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Civil society submission to the HKSAR's government consultation on the Digital 21 Strategy

A group of concerned members and associates of Hong Kong's Dim Sum Labs has put together a list of comments and recommendations on particular passages, as well as on the general premises and themes of the document as outlined on the following pages.

Contributors

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Chapter 2: Smarter Hong Kong, Smarter Living

Internet of Things

The Digital21 strategy document highlights the potential of the Internet of Things, but neglects the numerous risks for privacy and security. We recommend that the government consult experts in the field of data protection and privacy before supporting or implementing the deployment of IoT technologies across all sectors.

Wireless and multi-platform

Many government web sites provide a mechanism involving fillable PDF forms and Java. It is almost impossible to match the government's requirements wrt/ the combination of operating system, PDF reader and Java. It is almost impossible to use these web sites with tablets or smartphones.

All government web sites should be accessible with all modern browsers on all modern operating systems, and not require third party plugins like Java or Adobe Reader. We recommend HTML5 web forms to input data and server-side creation of PDFs. Ideally, all government web sites are accessible through one government portal in a user friendly way, avoiding the need to use search engines.

We recommend against the inflationary creation of specialized apps for each service. 62 apps already exceed this recommendation.[1] Instead, web sites should be optimized to work on all platforms including mobile devices, laptops and desktops.

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1 Consultation document, par. 68

Chapter 3: Empowering Everyone

(B) City-wide Wi-Fi for the Public and Visitors

18.-20. While we appreciate the efforts of the government in the creation of the FreeGovWiFi service, we are concerned that a) a lot of taxpayer money is wasted on a slow and unreliable service[2], and b) the rollout has not been extensive enough yet and should expanded to even more tourist hot spots, government buildings, all public transportation carriers and other public venues.

Without doubt, a city striving to provide a world-class service in terms of connectivity should maintain a fast pace in moving towards full coverage of FreeGovWifi for it's citizens and visitors. This could be achieved by cooperating and including commercial operators of WiFi hot spots, for example by providing a free tier that is limited in bandwidth, allowing for commercial operators to compete with the free offering by providing value added service. Traffic should not be filtered to allow teleworking via VPNs and similar solutions.

We recommend against the "free for a limed time" idea and suggest that no login or captive portal pages are used, as these unnecessarily deteriorate the user experience.

The idea of introducing a common brand "WiFi@HK" is an excellent idea.

We recommend the government get in touch with operators of other successful municipal WiFi networks, like panOULU in Finland, to exchange best practices and avoiding the repetition of mistakes others have made before.[3]

One of these best practices, just to provide an example, is a public-private-partnership model where ISPs provide business customers with a panOULU hotspot free of charge. This way, guests of the business customer can enjoy free WiFi service, ISPs have an incentive to sell their service and the free WiFi network grows beyond the public space. The bandwidth for this service is provided free of charge via a separate virtual network.

21.-22. We welcome the government's undertaking to provide all schools with contemporary broadband connectivity. However, WiFi can only complement wired network infrastructure, not replace it.

23.-24. We welcome the ambitious goal of teaching every child basic programming concepts. These concepts should be taught using free and open source software as well as existing free online course material.[4] We strongly advise against teaching using proprietary systems, as these often come with hidden agendas and can create undesirable dependencies[5].

25. We encourage the government to expand its efforts to use ICT for empowering underprivileged groups.

2 http://www.scmp.com/news/hong-kong/article/1216928/hong-kong-government-wi-fi-slammed-slow-and-weak-connection

3 http://www.panoulu.net/

4 https://www.coursera.org/course/interactivepython

5 http://www.labornotes.org/2013/11/ipad-every-desk-trojan-horse-teachers-say

Chapter 4: Igniting Business Innovation

(G) Public Sector Information (PSI) as Default - Open Data

32. We recommend that the government makes databases accessible using industry standard mechanisms in a standardized, open and non-proprietary format like XML or JSON.

The government has taken an important initial step providing Data. One as a one-stop-shop for public data. However, in many cases proprietary formats are used. We recommend not to use proprietary formats at all to ensure data is accessible for developers on all relevant platforms.

35. Public utilities and transport operators should not only be encouraged, but obliged to release data in a standardized, machine-readable format like XML or JSON as mentioned above. This obligation should be made an integral part of their license terms.

(H) SME Cloud Services

36.-38. While we agree with the government that cloud services have huge potential benefits for SMEs, it is important that business owners are made aware of the security risks of these services. One potential and generally useful application is using the cloud for storing encrypted remote backups. Again, we cannot stress enough that cloud services should be provided using free and open source software based cloud services to ensure interoperability, security, privacy and avoid vendor lock-in.

Chapter 5: Supporting a Thriving ICT Industry

(I) Supporting the Startup Ecosystem

43. While we recognize the importance of coworking spaces for startups, we recommend more support for venues of free thinking and experimentation, where Hong Kong's future entrepreneurs can test their ideas and network with like-minded spirits. Great ideas don't always start with a marketable service or product in mind. They are often a result of tinkering with hardware, software or even physical crafting.

