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Development Strategies for San Tin Technopole:

From Ground Zero to Innovation Hub

August 2023

Research • Advocate • Engage
研究 • 倡議 • 推動

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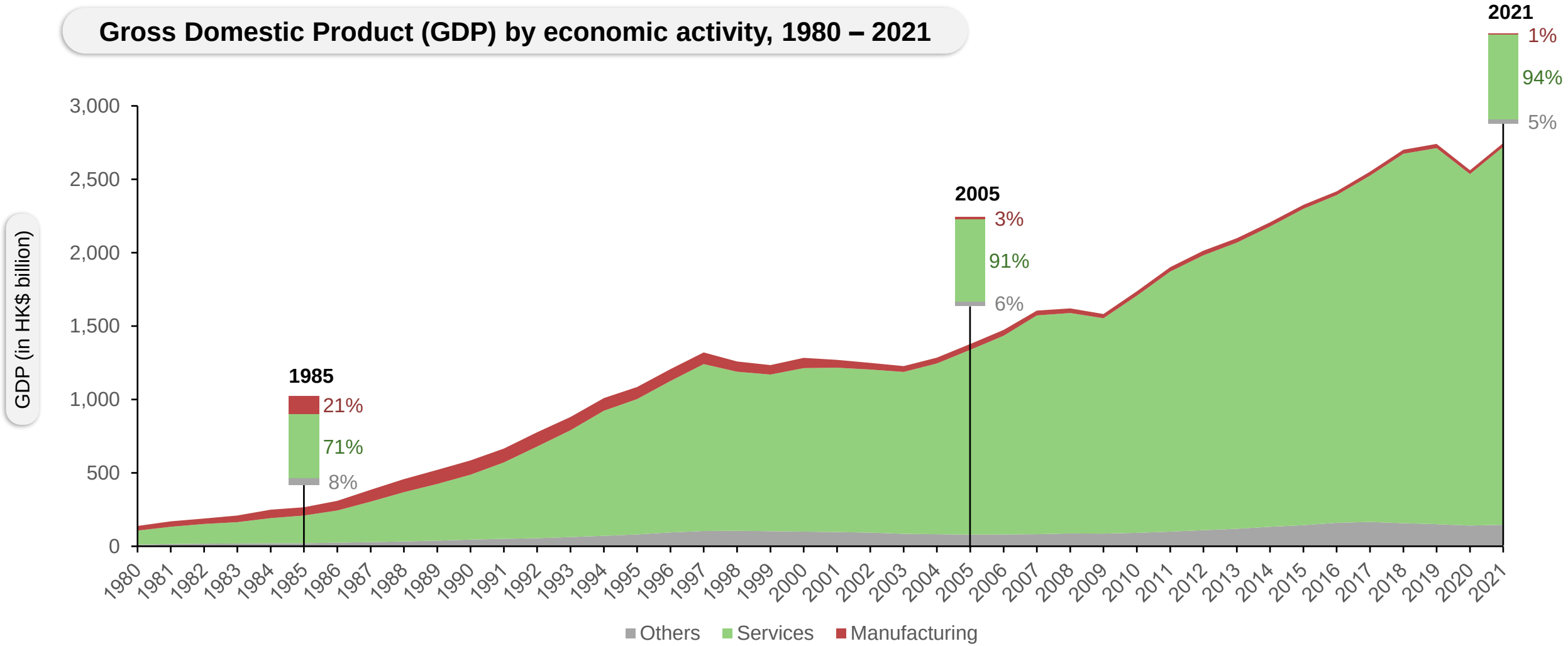
Part One:

Introduction

The significant decline in manufacturing and heavy reliance on the service sector led to Hong Kong's industry structure imbalance

Gross Domestic Product (GDP) by economic activity, 1980 – 2021



Note: [1] Refers to nominal GDP at basic prices
[2] "Others" include i) agriculture, fishing, mining and quarrying, ii) Electricity, gas and water supply, and waste management, and iii) Construction

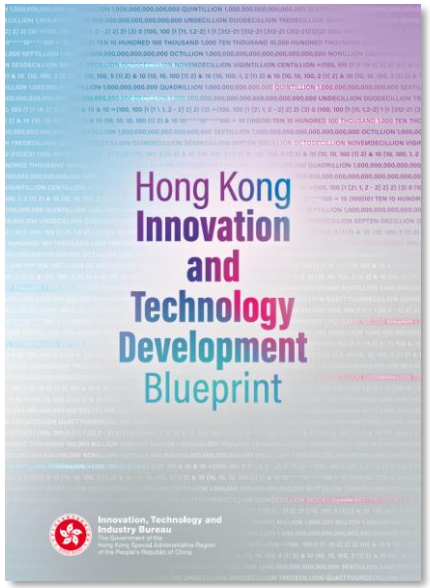
Source: Census and Statistics Department

In contrast, the other three “Asian Dragons” retained significant manufacturing sectors and lead Hong Kong in R&D expenditure

(2022 data unless otherwise stated)	Hong Kong	Singapore	Taiwan	South Korea
Contribution of service sector to GDP	93.4%	64.4%	60.6%	64.1%
Contribution of manufacturing sector to GDP	1.0%	22.1%	34.1%	26.1%
Manufacturing sector as percentage of employment	2.0%	12.4%	25.1%	18.8%
R&D expenditure as a percentage of GDP (2020)	0.99%	2.2%	3.5%	4.8%
Major manufacturing industry clusters	▪ Food & beverage ▪ Electronics & machinery ▪ Textiles & apparel ▪ Printed products	▪ Aerospace ▪ Electronics ▪ Biomedical sciences ▪ Precision engineering	▪ Mechanical parts ▪ Electronics ▪ Chemicals ▪ Consumer goods	▪ Automotive ▪ Electronics ▪ Heavy machinery ▪ Ocean vessels

Sources: Census and Statistics Department, Singapore Department of Statistics, Statistics Korea, and Taiwan Directorate-General of Budget, Accounting and Statistics

To reverse such trends, a clear policy intention has been laid out by the Government to develop the I&T industry in Hong Kong



Strategic technology industries

Life and health tech

Solid foundation in the basic life and health technology research with a good number of world-renowned research teams

AI and data science

Unique advantages and is well-placed to facilitate interchange of data within and outside of the country

Advanced manufacturing and new energy tech

Strong R&D capabilities, advantages as an international and market-oriented economy and robust IP protection regime

Key Performance Indicators (excerpt)		2022	2032
R&D	Gross Domestic Expenditure on R&D (GERD) as a ratio to GDP	0.99%	2%
	GERD per capita	HK$3,575	HK$9,000
	Public: Private Ratio of R&D Expenditure	58:42	40:60
Start-ups	Number of start-ups operating in co-working spaces, incubators and accelerators	3,755 (2021)	~7,000
	Number of unicorn enterprises (accumulative)	12	30
Talent	Number of I&T practitioners	45,310	≥100,000
	Number of I&T practitioners per 1,000 labour force	11.56	28.05
Industry development	Contribution percentage of manufacturing sector to GDP (at basic prices)	1.0%	5%

Sources: Northern Metropolis Development Strategy, Hong Kong Innovation and Technology Development Blueprint

Multiple I&T projects are in the pipeline within the Northern Metropolis to create greater synergy with Shenzhen

Shenzhen Innovation and Technology Zone

I&T land area (ha) ~300

Facilities

- Enterprise R&D centres
- Dry and wet labs
- Residential & Commercial
- Community amenities
- Border facilities

San Tin Technopole

I&T land area (ha)	~300
Total GFA	~71 million sq. ft.
No. of I&T jobs	Over 120,000
No. of housing units	50,000 to 54,000

Lau Fau Shan, Tsim Bei Tsui, Pak Nai

I&T land area (ha)	TBC
Total GFA	TBC
No. of I&T jobs	6,000 to 8,000
No. of housing units	47,000 to 52,500

Note: The map is for general information purposes only. All information is provided in good faith. However, we make no representation or warranty of any kind, express or implied, regarding the accuracy, adequacy, validity, reliability, availability, or completeness of any information

Sources: Northern Metropolis Development Strategy, Legislative Council

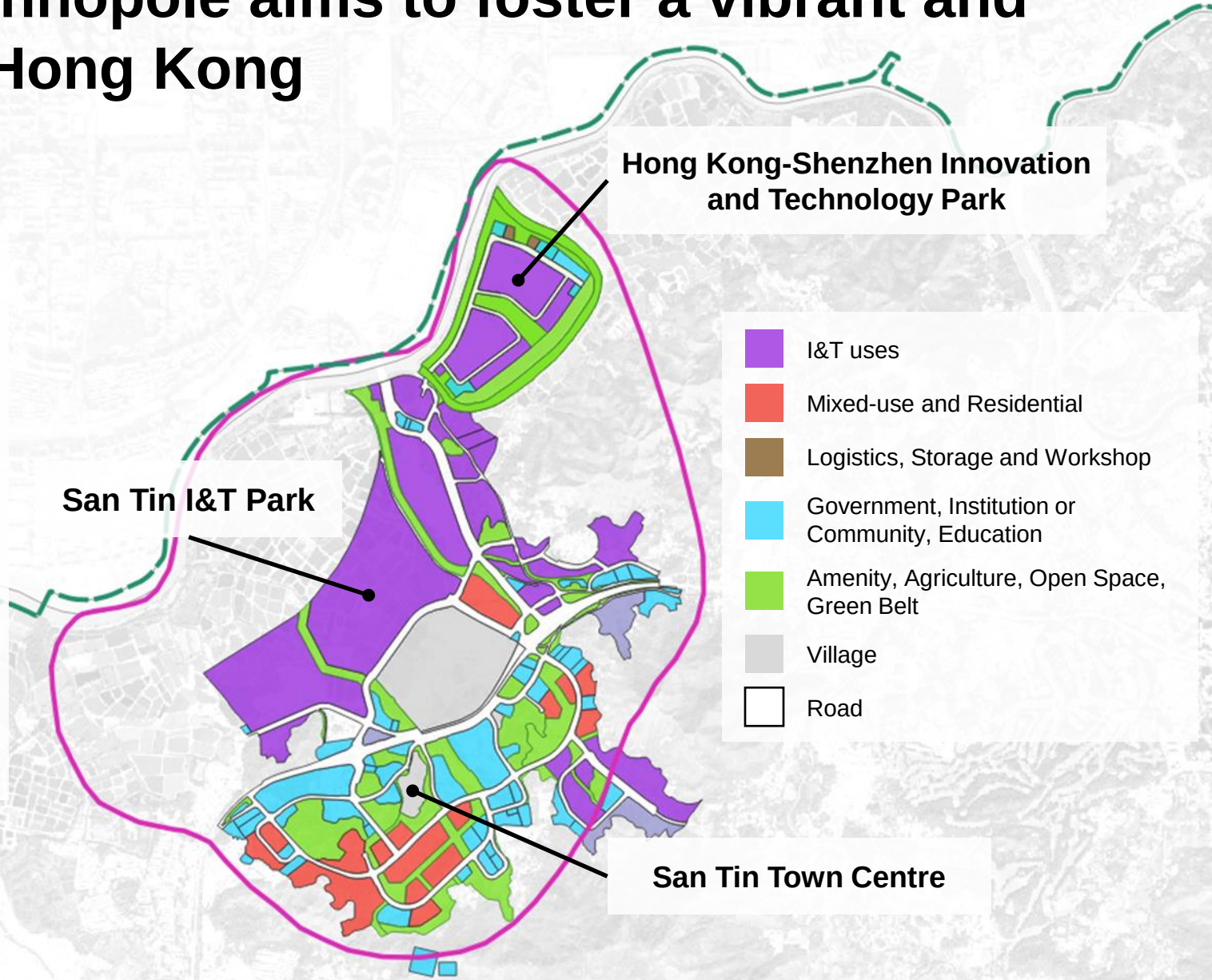
The upcoming San Tin Technopole aims to foster a vibrant and thriving I&T ecosystem in Hong Kong

Policy Objectives

- Agglomeration of I&T enterprises and supporting facilities
- Industry clustering effect with economy of scale
- Form a complete I&T industry ecosystem

Development Scale

- Total development area of over 600 ha, of which half (~300 ha) is designated as I&T land
- 7 million sqm of gross floor area (equivalent to 17 Science Parks)



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Sources: Northern Metropolis Development Strategy, Legislative Council

However, three critical questions need to be first answered in order to ensure the success of the San Tin Technopole

Implementation programme of San Tin Technopole

May 2023
Land use proposal of San Tin Technopole

Aug 2023
Public engagement concludes

Q1 2024
Statutory planning procedure begins

Q4 2024
Land formation begins

2026
Land delivery begins

2031
First population intake

2034
Major population intake

Create 165,000+ jobs (120,000+ on I&T sites), and home-job balance in the Northern Metropolis

Ensure steady implementation

Realise Hong Kong's I&T hub

- **Who should be the lead development entity for the 300-hectare I&T land?**
- **How to attract investments and enterprises to expedite the development of the local I&T ecosystem?**
- **In what ways should land be disposed of and developed to meet and align with industry-specific needs?**

Sources: Legislative Council, Our Hong Kong Foundation

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Part Two:

Case Studies

Referencing overseas and Mainland examples, there are various development models for answering the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

Referencing overseas and Mainland examples, there are various development models for answering the three critical questions

Lead development entity

Government entity

Research institution

University of Cambridge

Public-private partnership

Mission Bay Development Group

Corporate entity

Lingang Group

China-Singapore Suzhou Development Group

Zhangjiang Group

Business & investment attraction

Examples of enabling government structure and agencies

EDB SINGAPORE

Singapore
Economic Development Board

Shenzhen
Person-in-charge of industrial chain

Examples of forming mutually beneficial partnerships

Singapore
Dyson Global Headquarters

Northern Virginia
Amazon Headquarters 2

Shanghai
Tesla Gigafactory

Land allocation & development

Example of a mixed land allocation and development model

Singapore
One North

jtc · ascendas Reit · crescendas · Ho Bee Land · P&G · Grab

Lead and supporting development entities in different phases of One North's Biopolis Cluster

Source: Our Hong Kong Foundation

Referencing overseas and Mainland examples, there are various development models for answering the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

