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Case Study on “National Policies Linking TVET with Economic Expansion: Lessons from Singapore”

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“Expanding Opportunities for the Marginalized through Skills Development”

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Case Study on “National Policies Linking TVET with Economic Expansion:
Lessons from Singapore”

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PS: These are personal perspectives based on first-hand experience as administrator and practitioner in the transformation of the vocational and technical education system in Singapore.

The Unique Challenges

Governments the world over often pronounce the importance of Technical and Vocational Education and Training (TVET) in the social and economic development of people and nations. Much research, studies and analyses have been done. However, TVET continues to remain a “weakest” link in the total education system in many countries. Unlike the University or Polytechnic, the image, quality, standards and outcomes remain elusive. In contrast, parents continue to cherish the hope and aspiration that their children will make it to university. This intense desire to pursue an academic education generates unrealistic expectations amongst parents and undue pressure on students in schools. The consequence is a prejudice against and less-than-positive image of TVET and all its negative associations with those who are less academically inclined. In reality, the greatest gaps in human resource development are in technical and vocational skills. The greatest challenge is the ability to change the image!

Recognizing the importance of TVET alone is not sufficient to address these unique challenges. It takes much greater concerted efforts in terms of policies, governance, leadership, expertise, capabilities and a government, willing and ready to invest in TVET, to make a real difference. What will it take to develop graduates who not only have the technical knowledge and skills but also values for lifelong learning? From the economic and institutional perspectives, the graduates must not only be well-trained, entrepreneurial and confident, but also ready to contribute to the economy and serve society. Beyond these more immediate educational goals are the questions of how educational institutions should respond to the increasing expectations of stakeholders and customers in terms of organizational excellence, systems, processes and best practices. Given the many challenges and difficulties, what is the possibility of achieving a “breakthrough” in TVET? More importantly, what will it take to build a “sustainable” TVET system that is relevant and responsive to a global economy?

Governments and educational institutions in Asia would have reflected on some of these unique challenges and opportunities. Many will be looking for possible solutions in education and manpower development. From a strategic systems perspective, what makes an effective and responsive TVET? What are the optional models available to accommodate the needs of different social, economic, educational and cultural conditions? Is the TVET system aligned with and responding to the different levels and types of skills required for continuing economic growth? How is it positioned within the national education and training system? Is it meeting the training needs of school leavers who are less academically-inclined? How well is TVET accepted by school leavers, parents, industry and society? What is its public image? What are the governance, funding and educational policies and issues? How can the goals and objectives be translated into reality? How do we measure the results?

These are some of the basic questions we would have asked as we search for the ‘best’ TVET system to serve our economy, society and the community. The fact is that there is no one “universal” education and training system which will suit the needs of all countries. In my view, the so-called ‘best’ system is one often shaped by the history,

social motivation and economic needs of the local community. There should be a clear mission and vision in articulating the role of TVET within the national education and training system. A key challenge today is remaining true to its mission in staying focused on vocational and technical skills. The real tests of success are the employability of the graduates, career development, upgrading in the educational system, public acceptance and image. Ultimately, the effectiveness and responsiveness of a TVET system would be measured by its impact on the social and economic development of the nation.

In this respect, the Singapore Government believes in and has invested continuously and heavily in education and training, not only in the universities and polytechnics but especially so in vocational and technical education under the Institute of Technical Education (ITE). The Singapore experience will be shared in three parts. **Part I** traces the different phases of Singapore's economic development and their close alignment with educational policies and strategies since independence in 1965. **Part II** describes the transformation of ITE into a world-class education institution with its distinctive features and **Part III** identifies the key broad lessons from the Singapore experience.

Part I- Economic Development, Policies and Strategies

Phases of Singapore's Economic Development

There was little attention paid to TVET before Singapore's independence in 1965. Soon after, it became clear that the traditional trading, commerce and service sectors alone could not generate sufficient jobs for the number of school leavers in a growing population. The overall strategic plan of the Singapore Government then was to diversify and accelerate economic growth through industrialization. During this early phase of economic development, from the 1960s to 1970s, the educational priority was to expand primary and secondary education, including technical education and training, so as to lay the necessary foundation for the acquisition of basic vocational skills. It was only in the 1980s onwards, that an increasing emphasis was placed on improving the levels of skills and quality of the education and training system, including the schools, universities, polytechnics and TVET.

