Data Agenda of a Tech Startup

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Technology

Business Opportunity & Network

Funding
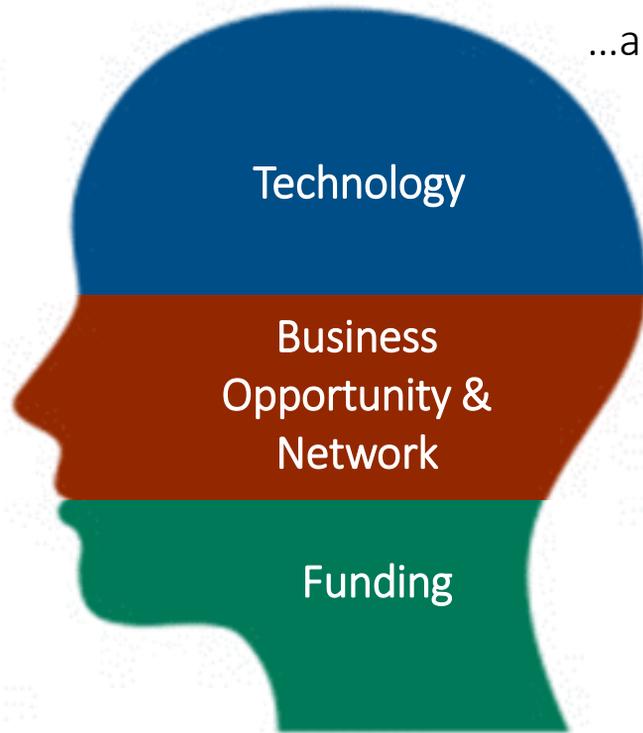
...and DATA is a key differentiator

Data Pyramid of Value

AI

Deep Learning

Predictive Analytics

Data Analytics

Increasing value opportunity

Aggregated Forecasting & Analytics

Interoperability & Data Integration

Machine Learning

Data Aggregation

Reporting & Dashboard

Data Verification & Cleansing

Data Creation & Collection

Data Generation

3
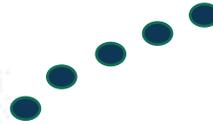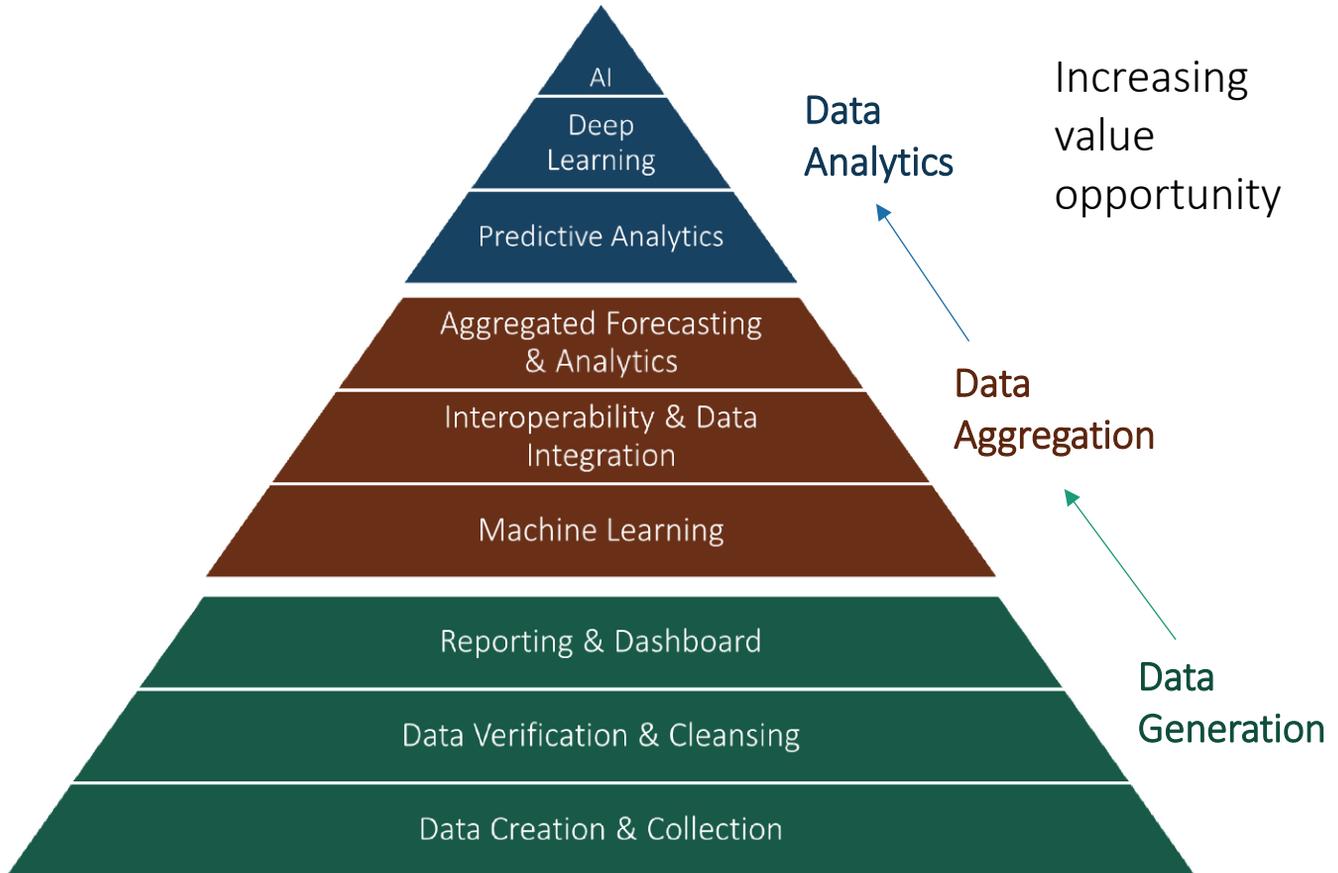
Data Initiatives from Hong Kong Science Park

