

For discussion on
12 July 2010

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

**Facilitating a Digital Economy, and Promoting Technological Innovation,
Cooperation and Trade**

Purpose

This paper briefs Members on the progress made in facilitating a digital economy and promoting technological innovation, cooperation and trade, and sets out initiatives in their furtherance.

Background

2. We already updated Members on the latest progress of the Digital 21 Strategy action areas in “Enabling the Next Generation of Public Service” and “Building an Inclusive, Knowledge-based Society” at the Panel meetings on 12 April 2010 and 13 May 2010 respectively (Members may wish to refer to LegCo papers: LC Paper No. CB(1)1520/09-10(03) and LC Paper No. CB(1)1843/09-10(07)). The Government has been working with the ICT industry and supporting organisations to formulate and implement various initiatives under other action areas. These are highlighted in the following sections. Together with our previous two reports, this report will form a complete picture of the latest updates concerning the Digital 21 Strategy.

Promoting Hong Kong as a Centre for the ICT Industry

Opportunities for Hong Kong

3. In formulating the strategy and measures to promote Hong Kong as a centre for the ICT industry, we worked with the Task Force on Industry Facilitation (ITFF) under the Digital 21 Strategy Advisory Committee (D21SAC) to analyse Hong Kong’s unique strengths and the opportunities that arise from them. The analysis reveals that although the local ICT market is relatively

small in size, there are significant opportunities in regional and global markets. In particular the fast development of the Mainland of China has led to rapid growth both in demand for ICT products and services, and in capabilities which could be used to serve global customers. Being an international trading hub with good financial facilities and having an ICT industry with good understanding of international market and business practice, Hong Kong is well positioned to facilitate the internationalisation of the Mainland software sector. Hong Kong's know-how and technology can add value to Mainland ICT sectors and assist them to be marketed internationally. Equally, Hong Kong can add value to technology developed in third markets, so that it can be effectively deployed on the Mainland of China and regionally.

Facilitation Measures

4. Based on the above analysis, we in collaboration with the IFTF have identified measures that the Government can take to facilitate the development of the identified opportunities. These are -

- (a) Strengthening cooperation frameworks to facilitate Hong Kong's development into an ICT hub for Mainland and overseas economies
- (b) Facilitating collaborative ICT research and development (R&D) with other economies
- (c) Fostering partnership to promote local ICT industry and attract inward investment
- (d) ICT manpower development
- (e) Data centre development

Strengthening Cooperation Frameworks

5. We have established inter-governmental cooperation frameworks with the various levels of Mainland governments to strengthen Hong Kong's edge as a conduit for the Mainland market. The "Mainland and Hong Kong Closer Economic Partnership Arrangement" provides for ICT-related liberalisation measures which, among other things, facilitate Hong Kong companies setting up enterprises on the Mainland to provide software implementation and data

processing services. The “Framework Agreement on Hong Kong / Guangdong Co-operation” advocates the support for enterprises in the two places to jointly build e-business systems and service platforms for business collaboration. In particular, "The Application Procedure for Pilot Project on Mutual Recognition of Electronic Signature Certificates Issued by Hong Kong and Guangdong" was announced in April this year. The recognised certification authorities in the two places can jointly submit applications for such projects. These measures enhance the cross boundary e-business environment and, more importantly, enhance Hong Kong’s position in attracting overseas companies to establish businesses in Hong Kong, by which they may tap into the Mainland market.

6. The Government supports the local ICT industry to expand into the Mainland market. For example, the Office of the Government Chief Information Officer (OGCIO) has sponsored the provision of a one-stop service to facilitate local small and medium-sized enterprises’ (SMEs) launching their mobile and wireless applications on the Mainland, providing services such as content localization, marketing and promotion, front line customer support and production hosting. The project will commence operation in July this year. Moreover, the Government also sponsored local software enterprises, including the winners of the Hong Kong ICT Awards and and China Outstanding Software Product Award 2009 (Hong Kong Section) to showcase their products and services at the Hong Kong Pavilion of the International Soft China 2010. We are also considering appropriate forms of support in collaboration with the different levels of Mainland governments.