The economic development of Singapore may be characterized in three phases as shown in **Figure 1**. A "Factor-Driven" economy involving intensive labour in the 1960s-1970s, it progressed to an "Investment-Driven" economy, which was capital intensive in the 1980s-1990s and the "Innovation-Driven" economy powered by the needs of knowledge intensive industries in the 2000s. Through these three phases, Singapore has also evolved from an "Early Industrialisation" economy to a "Newly-Industrialised" economy and a "Globalised and Diversified" economy it is today. Underlying the changing economic landscape was the concurrent evolution of the educational institutions in response to the changing manpower needs. The education and manpower policies ensured that graduates from the various educational institutions, including TVET, had the necessary knowledge and skills for the many new jobs which were created in a rapidly

growing economy. The economic, manpower and TVET strategies implemented during these various phases of development will now be elaborated:

Phase I - Labour-Intensive Economy (1960s-1970s)

In these early days of industrialization after Singapore's independence, the main challenge was to create enough jobs. The economic strategy shifted in 1968 from one of import substitution to one of rapid industrialization by attracting foreign investment for export-oriented and labour-intensive manufacturing. From the education and training perspective, the immediate task was to ensure that the workforce has the basic vocational and technical skills to support the labour-intensive manufacturing activities such as ship repairing, turning and fitting, sheet metal working, plumbing and radio and TV maintenance and repair.

The priority in the 1960s was to expand the educational system, especially primary and secondary education. With respect to TVET, the first vocational institute, the Singapore Vocational Institute (SVI), was established within the school system in 1964. With the increasing pace of industrialization, there was growing concern on how best to expedite and expand TVET to meet the technical and skilled manpower needs of new emerging industries. The mainstream of education remained largely academic. In 1968, 84 % of students in schools were enrolled in the "academic" stream.

As a result, a Technical Education Department (TED) was established within the Ministry of Education in 1968 to spearhead the development of secondary vocational education, industrial training and technical teacher training. By 1972, there were nine vocational institutes under TED and the number of graduates greatly increased from 320 in 1968 to over 4000. With this expansion in infrastructure and student enrolment, this model of vocational training, which was a part of the school system, was set for the next major phase of development. Thus, was created, the **first Industrial Training Board (ITB) in 1973 to centralize, coordinate and intensify industrial training. This was a significant step marking the formalization of the system of vocational training outside the school system.** As a statutory board, ITB was empowered with greater autonomy and flexibility to respond to the challenges of technical manpower needs in a rapidly growing economy.

In line with the changing needs of the economy, a new system of skills certification, the National Trade Certificate (NTC) was introduced to meet the different levels of skills and quality standards required by industry. A wide range of courses were introduced in areas such as Electrical, Electronics, Metal, Mechanical Engineering, Heavy-duty Diesel and Motor Vehicle Mechanics, starting with the NTC-3 or semi-skilled level of certification. The unique feature of this system is that the same competency standards were used for the full-time vocational training courses and the public trade testing system for working adults. In the early 1970s, another government agency, the Economic Development Board (EDB) whose mission is to promote direct foreign investment into Singapore, also played a significant role in strengthening the industrial training system. By partnering Multinational Corporations (MNCs) such as Tata of India, Rollei of Germany and Philips

of Holland, it established so-called “Joint Government Training Centres” which helped to enlarge the pool of trained technical manpower. This concept was later extended to the setting up of Joint “Government-to-Government” Technical Institutes with the assistance of Japan, Germany and France. Through this process, Singapore was able to meet the more specialized skills needs of the MNCs which the local training system was not quite ready to provide.

Phase II - Capital-Intensive Economy (1980s-1990s)

In 1979, the Government embarked on a major restructuring of the economy towards higher value-added, high technology and more capital-intensive industries. The new focus was the development of new industries such as petrochemicals, biotechnology, information technology as well as manufacturing services in testing, financing, warehousing and purchasing. To stay competitive through higher productivity, mechanisation, automation and computerization of the industry were promoted. Once again, the education and training system was called upon to respond to the manpower needs of more capital-intensive industries.

