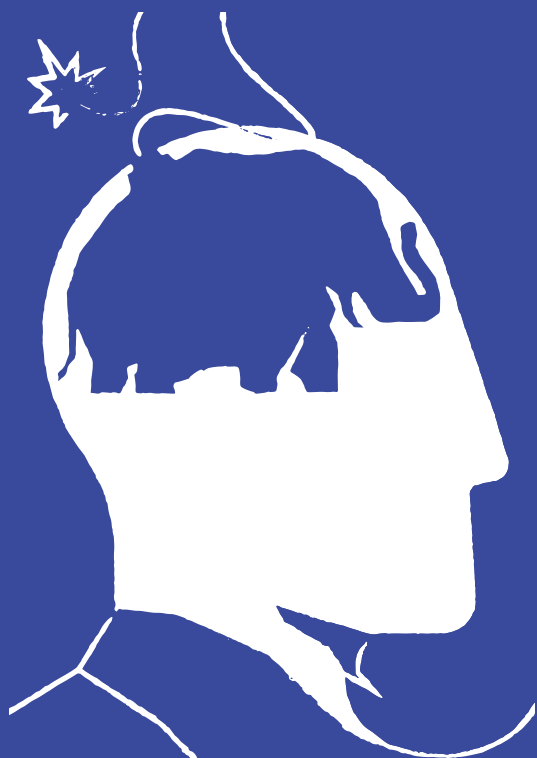


# Conversations for the future

## vol.2

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# Foreword

The world around us has changed dramatically since 2011 when Vol. 1 was published, and many will say that the compass with which we once navigated the world is no longer reliable—it needs to be recalibrated.

Since its beginnings in the 1980s, the practice of foresight in Singapore has matured but it is constantly evolving. Against the backdrop of growing complexity, we have tapped on a growing range of foresight tools to help the government manage threats and capitalise on unpredictable opportunities.

This means we need to keep warm ties with thinkers and policy-makers around the world to keep a pulse on changes around us, rely on diverse sources to pick up weak signals through emerging strategic issues and challenge policy-makers through thoughtful scenario planning and foresight-to-strategy translation. With a burgeoning futures community and a growing appreciation for foresight capabilities in the Singapore government, we expect that greater cross-sharing of ideas, methods and new networks will help elevate the practice of foresight to new heights.

The publishing of this volume marks the 20<sup>th</sup> anniversary since the first set of National Scenarios was launched within the Singapore government. Here, we have chronicled how our place in government has shifted and how the practice of foresight has evolved in the past six years since Vol. 1. This includes evolution in the methods we have employed, the networks we have built and the underlying philosophies that guide us.

The historian Edward Gibbons once said, “the wind and the waves are always on the side of the ablest navigator.” As the world continues to change, it is my hope that our foresight practice will help us navigate even the choppiest of waters ahead of us.

Peter Ho

Senior Advisor  
Centre for Strategic Futures

# Introduction

It has been six years since the publication of the first volume of *Conversations for the Future*. Looking back, it is striking that how our operating environment has evolved. This volume shows how we have adapted to thrive in this changing context.

Vol. 1 traced the history and origins of scenario planning in the Civil Service, its development from the Scenario Planning Office to the Strategic Policy Office, and most recently, to the Centre for Strategic Futures (CSF). It told the story of how we expanded our futures toolkit beyond scenario planning to cater for new needs that emerged. Vol. 1 expounded on solutions to the various challenges in our foresight practice, such as dealing with complexity, overcoming cognitive biases and communicating insights to a diverse audience. It also elaborated on our core functions of capability-building and networking within the Civil Service and outside of it.

You will find echoes along the arc we trace in this volume. After all, our core functions remain the same and our

current foresight practice builds upon the work documented in Vol. 1. Over the years, our networks have expanded to foster greater diversity and inclusivity of views. Our toolkit has grown richer as we experimented with new tools such as policy gaming, and refined existing ones such as Emerging Strategic Issues (ESIs). Government as a whole has renewed its focus on citizen-centricity through the Public Service Transformation in 2012. One large-scale example was *Our Singapore Conversation* in 2012-2013, which saw over 46,000 Singaporeans express their hopes and ideas for the future through facilitated dialogues.

As with Vol. 1, what we document in this volume is a work in progress. It is a documentation that archives our experience with foresight in CSF and other parts of the Civil Service over the past few years. It is also, in some ways, a look back that helps us look forward. And if the hopes and aspirations penned in our Memo to the Future are anything to go by, there will be much to look forward to indeed.

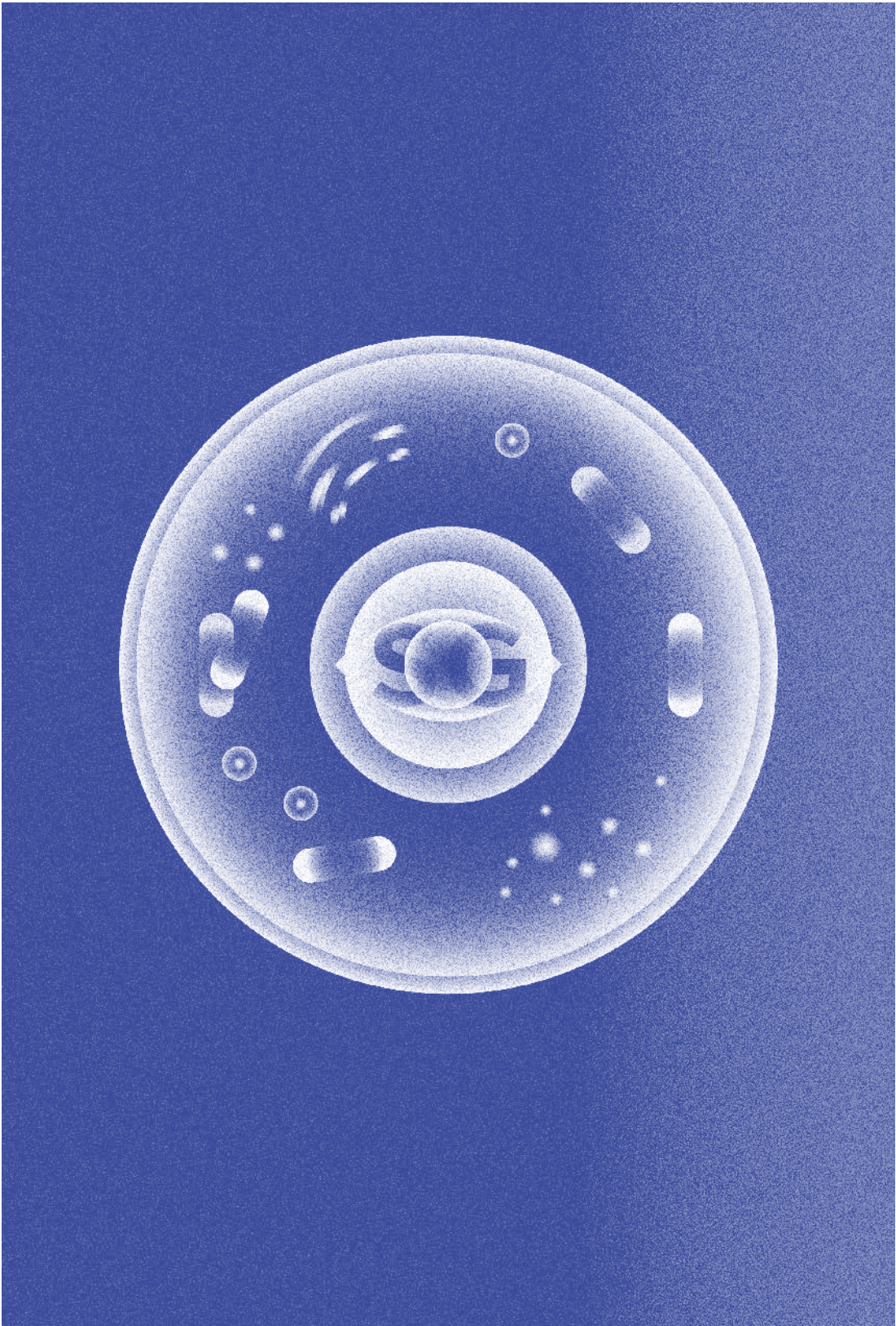


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# The Centrality of Strategic Planning and Foresight

For the Singapore government, planning for the future has always been at the heart of governance. As Mr Peter Ong, Head of Civil Service from 2010-2017 put it, “Singapore has never enjoyed the luxury of not planning for the future.” Where we left off in Vol. 1, CSF had been set up in the Public Service Division of the Prime Minister’s Office to develop government-wide capabilities in strategic anticipation. This was so that longer term considerations could be incorporated into medium-term strategic plans across the whole of government.

CSF’s mandate has remained unchanged: as a futures think tank, it focuses on open-ended, longer-term futures research and blind spot areas; it also experiments with new foresight methodologies. This has required CSF to maintain a degree of independence from the current preoccupations of policy-making units. CSF’s goal remains to nudge policy units to think differently about the future, in ways that go beyond their pre-existing assumptions. To do this, CSF frequently draws agencies’ attention to new ideas and push them out of prevailing, often inflexible, worldviews. The oft-quoted description of Shell’s scenarios team applies equally to CSF: we must be “tolerated but not embraced” by the rest of government.

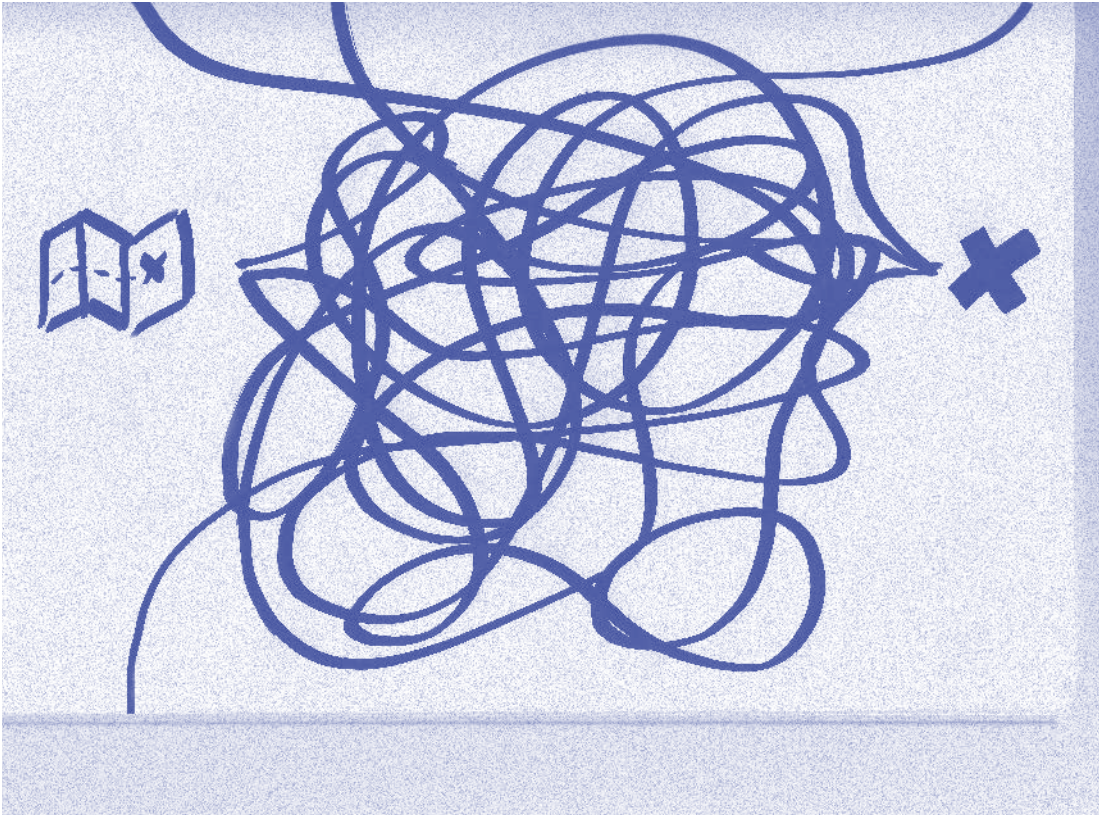


# Encountering Complexity with Futures

All systems embody a high degree of complexity, and complex systems do not necessarily behave in a pre-determined or linear manner. Singapore's reckoning with complexity arose from our understanding that while we could plan and prepare for the future, we could not predict it, with even the best-laid plans having the potential to run into problems and produce unintended consequences. This has been manifested in multiple episodes in recent history. One consequence, for instance, of being open and connected to the world is the susceptibility to risks originating elsewhere; we were not spared the SARS epidemic of 2003 and the 2008 Global Financial Crisis.

