Collaboration**

- 6 ITE's industry collaboration can be broadly classified into 2 areas:
- (a) Industry-based Training (IBT) schemes to facilitate training in industry partners' premises; and
  - (b) Industry/International partnership to enhance training in ITE.

Let me first elaborate on our IBT schemes.

### **Industry-based Training (IBT) Schemes**

- 7 Besides conducting training for fresh school-leavers in the days and adult learners in the evenings and weekends, ITE also develop schemes to facilitate training by industries. The ITE's IBT schemes are dynamic and versatile as they are designed with the needs of both employers and the workforce in mind. The training can be customised to the needs of the industry. Training can either be provided fully by the employer in his company or jointly conducted, with the on-the-job training (OJT) component conducted by the employer and ITE delivering the off-the-job training (Off-JT) component at its colleges.
- 8 The bulk of the IBT schemes enjoy funding support from the Skills Development Fund (SDF). Employers may claim subsidies to partially offset their training costs. I will now share with you details of our IBT schemes, namely:
- 8.1 Traineeship Scheme;
  - 8.2 Approved Training Centre (ATC) Scheme;

8.3 Certified On-the-Job Training Centre (COJTC) Scheme; and

8.4 Approved Training Provider (ATP) Scheme.

Traineeship Scheme

- 9 School leavers and working adults may enrol for technical skills training and acquire national certification through traineeship. Traineeship is an 'earn as you learn' scheme which is an alternative to full-time or part-time training offered by ITE. The ITE traineeship system is modelled after the German Dual Training System. It offers a wide range of training options to match the interests and aptitude of school leavers and workers. A trainee is considered an employee of his sponsoring company and he signs a traineeship agreement with this employer, with ITE as a witnessing party. Employers must be able to teach the skill tasks prescribed in the skill standards to be taught over the period of traineeship. However, the scheme allows a degree of flexibility for them to tailor some aspects of the training to their company specific needs. Traineeship comprises two components, namely, on-the-job training (OJT) and off-the-job training (Off-JT). During OJT, trainees acquire skills through actual job practice on specified tasks required for certification, under the supervision of qualified company trainers, approved by ITE. Off-JT equips them with theoretical knowledge and some hands-on activities to complement OJT. In general, trainees spend 4 days doing OJT and one day either in an ITE college or in an ITE Approved Training Centre to attend Off-JT.
- 10 Depending on the type and duration of the training programme, companies enjoy funding subsidies of up to S\$11,000 per trainee for the full duration of the traineeship (which is equivalent to RMB 54,000). This helps them to defray some 33% of the wages they pay to the trainees for loss of productivity during training.

Approved Training Centre (ATC) and Certified OJT Centre (COJTC) Scheme

- 11 Companies which have the resources and expertise to deliver skills training programmes for their employees may work with ITE to provide such training within their company premises. Employers benefit from this arrangement as it gives them flexibility over the design and scheduling of training programmes for their staff. In addition, such arrangements also allow for certification of skills areas that are beyond those traditionally offered in a full-time institutional environment.
- 12 Two schemes are available for companies. The first, the Approved Training Centre or ATC scheme allows a company to conduct training and testing of their employees in-house which will lead to the award of a nationally-recognised ITE Certificate. The standards attained and certificates issued are on par with similar courses conducted in ITE's colleges for full-time students and working adults. ITE provides wide-ranging support to companies that are keen to apply for the ATC status. This includes providing professional advice on facility and infrastructure development, access to course and training materials and pedagogic training for trainers.
- 13 To qualify, a company has to fulfil a few key criteria, namely, be able to meet ITE's curriculum requirements for the training programme; have in place the necessary physical training facilities and equipment; and have technically-competent and pedagogically-qualified staff to deliver the training and conduct assessments and tests. ITE controls the examinations and carry out regular audits of the ATCs to ensure that standards are adhered to. To date, ITE has some 165 ATCs since the scheme was introduced in mid-1980s. It has an annual enrolment of about 4,000 adult workers.
- 14 ITE also recognises that not all companies possess the capabilities to deliver training leading to national-level ITE certification. The Certified On-the-Job-Training Centre or COJTC scheme addresses this, taking

into account the diverse job scope and services provided by various industries operating in Singapore. The COJTC scheme helps companies to plan, develop and implement OJT in a structured manner to enhance skills competency and productivity of their employees.

- 15 This scheme gives companies the autonomy to schedule, develop and conduct OJT programmes tailored to their company-specific needs. Employees are awarded OJT certificates by their companies bearing the ITE's COJTC logo, which may be used for progression to ITE's certification courses.
- 16 To qualify for the COJTC scheme, a company needs to establish a formal framework to oversee and monitor the implementation of structured OJT within their company; develop at least one OJT programme; and develop a documentation system to track training activities. The framework requires the company to have in place a structure to implement OJT by assigning suitably qualified staff to take up the responsibilities of OJT Administrator, OJT Programme Developer and OJT Instructor. To date, ITE has some 1,200 COJTCs since the scheme was introduced in 1994. Each year, about 50,000 workers are trained through this scheme.
- 17 The scheme has also garnered interest among firms that have operations overseas, with many requesting that they be allowed to implement the systems in their overseas setups. ITE has responded with the introduction of an International COJTC scheme early this year.

