

For discussion on  
11 July 2011

**Legislative Council Panel  
on Information Technology and Broadcasting**

**Facilitating a Digital Economy**

**Purpose**

This paper briefs Members on the progress of initiatives made in facilitating a digital economy under the Digital 21 Strategy.

**Hong Kong's Competitiveness on Information and Communications  
Technology (ICT)**

2. Hong Kong has a world-class ICT infrastructure and an open, competitive and safe environment that is conducive to the development of a vibrant ICT industry. The majority (84%) of Hong Kong households has broadband Internet connection and each person on the average subscribes to 1.96 mobile phones or devices (as of April 2011). These penetration rates are amongst the highest in the world. Our Internet connection speeds are among the fastest in the world while our telecommunication charges are among the lowest. Hong Kong is also internationally recognised as a leading digital economy.<sup>1</sup>

3. The findings of a report released by the Boston Consulting Group (BCG) in May 2011 (the BCG Report) reaffirmed Hong Kong's position as a leading digital city in the world.<sup>2</sup> The report noted that as a result of strong government support in building infrastructure and an open Internet policy which allows the free flow of information across industries like finance and import/export, the Internet has strengthened Hong Kong's position as a global trading hub. In addition, small and medium-sized enterprises (SMEs) that actively use the Internet achieved higher performance in terms of sales growth, cost savings, and productivity gains. These are strong indicators of the

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<sup>1</sup> Hong Kong ranked the 7<sup>th</sup> globally and the 1<sup>st</sup> in Asia-Pacific in the Digital Economy Rankings 2010 published by Economist Intelligence Unit.

<sup>2</sup> The report is called "The Connected Harbour – How the Internet Is Transforming Hong Kong's Economy" and was commissioned by Google.

vibrancy of Hong Kong's digital economy and recognition of government effort and liberalisation policy in our Internet infrastructure.

4. In May 2011, the Chinese Academy of Social Sciences (CASS) released the “Blue Book of Urban Competitiveness” which reported the results of a study on the competitiveness of 294 Chinese cities. The CASS Study recognises the leading position of Hong Kong among Chinese cities in overall competitiveness, with Hong Kong obtaining first ranks in China in many competitiveness areas such as income level, human capital, financial capital, economic structure, ecological environment, capability of government and openness. The CASS Study suggests that Hong Kong’s competitiveness in science and technology has room for improvement.

5. Both the BCG Report and the CASS Study acknowledge Hong Kong as a leading international trade and financial centre, with strengths in legal and political system, intellectual property rights protection, openness of business environment as well as the positioning as a bridge between the Mainland and the rest of the world. We notice that the two reports have different scope and focuses, and their findings are drawn up with different methodologies. The BCG Report focuses on the Internet economy of Hong Kong, whereas the CASS Study focuses on overall competitiveness of Chinese cities. Our observations on the findings of the two reports are provided in the Annex.

6. We will continue to work with the ICT industry and supporting organisations to formulate and implement various initiatives to sharpen Hong Kong’s competitive edges in ICT and promote ICT innovation, cooperation and trade. Some of the major initiatives are highlighted in the following sections.

### **Data Centre Development**

7. In May 2010, the Office of the Government Chief Information Officer (OGCIO) commissioned a study on the economic benefits attributed to the data centre sub-sector in Hong Kong. According to the study–

- (a) the data centre sub-sector contributed an economic value added of HK\$3.4 billion in 2009, which is about 0.21% of our GDP of HK\$1,622 billion for that year;

- (b) total job opportunities attributed to the data centre sub-sector was estimated to be around 4,800; and
- (c) the value added per data centre employee in 2009 was about HK\$727,300, which compared favourably to the overall average of HK\$466,200 per employee across all sectors.

8. While the quantifiable contribution of data centres to our GDP is not particularly high, there are unquantifiable benefits attributable to the sub-sector. Data centres are an essential infrastructure to support other economic sectors, including pillars like financial services and logistics. The banking, financial and insurances services, logistics and transportation accounted for 52% of the total demand for data centre space, whereas they contributed 42% of the GDP of Hong Kong in 2009. Data centres also provide the catalyst for the development of new content and applications, and are fundamental to the overall growth of the ICT industry. To sustain and enhance Hong Kong's competitiveness in the region, the Government fully supports the development of data centres in Hong Kong as the backbone to our economic growth. This policy is integral to the Digital 21 Strategy. We need to attract more high-tier data centres<sup>3</sup> to support, in particular, the growth of high-frequency stock trading, e-commerce and cloud computing services, serving both international and Mainland users in addition to meeting local demand.