The Hsinchu Science Park Bureau shows how a government entity would guarantee policy, regulatory, and financial support

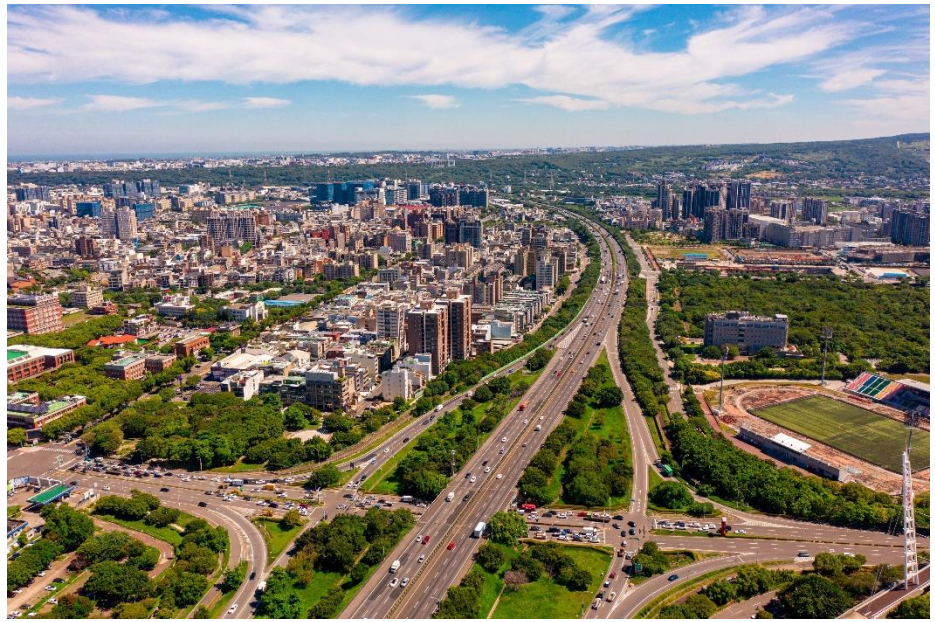
Lead development entity

Business & investment attraction

Land allocation & development

Government entity | Corporate entity | Research institution | Public-private partnership (PPP)

Case study: Hsinchu Science Park Bureau, Taiwan



Background

Establishment	1980
Area (ha)	686
No. of enterprises	400+
Working population	~140,000
Pillar industries	Integrated circuits, optoelectronics, computers & peripherals, telecommunications, biotechnology, precision machinery
Notable occupants	Taiwan Semiconductor Manufacturing Company

Sources: Hsinchu Science Park, Chinese Institute of Engineers

The Hsinchu Science Park Bureau shows how a government entity would guarantee policy, regulatory, and financial support

Lead development entity

Business & investment attraction

Land allocation & development

Government entity | Corporate entity | Research institution | Public-private partnership (PPP)

Case study: Hsinchu Science Park Bureau, Taiwan

Governance Structure

行政院 Executive Yuan

NSTC 國家科學及技術委員會 National Science and Technology Council

Hsinchu Science Park
Hsinchu Science Park Bureau, National Science and Technology Council

- Responsible for developing, operating, and managing the park
- One-stop service for attracting business and investment

- Easier attainment of policy support and inter-departmental cooperation
- Comprehensive land use planning
- Establishment of targeted regulations to facilitate the park's development e.g., tax break, subsidy, talent policy

- Large initial investment straining Government financial resources
- Tendency to expand in scale rather than improving land use efficiency
- Less market-oriented

Sources: Executive Yuan, Science and Technology Council, Hsinchu Science Park, Chinese Institute of Engineers, and Our Hong Kong Foundation

The clear division of responsibilities between Lingang Group and the government allows the former to maximise its strengths

Lead development entity

Business & investment attraction

Land allocation & development

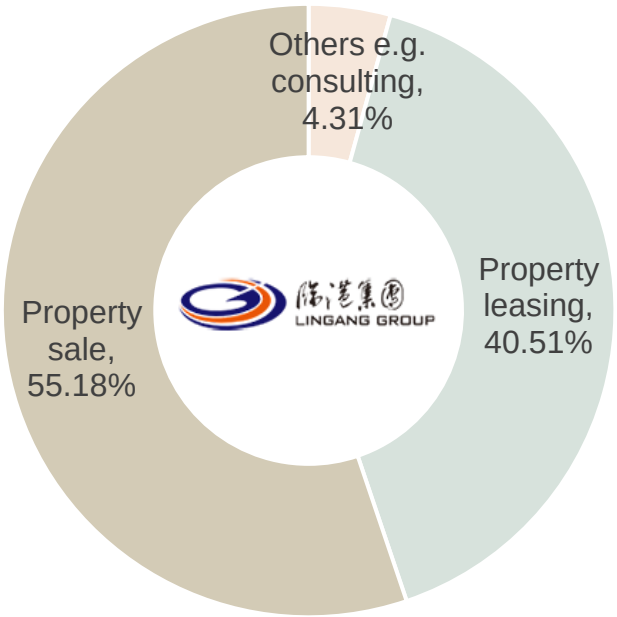
Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: Lingang Group, Shanghai

Background

Establishment	1984
Ownership	Listed state-own enterprise (600848.SH)
Revenue (2022)	RMB5.12 billion (HK$5.77 billion)
Scope of business	Park investment, development, and operations; Property management, leasing, and consulting
Business highlights	Operates 18 parks in China, hosting 15,000 enterprises in integrated circuits, advanced manufacturing, life sciences, new materials, etc.

Revenue breakdown in 2022



Source: Lingang Group

The clear division of responsibilities between Lingang Group and the government allows the former to maximise its strengths

Lead development entity

Business & investment attraction

Land allocation & development

Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: Lingang Group, Shanghai

Division of responsibilities

Government

- Site identification and planning
- Provision of developable land
- Grant development rights
- Industrial policy and tax incentives

Developer / Operator

- Planning, development and management
- Provision of infrastructure and facilities
- Profit sharing with the government
- Attracting business and investments

- Profit-oriented and market-driven, hence responsive to market demands
- Reduce the burden on government resources and cashflow
- Focus on commercialisation of scientific and research findings

- Significant operation risks due to high initial capital investment required
- Primary goal is profitability, which may compromise the promotion of certain industries and/or basic research

Sources: Lingang Group, Our Hong Kong Foundation

Zhangjiang demonstrates how a corporate entity could drive cluster development by making strategic investments in tenants

Lead development entity

Business & investment attraction

Land allocation & development

Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: Zhangjiang Group, Shanghai

Background

Establishment	1992
Ownership	Listed state-own enterprise (600895.SH)
Revenue (2022)	RMB19.1 billion (HK$20.9 billion)
Scope of business	Park development and strategic investments in hi-tech tenants
Business highlights	One of the most vibrant hi-tech clusters in China; tenants generate over RMB 1 trillion revenue annually; attracting over RMB 500 billion of venture capital and private equity investments in total

Hi-tech clusters and notable tenants

Life and Medical Sciences

华大基因 BGI

复旦大学附属肿瘤医院 Fudan University Shanghai Cancer Center

SIEMENS Healthineers

FOSUN 复星

Dräger

Microelectronics

AMD

SMIC

紫光展锐 UNIGROUP SPREADTRUM & RDA

NVIDIA

Qualcomm

Source: Zhangjiang Group

Zhangjiang demonstrates how a corporate entity could drive cluster development by making strategic investments in tenants

Lead development entity

Business & investment attraction

Land allocation & development

Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: Zhangjiang Group, Shanghai

Zhangjiang's investment strategies

Direct Investment

- Invest in top-performing tenants at pre-IPO stage, or those with IPO prospect

SMIC · 展讯通信 SPREADTRUM · MicroPort 微创医疗

Portfolio Investment

- Invest as Limited Partner through other private equity and venture capital

marsoft · 鑫华半导体 Xinhua Semiconductor · InventisBio 益方生物

- More proactive and risk-tolerant in investing due corporate nature
- Creates a vibrant innovation and investment atmosphere

- Investment decisions often restrained by profitability concerns
- Amount of investment fluctuates according to changing market conditions

Source: Zhangjiang Group, Our Hong Kong Foundation

The formation of the Sino-Singaporean joint venture enabled a win-win partnership that combined the best of both countries

Lead development entity

Business & investment attraction

Land allocation & development

Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: China-Singapore Suzhou Development Group, Jiangsu

Background

Establishment	1994
Ownership	Listed state-own enterprise; A joint venture between China and Singapore (601512.SH)
Revenue (2021)	RMB3.92 billion (HK$5.28 billion)
Scope of business	Park development, public utilities and investment in strategic tenants
Business highlights	Co-investment of Chinese and Singaporean Governments; Operates 9 parks in China and Myanmar, covering over 29,056 hectares of land in total

Source: China-Singapore Development Group

The formation of the Sino-Singaporean joint venture enabled a win-win partnership that combined the best of both countries

Lead development entity

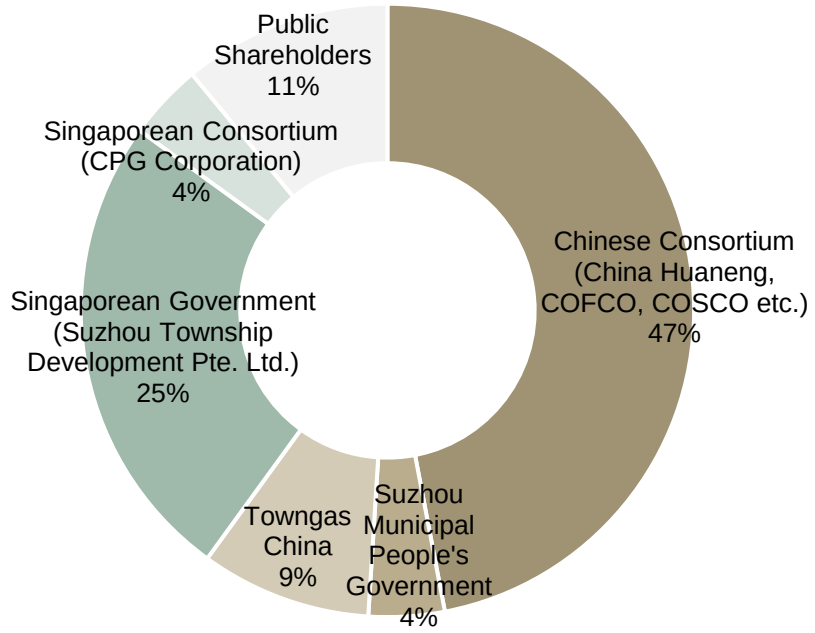
Business & investment attraction

Land allocation & development

Government entity	**Corporate entity**	Research institution	Public-private partnership (PPP)

Case study: China-Singapore Suzhou Development Group, Jiangsu

Shareholder breakdown in 2021



- Marriage of Singaporean expertise in park development and Chinese industrial base
- Joint venture setting tied the interest of the two governments together

- Significant operation risks due to high initial capital investment required
- Inter-government disagreements could result in significant delay of project

Source: China-Singapore Development Group, Our Hong Kong Foundation

Research institutions bring an abundance of intellectual capital and talent pool to build a sustainable ecosystem

Lead development entity

Business & investment attraction

Land allocation & development

Government entity	Corporate entity	**Research institution**	Public-private partnership (PPP)

Case study: University of Cambridge, UK

Background

Establishment	1970
Area (ha)	61.5
No. of enterprises	130
Working population	7,250
Pillar industries	Industrial technology, computers & peripherals, telecommunications, life sciences
Notable occupants	Global headquarters: AstraZeneca Research centres: Bayer, Huawei, Microsoft, Toshiba

Source: Cambridge Science Park

Research institutions bring an abundance of intellectual capital and talent pool to build a sustainable ecosystem

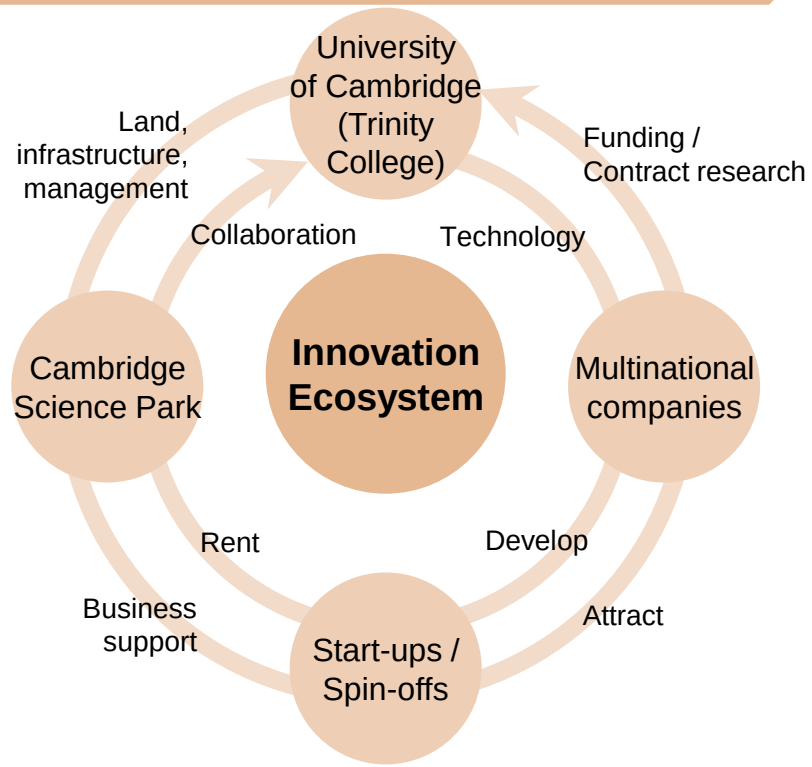
Lead development entity

Business & investment attraction

Land allocation & development

Government entity | Corporate entity | **Research institution** | Public-private partnership (PPP)

Case study: University of Cambridge, UK



- Large intellectual capital and talent pool provided by the research institution
- Foster collaboration between the research institution and the industry

- Limited financial resources and land for further expansion in scale
- Shortage of prototyping capabilities for product development after completion of the research process

Source: Cambridge Science Park, Our Hong Kong Foundation

The Mission Bay project shows how public-private partnerships can make a project both politically and economically feasible

