

## Chapter 2

# An Empirical Analysis of the Singapore Entrepreneurship Ecosystem: A Case Study For BRIC Economies to Ponder

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### 2.1 Definition of Knowledge-Based Entrepreneurship

There are many definitions till date of what knowledge-based means. Many would agree that it is a prefix which means the integration of domain knowledge in the processes of businesses to add justifiable economic value comparing with similar businesses.

To the author, incorporating expert knowledge alone is insufficient to affect sustainable knowledge-based enterprise. Ideally, four more components, i.e. market knowledge, industry knowledge, area knowledge and cultural knowledge should be incorporated into the business model. Hence his definition is:

“Knowledge-based Entrepreneurship is a process of application and customization of a combination of domain, market, industry-specified, area and cultural knowledge to affect economically prudent and sustainable business venture”.

### 2.2 Scenario Analysis

Many people reading this paper would be puzzled why the world's number one ranked country rated by the World Bank—for the ease of doing business is having problems in growing home-grown knowledge-based enterprises.

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The author thanks the readers for their attention and welcomes all constructive feedback. He is an active global entrepreneur consultant and educator and could be reached at [wealthconsultant@yahoo.com](mailto:wealthconsultant@yahoo.com).

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For almost two decades of globalization and a decade of synthesizing the software and hardware of the enterprise infrastructure through government initiatives and incentives, why is there still a lack of interest in enterprise take-up rate? Could it be because of the lack of capital formation opportunities? Or poorly implemented government policies? Could it be due to poor entrepreneurial execution knowledge? Or could be good jobs are just too easy to come by? Is it because of the minute size of the domestic market or the big government-linked corporations causing an oligopolistic environment which retards knowledge-based entrepreneurship?

According to the United Nations Human Development study of 38 highest human development countries, Singapore has one of the highest income gaps between the rich and the poor—indicated in the GINI Coefficient Index. It was also voted as the top 10 most expensive city in the world to live and do business by the UK Financial Times recently. These and many more questions lie behind the mindsets of those aspirers to embark entrepreneurship here. In sum, our problems are unique and complex.

With growing trends of unemployment, underemployment and volunteered early retirement, the author had decided to embark these issues to examine the root cause and formulate possible solutions for stakeholders in the Singapore entrepreneurship ecosystem to deliberate and decide. These major stakeholders would include: policy-makers, educators, parents, students and private sector participants amongst more than 60 groups being identified.

A simplified but relevant questionnaire was conceptualized. The questionnaire survey was carried out involving 100 students from various universities and polytechnics. The results were collated, analysed and evaluated. This had led to a series of strategy proposals and to be implemented concurrently.

## 2.3 Introduction

Singapore is a small country by world standards. It is about 700 km<sup>2</sup> in geographic size. With a population of about 5 million, majority of local graduates seek employment in the city-state. Rarely would they embark on overseas' career, though the trend had changed marginally in the last 10 years—as more were forced to take up jobs in regional emerging economies like China, India and the others. Generally, there are resistance in overseas' postings due to family reasons and working within a comfort zone.

As a global trading hub and a leading financial centre in South-East Asia; Singapore's competitive edge remains in the area of service. However, due to the impact of globalization and a continuing trend of inflation especially in big ticket items like residential real estate, cars and energy driven largely by an influx of foreign expatriates from the region; a scenario of upwards wage pressure to keep up with inflation, diminishing jobs for locals and the migration of jobs to lower cost jurisdictions became prevalent.

This situation had further depressed the salary scale of most Singaporean graduates. Hence, many caught in this predicament had to either follow the jobs and relocate—usually to emerging economies and leaving their families or to accommodate a situation of underemployment or worse, choose unemployment by choice.

These negative outcomes had also caused many stakeholders' groups like parents, sponsors and students to rethink and re-evaluate the economic value of investing in tertiary education in Singapore—which could cost an average of US \$80,000 per student for a 3-year undergraduate degree where many had finance through educational loans and/or the parents' life savings.

From the author's perspective, actions and reform on public policies can help to alleviate the current predicament. In many ways, the situation could also be converted into timely opportunities for individuals and the country to exploit.

## 2.4 Research Objectives

The objectives of the research include:

1. To identify to “gaps” and “cracks” in the current entrepreneurship ecosystem.
2. To discover the level of knowledge on entrepreneurship amongst students from different discipline.
3. To identify the knowledge and skill gaps to attain global-centric enterprise competence.
4. To examine the attitude of students towards starting a knowledge-based business against finding a salaried job.
5. To mitigate the problem of increased underemployment and unemployment amongst the graduate cohort.
6. To propose strategies to increase the number of knowledge-based entrepreneurs amongst local graduates.

## 2.5 Significance of Study

This study is intended to make significant contributions to the following stakeholders:

- To the students, they will discover the importance of acquiring not just entrepreneurial knowledge and mindsets but also enterprise competencies to work a profitable business from scratch in the midst of a prolonged global economic and political crisis.
- To the policy-makers, it will provide an alternative roadmap to achieve new milestones from an entrepreneurial perspective.
- Policy-makers and politicians would be less pressurized in trying to create “executive-level” jobs in an environment without real demand.

## 2.6 Literature Review

Take-up rate in knowledge-based entrepreneurship amongst tertiary graduates were deemed to be low in the Singapore context. Though she has been rated as the number one spot in the world for being the easiest place to do business (IFC 2009) and one of the most active participants amongst nations in the Global Entrepreneurship Monitor; there seems to be some disconnections between people and policies from the perspective of entrepreneurship engagement amongst Singaporeans.

According to Tan and Yoo (2006) during a Ministerial Meeting on Entrepreneurship; he demonstrated concerns about the low take-up rate of the Entrepreneurial Talent Development Fund—an initiative to boost entrepreneurship amongst the three state-funded universities and five polytechnics in Singapore. The fund was started in 2004.

In 2006, Singh a Member of Parliament and Head of the action community for entrepreneurship taskforce also expressed reforms needed to streamline the existing capabilities schemes introduced by government agencies such as SPRING (Standards Productivity and Innovation Board) and IE Singapore (International Enterprise in short) and the Minister had taken note.

As it is, entrepreneurship has got a lot to do with mindsets, environment, opportunities, and personal qualities like risking taking, the ability to lead, take initiative and to work effectively in a team amongst others. Personal resilience as Coutu (2003) rightfully affirmed as a quality sought in employees.

Bennis and Thomas (2003) suggested that great leaders are people who are confident, loyal and dedicated. They believe that it has something to do with managing adversity. Referencing their views to the local context, many youths or Generation Y—as socially coined; have been a pretty protected breed in a prodigal sense. Dual income parents with domestic helpers in most families might have contributed to the weaknesses in character building.