9. There is potential for strong growth in the demand for data centres. According to the aforementioned study, an additional 1.8 million square feet of Raised Floor Space (RFS)<sup>4</sup> will be required for all tiers of data centres in Hong Kong by 2015, of which 0.5 million square feet will be for high-tier data centres. It is reasonably expected that total RFS demand will continue to grow beyond 2015.

10. In the past year, the Hong Kong Science and Technology Parks Corporation granted about eight hectares of land in its Industrial Estates for developing high-tier data centres. To meet the projected growth in demand in

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<sup>3</sup> High-tier data centres refer to those data centres of Tier 3+ and Tier 4 based on the criteria of the Uptime Institute. They have very stringent requirements such as serviceability, availability and security.

<sup>4</sup> Raised Floor Space is the built-up floor space available in data centres to accommodate equipment for provision of data centre services.

high-tier data centres in the run-up to 2015, we need to explore more suitable sites. Besides, the data centre sub-sector also reflects that it takes time to search for and consolidate information related to available land, industrial buildings, power supply, telecommunication coverage, etc. in order to confirm the suitability of sites for data centres. In consultation with the Digital 21 Strategy Advisory Committee (D21SAC), we will implement the following measures to facilitate data centre development in Hong Kong –

- (a) **Stepping up promotion** to position Hong Kong as a prime location for data centres in the Asia Pacific region, in collaboration with industry stakeholders, Invest Hong Kong, the Hong Kong Trade Development Council, and the Economic and Trade Offices.
- (b) **Setting up an information portal and helpdesk** to disseminate information relevant to potential developers and investors of data centres. The OGCIO will provide helpdesk service to interested investors to supplement the services being offered by Invest Hong Kong. We will launch the portal and commence the helpdesk operation in July 2011.
- (c) **Identifying sites** for development of high-tier data centres and appropriate land disposal arrangements. We expect to put up concrete proposals in the second half of 2011.
- (d) **Promoting the incentive measures that optimise the use of industrial buildings** for the benefit of developing data centres, in particular those with mid-tier requirements. These measures encourage –
  - (i) the wholesale conversion of existing industrial buildings through exemption of waiver fees; and
  - (ii) the redevelopment of such buildings through assessment of premium to be paid on a “pay for what you build” basis.

## **Collaboration with the Mainland Authorities in Complementing the National Twelve Five-Year Plan**

11. The “Outline of the Twelve Five-Year Plan for the National Economic and Social Development of the People’s Republic of China” (The National 12-5 Plan) has one of its focuses on the uplifting of Mainland’s overall informatisation level, in particular in the areas of cloud computing, e-business, “Internet of things”<sup>5</sup> and logistics. It also emphasises the internationalisation of its service industries, including the information industry.

12. In the areas of informatisation and internationalisation, Hong Kong can play a major role in complementing the National 12-5 Plan from the following three angles –

- (a) **Cross-Boundary Facilitation:** Two pilot projects on “Mutual Recognition of Electronic Signature Certificates issued by Hong Kong and Guangdong” are in operation. Both pilot projects facilitate cross-boundary exchanges of electronically signed documents in preparing customs declaration, saving time (from a few days to within one day) and cost, as well as enhancing the reliability of information transmission. Hong Kong and the Mainland authorities are reviewing the arrangements, with a view to incorporating the mutual recognition scheme into normal practice in the light of experience gained in the pilot projects.
- (b) **Technology Collaboration:** Given the rapidly developing technology sectors and markets in the Mainland, it could be the standard setter. The Government encourages Hong Kong experts and industry members to collaborate closely with the Mainland and contribute to the development of cloud standards when opportunity arises. Hong Kong ICT industry could also contribute to the internationalisation of the Mainland ICT industry by sharing experience in international methodologies and best practices.

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<sup>5</sup> “Internet of things” makes use of the communications network, Internet, sensor technology and intelligent devices to perceive identification of the physical world and objects in achieving seamless connection. It is most commonly applied in logistics, intelligent home, etc.

- (c) **Joint Promotion:** OGCIO continues to join hands with Mainland authorities to promote ICT products and services of the two places to cater for the global market. In May this year, we co-organised the SmartHK ICT seminar in Guangzhou with the Hong Kong Trade Development Council and the Economic and Information Commission of Guangdong Province. We also took part in the 15<sup>th</sup> International Soft China Expo organised by the Ministry of Industry and Information Technology in Beijing, by staging a Hong Kong Pavilion and an International Forum to share Hong Kong's international business experience and showcase quality ICT products and services.

### **International Promotion**

13. To promote Hong Kong's ICT industry, the Task Force on Industry Facilitation under the D21SAC agreed on the following three-pronged promotion strategy –

- (a) to promote ICT achievements and opportunities in Hong Kong;
- (b) to attract large-scale and significant ICT events to highlight Hong Kong as a prominent place for ICT innovation, cooperation and trade; and
- (c) to join hands with different partner organisations to promote Hong Kong's advantages in ICT development, business, and trade.