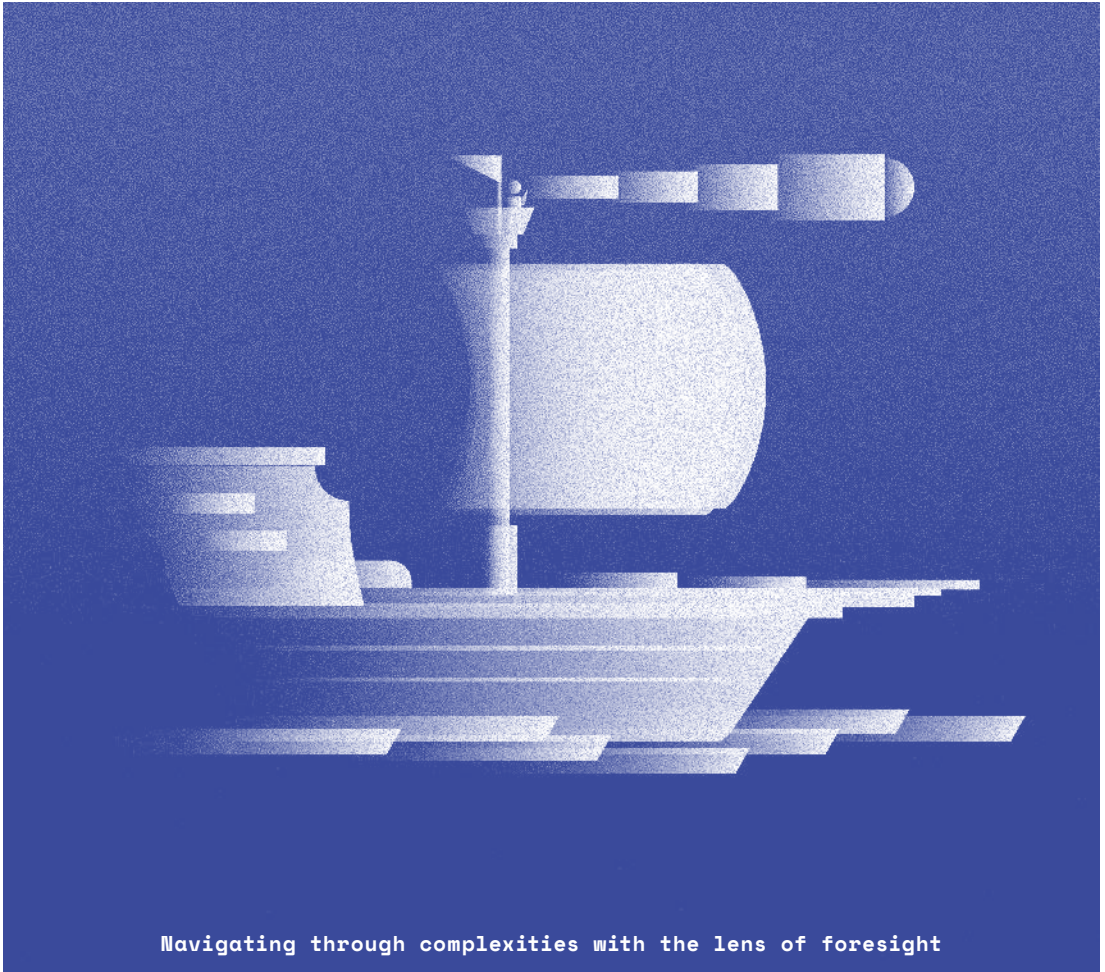
Complexity gives rise to wicked problems – problems that may seem intractable as they involve multiple agents interacting in less predictable ways. Complexity also produces black swans which are, as described by risk expert Nassim Nicholas Taleb, rare and hard-to-predict events with a large impact. Complexity therefore poses a conundrum for policy-makers: how do we make plans given that there will be changes and surprises in the operating environment along the way?

The recognition of this complexity spurred Singapore's early efforts in scenario planning in the 1980s. The driving motivation was not to predict the future but to understand shifts in the operating environment, and to proactively shape the future we would come to own.



# An Evolving Centre

Complexity arises from the density of interconnections among many agents and their interactions in a system, leading to outcomes that are unpredictable. The world has grown more complex over the past several decades, with technological and economic factors increasing this density of interconnections and interactions. For instance, the advent of the internet, and information and communications technology more generally, has facilitated the spread of ideas. Advances in transportation have greatly facilitated the movement of people and goods around the world.



Against this backdrop of increasing complexity, the PS21 (Public Service for the 21<sup>st</sup> Century) movement was launched in 1995 to prepare the public sector to meet future challenges and seize opportunities by better anticipating and embracing change. The Public Service embarked on a journey of Public Sector Transformation in 2012 to design citizen-centric policies, services and partner the community, rallying around a vision of “One Trusted Public Service with Citizens at the Centre”. This meant greater systems coordination across the whole of government to be able to respond nimbly and coherently to complexity. The emphasis on “One Public Service” has given stronger impetus to work across agency boundaries so that policies and solutions can deliver the best outcomes for Singapore and Singaporeans.

In line with this larger thrust, Strategy Group was formed in 2015 within the Prime Minister’s Office to drive whole-of-government strategic planning by identifying key priorities and emerging issues over the medium to long-term. It also partners and brings together public agencies to tackle long-term, cross-cutting issues, such as our response towards an ageing population. Underpinning its

establishment was the recognition that issues were increasingly complex and interconnected, and that greater strategic alignment was necessary across government as trade-offs were becoming more acute. It was hence natural that in August 2016, Strategy Group expanded to include the National Population and Talent Division (NPTD) and the National Climate Change Secretariat (NCCS). Bringing together complementary and cross-domain functions tightened the nexus between foresight and strategic planning.

CSF was brought into the Strategy Group from the outset to provide a long-term lens to the government’s strategic priorities and alignment. As a unit within Strategy Group, CSF has better sight of policy considerations across time horizons and heightened sensitivity to the concerns of the day. CSF’s move to the Strategy Group has thus created opportunities for more effective translation of futures work into policy-relevant insights and allows CSF to spot, and challenge more effectively, prevailing assumptions and mental models. It also allows CSF to better identify the system’s blind spots and helps us develop futures products to inform decision-making.

# A Growing Foresight Community Across Government

Recognising the challenges posed by complexity and uncertainty, agencies across the Singapore government have also invested in growing their foresight capabilities. As a consequence, the futurist network within the Singapore government has grown and evolved into an active community of practice. At the time of writing, more than a dozen agencies are actively engaged in futures work, and many more which participate in futures events. The growth of the futures community within the government has added to the diversity of foresight practice across different policy domains, contributing to richer, system-wide dialogues.

## A Diverse Community

Futures teams have sprouted across a wide and eclectic range of domains. The following provides a sample of this diversity.

### Policy futures

#### MINISTRY OF TRADE AND INDUSTRY FUTURES GROUP (MTI-FG)

Established in 2006, MTI-FG is one of the oldest futures units in the Singapore government. Throughout the last decade, it has sought to identify long-term trends affecting Singapore's goal of achieving a vibrant economy. Specifically, its key focus areas are the global economic order, the nature of work and jobs, the industry and enterprise ecosystem, and resource allocation.

Its notable early projects include the "Future of Data" in 2007 which explored how the growth in our ability to collect large amounts of data would spark opportunities for society and businesses at large. In 2010, it embarked on a study entitled "The Future of Talent" which explored how the nature of work might change as youths from Generation Y (1980s–90s) entered the workforce. Presciently, it highlighted the emergence of "free agents", a phenomenon which finds expression in the gig economy today.

Its ongoing projects include "Asian Frontiers" which explores how the future might unfold from an Asian perspective, highlighting novel responses emerging from the region to cope with new and evolving challenges such as demographics and energy security. It also publishes a regular newsletter, *Spectrum*, which discusses ideas and trends with potential economic implications for Singapore.

#### MINISTRY OF MANPOWER (MOM)

MOM's futures unit was set up in 2013 and has since blossomed into a leading futures unit in the government today. Its research involves emerging trends in manpower-related issues such as jobs, retirement

adequacy and workplace practices. Some of its earlier projects include a study on the impact of automation on jobs and the 2025 manpower scenarios, both developed in collaboration with CSF. The 2025 manpower scenarios also saw MOM's pioneering use of games to immerse policy-makers in scenarios. More recent projects include its "Pilot on Entrepreneurship Programme for Mature PMETs (professionals, managers, executives and technicians)" in 2016 and its "Study on Platforms and Platform Freelancers" in 2017.

#### RISK ASSESSMENT AND HORIZON SCANNING (RAHS) PROGRAMME OFFICE (RPO)

The RAHS programme was launched in 2004 as part of the National Security Coordination Secretariat to develop methods and systems to support strategic foresight. One of the programme's early projects was the development of the RAHS system, a horizon scanning platform which has been used across different domains of government to facilitate planning and strategy-building.

In 2012, RPO was formed. Beyond methods and systems for horizon scanning, RPO also developed content and reached out to diverse stakeholders to gather insights for national security risk analysis and assessment. For example, in 2016, RPO collaborated with the Massachusetts Institute of Technology on the "Crowdsensor: Resilience for the Smart Nation" project. This was an online competition, open to local and international participants, that helped gather ideas on how global trends could affect Singapore's Smart Nation plans. The competition also identified opportunities to improve society with technology.

*continued*

Other ongoing projects of RPO include the International Risk Assessment and Horizon Scanning Symposium (IRAHSS), a biennial conference on foresight and futures, as well as the Goh Keng Swee Future Thinking Challenge (FTC), an initiative that introduces tertiary students to futures thinking and methods.

#### AGRI-FOOD & VETERINARY AUTHORITY OF SINGAPORE (AVA)

AVA was among the first few agencies to have a Horizon Scanning unit. Its creation in 2010 was spurred by worldwide concern regarding melamine contamination in milk powder and pet food in China around that time. No one expected a chemical meant for industrial use to appear in food. In the wake of the crisis, AVA decided there was a need for a dedicated unit to scan open sources for emerging issues in an effort to reduce the number of, and be better prepared for, such surprises.

Since 2010, AVA has deepened and expanded its horizon scanning work. Situated within the Horizon Scanning and Emergency Planning Department (HSEPD), AVA's scanning encompasses the near to long-term time horizon and supports AVA's strategic planning functions. It has also assumed the additional function of emergency planning.

#### Operational futures

##### SINGAPORE POLICE FORCE (SPF)

Seeking to be a catalyst for a future-ready SPF, the Future Ops Division, established in 2014, engages partners and experiments with ideas that contribute to this vision. Internal engagement efforts focus on futures advocacy, and include horizon scanning publications such as *What's NEXT?* and *Looking Ahead* which pull together recent trends in policing for SPF's frontline officers. Its most recent "Vision for Frontline Policing 2025" provides a holistic look at how training,

processes and systems serve the frontline officer of the future.

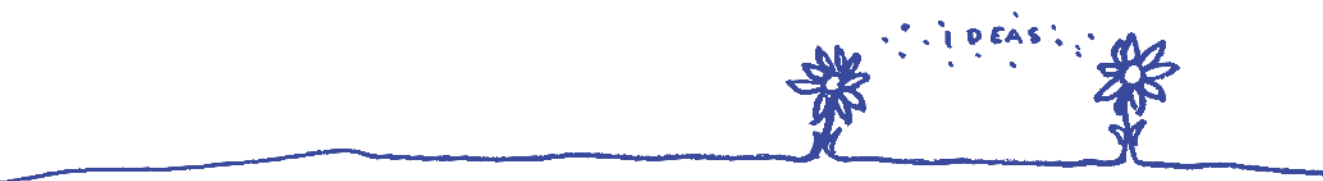
Apart from focusing on longer-term strategic plans, the SPF also conducts regular prototyping trials on Concepts of Operations (CONOPS) with frontline officers to explore the limits of emerging technologies. Examples of such technologies include chatbots, police robots and customised equipment for SPF's frontline responders.

##### MINISTRY OF TRANSPORT (MOT)

Set up in 2013, MOT's futures unit not only seeks to understand how emerging technologies and mobility concepts can improve and transform Singapore's transport system, but also incubates future mobility concepts through proof-of-concept trials and master-planning efforts. In addition, it actively works with agencies such as the Economic Development Board to engage industry and spur industry development efforts.

