National Strategy to Recycle & Reuse our Workforce

by

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Singapore is one of the world's great success stories, transforming itself from a developing economy to a developed one within one generation. We have succeeded economically beyond our size. Our country is well known for our survival mentality, which has been artfully orchestrated by the Government to develop a competitive economic niche for ourselves in the global economy.

With no other resources, human resources were and still are seen as our country's most precious asset – our people, our brains and our skills. We have survived through the careful cultivation of our human resources to adapt to the changing external environment. This has allowed the nation to pull through major economic crises over the past 50 years while continuing to climb the economic ladder.

Education

Education was seen, from the beginning, as central to building both the economy and the nation. Its job was to deliver the right kind of human resource to drive economic growth and to create a sense of Singaporean identity. The economic goals of education led to a strong focus on scientific and technical fields. This is reflected in Singapore students' stellar performance in international maths and science tests.[1]

The government's ability to successfully match human resource with economic demand, accomplished via a pragmatic education policy, is a major source of Singapore's competitive edge. A great example was the setting up of the Nanyang Technological University (NTU).

Nanyang Technological University

In 1979, Singapore was going through a period of economic transition or restructuring, from a fairly low value-added, labour-intensive model, to a high-value, high-tech model, which required skilled and trained people. To grow the human capital necessary for this, the Council on Professional and Technical Education (CPTE) was set up.[2] This national planning agency, taking a long-term and strategic view, and going by our economic manpower projections, laid out the blueprint for professional and technical training for the country.

In July 1980, CPTE identified the need to significantly increase the number of engineers in Singapore to enable our economy to shift to more high technology, high value-add activities.[3] To meet this need, the Council proposed, and the Government approved, the establishment of a new institute. Nanyang Technological Institute (NTI) – NTU's predecessor – was set up in 1981 with three engineering schools to educate practice-oriented engineers to run the industries that power our economy. As Singapore grew and prospered, NTI evolved to become NTU.

Investing in higher education has been an integral part of the government's strategy for economic growth and nation building. It enables Singaporeans to fulfil their potential and equips them with the skills, knowledge and motivation to seize the future. In particular, the then government recognised that engineering talent was relevant to help the nation innovate and adapt, and seize new opportunities in the region and the world. It knew that it was important that some of the most talented young people in the nation continue to view engineering as a discipline of choice.

The NTI Pioneer Engineering Class of 85

When the NTI pioneer engineering class graduated in 1985, the economy had already shifted its reliance from entrepot trade, rubber and tin to petrochemicals, electronics and other manufactured goods. Singapore had become one of Asia's four dragons characterized by an export-oriented economy with exceptionally high economic growth rates in excess of seven per cent!

The Economic Development Board (EDB) that was set up to promote our country's manufacturing sector did extremely well in attracting multinational corporations (MNCs) to Singapore for cheap but competent people adept at routine tasks.

One of the first American multinationals to invest in Singapore in 1969 was Fairchild Semiconductor.[4] Together with other MNCs, they triggered Singapore's electronics industry that enabled the nation to move from Third World to First within a generation.

In spite of the 1985 recession, when the economy contracted 1.5 per cent, Singapore's gross domestic product went on to increase tenfold between 1985 and 2009. Per capita income more than tripled to S$53,000 during the period, higher than most developed countries.

In manufacturing, the restructuring process took the form of higher value-added goods, which required more engineers. There was also rapid upgrading of the transportation, housing and communication infrastructures.

The NTI Class of 85 benefitted from the growing economy and contributed to its continual growth. In 2015, the Class published a book, *Thirty Years Hundred Stories,* which captured the engineering accomplishments in Singapore over a span of 30 years.[5] The book demonstrated that the meticulous development of Singapore's human resources via education to match economic manpower projections was a successful strategy.

The government had a pragmatic concept of education. It was not for its own sake. Instead, it was for economic growth, creating jobs and ensuring a livelihood.

Workforce Development Agency

However, developing the tertiary education sector was not enough. The Singapore population was not replacing itself and was rapidly aging. The workforce was supplemented with foreign talent, but over-reliance on this was not a long-term solution.

The Singapore economy was also susceptible to regional and world disasters, including the 1997 Asia financial crisis, the September 11 New York terrorist attacks in 2001, the Bali terrorist bombings in 2002 and the outbreak of the deadly severe respiratory syndrome (SARS) in 2003. These contributed to a shrinking job market and an increase in retrenchments.

An Economic Review Committee was set up and it recommended that the government establish a national Continuing Education and Training (CET) body to take charge of the promotion and development of continuing education and training in Singapore so that Singaporeans could remain employable. In response to this recommendation, the Workforce Development Agency (WDA) was formed in 2003.