14. The Government has developed a set of fact sheets in collaboration with industry support bodies. This will be used in promotion channels of the Economic and Trade Offices, Invest Hong Kong, the Hong Kong Trade Development Council, the Cyberport, the Hong Kong Science and Technology Parks Corporation, etc. to promote Hong Kong as a hub for trade, investment and innovation in ICT.

15. To raise Hong Kong's profile of ICT development and industry, the Government supports the hosting of high-profile ICT events in Hong Kong.

Such events include the first ever joint event of Asia Pacific Internet Conference on Operational Technologies and Asia Pacific Advanced Network (APRICOT-APAN) in February 2011, the first-ever Online Information Asia-Pacific 2011 in March, and the World Summit Awards (WSA) Grand Jury in April. Moreover, the Wall Street Journal (WSJ) has chosen Hong Kong to host its first “All Things Digital” event outside the USA in October this year. This event, called “AsiaD”, will feature top-notch global IT leaders discussing strategic issues about the digital industries. Hong Kong will also be the host city for the China Internet Conference to be held outside the Mainland for the first time in October.

16. We will continue to encourage our local ICT companies to participate in international, regional and national ICT awards to raise the profile of Hong Kong’s ICT industry. For example, nine software products from Hong Kong were granted awards in the China Outstanding Software Product Awards (COSPA) 2010 earlier this year. The list of awarded products has been provided to government departments, state-owned enterprises and other enterprises in the Mainland for their reference.

### **ICT Manpower Development**

17. The Government will continue to play a role in creating an environment in which a well-qualified IT workforce can flourish and meet the needs of the society. The Cyberport has, as part of its public mission in nurturing human capital, implemented the IT Internship Co-ordination & Facilitation Programme and the IT Exchange Programme for years, benefiting fresh graduates and university students respectively to learn about subjects that are unavailable in classes. The Government also supported an ICT professional body to develop promotion materials and organise career talks to inspire secondary school and university students to take up ICT related degrees in their academic advancement and to consider ICT as their career. The programme will commence in the third quarter of 2011.

18. The Government is working with the industry and academia to enhance the portfolio of ICT professional qualifications. With the support of the Education Bureau, the ICT Industry Training Advisory Committee (ITAC) has recently completed the industry consultation on the draft version of the second set of Specification of Competency Standards (SCS) under the Qualifications

Framework.<sup>6</sup> The ITAC is revising this set of SCS and expects to launch it in August this year.

19. The local ICT workforce has increased from around 67 000 in 2008 to over 73 000 in 2010.<sup>7</sup> To support the development of ICT talent in the longer term, the Government will continue to facilitate the development of the Qualifications Framework and encourage worthwhile initiatives of the industry.

### **Promoting the Adoption of ICT among SMEs**

20. The vast majority of business establishments in Hong Kong are SMEs, and the extent of their adoption of ICT is key to the development of our digital economy. Over the years, the Government and the ICT industry have been joining hands to facilitate the wider adoption of ICT among SMEs. For example, OGCIO's Sector-specific Programme (SSP) and IT Training Programme for SMEs supported 20 projects for 14 business sectors<sup>8</sup> between 2004 and 2010. Over 14 000 practitioners from SMEs have benefitted from these projects.

21. Given SMEs' significance in Hong Kong's economy, there needs to be continuous initiatives to enhance their adoption of ICT. We plan to launch a new round of SSP in August 2011 for promoting such adoption in three sectors, namely wholesale/retail, business services and import/export. These are the sectors identified by the "*Study on ICT Adoption in Hong Kong SMEs*", commissioned by OGCIO in October 2009. Besides, we will also invite proposals for facilitating SMEs' use of existing e-government services (e.g. e-procurement).

22. With the advent of Cloud Computing, more opportunities will be offered to SMEs to adopt ICT. The significance of Cloud Computing to SMEs is the lower startup costs it offers, the on-demand scalability and lower risks of over-

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<sup>6</sup> The sets of ICT SCS consist of 4 branches. The first set that was already launched is for Software Products and Software Services, and the second set under revision now is for Communication and Information Services. The remaining two sets to be developed are for (i) Electronic Products, Information Processing Hardware and Communication Equipment; and (ii) Electronic and Optical Components.

<sup>7</sup> Figures from the Vocational Training Council's IT Manpower Surveys

<sup>8</sup> Namely travel agencies, medical and health, drugstores, accounting, beauty service, logistics, trade, watches and clocks, social service, supply chain, Chinese medicine practitioners, social enterprises, manufacturing and general industries..

investments in hardware and software that may lead to technology obsolescence. This will help to reduce the entry barriers for adoption of ICT among SMEs. Under the new round of SSP mentioned in paragraph 21, we will also encourage proposals that make use of Cloud-based services.