7. The Government will also strengthen collaboration with economies with innovative ICT sectors, whose enterprises may benefit from establishing a presence in Hong Kong or partnerships with Hong Kong companies in order to address regional markets. We already have a number of high-level cooperation agreements with such economies¹ and will formulate actionable work plans to promote collaboration between Hong Kong and foreign enterprises in the field of ICT, covering joint R&D projects (also see *Facilitating Collaborative ICT R&D with Other Economies* below) as well as commercial arrangements. Relevant activities may include exchange of information that promotes awareness and interests in collaboration, joint study on marketing strategy and

¹ These include Canada, Ireland, Israel, Germany and Italy.

collaboration models, and trade missions to explore business opportunities and facilitate business matching.

8. We will also explore collaboration with other governments at city-level which will complement the development needs of Hong Kong in areas such as wireless and mobile technologies and applications, digital content, etc.

Facilitating Collaborative ICT R&D with Other Economies

9. We find that there are substantial opportunities for local enterprises to develop ICT software and hardware for the Mainland and overseas market by adapting technology originally developed outside Hong Kong. Such technology often needs to be adapted to fit the business, cultural and language environment as well as the technology standard being adopted in the new market, and that is where Hong Kong can play as the bridge.

10. We will explore our facilitation measures to promote Hong Kong ICT companies' collaboration with overseas enterprises in joint ICT R&D projects. In particular we will look at how to enable the industry to make best use of the existing funding schemes such as the Innovation and Technology Fund, and at the Government's role as a facilitator.

Fostering Partnership to Promote Local ICT Industry and Attract Inward Investment

11. There is potential for overseas enterprises to use Hong Kong as a gateway to the Mainland, either adapting technology for the Mainland market, or using Hong Kong as a base for managing outsourced manufacturing or development on the Mainland. They may also locate some other functions in Hong Kong such as regional management, customer service, sales and marketing, data centres, etc. They can do this through direct investment in Hong Kong or through partnering with local enterprises.

12. The Government has been providing sponsorship and other appropriate forms of support to promote the local ICT industry and attract inward investment. For example, we supported trade missions to the United States, Canada and Israel in 2009 and Thailand in 2010 to promote the ICT services of

Hong Kong. We also sponsored local ICT SMEs to showcase their products and services at the International ICT Expo 2010. Moreover, we also helped in recognising and promoting the excellent achievements of the local ICT industry through organising the Hong Kong ICT Awards as well as supporting its participation in regional or international awards such as the China Outstanding Software Product Awards 2009, Asia Pacific ICT Awards 2009, the World Information Technology and Services Alliance - Global ICT Excellence Award 2010, etc.

13. We will continue to promote the advantages and opportunities in Hong Kong to attract more overseas companies to set up their regional headquarters or offices here. On the other hand, we will facilitate local ICT enterprises exporting their skills and services to emerging markets such as the Southeast Asian countries.

14. We are working with other industry support bodies, including Hong Kong Trade Development Council, Invest Hong Kong and Cyberport, to create a more integrated approach to promoting Hong Kong as a hub for trade, investment and innovation in ICT.

ICT Manpower Development

15. 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, as part of its public mission in nurturing human capital, has implemented the IT Internship Co-ordination & Facilitation Programme and the IT Exchange Programme for years.

16. The Government has also supported major local ICT associations to form the ICT Human Resources Consortium and to establish an ICT Career Centre, where ICT professionals can look for opportunities in business, employment and training. The Centre now has around 11,000 members.

17. The Government is working with the industry and academia to enhance the portfolio of ICT professional qualifications. To support the development of ICT talent in the longer term, we are facilitating the development of the

Qualifications Framework for the ICT industry, and supporting the industry to develop a roadmap for the certification of professional qualifications.

