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Promoting Technology, Developing an Innovation- based Economy

Recommendations on the
Innovation and Technology Bureau

Preliminary Proposal

12 February 2014

Foreword

Technology and innovation are crucial to the sustainable and diversified economic growth of Hong Kong and the boost needed to keep Hong Kong competitive. In Hong Kong, policies to promote ICT, communications and technology innovation are scattered under different departments, lacking overall planning and coordination. Hong Kong needs to catch up on supporting our technology industry to open up more opportunities for our next generation.

It is not the first time the government talked about supporting the innovation and technology industries, yet previous initiatives were hardly delivered. The ICT industries have been ardently lobbying for a dedicated bureau to oversee technology policies. The government's pledge to reinstate the preparation for the Innovation and Technology Bureau is the first step in the right direction.

In order to convey the industry's views and expectations, this Preliminary Proposal includes a list of recommendations on the missions, objectives, major tasks, structure, and cross-bureau collaboration priorities for the ITB. I hope these will serve as reference for consulting related industries and stakeholders, so that the ITB will serve its purpose of supporting innovation and technology industries.



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Legislative Council (Information Technology)

1. Key Recommendations

Technology policy should be regularly devised

Countries such as Singapore, Japan, South Korea and Taiwan have placed technology policy at the core of their economic development strategy, and have administered comprehensively in a planned manner. Our government needs to regularly assess future trends, develop science and technology policies and allocate resources to implement them. Government should convince the public that the ITB is not only an act of reshuffling relevant departments, by showing commitment to promote cross-sectoral, long-term science and technology policy planning through the ITB's mission, work plan and structure.

We hope that the bureau will carefully study Hong Kong's positioning in technology and innovation, identify shortcomings in current policies, and develop a comprehensive set of technology policy which includes increasing public sector R&D expenditure, improving existing funding schemes, enhancing incentives for R&D, technology transfer, education and training, with diversified performance indicators and a long-term development perspective.

Adopt a result-oriented mindset

Although the government has provided considerable support on R&D over the years through the Innovation and Technology Fund, execution of these schemes are often seen as cumbersome and rigid. Administrative and accounting considerations often come first. When the Government is formulating technology policies, it should give R&D organisations and researchers more autonomy and flexibility in utilising resources. The government should listen to the views of researchers to improve arrangements for different funding schemes in the review of the Innovation and Technology Fund.

Invest in foresight studies and consolidate advisory bodies

The government should set long-term targets of increasing the contribution of innovation and technology industries to our economic growth. As technological trends becomes increasingly

complex and fast-changing, in order to ensure that investment of resources will match future needs, we recommend the Government to allocate more resources to forward-looking research with more holistic planning. With the establishment of the ITB, it is recommended that various technology-related advisory bodies should be consolidated. The ITB should also focus on strategy formation, execution and liaison with other bureaux.

Improve effectiveness of support and facilitate technology transfer

We suggest establishing a task force of academics and researchers to review the existing R&D funding policy, and submit recommendations on policies and resources necessary to encourage more local R&D activities. We also recommend allowing research institutions greater flexibility in funding and providing more tax incentives to support SMEs and R&D activities of local enterprises, as well as building in more incentive from performance and subsidy assessment methods to universities and research staff to encourage the commercialization of research results.

Promote commercialization of local R&D and support manufacturing industries

We recommend more support to the commercialization of R&D results, releasing the intellectual property of subsidized research projects, and providing more funding on industrial design, prototype testing and certification, pre-clinical trials, to facilitate the growth of local design and manufacturing.

Promote technology education and nurture talents

The Government should improve technology education through the areas of school infrastructure, curriculum and content: improving infrastructure, equipment and technical support; enhancing IT-related curriculum in primary, secondary and tertiary education, with more opportunities for young people to join R&D projects; expanding the quotas for IT, computer and engineering related programmes in universities, to nurture more talents

required for the development of technology industry and strengthen measures to promote usage of ICT to the disadvantaged to promote digital inclusion.