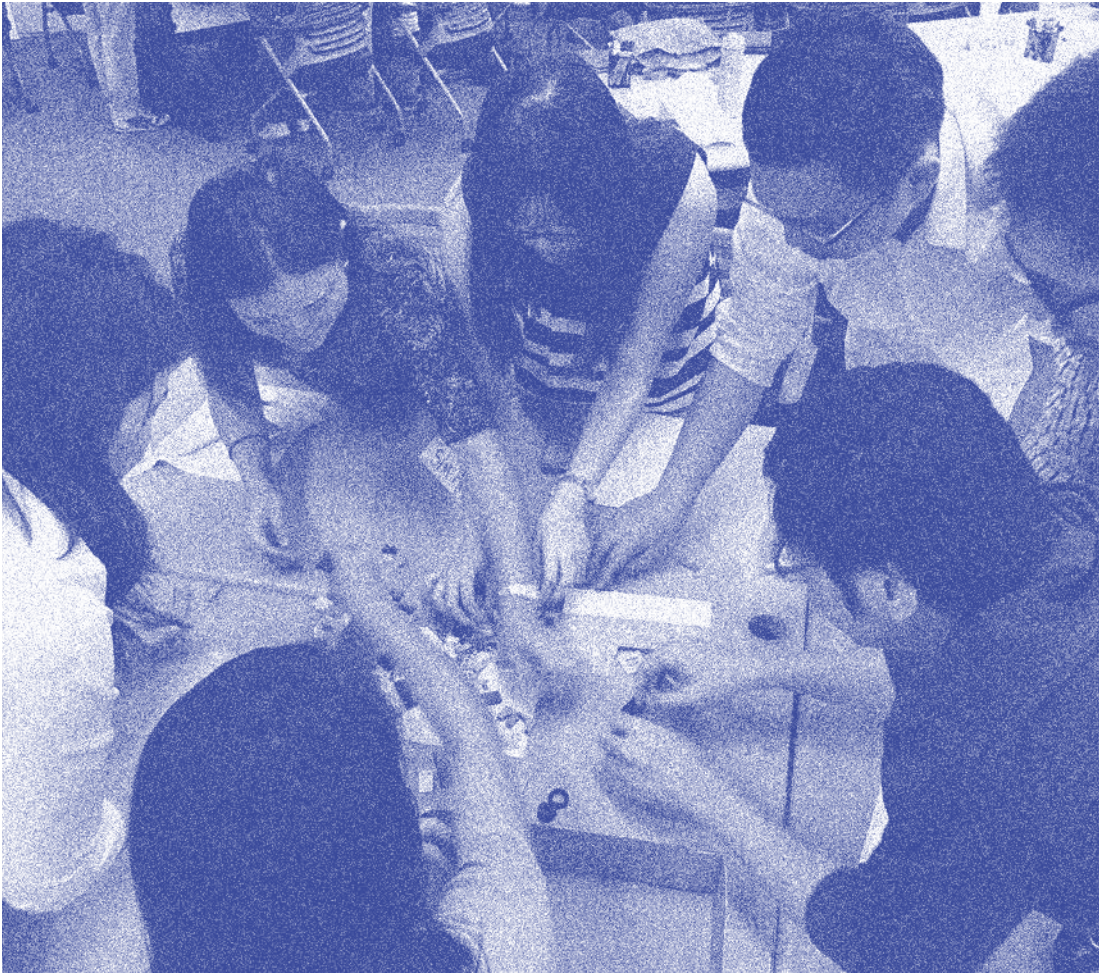
Two areas that the unit has focused on in recent years are Autonomous Vehicles (AVs) and Unmanned Aircraft Systems (UAS), where the unit has worked on the development of roadmaps for the nation-wide deployment of AVs and UAS and drives various pilots and trials. Recognising that the deployment of new mobility concepts requires cross-sector coordination, the unit also takes on the responsibility of driving policy and strategy formulation as the secretariat of two national inter-agency committees: the Committee on Autonomous Road Transport for Singapore and the UAS Committee.

CSF is one of two central nodes in the futures network. Our sister unit, RPO, has been actively engaging in risk scanning and assessment with a focus on national security since 2004. As central nodes, both units serve the foresight community by expanding the futures methodology toolkit, strengthening capability building and enriching the system through collaboration and cross-pollination of ideas.



# Capability Building for the Futures Community and Beyond

As one of the most established units in the futures community, CSF works to deepen and broaden futures capability in government. To do this, we design products to grow foresight capability in the futures community and conduct training courses on futures methods. Over the years, we have developed an asset base of methods, content, and shared networks for the futures community.



## FutureCraft and Policy Tools

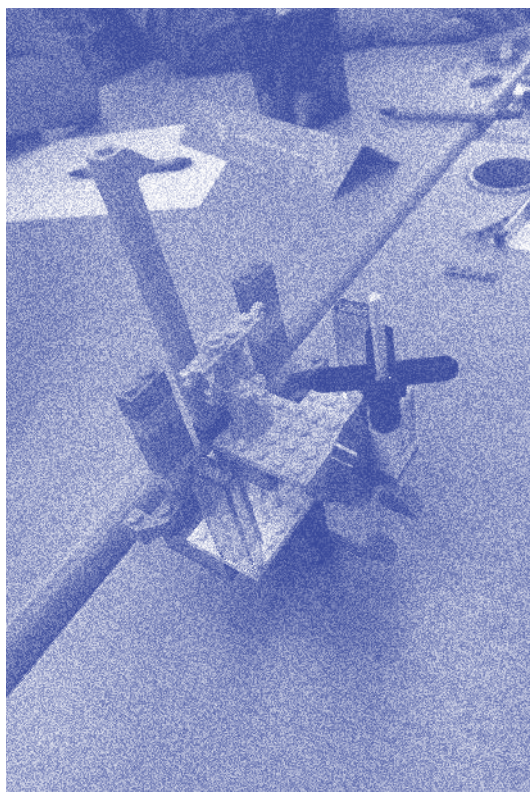
While capability building is focused on the futurist community, ongoing efforts have gone beyond this immediate community. Each year, CSF conducts multiple courses at the Civil Service College (CSC) titled “FutureCraft”, with more than a hundred public officers attending at least one course every year. Traditionally, the entire FutureCraft series has been targeted at futurists, but efforts since 2014 have engaged a wider group of civil servants. FutureCraft 101 is an introductory-level course which seeks to impart a broad appreciation for futures thinking and its relevance to the government. It has been refreshed to be useful not just for futurists, but also strategic planners, policy-makers, and even operations officers who would benefit from increased sensitivity to complexity and change. Futures units across the government have used FutureCraft 101 as part of the on-boarding process for officers new to futures work, and also as a refresher for more experienced officers.

In addition to expanding its scope to non-futurists, FutureCraft has also consolidated its programme both to focus on CSF’s core strengths and to fit more neatly into the wider government futures and training ecosystem. FutureCraft 102 has hence moved away from teaching a large selection of futures tools, to focussing on three core ones: Scanning for Emerging Strategic Issues (ESIs), Causal Layered Analysis and the Futures Wheel. This has allowed more time to be devoted to practitioner-sharing on how these tools are actually used in the course of work.

Apart from specialised foresight courses, receptacles for the teaching of foresight tools have taken varied forms. Foresight tools are regularly embedded in specialised courses intended for specific agencies in government. For instance, methodologies such as back-casting have been adapted for use in such specialised courses. Most recently, CSF’s work on National Scenarios has been shared and discussed at various fora attended by a

diverse range of agencies across different levels of government (more in Chapter 2).

The most recent innovation in our toolkit is policy gaming. The idea of “serious games” as a capability in the government arose from the recognition that experiential learning can be a valuable way to hone policy-makers’ reflexes in dealing with complexity – something that cannot be taught in a typical class. Helming the movement to introduce elements of play into policy-making is the Civil Service College Applied Simulation and Training (CAST) laboratory. As of 2017, CAST has produced 10 policy games used at various levels of seniority. Futures teams such as CSF and MOM’s futures unit have also adopted the use of games in various projects. The experiment of injecting serious play into policy will continue, especially given CSC’s commitment to creating more experiential learning opportunities for the wider civil service.

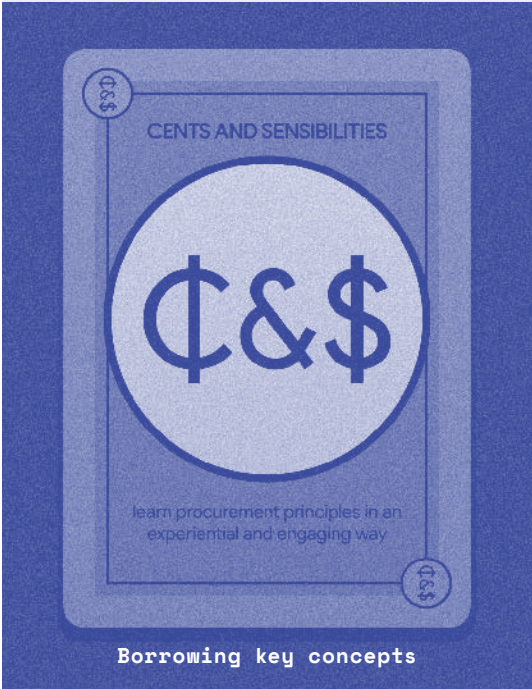


CSC APPLIED SIMULATION AND TRAINING (CAST)

CAST was set up in 2012 to build up public sector capability in applied simulation. To do so, it develops simulation-based teaching and learning content and provides consultancy services on applying simulations as a learning methodology.

One early success was “Cents and Sensibilities” (C&S), a game that aimed to teach procurement principles to public servants in a way that was experiential and engaging. The team borrowed concepts from popular games such as Monopoly and Monopoly Deal to develop the two versions of C&S that are in use till this day.

In recent years, CAST has sought to move from focusing on game development to achieving their vision of being a local authority and nexus on policy games and simulations. This has led them to focus on capability development through workshops, community building and consultancy work for public agencies.



MOM'S GAME ON FUTURE OF WORK

In 2016, MOM developed a game to encourage a re-think of existing manpower policies by simulating the tensions and challenges of work life in three futures scenarios. The objective of this game was to help participants explore possible enhancements to existing manpower policies.

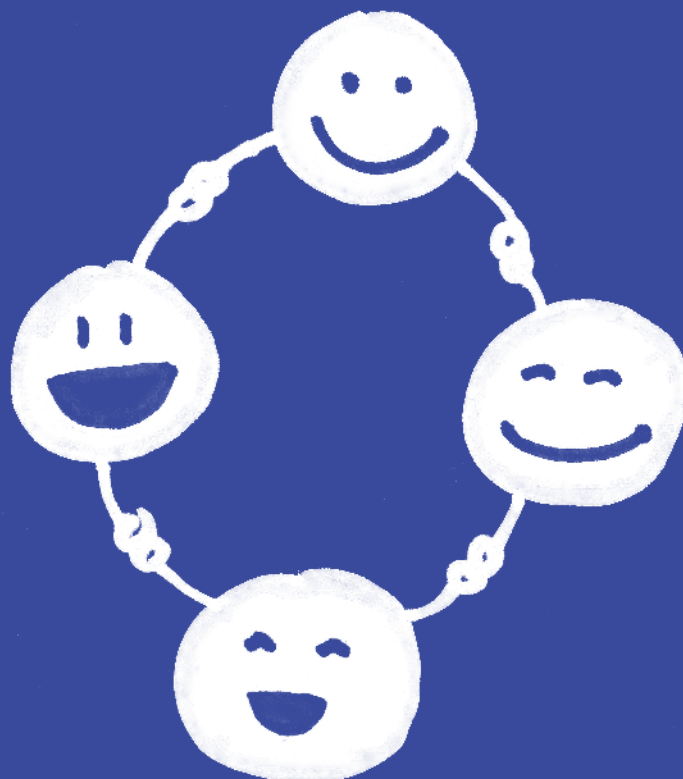
Participants played four rounds during the game. Players had to either seek out jobs that met their expectations, or hire employees that met minimum requirements. Through the game, participants understood the need to invest in lifelong learning to stay relevant to the global economy. The engaging and immersive nature of the game provoked enriching discussions and drove home serious messages about the future of work and the need to adapt current policies.

MOM's game on the Future of Work was used in outreach efforts to members of the public during the SGFuture Public Engagement sessions (explored in chapter three). CSF also adapted this game to engage public sector leaders on the potential challenges in the future labour market.

Viseral experience of data

## Foresight: A Glossary

We have discovered that a shared and common understanding of futures vocabulary is key to good conversations about the future. To seed this common language, CSF published *Foresight: A Glossary*, a lexicon of futures-related terms and concepts, in collaboration with CSC in 2015. Designed as a reference guide for the futures community in the government, the glossary outlines more than 50 concepts, methodologies and resources commonly employed in foresight research.



Forming and developing the right chemistry and bonds

# Foresight Networks Within and Beyond the Public Service

CSF seeks to use its networks to expand the public service's understanding of evolving challenges in Singapore's operating environment. In Vol. 1, we noted that building strong connections was a fundamental belief of CSF, and that "chance favours not just the prepared, but the connected mind". This core belief has not changed. Our networks continue to connect the government with unconventional ideas in the outside world.

Over the years, CSF has deepened and broadened its networks to draw in a diversity of viewpoints. Such networks have been critical for growing the connective tissues between the public service and thought leaders from external networks, ensuring that the system as a whole has access to fresh ideas and perspectives. These networks have also become an avenue for CSF to share its foresight work, ideas, and best practices to foresight practitioners outside of the public service. We build networks in several ways:

## Sandbox

Sandbox brings together the futures practitioners in the Singapore government to exchange ideas, perspectives and build networks. This informal platform is designed to be a safe space for practitioners to share best practices and gather ideas on ongoing projects. With growing interest among futures practitioners over the years, Sandbox has become a platform where opportunities for collaboration emerge.