With respect to TVET, the response was a restructuring of the TVET system and establishment of the **Vocational and Industrial Training Board (VITB) in 1979**. The VITB replaced the former ITB. With a broader mission, efforts were directed towards expanding the training system, developing new programmes and improving the quality of vocational training. In particular, the higher NTC-2 skilled level of certification was extended to include Electrical, Electronics, Precision Engineering and Automotive Technology. For the first time, a Centre of Vocational Training was set up to develop professional capabilities in areas such as curriculum development, training of trainers and instructional media development. These were some of the core areas of expertise necessary to develop and support a quality system of training.

Economic restructuring had a direct impact on the capabilities expected of the existing workforce. The education levels and skills may no longer be adequate or have become obsolete. National efforts were intensified in developing a comprehensive Continuing Education and Training (CET) system to facilitate upgrading and re-skilling of the workforce, especially those with lower education and skills. So, between 1983 and 1987, three national CET Programmes were launched, namely, the Basic Education for Skills Training (BEST), Work Improvement Through Secondary (WISE) and Modular Skills Training (MOST). Focusing on English Language and Mathematics, BEST and WISE had benefited a quarter million working adults in helping them to acquire a Primary or Secondary level education respectively. For ease of access, the classes were conducted through an extensive network of vocational institutes, schools, companies, union centres and even Ministry of Defence Centres. Modular Skills Training or MOST, on the other hand, provided a system of training for working adults to upgrade and acquire a technical skills qualification on a part-time modular basis.

In 1991, the Government published a new Economic Plan in charting the next phase of Singapore’s development. The goal was to turn Singapore into a first league developed

nation within the next 30 to 40 years. The new direction was focused on building the manufacturing and service sectors as the twin engines of economic growth. Companies were encouraged to diversify, upgrade and develop into strong export-oriented companies and invest in the regional economies. From the educational perspective, the stage was set for a critical review of the post-secondary education system, including the Universities, Polytechnics and VITB, to ensure the availability of well-trained and qualified manpower in the high-technology, knowledge-intensive and service industry sectors.

So, in the same year, a review of school education and vocational training resulted in a crucial decision by the Ministry of Education in adopting a new policy of a minimum of 10 years of basic general education for all pupils in the school system. It became clear that to meet the skilled manpower needs of Singapore's future economic development, a primary school education was no longer sufficient for those who wished to pursue vocational and technical training. Employers need vocational graduates who have had a secondary education and higher-level NTC-2 skills in responding to the dynamic changes in an increasingly global economy. **This review was a turning point for the establishment of the Institute of Technical Education (ITE) as a post-secondary educational institution in 1992.** ITE replaced the former VITB. It was an example of the forces driving change in the schools, economy and the rising expectations of industry and society. **For ITE, it meant new challenges and opportunities for a major transformation and building a world-class post-secondary education in vocational and technical education.**

Phase III - Knowledge-Intensive Economy (2000s)

Moving forward into the 2000s, Singapore saw the need to increasingly develop into a globalised, entrepreneurial and diversified economy. While continuing to strengthen the higher-end manufacturing activities, there was a clearer recognition of the importance of the service sector as another engine of economic growth. Concerted plans were formulated to attract and nurture new growth sectors such as the Biomedical Sciences, Info-Communications, Creativity Technology, Integrated Resorts and High-Value Engineering. **The response in the educational sphere was to position Singapore as an Education Hub by attracting foreign students and internationally renowned institutions to Singapore.** Local institutions would continue to seek quality and excellence in developing a first-class education at all levels.

Part II – The Journey of Transformation

The transformation of the Institute of Technical Education (ITE) is a Singapore success story. Established in 1992, it was the first educational institution to win the prestigious Singapore Quality Award (SQA) in 2005 and Harvard-IBM Innovations in Transforming Government Award in 2007 for its achievements and innovations in VTE. Over a period of 15 years (1992-2007), it has effectively rebuilt and transformed the former system of traditional “vocational institutes” into top-line modern “regional colleges”. Described by

the Education Minister as “the shining Jewel” in the education system, ITE has successfully created an educational pathway for school leavers who are less academically-inclined. These are students who would otherwise leave the formal education system prematurely. The key breakthrough came when it was able to turn around the public perception and image of ITE. Its unique brand of a holistic “Hands-on, Minds-on and Hearts-on” vocational and technical education is widely recognized for its relevance, quality and values in a global economy.