Improve the image of technology industry and breed a culture of innovation

Government should enhance the use of ICT such as cloud computing, open data and big data analysis to improve delivery of government services, support government decision-making and improve the transparency of governance. The government must take the lead in the use of local R&D technology, encourage SMEs to use ICT, and promote the impact and significance of technology towards social and economic development, and create a culture of entrepreneurship.

Seize the collaboration with the mainland while eyeing global opportunities

The new Bureau should work closely with the technology industry through the exchange of views with stakeholders and make good use of our advantages. In addition to grasping the opportunities for scientific and technological co-operation with the Mainland, we should also keep a keen eye on and strengthen Hong Kong's standing in regional and global markets, to maintain Hong Kong's profile as an international ICT hub.

Defend Internet freedom

The free flow of information is one of the key advantages of Hong Kong as an ICT hub. The ITB must ensure that content filtering, censorship or monitoring of the Internet do not occur in Hong Kong, and uphold the commitment of defending a free and open Internet.

2. Mission and Vision

Promoting the technology industry into a new pillar of Hong Kong's economy will be a long term task. The ITB should have the following vision and mission to help Hong Kong stay competitive in the race for global advantage and build an innovation economy:

- To provide strategic direction, drive change and perform stewardship role in ICT, innovation and technology to foster co-operation among the government, industry, academia and research sectors, support research and application in areas that enhance our competitiveness
- To coordinate policy initiatives and focus government resources on supporting research, innovation and entrepreneurship
- To advance local R&D and applied research, and strengthen the connection between basic research, applied research and industrial development
- To promote the development and application of ICT to position Hong Kong as a 'smart city' that makes citizens' lives better and increase the social and economic vigor of Hong Kong society.

3. Objectives

Leverage on innovation and technology to promote economic diversification, and increase investment in R&D, and strengthen the contribution of the technology industry to our economic growth:

- Review the direction and identify priorities for R&D projects, enhance the evaluation metrics of subsidised R&D and improve productivity and effectiveness through better use of resources
- Increase the ratio of government investment in R&D against GDP, create more R&D jobs, independent research project outputs, etc.
- Incentivise local investment and attract inbound investment in R&D, and put into place more measures to improve the success rate of technology transfer and commercialization
- Invest in technology infrastructure and develop human resources
- Adopt locally developed technology products, create market demand and foster local SMEs
- Uphold the freedom of information