18. We will continue to foster a vibrant, competitive and innovation driven ICT industry in Hong Kong, which will offer better prospect to the youngsters. We will also strive to attract large ICT enterprises on the Mainland and overseas to set up their regional headquarters and technology centres in Hong Kong and create technically challenging jobs for our ICT professionals. In addition, we will further explore the strengths and skill profiles of our ICT workforce, such as business skills, domain knowledge, knowledge management, etc., to help them advance in their careers.

Data Centre Development

19. Data centre development is in line with the key areas of focus and the desired outcomes of the Digital 21 Strategy. Data centres are also part of the essential infrastructure to support the continued development of the four pillar industries and the six key industries for Hong Kong. With technological advancement, data centre services can also provide a good platform for cloud computing and attract more on-line businesses to Hong Kong.

20. Hong Kong is an excellent location for data centres because of its proximity to the Mainland, conducive business environment, stable government, transparent and independent judicial system, reliable power supply, sound telecommunication infrastructure and low risk of natural disasters. OGCIO has been working hand-in-hand with other government departments including Innovation and Technology Commission and Invest Hong Kong to promote data centre development in Hong Kong. In order to enable us to evaluate the case for further facilitation measures, the Government has commissioned a study into the wider economic benefits that data centre development including mega data centre projects will bring to Hong Kong.

21. As a result of the marketing efforts conducted to date, several large data centre investors have either established a presence in Hong Kong or are in the planning stage.

Digital Economy Facilitation

Promoting the Adoption of ICT by SMEs

22. The adoption of ICT by SMEs can greatly enhance their operational efficiency, competitiveness and business development. To better understand the extent of ICT adoption by SMEs, the barriers and motivators, the Government commissioned a “Study on ICT Adoption in Hong Kong SMEs”. The Study, completed in October 2009, recommended the Government to focus on promoting ICT adoption in wholesale/retail, business services as well as the import/export trade sectors, as they either contribute significantly to the Hong Kong economy, or show significant correlation of value creation with ICT usage. It also recommended that government assistance should focus on subsidising training in the use of ICT.

23. In this respect, the Government has been supporting the promotion of ICT adoption in various business and professional sectors, including trade, logistics, supply chain, accountants and social service. We have also launched the IT Training Programme for SMEs, aiming to train over 4 000 practitioners from SMEs before the end of 2010. We will continue to provide appropriate support to the industry to promote ICT adoption by SMEs, especially in areas recommended by the Study.

Promoting Information Security Awareness in the Businesses and Community

24. The Government is committed to making Hong Kong a leading e-business community in the globally connected world. In this respect, information security is an important pillar to support the rapid development of our e-business environment. To nurture a secure and reliable e-community, we have focused on public education with the aim to raise awareness and promote online ethics. OGCIO has undertaken a wide range of initiatives in collaboration with related bodies such as the Hong Kong Computer Emergency Response Team Coordination Centre and the Hong Kong Police Force to enhance the awareness and knowledge of businesses and the general public to protect their computing assets, such as organising the “Hong Kong Clean PC Day”, publication of Information Security Guide for local SMEs, and provision of security alerts and practical advice on risk assessment.

Administration of Internet Domain Names and Internet Governance

25. The Government has been working closely with the Hong Kong Internet Registration Corporation Limited (HKIRC) to improve the institutional arrangements for the administration of “.hk” domain names to facilitate the development of digital economy and maximise benefits to the Hong Kong community. The Government and HKIRC signed a new Memorandum of Understanding (MOU) in March 2010 to reflect the new institutional arrangements. The new MOU requires HKIRC to conduct its activities in an open and transparent manner and in the public interest.

26. To enable the Chinese-speaking people to access websites of Hong Kong-related organisations using an Internet address that is written wholly in their mother language, the Government supported HKIRC to apply to the Internet Corporation for Assigned Names and Numbers for the introduction of “.香港” (the Chinese equivalent of “.hk”) domain names in Hong Kong. With the recent approval of the application in late June, HKIRC plans to launch the registration service for “.香港” domain names within this year, which we consider will strengthen Hong Kong’s position as a leading digital city.