Lead development entity

Business & investment attraction

Land allocation & development

Government entity | Corporate entity | Research institution | **Public-private partnership (PPP)**

Case study: Mission Bay Development Group, USA

Background

Establishment	1998
Area (ha)	122.6
PPP joint venture partners	Private: Catellus Development Corporation Public: San Francisco Redevelopment Agency
Former use	Industrial (railyard)
Pillar industries	Life sciences, transportation
Notable occupants	University of California, San Francisco, Uber (global headquarters), Dropbox, Lyft, Bayer, Golden State Warriors

Sources: University of California, San Francisco, San Francisco Business Times

The Mission Bay project shows how public-private partnerships can make a project both politically and economically feasible

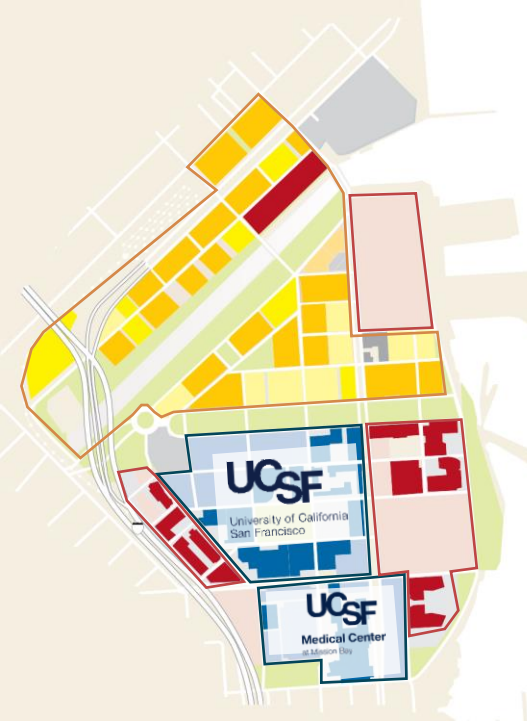
Lead development entity

Business & investment attraction

Land allocation & development

Government entity | Corporate entity | Research institution | **Public-private partnership (PPP)**

Case study: Mission Bay Development Group, USA



Residential

Market rate:	4,550 units (71%)
Affordable:	1,850 units (29%)
Total:	**6,400 units**

Commercial

Office GFA:	3,143,000 sq. ft.
Retail GFA:	336,900 sq. ft.
Total:	**~3,480,000 sq. ft.**

University campus

- Land donated by Catellus and San Francisco gov't
- Catalyst for urban regeneration and anchor institution for development

Public parks & open space

- 2,134,400 sq. ft.

- Bring together market responsiveness and sensitivity to community buy-in
- Drive private investment to generate tax increment to finance public infrastructure and affordable housing

- Drive for profitability may cause deviation from original policy intention
- Clear delineation of roles and responsibilities required

Sources: San Francisco Office of Community Investment and Infrastructure, Mission Bay Development Group, University of California, San Francisco, San Francisco Business Times, and Our Hong Kong Foundation

Referencing overseas and Mainland examples, there are various development models for answering the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

Singapore's model of a lead investment promotion agency enhances coordination between various government departments

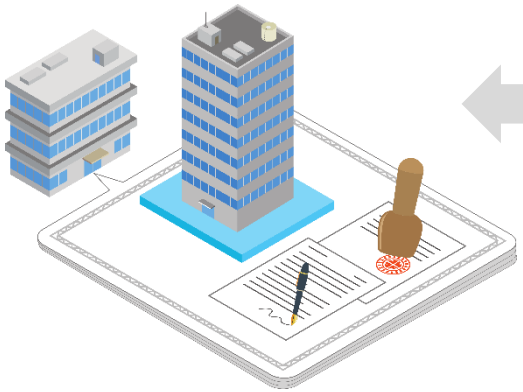
Lead development entity

Business & investment attraction

Land allocation & development

Enabling government structure and agencies

Forming mutually beneficial partnerships



Companies looking to invest in Singapore

EDB SINGAPORE

Economic Development Board (EDB)

Coordinate other departments; Attract and invest in strategic companies

NRF SINGAPORE

National Research Foundation (NRF)

Research grants for adopting technologies

INLAND REVENUE AUTHORITY OF SINGAPORE

Inland Revenue Authority (IRAS)

Provide tax incentives

jtc

Jurong Town Corporation (JTC)

Land, factory and office allocation

Agency for Science, Technology and Research SINGAPORE

Agency for Science, Technology and Research (A*STAR)

Research collaboration and commercialisation

Sources: Singapore Ministry of Trade and Industry, Singapore Economic Development Board

Shenzhen has adopted a work system centring on the person-in-charge to grow each of its strategic emerging industries

Lead development entity

Business & investment attraction

Land allocation & development

Enabling government structure and agencies


深圳市人民政府文件

深府〔2022〕1号

深圳市人民政府关于发展壮大战略性新兴产业集群和培育发展未来产业的意见

各区人民政府，市政府直属各单位：

为深入贯彻习近平总书记关于制造强国重要论述，全面落实省第十三次党代会和市第七次党代会决策部署，衔接落实国家、省关于培育发展战略性新兴产业中长期规划，发展壮大战略性新兴产业集群，积极培育发展未来产业，现结合我市实际，提出以下意见。

一、发展基础

近年来，深圳深入实施创新驱动发展战略，大力推进制造强市建设，持续推进产业转型升级，推动战略性新兴产业发展取得

— 1 —

20 ***Strategic Emerging Industries***

\+

8 ***Future Industries***

Shenzhen Municipal People's Government

"On the development and growth of strategic emerging industry clusters and cultivate the development of future industries" (2022)

Forming mutually beneficial partnerships

Person-in-charge of each industrial chain

Post holder	▪ Principal municipal official
Roles and Responsibilities	▪ Attract business investments and strengthening the ecosystem for the whole industrial chain ▪ Bring in the expertise of academicians and consulting firms through the procurement of service contracts
"Six Ones" Work System	▪ One leading and "hidden champion" enterprise list ▪ One business and investment attraction list ▪ One key investment project list ▪ One technological innovation system ▪ One policy toolkit ▪ One supporting strategic consulting institution

Source: Shenzhen Municipal People's Government

An investment agreement should form a mutually beneficial partnership for both businesses and government

Lead development entity

Business & investment attraction

Land allocation & development

Enabling government structure and agencies

Forming mutually beneficial partnerships

Government policy support

- Government co-investment
- Cash and tax incentives
- Concessionary rent and land prices
- Low-cost loans
- Supply of qualified talent

Contribution to economy

- Complement existing ecosystem
- GDP and tax contribution
- Fixed asset investment
- R&D expenditure
- Number of jobs created

Source: Our Hong Kong Foundation

Shanghai provided discounted land and loans, in exchange for tax, CapEx, and localised procurement commitments from Tesla

Lead development entity

Business & investment attraction

Land allocation & development

Enabling government structure and agencies

Forming mutually beneficial partnerships

Case study: Tesla Gigafactory, Shanghai

Opened in	2019
Business activities	Electric car manufacturing

Government policy support

- Concessionary land prices at a 90% discount
- Concessionary tax rate of 15% instead of the statutory 25%
- Direct cash incentive of RMB175 million
- RMB18.5 billion loan at a 3.9% interest rate
- Permission to setup a wholly foreign-owned subsidiary

Contribution to economy

- ≥RMB2.23 billion annual tax contribution starting from 2023*
- RMB14 billion capital expenditure from 2018 to 2023*
- 100% procurement localisation in Shanghai
- Employing 20,000 local workers

*Failing which, the land will be returned to the Shanghai government

Sources: Tesla, Reuters, South China Morning Post, and China Briefing

To attract Dyson, Singapore gave generous tax reductions on IP use, R&D, and international headquarters relocation

Lead development entity

Business & investment attraction

Land allocation & development

Enabling government structure and agencies

Forming mutually beneficial partnerships

Case study: Dyson Global Headquarters, Singapore

Opened in	2022
Business activities	Product R&D, advanced manufacturing

Government policy support

- International Headquarters Award: concessionary tax rate of 10% for up to 5 years
- Tax deduction of 200% on commercial use of IP
- 250% R&D expenses tax deduction for expenses incurred in Singapore

Contribution to economy

- An additional investment of S$1.5 billion in its Singapore operations
- R&D and future IP registration to be located in Singapore
- Expansion of R&D team by more than 250 engineers and scientists

Sources: Prime Minister's Office Singapore, Dyson, The Guardian, and Financial Times

Both state and county governments offered Amazon performance-based cash incentives tied to job creation and office occupancy

Lead development entity

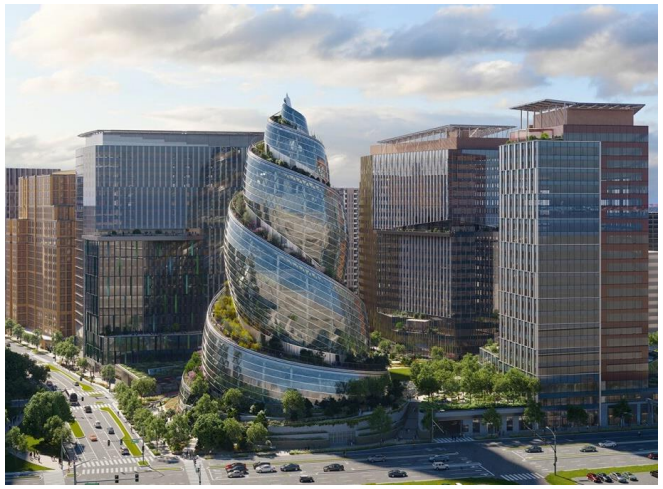
Business & investment attraction

Land allocation & development

Enabling government structure and agencies

Forming mutually beneficial partnerships

Case study: Amazon Headquarters 2, Virginia



Construction began	2020
Business activities	Headquarter operations

Government policy support

State government (Virginia)

- US$550 million grant for the first 25,000 jobs, and a further US$200 million grant for the next 12,850 jobs
- US$295 million investment in road and rail infrastructure

County government (Arlington)

- An annual performance cash grant of US$23 million across 15 years, capped at 15% increase of Transient Occupancy Tax
- US$28 million investment in community amenities

Contribution to economy

- Creation of new jobs with an annual wage of ≥US$150,000
- Occupy 64,000 sq. ft. of office space by 2020, rising to 6 million sq. ft. in 2025

Sources: Arlington County, The Washington Post, Washington Business Journal, and AP News

Referencing overseas and Mainland examples, there are various development models for answering the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

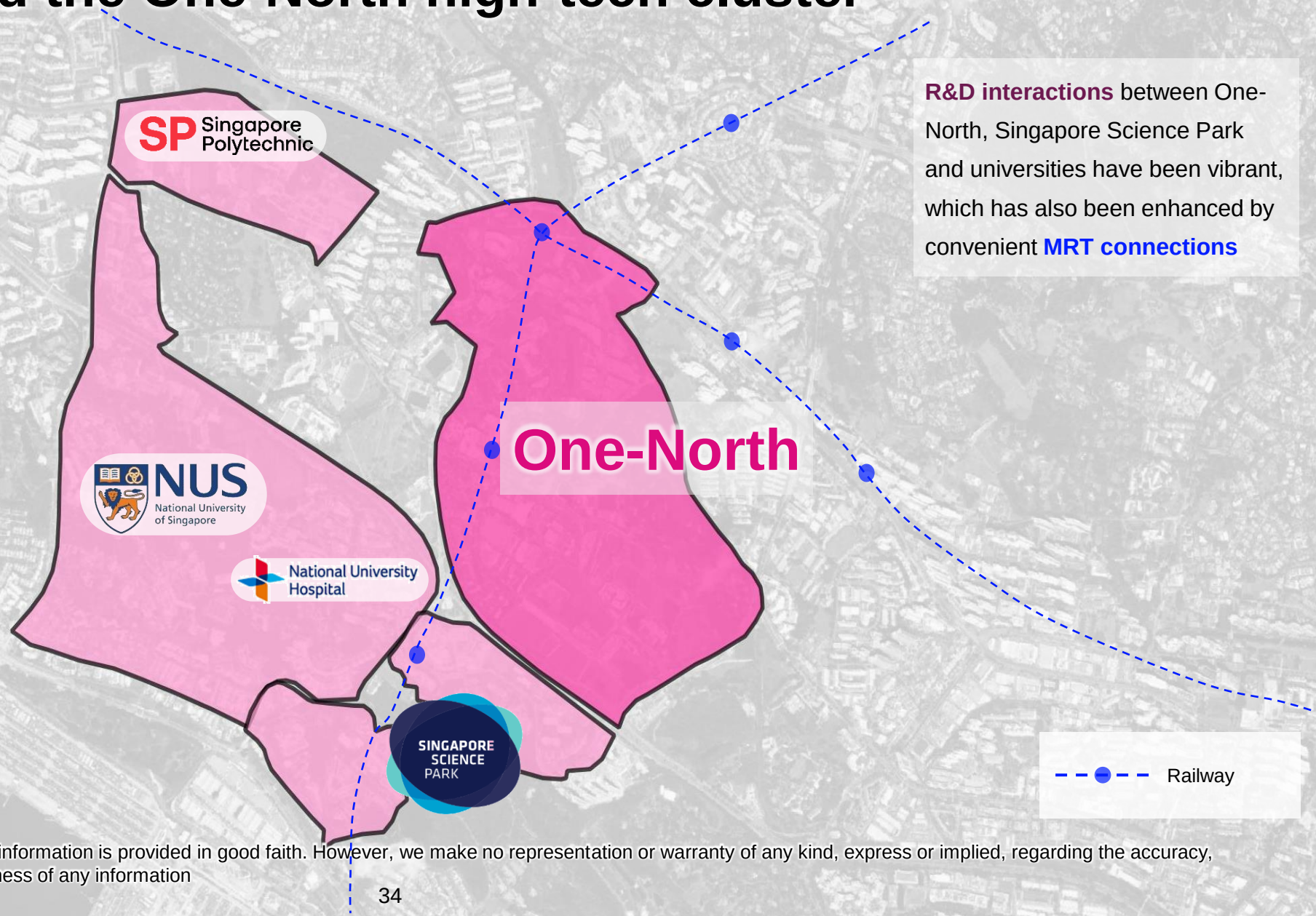
Source: Our Hong Kong Foundation

Singapore has established a highly successful R&D ecosystem that centres around the One-North high-tech cluster

