VISIONS AND RECOMMENDATIONS FOR AN INCLUSIVE FUTURE ECONOMY OF SINGAPORE

Yih Tng, Chong; Kang Hao, Cheong; Seck, Tan; Mun Heng, Tsoi; T Raja Segar, Han Tong, Loh & Thiam Soon, Tan
Singapore Institute of Technology

Corresponding Author: Han Tong, Loh

ABSTRACT

We envision that our future economy will see many diverse fields flourishing, driven by the advent of advanced technologies and the mastery of craftsmanship to produce innovative and high-value products and services. These will be supported by the synergy of high-tech solutions and high-touch skill sets from across a broad spectrum of the workforce.

In this paper, we propose recommendations that advocate equal opportunities to maximise one’s potential, tapping on regional opportunities, and positioning small and medium-sized enterprises (SMEs) as the next engine of growth.

METHODOLOGY

We adopted the following methodology:

1) Study the relevant demographic profiles of people for inclusiveness;
2) Envision a future economy; and
3) Propose a set of recommendations to the government aimed at bridging Singaporeans to this future economy.

In the next section, several notable profiles of our population are highlighted. In Section 3, three broad visions of the future economy are presented. Finally, several recommendations that can bridge our people to the envisioned future economy are described, as depicted in Figure 1.
THE PEOPLE — AN INCLUSIVE APPROACH

Singapore is not blessed with many natural resources. Without a skilled and diligent labour force, Singapore’s economic success would not have been attainable. The island nation continues to charm talented job seekers globally; and this further emphasises the need for the local labour force to continually upgrade and reskill to remain relevant in the workplace.

Recently, Singapore introduced SkillsFuture, a national movement to enable all Singaporeans to develop to their fullest potential and contribute to the workforce. This is a lifetime movement in light of changes in the nature of work and jobs as technology advances. SkillsFuture will play an important part in charting Singapore’s next phase of development towards an advanced economy and inclusive society (Government of Singapore, 2016). Every individual’s skill, passion and contribution counts. In shaping the future economy for the people, Singapore Institute of Technology (SIT) wishes to highlight the idea of “inclusiveness” by identifying multiple starting points, pathways, and peaks of excellence that are relevant to the cross-section of our people.
We propose to consider the spectrum of: (a) backgrounds; (b) interests and talents; (c) existing knowledge and skills; and (d) aspirations.

Based on the spectrum highlighted above, we identified polytechnic graduates as a key segment of the population. Polytechnic graduates comprise more than 40% of each cohort that entered school in Primary 1, and there is an increasing trend of students opting for a polytechnic education (even among those who qualify for junior colleges). These students have diverse interests and skill sets and are well positioned to undertake key responsibilities in the future economy.

We also emphasise the need to holistically develop our future economy for our population, which is broadly distributed across the left-brain and right-brain oriented spectrum. In the current situation, technology-driven initiatives have been relatively over-exploited; hence, there is a need to prioritise the development of alternative skill sets and industries for those that prefer to venture outside of the high-tech industries.

ENVISIONING THE FUTURE ECONOMY

We envision the future economy to have the following three broad characteristics. They are: (1) High-Tech and High-Touch; (2) Focus on the Region; (3) Focus on SMEs.

High-Tech & High-Touch

We envision that the future economy will see many diverse fields flourishing from the mastery of craftsmanship to advance technologies. As such, we propose that value creation be supported by both high-tech solutions and high-touch¹ skill sets and mindsets in the future economy.

Of late, high-tech developments have been in the limelight; some examples include the Internet of Things, Big Data Analytics, and Smart Cities. However, the human touch remains essential in many of

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¹ The term “Hi-Tech Hi-Touch” was first coined by John Naisbitt in the early 1980s. See Naisbitt et al. (2001), High Tech High Touch Technology and Our Accelerated Search for Meaning.
these sectors. The term “high-touch” reminds us that many complex tasks require more than high-tech to receive a satisfactory solution, and that high-touch skill sets should be developed concurrently for tasks that will be perform better by humans. For instance, most people will not want robots to raise their children. Furthermore, based on the principle of “inclusiveness”, we ought to recognise that not everyone can or wishes to work in high-tech industries. High-touch industries would include hospitality and tourism, culinary (including the future of local hawker food), healthcare, and areas that will benefit from high levels of artistry and craftsmanship (in diverse fields from hairdressing to design). It is our vision that both high-tech and high-touch skill sets play equally important roles in Singapore’s future economy.