Technologies from Science Park

- AI
- Deep Learning
- Predictive Analytics

Data Platform

- Aggregated Forecasting & Analytics
- Interoperability & Data Integration
- Machine Learning

Smart Campus

- Reporting & Dashboard
- Data Verification & Cleansing
- Data Creation & Collection
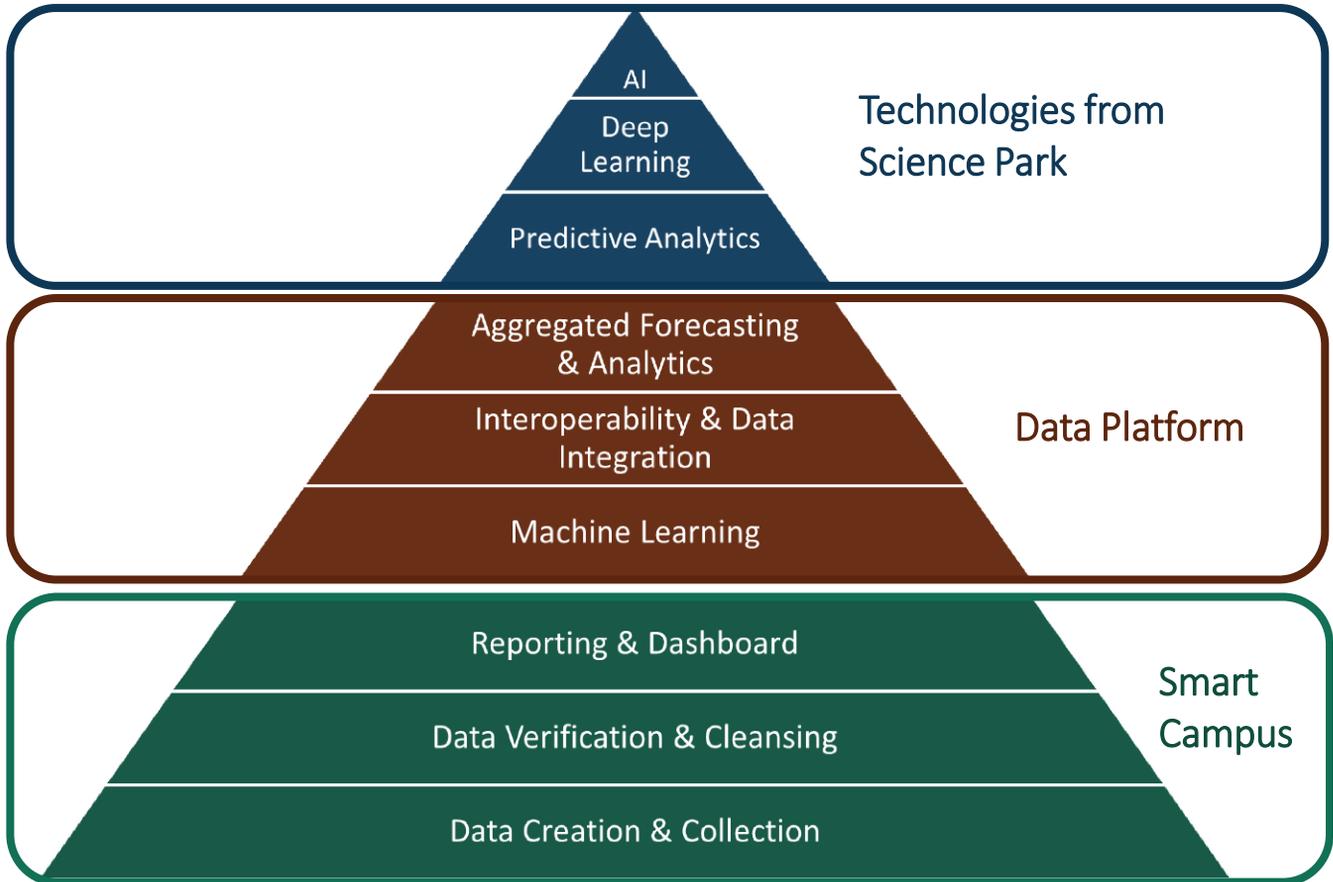
Smart Campus – A Living Lab Environment