We suggest the government encourage and embrace the creation of an ecosystem of hackerspaces[6] and makerspaces and support it wholeheartedly, very much like the Shanghai city government.[7]

(M) Data Centre and Cloud Computing Hub

Bridging the Digital Divide in Hong Kong

While Hong Kong can be proud of the highest average peak data rates in broadband Internet worldwide, there are huge discrepancies between the upper and lower end of the spectrum.

Remote areas such as South Lantau, but even buildings in urban areas that are not connected to a fibre network, are limited to broadband speeds of 8 Mbps via DSL. People living in these areas can only dream of the speeds up to 1000 Mbps that are available in buildings equipped with FTTH (Fibre-To-The-Home). DSL speeds in other OECD countries reach up to 100 Mbps using VDSL2 technology on the legacy telephone copper wiring or via HFC cable networks. Also, there is a huge cost differential between DSL and FTTH services. DSL service in Hong Kong is extremely expensive compared to FTTH, and also more expensive per Mbps than in most OECD countries.[8]

Mobile broadband can only complement, not replace fixed broadband

Mobile broadband provides theoretical speeds up to 100 Mbps using 4G LTE, with effective data rates up to around 40-50 Mbps. While it is important to have a contemporary mobile broadband infrastructure, mobile broadband is not a replacement for fixed line service due to inherent limitations of wireless signals. The quality of the service depends on factors like users per cell tower, distance from cell towers, obstacles such as walls, and many others, making mobile broadband significantly less reliable than fixed broadband.

We suggest the government introduces a "universal broadband service obligation", similar to the universal service obligation laid down in Section 35B of the Telecommunications Ordinance.

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6 http://en.wikipedia.org/wiki/Hackerspace

7 http://interactions.acm.org/archive/view/november-december-2012/created-in-china

8 http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm

(O) Multi-platform Government Services

68.-70. Please refer to our comments on the first page of this document regarding multiplatform web sites and an inflationary (ab)use of apps.

(P) Integrated Two-way e-Services

74. We recommend that the government make free and open source software (FOSS) based private cloud environments a mandatory requirement for cloud services used by the government. This ensures interoperability beyond contract terms and avoids vendor lock-in.

(R) Smarter City Infrastructure

76.-78. We suggest the government consult experts in the field of privacy, data protection and security and the general public before implementing any large scale sensor networks. The huge potential for abuse of data collected by ubiquitous sensor networks is still massively underestimated by policy makers.

Items not addressed in the consultation document to the extent necessary

Dedicated commitment to Digital Empowerment and the Protection of Freedom, Privacy and Security.

Especially in the wake of recent revelations of sweeping surveillance efforts by the NSA and other foreign agencies, the Digital Strategy's emphasis on citizen empowerment needs to be revisited and strengthened in regards to the protection of the freedoms, privacy and security of the governmental, private and public sector.

One promising pathway towards a more free, secure and empowering ICT infrastructure is to divert from the use of proprietary soft- and hardware towards free and open alternatives[9]. By definition, proprietary soft- and hardware always possesses an original "owner", an (often foreign) entity that holds the sole power over the program's source code or the hardware's blueprint – through which it can exercise power over it's users. As evidenced by the Snowden leaks, many proprietary products come with embedded mechanisms to spy on users, restrict them or censor them. Such software and devices signify the exact opposite of empowerment and endanger the privacy of citizens, the security of the private sector and can create vulnerabilities to the public sector.

Germany's city of Munich is a prominent example for a successful shift towards free and open software and away from potentially harmful proprietary software. With their LiMux (Linux + Munich) programme the government has already replaced the majority of the proprietary governmental ICT infrastructure with Free and Open alternatives and actively strives towards a fully free and Open city[10]. Munich's success is not just impressive because it improved freedom, privacy and security but also because by doing so it was able to both save money and significantly reduce user complaints.

As Hong Kong is striving to be a leader and role-model in the digital age, it should seize the opportunity to be on the right side of history and commit to a proactive stand, ensuring the digital well-being of it's institutions as well as private and public sector. The longer it relies on proprietary soft- and hardware, the more it will be become dependent, vulnerable and fundamentally dis-empowered.

To change this situation we recommend:

- the replacement and phasing out of running proprietary licenses for software in all governmental and administrative sectors (wherever possible)
- the replacement and phasing out of proprietary hardware (wherever possible)
- the introduction to and use of Free and Open soft- and hardware especially in education

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9 See Free Software definition and essential four freedoms: https://www.gnu.org/philosophy/free-sw.html

10 http://www.muenchen.de/limux, http://www.muenchen.de/rathaus/dms/Home/Stadtverwaltung/Direktorium/Strategische-IT-Projekte/LiMux/Dokumente/Praesentation_LiMux_engl_web.pdf

- an increased emphasis on Hong Kong's empowerment with regards to not just usability but also freedom, privacy and security.

Net neutrality needs to be ensured and protected

Net neutrality is defined as the principle that internet service providers (and governments) should treat all data on the internet equally and commit not to discriminate or charge differently by user, content, site, platform, application and so on. Neglect of the letter risks the creation of censorship and unfair competition and has to be seen as a direct threat to user's freedoms[11].

For these reasons, we recommend to include the preservation of net neutrality in Hong Kong's Digital 21 Stategy.

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11   http://www.washingtonpost.com/wp-dyn/content/article/2006/06/07/AR2006060702108.html