Lead development entity

Business & investment attraction

Land allocation & development



R&D interactions between One-North, Singapore Science Park and universities have been vibrant, which has also been enhanced by convenient **MRT connections**

Note: The map is for general information purposes only. All information is provided in good faith. However, we make no representation or warranty of any kind, express or implied, regarding the accuracy, adequacy, validity, reliability, availability, or completeness of any information

Source: Centre for Liveable Cities Singapore

The One-North high-tech cluster demonstrates a variety of options and combinations in land allocation and development

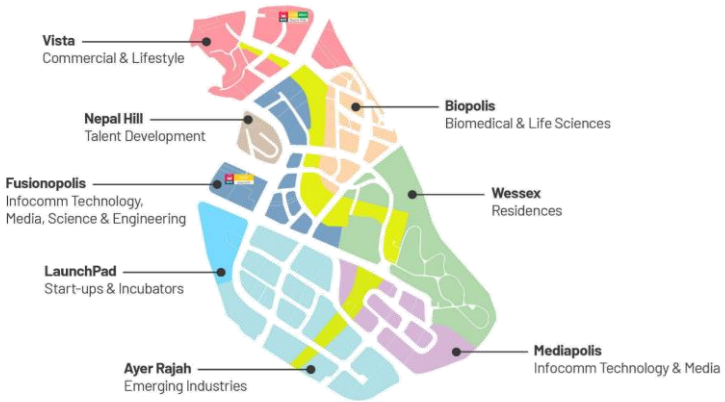
Lead development entity

Business & investment attraction

Land allocation & development

Land allocation			Land development		
Self	Direct	Tender	By development entity	By 3rd party developer	By end-user

Case study: One-North, Singapore



Background

Establishment	2001	**Working population**	~50,000
Area (ha)	~200	**Notable tenants**	A*STAR, GSK, Mediacorp, Autodesk, P&G, Equinix, INSEAD Asia Campus, Lucasfilm, Google, Grab, Razer, Shopee, Wilmar
No. of enterprises	over 400		

Sources: Centre for Liveable Cities Singapore, Jurong Town Corporation

To jumpstart the Biopolis life sciences cluster, the government took the initial lead by undertaking self-development via JTC

Lead development entity

Business & investment attraction

Land allocation & development

Land allocation			Land development		
Self	Direct	Tender	**By development entity**	By 3rd party developer	By end-user

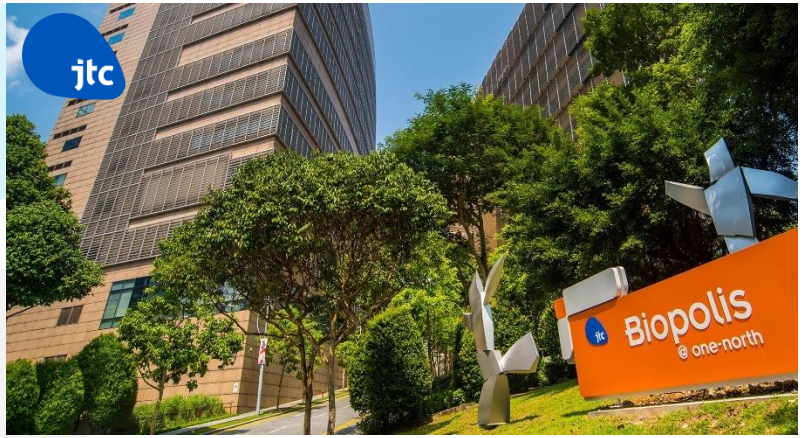
Case study: One-North, Singapore

Anchoring government research agencies

Agency for Science, Technology and Research
SINGAPORE

- 5 out of the 7 buildings in Phase 1 are occupied by A*STAR's public research institutes

NOVARTIS, MSD, Roche, AMGEN, abbvie, Pfizer, gsk, タケダ, AstraZeneca



Phase	Year of completion	GFA (sq. ft.)	Buildings	Developer
Phase 1	**2004**	**~2,000,000**	**Nanos, Genome, Helios, Chromos, Proteos, Centros, Matrix**	**JTC Corporation**
Phase 2	2006	~400,000	Neuros, Immunos	ascendas Reit
Phase 3	2011	~450,000	Synapse, Aminos	crescendas
Phase 4	2014	~340,000	P&G Singapore Innovation Centre	P&G
Phase 5	2014	~420,000	Nucleos	ascendas Reit
Phase 6	2023	~440,000	Elementum	Hoo Bee Land

Sources: Centre for Liveable Cities Singapore, Jurong Town Corporation, ascendas Reit, crescendas, Hoo Bee Land, and P&G

Later phases of Biopolis were tendered to third-party developers to further expand the ecosystem and leverage market resources

Lead development entity

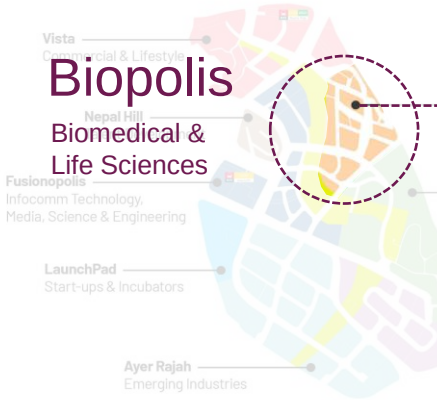
Business & investment attraction

Land allocation & development

Land allocation		
Self	Direct	**Tender**

Land development		
By development entity	**By 3rd party developer**	By end-user

Case study: One-North, Singapore



Neuros, Immunos ascendas Reit

Synapse, Aminos crescendas

Nucleos ascendas Reit

Elementum Ho Bee Land

Phase	Year of completion	GFA (sq. ft.)	Buildings	Developer
Phase 1	2004	~2,000,000	Nanos, Genome, Helios, Chromos, Proteos, Centros, Matrix	JTC Corporation
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Phase 6	**2023**	**~440,000**	**Elementum**	**Hoo Bee Land**

Sources: Centre for Liveable Cities Singapore, Jurong Town Corporation, ascendas Reit, crescendas, Hoo Bee Land, and P&G

Individual sites in Biopolis were directly allocated to strategic leading enterprises for building their own research facilities

Lead development entity

Business & investment attraction

Land allocation & development

Land allocation			Land development		
Self	**Direct**	Tender	By development entity	By 3rd party developer	**By end-user**

Case study: One-North, Singapore

P&G

Largest investment in a private research facility in Singapore at S$250 million

P&G's research department grew from 50 to over 500 engineers, researchers and support staff

Phase	Year of completion	GFA (sq. ft.)	Buildings	Developer
Phase 1	2004	~2,000,000	Nanos, Genome, Helios, Chromos, Proteos, Centros, Matrix	JTC Corporation
Phase 2	2006	~400,000	Neuros, Immunos	ascendas Reit
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Sources: Centre for Liveable Cities Singapore, Jurong Town Corporation, ascendas Reit, crescendas, Hoo Bee Land, and P&G

For leading enterprises pursuing an asset-light model, third-party developers can also be drawn in for land development

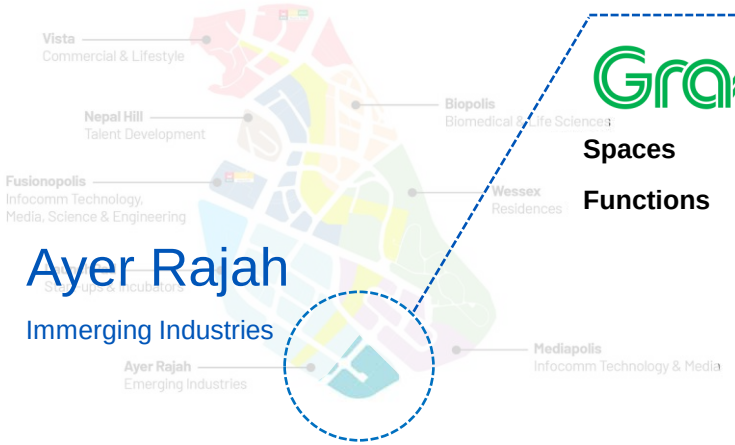
Lead development entity

Business & investment attraction

Land allocation & development

Land allocation			Land development		
Self	**Direct**	Tender	By development entity	**By 3rd party developer**	By end-user

Case study: One-North, Singapore



Grab Headquarters

Spaces	~450,000 sq. ft
Functions	One of two headquarters in the region, housing up to 3,000 employees and is the largest R&D centre of the company

Grab's asset-light strategy

jtc — *Development entity of One-North*

→ Direct allocation of site →

Grab — *Targeted end-user*

→ Sale and leaseback arrangement →

ascendas Reit — *3rd party developer*

→ Guaranteed rental level →

Grab — *Targeted end-user*

Sources: Jurong Town Corporation, Grab, and ascendas Reit

OUR HONG KONG FOUNDATION
團結香港基金

公共政策研究院
PUBLIC POLICY INSTITUTE

Part Three:
Policy Recommendation Directions and Measures

To ensure the success of San Tin Technopole, there are various measures that can be adopted for the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

Historically, the Government has been the lead development entity of new towns with various forms of private participation

Lead development entity

Business & investment attraction

Land allocation & development

Shatin

Conventional New Town Approach

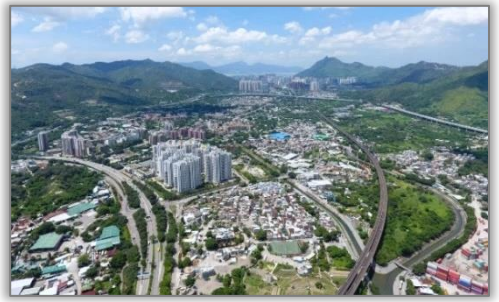
The Government take up the major land assembly, and…

engage private sector participation

- *to carry out reclamation and site formation works*
- *70% of the reclaimed land was reverted to the Government for public housing and infrastructure development, and the remaining 30% was used for private housing development*

Hung Shui Kiu / Ha Tsuen

Kwu Tung North / Fanling North



Enhanced Conventional New Town Approach

The Government resumes some private land, and also…

provides flexible options for private landowners

- *to allow private landowners to apply for lease modification (including in-situ land exchange) to develop their land* ***planned for private residential or mixed development***
- *site area should be no less than 0.4 ha*

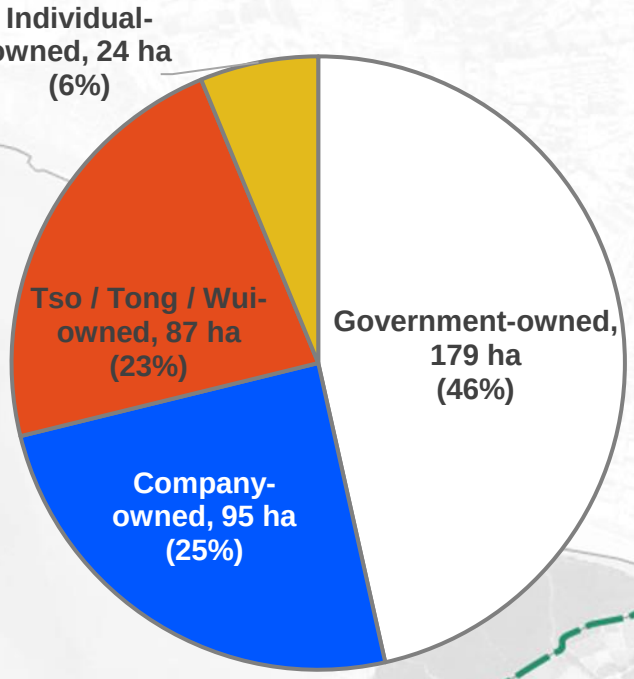
Sources: Legislative Council, Our Hong Kong Foundation

Given the diverse land ownership distribution in Phase 1 of the San Tin Technopole, there is also potential for private participation