Innovation ▶ Creativity ▶ Co-creation ▶ Experimentation ▶ Entrepreneurship

Smart Region Infrastructure

DATA STUDIO Data Platform

Sensor Network and Connectivity

WiFi LoRa NB-IoT sigfox 5G

Sensor Hub   Sensor Lab   Testbed (SCIC)

To generate and analyse data so as to ride the wave of Internet of Things (IoT) and enable smart solutions
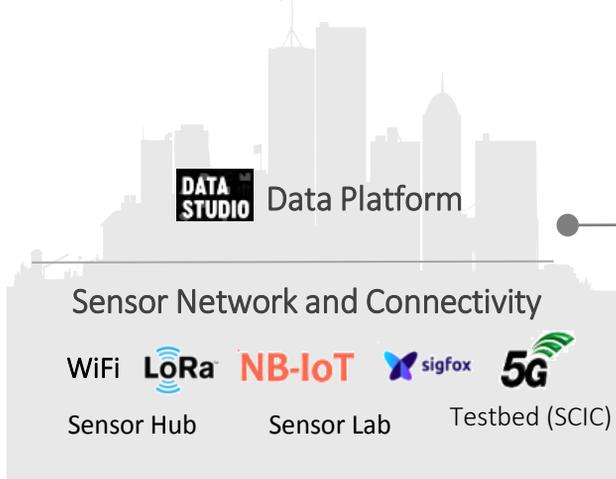
Smart City Themed Applications

Smart Environment
Enhance Building and Facility Management

Smart Mobility
Enable new technologies to disrupt the last-mile mobility

Smart People
Create a new experience and shared economy

Smart Living
Enable a secured and trusted cashless society

to Create a Seamless & Integrated Experience

Undertaking

Data Impact Assessment

Share Data @Data Studio

Data Review

Principles:

I. Purpose of the activity,
II. A full understanding of the data, its use and parties involved,
III. Impact to parties and in particular individuals, and
IV. Whether an appropriate balance of benefits and mitigated risks supports the data-processing activity.

- Transparent
- Benefits the data community

- Auditable & traceable

| Data Impact Assessment for Service Provider		
1) General Information		
1.1	Project Name	
1.2	Company	
1.4	Purpose of Project	
1.5	Data Owner	
1.6	Emergency Contact of Data Owner	
1.7	Data Collection Start Date	
2) Purpose and Manner of Collection		
2.1	Please provide the justification of the data activity	
2.2	What specific types of data will be collected?	
2.3	What is the sources of data?	
2.4	Is the data identifiable to a person? If yes: Is the data anonymous? what is the anonymity process?	
3) Accuracy and Duration of Retention		
3.1	How long will the data be retained? Guidance: Data shall be properly erased when the computing resources are de-provisioned or retention period passed.	
3.2	How will the data be destroyed / deleted after retention period passed?	
3.3	How will the data collected or derived from the system be checked for accuracy?	
4) Processing		
4.1	How will the data be collected and stored?	
4.2	Please describe all the uses for the data	
4.3	Who will have access to the data?	
4.4	What technical safeguards will be implemented to prevent unauthorized access?	
4.5	What technical safeguards will be implemented to prevent accidental loss of data (e.g. encryption and delinking of data)?	
4.6	What steps to ensure that a person be informed of the purpose and the kind of data being collected?	
4.7	Describe what privacy training is provided to operators relevant to the functionality of the system.	
4.8	Will the data be shared with other external organisations?	

