ITU-T Workshop on Bridging the Standardization Gap and Interactive Training Session
(Cyberjaya, Malaysia, 29 June – 1 July 2010)

Business Experience In Implementation of WiMax

MTSFB : Wireless Terminal Working Group

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Wireless Terminal Working Group (WT WG)

WT WG Leaders:
- Chairman: Dr. Mazlan Abbas (MIMOS)
- Vice Chairman: Mr. Glen Cha (Nokia)
- Secretary: En. Najib Mohd Fadli (TM)

There are 58 members in the WT WG comprises local and international representatives.

The deliverables are to revise and update the following documents:-

i. Technical Specification for Short Range Devices (SRD)
ii. Technical Specification for Broadband Wireless Access (BWA)
iii. Technical Specification for GSM Mobile Terminals
Current Broadband Penetration Trend (Malaysia)

Population Broadband Penetration

9.9%
(population: 28.31mil)*

Household broadband Penetration

33.2%
(homes:6.153mil)*

*Source: March 2010, MCMC
WiMAX Spectrum Award

WiMAX Spectrum announcement:
- March 2007
- 2.3GHz Band
- 4 companies were awarded the spectrum:
  - West Malaysia – P1, AMAX, YTL Coms
  - East Malaysia – RedTone, P1
WiMAX Spectrum Regulation in Malaysia

### Chronology

- **10 March 06** – SKMM issued Standard Radio System Plan Document (SRSP 532) for 2.3GHz band
- **16 May 06** – SKMM issued Applicant Information Package to tender the 2.3GHz band
- **16 Mac 07** – 2.3GHz spectrum awarded to 4 players
- **August 08** – Wimax commercial rollout

### SRSP 532
- From 2300MHz to 2400MHz, divided into 20 sub-blocks, each sub-block consist of 5MHz
- Allow usage of single or multiple sub-blocks per channel
- Allowed BS radiated power up to 40dBm EiRP per RF Channel (currently being revised for higher value)
- Revision also include inclusion of Block Edge Mask (BEM)
WiMAX Spectrum Regulation in Malaysia

Applicant Information Package (AIP) 2006

- Tender 2.3GHz via Apparatus Assignment
- Submit 5 years rollout plan
- Divided into 13 Geographical Areas
- Spectrum Fee as prescribe in Spectrum Regulations
- 6 x 5MHz per operator (inclusive guard bands)
- Performance guarantee RM8.7mil nationwide
- Evaluated based on 5 criteria:
  - i. Roll-out Strategy (15%);
  - ii. Coverage (40%);
  - iii. Technology and Network (15%);
  - iv. Services (20%);
  - v. Management (10%).
WiMAX Spectrum Award

Main Commitments:

- Service launch by end of August 2008

- Population Coverage
  - 25% by end of 1\textsuperscript{st} year
  - 40% by end of 3\textsuperscript{rd} year

- Quality of Service (SLA)
  - 70% of promised bandwidth, 90% of the time
The P1 Journey
The P1 Journey... Roll out strategy

2008
Fixed

2009
On-the-go

2010
Mobile
The Journey

#1 WiMAX (2360 – 2390MHz) operator in Malaysia
Second largest 2.3Ghz deployment in the world
WiMAX Forum Board Member

175, 000+ subscribers as of Q1 2010

8.5m+ Malaysian population covered
Total Malaysian population: 28m+
Building The Coverage

Over

35%

WiMAX Coverage in Peninsular Malaysia (until March 2010)

- States with P1 W1MAX Coverage (35% of pop. coverage)
- States have yet to be covered by P1 W1MAX

Coverage targets
- 2009: 35% population coverage of Peninsular Malaysia
- 2010: 45% population coverage of Malaysia
- 2012: 65% population coverage of Malaysia
## Building The Coverage: Why WiMAX works in Malaysia

<table>
<thead>
<tr>
<th></th>
<th>Malaysia</th>
<th>South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land size</td>
<td>329,750 sq km</td>
<td>100,032 sq km</td>
</tr>
<tr>
<td>Population (mil)</td>
<td>28.31</td>
<td>48.51</td>
</tr>
<tr>
<td>Population/sq km</td>
<td>85.82</td>
<td>486.81</td>
</tr>
<tr>
<td>No. of Household (mil)</td>
<td>5.66</td>
<td>16.67</td>
</tr>
<tr>
<td>BB Penetration (HH)</td>
<td>33.2%</td>
<td>95%</td>
</tr>
<tr>
<td>BB Penetration (POP)</td>
<td>9.9%</td>
<td>31.9%</td>
</tr>
</tbody>
</table>

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Driving The Sales: Devices

DV230, with integrated Wi-Fi and voice functionality, adds to this ease-of-use proposition by omitting the need to configure a separate Wi-Fi router.