WDA helped many in the workforce to up-skill and filled many positions available. However, the nature of the retrenchments from 2014 still caught the government by surprise.

Retrenchments of PMETs

According to the Ministry of Manpower's labour market survey, retrenchment in Singapore hit a peak of 19,170 in 2016. This is the highest level since the global financial crisis in 2009. Business restructuring and reorganisation across industries were reported to be the top reasons, accounting for close to two thirds of all retrenchments.

However, the biggest surprise was the over-representation of retrenched professionals, managers, executives and technicians (PMETs) relative to their overall workforce composition. This is reflected in Table 1, which shows the profile of the workers made redundant taken from the Ministry of Manpower's labour market report for the second quarter of 2016 and 2018 respectively.

		2Q2016	2Q2018	Change
Age Group	40+	64%	68%	+2%
Education Level	Degree	40%	55%	+15%
Occupational Group	PMETs	69%	79%	+10%

Table 1. Profile of Singapore Workers made redundant

It was tragic for the workforce above 40 years of age to hear that their skills, meticulously groomed over the years, had become irrelevant to the Singapore economy.[6] They began to form the bulk of layoffs. Once out, it was almost impossible for them to get back a job that was commensurate with their experience.

Many of those laid off were engineering graduates from NTU. A number of them became Uber drivers. Uber is the upstart transport service company that uses technology to make on-demand transportation easy. It began operations in Singapore in 2013.

There seemed to a massive mismatch between the skills that older workers in the Singapore economy could offer, and the skills demanded of workers by employers. The government seemed to be at a loss on what to do with these experienced and highly skilled PMETs that were laid off.[7]

Massive Mismatch of Skills

When putting together the book *Thirty Years Hundred Stories*, more than 200 members of the NTI Pioneer Engineering Class of 85 were interviewed for their stories on engineering accomplishments since they had graduated 30 years earlier. The stories were grouped into three categories – the work of engineers in building the infrastructure for the nation, the work of engineers in providing professional services and the work of engineers in the various industries.

It was found that many of the MNCs in the electronics industries were no longer in Singapore today while those in the petrochemical, aerospace and maritime industries had down-sized significantly. It was certainly a rude shock for an engineering graduate to find out that there were no jobs for him or her, after having spent 30 years in the electronics industry, for example. How did this come to be?

New Investment Reality

One major reason was that there were fewer new foreign investments and those that materialised were not creating as many new jobs as they used to. ExxonMobil is one of the largest foreign investors in Singapore with more than US$17 billion in assets. In June 2018, two new multibillion-dollar plants started production but added only 140 jobs to its existing workforce of 2,500.[8] In August 2018, Google announced that it would invest US$350 million for a third data centre in Singapore. The number of new jobs created was so few that the company declined to reveal how many.[9] Finally, in September 2018,

Facebook announced plans to build a new US$1.4 billion data centre in Singapore, which will add only hundreds of jobs. [10]

EDB was set up to identify and court potential foreign investors in order to create good job opportunities for Singapore. But the once revered organisation is no longer effective in bringing in new investments that would create enough jobs for Singaporeans especially for retrenched workers who are over 40 years old. Why is this happening?

Out-dated Policies and Structures

Since independence, Singapore has depended on attracting MNCs looking for cheap but competent people adept at routine tasks. But Singaporeans today are no longer cheap labour. The policies and structures that were put in place to transform Singapore from Third World to First within one generation seems ineffective in narrowing this gap given today's fast pace of innovation, changes in the international economy and competition from lower cost regions such as China. They need to be demolished and replaced with new ones.

Lack of Clarity in the New Economic Direction

The government seems to have decided that local enterprises are needed to fill the gap. It initiated the industry transformation programme in 2016 to enable local firms to build deeper capabilities, develop their people, scale up and internationalise.[11] The exercise was carried out through the trade associations and chambers.

While small and medium sized enterprises (SMEs) are at the heart of Singapore's economy making up 99 per cent of our enterprises, employing two-thirds of our workforce, and account for about half of Singapore's GDP, most of them are too small and splintered to be able to drive the economy forward.[12]

Industry Transformation Maps (ITMs) that were developed for twenty-three sectors to address issues within each industry and deepen partnerships between Government, firms, industries, trade associations and chambers were disconnected from the needs of business and failed to move the productivity and innovation needle.[13]

Government Legislation Needed to Reuse our Over-40 Workforce

There is an urgent need for the government to demonstrate greater courage, conviction and clarity in its new economic direction that includes the over-40 workforce.