## Internal platforms and roundtables

Internally, the Strategic Futures Network convenes senior decision-makers to discuss futures-related topics once every few months. We also engage the rest of government on emerging issues by convening roundtable discussions around specific topics. Some of the themes for our roundtable discussions over the past several years include 'Virtual Singapore' and the human cloud, implications of developments in artificial intelligence, and the impact of climate change.

## Foresight Week

Our biennial Singapore Foresight Week is the flagship event for the government's foresight community and comprises three events: the International Risk Assessment and Horizon Scanning Symposium (IRAHSS) by the National Security Coordination Secretariat (NSCS), the Complexity Workshop by Nanyang Technological University (NTU), and the Foresight Conference by CSF. At Foresight Conference, we bring together an international, eclectic and multi-disciplinary group of thinkers, for a conversation with each other and with other government officials. The diverse mix of participants allows for the cross-pollination of ideas and emergence of fresh perspectives.

● **2011's conference:** CSF's inaugural Foresight conference explored the theme of the future of Asia and its place in the world. It sought to develop new perspectives of Asia and the continent's risks and opportunities.

● **2013's conference:** Developed a framework for understanding trust among citizens and between citizens and public institutions.

● **2015's conference:** Highlighted ways in which technology could change the nature of work, governance and politics.

● **2017's conference:** Explored the various dimensions of identities people assumed, the impact driving forces such as religion and technology had on identity, and the possibilities and limits of government's role in national identity construction.

## Distinguished Fellows Programmes

The Distinguished Visitor Programme and the Distinguished International Fellows Programme were introduced to recognise experts who have made significant contributions to the foresight community in Singapore. These programmes allow for sustained and deeper engagements with specific thinkers. Beyond these programmes which tend to involve broad and inter-disciplinary thinkers, CSF also conducts regular engagements with original thought-leaders in specific fields. We link these thinkers with relevant agencies in the Singapore government who may then jointly explore policy issues of mutual interest.

Beyond these modalities, CSF has also made efforts to diversify the kinds of networks it builds. In particular, it has expanded the geographical reach of its networks in recent years to include deeper engagements with think tanks and individuals in non-English-speaking locales in Europe and Asia.

# A work-in-progress

Change and evolution have no end-point, and CSF will continue to evolve at the centre of government. The past few years have seen a broadening and deepening of networks both within and outside of the public service and this has provided a strong foundation for CSF to increase the relevance and reach of futures work within government. As CSF navigates new networks and regions, it will continue to experiment with an expanding suite of foresight tools. The next chapter discusses how some of our foresight tools have evolved to tame the proverbial black swans and black elephants of our day.

# Of Black Swans and Black Elephants

- ❶ Taming the Black Elephant with Scenario Planning
- ❷ Spotting Black Swans with Emerging Strategic Issues

Many would be familiar with the **Black Swan**, popularised by risk expert Nassim Nicholas Taleb, which describe rare events that have extraordinary impact, such as the pivotal September 11 attacks in 2001. As a sign of our times, the Black Swan is not alone, with grey swans and turkeys found in Vol. 1. More recently, another animal has been added to the menagerie: the **Black Elephant**.

## Of Black Swans and Black Elephants

# 1 Taming the Black Elephant with Scenario Planning

“What is the black elephant? The black elephant is a cross between a black swan and the elephant in the room. The black elephant is a problem that is actually visible to everyone—the proverbial elephant in the room—but no one wants to deal with it, and so they pretend it is not there. When it blows up as a problem, we all feign surprise and shock, behaving as if it were a black swan.”

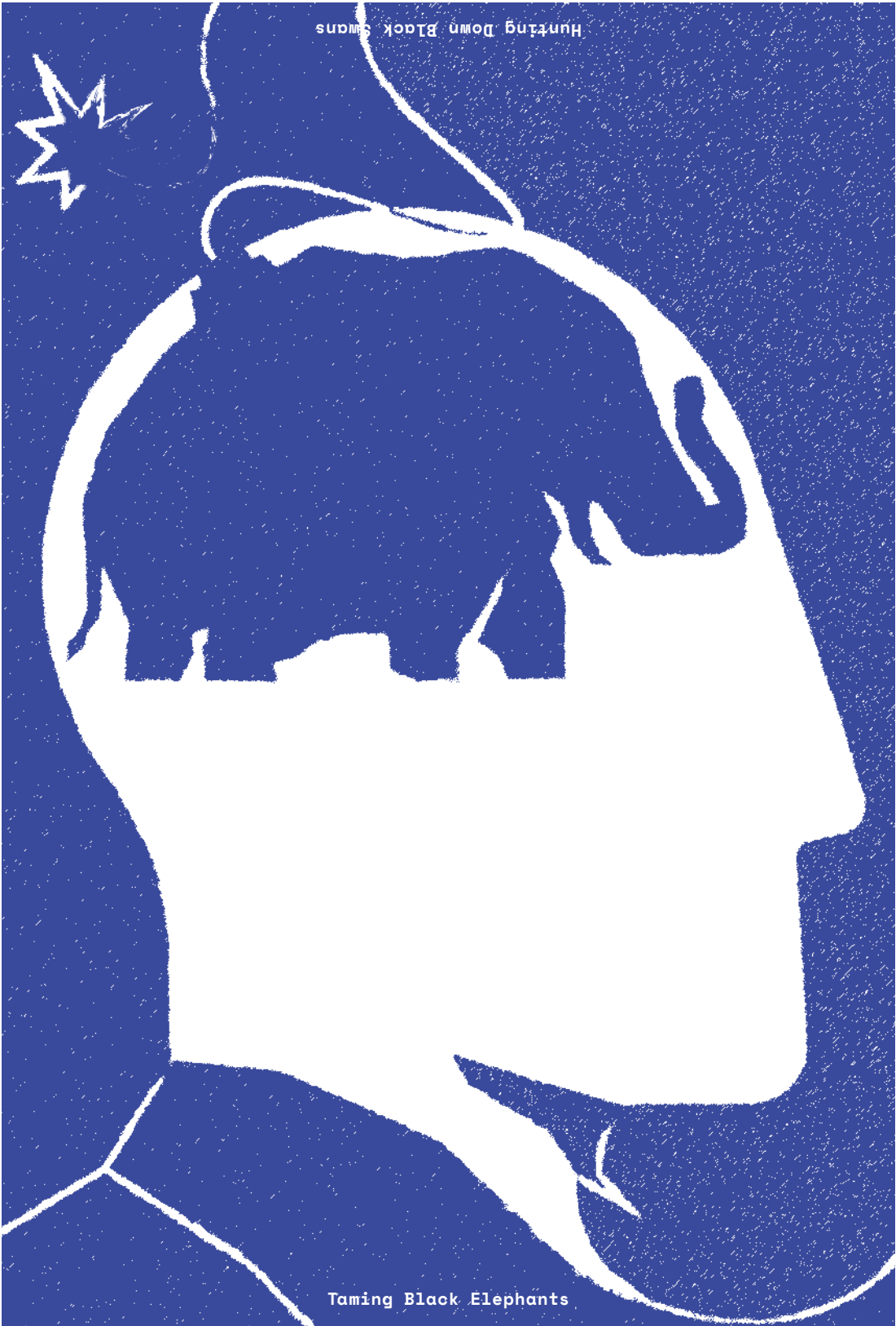
Mr Peter Ho  
Senior Advisor to CSF<sup>1</sup>

First introduced to us by renowned futurist and disaster consultant Vinay Gupta at the 2015 Foresight Conference, the black elephant has become a mainstay in CSF’s futures lexicon, both as a metaphor and cautionary symbol. It is a reminder that events with extensive impact may catch a system off-guard when systems inertia is too pronounced, or when immediate exigencies consistently take priority over longer-term concerns.

For the past 20 years, scenario planning has been a key tool to create a culture that encourages questioning of assumptions and mental models within the government. As a tool, scenario planning instils the discipline to confront black elephants so they do not go unaddressed until it is too late. It is a way to galvanise attention and action around *known knowns* and *known unknowns*, which account for more systemic disruptions than unknown unknowns. Scenario planning is also a useful device to help people think the unthinkable and explore the big “What Ifs” in order that blind spots may be uncovered and confronted. The desired product is not a series of predictions from crystal ball gazing, but a set of plausible futures that trigger conversations about potential risks and systemic challenges in a safe space.

<sup>1</sup> “Society at Risk – Hunting Black Swans and Taming Black Elephants” speech at “Disrupted Balance-Societies at Risk” Conference, 5 December 2016

<sup>2</sup> The concept of the black elephant as a cross between a black swan and the elephant in the room has been mentioned by various thought leaders. Thomas Friedman attributed the idea to Adam Sweidan in his New York Times article, “Stampeding Black Elephants”, 22 Nov 2014 (<http://www.nytimes.com/2014/11/23/opinion/sunday/thomas-l-friedman-stampeding-blackelephants.html>), accessed on 23 Nov 2017.



# 20 Years of Scenario Planning in the Singapore Government

2017 marks 20 years since the first set of National Scenarios was completed. As described in Vol. 1, scenario planning was first conducted in the Ministry of Defence (MINDEF), where hefty investments in acquisitions meant that long-term planning over a 10 to 15 year horizon was needed. Beyond that, scenario planning was also a tactical tool for dealing with uncertainties and anticipating challenges before their impact was fully manifest. It was born of an instinct to shape the operating environment rather than merely respond to it.

After multiple exercises over a span of 20 years, the National Scenarios have created a language about the future within the government. It has also helped the government develop long-term strategies to better position Singapore for meeting emerging challenges. 20 years on, CSF continues to produce National Scenarios on a three- to five- year cycle.



# Evolving Themes in Singapore's National Scenarios

While scenarios are meant to explore possible futures over a 15 to 20 year horizon, they also reflect the salient issues of their time. The evolving themes in Singapore's National Scenarios exercises closely track the evolving concerns of the day.

The first set of National Scenarios was launched in 1997. At the heart of the 1997 scenarios were domestic challenges revolving around national identity, rootedness and sense of community. One scenario, "Hotel Singapore", painted a Singapore that was economically successful and cosmopolitan, but one with dwellers coming and going like transient hotel guests.



In “A Home Divided”, Singaporean identity was defined along specific community lines resulting in a fractured society, in the absence of a larger, overarching identity. The tensions articulated in these scenarios remain relevant issues for Singapore in terms of incipient risks to be watchful of.

The 1997 scenarios informed policy thinking and found expression in subsequent developments after the scenarios exercise. For instance, the National Volunteer and Philanthropy Council (NVPC) was eventually set up to cultivate a sustainable volunteer ecosystem and strong community ownership in the longer run.

of increased global uncertainty fuelled by rising nationalism in other countries, slower economic growth and more frequent technological disruptions. These trends called for re-examining the underlying assumptions upon which our governance frameworks, growth models and design of social security are built.

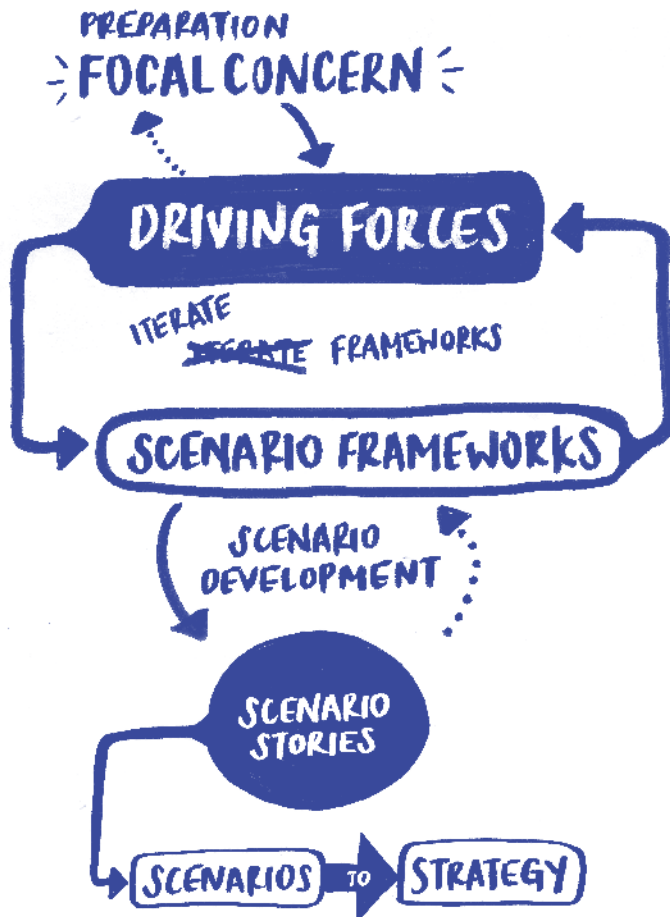
Against a backdrop of significant global economic and geopolitical shifts, the 2010 National Scenarios explored themes such as Singapore’s place in the world and the state of public trust in institutions and among citizens. A scenario titled “Brittle Red Dot”, for example, told the story of a Singapore whose social fabric had been torn apart by xenophobia, fuelling mistrust among communities and institutions. These scenarios were used to engage public servants across ministries and statutory boards in conversations about the future operating environment for Singapore. The conversations were particularly prescient as they anticipated the need to strengthen local-foreigner relations in the years that followed.