Arikan (2010) concluded the entrepreneurship is a collective phenomenon and wronged researchers treating the process as an isolated component directed attention to individual entrepreneurs as a primary driver of entrepreneurial transformation to impact economies. He advocated the involvements of government at local level, research and education institutions, financial institutions, workforce in the region and even local socialites as information disseminators. The author believes that more private sector empowerment is necessary versus the current practice of having a statutory board—SPRING (Standard Productivity Innovation Growth Board) Singapore to facilitate the funding programmes. He is also of the opinion that the facilitation of entrepreneurial mindsets and business competencies across the nation should be funded by government programmes but with led by business leaders. On the whole, he agrees with Arikan's philosophy.

For a service-based economy like Singapore, innovation is the key to maintaining sustainable economic growths. Drucker (1985) had pointed that most innovation were resulted from a conscious and purposeful search for opportunities.

He adhered that discipline must be instituted in the work processes. He also emphasized that one needs to only look at simple, focused solutions to real problems when seeking innovation opportunities. In line with Drucker (1985)'s philosophy, the author is of the view that the current teaching of innovation as a subject is not prevalent and equitably spread across tertiary institutions in Singapore.

The issue of which model to adopt is always mind-boggling budding entrepreneurs. Bhide (2000) suggested "bootstrapping" as the way to go. He advocated that the "big money model" of entrepreneurship with no track record and highly leveraged through venture capital or angels funding had failed in many cases as witnessed in the dot.com era of the early 2000s.

A study conducted by Inc. Magazine on the 500 fastest-growing U.S. start-ups also attested the value of using bootstrapping as a strategy. From a Singapore perspective, the author supports this view and has developed a microenterprise model named the 100K Enterprise Model, incorporating similar principles.

Bhide (2000) advocated seven principles to increase the odds of success for start-ups. These include:

- Start operation fast
- Quick break-even
- Select cash generating projects
- Offer high-margin products or services through business-to-consumer model
- Audit growth
- Focus on cash flow
- Build banking relationships
- and do-it-yourself versus hiring.

Matching these principles with the author's 100K Enterprise Model, there were many similarities. However, the latter has clearly defined standards and criteria like selecting projects with a 20 % or more profit margins, break-even within 9 months and adhering to international financial reporting standards amongst other qualitative measures.

Isenberg (2010) in his article entitled "How to Start an Entrepreneurial Revolution" also advocated that start-ups should not be given easy money. An over-capitalized new venture is likely to burn more cash and expend unwisely. He also stressed that many government had used misguided policies to address entrepreneurship issues. The author is of the view that some of Isenberg's virtues could be applied in the Singapore context and would investigate further.

Bygrave and Hunt (2004) had identified the average start-up capital required by entrepreneurs in business service and consumer-oriented sector. Their findings in The GEM Report concluded that the "necessity-based" consumer product or service model requires an average start-up capital of about US\$25,000 versus the "opportunity-driven" business service model which need a bigger budget of US \$76,000. For start-ups with intention to employ 10 person or more after launching for 5 years would need an average of US\$113,000 as start-up capital.

Though the above are just ballpark figures to work a business; it gives budding entrepreneurs a good reference regarding the sufficiency of capital usage.

Fenn (2010) observed the practice of extreme collaboration, technology exploitation, game changing, brand building, social capitalism and redefining work culture by Generation Y entrepreneurs. She had also affirmed that less than 5 % of start-ups had actually scaled beyond the US\$1 million mark in annual revenue intake. Her work as a journalist was admirable. The author sees the relevance that the model could be franchised to many “knowledge-rich” communities including Singapore and pockets within BRIC nations. He advocates start-up entrepreneurs to take courage and open a wider net—crossing borders to invite global partnerships—in the spirit of building world-class enterprises from the beginning.

In an article entitled, “The Global Entrepreneur”, Isenberg (2008) cited examples of some start-ups had attempted business across borders from day one and not necessarily to follow the past patterns where companies were built in their home turf for years before crossing borders. He also suggested to entrepreneurs to exploit the “Diaspora” networks where people capitalizes on their ethnic origins to penetrate new markets, especially the emerging ones—where the overseas Indians and Chinese had done so.

As the domestic market in Singapore is small, the author is of the view that knowledge-based start-ups must have a global vision from the very start. The business model should be global-centric though mobilization into foreign markets must be meticulously planned and could progress with progressive geographical proximity like within 4 h radius in flight time or serving clientele base from a different time zone, i.e. New York and Europe.

Khanna et al. (2005) in an article entitled “Strategies That Fit Emerging Markets” cited the challenges in penetrating emerging markets. He observed that the “institutional voids” occurring in many markets including the BRICS (i.e. Brazil, Russia, India and China) lacks efficiencies in their intermediaries, regulatory systems and contract-enforcing methods—though at varying degree amongst markets. Though written from the perspectives of multinational corporations, the author sees the relevance of these issues for knowledge-based enterprises going regional.

To conclude, Bhidé (2000) affirmed that most promising start-ups in the U.S. environment only contributed to 5–10 % of the total establishments. The others remain as “marginal” microenterprises. He also asserted the public policies cannot promote the formation and evolution of new business to a significant degree. Government initiatives tend to be “lagging” mechanisms. The author agrees with Bhidé to a large degree. The below 10 % figure stated could be drawn from well-funded start-ups that were born by established entities like a research arm of a transnational enterprise of a product of Massachusetts Institute of Technology to set an example.

However, he is of the view that public policies at least in the Singapore context could help in many ways to alleviate the “pain” factors of microenterprises and start-ups. According to statistics, more than the simple majority of SMEs reported less than S\$1 million in annual revenue collection. This reflects the limitations of a small domestic market as well as weak “brand” marketing amongst most SMEs.

Status, recognition and trust were also being discussed by Bhidé (2000). In societies like Singapore, start-up entrepreneurs still hold low self-esteem.

This literature review is not an exhaustive one. It is intended to give readers a gauge of the author's level of knowledge and passion in the topic, as well as to indicate the scope and depth of research he has endeavoured.

## 2.7 Research Methodology and Design

This study basically employs a descriptive method through observations, interviews and questionnaire survey. This is partly to keep resources and costs manageable within reasonable time allocated.

The author designed and conducted the survey and interview personally within the proximity of targeted institutions—including three publicly funded universities, five polytechnics, government-approved private universities within the institutions, as well as public libraries across Singapore.

The survey and interview had included contents in the following areas:

- Perception of entrepreneurship
- Knowledge and exposure in entrepreneurial learning across different disciplines, i.e. engineering, information technology, sciences, business administration, accountancy, arts and social sciences, etc.
- Perception of entrepreneurship as a life skill
- Perception of the social status of entrepreneurs in the Singapore context
- Perception of global credentialing of entrepreneurs
- Preferences for entrepreneurial learning contents, pedagogies and assessments
- Motivating factors to start enterprise in the Singapore context
- Knowledge and of government initiatives and level of institutional support, i.e. university's entrepreneurship club and society and government financial assistance scheme targeting start-ups
- Level of enterprise competence
- Level of interests to engage entrepreneurship before or upon graduation
- Reasons for not taking up
- Respondents' inputs (open-ended questions), such as under what circumstances and terms will they choose to engage entrepreneurship immediately upon graduation.
- Structured interviews (consisting "What-if" Questions) to confirm the "gaps" and "cracks".

