

Summary

In line with the objective for Singapore to grow a 'second wing', a position paper in 2016 called for the development of Singapore into an externally focused, geographically unconstrained economy, as well as a base for innovation and thought leadership. This essay discusses how the recent "Smart Nation" initiatives unveiled by the Singapore government are angled towards creating a collaborative, innovative national framework, and proposes that developing comprehensive Southeast Asian consumer-level data in Singapore, coupled with the use of application programming interfaces (APIs), could stimulate self-organised crowdsourced innovations and regional entrepreneurial activity while simultaneously communicating larger regional concerns to the user base.

Question: What are the limitations and challenges facing Singapore's current growth model? What changes and reforms do you think necessary, particularly in terms of raising productivity and the innovation capacity of the Singaporean economy?

Singapore's rise has arguably been heavily reliant on the accumulation of the factors of production (Young, 1992), and this model is unlikely to yield higher levels of growth for the country. Academic literature on the limitations of the Singapore growth model is relatively well documented, and I would refer you to the report on "Singapore's Productivity Challenge" (Auyong, 2016) for a more detailed perspective and overview of the challenges facing the Singaporean growth model. On the topic of Singapore's economic development, Prime Minister Lee Hsien Loong stated that for Singapore, "the obvious gains have been made" (McGurn, 2016). Having reached this stage of growth, the next step is to have a coherent approach towards developing the capabilities of the people and tapping into the creative potential of the populace.

On the notion of human capability development, the approach for longer term lasting change would be largely concerned with education, the case for which was touched upon by Faizal bin Yahya (2014) on the place of education in Singapore's industrial policy for innovation, and elaborated at length elsewhere. However, the pressures we face are more immediate, and the argument I put forth here is for a more current application that addresses the challenge we face.

For this essay, productivity will be defined as the efficiency by which inputs such as land, labour and capital, are “converted into outputs such as goods and services” (Auyong, 2016, p. 39); which I interpret as maximising the efficiency of a given task or process, while innovation here defined is loosely based upon The World Bank Innovation Policy report definition of “technologies or practices that are new to a given society” (2010, p.4); finding different solutions to existing problems, which suggests value creation. Singapore excelled in importing ideas, technology and knowledge from other parts of the world, and fulfilling demand from the global market; an example of how we “imported what the rest of the world knew, and exported what it wanted” (Commission on Growth and Development, 2008). Our ability to synthesise and take best-practices and amalgamate these as our own offerings produced our local champions capable of competing internationally, such as PSA International, Changi Airport and Sembcorp, to name a few examples. The main functions of these companies address typical needs at a high standard, and this, I argue, was more a case of enhancing productivity; improving on existing processes and delivering a higher quality or standard of service. Pursuing productivity gains will continue to be a mainstay of Singapore’s priorities. At this stage where the country is transitioning to the next stage of its development by undergoing reforms and moving towards a “Smart Nation”,¹ I argue that the shift that the government proposes to undertake represents a fundamental change in perspective that is geared towards innovation, which I would liken to the difference between ‘pipes’ and ‘platforms’ as business models.² To extend the logic, innovation requires a connected platform for knowledge, where both producers and consumers of information can derive and contribute value in a positive feedback loop.

¹ See Lee (2014) on the launch of the “Smart Nation” initiative, where the prime minister declared that the government “will build the infrastructure, facilitate innovation and create the framework for all of us to contribute”.

² To paraphrase, “pipes” represent a more traditional business, which places producers (of services, things, content etc.) on one end and consumers on the other, while “platforms” are a model where both producers and consumers are engaged and connected through the platform to deliver and consume services, of which companies such as Uber and AirBnB would be examples of. See Velayanikal (2015).

The close relationship between sources of knowledge and innovation has been explored (Bach et al., 2015), and in this regard, my proposal for developing the innovative capacity of the Singapore economy would be to develop a collaborative repository of consumer data which addresses the direct needs of regional socio-economic challenges. This suggestion shares a common basis with the themes touched upon within the Singapore Business Federation (SBF) 2016 position paper, which called for both an externally focused, geographically unconstrained economy, as well as the thought leadership of Singapore (Singapore Business Federation, 2016a, p. 8 – 9). Here, I argue that both these objectives can be pursued concurrently, through addressing the data deficit that exists within the larger geographic context that Singapore lies within, Southeast Asia.³ Singapore is arguably well-positioned to tap into this need, a notion which finds support from the company Google, which developed its first data centre for Southeast Asia in Singapore in 2011, and committed again in 2015 to investing an additional S\$ 675m to expand its data centre and services here, as an act of “building on Southeast Asia’s extraordinary growth” (Channel NewsAsia, 2015). This would be in line with Singapore’s efforts to expand the economic space that it operates within (Goh, 2005), and our next challenge would be to leverage upon our geographic proximity and technological advantages to deepen our engagement with the region.