Some themes have endured throughout scenarios exercises, and for good reason. One such theme is identity and community resilience. With nationhood thrust upon our young city state just over 50 years ago, building a sense of belonging and pride has been and remains paramount to ensuring survival in an increasingly uncertain and connected world.

The most recent set of scenarios, completed in 2017, was no different in this regard. Issues of identity and community resilience remain evergreen. However, the trends surfaced were of a different flavour—Singapore found itself in a context

# Innovations to the National Scenarios Process

At the broadest level, our scenario planning process has remained largely unchanged over the different scenario exercises. However, we have recently developed a more fluid and iterative approach to the scenario process, rather than seeing it as a series of discrete, linear steps.



## Focal Concern: Understanding Assumptions

Scenarios must be anchored to relevant and specific questions facing an organisation. Given that challenging assumptions necessarily entails *understanding* existing assumptions, the first step to scenario planning is an intensive exercise in listening and understanding. Arriving at a focal concern helps to define the scope of scenarios and anchor scenario development while allowing for continual iteration. To identify the focal concern, the scenarios team consulted key decision makers across the Singapore government in an extensive interview process, seeking to deepen the team's understanding of their views on trends, challenges, opportunities and most importantly, existing mental models about the operating environment.

The National Scenarios mainly address broad focal concerns that lead to "learning" scenarios. "Learning" scenarios involve scanning the environment for risks and sensitising the organisation's decision makers to the external environment.

We also modified the interview approach for a number of decision makers by providing them with a preliminary collection of driving forces. By doing so, the interviews could capture their reactions and critiques of the research and help reveal areas where our research challenged their existing mental models.

"Scenarios deal with two worlds. The world of facts and the world of perceptions. They explore for facts but they aim at perceptions inside the heads of decision makers."

Pierre Wack  
Founder and head of the Royal  
Dutch Shell Scenario Planning Group



What is the state of play?

**HUMAN SUBSTITUTION**

Employee of the Month

**WHERE WE ARE**

- Human substitution technologies are those that take over human jobs and roles by virtue of being physically, mentally or socially superior
- Examples include autonomous vehicles that can replace drivers, algorithms that can take the place of lawyers and artificial intelligences (AIs) that can substitute for friends and romantic partners

**WHAT WE KNOW**

- With huge investments in human substitution technologies, we can expect continued increase in capabilities and reduction in costs
- For example, AIs such as IBM Watson can already achieve levels of diagnostic accuracy comparable or superior to that of human doctors, and looks set to improve further as investments and research continue

**WHAT WE DON'T KNOW**

- Will humans be displaced higher up the value chain or replaced entirely?
- Will governments, unions and society push back?
- Which countries will have the talent and know-how to stay relevant and competitive?

**FUTURE OF TECHNOLOGY**  
TECHNOLOGY CAN HELP US OVERCOME LAND AND LABOUR CONSTRAINTS, BUT ALSO DESTROY JOBS

*Handwritten annotations:*  
 - Arrow from "What is the state of play?" to "WHERE WE ARE"  
 - Arrow from "WHAT WE KNOW" to "what are some pre-determined elements?"  
 - Arrow from "WHAT WE DON'T KNOW" to "What are some critical uncertainties?"

One of the driving forces cards that illustrate key points at a glance. Users can quickly understand the current state of play, some predetermined elements and some critical uncertainties. The full deck of cards and simple instructions for possible ways to use them can be found at the CSF website, [www.csf.gov.sg](http://www.csf.gov.sg).



The video takes the audience on three different taxi journeys, each showing a slice of life in the scenarios. Through Adam's eyes, we experience some of the joys and the frustrations of life in each scenario. Our audience also has the opportunity to compare and contrast the lived experience across the different scenarios as they grapple with Adam's struggles. This helps the audience draw from Adam's worldview during subsequent scenario discussions and serves as a useful reminder, particularly for policymakers, to take a step out of their own perspectives and experiences and consider the lived experience of diverse segments in society, especially those of the underprivileged.



## Communicating Scenarios through Gaming

In a departure from previous National Scenarios exercises, the most recent exercise experimented with immersive ways of communicating scenarios, such as through role-playing games. Previous iterations of the National Scenarios attempted to immerse audiences in this wealth of material through videos and creative writing. We went further this time to put policy-makers in the shoes of Singaporeans, through an immersive game that modelled key dynamics in the three scenarios. The game has since been played by over a thousand public officers, and has been an effective engagement modality.

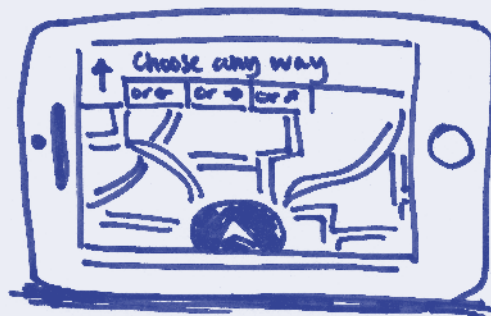
The process of game design for National Scenarios 2035 followed two key principles:



*Focus on feelings*

### 1. FOCUS ON FEELING

One thing an experiential activity does better than a policy paper is allow the participants to feel. Our objective for the game was to go beyond cognitive engagement so that participants could explore their emotional responses to each of the worlds.



*Design for customisation*

### 2. DESIGN FOR CUSTOMISATION

The game was designed to be a scalable resource, so that agencies could customise the game according to their specific policy contexts. This meant that the mechanics of the game were designed in a way that allowed users to plug in agency-specific content easily. For example, one social agency modified the game so that participants could experience in-group solidarity and segregation, skills mismatches in the future workplace and how certain economic opportunities could negatively affect social capital. Since the official debut of the game, many agencies have adapted and modified it, and used gaming to move conversations past the intellectual and cognitive into the experiential and affective domains.

By injecting elements of play, the process of communication became a more engaging one that drew people out of their analytical comfort zones. The game also functioned as an experiential context-setter that encouraged richer discussions through discovery of hidden complexities and trade-offs. Aside from the laughter, cajoling and fist-shaking, the game encouraged more active participation.

## RULES OF THE GAME: NATIONAL SCENARIOS 2035 GAME

The National Scenarios 2035 game situates players in the shoes of Singaporeans living in three different worlds. Players start with individual profiles and are given a set of resources, namely money and social connections. They win by earning a sufficient quantity of either resource by investing them in monetary or social opportunities. Using these resources, players compete to achieve various objectives, some of which require cooperation and others which do not. The incentives in each round are designed to provoke behaviours and outcomes that mirror life in each scenario. The game requires players to get up and move around the room, and to bargain or cooperate with fellow 'citizens'.

The catch is that the opportunities cost resources to obtain, more than any single individual could afford. Therefore, in order to win, players have to pool resources to pursue opportunities. This core logic holds through the variations that the three worlds throw at the players. For example, opportunities in one world are more exclusive and expensive, in the second, the economic ones are fewer and the best ones reside outside of Singapore, while in the third, they appear and disappear unpredictably.



Participants were active role-players, rather than passive consumers

Even among senior government audiences, participants threw themselves into their roles with enthusiasm, bargaining and conniving to land scarce opportunities. Many would recount these experiences in later discussions. This allayed fears that games might be perceived as frivolous and not "serious" enough to facilitate strategic conversations.

Participants responded emotionally, not only cognitively

While the scenarios were make-believe, the social realities the game sought to evoke were real. Players had to quickly grasp their environment, understand their goals, and negotiate the fast-moving social dynamics to succeed at their goals. Often, in a corporate environment, insights and ideas exist as purely cognitive products. The game went beyond merely informing players to making them feel the anger, despair and thrill of citizens in the three worlds.

Participants could mould the game in unexpected ways, rather than play by the script

Despite the fact that the game was designed to produce certain outcomes and learning lessons, we were often surprised by players who bent or even transcended the rules. Rather than enforce the game's preferred narratives, these occurrences were used as catalysts for discussing how incentive structures could play out in different futures.

Gaming process provided lessons in complexity

The emergent, unpredictable outcomes for each play were a reflection of the uncertainties of a complex world.

# Scenarios-to-Strategy

The final phase of scenario planning is a process of translation into actionable insights and strategies. The scenarios-to-strategy phase focuses on the question of whether organisations and their strategies in their current forms are 'right' or 'ready' for the future worlds as articulated in scenario stories.

However, there is no fixed formula to the scenarios-to-strategy process. Over the years, we have developed several ways for translating scenarios to strategies. Working through Strategy Group partners, strategy reviews were identified as follow-ups. These were then complemented with a broader sensitisation of the system through engagements with agencies. This helped to contextualise scenario stories for agencies and facilitate translation of scenario insights into agency-specific strategies. With scenarios providing a common reference point, conversations about plausible futures were more relatable. Finally, scenarios-to-strategy also entailed monitoring signposts through horizon scanning for Emerging Strategic Issues (described in pages 42-43), allowing us to rethink extant strategies where necessary.

Scenarios-to-Strategy Translation

Scenarios ▾

→

Strategy ▾

Formula 1

Formula 2

Formula 3

Formula 4

Formula 5

Formula 6

Formula 7

Formula 8

Formula 9

Formula 10

Formula 12

Formula 13

Formula 14

Formula 15

#@\$%

## Of Black Swans and Black Elephants

# ② Spotting Black Swans with Emerging Strategic Issues

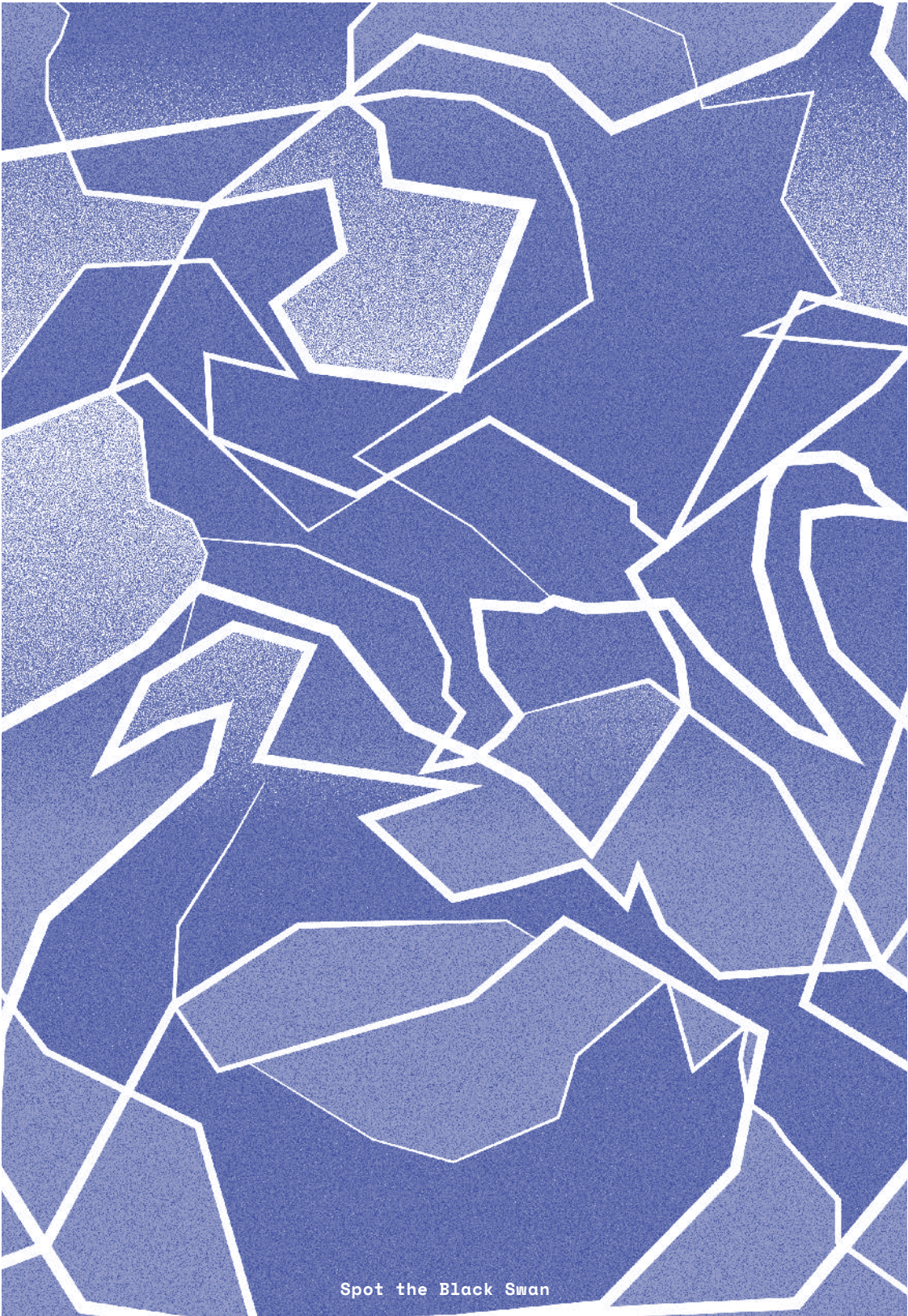
While scenario-planning is useful for taming black elephants, it is generally less useful for dealing with disruptions of the black swan variety. Unlike the slower-moving elephant, the black swan escapes the linear extrapolation of trends and driving forces which discounts the possibility of sharp, discontinuous shocks. They are rare, hard-to-predict events with large impact. In Rumsfeld's terms, they are the unknown unknowns, the unexpected problems "we don't know we don't know".

