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- DIGITAL TV
- NETWORKED CONTENT DEVELOPMENT GRANT
- THE SCHOOLNET PROGRAMME
- THE SKMM NETWORK SECURITY CENTRE
- BLOGGING
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- POSTCODES



Klang Valley Broadband Push

Creating demand for broadband in the Klang Valley



WE ARE NOW KNOWN AS SKMM



The logo of the Malaysian Communications and Multimedia Commission depicts the smooth transition of the telecommunications, broadcasting and IT sectors into a single converged communications and multimedia industry.

The regulatory regime is represented by four transparent equilateral triangles, which symbolises fairness, equity, safety and transparency in exercising the four facets of regulation - economic regulation, technical regulation, consumer protection and social regulation.

The tetrahedron's four vertices and six edges add up to 10 elements, each representing the 10 national policy objectives and 10 functions of the Malaysian Communications and Multimedia Commission.

The eternal fixed and focused guiding light represents the Malaysian Communications and Multimedia Commission's regulatory role. The sphere, tetrahedron and the light together symbolize the dynamism of the industry and the commitment of the Malaysian Communications and Multimedia Commission.

SKMM is committed to enhance the quality and efficiency of services to the public where its vision for the industry is to be a globally competitive, efficient and increasingly self-regulating communications and multimedia industry generating growth to meet the economic and social needs of Malaysia.

This new logo is the commission's first visual identity change since its inception in 1998 and signifies a significant step forward in SKMM's transformation initiative to promote investment, innovation and development, with due regard to the public interest.

HIGHLIGHTS IN A DECADE OF TRANSFORMATION

1998

- Introduction of Malaysian Communications and Multimedia Commission Act and Communications and Multimedia Act, and formation of SKMM.

1999

- Repeal of the Telecommunications Act 1950 and the Broadcasting Act 1988 and CMA takes effect.

2000

- Introduction of a set of subsidiary Communications and Multimedia legislations:
 - Technical Standards Regulations
 - Spectrum Regulations
 - Licensing Regulations
- Revocation of ATUR Regulations 1996 thus liberalizing cellular phone rates.

2001

- Migration from old licensing regime to the new technology and service neutral convergence based licensing regime.
- Transfer of regulatory role of Digital Signature to SKMM.
- Transfer of regulatory role in Postal Services to SKMM.
- Launch of the Framework for Industry Development (FID), 2001-2005.
- Nationwide Radio Frequency (RF) Radiation awareness campaign.
- Designation of the Communications and Multimedia Consumer Forum of Malaysia (CFM) and the Communications and Multimedia Content Forum of Malaysia (CMCF).
- Expansion of SKMM presence to Kuching and Pulau Pinang.

2002

- Introduction of Communications and Multimedia (Universal Service Provision) Regulations 2002.
- Introduction of Communications and Multimedia (Rates) Rules 2002.
- Launch and rollout of the first phase of Community Communications Development Programme.
- Implementation of Licence Fee Rebates.
- Expansion of SKMM presence to Kota Kinabalu, Kuantan and Johor Bahru.
- Issuance of Mandatory Standards for Quality of Services (QoS) on PSTN, Public Cellular, Dialup Internet Access and Content Application.

2003

- Issuance of WiFi Guidelines to Promote Wireless Broadband.
- Designation of the Malaysian Access Forum Berhad (MAFB).
- Registration of the General Consumer Code.
- Assignment of IMT-2000 (3G) Spectrum.
- Issuance of Mandatory Standards for QoS on Public Payphones, Digital Leased Line and Broadband Access.

2004

- Issuance of the Determination on Dominant Position in the Communications and Multimedia market and regulation guidelines.
- Issuance of Class Assignment for low power and network controlled devices.
- Registration of Content Code.
- Rollout of Nationwide Cellular Coverage Expansion Program.
- Expansion of SKMM presence to Shah Alam.
- Designation of the Malaysian Technical Standards Forum.
- Approval of National Broadband Plan.

2005

- Launching of the MyICMS 886 Strategy (Malaysian Information, Communications and Multimedia Services 886).
- Reclassification of postage mail and rates.
- Issuance of Access List and Pricing.
- Issuance of Standard Radio System Plan for RFID.
- Introduction of Guidelines on Services Based on VoIP (Prefix 0154) over Broadband.
- Mutual Recognition Arrangement (MRA) for telecommunications equipment with Singapore.
- Migration of Application Service Provider Individual License to Class License.

2006

- Registration of Prepaid Mobile Service users.
- Issuance of Standard Radio System Plan (SRSP) for Digital Terrestrial TV.
- Launch of Malaysia Internet Exchange (MyIX).
- Establishment of ITU Centre of Excellence on rural telecommunication at UUM.
- Issuance of Spectrum Plan.
- Publication of Anti-Spam Toolkit.
- Issuance of Numbering and Electronic Addressing Plan.