## 2.8 Delimitation of Data

As an academic exercise, it was financially imprudent and difficult for the author to attain bigger sample size of 400–500 student population spread equitably across every faculty of learning and to every tertiary institution in Singapore. However, this has been mitigated by drawing inputs from some practising entrepreneurs and managers about their views of the Singapore's entrepreneurship ecosystem.

Despite the aforementioned, not all data could be captured by drawing opinions and feedback from the respondent pool. Areas like securities legislation, capital markets formation with regards to new venture creations and the process of re-engineering in the training and development process for global-centric entrepreneurs are beyond the current level knowledge of amongst tertiary students with little or no enterprise experience. This was where empirical observations, secondary research and the author's expertise had complemented in narrowing the limitations.

## 2.9 Survey Findings, Analysis and Evaluation

The questionnaire survey was conducted in the month of July 2011. Candidates participated include students from the following institutions:

1. National University of Singapore (NUS)
2. Singapore Management University (SMU)
3. Nanyang Technological University (NTU)
4. University of Singapore Institute of Management (UNISIM)
5. Murdoch University (Australia)/Kaplan Higher Education Singapore
6. University of Western Australia
7. University of Wollongong (Australia)/PSB Academy Singapore
8. University of Newcastle (Australia)/PSB Academy
9. University of Buffalo (New York, USA)/SIM Global Education
10. Temasek Polytechnic
11. Management Development Institute of Singapore (MDIS)

The questionnaire survey took about 2 weeks to conceptualize, design and test. It took another 4 weeks for data collection from students within the tertiary institutions from the above mentioned and also in public space like the National Library.

## 2.10 Survey Findings

The results of the questionnaire survey include:

- More than 80 % of those surveyed are passionate to start and run a successful business.
- 57.6 % had indicated sufficient knowledge and skill to initiate business.
- Only 10 % had indicated that they will not support such initiative.
- Only 53.4 % had indicated that they have to financial means to raise a sum of S \$10,000 of risk capital.
- 94 % had voted that entrepreneurial knowledge and skill set is best learned through experienced entrepreneurs versus pure academics.
- 81 % had endorsed the team-based model to improve the odds of start-up support by financiers and sustainability.



- Only 16 % of respondents had some knowledge of government assistance scheme.
- More than 75 % of the respondents were agreeable to higher take-up rate if entrepreneurship is being taught across every faculty of learning.
- 57.8 % had indicated sufficiency of support rendered by their institution with regards to entrepreneurship learning and incubation.
- 70.4 % had supported the initiative the author has proposed for government to provide overseas incubation centres and lodging facilities.
- About 70 % of the respondents have demonstrated high regards in the social status of knowledge-based entrepreneurs.
- More than 69 % had also voted that international credentialing of knowledge-based entrepreneurs would bring standards and best practices up to world-class level.
- More than 60 % had responded that entrepreneurship curriculum is not included in their degree programme.
- Less than 10 % of the students' cohort achieved "enterprise competence" during their studentship.
- More than 70 % had indicated the lecture method, closed book exams, group projects and case studies as the prevailing pedagogies.
- To assess the travel patterns and area knowledge of respondents, it was discovered that more than 30 % had not travelled during the last 3 years. The most travelled destinations include China, Malaysia, Thailand, Australia and India.
- It has also been observed that about 20 % of publicly funded university students had some form of overseas internship opportunities.
- Regarding which government incentives would motivate enterprise creations, more than 50 % of respondents had indicated home-based business rental allowance and intellectual properties protection grants as most important and about 40 % indicated global branding and tax holidays for the first 3 years as prime motivators.
- More than 57 % had indicated interests in starting business upon graduation.

## 2.11 Post-Interview Analysis

It is evidenced from the feedback of interviewees, there are interests in creating own business. However, opportunity to learn entrepreneurship knowledge and mastery of basic skill sets are not prevalent across institutions.

Through face-to-face interview, the author had collected the following "qualitative" information:

1. Students' cohort largely engages education to find a salaried job.
2. When the job market tightens up, many were ignorant of alternatives and usually take up odd jobs or being employed.
3. A large minority changed career type and wasted the time and financial resources invested by parents.

4. Most tertiary students have no career goals. They find long-term goal setting hard to achieve.
5. Most tertiary students are domesticated in thinking and have poor knowledge of what is happening outside the Singapore sphere.
6. There is a lack of “fighting” spirits as most youths were “heavily protected” by parents and an environment where their safety and belonging needs are readily achieved.
7. School curriculums were outdated—usually focus on local context, mathematics and sciences but little on “thinking” subjects, such as global economics, global history, geography and politics.
8. Most are still been taught to learn by rote.
9. The simple majority only network within small social groups.
10. More than 80 % do not ask questions in class.
11. Most students embarked paper qualifications with mindsets to match minimum market-based salary scale and put applicability of knowledge and skill sets secondary.
12. Less than 10 % are readily equipped with global enterprise competencies to engage knowledge-based entrepreneurship.
13. The simple majority does not have a role model that they can emulate.
14. Many are weak in oral communication and interpersonal skills.

## **2.12 Proposal of National Entrepreneur Competency Assessment (NECA) Certification Scheme**

Justifying from the results of the survey, one-on-one interview as well as other secondary research, the author proposes a National Entrepreneur Competency Assessment (NECA) Certification to act as our national enterprise standard and a catalyst qualification for entrepreneurial development.

The following include more than 70 knowledge areas that have been identified and they include (though not exhaustive) (Table 2.1):

## **2.13 Method of Delivery**

The NECA Certification could be delivered by several modes. They include:

- Web-based learning, assessment and testing
- Distance learning (supported by hard copy materials) and e-tutor support
- In-class workshop
- Train the trainers and deliver in schools and tertiary institutions