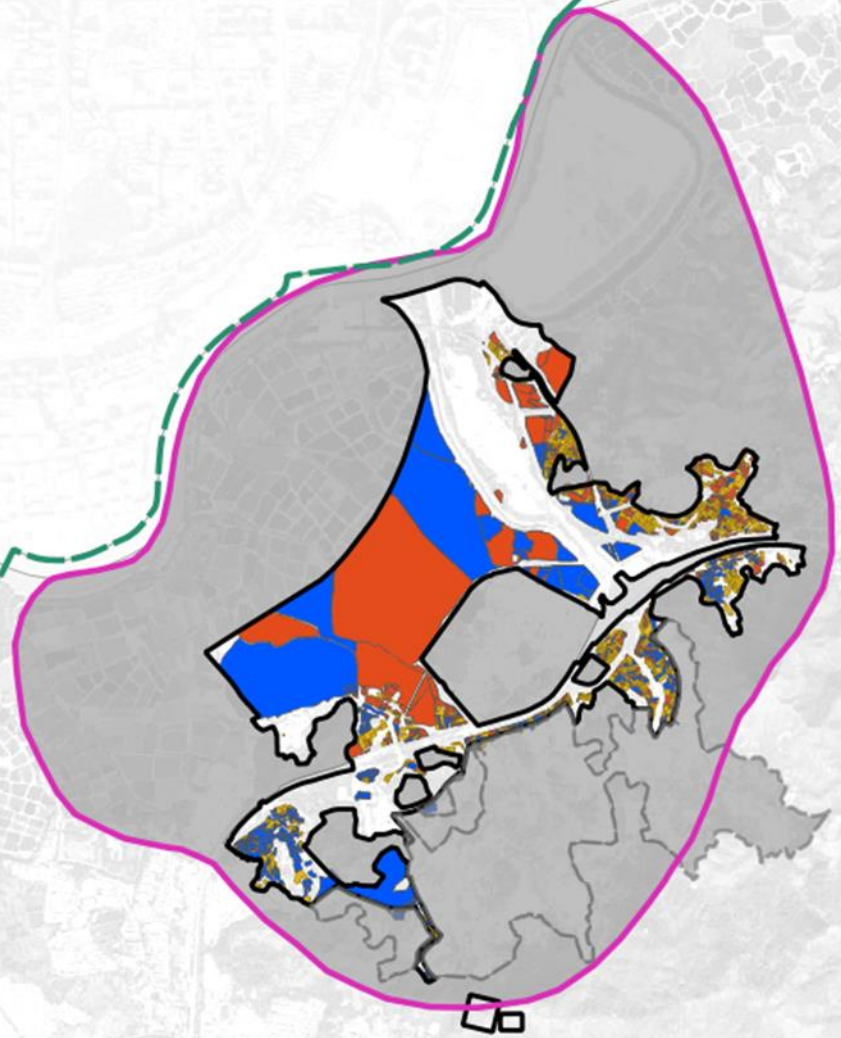
Lead development entity

Business & investment attraction

Land allocation & development



Total land area: 385 ha



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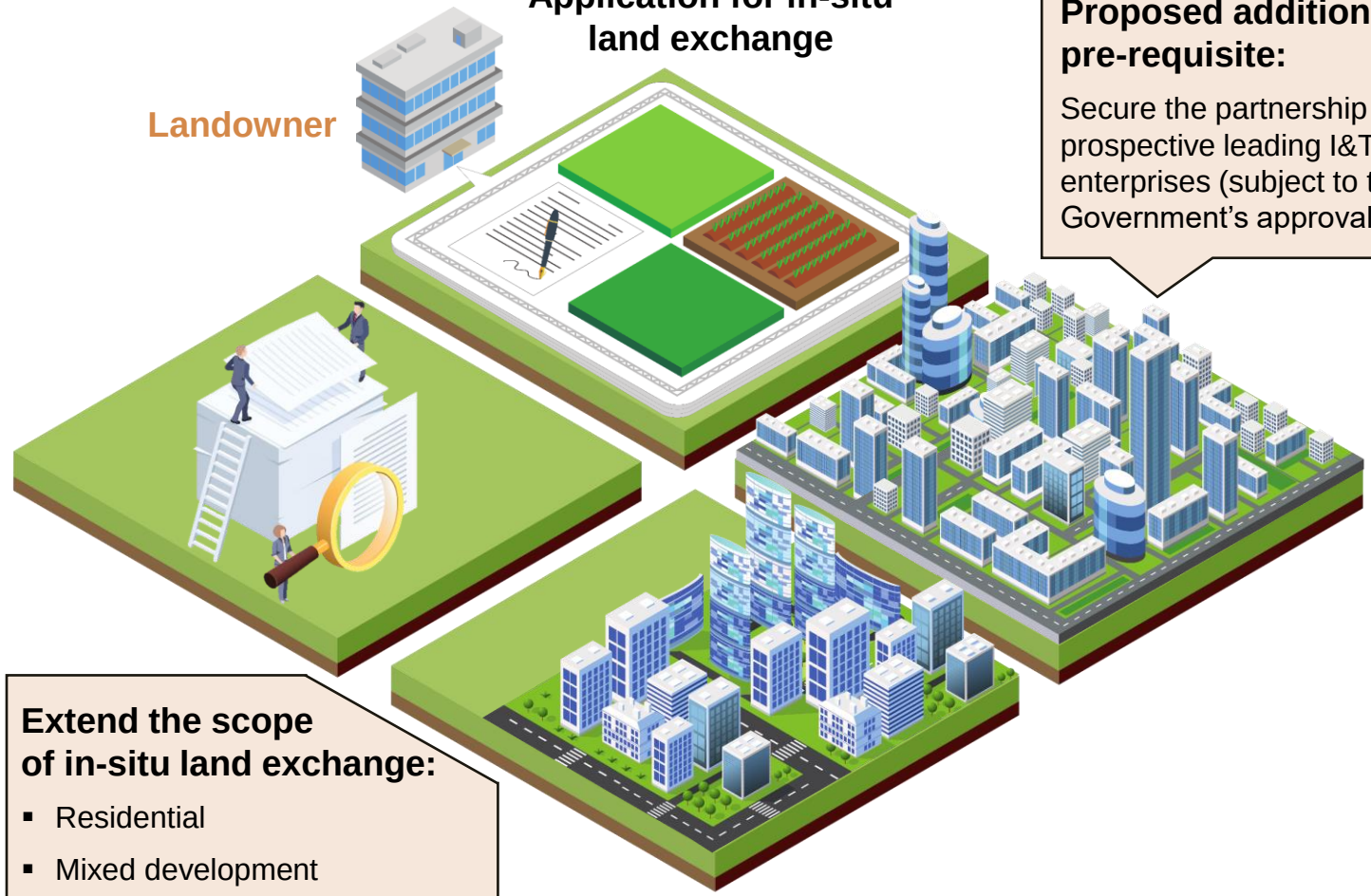
Sources: Land Registry, Our Hong Kong Foundation

The Enhanced Conventional New Town Approach can be extended to I&T use with a precondition to secure leading I&T enterprises

Lead development entity

Business & investment attraction

Land allocation & development



Proposed additional pre-requisite:

Secure the partnership of prospective leading I&T enterprises (subject to the Government's approval)

Extend the scope of in-situ land exchange:

- Residential
- Mixed development
- **I&T use**

Key Features	
	Private land ownership (in-situ land exchange)
	Incentives will be provided to landowners in the form of concessionary land premium
Evaluation	
	Leverage on market resources and reduce the Government's cash flow pressures
	Create uncertainty on the development programme since in-situ land exchange is to be initiated by landowners

Source: Our Hong Kong Foundation

Further options for private participation can include building talent accommodation proportionate to the scale of I&T operations

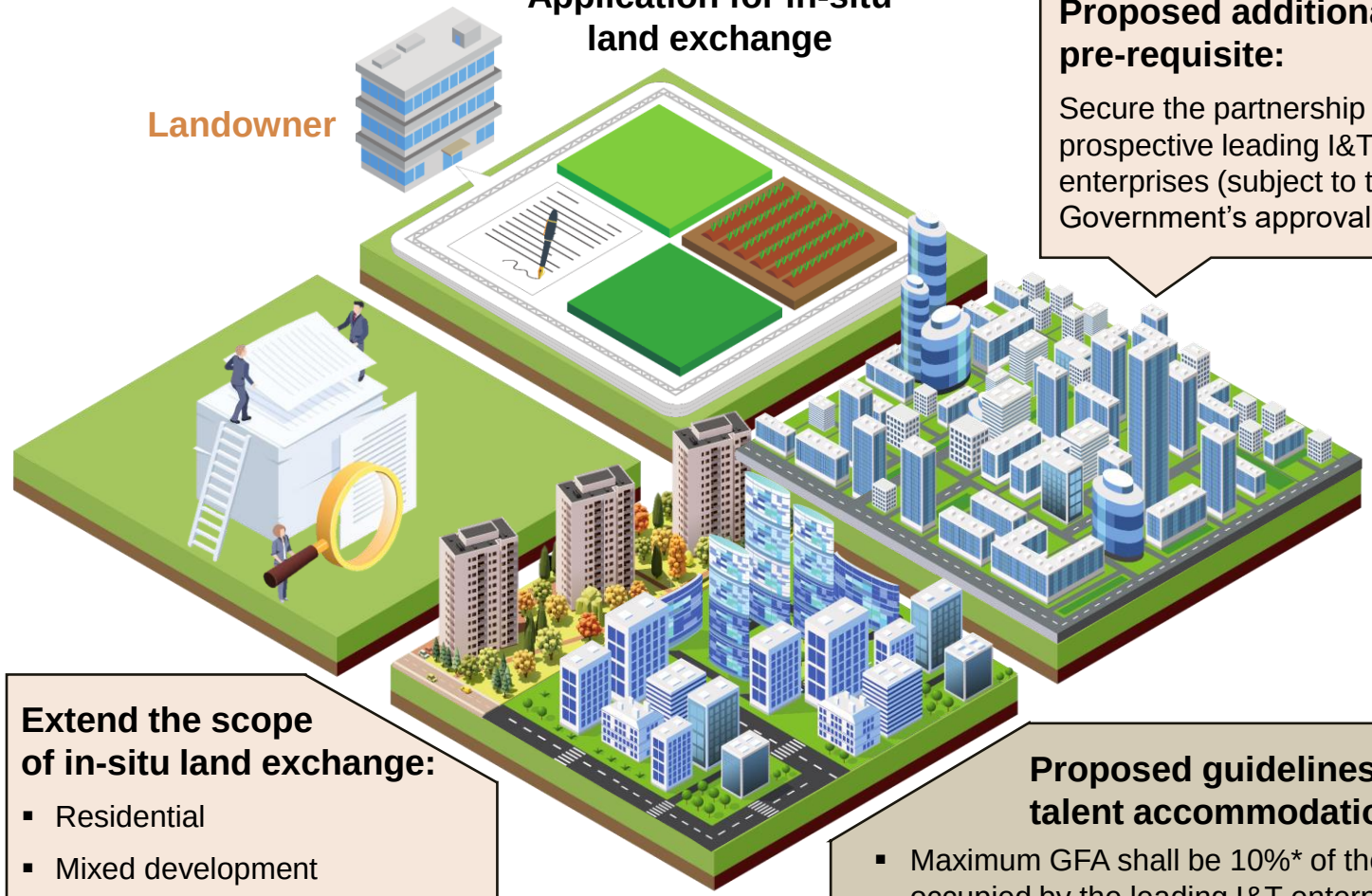
Lead development entity

Business & investment attraction

Land allocation & development

Application for in-situ land exchange

Landowner



Proposed additional pre-requisite:

Secure the partnership of prospective leading I&T enterprises (subject to the Government's approval)

Extend the scope of in-situ land exchange:

- Residential
- Mixed development
- **I&T use**

Proposed guidelines for talent accommodation:

- Maximum GFA shall be 10%* of the GFA occupied by the leading I&T enterprises on the respective sites
- Talent accommodation units shall be for rental only and not for sale

Key Features	
	Private land ownership (in-situ land exchange)
	Income stream from talent accommodation is tied to both the scale and long-term success of the I&T ecosystem
Evaluation	
	Provide greater incentives for private participation to secure prospective leading I&T enterprises
	Create uncertainty on the development programme since in-situ land exchange is to be initiated by landowners

Note: Based on the planning assumption that 10% of the employees in the I&T sites will be residing in the talent accommodation within San Tin I&T Park

Source: Our Hong Kong Foundation

As an additional compensation option for land resumption, private participation can also take the form of a continued co-investment

Lead development entity

Business & investment attraction

Land allocation & development

Government

Land resumption notice

Cash compensation

and / or

Bonds

(Fixed rate at initial stage e.g., first 5 years, the higher of the two thereafter)

Calculated based on the year-on-year rates of change of a basket of factors:

- Industry value added
- Profits tax income
- Fixed asset investment
- Total business expenditure
- Other relevant factors

Floating rate

Fixed rate

Key Features	
	Public land ownership (land resumption)
	As compensation for land resumption, landowners can choose to receive a mix of cash and San Tin Technopole Development Bonds
Evaluation	
	Reduce the Government's cash flow pressures and serves as a pilot model for other development projects
	The timing for bond issuance has become less favourable as the cost of capital rose after the recent interest rate hikes

Source: Our Hong Kong Foundation

To ensure the success of San Tin Technopole, there are various measures that can be adopted for the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

While high-level coordination for strategic planning is in place, coordination at the implementation level is still lacking

Lead development entity

Business & investment attraction

Land allocation & development

Strategic Level

Northern Metropolis

- The **Steering Committee on Northern Metropolis** provides **high-level policy steer** and supervision for the planning vision
- Chaired by the Chief Executive; members include secretaries of bureaux

Implementation level

San Tin Technopole

- The **Northern Metropolis Co-ordination Office** is primarily **hardware- and land development-driven**
- No **working-level** committee/ task group focused on **building a clear pathway** for enterprises to expand in San Tin Technopole

Sources: 2022 Policy Address, Legislative Council, and Our Hong Kong Foundation

It is proposed to form a new business-centric and one-stop shop working group for a fast-paced and coordinated response

Lead development entity

Business & investment attraction

Land allocation & development

Steering Committee on Northern Metropolis

Northern Metropolis Co-ordination Office

New working group on San Tin Technopole

Secretariat

Innovation, Technology and Industry Bureau

Lead

Financial Secretary / Deputy Financial Secretary

Investment attraction for strategic companies

Commerce and Economic Development Bureau

InvestHK OASES

Government investment and tax

Financial Services and Treasury Bureau

Hong Kong Investment Corporation Limited (Co-Investment Fund)

Education and Visa for talents and their families

Education Bureau

Security Bureau

Land allocation, housing and transport

Housing Bureau

Development Bureau

Transport and Logistics Bureau

R&D collaboration and I&T ecosystem

ASTRI HKSTP Cyberport 數碼港 hkpc 生產力局

Talent attraction strategy

Labour and Welfare Bureau

Business opportunities

Source: Our Hong Kong Foundation

Relevant KPIs can be set to ensure the commitment of all bureaux involved and monitor the effectiveness of the working group

Lead development entity

Business & investment attraction

Land allocation & development

Investment commitments*

Fixed asset investment

refers to a company's incremental capital expenditure in facilities, equipment, and machinery

Total business expenditure

refers to a company's incremental annual operating expenditure in Hong Kong (excluding depreciation)

Contribution to economy

Value added

measures the direct contribution a company makes to Hong Kong's Gross Domestic Product, excluding multiplier effects

Jobs created

is defined as the sum of all incremental jobs created when the investments are fully implemented

Note: Investment commitments are investments to be realised over a 3- to 5-year horizon when the projects are fully implemented; for more granularity, breakdown by industry and region should be disclosed

Source: Our Hong Kong Foundation

Effective investment attraction entails going the extra mile to offer tailor-made incentives and a compelling business proposition

Lead development entity

Business & investment attraction

Land allocation & development

General policy support

- Direct government investment
- Concessionary land prices and rent for commercial space
- Funding and/or loans from various government schemes
- Cash and tax incentives
- Relaxation on talent visa