This builds upon elements proposed within the Infocomm Media 2025 plan, which discussed the development of Singapore as a digital harbour and a data marketplace.⁴ Expanding on this, our role and brand as a data marketplace can be strengthened by establishing a reputation as a high quality network for ground level data on Southeast Asia, becoming a platform for knowledge producers and consumers to capture the opportunities present in the region; providing the so-called raw materials for innovation. This would be known as organising the ‘external knowledge’ search (Dikova, 2015). Developing a framework for the various actors to share crucial knowledge that can

³ See Kellerman (2015), for a brief discussion on the business-related data deficit in Southeast Asia.

⁴ In brief, the “digital harbour” looks at developing data infrastructure, while the “data marketplace” looks at developing datasets to be exchanged, see Ministry of Communications and Information (2015, p. 25 – 26).

support business activities capable of exploiting such data sources at scale, has been made possible via information communication technologies (ICT).

The type of data relevant in this regard, consumer-level data, would take the cues from that employed in the United Kingdom (UK) by retailers for developing insights into consumer behaviours, the use of which is pivotal for what is termed as consumer-driven innovation networks (Cox and Mowatt, 2004). Such data has yielded financial benefits to UK retailers, and created a strategic asset using knowledge about the requirements of customers (Cox and Mowatt, 2004). Such data would be the lifeblood for small medium enterprises (SMEs) and companies with regional ambitions. Having a clear understanding of the ground sentiments, preferences and behaviours allows for better business decisions to be made. This is an approach called ‘demand-space analysis’ by the Boston Consulting Group,⁵ and I would argue that Singapore is particularly well-placed to be a broker of such information. Data on Southeast Asian consumers is still in its nascent form, with a large proportion of the region still yet to come online.⁶

The value of data lies in its ability to facilitate self-organisation among users, who are able to make connections that are not readily apparent even to the data providers themselves. This approach has been used by technology firms such as Amazon, eBay and Google to unleash innovation, using application programming interfaces (APIs) as a way of allowing developers access to their database to design services and applications, built by a community of developers out of their own volition (Tapscott and Williams, 2006). This encourages an open source approach to innovation, an example being how Google officially released the APIs to Google Maps, which developers then

⁵⁵ See Boston Consulting Group (2015, p. 18 – 19), for a discussion on data based “demand centric” segmentation and its considerable benefits for companies.

⁶ To give a sense of the potential, a Google executive shared that in the third quarter of 2013 “there were 60 million new internet users – mobile only” in Asia, nearly two times the population of Canada; illustrating the scope for growth in this regard. See Wong (2014).

took to create new applications on a massive scale by combining it with other data sources, which found usage in ways from crime reporting to disaster relief (Tapscott and Williams, 2006, p. 184 - 193). This method of tapping into the creativity of large groups allows new forms of innovation to develop in unforeseen ways, benefitting from the network effect as more applications and developers interact with the API platform, creating value from the ground up.

Singapore's forays into becoming more data savvy have yielded valuable projects, such as the data.gov.sg data portal, which makes available a wide array of datasets on Singaporean statistics, and encourages the use of APIs to develop applications and services using government data (Ministry of Communication and Information, 2015). The next step would be to take this data driven focus and turn it outwards to the region. The SBF position paper advocated the usage of digital technology to overcome geographical boundaries (Singapore Business Federation, 2016a, p. 8), I would suggest that tapping into the innovative and entrepreneurial potential of the country's residents can be achieved through the development of a state-of-the-art API of Southeast Asian consumers, which would hold the potential for both social and commercial applications. Such a platform of knowledge will empower market participants to have a clearer view of the wider context that they are placed within, making their efforts more targeted and effective for regional consumers, and allowing them to venture out to take on risks they deem suitable.

For the benefits of innovation to be felt, it has to be of a form that is accessible to a wider array of users. In Singapore's quest to support domestic enterprises, I would argue that a deeper knowledge of the surrounding region remains one of the key stumbling blocks that prevents more

local companies from venturing out.⁷ Small individual players would be hard pressed to eke out a share of foreign markets elsewhere, although the Singapore market's lack of scale remains a constant push-factor for local companies. Engaging a wider segment of people to embrace the larger multilateral challenges that Singapore faces, through a regionally focused consumer-based API, will allow the medium of a data centred platform to be a way of unleashing commercial innovation as well as communicating larger regional concerns to the user base.

Shifting towards a collaborative approach through the sharing and development of actionable data can empower a community-based approach towards the 'second wing' movement.⁸ This essay argues that a way of making an external wing more viable would be to become a recognised thought leader and network for innovation on regional consumer data. By so doing, this would further support the slew of technology focused initiatives the Singapore government has embarked upon since 2011, and develop a data driven society that understands the region's needs, in order to be a leading innovation hub in the years to come.

(1900 words)

Bibliography

⁷ A survey of Singaporean SMEs in 2016 identified that "close to 60% of SMEs identify lack of familiarity with the overseas markets and difficulty in identifying suitable local partners as biggest challenges when expanding overseas", see Singapore Business Federation (2016b).

⁸ Discussed within the 2016 SBF position paper, this references a speech made by then senior minister Lee Kuan Yew at an award ceremony for businesses on 8 January 1993, on the lack of Singaporean entrepreneurs and the need for Singapore to build an external dimension of its economy.

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