2007

- Preparation for Mobile Number Portability (MNP) readiness.
- Mandating of VoIP call initiation and termination pricing.
- Establishment of the National Spectrum Monitoring Centre (NASMOC).
- Establishment of SKMM Consumer Complaints Bureau to enhance complaints handling.
- Strategic Review of Spectrum Management.
- Assignment of 2.3GHz broadband wireless access spectrum.
- Expansion of SKMM presence to Miri and Sandakan.
- Presentation of Malaysian positions at World Radiocommunication Conference 2007 (WRC07).
- Launch of the Klang Valley Broadband Push (KVB90).
- Launch of Web@KL.
- Establishment of National Security Centre.
- Launching of USP Communication Tower Projects along East-West Highway.
- Establishment of SKMM Academy.
- Spectrum Research Collaboration with universities.
- Publication of SKMM .myConvergence knowledge magazine

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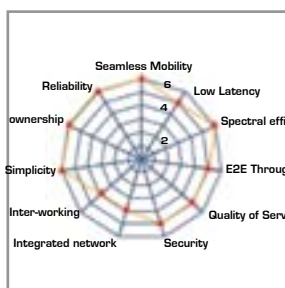
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A

llow me to begin by wishing readers a very happy 2008. It is indeed a pleasure for me to usher in Vol 2 Number 1 of *.myConvergence*. This issue continues the genealogy of *.myConvergence* as a “knowledge magazine” that seeks to disseminate knowledge not only about the industry, the regulatory environment but also the technology that drives both. Broadband in its many variants is one such technology.

It is thus appropriate that in this issue we highlight the Klang Valley Broadband Push (KVB90) as the cover story. At the forefront of our national efforts to spur the adoption of broadband nationwide, the KVB90 aims to raise the level of broadband penetration in the Klang Valley close to full penetration as the decade draws to a close, to match adoption rates in urban concentrations globally. Beyond that and among others we also feature an interesting article on evolution to the Next Generation Mobile Networks taken from the SKMM Lecture series to fill you in.

Crossing over to the postal and courier sector, we take a look at how a humble 5 digit code works to make sure that your mail reaches you on time and safely. The postal service is indeed a remarkable one confounding fears that the advent of e-commerce and e-mail would make it redundant. On the contrary it has a vital role to play in the e-commerce process. There is also a companion piece on stamps that will take many of us down memory lane or at least to rummage for that stamp album we know we have somewhere...

Have a good read!

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Do you have ISSUES or PROBLEMS on:

Your fixed line and mobile phone service (no coverage, dropped calls, billing, false charges, charge imposed for SMS not subscribed or requested, etc.)

Programmes aired on TV/radio (quality, content, etc.)

Your Internet service (quality, availability, etc.)

Postal/courier service and digital signatures (availability, delivery, etc.)



How to make a COMPLAINT

STEP 1

Contact your service provider

STEP 2

If the complaint is unresolved, contact Suruhanjaya Komunikasi dan Multimedia Malaysia / Malaysian Communications and Multimedia Commission (SKMM) Consumer Complaints Bureau:

E-mail: aduanskmm@cmc.gov.my

Complaints Hotline:
1-800-888-030
(8:30am - 5:30pm, Monday - Friday)

Write/Walk In:
SKMM Consumer Complaints Bureau
Suruhanjaya Komunikasi dan Multimedia Malaysia
63000 Cyberjaya, Selangor

Fax: 03-8688 1880

For dropped calls and no coverage, please provide:

- Information on the date and time of incident
- The location (name of town/village/place)
- Roads or description of the area and landmarks, etc. would be helpful.





KLANG VALLEY BROADBAND

SKMM is at the vanguard of the push to create demand for broadband in the Klang Valley. The KVB90 team tells us the story.



PUSH

The availability of broadband Internet and communications connections is a proven and significant contributor to national aspirations and a driver of national competitiveness. The Malaysian government recognizes this and one of the actions taken to make this a reality throughout the country was the establishment of the Cabinet Committee on broadband rollout or CCB, chaired by the Deputy Prime Minister, Dato' Seri Najib Tun Abdul Razak. The committee set a target for 50% broadband penetration of households throughout Malaysia by the year 2010.

Nationwide broadband provision is one of the eight service areas identified in the Malaysian Information Communications and Multimedia Services 886 or MyICMS 886 strategy announced by the Minister of Energy, Water and Communications, Dato' Sri Dr Lim Keng Yaik. The strategy, over the period 2006 and 2010, aims to enable the delivery of advanced information, communications and multimedia services throughout Malaysia to improve the lives of Malaysians and boost the country's global competitiveness.

In 2006, there were 1.3 million broadband connections nationwide or 25% household penetration and the goal of MyICMS 886 was to achieve 4.2 million broadband connections or 75% household penetration by 2010. This has been

revised down to the aforementioned 50% penetration within that timeframe.

The Klang Valley

While the government continues to spur the adoption of broadband nationwide, it is also aware that the largest urban conurbation in the country, the Klang Valley, had the highest level of broadband penetration. This has spurred an initiative to take the levels of broadband penetration in the Klang Valley to much higher levels and brought about projects to bring broadband, innovative services and appealing content to public and educational facilities.

