

Make Innovation a National Imperative

By Hitendra Patel, Steve Wyatt and Arun Mahizhnan

Over the past four decades, Singapore's policy makers have successfully met the challenge of defining holistic, internally consistent and externally relevant economic policies. Today, the nation faces a new challenge: moving forward into a new "innovation era" of economic development. As we have argued throughout this series, the nation stands at a crossroads. Down one road ... the continuation of the well known 'investment' era' ... lies the prospect of decelerating growth and the erosion of the economic lead that Singapore has achieved, to aggressive global and regional competitors. Down the other ... less familiar but ultimately far more rewarding ... lies sustainable growth generated by innovation. To commit to this 'road' policy makers will have to define a new holistic, internally consistent and externally relevant set of policies focused on building and facilitating the effective functioning of a robust innovation ecosystem. Singapore has achieved a stellar record in coordinating industrial policy; now it is time to do the same with innovation policy.

There are three 'pillars' upon which an innovation based economy will be built. The challenge for today's policy makers is to embrace all three 'pillars' simultaneously and in a balanced manner. Inspiring and shaping the efforts of multiple firms, agencies and individuals through-out the economy, to act in new ways.

- **Clusters of Innovation:** Here, policy makers have two critical roles; firstly to identify and foster the development of the 'right' clusters; secondly, to ensure the vibrancy and integrity of the chosen clusters. Much of the vision of and challenges for Singapore's move into the innovation era of economic development was laid out by Professor Michael Porter during his visit to Singapore in 2001.
- **Entrepreneurship:** Policy makers have a critical role in fostering an environment that promotes and supports entrepreneurship, from the availability of funding to the evolution of a culture that supports the 'brave effort,' even if it ends in failure. In other words, a culture that accepts and welcomes the business person who fails the first time and having failed once, tries again; a culture that sees failure as par for the course; and a culture that is proud of the Phoenix Award for resurrected business leaders. Not to repeat the many previous writings on the subject of fostering entrepreneurship in Singapore, here we will limit ourselves to noting that entrepreneurship is a critical component and that a significant challenge for policy makers is to create an environment that nurtures and develops entrepreneurship in concert with the other 'pillars'
- **Innovation at the firm level:** Innovation at the firm level has been the subject of the survey of the state of innovation in Singapore jointly conducted by Monitor Group and the Institute of Policy Studies; the findings of which have already been explored in great detail throughout this series of articles.

Perhaps the key finding from the study has been that fortunately, Singapore has a strong foundation on which to build. The World Economic Forum 2004 Global Competitiveness Report rated Singapore number one in the world in Information Technology and Microeconomic Environment. Our study confirms that Singapore has developed a particularly well-equipped 'kitchen' for innovation:

- With its renowned infrastructure and workforce, Singapore has created some of the basic conditions for successful innovation. As one CEO whom we interviewed remarked, “The hardware in Singapore is really world-class; the roads, the airports, the seaports, the telephone, and the water are all first class. So when companies come to Singapore, they feel very comfortable.”
- Singapore's multicultural and highly diversified workforce gives it a unique edge when it comes to testing R&D. Global companies see Singapore as an ideal test-bed for their products. One CEO told us, “It is easy to get focus groups of Americans, Europeans, Asians from many different countries through the expatriate and local populations.” It is precisely for reasons like this that Philips has based its home-entertainment business global R&D operations right here in Singapore.
- There are more than 7000 multinational corporations within a 30-km radius, including the regional headquarters or significant local decision-making authorities of many global leaders in their sectors

Yet despite this well-equipped ‘kitchen,’ firms rarely collaborate in the kinds of deep, meaningful ways that create economically beneficial innovations.

For policy makers, this is a key area in which to act – moving from a role of providing facilities and attracting participants to one of providing the incentives and facilitating the functioning of innovation ecosystems.

While it is absolutely essential that individual companies take the primary responsibility for firm-level innovation, there is also a clear and strong role for the government and its economic agencies to nurture and drive innovation through a national policy framework. Such a national innovation policy framework ought to: Facilitate the development of innovation-management capabilities at the firm level. Much is already being done to encourage firms to adopt the processes and systems of innovation but as our survey has shown Innovation at the firm level in Singapore needs to extend beyond the observable ‘hardware’, addressing also the attitudes, behaviors and even expectations for value creation through innovation.