In fact, high-tech with high-touch are not mutually exclusive and indeed, the high-touch industry will leverage high-tech solutions. These are evident in smart tourism, smart hairdressing, smart urban farming, etc. In the case of hairdressing, for instance, technology can assist in the selection of hairstyles by fitting different styles to faces; although ultimately, the reassuring attention of a competent hairdresser is still required and irreplaceable.

Focus on the Region

The first wave of economic development in Singapore 50 years ago was based on looking out to the first-world economies of Europe, Japan and the United States, where the main objective was to create jobs, attract foreign direct investment, learn from the developed economies, and offer Singapore as a market segment for the goods and services produced.

With capabilities and expertise built up from the first wave, the second wave 30 years ago shifted to China and India, where Singapore companies found opportunities and markets in the emerging economies of China and India. The Singapore brand was leveraged to partner with local Chinese and Indian governments and share expertise in economic development.

We envision that the region will become the natural focus (low-hanging fruit) for Singapore in the future. More specifically, the ASEAN region will be the third wave on which Singapore should ride.
Singapore’s hinterland is ASEAN and it is geographically situated in the centre of ASEAN. With a market of 620 million people, an estimated GDP of US$2.5 trillion (in 2014) and a projected annual growth of over 5% to the year 2018, ASEAN will be the fourth largest single economy — behind the European Union, United States and China — by 2030 with a GDP of USD10 trillion (OECD, 2014; ISEAS et al., 2014). The growing middle class and sizeable young population in ASEAN forms a prominent market for Singapore’s businesses. The establishment of the ASEAN Economic Community (AEC) in 2015 underscores the economic potential of this region.

The nations in the ASEAN region are at different stages of economic development and remain open to opportunities and are at risk of threats. Singapore should identify the current and future employment gaps in the ASEAN region that the workforce can fill. The opportunities in ASEAN will be based on: (a) increasing level of economic and social maturity; and (b) continual evolution and adaptation of the region. Various indicators from the World Bank’s World Development Indicators\(^2\) illustrate the case for the placement of Singapore’s human capital in the region to contribute to the development of ASEAN nations. For instance, based on the data (not shown here), we can see that the ASEAN region has low population growth, an ageing population (especially in Singapore, Thailand and Vietnam), and falling birth rates (notably in Laos, Cambodia and Brunei). We envision that Singapore may build on the linkages in ASEAN to tap on the larger market and opportunities while sharing our expertise on economic and social matters as well as in providing humanitarian assistance when needed. Such opportunities are made possible by the committed investment in Singapore’s human capital through training and education, where the benefits will not just be enjoyed by the island nation, but actualised to the greater ASEAN region.

**Focus on SMEs — Can Mee Pok be Like “Ramen”?**

We note that SMEs employ 70% of workforce but provide only 50% of economic output (MTI, 2013). As they employ the majority of the

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labour force, more should be done to propel SMEs towards greater success. SMEs should be acknowledged and primed as the new engine of growth.

The majority of SMEs perform a particular function within a value chain supporting MNCs, but few have explored outside of their specialised roles to other stages of the value chain. SMEs will need to broaden their scope in the value chains to progress beyond supporting MNCs in the future economy. There have been success stories in the defence sector where SMEs have produced and supplied parts and components as well as finished products for Singapore Technologies. Another notable product would be the desalination of seawater to potable water. SMEs should explore regional opportunities with emphasis on vertical development in the supply chain.

An analogy of this vision is for the local Mee Pok noodles to attain the status of Japanese Ramen. Mee Pok is relatively undervalued and unknown in comparison with the well-known Japanese culinary export, Ramen. Yet, Mee Pok has the potential to be a culinary flag bearer and a value-added culinary export in the same vein. In other words, our SMEs’ products and services will need to have the intricacy, consistency, design, image and status of the Ramen in the future economy. SMEs should learn to take measured steps towards advancement without having their existing positions threatened.

SMEs can offer greater employment opportunities to the workforce and provide greater economic output. A broader and sustained development calls for greater resources towards SMEs’ development and ensuring that the impacts trickle down and across the value chain. Singapore-branded goods and services may offer a way out for the SMEs in the future economy — but this will not be possible without embracing the future economy and engaging to maintain a competitive edge. In this way, SMEs can emulate the *Mittelstand* of the German-speaking countries.