So, what is ITE and what is so unique about its mission and challenges? ITE is a government-funded post-secondary institution focusing on vocational and technical education. It is not a University or a Polytechnic. Focusing on career-based vocational and technical education, its mission is “To create opportunities for school leavers and adult learners to acquire skills, knowledge and values for employability and lifelong learning”. An integral part of the national education system, its goal is to train technicians and skilled personnel for jobs and careers in the major sectors of the economy.

ITE today is well positioned amongst the post-secondary education institutions in Singapore as shown in ***Figure 2***. There are clear demarcations with respect to the missions of the University, Polytechnic and ITE. ITE’s mandate is to provide an attractive pathway for those who are not as academically-inclined. As a matter of policy, all students receive at least ten years of general education in schools, comprising 6 years primary and 4/5 years secondary. Depending on their academic achievements, aptitude and interests, about 90% of a student cohort would progress to a post-secondary education and beyond. The Junior Colleges provide an academic high school education for the top 25% of a school cohort for a university education. The next 40% of school leavers would enter the Polytechnics for a wide range of practical-oriented three-year Diploma courses in preparation for middle-level professions and management.

Catering to the needs of the lower 25% of a school cohort who are less academically-inclined, ITE provides full-time institutional-based courses under its “One ITE, Three Colleges” system of governance. With a wide range of 80 different courses, full-time student enrolment is 25,000. There are two basic levels of qualifications under the National ITE Certificate (Nitec) system of certification. Depending on their achievements in schools, aptitudes and interests, students may enroll at the Nitec or Higher Nitec mainly two-year courses in Schools of Engineering, Business & Services, Electronics & Info-Communications Technology, Applied & Health Sciences, Hospitality and Design & Media. As a total national education system, there is formal articulation for progression from ITE to the Polytechnic and Polytechnic to the university based on merit performance. There are “ladders and bridges” linking the alternative pathways to cater to the different needs, talents and potential.

Key Features of ITE System include:

- Having a Clear Mission: With a clear focus on its “Mission, Vision and Values”, ITE has developed an inner spirit of commitment and teamwork in always asking how it can better serve, add value and meet the needs and expectations of students and stakeholders. As an educational institution built upon organizational excellence and best practices, it has nurtured a pervasive culture of care, especially the care and concerns of the staff for the students.
- Addressing Needs of Lower 25% School Cohort: ITE has systematically restructured and transformed a former system of smaller traditional “vocational institutes” and regrouped them into a system of three modern and mega campuses called “ITE Colleges”. Operating under a “One ITE, Three Colleges” system of governance, the colleges, each with a full-time student enrolment of 7200 and headed by a Principal, enjoy greater autonomy, economy of scale and flexibility in responding to changing needs. Addressing the needs of the lower 25% of a school cohort who are less academically-inclined, ITE has created alternative pathways, choices and diversity to the robustness of the Singapore education system.
- Created a Unique Brand of an ITE Education: Called “Hands-on, Minds-on and Hearts-on”, this is a holistic College education that provides the motivation, assists student learning and nurtures all-rounded graduates. Known for its quality, relevance and values, it produces highly employable and adaptable graduates who are ready to take on the challenges of a modern global economy.
- Modern Campus Infrastructure: ITE’s campuses are modern and well-equipped with extensive workshops, an IT-rich web-based environment, student support services and other sports and arts facilities. Purposefully built, it provides a conducive and experiential learning environment for the total development and experience of students. These modern campuses have been an important factor in changing the mindset and perception of the public and image of ITE.
- A Rigorous Curriculum Development Process: Called “Developing A Curriculum” or “DACUM” Process, the skills standards and competencies to be acquired by students are derived directly in consultation with the major sectors of business and industry. To ensure relevance and a strong foundation in technical skills, typically 70% of curriculum time is allocated to practical and 30% theory.
- A Process-Oriented Pedagogic Model: Called “Plan, Explore, Practise and Perform” or “PEPP” Model, the aim is to develop “thinking doers”, ie graduates who can apply what they have learned and put them into practice. The focus is on acquiring the three key competencies, ie technical, methodological and social in an experiential learning environment.
- Close Partnership With Industry: Built on the mutual needs and benefits since the early days of Singapore’s efforts in industrialization, this partnership has further strengthened in terms of levels and quality of engagements. Leveraging on