HKSTP Data Platform

Objective Becoming the Data Hub to spawn innovation and manage data exchange between entities

Data Sources

Data we can generate:

- Research Projects
- Smart Region
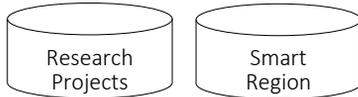
Data acquisition thru exchange:

- Enterprises
- Science Park Companies
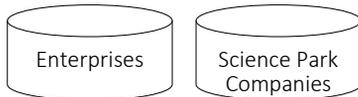
Open Data we can add value:

- Government
- Utilities & Transportation
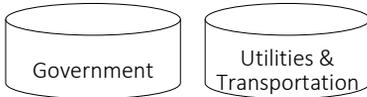
Data Studio Programme

Tech Focus

- Internet of Things
- Data Analytics & AI
- Biomed Tech
- Security, DLT, others…
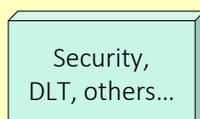
Enabled by Data Analytics Partners

Smart City Initiatives

- Mobility
- Environment
- Living (& Fintech)
- People
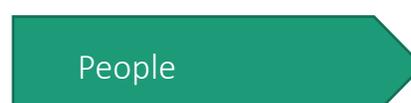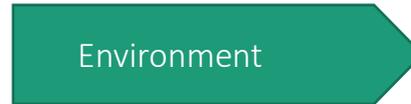
Smart Campus Initiatives

Outcomes

- Trusted sharing and purposeful use of data to accelerate innovation

- Attract talents and companies on AI, Big data, Fintech, Health Informatics, etc.

Private Cloud Data Infrastructure
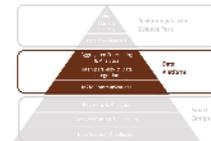
Why Private?
Data Governance, Development & Testing, Security & Protection

Private Cloud Data Platform

Tenant #1 — VM1

Tenant #2 — VM2

Tenant #3 — VM3

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Tenant #4 — VM4

Tenant #5 — VM5

HKSTP

Data Discovery, Data Integration, Data Analytics

Data Sharing & Collaboration

Data Provider, Developer, Startups
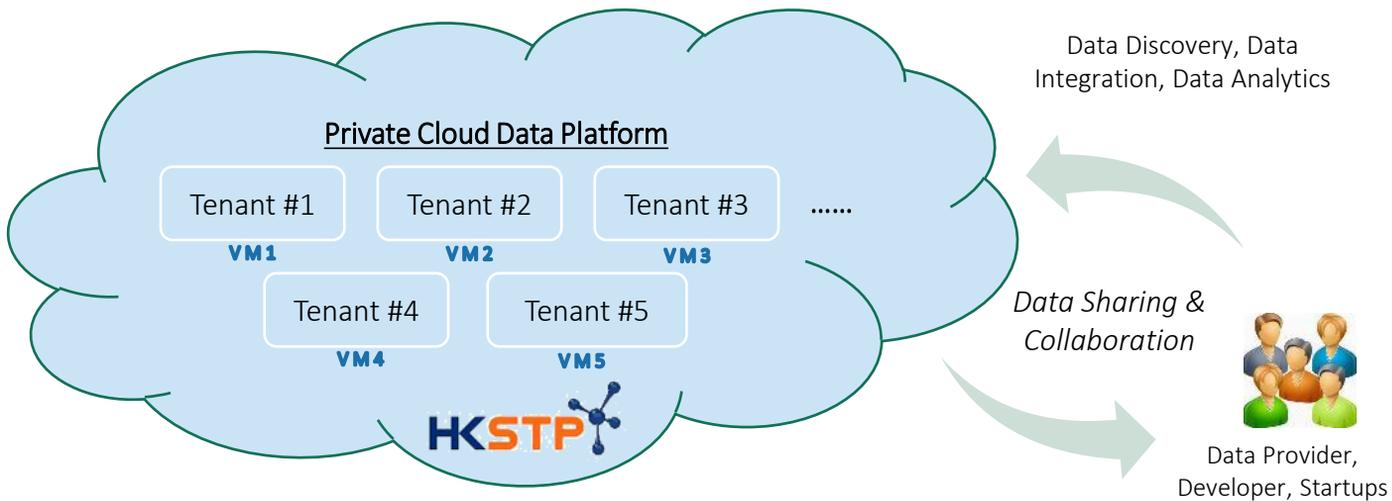
- Infrastructure management
- 7x24 call center service and monitoring of private cloud infrastructure
- Storage/VM provisioning

