

Analyses and focus

Using Regulatory Sandboxes for an Innovation-led Economy

Outcome



Victor Tay

CEO

Global Catalyst Advisory

Managing Director

Stout Investment Banking

Governing Council

China-ASEAN Business Alliance

Singapore Digital Chamber of Commerce



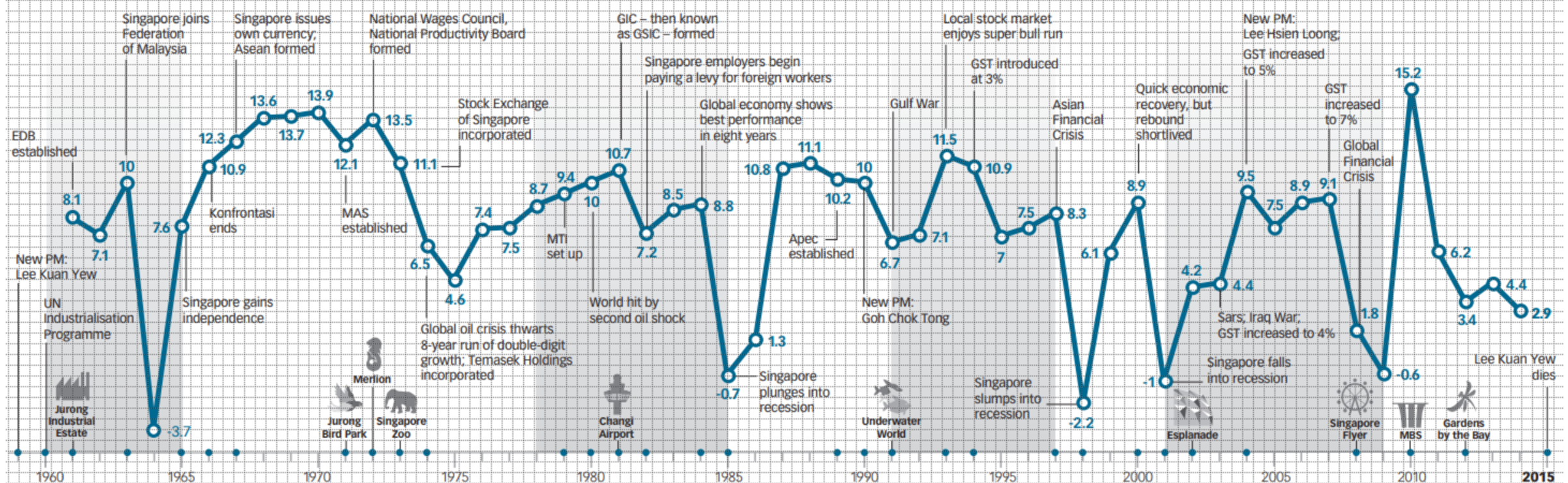
<https://www.linkedin.com/in/victortay>

victortay@globalcatalystadvisory.com

Singapore's Resilience

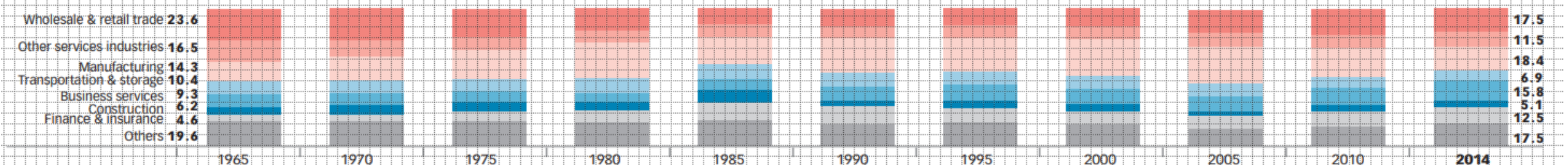
weathering 18 years of double-digit growth into finance and commerce hub

% GDP GROWTH (2010 MARKET PRICES)