#### Approved Training Provider (ATP) Scheme

- 18 Similar in concept to the Approved Training Centre Scheme, the Approved Training Provider or ATP scheme allows private educational training providers to offer some of ITE's courses to the general public on a commercial basis. Private education providers will need to satisfy a number of key requirements to qualify for the ATP scheme. This

includes attainment of certain quality accreditation standards in Singapore; ability to deliver ITE's curriculum; have in place the necessary training infrastructure; adequately staffed with technically and pedagogically qualified professionals; and where required, a certificate of registration from the Education Ministry. ITE oversees the conduct of examinations for such providers to ensure that quality standards are met.

### **Industry/International Partnership**

- 19 Let me now focus on another form of collaboration with industry or educational institutions which involves forging of partnerships to facilitate the exchange of technology and sharing of learning resources for mutual benefit. Often, such partnerships are formalised through a Memorandum of Understanding (MOU). The types of collaboration are wide-ranging and typically include:

#### **Provision of State-of-the-Art Training Resources by Industry to ITE**

- 20 MOU partners sponsor the latest technology such as hardware and software to be housed in ITE. Under such collaboration arrangements, companies may consign their latest equipment and software to ITE. As a result, ITE lecturers receive training which enables them to keep abreast with technological developments. As a result, students get to acquire up-to-date knowledge. With this arrangement, our MOU partner benefit from such collaboration as it could tap on a ready pool of skilled graduates who are knowledgeable on use of their products in the future. Some of our current partners include major industry players such as Mitsubishi Electric Asia, Nissei, Robert Bosch (SEA), Siemens, IBM, Cisco System and Sun Microsystems. Currently, ITE has 34 MOUs worth a total of about S\$10 m.

### Joint Training Centres and Certifications with Industry

- 21 ITE also collaborates with industry leaders to develop joint training centres in its colleges. Under this arrangement, our partners provide resources which may include hardware and expertise to train ITE lecturers and provide consultancy services in areas such as technology and setup guidelines. With facilities located in ITE, such joint collaborations provide an additional venue for our partners to showcase their products and services to potential clients. Partners also get to tap on ITE's expertise to develop new software for their products and to train their clients and offer consultancies to other interested industry players, particularly the SMEs. Such joint training centres as well as other industry partnerships may also lead to the offer of joint certifications with industry leaders for ITE's students and adult learners. These joint certificates will equip graduates with additional skills, thus giving them an edge in their job search and career advancement. Recently, ITE partnered Microsoft Singapore and Sun Microsystems to offer joint certification programmes.

### Industry Training Attachments for ITE Students

- 22 Another form of MOU arrangement involves employers taking on ITE students to undergo a period of Industrial Attachment in their company premises. This enables our students to acquire practical hands-on experience in a real work environment. Such employers have an added advantage as they will be have a potential pool of workers who are familiar with their work environment and culture to tap upon in future.

### International Alliances

- 23 Besides local partnership, ITE also has collaboration with educational institutions overseas. The main objectives are sharing of experiences, exchange of staff and students and cooperation in joint student or staff

projects. Our international partners include the Ministry of Education, Youth and Sports of Baden-Württemberg, Germany; Hong Kong Vocational Training Council; Southern Alberta Institute of Technology, Canada; and Centre on Education and Training for Employment, Ohio State University, USA.

### **Future Directions and Challenges**

- 24 ITE had gone through different phases of development since its establishment as a post-secondary institution in 1992. Having successfully achieved the outcomes of 2 earlier strategic plans and establishing itself as a world-class technical education institution for a knowledge-based economy, ITE is now poised to make its mark in the international arena as “A Global Leader in Technical Education” in its next 5-year strategic plan. ITE will work on increasing its global reach and presence in its strive to brand itself as a leader in the global community in the area of vocational and technical education.
- 25 Recently, ITE formed a private company to enable it to engage in training and consultancy services sought by industry and overseas organisations on a fully self-financing basis and to commercialise the innovations developed by ITE staff. This vehicle also enables ITE to exercise greater flexibility and speed in responding to the needs of its clients and practice better financial transparency and accountability in the management of its resources.
- 26 This private setup also serves ITE’s interests of establishing its brand name internationally. At the same time, the businesses that it brings in will create valuable opportunities for ITE staff to undertake more overseas consultancy projects. Such exposures will allow ITE to benchmark its competencies internationally against a backdrop of global technical education providers and enable ITE to continue to stay relevant in an increasingly global environment.

- 27 In line with its strategy to continue engaging reputable local industry players in its thrust overseas, ITE, through its private company ITE Education Services Pte Ltd, has partnered 2 local companies to offer its Nitec International programmes in China and Vietnam under licensing arrangements.

### **Conclusion**

- 28 In conclusion, the relationship between Vocational Education and Training (VET) institutions and industry cannot be dichotomised. With the rapid pace of technological advancements taking place in industry, it has now become even more critical for VET institutions and industry to synergise and strengthen collaborative efforts to ensure that the workforce is primed to face the challenges ahead. The maturing Singaporean workforce and improving educational demographics will offer new areas of challenges for ITE to continue to review its programmes and schemes to cater to the higher aspirations of the workforce.
- 29 The rapid pace of economic development, particularly in Asia and the Pacific regions signal the need for VET institutions like ITE to imbue its graduates with a global perspective to prepare them for the international marketplace. The challenge is for VET institutions to work with industry and overseas partners to integrate such global education elements into their training curricula.
- 30 The global marketplace also offer many opportunities for VET institutions to benchmark their competencies with key global players in the VET sector and also to leverage on one another's strengths to collaborate on projects and contribute to raising their profiles on the international scene.