Vol. 1 noted that scenario planning lacked sufficient agility in responding to a rapidly changing and complex environment. This was largely due to the fact that each past National Scenarios exercise took more than two years to complete and had few in-built opportunities for timely course corrections. Yet Singapore is not immune to shocks of the black-swan variety, and is no stranger to them. The appearance of Severe Acute Respiratory Syndrome (SARS) in 2003 and the 2008 subprime financial crisis are two cases-in-point.

Detecting weak signals of future shocks requires going beyond scenario-planning to develop a broader suite of tools. One such tool is CSF's Emerging Strategic Issues (ESIs) exercise.

"There are known knowns. These are things we know we know. We also know there are known unknowns. That is to say we know that there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know."

Donald Rumsfeld  
Former US Secretary of State

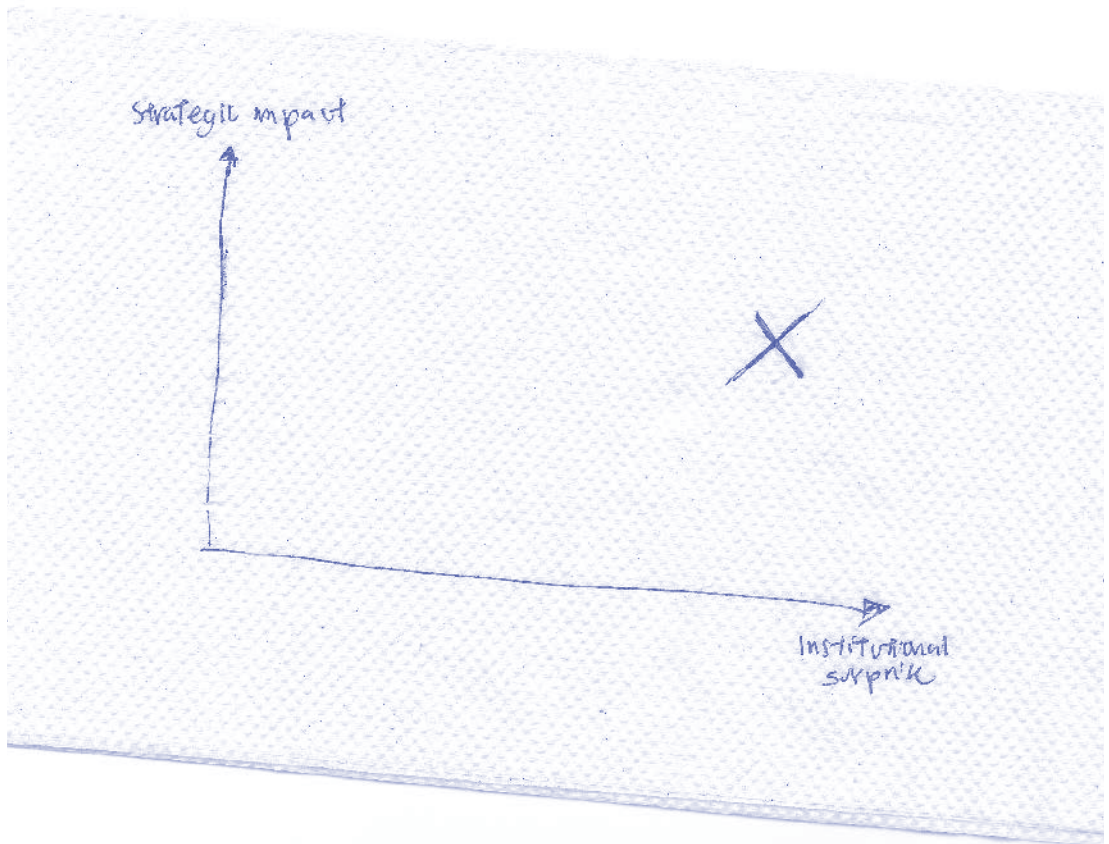


# The ESI Process

An important complement to scenario planning, the ESI process involves identifying, filtering and prioritising strategic issues that have not yet surfaced as critical but which could have significant impact if they occurred. In many organisations, the scanning of emerging issues to inform priorities is known as horizon scanning.

For CSF, the ESI process is a systematic way of uncovering emerging issues with strategic impact and institutional surprise. Hence, ESIs help to advance CSF's vision of building an agile Public Service in the context of a complex and fast-changing environment.

Since the first ESI exercise in 2009, the ESI process has gone through several iterations in response to evolving needs and organisational contexts.



Issues with *strategic impact* are those with consequences that have systemic impact across multiple domains of public policy. Issues with *institutional surprise* are those that are potential blind spots which could develop into black swans that take the system by surprise.

# Early Approaches

## ESI 1.0 and ESI 2.0:

### Generating > Synthesising > Prioritising

The first and second ESI exercises shared a similar approach with three stages:

#### GENERATING

- Scanning for issues through research that draw on a diverse range of sources, ranging from publications to expert interviews

#### SYNTHESISING

- Combining disparate ideas into surprising insight

#### PRIORITISING

- Determining which issues merit focused attention

The first ESI exercise was conducted in 2009 together with the Global Business Network. 50 emerging issues were surfaced over the course of six months. In 2013, CSF ran a second round of the ESI exercise, this time conducted entirely in-house over a period of 18 months. ESI 2.0 took a longer time to complete as CSF undertook more extensive engagements with agencies across government in the prioritisation phase. 49 issues were surfaced and subsequently converted into a deck of cards (“Future Deck”), which were used to stimulate conversation among agencies in various workshops. Public sector leaders then ranked them on three criteria:

- Impact on Singapore
- Likelihood of occurrence
- Level of institutional surprise each issue would cause if it occurred

Through the ranking process, we developed a priority list of the most pressing ESIs.

In addition, CSF continued to monitor issues that had been deprioritised in the voting process as these could continue to be part of current organisational blind spots. Deep dives were also commissioned for ESIs assessed to merit more in-depth study. Past deep dives include diverse topics, ranging from the impact of automation on jobs to the efficacy of cities as an influential organising unit. The ESI on “What if mayors

ruled the world” also informed themes discussed at the 2015 Foresight Conference on Global Cities.

While ESIs 1.0 and 2.0 generated good conversations within the system, the approaches had their limitations. An 18-month process proved too long, given the accelerating pace of change in our environment. Additionally, putting out ESIs for debate at intervals of one to three years could mean certain fast-moving developments and weak signals go undetected.

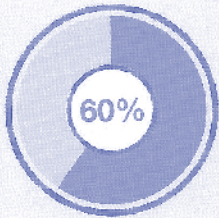
**AUTOMATION OF HIGH-END JOBS**
THE FUTURE OF WORK

The pace of automation has increased. Machines now possess capabilities previously thought to be uniquely human, such as understanding speech and recognising complex patterns.

Whereas the previous wave of automation hit manufacturing jobs, the next wave will affect higher-end service jobs – such as those in accounting, finance, sales, marketing, and legal services.

This means that in future, the skills required in high-end jobs will be those abilities that machines lack – asking the right questions, solving unexpected problems, and programming machines.

**% of Existing Jobs Likely to be Displaced by Computers by 2030**  
(National Research Council, 2006)



60%

“By one estimate, one lawyer is now as productive as 500 used to be. You might not lay off 500 lawyers, but the next time you might hire a few people and some software to read documents.”  
– Prof. Andrew McFee, MIT

photo credit: CC BY JD Hancock

CSF

Sample ESI from CSF’s Future Deck, a product of ESI 2.0. It is a deck of cards intended to spark conversations about emerging challenges and opportunities, and to prioritise issues for further research.

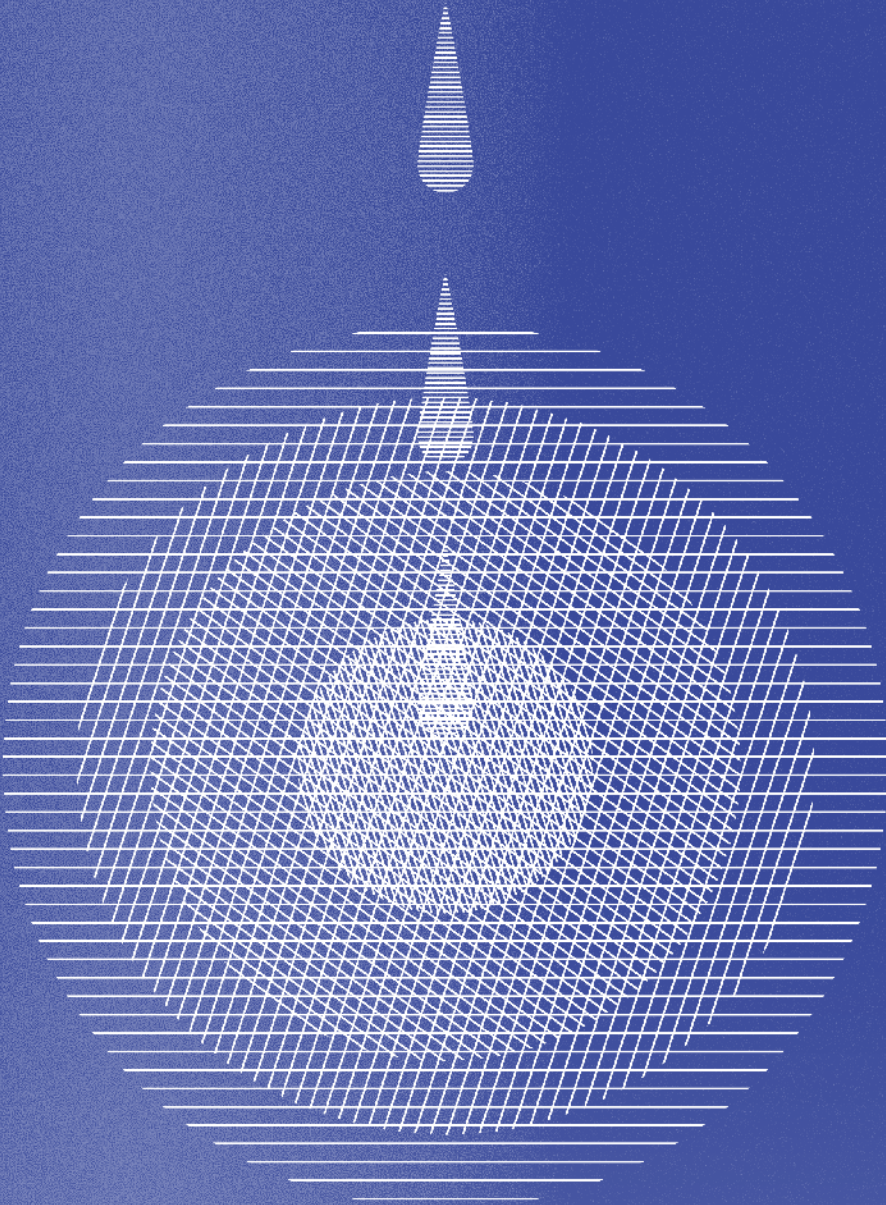
# ESI 3.0: Continuous, Drip-feed model

## Drip-feed model

The current iteration—ESI 3.0—corrects for these limitations by adopting a “drip-feed” model. Instead of conducting the exercise once every few years, ESIs are now generated on a quarterly basis. Each cycle features five to seven ESIs developed over a shorter gestation period. By scanning for signals and developing ESIs on a continuous basis, effectively shortening each cycle, the process is more sensitive to ongoing developments and informs policy in a timelier manner. This approach is designed for greater fluidity: instead of delivering a final “product” only after a year-long process, ESIs can be updated and reworked in response to new developments.

