

For information on
8 July 2013

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

Facilitating a Digital Economy

Purpose

This paper updates Members on the progress of initiatives to facilitate a digital economy under the Digital 21 Strategy.

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

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. With some 17 200 business establishments, the ICT sector generated business receipts and income amounting to HK\$1,458 billion, representing 6.1% of our GDP as of 2011. With the concerted efforts of the Government, ICT industry, academia and the community, Hong Kong has consistently performed well in international ICT rankings. For instance, we ranked first globally in respect of “technological infrastructure” of the World Competitiveness Yearbook 2013 by International Institute for Management Development. For three consecutive years from 2011 to 2013, we ranked as the safest place in Asia for setting up data centres. The Asia Cloud Computing Association has also ranked Hong Kong the third in the Asia Pacific region in cloud readiness in 2012. Our household broadband penetration of 86% and mobile penetration of over 228% (as of March 2013) are among the highest in the world. Our average peak Internet connection speed of 57.5 Mbps is the fastest worldwide and the average connection speed at 9.3 Mbps is the third in the world, after South Korea and Japan (4th Quarter, 2012).¹

3. The Government has been working closely with the ICT industry and supporting organisations to formulate and implement various initiatives to drive the development of our digital economy and enhance Hong Kong's position as a regional ICT hub. The major initiatives are highlighted in the ensuing paragraphs.

¹ According to the "State of the Internet" report for the 4th Quarter, 2012 published by Akamai.

Development of Cloud Computing

4. To facilitate the development of the cloud industry, the Government takes the lead in adopting the cloud model to improve our efficiency and deliver better public services. We will invest over HK\$240 million during the next five years to establish a private cloud (GovCloud) for the Government to support common e-government services. The contract was awarded in March 2013. We expect to launch the cloud services before the end of this year. We are developing common services on GovCloud, including electronic information management, human resources management, electronic procurement, etc.

5. Other than the direct investments in government cloud projects, we have been actively taking different measures to facilitate cloud industry development, including facilitating the development of data centres, collaborating with the Mainland on the development of cloud services and facilitating adoption of ICT and cloud services among the local small and medium enterprises (SMEs). In addition, we are also opening up different Public Sector Information (PSI) in helping the local industry develop creative and innovative cloud solutions.

Data Centre Development

6. The Government has implemented a host of measures to develop Hong Kong into a regional data centre hub. With the Government's support for the provision of land for high-tier data centres, the Tseung Kwan O Industrial Estate now houses a cluster of 12 high-tier data centres. We have also earmarked two hectares of land in Tseung Kwan O outside the Industrial Estate for high-tier data centre development, with the first one-hectare site now open for tender for three months until 4 October 2013.

7. To drive data centre development, we launched two incentive measures in June 2012 to encourage the conversion of eligible industrial buildings for data centre use and development of high-tier data centres in industrial lots. Responses from the industry have been encouraging, and the Government has received a total of six applications (five for conversion and one for development) in just one year. Two of the applications for conversion have already been approved, and the remaining four are being processed.

8. Besides, the Data Centre Facilitation Unit (DCFU) established under OGCIO proactively provides information and one-stop services to organisations interested in the development and operation of data centres, including —

- promulgating useful information through the data centre thematic portal, such as site availability and selection, power supply, water

supply for cooling, energy efficiency guides, goods vehicle parking requirements, etc.;

- working with government departments on more measures to facilitate the setting up of data centres taking into account the unique mode of operation of data centres; and
- working with Invest Hong Kong to support enterprises interested in setting up data centres in Hong Kong and, targeting at both overseas and the Mainland, to promote Hong Kong as the prime location in the Asia Pacific region for setting up data centres.

9. Since its establishment in July 2011, the DCFU has handled enquiries from about 200 enterprises within and outside Hong Kong, and assisted three overseas operators to set up two high-tier data centres in Hong Kong with a total site area of about three hectares.