KEY INDICATORS

Industry contribution to GDP (%)

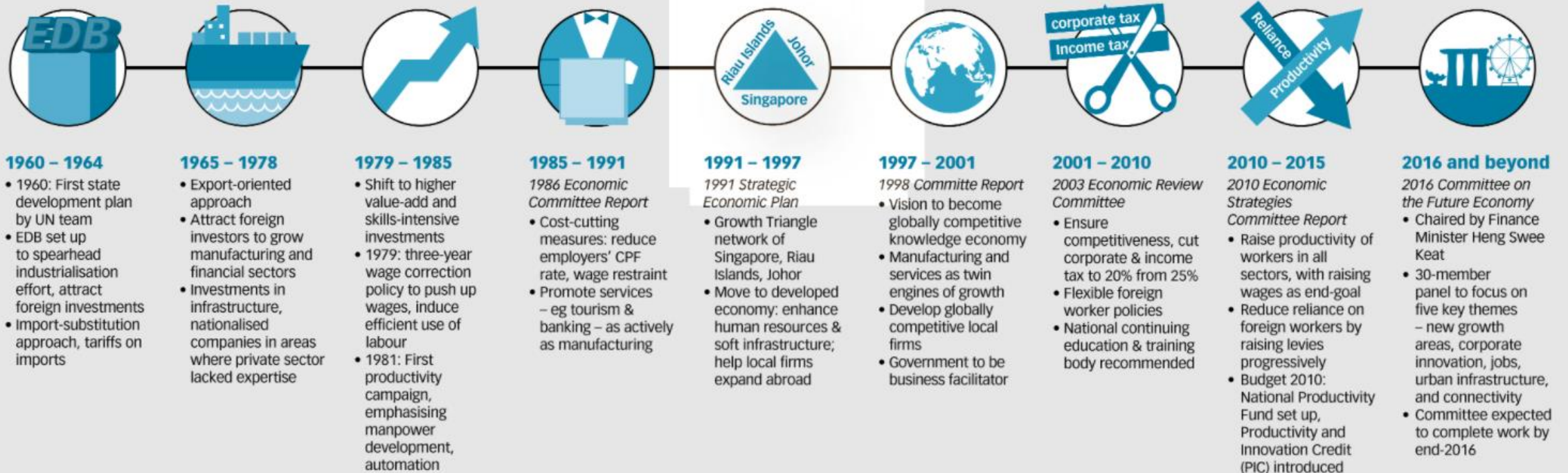


Singapore Economic Growth

from export oriented, twin engine, productivity, skills-centric, future economy

Taking the next step, again

Singapore's economic profile has changed significantly over the last 50 years, thanks to a series of growth strategies designed to keep the country competitive. *The Business Times* looks back on five decades of transformation, even as the Committee on the Future Economy charts a new way forward. **BY KELLY TAY**



COMMITTEE ON THE FUTURE ECONOMY RECOMMENDATIONS

3 significant shifts in our global environment

- 1 RAPID TECHNOLOGICAL CHANGE**
- 2 SUBDUED GLOBAL GROWTH**
- 3 ANTI-GLOBALISATION TREND**

We should be the pioneers of the next generation:

- Our people highly skilled and constantly learning
- Our businesses innovative and nimble
- Our city vibrant, connected to the world, and continually renewing itself
- Our government coordinated, inclusive and responsive

7 STRATEGIES IDENTIFIED BY



the Committee on the Future Economy

1 DEEPEN OUR INTERNATIONAL CONNECTIONS

- Press on with trade liberalisation
- Set up a Global Innovation Alliance
- Deepen knowledge of markets

2 ACQUIRE AND UTILISE DEEP SKILLS

- Facilitate acquisition of deeper skills
- Strengthen utilisation of skills

3 STRENGTHEN ENTERPRISE CAPABILITIES

- Strengthen our innovation ecosystem
- Support enterprises to scale up
- Encourage private sector to provide more growth capital