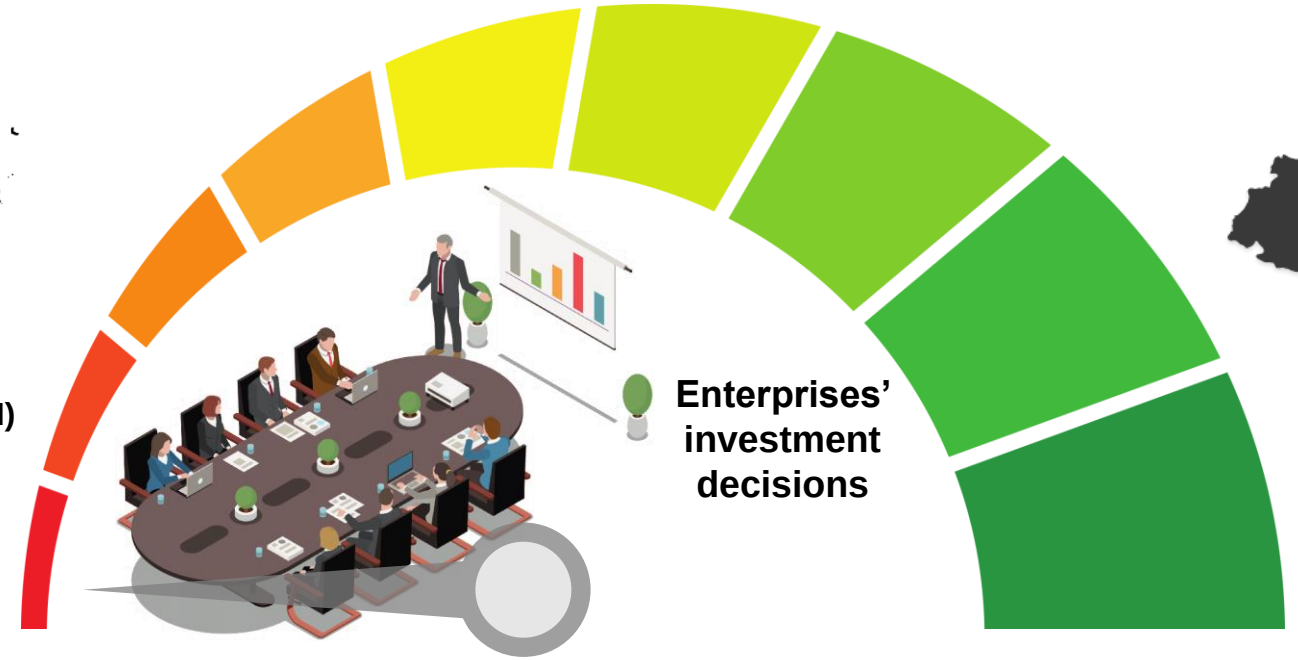
Tailor-made industry-specific incentives

- *Biotechnology*: Purpose-built wet lab, biotech prototyping and animal testing facilities that meet the standards and requirements of major international drug administrations
- *Artificial Intelligence*: Government support for constructing and operating AI supercomputing centre that provide much-needed computing power
- *Startup*: Streamlined government funding application procedures; advisory, feedback and follow-up

Compelling business proposition

- Serve as the springboard for enterprises entering the Greater Bay Area, through harmonising systems and regimes such as:
  - Legal framework enabling convenient cross-border data flow between Hong Kong and the Greater Bay Area
  - Expedited authorisation process for the launch of products and services in Hong Kong and the Greater Bay Area

Hong Kong
(Population: 7.33M)



Enterprises' investment decisions

Guangdong-Hong Kong-Macao Greater Bay Area
(Population: 86.62M)

Sources: Hong Kong Trade Development Council, Our Hong Kong Foundation

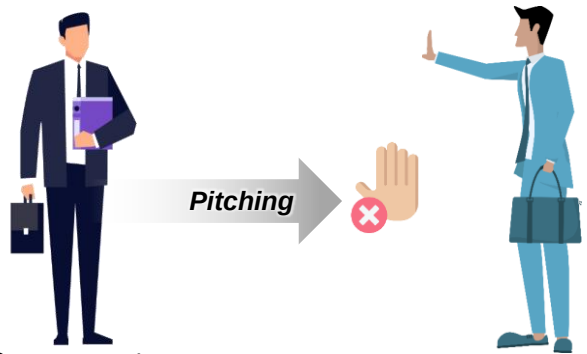
A more aggressive and omnichannel approach is to leverage key decision influencers for all-round investment attraction

Lead development entity

Business & investment attraction

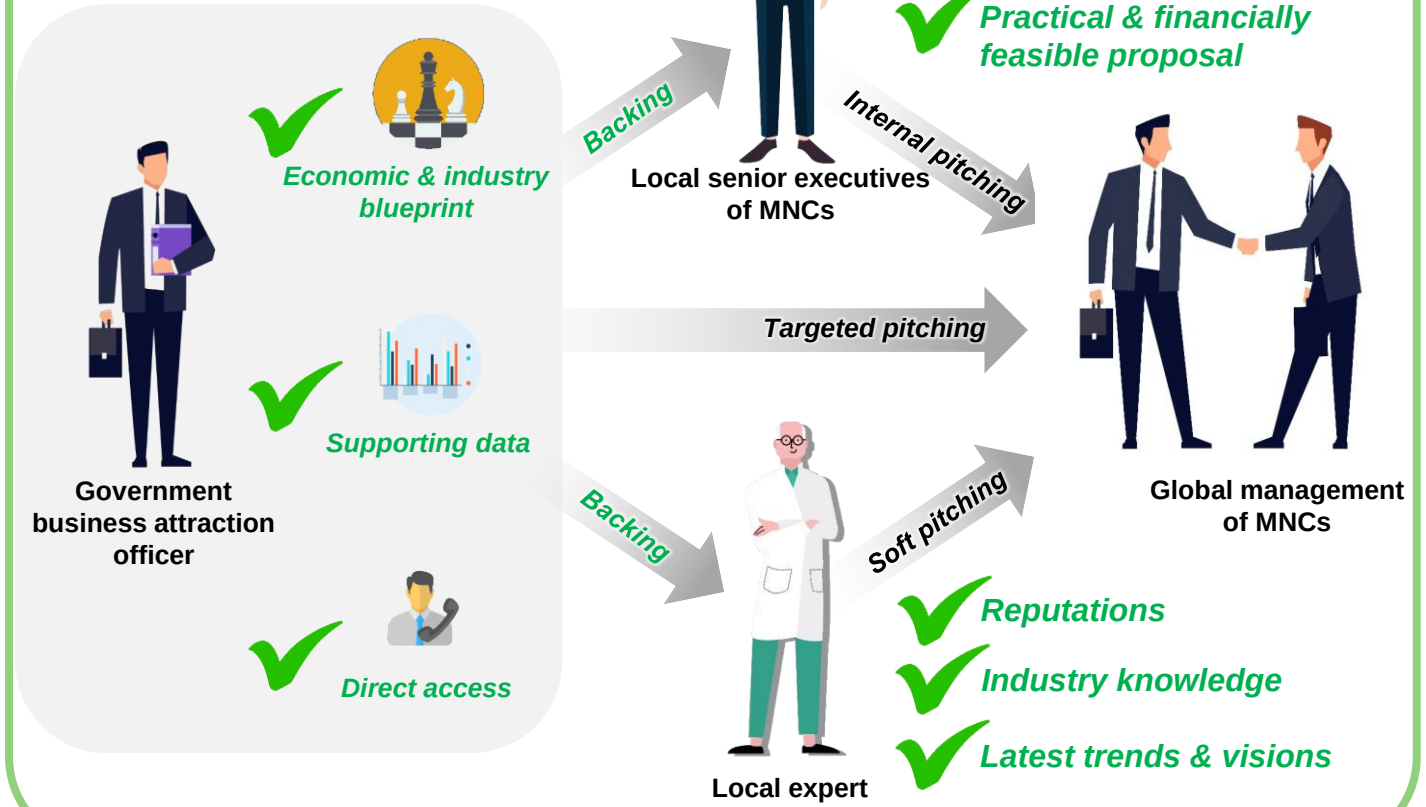
Land allocation & development

Current situation (Single approach)



- ✗ *No direct connection*
- ✗ *No industry knowledge*

Ideal situation (Omnichannel approach)



Source: Our Hong Kong Foundation

Nevertheless, incentives should be performance-based with KPIs aligned to policy goals to ensure mutually beneficial partnerships

Lead development entity

Business & investment attraction

Land allocation & development

Economic

Contribution to economy

- GDP contribution
- Tax contribution
- Labour productivity per capita

Enterprise growth prospects

- Gross profit and profit margins
- Growth rate of operating income

Investment and trade

- Amount of foreign capital
- Amount of fixed asset investment
- Total volume of foreign trade

Science and Technology

Innovation

- Type of facility (research, production, etc.)
- R&D expenditure as a share of revenue

Talent

- Number of jobs created
- Proportion of local and foreign employees
- Proportion of highly skilled personnel

Patent

- Annual patent applications
- Annual patents granted
- Value of technology contracts

Sources: United Nations Industrial Development Organization, Our Hong Kong Foundation

To ensure the success of San Tin Technopole, there are various measures that can be adopted for the three critical questions

Lead development entity

Business & investment attraction

Land allocation & development

Source: Our Hong Kong Foundation

There is a need to ensure the readiness of convenient transport connectivity to I&T land at the outset to minimise inconveniences

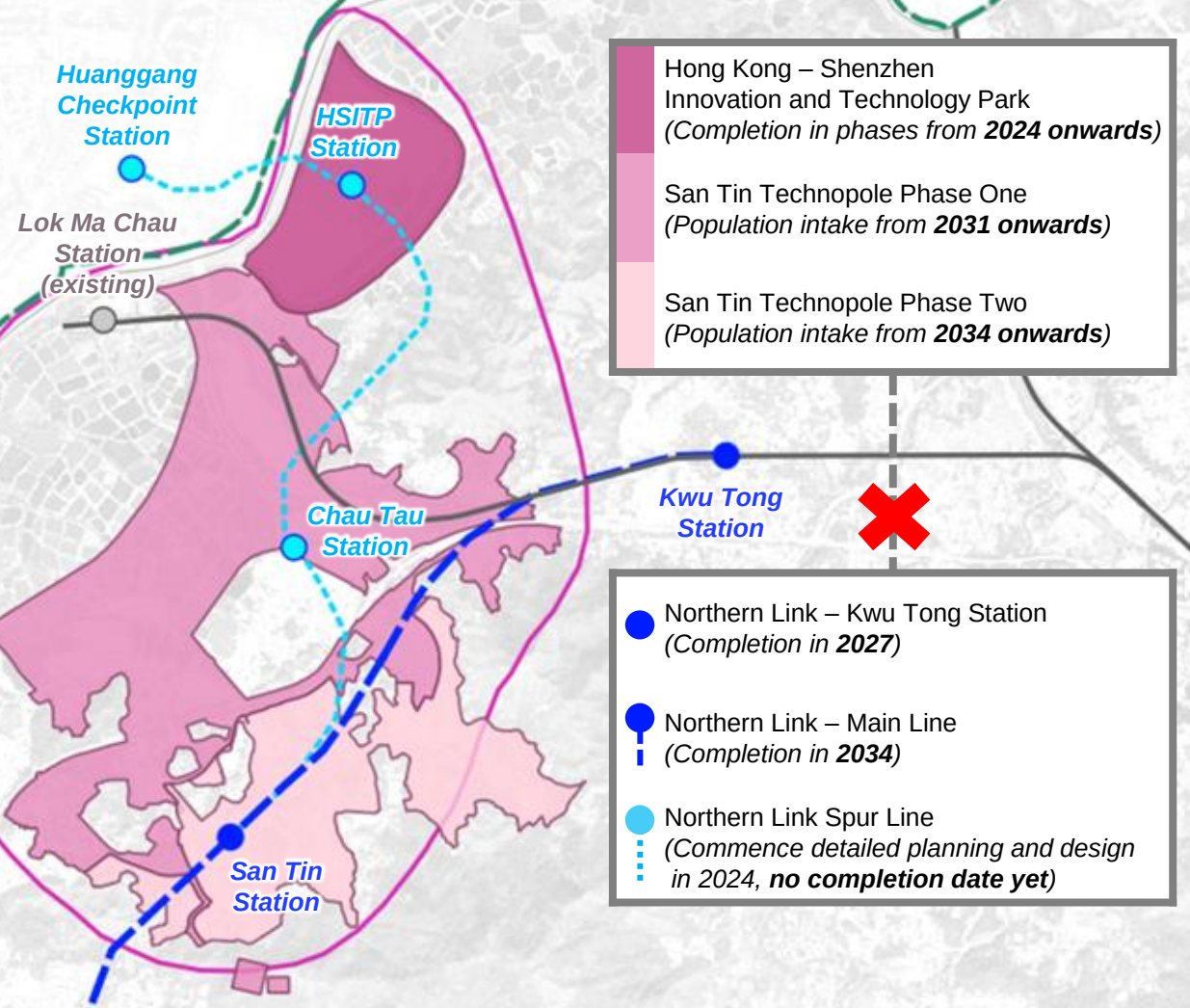
Lead development entity

Business & investment attraction

Land allocation & development

Problem 1: ***Disconnect between railway and I&T projects***

- *Bus-bus interchange (BBI), Autonomous Rail Rapid Transit (ART)*



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Sources: Legislative Council, MTR Corporation Limited, and Our Hong Kong Foundation

There is a need to ensure the readiness of convenient transport connectivity to I&T land at the outset to minimise inconveniences