ICT Collaboration with the Mainland

10. The Government co-operates with Mainland authorities in three areas, namely mutual recognition of electronic signature certificates issued by Hong Kong and Guangdong (Mutual Recognition), technology collaboration and technology exchanges.

11. The pilot Mutual Recognition scheme under the “Mainland and Hong Kong Closer Economic Partnership Arrangement” and the “Framework Agreement on Hong Kong/Guangdong Co-operation” has been successfully implemented. With reference to the experience gained from the pilot projects and the results of consultancy studies commissioned by Hong Kong and Guangdong, the governments of the two places announced the standing arrangement for Mutual Recognition in August 2012. Certification authorities in the two places can issue electronic signature certificates with mutual recognition status for use in cross-boundary transactions to enhance security and reliability. This will further the development of secure e-commerce between the two places.

12. On technology collaboration, the Government encourages Hong Kong experts and industry practitioners to collaborate closely with the Mainland on the development of cloud computing. In July 2012, OGCIO and the Economic and Information Commission of Guangdong Province (GDEI) jointly established the “Hong Kong/Guangdong Expert Committee on Cloud Computing Services and Standards”, with a view to promoting the adoption and development of cloud computing services and standards, as well as nurturing cloud computing talents of the two places. In January 2013, OGCIO and GDEI

jointly launched their respective cloud computing resource portals, with common look-and-feel and cross-linking between them to facilitate cross references to cloud-related technologies, services and industry developments. We are also establishing an online collaboration platform to facilitate the continuous discussion among the cloud experts in Hong Kong and the Mainland on different cloud technology topics.

13. On technology exchanges, the Government collaborates with Mainland authorities to organise and support expert and industry forums to facilitate exchanges between the two places, including the “Symposium on the Mainland and Hong Kong ICT Industry Innovation and Entrepreneurship” in July 2012, the first "Guangdong-Hong Kong Cloud Computing Conference" cum the launch of the "Guangdong-Hong Kong ICT Youth Entrepreneur Programme" in December 2012, and the “Hong Kong-Guangdong Cloud Industry Collaboration Forum” in April 2013. We also actively participate in major Mainland ICT events to facilitate industry collaboration. In May 2013, OGCIO together with local industry associations participated in the 17th International Soft China Expo in Beijing to promote Hong Kong’s ICT development. In June 2013, the Government led a 50-strong delegation to participate in the 11th China International Software and Information Service (CISIS) Fair in Dalian. At CISIS, we organised the “Hong Kong-Mainland IT Forum” to promote our innovative e-services and strengthen our position as a bridge between the Mainland and international markets. We also set up a Hong Kong Pavilion to showcase Hong Kong’s innovative ICT products and services.

ICT Manpower Development

14. With the ever increasing usage of ICT, the local ICT workforce is growing in tandem, by 18% from around 66 700 in 2008 to around 78 700 in 2012.² The Government continues to facilitate the creation of an environment in which a well-qualified ICT workforce can flourish and meet the needs of the industry.

15. In relation to the students, we put considerable emphasis on nurturing them to pursue ICT as their career. For example, the Cyberport has, as part of its public mission to nurture human capital, organised the Hong Kong-Shanghai ICT Internship Programme since 2011 for university students to work in ICT settings in Shanghai for six to 12 weeks. More generally, Cyberport has also organised over 60 knowledge sharing events which helped more than 6 000 ICT practitioners upgrade their ICT knowledge.

² Figures from the Vocational Training Council’s Report on the 2012 Manpower Survey of the Information Technology Sector

16. It is important to arouse students' interest in ICT. In July 2011, we supported an ICT professional body to develop a promotion toolkit entitled "IT is Your Ideal Career" and organise career talks to encourage secondary and university students to take up ICT related degrees and to consider joining the ICT industry after graduation. Upon completion of the project in January 2013, a total of 23 career talks had been conducted, with participation of around 2 200 secondary and 500 university students.