4 BUILD STRONG DIGITAL CAPABILITIES

- Help small and medium enterprises adopt digital technologies
- Build deep capabilities in analytics and cybersecurity
- Leverage data as an asset

5 DEVELOP A VIBRANT CITY OF OPPORTUNITY

- Invest in our external connectivity
- Continue to plan boldly to rejuvenate the city
- Build partnerships for a vibrant city
- Develop exportable capabilities

6 IMPLEMENT INDUSTRY TRANSFORMATION MAPS

- Tailor Industry Transformation Maps for each industry
- Maximise synergies across industries

7 PARTNER EACH OTHER

- Encourage Trade Associations and Chambers and unions to work together
- Create a regulatory environment to support innovation and risk-taking
- Use lead demand to develop promising industries
- Review and reshape Singapore's tax system
- Create a sustainable environment



WHAT CAN WE DO
to prepare for the future?

OUR PEOPLE CAN BECOME KEY DRIVERS OF CHANGE

- **Prepare for jobs of the future:** take ownership over your skills development
- **Think global:** develop cross-cultural experiences and competencies

OUR ENTERPRISES CAN CREATE NEW IDEAS AND SOLUTIONS FOR THE WORLD

- Look beyond value-adding to value-creation
- Level up together to strengthen the Singapore brand

GOING DIGITAL FOR THE FUTURE ECONOMY



WHAT IS DIGITAL ECONOMY

Production and consumption of

Digital Products	Digital Services	Digital Platforms
Examples	Examples	Examples
• Data • Sensors	• Uber • PayLah	• Netflix • Carousell

and any business activity that is enabled by such technologies

WHY DOES IT MATTER



Digital technologies are **changing** the way we live, work, consume and create



Digital economy in ASEAN expected to grow to **US\$200 billion** by 2025



53,000 new jobs in infocomm roles expected in Singapore by 2018

SINGAPORE WELL-PLACED TO TAP ON OPPORTUNITIES

- ✓ Reliable IT infrastructure
- ✓ High adoption of digital tech
- ✓ Reputation of trustworthiness
- ✓ Well-educated workforce
- ✓ Existing capabilities in e-commerce, cybersecurity, analytics, etc
- ✓ Close ties to key markets in ASEAN



COMMITTEE ON THE FUTURE ECONOMY LOOKING INTO HOW SINGAPORE CAN:

Be key player in global digital economy

- Become a leader in fields such as cybersecurity, advanced analytics, 5G comms and e-commerce solutions
- Make data our competitive advantage

Transform our industries, enterprises and people

- Tap on digital technologies to improve efficiency, develop new products, and reach new markets
- Develop digital talents



Research, Innovation and Enterprise 2020

Research, innovation and enterprise are cornerstones of Singapore's national strategy to develop a knowledge-based innovation-driven economy and society. Public investment in research and innovation has grown over the last 25 years. Under the last five-year Research, Innovation and Enterprise (RIE) 2015 Plan, the Singapore government committed \$16 billion over 2011 to 2015 to establish Singapore as a global research and development (R&D) hub. The government will be sustaining its commitment to research, innovation and enterprise, and will invest \$19 billion for the RIE2020 Plan over 2016 to 2020.

Plan	National Technology Plan 1995	National Science & Technology Plan 2000	Science & Technology 2005 Plan	Science & Technology 2010 Plan	Research, Innovation and Enterprise 2015 Plan	Research, Innovation and Enterprise 2020 Plan
Budget	\$2 billion	\$4 billion	\$6 billion	\$13.5 billion	\$16 billion	\$19 billion

Research, Innovation and Economy 2020 Plan

- amidst 3 main challenges population, inequality, competitiveness (productivity)