27. The Government regards the Internet as an important tool for the community in a wide variety of economic, social and personal purposes. As the Internet belongs to everyone, people should have the opportunity to discuss matters and increase their participation in the development and governance of the Internet. In this regard, the Government continues to support initiatives of the industry that promote the awareness of and participation in Internet governance issues, such as digital inclusion, e-engagement, information security, cybercrime, intellectual property protection, and management of critical Internet infrastructure.

28. As regards the critical Internet infrastructure, the unallocated Internet Protocol version 4 (IPv4) addresses are expected to be exhausted in about two years. Although we do not see the IPv4 address exhaustion issue will have direct impact on Hong Kong in the short term since the local Internet market is already well developed and no sudden large demand for additional IP addresses

in the near future is foreseen, we support the initiatives of the industry that promote the awareness of the Internet Protocol version 6 (IPv6). This helps ensure that the market and users will be IPv6 ready for communicating with IPv6 networks, in particular those on the Mainland in the future because of the geographical proximity and close economic relations.

ICT for Green Economy / Community

29. The Government believes that, in the information age, ICT plays a key role in saving energy and protecting the environment in Hong Kong. The D21SAC has endorsed that “ICT for green” be included in the relevant statement of desired outcomes² of the Digital 21 Strategy as follows: “*There is widespread use of advanced information and communications technology (ICT) to achieve ‘green’ objectives.*”

30. Based on research by the Climate Group³ and analysis of its applicability to Hong Kong, the D21SAC has identified three areas of environmental policy where ICT could be an important enabler. These are -

- (a) using ICT to reduce the environmental impact of construction and use of buildings;
- (b) using ICT to reduce the environmental impact of the transport and logistics sectors; and
- (c) reducing the “carbon footprint” (or the extent to which human activities produce greenhouse gases) from the use of ICT, and using ICT to reduce consumption of transportation services, paper and other materials by enterprises across the economy.

31. In promoting the innovation and the use of ICT to enable the green economy and community, we will focus on the following aspects: (a) promoting public awareness; (b) publishing guidelines and best practices; and (c) providing support to the businesses and community. We are liaising with the relevant government bureaux and departments on how best to take the matter forward.

² http://www.info.gov.hk/digital21/eng/press/articles_201007021800.htm

³ The Climate Group is an international, non-profit organisation aiming to help set the world economy on the path to a low-carbon future.

Key Performance Indicators (KPIs)

32. At present, there is a dearth of internationally comparable statistics on innovation and trade in the ICT. This means we cannot use hard economic data to measure whether Hong Kong is playing a leading role in innovation and trade in the Asian ICT sector. While we will continue to monitor the available economic statistics, we use a more direct approach to track progress towards the desired outcomes. To do this, we will use the following KPIs -

- (a) Digital economy rankings⁴; and
- (b) Opinion surveys among relevant stakeholders on achievement in respect of the statement of desired outcomes for this action area.

33. The Economist Intelligence Unit conducts annual surveys to determine different economies' digital economy rankings. The rankings comprise a number of indicators and sub-indicators, but not all of them are relevant to our statements of desired outcomes. We will commission an exercise to remove those irrelevant indicators and sub-indicators, assign weightings to the remaining ones, and compile the new scores and rankings. We will also commission surveys to measure the extent to which executives in local and international enterprises consider that Hong Kong is achieving the statement of desired outcomes qualitatively. Over time, we aim for such surveys to demonstrate an increasing trend in the extent to which the desired outcome is being achieved.

Way Forward

34. The Government will continue its efforts in collaboration with the industry and academia to formulate and undertake initiatives to boost the development of digital economy in Hong Kong.

**Office of the Government Chief Information Officer
Commerce and Economic Development Bureau
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⁴ Previously known as e-readiness rankings.