

BayCom Sdn. Bhd.

Satellite Communications

MYICMS 886 Workshop 8th August, 2006

**Challenges & Issues in Rolling Out
Broadband Infrastructure in Malaysia**

BayCom Sdn. Bhd.

Satellite Communications

- ❑ **Our Lineage**
 - ❑ **Founded in 2000,**
 - ❑ **MSC status company**
 - ❑ **Totally focused on VSAT services,**
 - ❑ **Only operator in Malaysia with two totally identical, redundant and diverse Satellite Network Operations Centers (NOCs).**

Baycom's Milestones

- ❑ **2000 – Baycom incorporated for satcom services**
- ❑ **2001 - accorded MSC and Pioneer status;**
- ❑ **2002 – one of the first to offer two way Internet access services via satellite;**
- ❑ **2003 – C-Band (MEASAT-1) & Private Managed Network services as our core business; major private broadband-enabled networks for corporate clients**
- ❑ **2003-Invested in 2nd HNS Satellite Hub and NOC**
- ❑ **2005-started regional satellite services**

Baycom

- ❑ **Managed Private Network - 24 x 7 customer care;**
- ❑ **On-site nationwide field support; able to respond anywhere anytime in the country within a few hours**
- ❑ **Two identical and diverse NOCs; able to ensure business continuity to our clients**
- ❑ **Large project implementation experience; managing networks with over 700 sites serving Multinationals, corporations, and Government Departments**

Challenges and Issues in Rolling Out Broadband Infrastructure

- ❑ **VSAT – previously served in niche markets because it has always been viewed historically as costly**
- ❑ **High infrastructure costs in an increasingly competitive market;**
 - **Relatively High equipment cost for the consumer market;**
 - **Satellite transponder bandwidth costs are relatively higher than fibre bandwidth for typical backhaul distances within Malaysia (new Ku Satellites are getting there in lowering costs)**
 - **High local loop costs for our first mile; if local loop unbundling happens, costs should reduce and it would make us more competitive to provide satellite broadband internet access for the SOHOs/consumer**

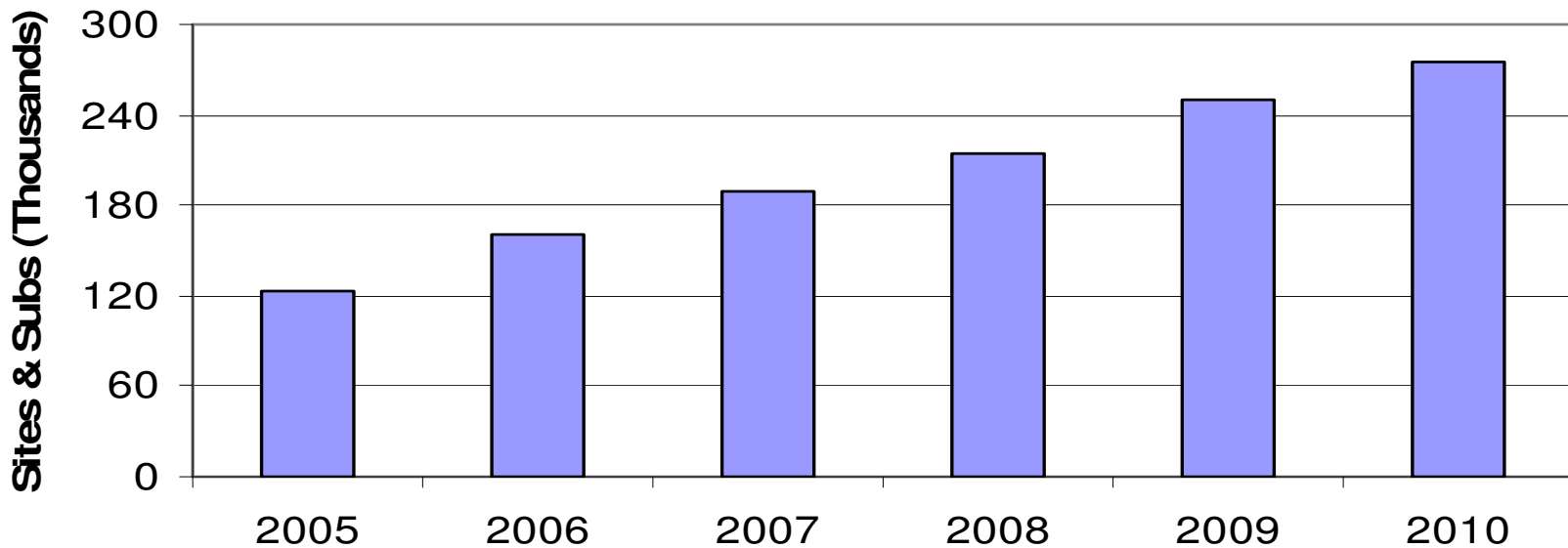
Challenges and Issues in Rolling Out Broadband Infrastructure (cont'd)