## More talk, more do

Another design consideration of the current approach aims to increase the level of engagement between CSF and agencies throughout the process. In order for ESIs to lead to actionable change within the system, agency support is critical. ESI 3.0 hence takes a more iterative and communicative approach to the development process. CSF engages government agencies in conversations for early validation of relevance and ownership so that the final ESI products have a greater likelihood of being adopted and used by agencies. In the most recent ESI cycle, 40 ESIs were surfaced, 18 of which were identified as “high impact and surprise”. Deep dives, or more in-depth research pieces, were subsequently commissioned for nine of them.



## Facilitating system-wide conversations

Conversations around these ESIs take on different modalities and range from informal to formal settings. CSF regularly convenes themed roundtables around specific topics. For example, a recent roundtable was convened with policy-makers to seek fresh perspectives on artificial intelligence governance frameworks. In addition, our workshops and Sandbox get-togethers serve as platforms for cross-pollination of ideas and networking among participants. Collectively, these conversations help CSF situate weak signals (“What?”) within the policy operating context so that implications (“So What?”) are effectively translated into strategic options (“Now what?”).

## Towards a differentiated approach

ESI scans range across a gamut of disciplines, geographies and time horizons. This diversity is necessary to determine the extent to which issues identified are “cross-cutting” in nature. To make the exercise more valuable to agencies, CSF intends to refine the process such that it is more sensitive to differences in sectors, time horizons and policy intersections of ESIs. Such differentiation will help in determining the most appropriate subsequent actions that should be taken in response to them. For example, if an ESI falls largely within a single government agency’s purview, it may be sufficient to hand over the ESI product to that agency with accompanying material. Certain ESIs, especially those within the technology sector, may have shorter development time cycles, and might not lend themselves to deep dives that tend to take a longer time.

## Who Will Set the Rules for AI?

### Laws and Ethics Can't Keep Pace with Technology

Although there are codes technically that we live by, and laws that we follow, computers and technology move too fast in case.

OECD calls for action to protect workers amid weak wage growth

Is technology moving too fast? Emerging technologies, AI, nanotech, biotech are unlike the previous breakthroughs because in a stable, predictable state. For example, Neural nips power AI, and now AI is being used to build AI. In the future, AI can even analyse neural connections to improve itself.

Tidying the 'big brother' out of big data  
Starting with iOS 10, Apple will use differential privacy "to help discover the usage patterns of a large number of users, without compromising individual privacy."

Hackers split up "ethics" of ransomware attacks on hospitals  
More and more hackers have found institutions as a potentially rich target. A Los Angeles hospital paid a \$17,000 Bitcoin ransom after a Locky infection took down its network.

**Real ethics for artificial intelligence**  
Now, five of the world's largest tech companies are trying to create a standard of ethics around the creation of artificial intelligence.

With each passing month, AI gains footholds in new industries and becomes more enmeshed in our day-to-day lives, and that trend seems likely to continue for the foreseeable future.

The Singapore government has acted early to ensure that we are well placed to capture the economic and efficiency benefits of AI. The National Research Foundation has identified AI as a key R&D focus, particularly in transfer learning, one-shot learning, and explainable AI. Economic agencies are working to attract AI-generated value-adding activities to Singapore. GovTech is also experimenting with using AI to enhance public service delivery.

However, efforts to capture economic opportunities must be undergirded by a sound understanding of AI ethics, and robust system of governance, to ensure just and fair outcomes for the public. This governance system must deal with the ethical challenges of AI in areas of equity, privacy, security, and human dignity. Governance itself will be made problematic due to the complexities of ensuring accountability, transparency, and control of AI.

Others are already acting to influence the discussion. The early "rules" of AI may be set by Digital giants, IBM, Google, Facebook, Microsoft, and Amazon, which have formed an industry association called the Partnership on Artificial Intelligence. In time, the Partnership is likely to become the primary force lobbying for smarter legislation on AI and related future-tech issues.

Singapore is unlikely to prevent itself from becoming a price-taker of all of the governing principles, standards, and laws of AI, especially those encoded into AI design and software. However, there is still room for fastidiousness and policy to affect governance.

*Domestically, how can Singapore strike the tensions balance in regulation – to protect but at the same time encourage innovation? Are our institutions coordinated, and capable of grasping the changing technology? Is there a role of the public to participate in the governance of a such a complex technology? How should Singapore involve itself at the international level, bilaterally or multilaterally, to defend its autonomy and interests?*

[illegible]

# Where to, from here?

Over the years, various tools have been designed for hunting different animals in the menagerie of risks. Our toolkit will keep evolving as we grapple with new risks. What comes after black elephants and black swans? This remains to be seen, but recent conversations point at exciting new directions.

There have been conversations around engaging with social futures—societal change and phenomena with wide-ranging implications that are not easily detected given that they develop over a longer time horizon. Issues such as values and identities as well as shifts in a society's cultural contours carry potential risks that take the form of neither a black swan nor a black elephant. Understanding them may require developing new tools within our toolkit. This is an exciting prospect that we are only beginning to embrace.

“We may not be able to pre-emptively hunt down all the animals in the menagerie of risks, but we can at least learn to live with them. This will be the product of good governance, and result in better and more resilient societies for all.”

Mr Peter Ho

“Society at Risk – Hunting Down Black Swans and Taming Black Elephants”, Speech at the conference “Disrupted Balance – Societies at Risk”, 5<sup>th</sup> December 2016

WHERE TO  
FROM HERE ●

You are here —



# Participatory Foresight

The “Memo to the Future” in Vol. 1 speaks boldly of foresight practice as a form of activism about the future and a proactive way of shaping our destiny. There has been a growing recognition that the practice of foresight can be more inclusive and that citizens can play a bigger role in re-imagining the future. Over the past few years, various initiatives across the Singapore government have sought to engage not just stakeholders of public policy, but also citizens. How does Government involve citizens in envisioning the future? What are some challenges and future prospects?

Guest-writer Vernie Oliveiro<sup>3</sup> discusses an emerging, system-wide capability that the Singapore government has been developing over the past few years: participatory foresight.

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<sup>4</sup> This section is an excerpt of an article “Participatory Foresight in Singapore”. Vernie Oliveiro is serving a secondment as Senior Assistant Director (Policy Strategy) at the Research and Strategy Management Division, Ministry of National Development. She was previously Lead Researcher (Governance) at the Institute of Governance and Policy, Civil Service College. The full article can be found on our website, [www.csf.gov.sg](http://www.csf.gov.sg).

# Envisioning the Future with Citizens

Futures is a growing discipline, with practitioners building expertise by undergoing academic training, participating in conferences and acquiring membership in professional bodies. Despite this strengthening professionalism, futurists themselves are concerned that the lack of diversity in their ranks leads them to envision disproportionately optimistic futures.<sup>4</sup> In the public sector, the recognition of the limits of expert foresight is growing alongside efforts by governments to harness the collective capacity of a society to create greater public value.

In this context, many governments and private institutions have been growing their capabilities in participatory foresight which involves citizens in envisioning the future. Indeed, Aaron Maniam, a former Head of CSF, notes that participatory foresight confers important advantages. First, it gives futurists “more ideas to work with”, which is especially crucial since “futures isn’t about prediction, but gaining a better understanding of our mental models and assumptions today”. Second, it is a “powerful way to alleviate biases” and question our adherence to simplistic metrics and ideologies.<sup>5</sup>

Besides creating more robust futures, participatory foresight arguably creates more democratically legitimate visions of the future. The UK Government Office for Science argued, in its “Future of Cities” project, that the deliberations that underpin participatory foresight help to facilitate “greater buy-in for future decisions”. Civic engagement also helps to foster stronger relationships and trust across a governance system, strengthening a society’s ability to work together to achieve shared goals for the future. Additionally, participatory foresight allows cities to go beyond “generic objectives of ‘liveability’ and ‘competitiveness’” and develop futures with a “deeper appreciation of local characteristics”.<sup>6</sup>

In this vein, the Singapore government has been strengthening its capabilities in participatory foresight. The past few years have seen several efforts

to engage citizens in envisioning the future. One of these was Our Singapore Conversation (OSC), which took place over 2012 and 2013. As then-Minister for Education and Chair of the OSC Heng Swee Keat noted, this was an opportunity for Singaporeans from all walks of life to come together and ask, “Where do we want to go as a country, as a people?”.<sup>7</sup> Another initiative, using a rather different format, was the Future of Us Exhibition which took place from December 2015 to first quarter of 2016. The exhibition capped a year-long celebration of 50 years of independence for Singapore by looking forward to the future. It was an immersive, multi-sensory experience which presented visitors with different possibilities for Singapore’s future. Visitors were also invited to share their dreams for the future as well as what they might do to achieve them.

Lest there be the impression that only the government has been occupied with such efforts, private institutions too have been experimenting with participatory foresight. The Institute of Policy Studies (IPS), a public policy think tank, conducted the PRISM project in 2012. It used scenario planning methods to ask Singaporeans how they would govern themselves in 2022. This then manifested as Action Plan Singapore in 2016 exploring futures in three areas: Longevity, Innovation and Skills.



<sup>4</sup> Rose Eveleth, “Why Aren’t There More Women Futurists”, *The Atlantic*, 31 July 2015.

<sup>5</sup> Aaron Maniam, “A Letter From My Future Self on Citizen Foresight, Why and How?”, *openDemocracy*, 28 April 2017.

<sup>6</sup> United Kingdom Government Office for Science, *Future of Cities: Foresight for Cities* (2016), p. 19.

<sup>7</sup> Speech by Mr Heng Swee Keat, Minister for Education, at the National Day Rally on 26 August 2012, [[http://www.businesstimes.com.sg/bt\\_files/NDR\\_Speech\\_Heng\\_Swee\\_Keat.pdf](http://www.businesstimes.com.sg/bt_files/NDR_Speech_Heng_Swee_Keat.pdf)], accessed 7 June 2017.

# Diverse Methods Foster Inclusivity

To say that Singaporean society is diverse might be an understatement. While Singapore has four official languages, its people speak many others. The Pew Research Centre ranks Singapore as the most religiously diverse country in the world.<sup>8</sup> Besides the three main ethnic groups of Chinese, Malays and Indians, Singapore is also home to significant minorities of Filipinos, Caucasians, Eurasians, Arabs, Thais, Japanese and other communities.<sup>9</sup> This is in addition to differences in income, age and values. Singaporeans are also increasingly interested and active in various causes such as supporting the arts, enabling the disabled, saving the environment, advocating gender equality and preserving our heritage.

Given the diversity of Singaporean society, it was important to organisers of OSC and the Future of Us Exhibition that participants from across Singapore's many communities could participate in these events. To do this, organisers were deliberate about designing outreach and engagement in a way that would encourage participation from members of various communities.

To this end, OSC dialogues took place in several languages (e.g. English, Mandarin, Malay, Tamil, Cantonese, Hokkien, and Teochew) to enable people to deliberate in the languages they were most comfortable in. Dialogues also took place in different modalities. There were centrally-organised, facilitated dialogues conducted mostly in English with Singaporeans from a cross-section of society. These sought to bring together diverse perspectives. There were also ground-up dialogues organised by the People's Association, trade unions, volunteer welfare organisations and interest groups targeted at specific communities. These helped participants to voice their concerns and hopes on issues that were especially pertinent to their communities.

In addition, the OSC Secretariat provided support in the form of resources (e.g. sample facilitation plans and information kits) and logistics (e.g. venues and refreshments). The OSC secretariat also organised dialogues in different formats,

including dialogue sessions held at food centres aptly named “Kopi Talks”. As then-Director of the OSC Programme Office Melissa Khoo observed in an interview, such events allowed dialogues to happen “where conversations were already taking place.” All of these methods helped to broaden the reach of the OSC to include as many groups as possible to ensure representation of diverse voices.

Similarly, the Future of Us Exhibition adopted a variety of means to attract diverse groups to the event. To enhance accessibility, the exhibition was kept free of charge. Organisers also prepared additional resources to help various groups get the most out of their experience. For example, they worked with the Early Childhood Development Agency to tailor the exhibition experience for pre-schoolers, developed a series of programmes, and prepared resources for teachers, facilitators and students. They also collaborated with different organisations in society to bring various groups to the exhibition; organisers worked with Temasek Cares and the National Council of Social Services to reach out to children with special needs, with the National Trades Union Congress to reach out to workers, and with media such as the newspaper Lianhe Zaobao, the radio station Oli, and the television channel Suria to reach out to the Chinese, Tamil and Malay communities respectively.<sup>10</sup>

In both OSC and the Future of Us Exhibition, technology helped to enhance access. Those who could not attend OSC dialogues could take part online via platforms such as Facebook and the OSC website. The Ministry of Health partnered Reaching Everyone for

Active Citizenry @ Home (REACH), the government’s e-engagement platform, to organise two live webchats in conjunction with the dialogues on healthcare. The internet also broadened the exhibition’s reach with the organisers seeing over 13.2 million social media interactions and collecting an additional 481,651 “dreams” and commitments both online and onsite.