the knowledge, expertise and skills of industry technology leaders, established linkages with private industry includes Industry-based Training (IBT) Schemes, ITE Board representation, curriculum development committees, college advisory committees and Joint Centres of Technologies.

- Branding – a New ITE image: The effort to communicate and rebrand the ITE Image was an integral part of its journey of transformation. Supported by a comprehensive marketing and rebranding programme, there was gradual turnaround in its public perception and image. Over a period of nine years, from 1997 to 2006, the image of ITE had significantly improved by 76%.

Part III - Lessons From Singapore's Experience

Established as a post-secondary education institution in 1992, ITE has transformed itself into a model of excellence in vocational and technical education. It was certainly not a journey without its share of challenges. In this respect, it takes a government that not only believes in but continues to invest heavily in education and training, including VTE, to make real a difference. In particular, the special efforts in addressing the needs of the lower 25% of a school cohort who are less academically-inclined through the ITE Model have added choices, diversity and robustness to the Singapore education system.

The following would reflect some of the broad key lessons:

- Policy Shifts in Aligning Education Systems with Economic Development

Little attention was paid to VTE prior to Singapore's independence in 1965. The limited places available in general education were geared towards preparing "white-collar" workers for the clerical and administrative jobs in the colonial civil service. This posed a major obstacle when national priority shifted towards economic development through industrialization. There was limited education and training infrastructure, lack of expertise in skills development and a workforce with low levels of education and skills.

It was therefore a farsighted government that began to pursue a policy of a relentless and systematic development of education and training in keeping with the needs of economic development. Manpower planning and skills development at the national level was a strategic tool in attracting foreign investments. It was a painful and slow process in the earlier days of industrialisation. With limited resources, the expansion of technical education had to make do with available basic school buildings, shared centralized workshop facilities and even crash programmes for the training of technical teachers within the school system. With each phase of economic restructuring and development, the educational and training institutions were called upon to respond to the manpower needs of new emerging industries.

With respect to VTE, an important change in education policy in 1973 was the establishment of the first Industrial Training Board (ITB) as a Statutory Board. With greater autonomy and flexibility, it was better able to coordinate, strengthen and develop a system of more specialized education focusing on technical skills as against general vocational education. This policy change had a significant impact on the chosen model of VTE in Singapore. It marked for the first time the formalization of a system of pre-employment training for young school leavers outside the school system. This then became the present day model of VTE in Singapore, a system subject to regular reviews and restructuring as it responded to the forces driving change in an increasingly global economy. Another crucial policy change was the decision by the Ministry of Education to upgrade and reposition VTE as a post-secondary educational institution. This led to the establishment of ITE in 1992 and its transformation as a world-class educational institution.

- Changing Public Perception and Image

Singapore started industrialization without the benefit of tradition or experience in production and manufacturing. As an Asian country, there was culturally a steep preference for an academic education. Parents harbour the aspiration that their children will make it to a university. The desire for a university degree is pervasive in society. The respect for the “scholar” and disdain for the “mechanic” and all the negative associations with those who do poorly in schools only helped to perpetuate the poor image of VTE.

To overcome this barrier and change people’s mindset, public campaigns on “using the hand” were necessary and basic workshop subjects such as metal work, woodwork, technical drawing and basic electricity were made compulsory for all secondary students. “Top of the Trade” television competitions and “Apprenticeship of the Year” awards were used to create interest and promote the importance of technical skills among the young in the early years of Singapore’s industrialization. Eventually, as the economy grew and VTE graduates enjoyed high employability and successful careers, there was a greater acceptance of VTE. However, the public image remained poor for many years. The breakthrough only came with the repositioning of ITE as a post-secondary institution and its journey of transformation and achievements in organizational excellence. As part of this journey were the extensive efforts in communications, marketing and branding to change the image of VTE in Singapore. In this respect, the provision of modern campuses has been a key factor in achieving a significant turnaround in the public perception and image of ITE.

