PUBLIC CONSULTATION ON 2014 DIGITAL 21 STRATEGY "SMARTER HONG KONG, SMARTER LIVING"

Submission by Cisco to
Office of the Government Chief Information Officer

Cisco Hong Kong is pleased to participate in the Government's public consultation on the 2014 Digital 21 Strategy by providing our collective thoughts on the proposed development plans. We are very pleased to see the Government setting out the framework for Hong Kong to leverage on new information and communications technologies (ICT) to propel continuous economic development and foster a thriving ICT industry. Cisco agrees with the Government that ICT is an enabler underpinning Hong Kong's thriving economy, and has also become an integral part of today's society in a way that has the potential to improve the quality of life for citizens by changing the way we work, live, learn and play.

Cisco, as a worldwide leader in IT, is privileged to work with many of the world's leading governments and companies, and has gained a great deal of valuable experience about how to deliver successful smart city projects. We are pleased to provide our input to the Government's blueprint, focusing on the strategic thrusts of "Transforming and Integrating Public Services" and "Empowering Everyone", with a view to sharing our experience and expertise, and assisting in creating a Smarter Hong Kong that will ultimately improve the productivity, effectiveness and livability of the city. In particular, we would like to share our knowledge, experience and insights on the proposal of "Smarter City Infrastructure", and suggestions on the Government's initiative to create "Broadband Wi-Fi Access for Schools to Drive e-Learning".

Transforming and Integrating Public Services: Smarter City Infrastructure

Over the past few years, the definition of "Smart Cities" has evolved to mean many things to many people. Yet, one thing remains constant: part of being "smart" is utilizing ICT and the Internet to address urban challenges.

Given that we live in a fast-changing world, understanding where we are in the evolution of the Internet is critical to the Government's city-planning processes. In terms of phases, Cisco believes that Hong Kong is currently experiencing the Internet of Things (IoT), the networked connection of physical objects, including sensors, machines, devices, analytics and robots, and is entering the era of the Internet of Everything, which is an intelligent connection of people, process, data and things on the network. Although the Internet has been established for more than 8,000 days, more than 99% of things in the physical world are still unconnected at present.

When we "connect the unconnected", linking up more than physical sensors in Hong Kong, the Internet of Everything will bring new value and create unprecedented opportunities for the community and for individuals.

For instance, at city level, the Internet of Everything will enable improved building management, water or waste management, road infrastructure (better monitoring of pavement and bridge condition by using intelligent sensors and new "big data" computing capabilities), healthcare, education and more efficient traffic flow. Imagine if we connect all traffic signal lights, road sensors, satellites, cars, buses and emergency vehicles to the Internet, cities will be given the ability to manage traffic and mass transportation in real time. The city of the future will transform urban living with unprecedented logistical efficiency. So it's easy to see how and why the Internet of Everything is really one of the most significant market transitions of our time, the Government should therefore take this as a key consideration in the planning of a smart city, and commit resources to building a strong ICT infrastructure to prepare for the future.

To support the development of an Internet of Everything-enabled smart city, a well-structured and intelligently-connected network undoubtedly plays a fundamental role, which needs to be planned and developed right at the beginning of the project. As a sustainable and scalable network must be future-proof, meaning it can cope with existing needs as well as future demands, we strongly encourage the Government to plan carefully before acting.

In fact, an Internet of Everything-enabled smart city is not an undeliverable vision, and many global cities have already taken action to realize their transformation. Cisco, for instance, has participated in a variety of successful smart cities projects that address key public priorities and enhance experiences and quality of life for individuals, organizations and society, which may be of good reference for the Government.

Amsterdam: Connected Public Lighting

Amsterdam, the Netherlands, has developed a vision for collaborating, envisioning, developing and testing numerous connected solutions that could pave the way to a smarter, greener urban environment. Most recently, the city has been exploring the potential for a connected public lighting infrastructure. New concepts and innovations around network-enabled LED street lighting have been developed, as switching to LED lighting alone is not sufficient to meet the city's energy consumption and cost reduction targets.

Cisco sees the future of public lighting as a transition from analog to digital where solid-state lights are connected to an energy grid through a variety of technologies that enable capabilities such as remote monitoring, and intelligent energy metering and billing. Additional savings can be achieved by incorporating connected controls to the Internet, and even greater value can be derived using the lighting network for other connected services. All these improvements can be enabled by ubiquitous wireless connectivity, symmetrical broadband and IP-based utility networks. The city's broader objective is to connect all of its citizens by 2018, so as to enable

residents and businesses to access rich information and a wealth of innovative services that improve life across the city.

New York: Smart Screen Platform

New York City has a similar vision of a smarter city to improve the quality of life of its residents. An interactive Smart Screen platform that integrates information from open government programs, local businesses and citizens has been launched to provide meaningful and powerful knowledge anytime, anywhere, on any device. These Smart Screens have been installed in different locations from bus stops, train stations, sports facilities to shopping malls, and can even be accessed via Wi-Fi on nearby smartphones, tablets and laptop computers, to connect people with information that is relevant to their immediate proximity, as well as enabling the provision of public services exactly where and when they are needed. With numerous organizations participating, the city recognizes that it is crucial to leverage on the network, together with ubiquitous platform support and powerful analytics, to gather and distribute valuable data. It can be foreseen that, as the network grows by deploying more Smart Screens, the amount of data and useful insights will also grow to deliver even more value to the city's businesses and citizens.