17. The Government has also sponsored another promotion programme targeting students of Secondary 3 to 6 to inculcate interest in ICT. The programme covers a research study on the aspirations of students in relation to ICT, and a series of activities including mobile application development competition, short message/video clip competition, interschool debate on ICT-related topics and TV programmes promoting the ICT industry. Results of the research study will help fine tune other activities of the programme so as to better address students' interest areas and can also serve as reference for other future initiatives to promote IT to secondary students. The programme commenced in December 2012 and is scheduled to complete in December 2013.

18. We organised an IT Man Workshop in December 2012, in which over 50 participants from the ICT industry exchanged views on issues related to ICT manpower in Hong Kong. Drawing on discussions at the workshop, the Government has started to implement further measures to facilitate the sustainable development of manpower in the ICT industry. Such measures include —

- arranging exhibitions and other promotional programmes to secondary students to arouse their interest in ICT;
- fostering closer liaison with ICT departments of post-secondary institutions with the ICT industry and organising more career talks for students;
- producing and broadcasting a TV drama series, at end 2013, on the contribution of ICT professionals to Hong Kong's social and economic development; and
- setting up a new category of the Hong Kong ICT Awards for students' projects, starting from 2014, so as to recognise and showcase their innovative ideas in the use of ICT.

19. In addition, the Digital 21 Strategy Advisory Committee (D21SAC) has set up the Task Force on ICT Professional Development and Recognition to explore and establish a framework on ICT professional certification and

recognition in Hong Kong, with reference to international practices and frameworks of other economies. The Task Force is now working on the conceptual framework for ICT professional development and recognition in Hong Kong.

Green ICT

20. The Government is committed to promoting green ICT and has implemented a range of green ICT initiatives. In 2010, OGCIO promulgated the “Green Data Centre Practices” for reference and adoption by bureaux and departments (B/Ds) in their data centre management. All relevant B/Ds have undertaken to adopt the recommended practices, and will fully implement these recommendations when renewing systems and facilities as well as setting up new data centres. Moreover, B/Ds will enhance existing facilities for better energy efficiency while maintaining normal operational services. Taking the data centres managed by OGCIO as an example, we have made reference to the Government’s green procurement policy and green product standards promulgated by the Environment Bureau in procuring computer equipment. In addition, we are progressively switching to energy-efficient air conditioning systems, uninterruptible power systems and diesel generators. We have installed green fire protection and lighting systems, raised the room temperature, implemented virtualised infrastructure, and adopted the design to separate hot and cold air when enhancing existing computer systems and installing new systems. We also arrange training, experience sharing sessions and workshops for B/Ds from time to time to promote these practices and increase their awareness on green data centre management.

21. Regarding green procurement, it is the practice of the Government to incorporate green requirements in procuring IT products and service. B/Ds will adopt in their IT tenders a set of standard terms and conditions which include provision about environment management. In addition, contractors are required to pay attention to environmental issues including the control of the use of materials and resources (e.g. electricity, paper, etc.) to minimise their consumption and avoid unnecessary wastage. To further facilitate green procurement, the Government has developed a list of green specifications for IT products commonly used by B/Ds. The list will be updated regularly and continuously taking into account latest development of green technology and standards.

22. To promote energy-saving practices in the industry, OGCIO made available in 2012 the above-mentioned “Green Data Centre Practices” for reference by the industry through the data centre thematic portal. Regarding setting up of new data centres, the Government issued a Practice Note in June

2012 on applications for high-tier data centre development on industrial lots, which requires submission of green building designs and other green measures, with a view to encouraging data centres to enhance energy efficiency. The data centre industry has also implemented various green and energy-saving measures in design and operation to reduce carbon emission and operating costs. For instance, some new data centres and some existing ones which have been recently upgraded adopt energy-saving measures in construction and operation, optimisation of air flow and chiller systems, as well as virtualisation of computer servers.

23. To encourage development and adoption of green ICT, we have instituted a distinct category on green ICT under the Hong Kong ICT Awards since 2011. Responses have been encouraging, with an average of 40 entries each year, and many of them demonstrated the advanced development and innovative adoption of green ICT.