Identify national ‘platforms’ and ecosystems supported by a national ‘idea bank’.

- **National Platforms:** We define an innovation ‘platform’ as a theme around which to focus innovation efforts. The platform reflects the unique set of assets and capabilities that the firm possesses and it identifies a relevant need and opportunity in the market-place. The platform concept could be extended to the national level; the key being to identify pivotal themes that can provide a cross-cluster focus for firms throughout the economy. Potential national-level innovation platforms could range from “Nanotechnology” to “Photonics” to “Ensuring quality of life with anti-aging” to “Data-processing at the rate of data ingestion”. Any such platform defined at the national level should provide a common theme and focus across different clusters, should reflect assets and capabilities that Singapore can uniquely harness and should be relevant for the global market. Success with any such platform would require networks of partnerships between public- and private-sector participants of all sizes, as well as with universities and research organizations and would require strong connectivity with markets globally.
- **National Ecosystems:** By first defining the key innovation ecosystems the government can then also play a role to identify gaps capabilities and to then support

efforts to fill them, ensuring that all the required elements are in place and that the appropriate behaviors are encouraged.

- **National Idea Bank:** The platforms and ecosystems can be tied together through the creation and operation of a national level 'ideas-bank' to which any individual or firm can contribute and receive recognition, protection and funding of ideas related to the platform.

Nurture the development of 'Institutions of Collaboration.' Government-supported agencies should foster local interconnectivity, for example acting as a matchmaker between firms of all sizes and types, as well as with universities and other research and development organizations. Such agencies can also work to spur global partnerships; connecting Singapore to the flow of ideas and knowledge between East and West and around the region. Whereas A*Star, EDB, IE Singapore, SPRING and others all have specific groups of companies to focus on there also needs to be an explicit responsibility for the effective functioning of the entire innovation ecosystem which depends for its success on cutting across these jurisdictions. As one CEO told us "as soon as we visited China to consider setting up an operation we started to receive unsolicited offers from both known and unknown local suppliers. In Singapore, we sometimes wonder if the SMEs are waiting for an invitation before contacting us".

Build a national culture of innovation. Government should develop education curricula that support innovation and collaboration; collect and publicize innovation success stories, so that one firm's success can inspire another's; and sponsor national innovation-themed competitions. It has been said that Singapore has groomed and developed a nation of excellent managers and administrators, there also now needs to be a nurturing of visionary business leaders who can embrace and empower innovation in their organizations.

Pick winners and accelerate their global success. Government agencies could help to fund or to support in other ways promising private companies to help them to create new global Singaporean brands. Similarly support could be provided to help ensure international recognition of Singapore-registered IP and provide assistance for Singaporean companies seeking to defend their IP in legal disputes globally.

Undertake an annual review of the state of innovation in Singapore. Define a set of metrics and targets to assess the evolutionary stage of innovation in the country. Then, identify opportunities and actions to further enhance and extend the capabilities and the effective functioning of the innovation ecosystem.

The old investment model for economic development remains relevant, but it is no longer sufficient. New investment-based initiatives should be proactively leveraged to build momentum in platforms of innovation that extend to the wider economy and connect globally. As an example consider the investment and infrastructure based initiative to establish Integrated Resorts and Casinos in Singapore. This investment-based initiative could be used to foster the development of innovation platforms, - for example in real-time data capture and processing to enable profiling of human behavior— such a 'platform' that may engage firms, large and small across the nation and the expertise so developed may find markets globally and applications in fields, from security to health insurance.

Singapore's policy makers need to create new initiatives and a new national rallying cry around innovation. Their efforts must be inspirational in the medium term, but also relevant in short term – and something that both business leaders and the wider

domestic and global communities can relate to and understand. The new policy regime must simultaneously build in a balanced manner the three 'pillars' of Clusters, Entrepreneurship and Innovation at the firm level. The task of defining and delivering on a framework for economic development driven through innovation may be daunting, but Singapore's policy leaders have met and overcome other challenges before and Singapore already possesses many of the foundations for a strong innovation based economy.

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