- Leveraging on Industry Partners

The VTE Model in Singapore is based on a system of pre-employment full-time institutional training for school leavers. It is a system closely aligned with the needs of economic development. Viewed as an integral part of the educational system, the government continues to take direct responsibility for and invest heavily in the

development and funding of ITE. However, this system alone would not be able to ensure the sufficiency and range of skills required by the industry. To do so, it was necessary, especially in the earlier days of industrialization, to leverage on the experience, skills and technology that reside in the private sector companies. Many of these were foreign Multinational National Corporations (MNCs) who needed more specialised skills not available or too costly to develop in the formal TVET system. To meet these skills gaps, several major MNCs (Tata, Rollei-Werke and Phillips) were offered incentives as part of the total investment packages by the Economic Development Board (EDB) for the establishment of Government Training Centres in the late 1960s. This strategic promotional tool for the government to ensure the availability of specialized technical manpower was later extended to the setting up of Joint Government-to-Government Technical Institutes with the assistance of Japan, Germany and France in the 1970s. But, with the success of Singapore's economic development, these Joint Technical Institutes and Training Centres were eventually absorbed into a Polytechnic and the ITE. This experience demonstrated a critical early phase of economic development when it was necessary to leverage on foreign government assistance and private sector industry partners in complementing the capabilities of the national TVET system.

This close partnership built over the years since the early days of industrialization has further strengthened in terms of levels and quality of engagements. For one, the curriculum review and design process requires an active participation of major sectors of business and industry in the curriculum development process. The industries as potential employers have much to contribute in defining the skills competencies, standards and values required. Besides, depending on the nature and levels of skills, participation by industry will ensure relevance, quality and cost effectiveness. In this respect, various Industry-based Training (IBT) Schemes (ie Traineeship, Approved Training Centres and Certified On-the-Job Training Centres) have been established to facilitate training by industry. Another form of partnerships is the joint establishment of Centres of Excellence in various technologies to facilitate exchange of technology, expertise and training resources.

- Journey Towards Organisational Excellence

ITE is not a University or a Polytechnic but it has achieved international recognition for its achievements and innovations in vocational and technical education. It has created a unique brand of an ITE College Education for those who are less academically-inclined. Its journey of transformation towards organizational excellence was a response to upgrade the system and change the image of VTE in Singapore. So, what are some of the factors of success? In ITE, there was the constancy of purpose in pursuing its mission, vision and goals. The consistent use of five-year strategic plans has helped to provide a clear focus and platform for implementing many of its initiatives and programmes. It has built a strong team of leaders and staff who are professionally qualified and dedicated to the cause of vocational and technical education. Their commitment and enthusiasm to achieve the mission and goals are reflected in the "ITE Care" culture, especially the care

and concerns of the staff for the students. Embedded in this culture was the relentless pursuit of organizational excellence and pro-active approach in always seeking better ways to serve, add value and meet the needs of students and stakeholders. There is an open willingness to learn from and adopt the best relevant practices from other educational systems. And so with a new vision and five-year strategic plan (2010-2014) called “ITE Innovate”, the journey of transformation in ITE continues.

Closing Remarks

In closing, TVET systems are dynamic. The challenges are unique. The goals and concerns may be the same but the systems are often shaped by the economic, educational and social conditions of the local community. As such, the Singapore experience is not the same as compared to some of the more developed economies in Asia such as Japan, Korea and Taiwan. We have each developed and adopted different models and approaches. However, the different systems continue to stay relevant and responsive in a rapidly changing global environment.

There are implications for the poorer developing countries. The challenges are more difficult to address. There is no one “universal” model. Each country will ultimately need to carefully assess and decide on the “TVET system” that it considers most relevant in meeting its national strategic goals. But, underlying a successful model are also some fundamental policies and principles. One fundamental principle is the need to ensure that the TVET system is closely linked to the national economic development agenda. Another would be the question as to whether sufficient attention has been paid to those who are less academically-inclined in the school system. There are policy decisions and choices to be made.