Orlando: Cisco Live with Smart Connected Buses

Connected transportation has been widely tested worldwide and Cisco's experience in leveraging on the technology at our industry event is one of the examples. At Cisco Live 2013, held recently in Orlando, a fleet of connected buses transported attendees between hotels and the convention center. In addition to free Wi-Fi provided on the buses and in the convention center to keep passengers connected, each connected bus had an on-board HD IP video camera which sent a live feed to a monitor in the Cisco IoT Pavilion, keeping passengers safer and more connected. Also, more than 50 touchscreen kiosks helped attendees in the convention center track important event information along with the bus schedule and route information.

Back in the Cisco Connected Transportation booth, a monitor showed live GPS tracking of every bus in the fleet and visually tracked all buses and their locations on a color-coded interactive map. At the same time, On-Board Diagnostic (OBD) monitoring captured real-time vehicle telematics such as speed, tire pressure, engine temperature and fuel efficiency. This monitoring capability can actively provide useful information to proactively prevent traffic accidents and help facilitate driving.

Additionally, areas around schools, playgrounds and other locations with reduced speed limits can be identified as "safety" areas using geo fencing to send alerts or even instructions to take automatic action when a warning is triggered. Fleet managers can therefore be immediately notified when speed thresholds are exceeded or accidents occur.

Connected vehicles and their ancillary facilities can revolutionize the way we drive with improved safety and efficiency, enhancing both the driving and the passenger experience. The fleet of connected buses at the event serves well to demonstrate that the vision of a smart city

with an efficient, connected transportation system is actionable and Cisco is looking forward to seeing its realization.

Next Steps for the Internet of Everything-enabled City

To build an Internet of Everything-enabled city, the Government needs to put in place an efficient infrastructure, which requires smart and innovative solutions that break away from traditional, energy-intensive and waste-generating approaches, as well as solutions that eliminate silos of information within a city to allow efficient and open sharing of resources. Cisco agrees with the Government's plan to leverage on interconnected sensors and analytics technologies to drive a smart city. On top of sensors, people should also be connected to help realize the transformation. Further, we emphasize the importance of open networks to combine all the data collected in intelligent ways to provide new services and benefits.

Besides infrastructure, human capital with specialized skills is critical in supporting the development of a smart city as well as the flourishing ICT industry. The gap between the demand and supply of ICT talent, as outlined in the consultation paper, in fact exists not only in Hong Kong but throughout the world today. According to a recent study published by the World Bank, it is estimated that over the next 10 years there will be two million unfilled ICT-related jobs globally, correlating with a projected talent gap of 8.2 percent by 2022. To address this gap, education and training institutions worldwide will need to increase the number of technical graduates significantly – 222,000 more each year between 2014 and 2022. In particular, we encourage the Government to invest more effort in nurturing a next-generation workforce that can provide Internet Protocol (IP) networking expertise, with a focus in automation, retail, logistics and energy, and future expansion to include equally transformative industries, in order to take full advantage of the era of the Internet of Everything.

Empowering Everyone: Broadband Wi-Fi Access for Schools to Drive e-Learning

Cisco, sharing the same view as the Government, envisions a connected learning environment that uses the Internet to deliver innovative and interactive learning platforms that enhance the effectiveness of teaching and learning. To realize such a vision, the Government's proposal to equip every Government and aided school with Wi-Fi to facilitate constant and stable access to the Internet is deemed necessary.

Cisco sees that the existing IT talent gap and the lack of IT resources are hindering the development of e-learning in the local education sector. With our ample experience working with numerous local primary and secondary schools on their e-learning development, we believe plug-and-play, easy-to-manage and highly secure Wi-Fi solutions are the key enabler of education transformation. As the majority of schools in Hong Kong have limited human resources to manage their IT in support of e-learning, a complex IT infrastructure is not the ideal solution and is of little help in creating an efficient IT learning environment and in promoting the adoption of the Wi-Fi at schools. Thus, we encourage the Government to actively promote the adoption of plug-and-play, easy-to-manage and highly secure Wi-Fi

solutions that can support video, multimedia and application-aware e-learning to deliver an interactive learning experience to our next generation.

In order to effectively drive e-learning, we believe the Government can take a leading role in communicating and exchanging views with IT industry players in order to keep informed of the latest IT trends and industry insights during the planning and implementing process of education transformation. Further, Government should collaborate with different players in the industry and work with them to promote the benefit of e-learning to teachers and schools, educating them in the best ways to leverage on and incorporate technology in their teaching.

In Hong Kong, the collective effort of the public and private sectors will surely bring about the best results and pave the way to a more connected, interactive and effective teaching and learning environment for the community.

We recommend that an e-learning initiative be included as a priority in Hong Kong's Digital 21 Strategy, as we believe through e-learning, students can leverage on the ocean of online learning resources, absorbing knowledge and information from all around the world at any time, and thereby broadening their vision and horizons. E-learning also facilities the exchange of ideas and sharing of knowledge and culture which serves as a breeding bed of wisdom. This can help to change the future paths of students as e-learning provides a platform for the nurturing of students, enabling them to use knowledge to enhance their competitiveness, and ultimately contribute beneficially to society.

Conclusion

Cisco Hong Kong has been operating in Hong Kong for 20 years and many of us regard this city as our home. We sincerely hope to provide our knowledge and expertise to contribute to the betterment of our community, so that Hong Kong will become a smarter city in the modern world, one where technology helps create more business opportunities and enhances the quality of life, making the city more sustainable and its society more inclusive and knowledge-based.

Yours faithfully,

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