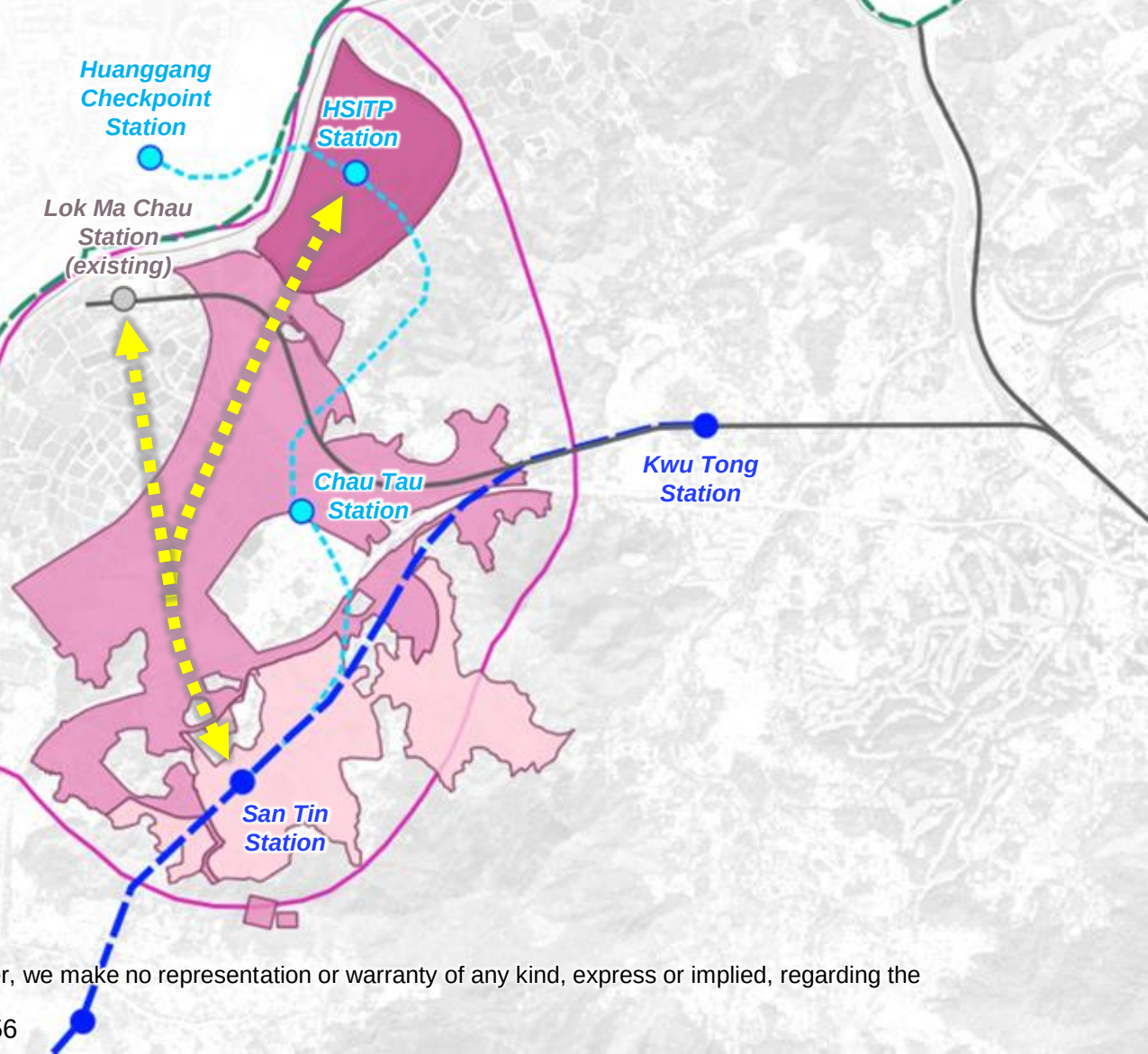
Lead development entity

Business & investment attraction

Land allocation & development

Problem 2: ***I&T land underserved by railway network***

- *Medium-to-light capacity rail system such as the Sky Shuttle*



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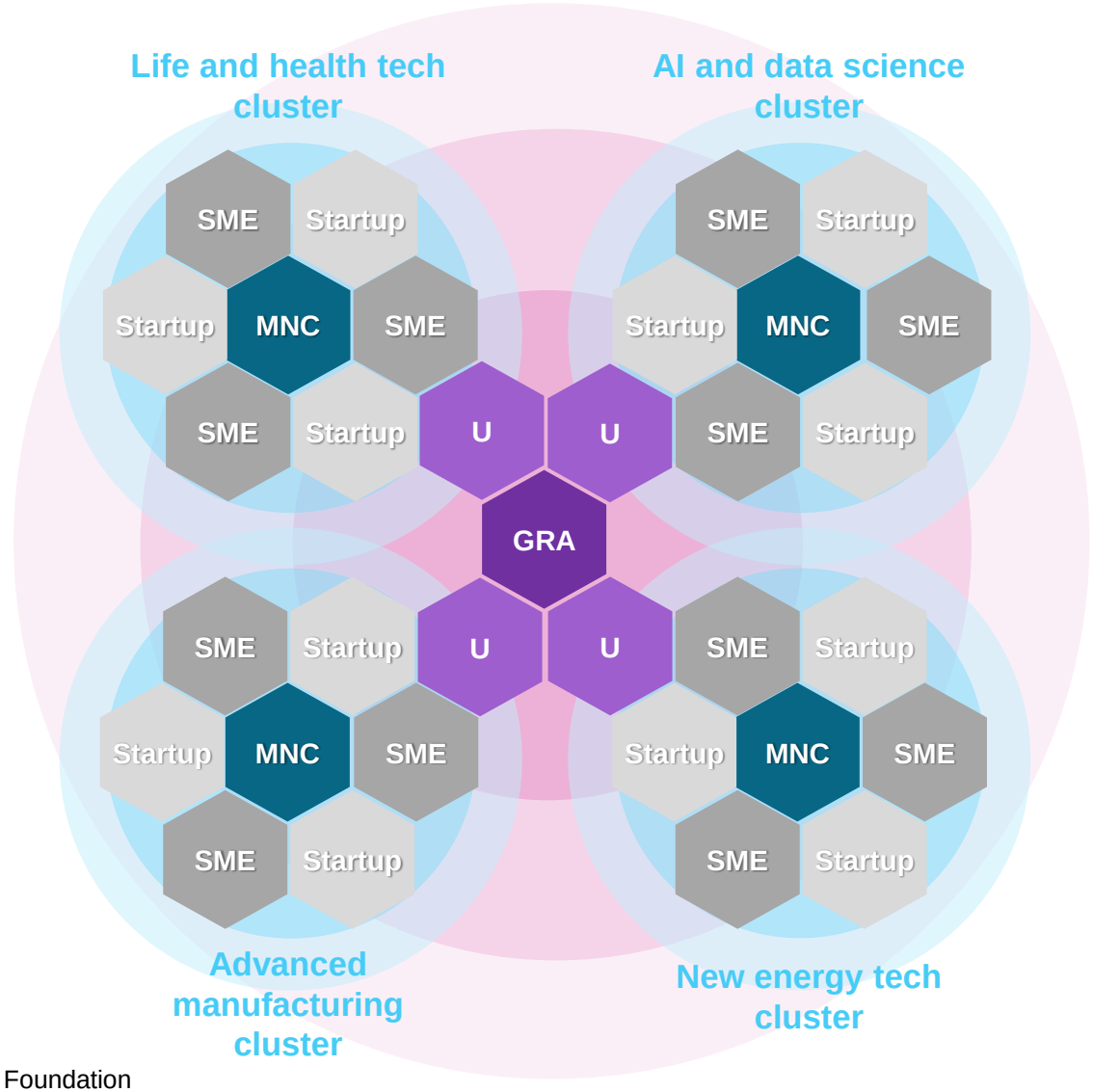
Sources: Legislative Council, MTR Corporation Limited, and Our Hong Kong Foundation

Establishing the presence of government research agencies and academic institutions is critical to kickstart the I&T ecosystem

Lead development entity

Business & investment attraction

Land allocation & development



GRA Government research agencies

- Singapore's **A*STAR** has drawn the first batch of commercial research partners to One North.
- **ASTRI** in the HKSTP and the **InnoLife Healthtech Hub** that will be established in the HKSITP are comparable local examples.

U Universities

- Harvard and MIT set up the **Broad Institute** in Kendall Square to work with enterprises.
- **University research in Hong Kong** is internationally acclaimed and should play a role in the ecosystem of San Tin Technopole.

MNC Multinational corporations

- **Roche** has set foot in the early development stage of Shanghai's Zhangjiang Hi-Tech Park to foster the ecosystem.
- In the past, Hong Kong was once the **ideal location for R&D activities** of Electronics MNCs

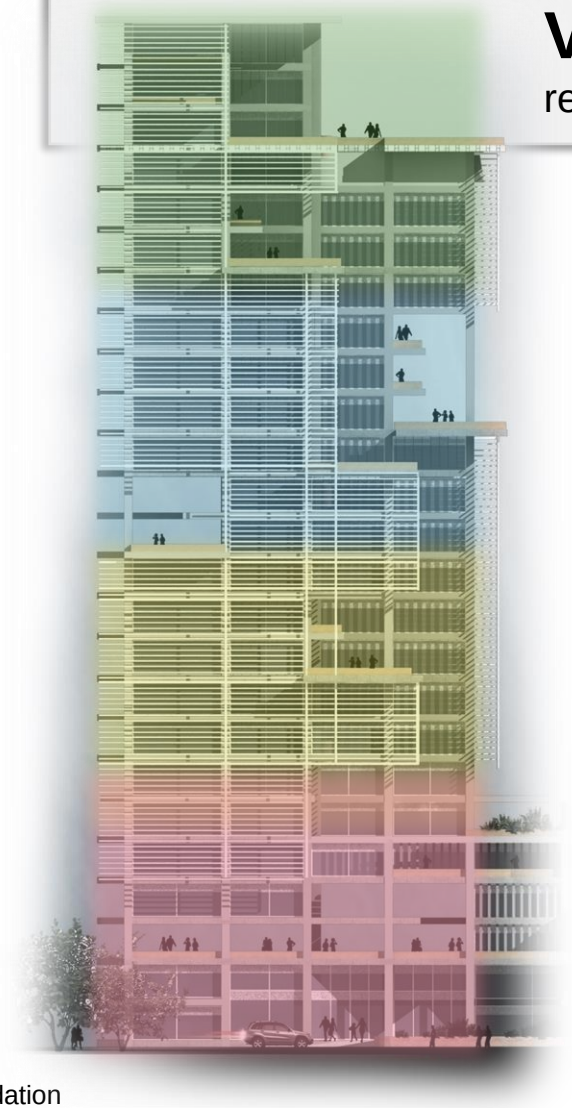
Source: Our Hong Kong Foundation

To achieve home-job balance, a mixed-use community should be formed with the “work-live-play-learn” and “vertical city” concepts

Lead development entity

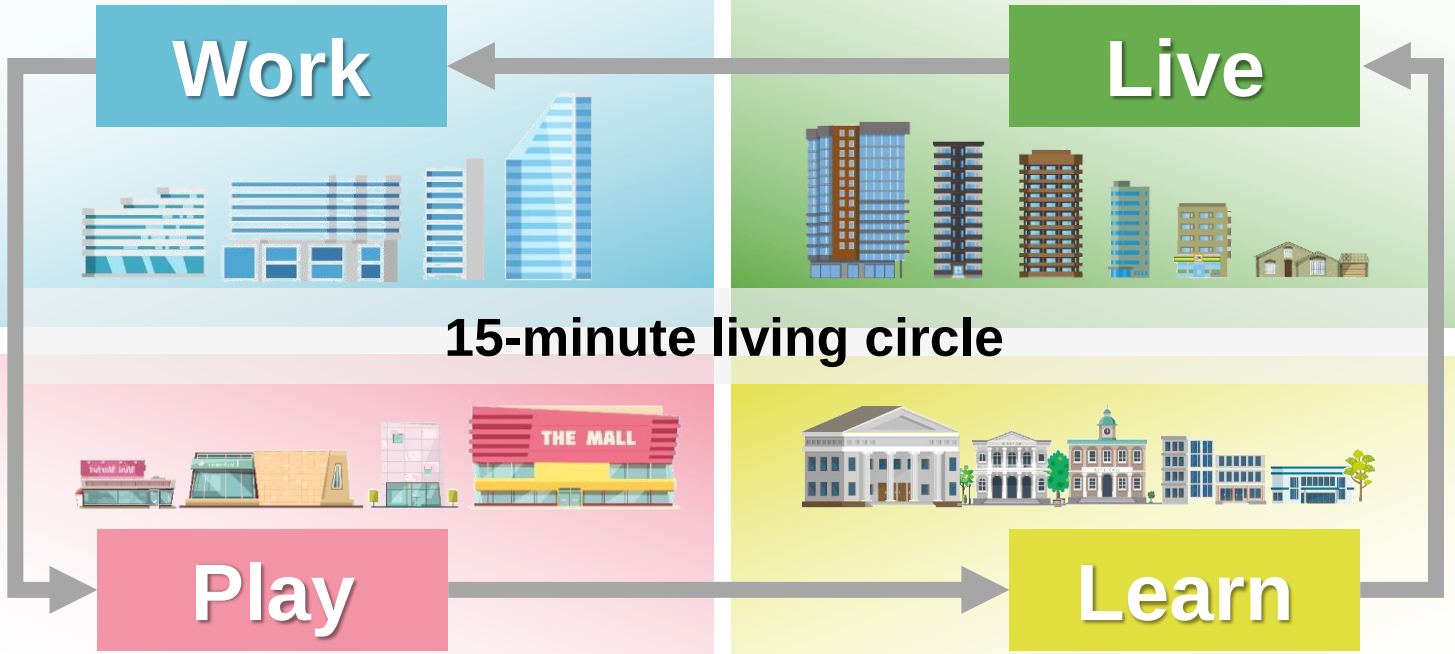
Business & investment attraction

Land allocation & development



Vertically, a single building can provide housing, office, recreational and retail spaces all-at-once, to enable a convenient and comfortable living environment

Horizontally, the planning and design of the San Tin Technopole should embrace the “work-live-play-learn” concept to create a 24-hour vibrant community



Source: Our Hong Kong Foundation

Depending on the development stage of the I&T ecosystem, various land allocation methods can be used