### **Administration of Internet Domain Names and Internet Governance**

23. Hong Kong is at the forefront of domain name registration. We are one of the first economies in the world that offer bilingual domain name registration. In March 2011, the Hong Kong Internet Registration Corporation Limited (HKIRC) launched full Chinese “.香港” Internationalised Country Code Top Level Domain (“.香港” domain name) registration service. The service enables Chinese-speaking people to access Hong Kong websites using web addresses written wholly in their mother language. It also facilitates the establishment of organisations’ cyber identities and the promotion of commercial brand names in Chinese more easily and directly. As of June 2011, there were over 20 800 “.香港” Chinese domain names registered.

24. As regards the implementation of the Registry-Registrar model, the HKIRC launched a Registrar Accreditation Program in December 2010 and started to receive applications for registrar accreditation. Subject to the progress of applications and accreditation, it is anticipated that two or more local registrars would be accredited in this year.

### **Advice Sought**

25. Members are invited to note the contents of this paper.

**Office of the Government Chief Information Officer  
Commerce and Economic Development Bureau  
July 2011**

## Observations on the Findings of the BCG Report and the CASS Study

### A. Observations on the BCG Report

- This report focuses on the nature and size of commercial activities on the Internet across different countries and regions in 2009. It ranks Hong Kong against other countries/economies.
- The BCG has created the e-Intensity Index, which is compiled from three measures of Internet activity –
  - (a) Enablement: how well-built and how accessible the infrastructure is;
  - (b) Expenditure: how much money consumers and businesses are spending online on e-commerce and online advertising; and
  - (c) Engagement: how actively businesses, governments, and consumers are embracing the Internet.
- Hong Kong is ranked 13<sup>th</sup> in the overall e-Intensity Index (the Mainland of China is ranked 40<sup>th</sup>). No other individual Chinese cities are ranked in this report.
- Hong Kong is ranked 3<sup>rd</sup> globally in high speed optical technologies, ranked 6<sup>th</sup> globally in the penetration of broadband, and ranked 3<sup>rd</sup> in Asia Pacific in the Enablement sub-index, which is measured by number of broadband subscriptions, smart phone adoption, and average download and upload speeds.

### B. Observations on the CASS Study

- This study aims to compare the competitiveness of 294 Chinese cities annually, covering comprehensive aspects of each economy instead of the Internet alone. Hong Kong is ranked top in the Overall Competitiveness Index, which is compiled from seven areas, namely Overall Growth Competitiveness Index, Economy Scale Competitiveness Index, Economy Efficiency Competitiveness Index, Development Cost Competitiveness

Index, Industry Competitiveness Index, Income Level Competitiveness Index and Well-being Competitiveness Index.

- The Study has also researched into the factors affecting the competitiveness of cities, and compared the competitiveness of 56 major cities by 12 sub-categories. Hong Kong is ranked first in six sub-categories: Human Capital Competitiveness, Financial Capital Competitiveness, Economic Structure Competitiveness, Ecological Environment Competitiveness, Government Governance Competitiveness, and Openness of Business Competitiveness. Hong Kong is ranked among the top five in five sub-categories: Infrastructure Facilities Competitiveness, Overall Regional Position Competitiveness, Commercial Culture Competitiveness, Economic Institution Competitiveness, and Enterprise Management Competitiveness.
- Hong Kong is ranked 26<sup>th</sup> in Science and Technology Competitiveness, one of the 12 sub-categories. Note 1
- In Information Technology Infrastructure Index under Infrastructure Facilities Competitiveness, Hong Kong is ranked 37<sup>th</sup>. The index is made up of two sub-indicators, i.e. the number of mobile subscribers per 100 persons and the number of Internet subscribers per 100 persons. These are essentially mobile and Internet penetration rates. Note 2

*Note 1: CASS's ranking of Science and Technology Competitiveness cannot be directly compared with the e-Intensity ranking in the BCG Report. CASS's ranking order focuses on measuring R&D input and output of an entire economy rather than concentrating on the intensity of Internet activity as in the BCG report. In assessing the competitiveness, the BCG report casts a wider net in measuring market sophistication and business environment other than the technical capability.*

*Note 2: As at end 2009 (time frame of the statistics used for compiling the indices in the CASS Study), Hong Kong had 12.2 million mobile subscribers and 2.1 million Internet subscribers, representing penetration rates at 173.6% and 29.3% respectively. These penetration rates were amongst the highest in the world.*