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3 *Mittelstand* are small and medium size enterprises with highly specialised capabilities. They are renowned for their innovative and high value products.
Current Strengths & Future Expertise

Thus far, the vision articulated in the above section points to two segments of Singapore’s response: First, to build on existing core strengths and second, to explore expertise for the future.

The current strengths of Singapore include the following:

- The Singapore brand — A globally trusted brand that stands for safety, efficiency and high productivity. Singapore firms in the logistics and transportation sector have been able to compete on a global standing.
- Education — Singapore’s education system is globally recognised with its universities and institutions ranked internationally; making it an appropriate tool to develop human capital.
- Niche areas — These include medical tourism (by engaging technology to complement high-touch services), finance (pillar of the Singapore economy), infrastructure (port, airport, waste and water), sovereign fund investments and humanitarian aid.

Future areas of expertise that can be developed include the following.

- Design — Singapore has invested in design (as a potential forte) enabling significant differentiation to products and services. While resources have been pumped into this area, we have yet to witness successes observed in Japan and Taiwan.
- Sustainable, smart and liveable cities — Singapore is an early mover and has leveraged this model of success to offer development services towards sustainable, smart and liveable cities for the region.
- Culture — Being in the region with a multicultural setting, Singapore is an ideal place to develop products and services for a wide range of demographics.

We propose that Singapore consolidate and exploit existing core strengths and build on future expertise for the region with the use of high-touch and high-tech industries.
RECOMMENDATIONS FOR THE CFE

Considering the lifecycle of an average individual from schooling to entering and contributing to the workforce, we propose three tiers of efforts in *bridging* our people to the future economy (refer to Figure 1). They are “Education and Training”, “Entrepreneurship and Intrapreneurship”, and “Local SMEs Support”.

**Education and Training**

In general, we recommend integrating the entire spectrum of education and training institutes (for example, institutes of higher learning, polytechnics, Institutes of Technical Education, arts institutions, and other vocational institutes) towards an inclusive model for the people. In view of the importance of both high-tech and high-touch in the future economy, we advocate an education and training landscape that is balanced, and one that will synergise the applications of the two types of skill sets and industries. We also propose education and training initiatives that gear our future workforce to capitalise on the regional market. Some specific recommendations below also point towards a build-up of regional “soft power” by bringing AUs, local SMEs and established firms closer to the region. In summary:

- Translate the purpose of internship from supporting companies to one of a learning model.
- Introduce initiatives in educating and training the marrying of high-tech and high-touch solutions (highlighted in the preceding section). For instance, at SIT, we encourage the cross-pollination of ideas and projects between faculty and students from high-tech and high-touch programmes.
- Emphasise the concept of life-long education from institutes to companies, thus enabling a mindset of continuous education in line with SkillsFuture.
- Extended internships in tertiary education will further increase the readiness of our workforce before graduation. SIT facilitates Integrated Work-Study Programme (IWSP) where students spend eight to 12 months acquiring real work skills and integrating them with the knowledge they have learnt. Through the IWSP, students will need to understand
organisations at the process and system level to find ways to improve efficiency and implement them successfully. They may also bring in new ideas or even create new products and services to generate new growth pathways.

- To train innovation-driven students through working closely with the industry. Applied learning and research models can be developed to suit the hands-on curiosity of students. In SIT, faculty members supported by the administration and professional officers are geared to do applied research and learning with industry partners.

- Concerted efforts at the university level to include teaching materials that provide insights into the region. For example, exploring more uses of text and reference books that contain regional cases.

- "Dual Studies" programme where a degree programme alternates between coursework and laboratory work in AUs, followed by a practical phase in a local regionalised firm. This is currently implemented in SIT with German companies, where SIT further trains students through applied learning pedagogies, gearing them to make a positive impact on the industry and the wider community.

- Students in AUs to have the opportunity to spend some time in the region via government-to-government initiatives, university efforts, and local contacts. We could utilise the platform of partnerships and sponsorships with SMEs to propel students to the region. For instance, SIT has the Regional Exposure to Accounting Practices (REAP) and the Regional Immersion in Sustainable Engineering (RISE) programmes, to widen students’ perspectives and expose them to the cultural, economic and social nuances prevalent in the Asia Pacific region.

- With the ageing population and low population growth in ASEAN, the targeted sectors would be nursing, healthcare and pharmaceutical. Auxiliary services that support the transition for employment from agricultural to services sector in the ASEAN region should also be prioritised in the accounting (regulation), engineering (solutions) and hospitality sectors.