- **Serving the consumer/SOHO market with satellite broadband will happen but is not without challenges; being done in the West but heavily subsidised**
- **Satellite services cannot compete head-on with ADSL in the consumer market for now but we can complement ADSL e.g. Providing backhaul for first mile and local access for last mile where fibre/ADSL is lacking. Hybrid networks can serve a wider market spectrum where satellite serves the niche and terrestrial ADSL/fibre serves its strong suit in providing a broader solution by the single operator**
- **Smart partnerships with terrestrial players allows Baycom to provide a quick hybrid solution to play a role**

The Potential in Rolling Out Broadband Infrastructure

Asia Broadband Satellite Sites & Subscribers 2005-2010

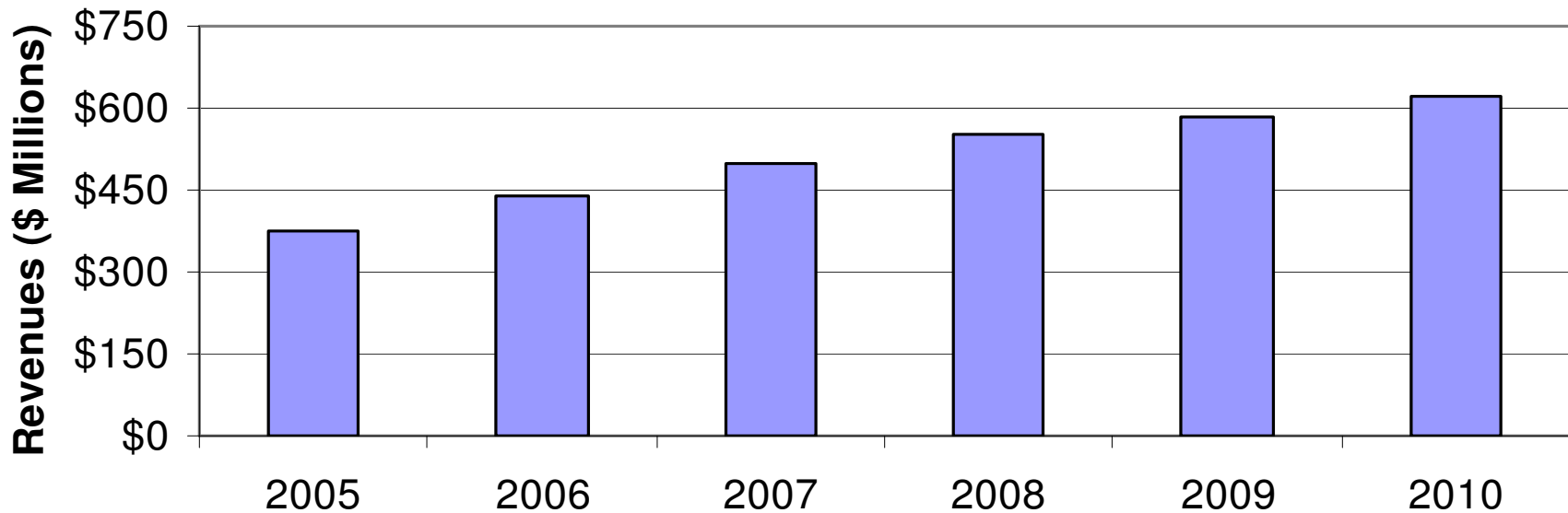
(Northern Sky Research Apr 06)



The Potential in Rolling Out Broadband Infrastructure (cont'd 1)

Asian Broadband Satellite Services & CPE Revenues, 2005-2010

(Northern Sky Research Apr 06)



The Potential in Rolling Out Broadband Infrastructure (cont'd 2)

- **VSAT – a technology that is continuing to evolve for broadband**
 - **VSAT technology has evolved and is continue to evolve with more cost effective equipment and bandwidth efficiency and will continue to enhance efficiency**
 - **There are various Ku band VSAT technologies that are emerging to target the consumer market**
 - **Ku band VSAT technology now has adaptive coding and modulation to mitigate rain fade issues**
 - **The high equipment cost will eventually drop through volume/technology evolution;**

The Potential in Rolling Out Broadband Infrastructure (cont'd 3)

- **Ku band satellite capacity rates should drop with the onset of the large capacity Ku band satellites**
- **New applications like IPTV and combining others to form triple/quadruple play are the strong drivers for broadband in Asia**
- **use of satellite for cellular backhuls, internet trunking for Wi-Fi and later on WIMAX. These are strong potential roles for Baycom in implementing the National Broadband Plan and complementing wireless and wired players. Baycom has smart partnerships with players**
- **VSAT will continue to thrive with traditional applications in Asia e.g. point-of-sale, digital signage, data transfer and distribution, VOIP, distance learning**

Conclusion

- ❑ **Despite the challenges Baycom will continue to seek ways and means to provide a more consumer oriented and cost effective satellite broadband service**
- ❑ **Working together with partners is a way to join complementary strengths in coming up with such a solution quickly to play a role in implementing MYICMS 886**
- ❑ **Baycom can play a key role in providing an interim solution to jumpstart MYICMS while other solutions evolve and therefore enhance overall availability**

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Thank You