**Table 2.1** NECA competency-based certification units

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
1	Understand the entrepreneurial process	<ul style="list-style-type: none"> <li>• Illustrate with a mind map and explain the entrepreneurial process based on the individual thinking process from interest gathering, conceptualization through harvesting</li> </ul>		
2	Define knowledge-based entrepreneurship and its impact on you enterprise and the economy with reference to the current global context	<ul style="list-style-type: none"> <li>• Conduct a research on SMEs contribution to the gross domestic product</li> <li>• Substantiate a case of your start-up contributions to the Singapore economy</li> </ul>		
3	Discuss what personal traits successful entrepreneurs must have to succeed	<ul style="list-style-type: none"> <li>• Research on characteristics of success entrepreneurs</li> <li>• Discuss and identify personal strengths and weaknesses</li> </ul>		
4	Assess the current environmental and sociological factors impacting your business	<ul style="list-style-type: none"> <li>• Research from Business Times and Straits Times and select 10 events that could impact your business in domestic markets</li> <li>• Research from regional or global news, i.e. CNN, CNBC Russia Times or Bloomberg and list major events that will impact your business</li> </ul>		
5	Identify and conduct an industry analysis on your business type based on Global Industrial Classification Standards (GICS) Index	<ul style="list-style-type: none"> <li>• Present a customer analysis report</li> <li>• Present a competitor analysis report</li> <li>• Evaluate the two and strategize a niche</li> </ul>		
6	Discuss how your apply knowledge into your business processes	<ul style="list-style-type: none"> <li>• Formulate a knowledge application process plan and justify the integration</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
7	Define global entrepreneurship	<ul style="list-style-type: none"> <li>• Define entrepreneurship</li> <li>• Integrate knowledge content into your business processes</li> <li>• Differential the value add between knowledge-based and non-knowledge-based business model. Illustrate with an example</li> </ul>		
8	Discuss the challenges starting a business in Singapore and illustrate strategies to capitalize and/or circumvent these challenges	<ul style="list-style-type: none"> <li>• Identify 5 main challenges your proposed business will face (1) in the start-up phase (2) 3–5 years down the road</li> </ul>		
9	Identify business opportunities within (a) local (b) regional context	<ul style="list-style-type: none"> <li>• State the opportunities identified and draft out an action plan</li> </ul>		
10	Define the differences between ideas and viable business opportunities	<ul style="list-style-type: none"> <li>• Be explicit in your definition and illustrate with an example</li> </ul>		
11	Define and apply Bootstrapping strategy into your business	<ul style="list-style-type: none"> <li>• Identify five bootstrapping strategies applicable to your business model</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
12	Conduct sustainability test based on your business model	<ul style="list-style-type: none"> <li>• Present a feasibility plan to justify the risk/return ratio, potential benefits against costs and sustainable strategies to be employed and global scalability potential</li> <li>• Using financial metrics, justify if your business is able to pass these benchmark:               <ol style="list-style-type: none"> <li>(1) Market size potential &gt;S\$1 million revenue per annum</li> <li>(2) Annual growth rate &gt;20 %</li> <li>(3) Entry barriers, i.e. special qualifications/licence/regulation/global brand equity/intellectual property protected = in place</li> <li>(4) Gross margin &gt;40 %</li> <li>(5) After-tax margin &gt;20 %</li> <li>(6) Return on asset &gt;20 %</li> <li>(7) Break-even &lt;18 months</li> <li>(8) Return-on-investment &gt;30 %</li> <li>(9) Founders' control &gt;60 %</li> <li>(10) Management team market knowledge/expertise = Advance</li> <li>(11) Entrepreneur focus = Full-time</li> <li>(12) Ability to adapt in challenging scenario = Quick to adapt</li> </ol> </li> </ul>		
13	Determine resources needed for your business	<ul style="list-style-type: none"> <li>• Present a breakdown of resources and capital expenditures needed to sustain the business in the first 2 years</li> <li>• Develop an operational plan including capital budgeting for property, plant and equipment</li> <li>• Develop an outsourcing and or off-shoring strategy</li> </ul>		(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
14	Determine the size of start-up capital	<ul style="list-style-type: none"> <li>• Present a step-by-step build up approach to size your capital needs</li> </ul>		
15	Decide on business form	<ul style="list-style-type: none"> <li>• Consider the legal business form to adopt, i.e. sole proprietorship, partnership, Limited Liability Partnership (LLP), Limited Liability Corporation (LLC)</li> </ul>		
16	Decide on capital structure—percentage in equity and debt. Justify	<ul style="list-style-type: none"> <li>• Deliberate and justify your capital structure decisions as well as any anti-dilution provisions to be incorporated</li> </ul>		
17	Identify sources of capital	<ul style="list-style-type: none"> <li>• Identify local and foreign sources of capital</li> </ul>		
18	Prepare documents for private placements	<ul style="list-style-type: none"> <li>• Research private placement memorandum</li> <li>• Develop a customized PPM to suit your invitation to treat</li> </ul>		
19	Selling to investors	<ul style="list-style-type: none"> <li>• Role play the investors proposition process</li> </ul>		
20	Develop prototype	<ul style="list-style-type: none"> <li>• Design and/or reverse engineer existing product/service</li> <li>• Locate prototyping contractors</li> <li>• Work out per unit cost</li> <li>• Design just-in-time process</li> </ul>		
21	Market testing and evaluation	<ul style="list-style-type: none"> <li>• Launch market testing to first 100 primary target audience</li> <li>• Solicit feedback</li> <li>• Refine quality and customer value proposition</li> </ul>		
22	Conduct break-even analysis using formula: $0 = (SP - VC)S - FC$ where $SP =$ Unit selling price, $VC =$ Variable cost per unit, $S =$ Sales in units and $FC =$ Fixed costs	<ul style="list-style-type: none"> <li>• Identify (1) all fixed costs (2) all variable costs</li> <li>• Identify (3) total costs (4) total revenue</li> <li>• Illustrate with a graphical representation</li> </ul>		
23	Harvesting strategies for investors	<ul style="list-style-type: none"> <li>• Set a time horizon for investors to exit investments</li> <li>• Set an annual valuation policy</li> <li>• Offer alternatives</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
24	Construct your business model	<ul style="list-style-type: none"> <li>• Present a viable business model embedding your competitive and differential advantages</li> </ul>		
25	Create intrinsic values	<ul style="list-style-type: none"> <li>• State explicit in all marketing materials your firm's intrinsic offerings versus industry practices</li> </ul>		
26	Construct bottom-up market sizing	<ul style="list-style-type: none"> <li>• Determine your market coverage</li> <li>• Align your current resources to capture optimal market share</li> <li>• Sum up market size in dollar terms</li> </ul>		
27	Construct differential advantages	<ul style="list-style-type: none"> <li>• List and justify the differential features of your product/service offerings that will positively impact your competitive edge</li> </ul>		
28	Incorporate creativity in your business	<ul style="list-style-type: none"> <li>• Present a creativity process plan</li> </ul>		
29	Incorporate innovation in your business	<ul style="list-style-type: none"> <li>• Discuss the differences between creativity and innovation</li> <li>• Develop an innovation plan for your service/product/process</li> </ul>		
30	Apply business ethnography	<ul style="list-style-type: none"> <li>• Conduct a field observation exercise to understand how your customers do business and prepare a report offering solutions to make them more productive and profitable.</li> </ul>		
31	Refine product and service offerings	<ul style="list-style-type: none"> <li>• Perform a market survey of competitive offerings</li> <li>• Prepare a report to improve its features and processes</li> </ul>		
32	Define forecasted market size in geographical coverage, human resources, time and capital needed	<ul style="list-style-type: none"> <li>• Using secondary data from competent third parties like the World Bank, The Economists, IMF, etc. via the internet and prepare a report incorporating resources within your firm's capabilities</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
33	Conduct customer anthropology for B2B model	<ul style="list-style-type: none"> <li>• Conduct a field survey or request to perform joint marketing with your customers to understand their clientele business processes</li> <li>• Identify gaps and solutions to help your customers get the sale</li> </ul>		
34	Forecast sales in percentage and dollar value from (1) primary target audience (2) secondary target audience	<ul style="list-style-type: none"> <li>• Define your primary target audience and secondary target audience profile and its market size in numbers and dollar terms respectively—from a bottom-up approach</li> </ul>		
35	Determine demographics and psychological profile of customers	<ul style="list-style-type: none"> <li>• Using most recent statistical report, develop a customer profile plan</li> </ul>		
36	Conduct industry analysis with reference to your industry and those that may impact your business greatly to determine the trend in the next 3 years	<ul style="list-style-type: none"> <li>• Using trade publications relevant to your industry, prepare a trend report for the next 3 years factoring current economic, social and political factors</li> </ul>		
37	Forecast size of your business in 5 years time. Justify	<ul style="list-style-type: none"> <li>• Prepare a short report justification a 5 year scenario with regards to your industry based on GICS Index</li> </ul>		
38	Set pricing policies	<ul style="list-style-type: none"> <li>• Set a competitive pricing policy to win over customers</li> </ul>		
39	Determine frequency of customer purchase: per week, per month, per quarter, per year	<ul style="list-style-type: none"> <li>• State the type of product/service offerings</li> </ul>		
40	Determine which stage of the industry cycle is your offerings in	<ul style="list-style-type: none"> <li>• Determine the frequency and size of purchase</li> <li>• Reference your industry to the Global Industry Classification Standards (GICS)</li> <li>• Identify which phase is your product/service is undergoing and carve a niche that is economically profitable to justify your efforts</li> </ul>		
41	Define and determine your gross margin	<ul style="list-style-type: none"> <li>• Understand the importance of real gross margin</li> <li>• Use a benchmark of 40 % benchmark to gauge the viability of business potential</li> </ul>		