- For an individual who has graduated from a higher institution, success from a tertiary education is no longer measured by the professional practices of doctors and lawyers. The transition at
the local level is now moving towards arts and design as well as the perennial sector of engineering — which allows the actualisation of skill sets learnt from schools. As nations in the ASEAN region are at different stages of economic development, innovative thoughts can be crafted as real solutions to meet real social challenges.

**Entrepreneurship & Intrapreneurship**

With support from the government, the future economy has to be driven and shaped by the people. Entrepreneurship and intrapreneurship programmes for high-tech and high-touch industries, and design thinking will facilitate the self-actualisation needs of the people. It is recommended that we leverage on entrepreneurs overseas with strong Singapore links as mentors to students and SMEs. We may also expand the role of networks created by Singapore over the past decades.

**Local SMEs Support**

We propose a focus on developing local SMEs for economic sustainability of the nation, as they are critical in our next phase of economic development. The future SMEs will create quality jobs, catering to a diversified workforce.

Alongside the development of high-tech industries, there should be a concerted promotion of identified high-touch industries for instance, creative, culinary, design, and hospitality sectors.

We should benchmark our SMEs against the models of the German and Japanese counterparts. For example, in order for local SMEs to have access to high-quality manpower, local SMEs should start implementing forward-looking talent development initiatives, which is in line with the SkillsFuture movement.

With the economic rise of the regional countries, we recommend that SMEs move aggressively into the regional market. Our SMEs may support the development of the region with knowledge and experiences developed locally such as, education, healthcare, water, public housing and transport infrastructure. The creation of familiar support structures in the region will encourage the regional expansion,
such as more Singapore-branded schools and established healthcare facilities. The facilities will allay concerns for Singaporeans venturing out of the country. We may develop an expertise to enable local companies to tap the region by integrating the vertical value chain — a shift away from adding value to creating value. In the longer term, SMEs in the region will provide a bridge for local undergraduates to learn and in the future tap on the overseas markets. A virtuous cycle can therefore be realised.

**Value Innovation and Quality**

An additional recommendation is to have a substantial shift in attitudes of the Singapore population, whereby success in what we do in the society should be measured in terms of quality and innovation. Passion and pride during the initial and design phase of products and services can translate to innovation and quality in the final product and service delivery. Emphasising on innovation and quality will enhance the three recommendations made above (as shown in Figure 1).

**FUTURE DIRECTIONS**

In training our future workforce, we have recommended close symbiotic relationships with industry to facilitate applied learning and research to meet industry needs, while providing students with broad-based skill sets and knowledge. Training and education should also enable our workforce to tap on the fast growing ASEAN economy. As waves of technological change continue to disrupt industry and jobs, the workforce should be trained to learn, unlearn and relearn based on contextual needs. Tertiary education should further develop the innovative and tinkering spirit in our workforce, to encourage the transformation of our businesses. Rooting our workforce in their communities should start from their years in school; it will create and enable their professional and social networks, which will be critical in their future careers.

The recommendations made in this article are broadly related to the SIT DNA, which encompasses a holistic approach highlighting an individual's career journey. The SIT DNA is a set of four traits: Thinking Tinkerer; Able to Learn, Unlearn and Relearn; Catalyst for Transformation; Grounded in the Community, which are incorporated
into the formal curriculum, appropriate pedagogy, consistent messaging, and a nurturing campus environment.

About 70% of each cohort of young people have taken the polytechnic/ITE education route. We identify them as a key pillar of the “people” as represented in Figure 1. Based on their diverse knowledge, interests, talents and aspirations, they are trained to take up the challenges of the envisioned future economy — one that focuses on high-tech and high-touch skill sets, intra and entrepreneurial spirits, SME development, and regional opportunities.

Although Singapore is recognised as an established brand, sustained efforts must be made to ensure the brand values do not erode. Central to this is the quality of human capital whereby inclusiveness must be fundamental to policy considerations. Singaporeans must continue to have a strong foundation in the knowledge and skills of the 21st century in both high-tech and high-touch areas. They will also need to:

1) Have an enterprising spirit;
2) Be well connected in the region; and
3) Be able to help both local SMEs and established firms take advantage of emerging opportunities in the region and beyond.

By considering the entire spectrum of the population, no one will be left behind.

CONCLUSION

In this new era of development, we must leave no one behind, and every individual should have full access to opportunities by leveraging both high-touch and high-tech technologies.

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REFERENCES