Data Lake

Governance

Content/Knowledge Repository

In/Out Gateway

Digital Science Park overlay with energy and temperature data

Some Recent Data-driven Innovation from SP Companies

Main bus-stop video analytics of queue (faces are masked at the edge)
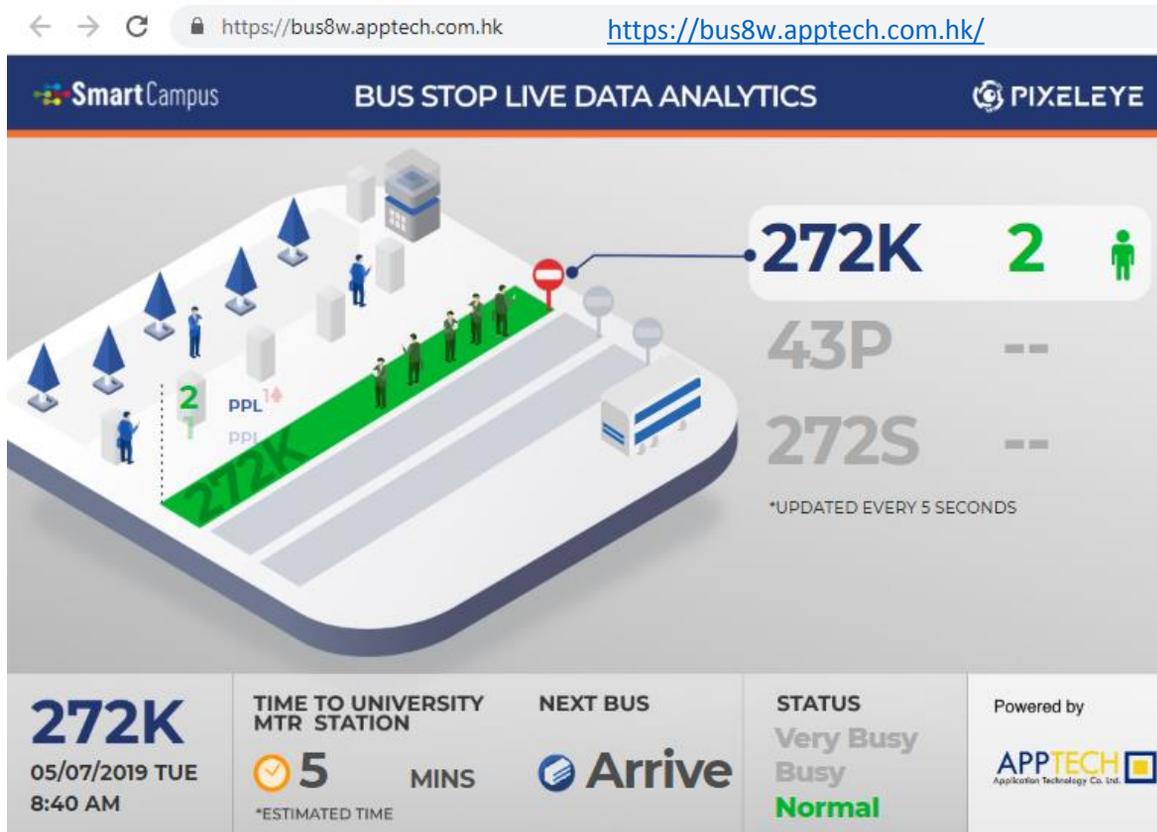
Some Recent Smart Campus Trials backed by Data

Unmanned Shop (T-Shop & Lab)

- ✓ Cashless payment: Octopus, WeChat play, QR code
- ✓ Facial recognition: i) automated gate at entrance, ii) video surveillance for security monitoring
- ✓ Item scanning: RFID, Barcode
- ✓ Decoration: Digital Film Player
- ✓ Ad-hoc promotion: Redemption program

Smart Lamp Pole

- ✓ Traffic Flow Monitoring
- ✓ Automatically turn on/off the lights or set an appropriate light level for illuminating streets
- ✓ Remote control the LED's dimming level
- ✓ Surveillance Camera (illegal parking)