(continued)



Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
42	Develop channel strategy	<ul style="list-style-type: none"> <li>• Create affiliates network</li> <li>• Create franchise schemes</li> <li>• Create business opportunity scheme</li> <li>• Create agency, dealership and distributorship</li> <li>• Create global importers network</li> </ul>		
43	Develop risk management plan	<ul style="list-style-type: none"> <li>• Buy a franchise</li> <li>• Buy into an established business</li> <li>• Identify all potential risks</li> <li>• Consider types of insurance needed and its costs:</li> </ul> (a) Key person (b) Directors buy-sell agreement (c) Employee benefits insurance (d) Property and casualty insurance		
44	Develop proactive competition strategy	<ul style="list-style-type: none"> <li>• Investigate and decide country of domicile with regards to FTA, market size, global branding, corruption and transparency standards, costs and taxes and regulatory friendliness towards global businesses</li> </ul>		
45	Demonstrate research capabilities	<ul style="list-style-type: none"> <li>• Submit a research report investigating global innovation, business competition and industry development with reference to your business</li> </ul>	5,000 words (1 week)	
46	Develop your value chain	<ul style="list-style-type: none"> <li>• Design and incorporate a value chain process into your business plan</li> </ul>		
47	Develop global markets (country-specific)	<ul style="list-style-type: none"> <li>• Conduct demographic and psychological analysis</li> <li>• Identify potential global markets and size by country</li> <li>• Estimate the buying power per customer per country</li> <li>• Justify your selection</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
48	Select global market penetration strategy	<ul style="list-style-type: none"> <li>• Technology transfer</li> <li>• Licencing</li> <li>• Outsourcing</li> <li>• Exporting</li> <li>• Foreign direct investment</li> <li>• Franchising venture financing</li> <li>• Merger and acquisition</li> </ul>		
49	Integrating marketing, branding quality and intellectual properties strategies (emphasizing differential advantages)	<ul style="list-style-type: none"> <li>• Develop product/service strategy</li> <li>• Develop a communication plan</li> <li>• Develop a just-in-time distribution strategy (indicating collection methods and turnaround time to process an order)</li> <li>• Justify pricing policies</li> <li>• Develop promotional and outreach campaign (online and on-site)</li> <li>• Site and traffic analysis and decision-making</li> <li>• Online marketing policies</li> <li>• Develop branding strategies</li> <li>• Protect all intellectual properties</li> </ul>		
50	Employ e-commerce strategy	<ul style="list-style-type: none"> <li>• Plan and develop your website</li> <li>• Demonstrate web enhancement capabilities</li> <li>• Employ search engine optimization</li> <li>• Develop a global e-commerce value chain</li> <li>• Present web strategy plan including strategic partnership, lead generation and follow-through processes</li> <li>• Conduct beta testing</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
51	Define corporate entrepreneurship	<ul style="list-style-type: none"> <li>• Understanding how intrapreneurship can contribute positively to any organization</li> <li>• Under the challenges and design a company-wide "Intrapreneurship Initiative"</li> <li>• Initiate an innovation project</li> </ul>		
52	Develop an ethics plan	<ul style="list-style-type: none"> <li>• Establish a method to contain ethical responsibility</li> </ul>		
53	Incorporate cause related marketing	<ul style="list-style-type: none"> <li>• Initiate a campaign integrating profit and social objectives</li> </ul>		
54	Establish relationship with business incubators	<ul style="list-style-type: none"> <li>• Develop a regional incubators list</li> <li>• Communicate and establish a business relationship</li> </ul>		
55	Design innovation strategy	<ul style="list-style-type: none"> <li>• Decide on service/product offerings</li> <li>• Reverse engineer its processes</li> <li>• Add economic and aesthetic values to existing offerings using knowledge-based concepts</li> <li>• Justify incremental values</li> </ul>		
56	Develop venture team/s	<ul style="list-style-type: none"> <li>• Define collective entrepreneurship</li> <li>• Set stringent selection criteria for founding team</li> <li>• Establish a board of advisers</li> <li>• Set a timeline to reach the benchmark</li> <li>• Set clear and equitable policies</li> <li>• Develop and endorsed a shareholders' agreement</li> </ul>		
57	Understand how to apply and exploit government assistance schemes	<ul style="list-style-type: none"> <li>• List all government assistance schemes helpful for small and medium-sized enterprises</li> <li>• Develop an action plan to capitalize on the applicable schemes</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
58	Conduct environmental assessment	<ul style="list-style-type: none"> <li>• Conduct a SWOT analysis (strengths, weaknesses, opportunities and threats)</li> </ul>		
59	Identify regulatory impact on your business	<ul style="list-style-type: none"> <li>• Assess the regulatory environment</li> <li>• Identify potential risks exposure</li> <li>• Develop contingency plan</li> </ul>		
60	Create barriers to entry	<ul style="list-style-type: none"> <li>• Design a defensive plan to protect your business</li> </ul>		
61	Conduct marketing research	<ul style="list-style-type: none"> <li>• Gather secondary and primary data</li> <li>• Evaluate and justify decisions</li> <li>• Report your findings</li> <li>• Refine target market profile</li> <li>• Design a “no-frills” 1 year marketing campaign</li> </ul>		
62	Plan sales strategy	<ul style="list-style-type: none"> <li>• Plan sales strategies</li> <li>• Allocate sales and distribution resources</li> <li>• Sales force development</li> <li>• Establish incentives for sales force and buyers’ motivation</li> <li>• Develop consultative selling process</li> <li>• Role play consultative selling proposition</li> <li>• Develop customer value proposition</li> </ul>		
63	Perform financial ratio analysis	<ul style="list-style-type: none"> <li>• Understand the relevance of financial ratio and its application</li> <li>• Define ROIC, ROE and ROA</li> <li>• Define gross profit margin, net margin EBITDA, account receivable turnover, average collection period, inventory turnover, working capital</li> <li>• Define current ratio, quick ratio, cash ratio, debt-to-equity ratio, times interest earned and cash flow to liabilities</li> </ul>		(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
64	Identify global market opportunities	<ul style="list-style-type: none"> <li>• Align service and product to global customers</li> <li>• Identify 3 specific countries to serve for the next 2 years. justify your decision</li> <li>• Develop a global market access plan</li> <li>• Identifying importing opportunities</li> <li>• Identifying exporting opportunities</li> <li>• Identifying foreign direct investment opportunities</li> <li>• Identify joint venture opportunities</li> <li>• Identify franchise and licencing opportunities</li> <li>• Identify manufacturers' sales representation, distributorship and dealership opportunities</li> </ul>		
65	Understand trade blocs	<ul style="list-style-type: none"> <li>• Define the roles of WTO, NAFTA, MERCUSOR—Latin American common market, EU, ASEAN, MENA and how to benefit from them</li> <li>• Define free trade agreement and discuss how to exploit them</li> <li>• Identify your country top 10 trading partners and substantiate with latest statistics and identify trade opportunities</li> </ul>		
66	Incorporating quality initiatives	<ul style="list-style-type: none"> <li>• Identify all quality initiatives that could impact your business results, i.e. ISO 9000, ISO 14000, Singapore quality class (equivalent to EFQM standards), people developer standards, National Skills Recognition Standard (NSRS), etc.</li> <li>• Establish a budget for quality standards attainment</li> <li>• Design a quality initiative and set a 2 year target to achieve it</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/pass/retake
67	Prepare a harvesting plan	<ul style="list-style-type: none"> <li>• Identify time horizon to sell</li> <li>• Establish your enterprise value using (a) multiple of earnings (b) discounted cash flow (c) industry-adjusted market value approach</li> <li>• Discuss how to effect a leveraged buyout (LBO)</li> <li>• Understand the acquisition process</li> <li>• Understand the initial public offering (IPO) processes</li> <li>• Understand the listing criteria for the CATALIST Market (Singapore's Second-tier equity exchange)</li> </ul>		
68	Prepare company strategic plan	<ul style="list-style-type: none"> <li>• Communicate mission and vision</li> <li>• Communicate annual milestones</li> <li>• Communicate expectations and opportunities to employees, investors and customers</li> <li>• Prepare a visionary 5 year plan</li> </ul>		
69	Present business plan	<ul style="list-style-type: none"> <li>• Prepare a 20-page business plan</li> <li>• Present within 15 min</li> <li>• Refine the plan</li> <li>• Present to bankers and accredited investors</li> <li>• Incorporate disclaimer and confidentiality clauses</li> </ul>		
70	Apply financial Bootstrapping	<ul style="list-style-type: none"> <li>• Identify opportunities within your stakeholders and processes where bootstrapping strategies can be applied</li> </ul>		
71	Prepare pro forma financial statements	<ul style="list-style-type: none"> <li>• Prepare pro-forma income statement</li> <li>• Prepare pro forma cash flow statement</li> <li>• Prepare pro forma balance sheet (for Year 1–3 in monthly period)</li> </ul>		

