Mobile TV Singapore _MDA Policy Consultation
IMB_Navasero

TECHNOLOGY ISSUES:

Background – EU has just accepted the DVB H standard in any spectrum given the scarcity of UHF spectrum in the EU. Japan has mandated ISDB – T or its popular name One-Seg. Korea has adopted DMB for both S Band and UHF spectrum. China has yet to decide, but CMMB is supported by SARFT. And, China Mobile is exploring via a joint venture with Alcatel Lucent the DVB – T track.

Why is platform selection important? - Economies of scale. Handset prices are volume and platform sensitive. ISDB-T handsets are sub 100USD. DVB H are still greater than 200USD. DMB are at 300 USD and up. ISDB T . There is clearly need for a global standard. Since Singapore is a member of the ASEAN, we may need to look at our neighboring nations on what platform is being promoted.

The Philippines, Vietnam, Malaysia, Indonesia and Thailand have launched or are about to launch a commercial DVB H service. DMB was trialed in the Philippines and Indonesia, but the operators decided against DMB due to handset availability out side of Korea. Handset availability is a key factor on deciding what platform. Clearly DVB H is now produced by all major and several minor brnad terminal manufacturers. Nokia, Samsung, LG , Motorolla have all commercialized everal DVB H handsets. But, we must closely look into the chipset market. There are three key mobile TV chip makers NXP, DibComm and Siano. They have deployed and are shiping multi platform chipsets. But one common platform found in all is the DVB H standard.

To insure uniformity , economies of scale, roaming globally and handset availability. I recommend following the EU DVB H (but spectrum neutral) platform. Your decision will trigger this as the de-facto standard in Asia. As France did a few months ago, where they set DVB H and DVB SH as the key standard for mobile TV. This woudlo be fitting given that the AEAN has recently signed up with the EU on many cross border agreements. This can be one of them. Singapore has the opportunity to set the pace to insure regional uniformity.

Why is spectrum important? - Infrastructure cost based on coverage area. UHF has longer propagation with a larger (i.e. 1000km) radius coverage, while S Band spectrum has smaller coverage area per cell. But, higher spectrum have their advantages too over long wave spectrum like UHF. I recommend that the MTVS policy be spectrum neutral.

My Vote: DVB H/SH Standard and spectrum neutrality. We must also keep the door open for MTVS operators to build out or connect to BWA (wirelss broadand networks) to insure that content stays connected.

Licensing Framework: No comment This is not my expertise.

My Vote: MDA's decision

Market (Contetnt) Issues:

I recommend a review on the mobile TV market usage in Singapore, rather than on the review of coverage, and technology. The most difficult issue to resolve is what the future MTVS market needs and wants. Here is my best guess. 1- The Youth is our key market target. They need to be educated. But, they may want to be connected, and will definitely want to participate in some form of mobile UGC (user generated content) network. Connected content that provides high take home value will "make " this market. Early studies made of consultants and researchers do not clearly show the true demand of Singapore. Interactive media will play a key role.

Advertising – Should it be capped? Absolutely not. Market forces will keep this at bay. But, we should note that mobile advertising is a very different form mass – Broadcast TV advertising. Personalized one to one advertising plus permission based advertising will in the future be the key revenue stream for MTVS. Take Google as a key example. They will be a potential player in the MTVS market.

My Vote: Do not regulate content but protect our youth. Put emphasis on mobile TV education. And, insure that the infrastructure and technology allow connected content to flourish. (i.e integrsted unicast and multicast networks)

Market (Competition) Structure (# of Players):

A monopoly is needed to seed new services that require costly infrastructure. To insure the service's QOS and value, competition is required. Can two players survive in the Singapore market. NO. But, if they share a common infrastructure, where it allows the pay tv provider to be economically feasible given a small sub million subscriber base . Multiple operators will potentially succeed.

Singapore can act as a launch pad for a regional MTVS provider. If properly supported by the government and market. A MTVS provider can share its broadcast hub, technology and content through out the region through a head end in the sky (IMB business model). A viable operator

would allow not only a domestic pipe / carriage for Sinagpore made interactive content, but a regional carriage for its content and services.

MNO neutral MTVS provider may be key in providing to all mobile users regardless of thier service provider. The low interest from Singtel may be a great opportunity for new service companies to grow and provide a neutral MTVS platform. This provider would aid in converging the content players and the telco players. Both players need to work together. And, a MTVS provider can make that happen.

My Vote: Who ever gets the spectrum and license should be able to regionalized its service to insure long term viability given the small market in Singapore. And, provide a distribution network for content developed in Sinagpore to other markets in the region and the world.

Spectrum limits the number of MTVS operators. So policy must guide the MTVS operators to integrate with each other. Which may require a common platform and CAS (conditional access system).

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By providing an economically viable environment for the first MTVS operator in Singpore, a new regional and global company can be created providing a new mobile media network serving the growth of Singapore content.

Other:

- Licensing Framework – Agreed Broadcast and multiplex license applied to MTVS. Agreed that MTVS will require cellular operators to obtain broadcast TV license. Agrred on two tier licensing framework. Agreed not to limit # of mobile TV operators.
- Comparartive Bid - Agreed but enhance criteria:
- CONTENT Criteria:
    - Content Channel development capabilities – since there are minimal number of mobile cleared channels and content created for mobile. The MTVS candidate should have the history and ability of developing and aggregating mobile

channels. Numebr of channels the MTVS candidate developed and operates.

- o Channel line up - given the limnited number of channels that 8MHz can provide. The MTVS operator should be able to present a balnced but compelling bouquet of channels.
- o Access to global markets – The MTVS candidate must possess relationships with international carriers and other channel platforms. This measures the ability for the MTVS operator to globalized its service and mobile channels not only for mobile but for multi-platforms (IPTV, DTH, Cable etc).

- Planned QOS
  - o Singapore outdoor coverage
  - o Singapore indoor coverage
  - o Regional coverage
- Technology
  - o Platform uses global standards
  - o Does not limit to a few selected terminals
  - o Netowrk able to integrate with wirelss broadband tchnologies