ICT Start-up Development

24. Start-ups are a vital breeding ground of innovative ideas and powerful products, playing a pivotal role in driving the sustained development of Hong Kong's ICT industry. However, by their very nature, ICT start-ups usually lack the requisite resources, connections and experience to commence and sustain their business.

25. In this connection, the Government, through Cyberport and Science Park, provides financial and other forms of assistance to these fledgling ICT companies. For instance, the Cyberport Creative Micro Fund (CCMF) provides subsidies to ICT projects to turn their embryonic ideas into prototypes. So far, 34 such projects have been subsidised. Moreover, Cyberport runs the Hong Kong-Shenzhen CCMF and Hong Kong-Guangdong CCMF programmes, which provide grants for ICT projects collaborated by Hong Kong and Mainland ICT talents. Cyberport and Science Park also run incubation programmes, which provide free rental office space, financial assistance, trainings and advice to new ICT start-ups. So far, more than 270 companies have completed the programmes since 1992³, with over 70% of them still in operation.

26. The support provided is beginning to bear fruit, with some of the local ICT start-ups becoming successful businesses and gaining international recognition over the years. In 2012, for instance, our ICT industry won a total of seven international awards. These achievements demonstrate that Hong

³ Science Park (or the Hong Kong Industrial Technology Centre, which was the predecessor of Science Park prior to its establishment in May 2001) and Cyberport have been running their incubation programmes since 1992 and 2005 respectively.

Kong's ICT sector is developing from its role of supporting other sectors into an important sector on its own right.

27. Meanwhile, to further enhance the existing support to tech start-ups, OGCIO has recently set up an Advisory Committee on Start-up Development to join hands with Cyperport, Science Park, Hong Kong Productivity Council, Create Hong Kong and Invest Hong Kong. The Committee aims to create synergy among the existing support resources and measures provided by various agencies, with a view to promoting the entrepreneurial culture in the ICT field. As a start, we will develop a one-stop portal for prospective and existing start-ups, as well as potential investors and other stakeholders. By serving as the central point for information retrieval, the portal aims to promote a vibrant and self-sustaining ecosystem for ICT start-ups by increasing the transparency of the start-up scene. The portal will feature a wide range of user-friendly functionalities, including a platform for matching start ups and angel investors, practical templates and samples for various documents from business registration to award entry forms, as well as useful information to start-ups, such as incubation programmes, funding and loan schemes, co-working spaces, networking events, etc. We will also set up a "Start-up Corner" in Hong Kong Productivity Council's "SME One", which is a one-stop centre for SMEs, to provide a comprehensive range of information specifically for start-ups. On-site staff will be available at "SME One" to handle enquiries relating to start-ups.

Adoption of ICT among SMEs

28. Recognising that cloud technology allows SMEs to adopt ICT solutions that are suitable for their scales of operation with low start-up costs and reduced requirements for technical know-how and manpower resources to cope with system maintenance and upgrade, the Government strives to facilitate the adoption of cloud technology among SMEs. We launched a portal on cloud computing (InfoCloud) in January 2013 to provide SMEs with useful information on cloud computing, user guides and best practices. These publications help SMEs understand the benefits of using cloud computing, how to select cloud services as well as common issues that SMEs should be mindful of when adopting cloud services such as security and switching between service providers.

29. To further promote the adoption of cloud computing services by SMEs, we will step up our promotional efforts, including publicity through online media and co-organising promotional events with ICT industry bodies and SME-related organisations. In parallel, we are working with Hong Kong Productivity Council to explore measures to encourage and facilitate SMEs to adopt cloud computing services.