(continued)

Table 2.1 (continued)

S. no.	Unit of competence	Element of competence	Performance standards	Date/ pass/ retake
72	Research listing requirements	<ul style="list-style-type: none"> <li>• Discuss listing criteria in CATALIST (Singapore's secondary stock exchange)</li> <li>• Compare and contrast with U.S. NASDAQ and london alternative investment market and report the differences and opportunities</li> <li>• Research and discuss employment regulations and procedures in Singapore</li> <li>• Define the legal term of an "employee" and a "contractor" under the Singapore law</li> <li>• Discuss the vicarious liabilities of an employer when employee breach performance or broke the law</li> <li>• Discuss the process and obligations to establish a Central Provident Fund Account (CPF) for employees</li> <li>• Discuss your legal obligations as an employer</li> <li>• Discuss opportunity to outsource</li> </ul>		
73	Prepare for employment			
74	Motivate founding team	<ul style="list-style-type: none"> <li>• Plan talent resource</li> <li>• Plan incentives</li> <li>• Plan career path</li> <li>• Set-up Employee Share-Ownership Plan (ESOP)</li> </ul>		
75	Plan public listing	<ul style="list-style-type: none"> <li>• Understand listing requirements</li> <li>• Compare CATALIST with NASDAQ (US) and London Alternative Investment Market (AIM)</li> <li>• Compare CATALIST with Hong Kong and Australia small cap listing</li> <li>• Compare CATALIST with India small cap listing</li> </ul>		

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*Disclaimer* The above list of competencies and underpinning knowledge is not exhaustive and may overlap in some cases. Knowledge of Social Entrepreneurship and Minorities-focused Entrepreneurship are not included

- Online learning supported by a national call centre administered by a core group of certified business advisors
- On-site assessment centre.

## **2.14 Assessment Criteria**

- Students must demonstrate competencies by showing sufficient knowledge within each unit of competence identified through presentation, project submission; oral defence and questioning, discussion, prototype demonstration and other method pre-approved by the Assessor.
- The time limit for each assessment would be up to 3 h regardless of online or on-site mode.
- The passing grade is 60 % under a knowledge band system.
- There will be a maximum of three retake permitted to each candidate.
- Candidate would only need to attempt only unit/s below stipulated standards and need not repeat those passed.
- There will be a quarterly review of contents, pedagogies and assessment standards to constantly update and refine the certification process.

## **2.15 Linking NECA Certification to a Global Credential**

There should be a global competency standard set for knowledge-based entrepreneurs. Creating a credential based on a standard equivalent to the United Kingdom National Vocational Qualification Framework at Level 7 (Masters Degree level) or the ISO 17024 Standards in certifying the competence of individuals—would entice more tertiary graduates to pursue entrepreneurship with pride and confidence. NECA graduates could complete a 10,000 word Capstone Enterprise Project and receive a Certified Practising Entrepreneur (CPEntr) designation. This will help to bring up the societal value of entrepreneurs in the Singapore context.

## **2.16 Linking NECA Certification to All Government Financing Schemes**

The current practice of funding of start-ups did not include any process to ascertain the enterprise competencies of the lead entrepreneurs and their co-founding teammates. Linking NECA Certification will offer another level of selection to identify and discern the passionate and knowledgeable from the half-hearted.