Lead development entity

Business & investment attraction

Land allocation & development

Direct Allocation	Restricted Tender	Concept and Price Tender	Open Tender
Direct negotiation with the prospective enterprise	*Only invitees can submit a tender*	*Anyone can submit a tender*	*Anyone can submit a tender*
Subject to agreement with the prospective enterprise	*Highest bid wins*	*Separate envelopes for price and concept proposal*	*Highest bid wins*
Exclusive			***Inclusive***
A ***broad policy framework*** is required to facilitate monitoring and maintain transparency	Aims at recruiting potential tenants that ***complement the leading enterprises*** in the industrial chain	Priority lies in bringing in ***unique concept designs to further enhance*** the I&T ecosystem	Select the most profitable enterprises and ***maximise the income from land premium***
Ground zero stage *Trying to attract the first batch of leading enterprises*	***Emerging stage*** *I&T ecosystem begins to develop and emerge*	***Mature stage*** *Vibrant I&T ecosystem with firms at various stage & scale*	***Well-established stage*** *Established a reputation as an international I&T hub*

Source: Our Hong Kong Foundation

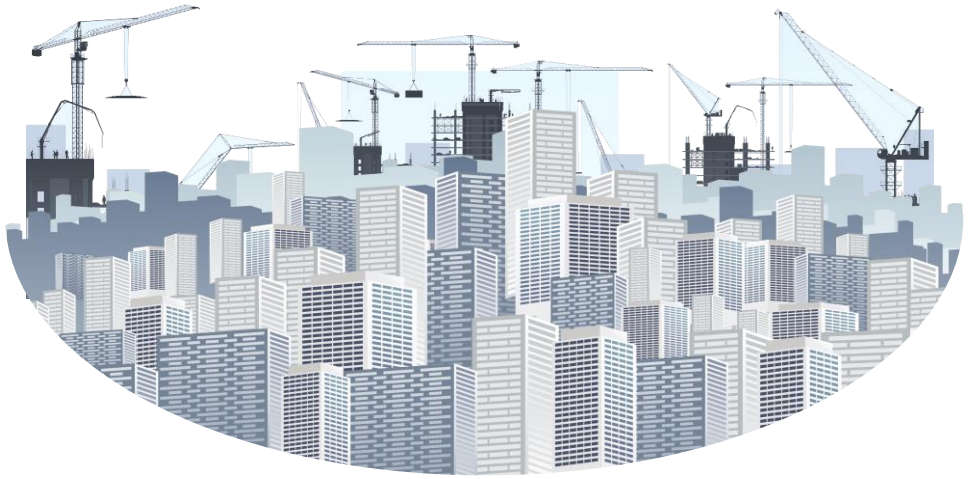
There is also a need to understand the demands of companies at different sectors of an industrial chain to avoid “building waste”

Lead development entity

Business & investment attraction

Land allocation & development

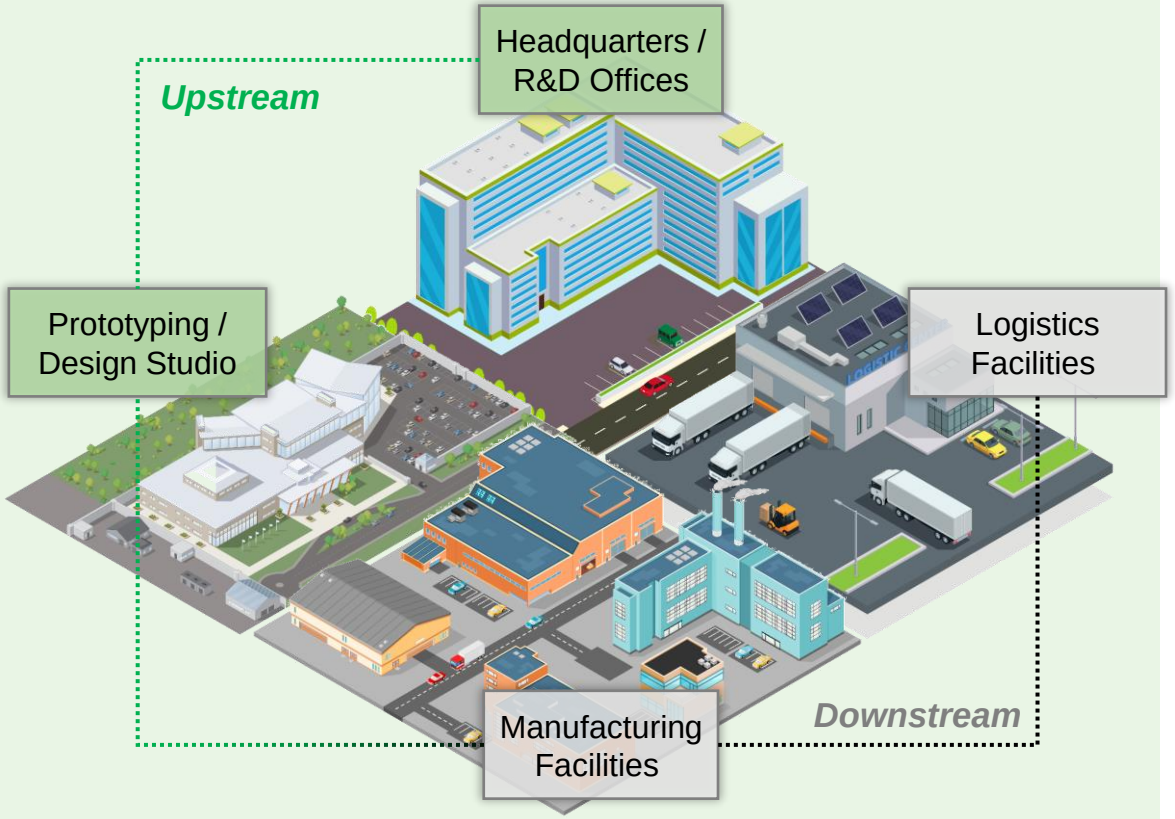
Without thoroughly understanding the **actual tenant demands** and **industry trends** before construction…



many of the completed projects in the I&T park will become **vacant “building waste”**

Precisely understanding the spatial demands by:

1. *Industry*
2. *Scale of a company*
3. *Section of an industrial chain*



Source: Our Hong Kong Foundation

Examples of facilities needed in the upstream of the industrial chain of Life and Health Technology

Lead development entity

Business & investment attraction

Land allocation & development

Site parameters – Life science cluster

Shanghai Zhangjiang Biomedical Base

- Phases 1 & 2 in total provide ***~6,500,000 sq. ft. GFA***
- Hosting ***70 companies*** with revenue over RMB 20 million

Singapore One-North Biopolis

- Phases 1 to 6 in total provide ***~4,000,000 sq. ft. GFA***
- Hosting over ***50 companies***

Building requirements – Life science office

- Spaces for ***wet laboratories***, clinics, sample collection, rehabilitation, and clean rooms for R&D uses
- Accommodating ***simultaneous and separate ventilation*** and utility connections at individual lab modules
- Provision of ***hazardous-waste disposal*** and spaces for ***dry laboratories and offices***
- Heating and cooling systems
- High floor-to-ceiling height

Sources: Shanghai Municipal People's Government, Centre for Liveable Cities Singapore, Jurong Town Corporation, Cambridge Industrial Innovation Policy, and Our Hong Kong Foundation

Examples of facilities needed in the upstream of the industrial chain of AI & Data Science

Lead development entity

Business & investment attraction

Land allocation & development

Infrastructure – Supercomputing centre

- ***Essential infrastructure*** for the AI industry
- Location ***can be outside of the I&T park***
- Providing dedicated computing power for AI
- Feasibility study is being conducted by the Government, with the centre going into operation no later than 2025

National Supercomputing Center in Shenzhen

- Phase 1 was completed in 2011, with ***~460,000 sq. ft.*** GFA on a ***1.2-ha*** *site*
- Phase 2 will be completed in 2025, with ***~1,200,000 sq. ft.*** GFA on a ***4.6-ha*** site

Connect

Building Requirements – AI R&D Office

- Most R&D activities such as algorithm research can be conducted in a ***regular office setting***, and complementing facilities like ***product display centre*** and ***data centre*** can also be included
- Reliable ***power supplies*** and areas for transformer rooms and backup power generators
- Reliable ***network connectivity*** that enables ultra-low latency for information transportation
- High ***floor loading and headroom*** to support computers server racks

Sources: National Supercomputing Centre in Shenzhen, Shenzhen Special Zone Daily, and Our Hong Kong Foundation

Examples of facilities needed in the upstream of the industrial chain of Advanced Manufacturing

Lead development entity

Business & investment attraction

Land allocation & development

Site parameters – Electronics R&D complex

Samsung R&D Center in Hanoi

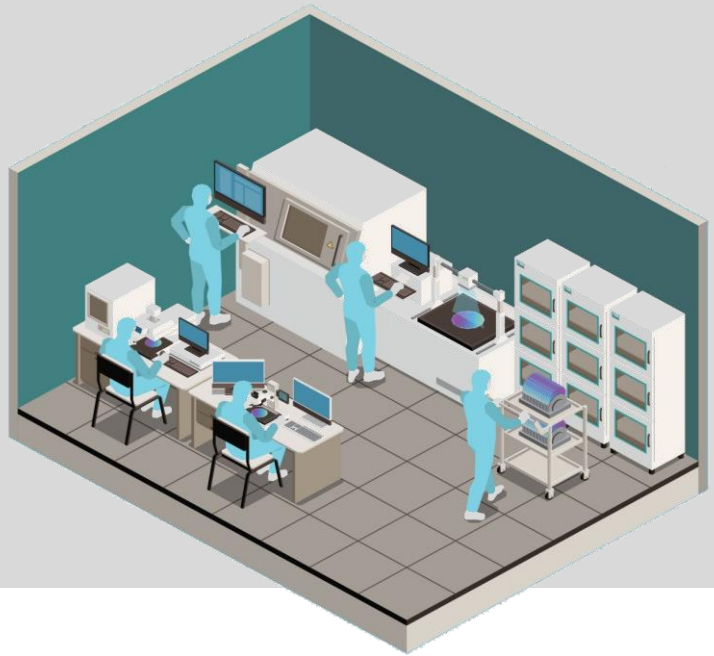
- Completed in 2022, with ***~860,000 sq. ft.*** GFA on ***1.2-ha*** site
- Targeting to research and develop mobile devices, and software and hardware products, and housing 2,200 - 3,000 staffs
- The company has established a network of 13 R&D centers around the world

Samsung Semiconductor Campus in Giheung near Seoul

- A ***New R&D Complex*** will be completed in 2028 on a ***11-ha*** site, targeting to lead advanced research on next-generation devices and processes for memory and system semiconductors
- The Giheung campus started operations since 1992 with ***existing R&D Centers and production plants***

Building requirements – Electronics R&D centre

- High level of ***vibration control*** by identifying clearance areas, and suitable bedrock for the development of building
- ***Clean rooms*** for semiconductors and chips R&D and production, supported by high-standard heating, ventilation and air conditioning



Sources: Samsung, Our Hong Kong Foundation

Examples of facilities needed in the upstream of the industrial chain of New Energy Technology

Lead development entity

Business & investment attraction

Land allocation & development

Site parameters – Fuel cell vehicle laboratory

Xianhu Laboratory in Foshan

- Phase 1 occupying ***~690,000 sq. ft.*** GFA on a ***7-ha*** site
- Housing ***300 researchers,*** including ***3 academicians***

- *Signed strategic cooperation framework agreement with Hong Kong Productivity Council (HKPC)'s Automotive Platforms and Application Systems R&D Centre (APAS) in July 2023*

Building requirements – Fuel cell vehicle laboratory

- Spaces for ***test bench*** that meets the requirements of ***commercial vehicle engines*** in terms of speed, torque, combustion, fuel consumption and other measurements, as well as the control of air intake, cooling and ventilation
- *Provision of* ***ammonia and hydrogen*** at the required pressure, temperature, flow rate and condition, and realize accurate measurement, while meeting ***explosion-proof*** and other safety requirements in order to cope with the risks associated with possible gas leaks
- Spaces for ***electrochemical workstation***

Site parameters – Vehicle design centre

BYD Global Design Center in Pingshan, Shenzhen

- Occupying ***~136,000 sq. ft.*** GFA
- Housing ***~400 designers***

Volvo Car Design Studio in Shanghai

- Occupying ***~60,000 sq. ft.*** GFA
- Housing ***~100 designers***

Building requirements – Vehicle design centre

- Separated and sufficient areas for ***each stage of the R&D cycle***: designing, clay modelling, equipment processing, comprehensive assessment and virtual assessment
- ***Logistics*** infrastructures for shipping of large vehicle components
- Large floor-to-ceiling windows and grand showroom
- Testing grounds

Sources: Xianhu Laboratory, Hong Kong Productivity Council, BYD, Volvo, and Our Hong Kong Foundation

Summary of recommendations

Lead development entity

I. Introduce various forms of private participation to assist the Government as the lead development entity

1. Extend the scope of in-situ land exchange to include I&T use and provide concessionary land premium, but as pre-requisite, landowners are required to secure prospective leading I&T enterprises for the Government's approval
2. Allow landowners to construct talent accommodation, pegged to the scale of I&T operations on their respective sites; units shall be for lease only and not for sale
3. In the case of land resumption, give landowners the option to receive a mix of cash and San Tin Technopole Development bonds as compensation

Business & investment attraction

II. Strengthen intragovernmental coordination at the implementation level for San Tin Technopole

4. Form a new business-centric and one-stop-shop working group for a fast-paced and coordinated response
5. Set relevant KPIs to ensure the commitment of all bureaux involved and monitor the effectiveness of the working group

III. Ensure effective and aggressive investment attraction with mutually beneficial partnerships

6. Move beyond general policy support to offer tailor-made incentives and a compelling business proposition
7. Leverage key decision influencers for all-round pitching to enterprises
8. Make sure incentives are performance-based with KPIs aligned to policy goals

Land allocation & development

IV. Develop an attractive environment for leading enterprises and the community

9. Ensure the accessibility of I&T land through advanced planning on the provision of convenient transport connections
10. Establish the presence of government research agencies and academic institutions to kickstart the I&T ecosystem
11. Form a liveable mixed-use community with the "work-live-play-learn" and "vertical city" concepts

V. Allocate and develop the land based on ecosystem maturity and industry needs

12. Directly allocate land to leading enterprises at ground zero, while introducing other more competitive methods as the I&T ecosystem matures
13. Avoid "building waste" by understanding the demands of companies in different sectors of an industrial chain

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Thank you