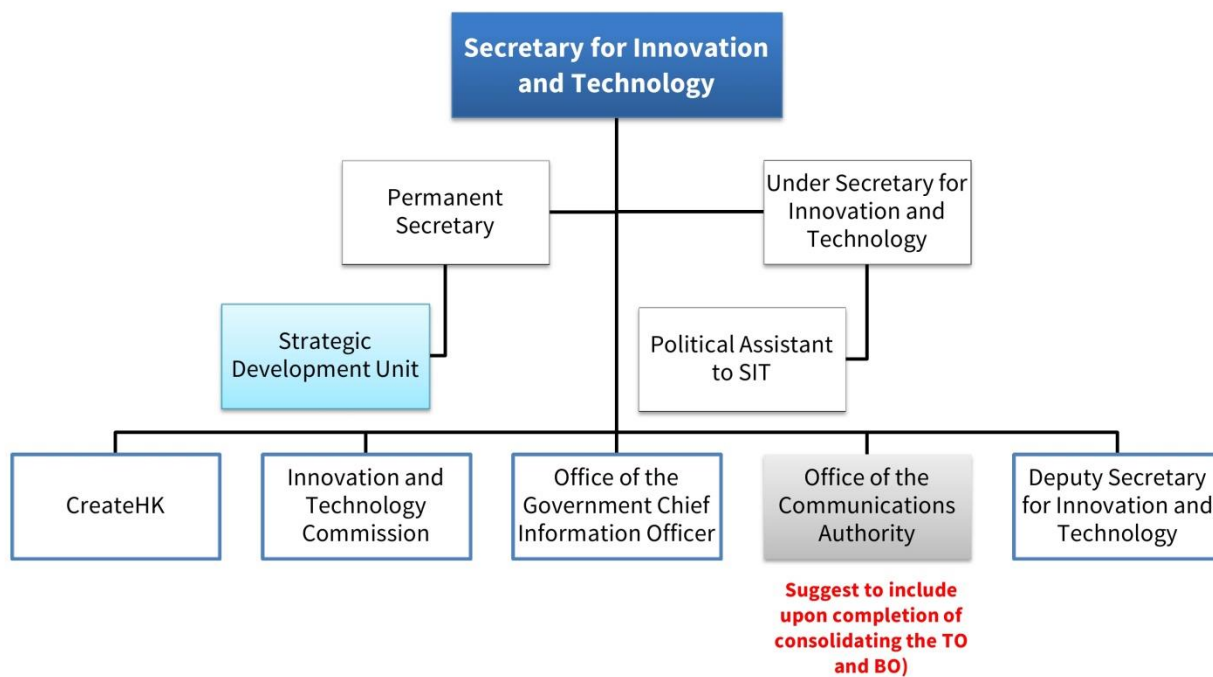
4. Major Tasks

Utilise the unique position of the bureau to foster technology industry development in four areas: market, investment, talent and image; and determine the strategy and policy of innovation, technology and ICT:

- Formulate a multi-pronged strategy to boost the technology industry and review such policy in a planned manner, including setting out the priority for the next five years
- Review the current five key research areas and adopt an outcome-driven approach to audit and allocate resources
- Study the feasibility of introducing more financial incentives for start-ups, promote Hong Kong as an ideal start-up hub, and attract foreign technology companies and talent to Hong Kong to create job opportunities that benefit society
- Support applied research and development in emerging areas of technology, and set an example of government utilizing more local technology products and services
- Provide more incentives to encourage enterprises to expand investment in research, technology transfer and encourage universities to promote the commercialization of scientific and technological research outcomes
- Improve technology education from infrastructure improvements, curriculum and content, to entice students towards innovation and technology, and to strengthen continuing education support in technology area to develop ICT skills and knowledge
- Make effective use of ICT such as open data, e-government services etc. to bring benefits to society and promote digital inclusion
- Enhance e-infrastructures, foster human resources and make Hong Kong more attractive to overseas talent
- Support enterprises in technology upgrade, talent development, financial and exploring new markets, and stimulate SMEs to look for and apply new technologies

5. Structure

This proposal supports the inclusion of the Innovation and Technology Commission (ITC) and the Office of the Government Chief Information Officer (OGCIO) as part of the proposed ITB. As for the Office of the Communications Authority (OFCA), it is recommended that the OFCA be included upon completion of the consolidation of the Telecommunications Ordinance and the Broadcasting Ordinance. In the long run, the CreateHK should also form part of the ITB to promote creative industries and local films.



Recommended Structure

We recommend taking a holistic approach and merging various technology-related advisory bodies to ensure synergy and cross-sector collaboration, and provide advice on the formation and implementation of innovation and technology policies. The Steering Committee on Innovation and Technology should be reformed into ‘**Long Term Technology Strategy Steering Committee**’ (LTTSSC), combining with the existing Digital 21 Strategy Advisory Committee (D21SAC) and the Working Group on Manufacturing Industries, Innovative Technology, and Cultural and Creative Industries, under the Economic Development

Commission. The LTTSSC will become the top-level advisory body regarding Hong Kong's overall strategy of developing innovation and technology.

The government should strengthen its technology policy-making function. A new '**Strategic Development Unit**' should be formed to identify and grasp new technology trends and formulate forward-looking strategy.

Recommended Terms of Reference:

- To steer strategic planning in innovation and technology and oversee execution of such plans
- To conduct trans-departmental, cross-sector thematic policy research related to technology
- To provide support for the Long Term Technology Strategy Steering Committee (LTTSSC)
- To coordinate with other policy bureaux and departments for implementation of initiatives

Members of the **Long Term Technology Strategy Steering Committee** should be comprised of representatives of government departments, academia, industry, financial sector, technology-related organisations and ICT sector organisations.