RIE2020 Portfolio

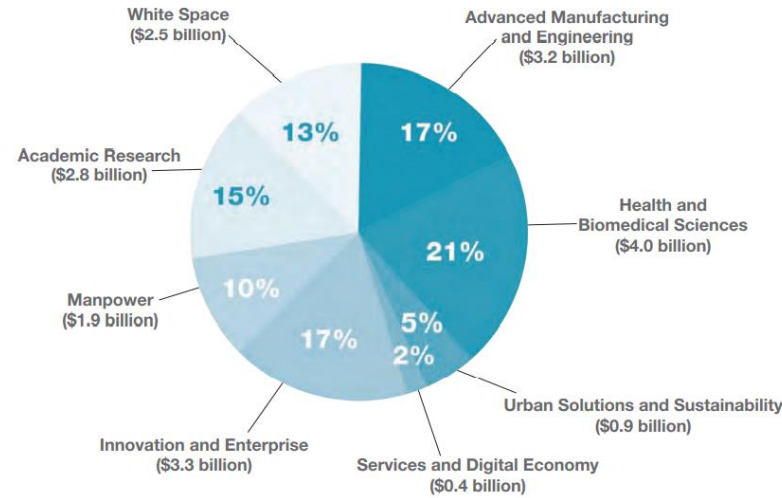
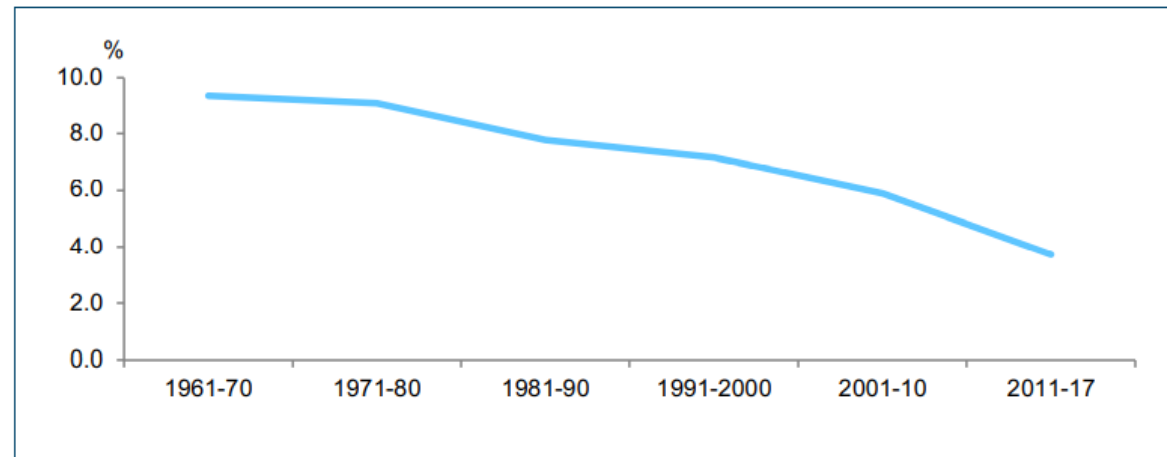


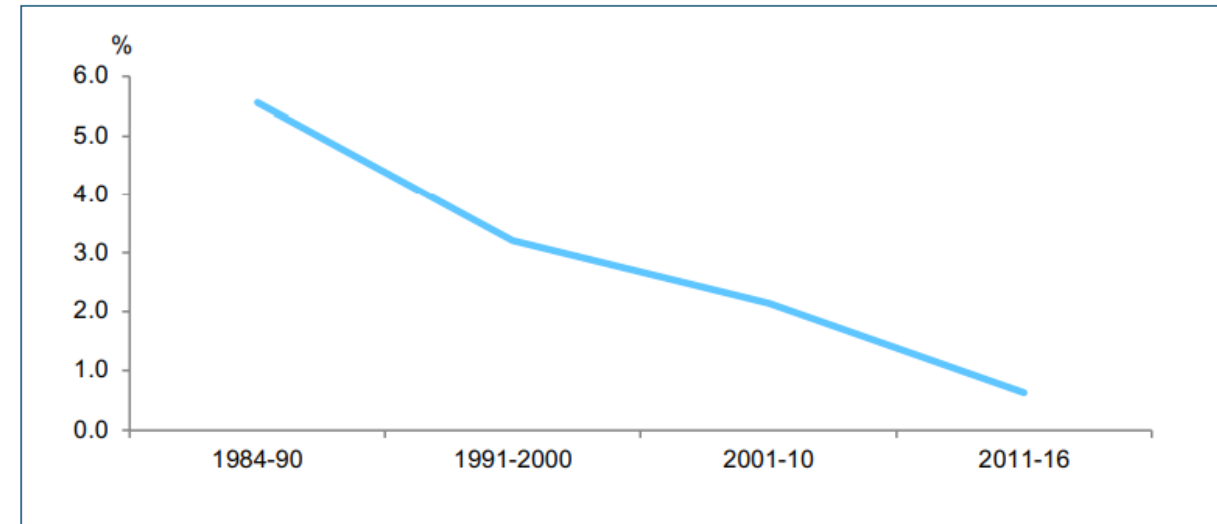
Figure 1: Singapore's long-term GDP growth