It would also serve as a risk management instrument for investors and lenders in making risk-calculated decisions. The certification process is thus a value-added component to help more like-minded entrepreneurs in the capital formation.

NECA Certified Entrepreneurs should be rewarded with incentives, i.e. higher funding quantum to all government assisted schemes. If certification is mandated as criteria to apply for government assistance, the quality and quantity of competent entrepreneurs would increase.

## **2.17 Linking NECA Certification to the 100K Enterprise Model**

This Model has been created by the author to address the learning needs of potential knowledge-based entrepreneurs globally and to complement the NECA Certification Scheme. It is global-centric in its perspectives and will serve microenterprises well to achieve business sustainability and excellence.

The term “100K” was coined to help start-up entrepreneur to target his first major milestone—reaching a US\$100,000 net profit. Though it is not a rigid target, it provides a realistic milestone for start-ups to achieve. Several principles were incorporated into this model. They include:

1. Team-based model
2. Promotes democratic capitalism
3. Global product/service positioning
4. Scalable potential to reach a revenue of US\$1 million per annum
5. Be service-oriented
6. Emphasis on consultative selling
7. Capitalize on intellectual properties
8. Exploit web presence
9. Must incorporate in a country with high corporate governance standards and least corruption
10. Break-even within 9–12 months
11. Promote a culture of fun, respectfulness and democratic in its policies and practices
12. Adherence to International Financial Reporting Standards
13. Operate a business with a minimum gross margin of 40 % or an operating margin of at least 20 %
14. Return on invested capital to be more than 30 %
15. Quick ratio of more than 2.0
16. Employ Bootstrapping Strategies
17. Emphasize on just-in-time model
18. B2C model preferred
19. Initiate a quality programme at the launching stage
20. Must be knowledge-intensive

21. Capitalize on equity financing from accredited investors through private placements
22. Hold more than 60 % of its shareholdings
23. Demand owner–employees to engage world-class continuous learning and certification.

Note: This list is not exhaustive and is continuing evolving.

As of this writing, there are no tertiary institutions heard off which promotes quantitative performance measurement of the learning outcomes of students. There is also no accountability from institutions in the transfer of knowledge versus its effectiveness and relevance to industries.

The 100K Enterprise Model is an ideal framework for collegiate entrepreneurs to start real-time businesses. Students should be taught the competencies to start, market and growth real income in college under close supervision of professors. This team-based model (ideally consisting 3 members) would help students to master the real art of enterprise development which theories and exams had not proven its worth. Further reading could be extracted by visiting “100K Enterprise Model” via Google search.

## **2.18 Analysis of the Singapore Entrepreneurship Ecosystem**

A holistic approach to solving the “entrepreneurial gap” would not be complete without a thorough analysis of the local entrepreneurship ecosystem.

More than 60 stakeholders’ groups were identified. And they include:

1. Ministry of Education
2. Parents’ Group
3. Ministry of Defence: (a) National Servicemen
4. Ministry of Home Affairs: (a) Singapore Police Force (b) The Civil Defence Force
5. Ministry of Finance
6. Prime Minister Office (PMO)
7. Policy-making: (a) What should change for the better?
8. ACRA
9. Standards, Productivity, Innovation and Growths (SPRING) Singapore—A Government statutory board in charge of enterprise development
10. EDB (Economic Development Board) Singapore
11. International Enterprise (IE) Singapore
12. ASME (The Association of Small and Medium Sized Enterprises)
13. Singapore International Chamber of Commerce
14. Singapore Chinese Chamber of Commerce
15. Singapore Malay Chamber of Commerce

16. Singapore Indian Chamber of Commerce
17. APEC (Asia-Pacific Economic Cooperation) Countries
18. Money Centre Banks
19. Sovereign Wealth Funds
  - (a) Government of Singapore Investments Corporation (GIC)
  - (b) Temasek Holdings
20. Ministry of Trade and Industry: Ministry in charge of Entrepreneurship
21. Ministry of Transport:
  - (a) Land Transport Authority
  - (b) Mass Rapid Transit (MRT)
  - (c) Singapore Bus Transit Services (SBS)
  - (d) Taxis operators
22. Ministry of Community, Youths and Sports
23. Insurance Companies
24. Stock Exchange of Singapore (SGX)
25. The CATALIST Market (Sponsor-Supervised Fund Raising Platform of The Singapore Exchange)
26. Institute of Certified Public Accountants (ICPAS)
27. The Law Society
28. Polytechnics and Institutes of Technical Education
29. The National Library
30. Jurong Town Corporation (JTC)
31. Singapore Science Park/Ascendas Land/Capitaland
32. Major Oil Companies (Exxon Mobil, Shell, etc.)
33. Singapore Airlines (SIA)
34. Budget Air Carriers
35. Civil Aviation Authority of Singapore (CAAS)
36. Inland Revenue Authority of Singapore (IRAS)
37. Sports Council of Singapore
38. Infocomm Development Authority of Singapore (IDAS)
39. Advertising Standards Association of Singapore
40. Institute of Public Relations of Singapore
41. Universities and Polytechnic Libraries
42. Singapore Accreditation Council
43. International Organization of Standardization (ISO)
44. European Foundation for Quality Management (EFQM)
45. Malcolm Baldrige National Quality Award (US) Standard
46. Singapore Tourism and Convention Bureau
47. Telecommunication Authority of Singapore
48. Telco companies
49. Media Corporation of Singapore
50. Ministry of National Development: (a) Housing and Development Board (HDB)

51. Town Council in Singapore
52. Licencing Authorities in Singapore
53. Ministry of Manpower
54. National Trade Union Congress (NTUC)
55. Ministry of Environment: (a) National Environmental Agency (NEA)
56. The Peoples' Association & the Community Clubs
57. Singapore Press Holdings
58. Grassroots organizations
59. Non-governmental organizations
60. Parents–Teachers Associations
61. The Academy of Principals
62. National Teachers Association/Union
63. Ministry of Foreign Affairs: Singapore embassies based overseas

## 2.19 Reforming the Education Process

An in-depth examination of its education policies and practices was conducted and some severe “knowledge gaps” were identified. On a positive note, opportunities for process enhancements are also available at each level of the educational chain—ranging from the 179 Primary Schools, 154 Secondary Schools, 18 Pre-Universities, 5 Polytechnics, 3 Institute of Technical Education Colleges through the 3 state-funded universities. The National Servicemen and PMETs (Professionals, Managers, Executives and Technicians) and Private Post-Secondary Education Sector had also presented opportunities for re-engineering and improvements.

Collectively, it impacts a population of more than 600,000 people.

Solutions proposed include:

- Create an experiential learning curriculum to develop global entrepreneurial mindsets for students from Primary 3 through Primary 6 level impacting 270,000 students. This subject must be graded as a core subject. The objectives include identifying young talents and to discover the strengths of individuals which academic subjects failed to provide.
- Provide a minimum of 3 “Enterprise Coach” in each Primary School.
- Introduce “Enterprise and Innovation” and “Economics and Globalization” as two core modules in all Secondary Schools—impacting more than 250,000 students.
- Provide a minimum of 5 “Enterprise Coach” in each Secondary School.
- Get Parents to be involved in “Enterprise” Projects.
- Initiate collaboration with overseas’ universities like Babson, IIMs, Cambridge University and Harvard University.