These past efforts show that the key to ensuring diverse and inclusive participation in participatory foresight is not a one-size-fits-all approach. Engagement formats can be adjusted to suit the preferences of particular groups. Community partners such as media, schools, unions and welfare groups can help to reach out to specific communities. The key is to customise processes to enhance the quality of experience for each group.

<sup>6</sup> United Kingdom Government Office for Science, *Future of Cities: Foresight for Cities* (2016), p. 19.

<sup>7</sup> Speech by Mr Heng Swee Keat, Minister for Education, at the National Day Rally on 26 August 2012, [[http://www.businesstimes.com.sg/bt\\_files/NDR\\_Speech\\_Heng\\_Swee\\_Keat.pdf](http://www.businesstimes.com.sg/bt_files/NDR_Speech_Heng_Swee_Keat.pdf)], accessed 7 June 2017.

<sup>8</sup> Pew Research Centre, *Global Religious Diversity* (April 2014), Appendix I.

<sup>9</sup> “Singapore Department of Statistics, *Census of Population 2010: Demographic Characteristics, Education, Language, Religion*, Table 7: Resident Population of Other Ethnic Groups.

<sup>10</sup> “The Future of Us”, Report, 2016, pp. 9, 26, 29, and 34.

## Fostering Authentic Engagement: Design and Processes

Authentic engagements in participatory foresight help participants to contribute views and foster a sense among participants that they are being heard and that their perspectives matter. To this end, the first phase of OSC was, as Khoo describes it, “free-ranging, broad, open-ended and messy”.<sup>11</sup> That is, rather than prescribing what issues participants should discuss, participants were free to raise any issue and contribute any perspectives they had about Singapore’s future. It was only in phase two that the OSC secretariat organised dialogues on the specific issues related to housing, education, healthcare and jobs. These themes were identified from the topics which dialogue participants themselves seemed most interested in discussing. Ultimately, this process yielded perspectives about the future that were grouped under five key aspirations for Singapore’s future:

1. Opportunities so that Singaporeans can make a good living and fulfil their potential;
2. The ability to live lives of Purpose, so that Singaporeans can celebrate diverse achievements and cherish heritage, memories and communal spaces that helped to bind us together;
3. Assurance that basic needs such as housing and healthcare are affordable and accessible;
4. A society of Spirit anchored in common values, compassion for the less fortunate and togetherness; and
5. Trust so that Singaporeans can work together to build our common future.

The OSC secretariat also took an iterative approach to designing the dialogues in order to foster high-quality

conversations. For instance, organisers had initially planned to start each dialogue with a video to sensitise participants to Singapore’s changing operating context. They did this to provide information that they believed would enhance the quality of deliberations. However, they soon realised that this approach had to be adjusted as participants found the video too prescriptive – it appeared to many that the organisers were trying to pre-emptively shape discussions. Organisers subsequently did away with the video in favour of a more free-flowing format. Similarly, organisers also experimented with different group sizes for dialogues. Through running trials with public officers, they eventually arrived at an optimum number of participants for small group discussions. In both these cases, arriving at the best possible design required trial and error, a willingness to learn and adapt, and to prioritise participants’ needs and perspectives over pre-conceived ideas about what might work.

Authentic engagement was also something that Gene Tan strove to achieve with the Future of Us Exhibition. As Creative Director of the exhibition, he was particularly concerned about fostering a sense of optimism and agency about the future. While the exhibition aimed to present information on existing plans and research by agencies, he said in an interview, “I didn’t want to just have a convention hall where you have exhibits from different agencies”. Indeed, he had prepared for the exhibition by reading the histories of several countries, including Singapore, to learn how nations are made.<sup>12</sup> His research led him to realise that just as the nations of today came to be as a result of a series of decisions, similarly, the future too was not set, and

<sup>11</sup> The first phase of OSC took place from October 2012 to February 2013 while the second phase took place from March to June of 2013.

<sup>12</sup> “The Future of Us Exhibition: Going Back to the Past to Look Into the Future”, ST, 9 November 2015.

would be made by the actions and choices of today's citizens. As Tan explained, "The past was not inevitable. We had to go through all these things to achieve what we are today. We did not get here buoyed by good fortune. There were lots of choices that were made." As such, he wanted the exhibition to similarly highlight the fact that people had choices to make about the future.

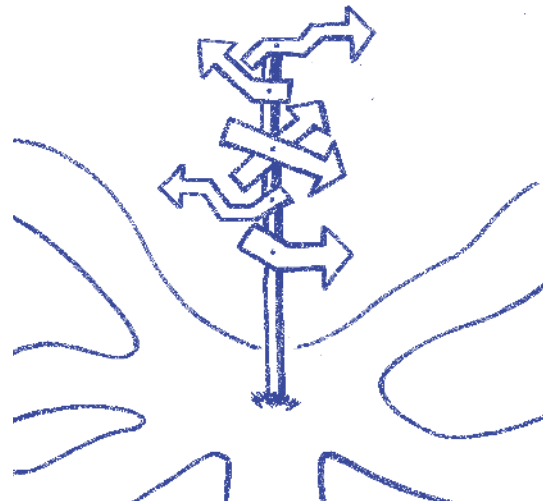
The exhibition was designed to be an immersive experience of possible futures from 2030 and beyond. Rather than static displays, these futures were personified in the lives of four Singaporeans. Exhibition spaces gave attendees a better sense of what the future might mean for individuals on a personal level whether at home, in school or at the office, as well as in areas such as healthcare, transport and the environment. Even the venue for the exhibition—Gardens by the Bay—reflected the twin requirements of imagination and will to realise the future.<sup>13</sup> This multi-sensory experience of possible futures sought to prompt attendees to reflect on the choices and decisions they might make to experience possible futures.

The exhibition was ultimately successful in engaging Singaporeans about the future in a way that appealed to their emotions and sense of agency. After experiencing the exhibition, three quarters of visitors reported having ideas about the future of Singapore, while 9 in 10 Singapore citizens reported that they felt they had a place in a future Singapore and that they were inspired to contribute to a better Singapore.<sup>14</sup> Tan noted, in an interview, that as visitors penned down their dreams after experiencing the exhibition, "many people, especially kids, said 'I want to do X, so I can do Y'." He noted, among the many dreams collected, that "there was a lot of input [from visitors] about how the future was not

just for themselves, but what they could do for the country, for other people."

Participatory foresight designed with authenticity in mind delivers several positive outcomes. Firstly, by eliciting diverse views from the community, it challenges the biases and mental models of elite practitioners. Such engagement can also strengthen individuals' commitment to the process and willingness to play a role in bringing about the futures they envision. That is to say, authenticity in participatory foresight helps to engender a genuinely collective visioning of the future, while also complementing the foresight work done by futurists and policy-makers.

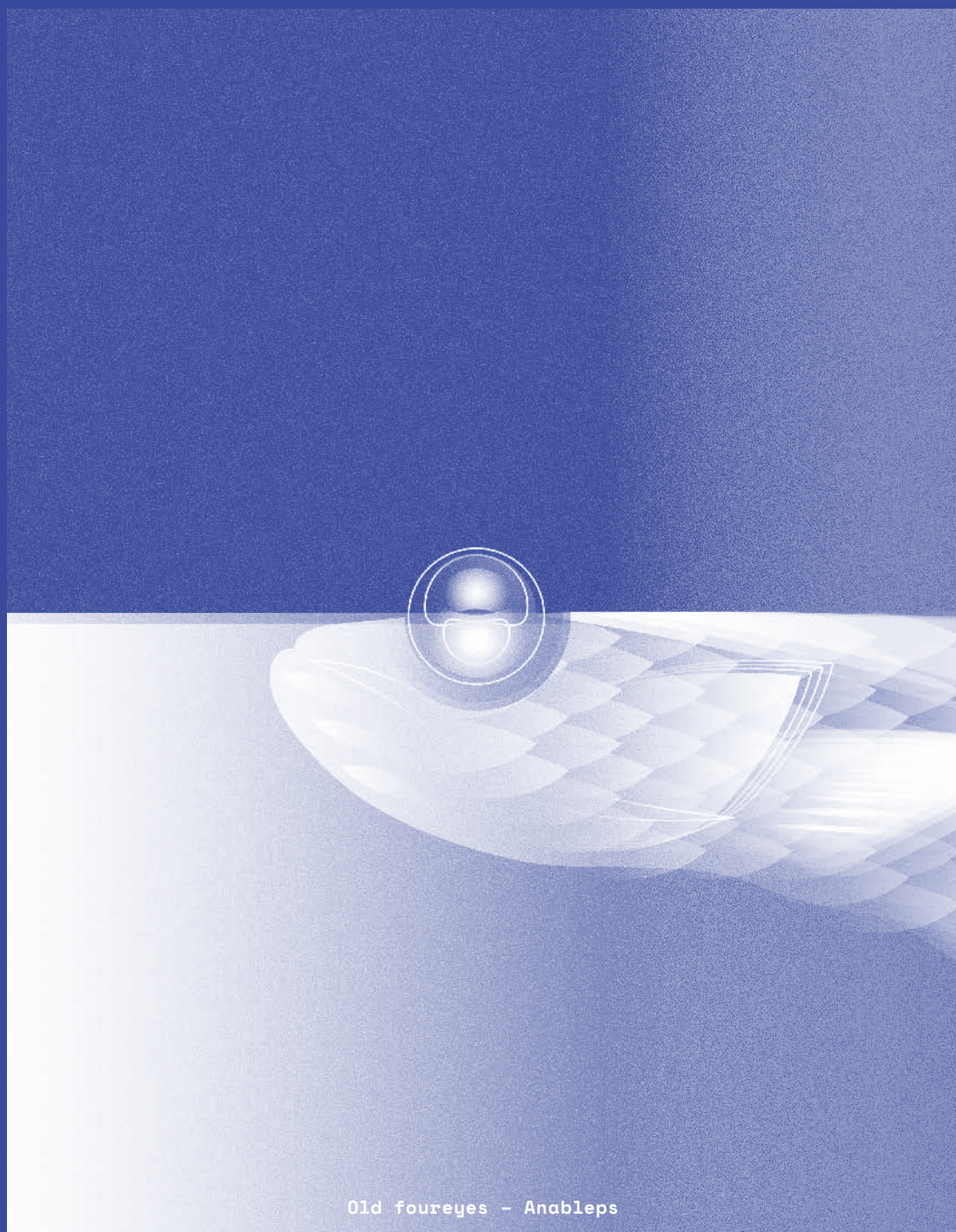
Singapore has some way to go in developing its instincts and capabilities in participatory foresight, but it is starting on a good footing. Inclusivity, authenticity and capabilities can all be further deepened through innovative methods that enhance collective deliberation. Ultimately, stronger participatory foresight in Singapore can help the government to chart new paths amidst a volatile, uncertain, complex and ambiguous future.



<sup>13</sup> Ibid

<sup>14</sup> "The Future of Us", Report, 2016, appendix III.

# Afterword



Old foureyes - Anableps

There is a four-eyed fish that lives in river estuaries and mangroves, adapted to the constant ebb and flow of fresh and brackish water. It can be found on the Atlantic Coast of Central and South America, and around the island of Trinidad.

This fish does not actually have four eyes, but a lay-observer would easily be fooled at the sight of this animal that spends most of its time swimming at the water's surface. From the surface, it looks like it is constantly peering upwards, from below, its eyes surveying the water below—a perfect sentry.

Old four-eyes, or *Anableps*, really only has two eyes, but its eyes are each divided into two distinct parts—one that is always looking out of the water, and the other underwater.

Looking at this fish for the first time, one cannot help but be fascinated by the adaptation. How is its brain wired to make sense of the two very different worlds it sees, and how would it perceive the world if it did not straddle the surface of the water?

Like many weird and wonderful creatures of the animal kingdom, the four-eyed fish is well-adapted to seeing vastly different perspectives, and this adaptation is critical to its survival.

This is not unlike what is expected of a futurist in any organisation. Our job is

to find that sweet spot in the organisation, perched at the fringes of policy-making, so that you know what fresh insights are needed and what the policy preoccupations are. At the same time, we are looking out, plugged into networks that feed us those fresh insights, and build connections with thinkers that give us ideas to constantly challenge the organisation's mental models. We cannot be pulled too far in either direction, because we need to translate the signals from outside into meaningful insights and responses within the system.

It is tempting to want a futures unit to be demonstrably useful to the organisation all the time. The reality is that we ought to be tolerated, but not embraced. Challenge the system's thinking, dig deep into prevailing mental models, and use our tools to help our organisation make better decisions today, so we can all be better prepared for the future.

Our hope is that we can maintain our position at the water's surface, like the four-eyed fish, and be able to adjust and adapt with changing tides, unpredictable rains, and all the wild and wonderful animals they bring to our shore.

Good luck!

Yours truly,  
CSF Team 2017



# FORESIGHT DEADLINES

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