Source: Calculated by Centennial Asia Advisors using CEIC database

Domestically, Singapore's economy faces three main challenges: population; inequality; and competitiveness.

Figure 2: Singapore's labour productivity growth



Source: Calculated by Centennial Asia Advisors using CEIC database

Challenges highlighted by Thinktanks

Table 3: Singapore's ranking on innovation, Global Competitiveness Index

	2015–16	2016–17	2017–18
Capacity for innovation	19	20	20
Quality of scientific research institutions	12	10	12
Company spending on R&D	11	15	17
University-industry collaboration in R&D	5	7	8
Government procurement of advanced technology products	4	4	5
Availability of scientists and engineers	11	9	9
Patents, applications/million population	14	13	12

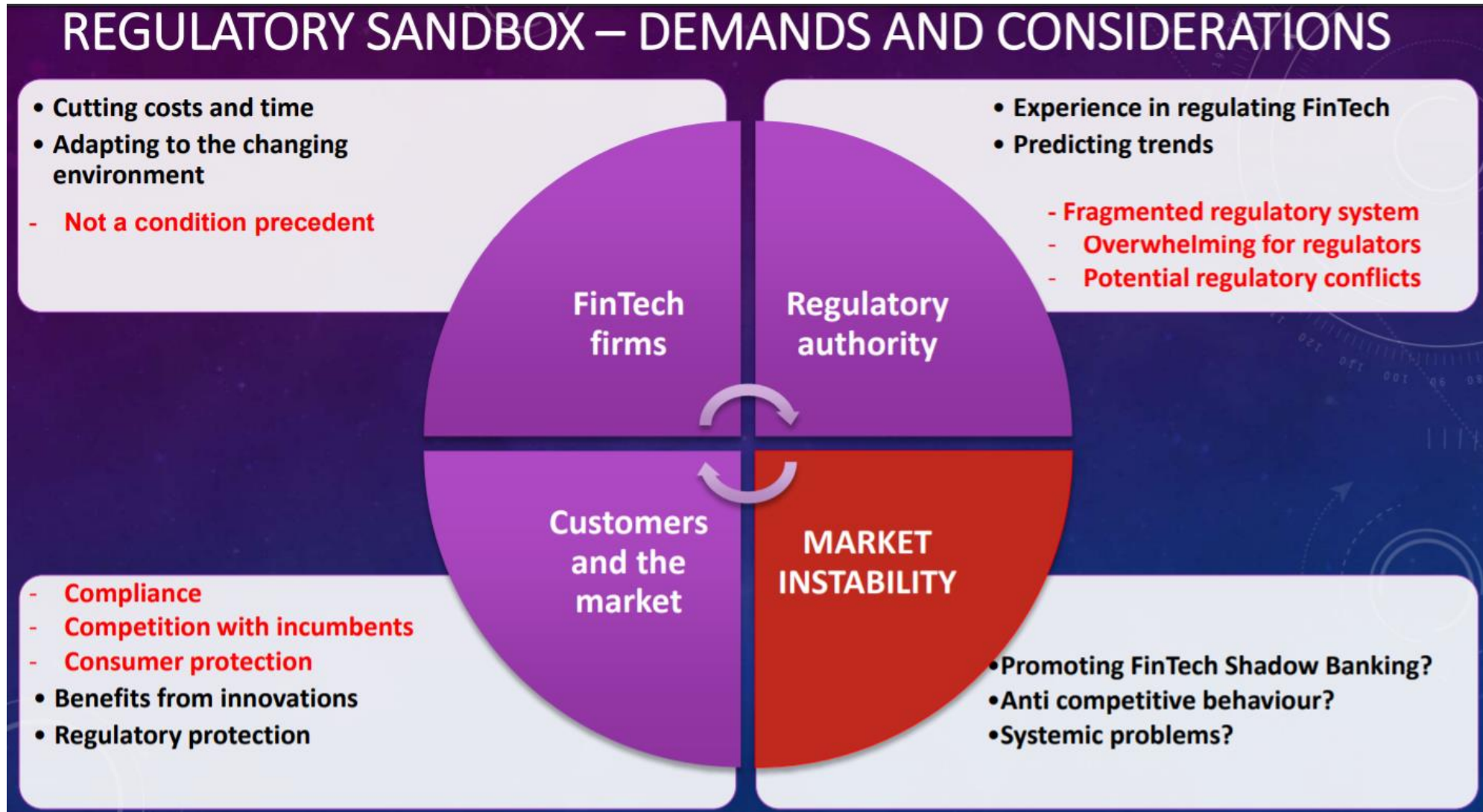
Source: World Economic Forum, Global Competitiveness Index