The first bold move for the government to consider is to ensure there is only one economy going forward that is powered by our SMEs. This means merging EDB with Enterprise Singapore so that a single agency can ensure that foreign investments are welcome only if they take our promising SMEs to the next level. All policies that benefit multinational companies must also be offered to our SMEs to strengthen their positions. For example, the billions

that the National Research Foundation pumps into research at our local universities and research centres must directly benefit our SMEs, which are not currently on their radar.

Second, retrenched senior executives who worked for MNCs should be mobilised to take SMEs to the next level and not just replace current SME staff by subsidizing their salaries. They need to develop new initiatives to internationalise our local SMEs leveraging their worldwide network of consumers and suppliers, which they have developed while working for MNCs.

Third, a portion of the billions of Government funds, which have been pumped into foreign entities to help them conquer world markets, should be set aside to finance these new SME initiatives developed and executed by the experience executives injected into the local SMEs.

Fourth, retrenched senior executives should be mobilised to replace young and inexperienced Enterprise Singapore officers who are currently tasked to help local SMEs to develop world markets. It is naïve to expect such young and inexperienced officers to be able to do a better job than the retrenched senior executives who have spent years helping MNCs conquer such markets.

Fifth, to direct all government enterprises that have become regional behemoths to include local SMEs in their regional plans and adopt SME solutions surfaced by the ITMs. Displaced PMETs should be the links to help these SMEs meet the expectations of enterprises as they venture overseas.

The current economic initiatives have failed to mobilise the displaced over-40 workforce, who have acquired significant skills, knowledge and experience, to help take the economy to the next level. Not only is this a total waste of critical human resources, but the government also ended up with a disgruntled workforce who will not hesitate to leverage the same skills, knowledge and experience to challenge the government.

Professional Bodies

With clarity in economic direction, the professional bodies must be roped in to take ownership and contribute to enabling their workforce for the future. They play a crucial role in getting their professionals to upgrade their skills, plan their careers and mentor others in the same profession.

The unprecedented disruption from the technological fields, not just in terms of scale but more significantly, in terms of speed, has placed greater urgency upon professional bodies to transform their sector's workforce into one that is skilled and tech-enabled. There is a need to develop relevant training programmes and to tie up with overseas partners to upgrade the skills of its members.

Two of the professional bodies in Singapore who have done an outstanding job in this respect are the Singapore Medical Council and The Law Society of Singapore. They are actively involved in setting the standards of their profession including the administration of compulsory continuing education for their members. This includes developing the medical and law

faculties in our local universities to be recognised as among the best in the world.

There is a glaring lack of leadership by the professional bodies in the engineering profession in this aspect as experienced by the NTI Pioneer Engineering Class of 85. Only a small number from the Civil and Mechanical Engineering faculties are registered as professional engineers. The rest are left to fend for themselves. Much needs to be done to legislate the practice of engineering in Singapore to not only maintain standards, administer compulsory continuing education programmes but also to manage the supply of engineers versus demand.

The Law fraternity has gone one step further in having a law minister to advise the government on matters of the law. With the renewed call for businesses and citizens to seize the opportunities new technologies create, and the government's plans to transform Singapore into a SMART City, it is time for a Technology Minister in the cabinet to advise the government and the public in all matters ancillary to technology.

Training Providers Key to Recycling the Workforce

Based on Singapore's experience with university education, adult education similarly cannot be for its own sake. Instead, it must be for economic growth, supporting jobs and ensuring a livelihood.

The ability to anticipate and prepare for future skills requirements and job content is increasingly critical for governments, businesses and individuals in order to fully seize the opportunities presented by technology disruptions—and to mitigate undesirable outcomes.

Only with comprehensive long term planning based on our nation's economic direction and with the professional bodies providing the necessary leadership on the required skills needed going forward, will both public (institutes of higher learning) and private training providers be able to align their offerings to re-skill and up-skill the workforce so that it remains relevant to the market.

We must recognise that only when our workforce has jobs will they be able and willing to pay for training programmes that would help them do better at work. Without meaningful employment, the adult workforce will find little value in attending classes. Subsidising the course fees for unmotivated participants do not make for a sustainable and economically viable adult education model.

Conclusion

This paper examines the reasons behind the recent massive mismatch between the skills that workers in the Singapore economy can offer, and the skills demanded of workers by employers. The policies and structures that were put in place to transform Singapore from Third World to First within one generation seems ineffective in narrowing this gap given today's fast pace of innovation and changes in the international economy.

Drawing upon the experiences of the NTI Pioneer Engineering Class of 1985, a national strategy calling for the re-examination of the relationship between government legislation, professional bodies, trade associations, training providers, and institutes of higher learning is needed. The goal is to develop an efficient and economically viable adult education industry that is financially rewarding for all its stakeholders and in line with the next phase of our nation's development.

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