30. The effective use of ICT by SMEs can enhance their operational efficiency and competitiveness as well as facilitate their business development. Over the years, the Government has implemented a lot of schemes to support SMEs. Those that are ICT specific include the Sector-specific Programme (SSP) and the IT Training Programme (ITTP), providing funding support to 22 projects in 16 sectors since the launch of the programmes in 2004. As at June 2013, we have completed 21 such projects, benefiting over 17 000 SME practitioners. The most recently completed project, “Consumer Connect”, provides brand owners and retailers with a cloud-enabled mobile platform and application to promote their products and make available product information to the consumers. The remaining project, namely a cloud-based teleprotection system to enhance the efficiency of security patrol operation and the safety of security guards, commenced in February 2012 and is expected to complete in early 2014.

31. We launched a new round of SSP in May 2013, setting aside \$3 million for sponsoring projects that develop applications and solutions for individual SME sectors to encourage SMEs to suitably adopt ICT to enhance their operational efficiency and create business opportunities. We are now inviting proposals and expect to award sponsorship within 2013.

International IT Fest 2013

32. The Office of the Government Chief Information Officer (OGCIO) collaborated with technology partners (including Cyberport, Science Park, Hong Kong Productivity Council, Invest Hong Kong and Hong Kong Trade Development Council) and the local ICT industry to organise Hong Kong’s first-ever International IT Fest (IT Fest) from 8 to 21 April 2013. IT Fest 2013 achieved the objective of showcasing Hong Kong’s ICT achievements and strengths in areas where Hong Kong is developing fast. By putting together 25 events in various ICT domains under a distinctive brand name, the IT Fest helped promote Hong Kong’s image as a leading ICT hub in the Asia Pacific region. The list of the 25 events is at Annex I.

33. Within Hong Kong, the IT Fest raised the profile and increased awareness of the ICT industry in the community. Moreover, the IT Fest provided a platform for the local ICT industry to share insights and collaborate with Mainland and overseas experts. IT Fest 2013 registered a total participation of over 46 000 attendees, with over 8 000 from the Mainland and over 9 000 from overseas. The participation rates of many events under the IT Fest exceeded expectation, with some recurring events breaking new records. Feedback from the ICT industry about the IT Fest is generally very positive.

34. Riding on the success of this year, we are planning for next year's IT Fest to be held on 7-20 April 2014.

**Office of the Government Chief Information Officer
Commerce and Economic Development Bureau
July 2013**

Events of IT Fest 2013

Date	Event
8 April 2013	Hong Kong ICT Awards 2013 Awards Presentation Ceremony
9 – 10 April 2013	Broadband Asia 2013
11 April 2013	Hong Kong Digital Heroes
11 April 2013	Information Security Seminar
12 April 2013	MoDev Hong Kong 2013
12 April 2013	Smart Elderly Awards Presentation Ceremony
12 April 2013	IT and Infrastructure Seminar
12 – 14 April 2013	Startup Weekend HK
13 – 16 April 2013	International ICT Expo
13 – 14 April 2013	IET/MATE Hong Kong Underwater Robot Challenge 2013
14 April 2013	iCity Opening Ceremony and Experience Sharing
15 April 2013	BIP Asia Seminar Series – Panel Discussion on Software Copyrights Best Practices
15 April 2013	Web Accessibility Recognition Scheme Awards Presentation Ceremony
15 April 2013	China Outstanding Software Product Awards – Hong Kong Region Presentation Ceremony
15 April 2013	Seminar on Market Analysis for Social Media
16 April 2013	HK-GD Cloud Industry Collaboration Forum
17 April 2013	Hong Kong Internet of Things Symposium
17 April 2013	Digital Entertainment Leadership Forum 2013
17 – 19 April 2013	ISACA China Hong Kong Chapter Annual Conference
18 April 2013	Silicon Dragon Hong Kong 2013
18 April 2013	“Top 10 .hk Website Competition” Award Presentation Ceremony
18 April 2013	2013 Worldwide Cyber-security Landscape Forum
19 April 2013	SME ICT & Cloud Experience Day
20 April 2013	Seminar on Free and Open Source Software in Hong Kong
20 – 21 April 2013	Launch of Mobility Experience Centre cum Exhibition