Recommended Terms of Reference

- To advise on the formulation of policies to support the development of innovation and technology and the commercialisation of R&D deliverables and digital economy;
- To advise on the focus, initiatives, intended outcome, arrangements and plans to realize the goals set out in the innovation, technology and ICT policy;
- To review and identify needs and priorities, ensure effective alignment, coordination and synergy among departments, and review institutional arrangements for effective policy implementation where necessary;
- To explore means to proactively attract inward investment in local technology sector and

create favourable environment for entrepreneurship;

- To recommend changes according to latest situation, to ensure effective and efficient implementation of policy objectives and programmes;
- To devise Key Performance Indicators (KPI), collect and track relevant data for feedback, and conduct regular technology policy review;



6. Collaboration with Other Policy Bureaux

Commerce and Economic Development Bureau

- Foster partnerships between publicly funded and private incubation programmes, start-up communities, and investors; and study means to attract overseas enterprises to establish research base in Hong Kong;
- Complete the legislation to combine the Telecommunications Ordinance and Broadcasting Ordinance before OFCA is transferred to the ITB;

Financial Services and the Treasury Bureau

- Encourage the development of a mature and supportive local angel and venture capital investment community, and attract alternative investment that provide early-stage seed funding to local start-ups
- Improve legal and regulatory framework in place and provide tax relief to facilitate growth of angel investment, venture capital and private equity; Incentivize investment in start-ups by corporations through devising policy measures that reward establishment of venture capital by enterprises;
- Review the limitation to capital investment immigration and pension funds investing in venture capital and private equity to allow alternative investment or high-risk investment

Security Bureau

- To defend cybersecurity and curb computer and online crime, the ITB should work with the SB to re-establish the Inter-departmental Working Group on Computer Related Crime (set up in 2000) to follow-up and review cyber security measures, including a comprehensive review of the related legislation (including Computer Crimes Ordinance, Telecommunications Ordinance, Crimes Ordinance and Theft Ordinance), to ensure a robust legislation and guard against cyber threats and assaults.

Education Bureau

- Promote the development and adoption of e-textbooks, reform technology-related curriculum in schools, and provide resources to schools for improving network infrastructure, equipment, computer hardware/software and technician support, to improve digital literacy and eLearning territory-wide.

Development Bureau

- The government should initiate ‘Digital New Town Development’ project to plan and lay the foundation for introduction advanced network infrastructure in areas with planned urban redevelopment and future development. It should also be applied to the rest of Hong Kong to enhance our information infrastructure, encourage technology innovation and creation of business opportunities, for example in newly-built public housing, government buildings etc. The government should also reserve sufficient land supply for data centre development and R&D facilities.

Labour and Welfare Bureau

- Closely monitor the salary and benefits trends of ICT practitioners to promote ICT employment.

Civil Service Bureau & Food and Health Bureau

- Review the arrangement and policies of employing government IT staff (including civil service, non-civil service contract staff and T-contract staff), and increase civil service and/or non-civil service contract staff vacancies in each IT-related grade according to need.

Environment Bureau

- Promote the use of local green technologies to reduce carbon footprint

7. Other Recommendations

The ITB should:

- Support and encourage adoption of locally developed R&D deliverables
- Establish a more agile approach to promoting Public Sector Information (PSI) and open data, making government more transparent and accountable, by utilising the potentials from the reuse and discovery of PSI
- Be proactive and forward-looking in researching, experimenting and promoting new technologies
- Uphold freedom of speech and information and support innovation and creativity
- Appoint a Secretary for Innovation and Technology with strong industry credentials, global vision in innovation and technology, and recognition by the industry; the Secretary should be supported by Under Secretary and Political Assistant with deep knowledge in business and technology

The ITB should not:

- Conduct internet censorship and filtering in any manner
- Limit itself to short-term investment and funding without a sustainable strategy
- Overly rely on Mainland collaboration only

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