Commentary from LOWY institute and Centennial:

1. **Same favoured growth sectors**
2. Continued commitment to **retaining large manufacturing base**
3. No change to **economic openness**
4. **Deregulation** to spur innovation and digitization
5. **Scaling up and internationalizing**
6. **Tax reforms**
7. **Industry Transformation Roadmap** which SMEs did not find useful

Innovation Efficiency with Sandboxes

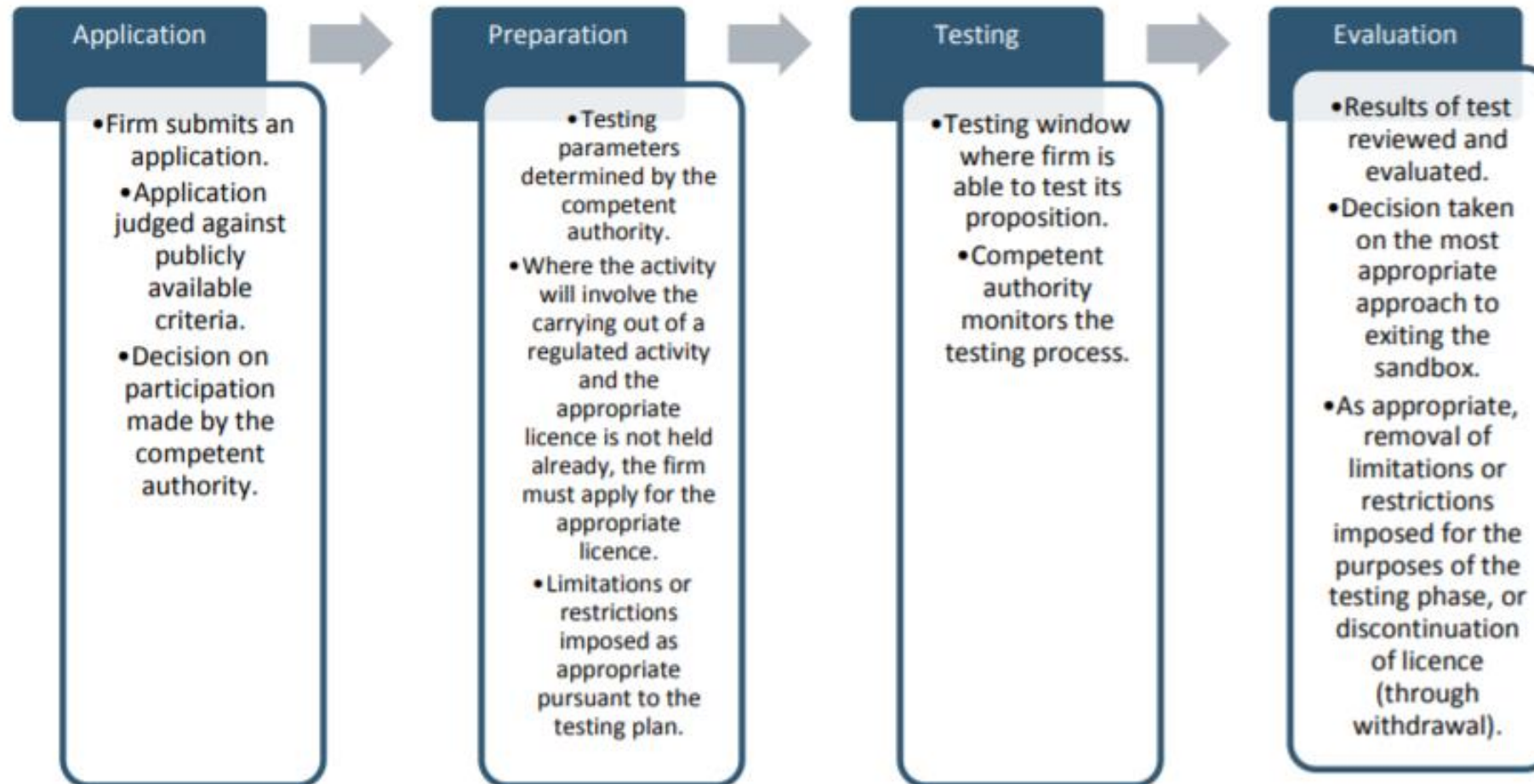
- balancing market forces, multiple regulators and unprecedented conditions



Balancing Regulations with Innovative sectors

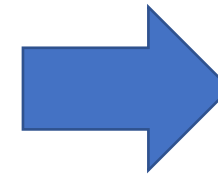
- innovation progresses with authority monitoring

Diagrammatic representation: Regulatory sandbox phases



Objectives of Panel Discussion

Can Sandbox help to preempt regulatory hurdles to catalyse an Innovation-led Economy?



1. What are the **challenges and Impediments** to Innovation in Singapore? Are our **ecosystems and regulations suitable** for innovation?

2. What approach will **accelerate market or industry practice** to adopt Innovation?

3. Fintech is a nascent and highly regulated sector which MAS has applied the **sandbox approach to enable innovation** catapulting Singapore as a Global Fintech hub.

4. Can the other sectors (medical, healthcare, transport etc) follow suit?

5. Distil learning points from **Entrepreneurs' case studies**:

- Industry
- Enterprises

Panel's Discussion

Perspectives from entrepreneur, government, association, innovator across Environmental, Financial, Technology sectors

Frank Phuan

Chief Executive Officer & Executive Director

Sunseap Group Pte Ltd

1. Environmental Sector

- a. Environmental Sector
- b. Pioneering as the region's largest solar Installations on water

Ken Chua

Deputy Director,

Fintech Infrastructure Office,

Monetary Authority of Singapore

2. Fintech Sector

- a. Government Regulations and Infrastructure

Jayaprakash Jageteesan

Chief Executive Officer

RHT AIDigi Financial Holdings Pte Ltd

2. Fintech and Environmental

- b. Establishing Singapore's Most comprehensive Digital Exchange and Carbon Exchange

Ms Yean Cheong

Executive Director

SG Tech

3. InfoTechnology

- a. Association perspective
- b. Members' challenges and predicament