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Dear Daniel,

**Recommendation: An Efficient Model to Implement Free Public Wifi**

The newly released audit commission's report citing inefficiencies of public Wifi has led the HKISPA to rethink one of the central debates for public ICT infrastructure policy: of how to apply the right level of interventionism to a laissez faire regime.

Since the deregulation of the telecommunications market back in the 1990's, and in a significant part owing to our very competitive members, HK has become the central hub of telecommunications traffic in Asia, landing the highest number of optical fiber serving the whole of Asia and the world. Our mobile and fixed networks are offering unparalleled services second to none, and mostly lately, HK leads the world in terms of high speed and low cost for broadband services since the forth quarter of 2012.

Ms. Susie Ho, Permanent Secretary for Commerce and Economic Development, has correctly pointed out these facts in her speech to Broadband Asia 2013<sup>1</sup>. I agree with her that such success of HK came from proactive government policies that facilitate a free market, in which our members compete to innovate for the best available services to offer to the public. Another prime example of such is allocation of land for development of data centers to further strengthen HK's position as a central ICT hub, while letting the market to compete to work out the best data center and cloud ecology.

The inefficiencies of public Wifi service looks odd compared against these successes.

Following the same line of thoughts of Susie, and inspired by creative inputs of our council members and two recent articles of our Honorary Chairman Mr. York Mok on issues of Wifi<sup>2</sup>,

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<sup>1</sup> [http://www.itfest.hk/en/news/speeches/PSCT\\_speech\\_at\\_Broadband\\_Asia\\_2013.pdf](http://www.itfest.hk/en/news/speeches/PSCT_speech_at_Broadband_Asia_2013.pdf)

<sup>2</sup> <http://www.scmp.com/comment/letters/article/1187893/letters-editor-march-11-2013>

we arrived at the following suggestions for your valuable consideration to solve the free public Wifi problem and also make HK a truly ubiquitously connected city. We believe adoption of this simple model would make HK the world's first, and create vibrant and competitive free Wifi networks throughout HK.

### **The Model**

Hong Kong has multiple commercial or private Wifi operators. Each of them provides services to different set of customers, either as an outsourced and branded service (for example, Y5-Zone providing service for the clients of 3), or as a service supplemented to their own customers (for example, PCCW), or as a free private service in confined premises (e.g. Hotels), or an amalgamation of such.

Our model aims to cost-effectively and efficiently provide free and limited Wifi services to all citizens of Hong Kong throughout all Wifi-covered areas, creating direct competition between operators, and without negatively impacting or squeezing out other mobile or wired services. Most distinguishingly, the model is very simple to implement, and it results in a system that improves on itself automatically on various important metrics, including EM-Noise pollution levels.

The model is outlined as follows:

1. The government to procure Wifi connection hours from all Wifi service providers, on a fixed hourly rate basis. In essence, all eligible Wifi operators can choose to offer Wifi service to the public, through connecting to the authentication servers operated by the Government (or its outsourced agent), and get payments from the Government basing on the total connection hours as accounted by the authentication servers.
2. The government operates the authentication and accounting servers for these Wifi networks. All connection requests should be authorized by these servers, and these servers send disconnection requests to the Wifi operator upon the user has expired the daily limit, or the user has switched to another Wifi operator (which also had to authenticate the user through these servers when they obtain a new connection). All usage data, login IDs and passwords are operated by these authentication servers.
3. The government to announce to the public and let each citizen of Hong Kong to register a Wifi usage password combo, where each combo is allowed to use these public Wifi

service for 3 hours per day (or a limit deemed appropriate). The government may also consider giving away free combos with limited expiry to tourists, and applying different limits at Government premises.

4. The hourly rate paid to the operators can be decided and reviewed periodically by the government, through consensus with the operators. As the operators are competing for this revenue, the government has the edge of negotiation for this rate.

### **Distinctive Advantages of the Model**

The above model offers these imperative advantages:

**Competition** – Competitive operators (in terms of speed and stability) naturally would be chosen more often by users, and therefore gets more revenue. Slow and congested operators will be punished or eliminated.