WIGGY, P1's on-the-go product and Malaysia’s most advanced USB WiMAX modem.
The P1 Journey...

Intel’s WiMAX-enabled laptops
US$15m in convertible exchangeable bond
International market development
Secures device availability

Infra Partners
Alcatel-Lucent
Phase I

ZTE
Phase II

Strategic Partnership

Alliance with Global Leaders

Product Awards - Best WiMAX
2009 HWM Editor’s Choice - Best WiMAX Service Provider
2010 Frost & Sullivan - Most Promising Service Provider
The P1 Journey... leader in the world

- Board Member
- Clearwire, P1, UQ & Yota
- Lead telco in 2.3Ghz validation
Driving The Sales: Embedded Device

P1 and Intel are working very closely to launch Malaysia’s first range of WiMAX-embedded laptops and we’re now at the final stretch.

P1 will join the likes of Clear, UQ and Yota – amongst the world’s leaders in WiMAX deployment – to introduce WiMAX-embedded into the market.

Affordable embedded chipsets will help tremendously in terms of lowering subscriber acquisition costs and the ability to market a wider variety of devices.
Challenges Faced

- 2.3GHz WiMAX Profile Issue
- Adjacent Channel Issue
- International borders
- Site acquisition
- Misperception on Radiation
Implementation Issues

2.3 GHz WiMAX Profile Issue

- P1 is deploying profile MP02 (2.3GHz, 10MHz channel bandwidth, 1024 FFT) equipment.
- MP02 is still not finalised at WiMAX Forum level
- Difficulties in IOT between vendors and CPE design.

Adjacent Channel Issue

- P1 has been awarded 2.36-2.39GHz, side-by-side with another WiMAX operator.
- Both operators need to have harmonised synchronisation and similar TDD Ratio in order to avoid adjacent channel interference.
- Requires numerous coordination effort especially during the initial stage of network rollout.
Implementation Issues (cont’d)

**International borders**

- Both Regulators (Malaysia’s SKMM & Singapore’s IDA) have agreed to split 2.3GHz band at international borders, where Malaysia will use only the upper half of the band within the coordination zone (50km from the borders).
- Insufficient spectrum to operate mobile WiMAX at borders.

**Site acquisition**

- Land & building owners see new WiMAX operators as a giant, established company just like the incumbent GSM/3G operators.
- High rental cost.
- Resident protests due to fear of RF radiation, which prolongs implementation process.
## Site Acquisition Issues

### Planning the infrastructure
- Town planners do not account for space for fibre and wireless infrastructure
- No centralised mapping of underground ducting, cables, and pipes
- No commercial power supply or slow deployment especially in rural areas (TNB, SESCO, SESB)

### Approving the infrastructure
- Multiple agencies’ approvals required, resulting in a time-consuming process (MPPP, MPSP, DBKL in Penang and KL; USM, UKM, UPSI, UUM, UTP in IPTA; KPTG and PTG on state land)
- Local councils act differently across states
- Limited right of way for telco infrastructure, and approved on a case-by-case basis

### Building the infrastructure
- Developers do not build fibre or ducting into new builds
- SBCs have an exclusive right to build towers in certain states (Sarawak, Melaka, N Sembilan)
- SBCs build slowly (KJS, PINS, PDCTS, RMNS, MICTH)

### Accessing the infrastructure
- SBC pricing high and volatile
- Local authorities may retract permits and take down infrastructure without consultation with telcos
- Costly safety audits required for permit renewals (Johor, Kedah)
Misperception on Radiation

Minority group of people overshadow the need of majority

- Lack of awareness and unfounded fears on the effects of base station radiation
- Lack of awareness on the process that telcos have to abide to operate a base station (i.e. the requirements/approvals from various regulatory bodies)
- Before a site is commissioned. Stringent regulations to protect the community
- Involvement of politicians with vested interest and due to lack of awareness
There is a need to educate the general public on the facts regarding the role of communication structures in the country and to allay fears of perceived radiation from base stations.
Thank You

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