ASD Test Track

- ✓ Individual monitoring platform to record ASD tests and experiments.
- ✓ Non-interrupted video as the master records.
- ✓ Data Analytic tools for generating testing reports
- ✓ Number of trials, Duration of Trail, Any Fault cases

5G Trial

- ✓ Test 28GHz spectrum in collaboration with CMHK and ASTRI
- ✓ Test trail the mid-band spectrum, with an objective to evaluate the potential of reduction of the Restricted Zone

Ice-Cream Robot

- ✓ Comprises IOT sensors and IC control system
  - • Customer driven customization of ice-cream flavours and toppings
  - • Delivery customized message with associated QR Code.
- ✓ Payment model: Octopus card and QR Code

## Real-time Intermodal Transport Status

- ✓ Leverage AI object detection by surveillance cameras positioned with different angles
- ✓ Real time detect and count both number of car and people in pixel-level for higher accuracy

Data Studio – The HKSTP Data Gateway

Data Studio provides a single point of reference of shared data from Smart Campus and Open APIs offered by HKMA and >15 banks:
http://datastudio.hkstp.org

- Key collaborator: Global Shapers, an initiative of World Economic Forum

- Three themes: Smart Living, Smart Mobility, Smart Environment

- Participants are required to create data innovation via Data Studio to create solutions based on Big data, IoT or Blockchain

Winners Highlights:
- Smart Living: Demonstration of use of Blockchain to trace medicine
- Smart Mobility: Intermodal transport data insight
- Smart Environment: IoT tags on rubbish bin for real-time response

SMART CITY HACKATHON HONG KONG 2018

Smart City Challenges.
Connect the Dots.

>> Big Data | IoT | Blockchain

Hong Kong Science and Technology Parks Corporation

1-2 September 2018

23 teams, 93 participants

2nd Classified Post Hackathon held, in collaboration with Data Studio

Date: 17 – 19 Nov, 2018 (3 whole days)
Target: Students and fresh graduates
Attendance: ~110 (28 teams)

- For participants to develop their prototype, enhance their problem solving skills and to learn and meet with technology industry leaders.
- Outstanding participants will be invited by participating companies to attend their internship programmes or gain job opportunities.
- Datasets are offer to participant through Data Studio and the data will stay for use in long run.

Highlights:
- Winner of Insurance Session: Mobile education game.
- Winner of Media Session: Use "Neural Network" to categorize Job Post for better job mapping advice for job seeker.


Job Posting data & Career GPS Insight data


24 hours

Overnight Hacking

HKSTP

HKSTP

About us:
Science Park – R&D Ecosystem

Established in **2002**

330,000 m^2
R&D Office Space

700+ Tech Enterprises,
Working Population
13,000

AI & Robotics, Biotech, Fintech, Smart Cities

Park Companies from
24 Countries /
Regions of Origin

Leading Technology
Incubator in HK with
300 Start-ups

Science Park +
InnoCentre +
Industrial Estates

HKSTP

Innovation as the Backbone – Key Technology Focus

Technology Focus Areas

Artificial Intelligence & Robotics

Smart Cities

Healthcare Technologies

FinTech

HKSTP's Technology Clusters

Biomedical Technology

Information & Communication Technology (ICT)

Green Technology

Material & Precision Engineering
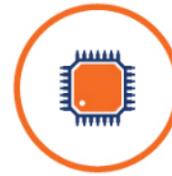
Electronics

HKSTP Key Achievements – 18 Years, and 2019

2
Unicorns

Technologies
from Science Park

Successfully built partnerships with
65 corporations and public sector:
Airport Authority, MTR, Maxim's, HSBC,
Wheelock, 3HK, Ocean Park, CLP, etc.

Sanomics   VITARGENT   HANSON ROBOTICS

FANOLabs 有光科技   XSPATIAL 4D Psychoacoustics   KOLN 3D

MND Master Dynamic Limited   ON OSEN ENERGY   ALTAI Super WiFi

Companies expanded into China, regional and
globally, with HKSTP's support

Incubation – Incu-App, Incu-Tech, Incu-Bio…so far

622
Graduated from
Incubation
Programmes since
inception

485
Still in
Business

28
4 IPO &
24 M&A

Investment Funds
Raised…FY18/19

HKD **18** B
Funds raised by
Park companies

Corporate Venture Fund
(CVF)…Up to Dec 2018

1 : **13.4**
HKD **50** M   HKD **670** M

HKSTP Total Investment
Fund *(as of today)*

HKD **600** M

Innovate *with Data* for a Better Future