- Set up a “Globetrotter” Fund for all tertiary students.
- Obtain community leaders to support and endorse on a continuous basis.
- Introduce a “Science-based or Arts-based Entrepreneurship” subject (depending on stream) as a core subject in all Pre-Universities—impacting 20,000 students from 17 Junior Colleges and 1 Centralized Institution.
- Provide a minimum of 5 “Enterprise Coach” in each Pre-University.
- Incorporate a regional business opportunities identification trip for Pre-University students funded by Edusave (a joint government–parents scheme) and surpluses from our sovereign funds.
- Introduce a Master of Technopreneurship Certification equivalent to the United Kingdom National Vocational Qualification (NVQ) standards at Level 4 at each Institute of Technical Education (ITE) impacting 14,000 students—with initiative to integrate technical discipline with a 30 % enterprise development curriculum.
- A minimum of 5 “Enterprise Coach” is mandatory in each ITE College.
- Incorporate industry-specific overseas’ internship for all ITE Master of Technopreneurship students.
- Integrate Bachelor degree and Chartered Engineer qualifications in all Polytechnics.
- Review and re-engineer all curriculums and pedagogical approach by incorporating a minimum of 25 % of total contact hours in Global Technopreneurship and Innovation as a Capstone Module in every Polytechnic. This will impact 80,000 students cohort.
- Initiate similar mechanism emulating the ‘Bayh-Dole Act of 1980 on government policies in the transfer of technologies and supporting the research and development of commercially viable institutions’ research projects.
- Revise the university curriculum and pedagogical approach to include a “Just-in-time” contents and experiential-based learning.
- Mandate Global Entrepreneurship as a core module across all faculties of learning to impact a student cohort of 80,000.
- Revise recruitment policy to invite industry practitioners with more than 20 years experience to embark a full-fledged professorship of practice in the respective field.
- Create a one-stop Enterprise Incubation Centre for PMET Sector to learn and network within Community Clubs based in every constituency with the support from SPRING Singapore, ACRA and the Member of Parliament. This initiative will impact more than 200,000 nationwide.
- Mandate all Private Education Providers to introduce Global Entrepreneurship Module for all Level 4 onwards Diploma and Degree courses. This initiative impacts about 80,000 private post-secondary school students.

## 2.20 Proposal for Other Stakeholders

- Revise Government Assistance Schemes through drawing public consultation to make existing schemes more user-friendly and favour the masses instead of benefiting a few.
- Revise the Home Office Scheme and expand usage rights, size of owner-employee per unit, infrastructural links to all publicly funded databases.
- Revise Land Transport Policies to encourage entrepreneurial activities, i.e. exemption from Certificate of Entitlement Process and decrease in road taxes amongst others.
- Revise the current Securities laws and initiate a Direct Public Offering Securities emulating the U.S. Small Corporate Offering Registration (SCOR) Regulation D Rule 504 Model to allow for microenterprises (less than 10 employees) to raise up to S\$200,000 per annum and to be administered under a Non-for-Profit Charter. This initiative will benefit more than 50,000 new business firms and companies annually registered and incorporated and also the existing 130,000 SMEs.
- Expand Incubation Space from 30 sq ft per workstation through 500 sq ft units across industry zone across the island republic by rejuvenating unused School Buildings and Flatted Factories into “Global Enterprise Hubs”.
- Teach Entrepreneurs to exploit Free Trade Agreements with host countries to facilitate easier market access and co operations.
- Negotiate with FTAs Partners to have greater flexibilities in granting business VISAs to Singapore-based entrepreneurs and residing rights to his family.
- Revise the Policy to allow Singapore-registered entrepreneurs to access all tertiary institutions’ student-domain resources, i.e. libraries, laboratories, workshops and technical support with equitable terms and conditions.
- Soliciting support from Sovereign Wealth Funds, i.e. Temasek Holdings and The Government of Singapore Investment Corporation (GIC) to invest 1 % of this net profit to build world-class Singapore-based enterprises. A recent financial report indicated a collective net profit of about \$12 billion.
- Introduce a Flat Enterprise Tax of 8–10 % for SMEs with less than S\$1 million in revenue to keep Singapore competitive and attractive to foreigners to set up enterprises here.
- Cut down public expenditures referencing return-on-assets of immovable assets and productivity metrics, such as per employee contributions.
- Revise Banks’ practices on setting minimum balance amounting to S\$10,000 to start a checking account.

## 2.21 Implications and Propositions for BRIC Nations

Every BRIC economy is different in its make-up and hence faces different challenges.

Brazil may be overpopulated and have difficulties in controlling birth rates and hyperinflation. Too much concentration in the Saul Paulo and Rio de Janeiro region may hurt the other region's development and cause income inequality issues. Russia may be experiencing an overly dependence in its natural resource, rampant corruption, shrinking population and other geopolitical issues. India being the most democratic amongst BRIC nations has weak central government, slow in policy consensus, corruption, cultural conflicts and disharmonized business regulations across all states—not discounting frequent unanticipated terrorisms from external and internal sectarian groups. Likewise, China being the most stable in governance and economic growths had also shown cracks in human rights issues, ageing population and income inequalities in many provinces.

Despite these issues prevailing around BRIC nations, there are ample opportunities available that BRIC leaders could exploit and would help to mitigate the existing problems. Introducing strong public policies and building enterprise infrastructures is one solution each BRIC government must collectively agree and act swiftly. The political will to support positive change will be the driving force for sustainable economic growth. This could only be achieved by casting political differences aside and placing people's interests first.

The Singapore scenario as presented could still be a role model for BRICS economies despite its current weaknesses in its links across the entrepreneurship ecosystem. Policy-makers and all stakeholders in BRIC could still learn from the cues presented in this Paper and customize them to fit their respective context.

As a collective bloc, BRICS nations should seriously contemplate to establish a Common BRIC Microenterprise Model incorporating principles of the 100K Enterprise Model and allowing businesses in each of the member nation to trade and invest freely with a no-frills flat tax basis of say at 10 %- using a common company mechanism. The author advocates a creation of a global microenterprise standard which BRIC nations could benefit.

At this point of writing, costly and complex processes to incorporate a company are still prevalent in all BRICS economies. From an economic standpoint, these practices are not enterprise-friendly and would cause major impediments to entice new foreign direct investments and not help the teething unemployment issues.

A multi-lateral agreement is suggested and must be enacted quickly to promote freer global movement of business activities amongst a collective population of 3 billion people. The multiplier effect from this initiative would lead to a rejuvenation of a new and vibrant economic growth engine which our world needs in exigencies today. The ultimate solution for BRIC economies is to continue to develop clearly defined numbers of world-class knowledge-based entrepreneurs in the interests to achieve more equitable wealth distribution and societal good.

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