

Idiot's guide to wireless broadband

A senior Perak minister recently fielded a question from the Opposition with aplomb. Why, the gentleman from the Opposition asked, was the state government hotly pursuing wireless broadband when it should be supporting 3G?

Allowing his incredulity to subside, the minister replied that there was nothing stopping Malaysian cellular carriers from deploying 3G. In fact, he wanted to know why 3G had not been deployed to the general public in an affordable package. The state had come into the picture only because the telecommunications establishment had failed to deliver affordable wireless broadband to the masses, he added.

The minister's riposte took me back to events in the US when Philadelphia took on the American telephone establishment. Alarm bells were ringing at the telephone companies at the city's just announced Wireless Philadelphia Project. They were not going to allow a city municipality to thwart their plans to keep consumers hooked on low bandwidth and high-cost fixed line drips. As I wrote in an earlier article, nothing galvanised American telephone companies like Philadelphia's plan to introduce competitive broadband to homes and free usage in public areas.

In what must easily be the most shameful obstructive action undertaken by an incumbent telephone company, Verizon showed its contempt for the consumer by ramming House Bill 30 through the Pennsylvania legislature. Using its clout, Verizon lobbied politicians to pass the Bill that would prevent a political subdivision or municipality from offering telecom services. For all purposes, the Wireless Philadelphia Project appeared stillborn. Then the fun began.

The citizens of Philadelphia, especially the economically weaker sections (read: African Americans) started to petition their state's elected officials. Public reaction was so intense that Verizon backed off, allowing the Wireless Philadelphia Project to proceed.

So, Lesson One in the Idiot's Guide to

BY RAIS HUSSIN I

Wireless Broadband is that the telecoms establishment hates wireless broadband even though customers want it. Why? Because it will open a Pandora's box. It will mess with the telecoms establishment like nothing it has encountered in half a century of statutory permission to overcharge subscribers. Once consumer handsets connect in large enough numbers to the Internet over a broadband highway, there is an immediate impact on general packet radio service data as well as fixed line and cellular telephone revenue.

economically weaker sections in the hands of private enterprise;

- Too many units all over the place and thus too many points of potential failure;
 - Too dependent on Internet access (what about voice, video, TV?); and
 - If traditional meshed WiFi were deployed in Hong Kong's famous Golden Mile shopping district, 30 access points would be required as against just seven if a new micro-cellular topology were considered. (This was after Perak officials had pored over maps in a Hong Kong study.)
- Homework and self-study also helped Perak officials make a second discovery. Voice calls could not survive the many hops required for voice packets over a meshed network. Cellular

project goodbye. A small Internet service provider may not have a vested interest but his lack of expertise in large-scale deployment will kill the project as surely as a telco would.

Reverting to our Malaysian case study, Perak ended up selecting a consortium that has partners like Jaring — large enough to do statewide deployment but with no telecoms-related axe to grind. In an ingenious tradeoff, what the ISP gets is the state government as anchor tenant as long as it subsidises usage in universities and the economically weaker sections.

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What the intelligently thought out deployments in Japan, South Korea and elsewhere demonstrate is that wireless broadband can be brought to the small user's doorstep at no great cost. A micro-cellular WiFi base station fully deployed costs a fraction of a micro-cellular 3G base station, which, when fully loaded and installed, groans under a US\$100,000 burden.

This explains the telecoms establishment's reluctance to offer viable and ubiquitous wireless broadband, which is why there's a global groundswell at precinct, municipal or state level to take on the job of providing wireless broadband to the citizenry.

Justified in taking on the responsibility, the state or municipality needs to next ponder how to go about it. Outsourcing deployment is no excuse to not do the homework. The Perak government, for example, studied the Wireless Philadelphia Project and other such projects in depth. The following assessments were then made:

- The City Hall's approach was too minimalist, leaving a lot of deliverables aimed at

topology, however, has already established a couple of decades' long functionality for voice. If the same cellular topology were adopted for WiFi, it would handle voice better than traditional mesh.

Run these conclusions past any radio frequency engineer and one will understand why homework trumps a blind reliance on experts.

Next is the actual deployment and service delivery. The Idiot's Guide advises that once the homework is done, things should be left to the experts. But which experts? Again, homework helps.

Choose a member of the telephone establishment and you might as well kiss the

band can be brought to the small user's doorstep at no great cost. A micro-cellular WiFi base station fully deployed costs a fraction of a micro-cellular 3G base station, which, when fully loaded and installed, groans under a US\$100,000 burden. No wonder the telecoms establishment hesitates to deploy significant 3G outside of the city centres, leaving the states and smaller municipalities to fend for themselves. ■

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People's power helped Philadelphia launch its Metro wireless service. PEC, Philadelphia's oldest provider of wireless Internet services, was invited by the Mayor's office to represent the future of the City as the municipal Wireless Philadelphia initiative was signed into law by Mayor John Street (in suite) on May 25, 2006.