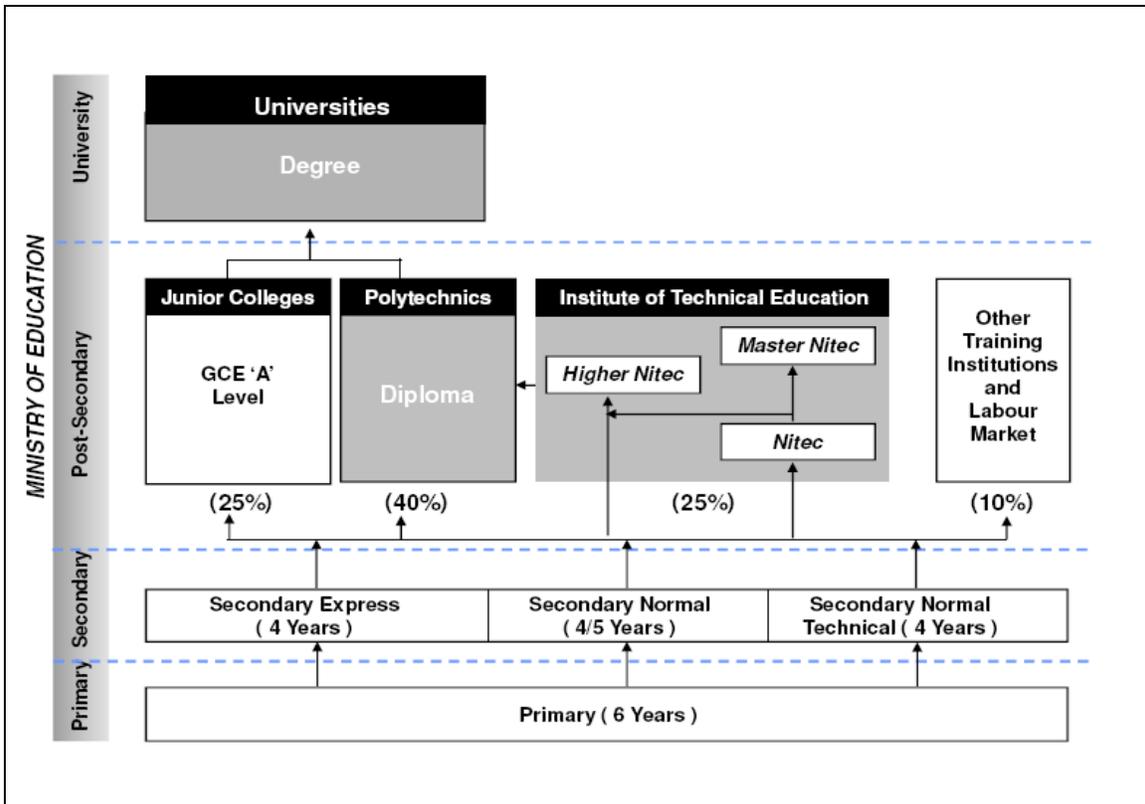
But, given all the constraints, it is even more important that governments in the poorer developing countries take direct responsibility for the leadership in TVET. There should be priority at the highest level in setting the direction and championing the cause for building and funding a “sustainable” TVET system taking into consideration the local factors and conditions. Not to do so would only serve to weaken the total national education system. The goals should be strategic but not overly ambitious. They should be set with the support of the relevant governmental ministries within the total political, social and economic environment. It is better to begin a journey that is relevant, realistic and sustainable in line with social and economic progress of the nation. While it would not be feasible or realistic to duplicate every aspect of a model from another country, the policies, experience and best practices which have been proven successful should be of interest and may be of value to others.

In this respect, I hope that the case study on the Singapore ITE experience will provide some useful insights and be an inspiration to others who are seeking to develop successful TVET systems of their own.

Figure 1: Phases of Singapore's Economic Development



Figure 2: ITE as a Post-Secondary Institution



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