**Low Entry Barrier** – All operators, upon getting necessary licenses from OFCA and fulfilling basic eligibility tests, can operate in small or large scale or focusing on a niche area. This model is friendly to small and new entrants to the market because they have the customers once their network is up and running. Market dominance by a few players will not be likely.

**Market Driven Geographic Coverage Improvement** – Operators will have an incentive to invest to cover areas currently without Wifi access, because there is no direct competition in those areas.

**Market Driven EM-Noise Reductions** - For areas with too many Wifi operators and therefore too much competition and congestion, further additional investment would offer a much lower return, and therefore automatically discouraged.

**Facilitates Prudent Use of Public Funds** – This model is very simple to implement, and leaves no room for inefficiencies. There would be fewer administration costs because periodical tendering and service quality monitoring are all not necessary with this model. Distinguishingly, the operators have to compete at all times instead of just compete for winning a tender.

**Complete Audit Trails** – As the authentication and accounting are centrally operated, full audit trails are kept. Because payments to respective service providers are calculated from these records, that there can be no accounting irregularities from the side of the operators.

**Policy Flexibility** – Policies can be adjusted flexibility. For instance, the daily connection limit can be adjusted for the amount of public funds available to offer this free Wifi service, and with a daily connection limit this Free Wifi service becomes a supplement to, rather than a substitute for, other mobile services. Some mobile operators attempt to offer Wifi to offload their 3G/LTE band congestions, and this policy will make a positive impact to these operators both technical-wise and revenue-wise. Likewise, special policies for tourists and government premises can be applied.

**Thwarts Abuses** – With authentication and accounting centrally operated, abuses of free Wifi service will be greatly discouraged.

**Negotiation Advantage of the Government** – Unlike the current outsourcing model where the contract would lock in for a period with specific provider(s), this model would totally give the government the upper hand in negotiations, because at all times and in most areas the government does not need to rely on a single operator.

**Stimulates the Wifi Market** – This model injects revenue into and stimulates the overall Wifi business, but does not bias in favor of big operators. Unlike the current GovWifi project that rewards one big operator, this model accommodates all operators big or small. With this model, operators of private premises can also participate in this scheme such that a more serious investment into construction of their indoor Wifi infrastructures can be considered given the incentives. Also, if individual users found a certain Wifi network has good performance through using their public free Wifi account, they may subscribe direct to the paid services of that operator to evade the daily connection limit.

**Accommodating to New Technologies** – The topology of this model is compatible with the advent of new Wifi technologies in the future. For instance, the Hotspot 2.0<sup>3</sup> concept utilizing the IEEE 802.11u protocol can be easily adopted into this model.

Additionally, as suggested by York in his article, your office may also study the feasibility of designing and implementing policies that enables roaming across commercial Wifi operators,

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<sup>3</sup> <http://www.networksasia.net/content/hotspot-20-will-enable-enterprises-wholesale-wi-fi-access>

by establishing a central clearing and settlement mechanism that all operators can participate. It is notable that PCCW and Y5ZONE already have free roaming arrangements with some of the local Universities' Wifi networks. By extending this roaming arrangement across all operators, HK's Wifi users can enjoy seamless roaming across networks. This free roaming feature is also part of the draft Hotspot 2.0, which our suggested model can adopt easily when Hotspot 2.0 becomes mature.

The above is only an outline of the model we suggested that definitely needs fine-tuning, particularly on how and who to construct hotspots in Government owned premises. But we truly believe this model upon improvements would offer the best of both worlds of free market competition and enabling the public to enjoy the best available free Wifi services. With this model realized, HK can truly claim to be a ubiquitously connected city without the Government's big hand involvement in building the infrastructure.

We wish that your office would study the feasibility of these ideas. HKISPA and its members definitely would be able to contribute to the study.

I sincerely look forward to a creative and successful implementation of this model, so that HK's ICT leads the world in one more count.

Thank you for your kind attention.



Lento Yip  
Chairman  
Hong Kong Internet Service Provider Association

c.c.

Ms. Susie Ho, Permanent Secretary for Commerce and Economic Development  
Ms. Eliza Lee, Director-General of Communications, OFCA  
Mr. Charles Mok, Legislative Councilor of the ITFC  
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