While there is no hard and fast definition of the boundaries of the Klang Valley, it is generally understood to comprise the Federal Territories of Kuala Lumpur and the new administrative centre Putrajaya and the neighbouring districts of Petaling, Gombak, Hulu Langat, Klang, Sepang and Nilai, with a combined population of between five and six million inhabitants.

The Klang Valley has benefited from Malaysia's rapid economic growth over the past 30 to 40 years and it has attracted many educated, tech-savvy professionals, civil servants and business people to the area in search of employment and business opportunities.

So not surprisingly, household broadband penetration within the Klang Valley stood approximately at 30% in

December 2006 and the government realised that driving broadband penetration within the Klang Valley was an important component of its nationwide broadband drive.

Having already achieved impressive levels of broadband penetration there, it was a logical move to start a push to raise the level of broadband penetration in the Klang Valley close to full penetration. SKMM came up with the Klang Valley Broadband 90 (KVB90) initiative which aims to achieve 90% household broadband penetration within the Klang Valley by 2010. KVB90 will see the utilization of a multitude of fixed and wireless broadband technologies, including ADSL, optical fibres, WiMAX, 3G, HSDPA, iBurst and so on.

This was a realistic goal especially since most incumbent and new fixed and wireless broadband service providers usually roll out their services with the Klang Valley first before taking them to other parts of the country.

It's also more realistic to compare broadband penetration in an area such as the Klang Valley, with that in neighbouring countries such as Singapore, the Hong Kong Special Administrative Region and the city of Taipei, with broadband penetration of about 60%, 75% and 85% respectively in December 2006.

Otherwise, comparing penetration levels within a city state like Singapore with that of the whole nation of Malaysia isn't quite an apple-to-apple comparison.

It wasn't just a question of overcoming technical hurdles to get KVB90 moving. Rolling out broadband infrastructure and connections alone serves little purpose if users don't see any benefit in paying the resultant higher prices for it compared to narrowband dialup Internet. The SKMM concluded it had to create demand for broadband infrastructure through a series of pilot projects and technology showcases delivering desirable multimedia content and services over broadband infrastructure, hence the KVB90.

One of the key elements of the strategy is to promote the deployment of broadband infrastructure and services

“ A variety of broadband technologies and devices are being deployed throughout the Klang Valley ”



Broadband enhances Raja Tun Uda Library's public appeal

The Raja Tun Uda Library in Shah Alam was established as a public library in 1986 and is used by people of all ages, including children, young adults, older adults and senior citizens – all of whom are either students, in various employment and unemployed.

It provides multimedia and Internet services for all users, including 33 PCs for public use.

Packet One, in collaboration with SKMM, sponsored a WiFi hotspot, including the access equipment and a 2 Mbps backhaul connection for one year at the Raja Tun Uda Library in Shah Alam, so that its visitors can surf the Internet for free from their notebook PCs and handheld devices.

“The SKMM wants to create awareness in the usage of wireless broadband in libraries and through this WiFi in Library project, we hope to convince the state government to provide Internet access in libraries as a standard feature as this will provide library visitors, including students and senior citizens, with free or affordable WiFi access,” said Md. Radzi Din, vice-president of Special Projects, Green Packet.



Library spokesperson, Mrs. Kamalam Sugumar said that the WiFi hotspot in the library is well received by users who are satisfied with the services. The facilities are mainly used by Masters Degree students who come in to access WiFi in the afternoons and during weekends. It has become an integral part of the services offered by the library. “WiFi has become part of our library service, it will affect the users if we were to stop this service,” said Mrs. Kamalam.

in key public institutions, such as schools, universities and libraries.

WiFi enabled libraries

In particular is the WiFi in Library project which provides WiFi hotspots in 10 public libraries within the Klang Valley and the rest of Selangor state. People can access the Internet for free from their notebook PCs and smartphones in the libraries. The project adds yet another channel for public wireless Internet access in addition to the many locations such as cafes and buildings which have been set up by private initiatives and offer WiFi for free or for small fees. The SKMM is working on this line of action with the Selangor State government as well as Dewan Bandaraya Kuala Lumpur to attract more users of the hotspots.

The first library to get free WiFi is the Raja Tun Uda Library in Shah Alam. This initiative is sponsored by broadband service provider PacketOne Networks (Malaysia) Sdn Bhd. WiFi service was available there since April 2007 and it was officially launched by the Menteri Besar (Chief Minister) of Selangor on 28 September 2007.

The service has been very well received, especially among college and university students who use it during

weekends. The SKMM will now spend a considerable sum of money to extend it to another ten libraries.

eSchools Project

Another initiative, the eSchools Project is due to be launched in January 2008. The SKMM is working with Telekom Malaysia (TM) on this project and has identified four schools: St. John's Institution, an urban school in Kuala Lumpur; Sekolah Menengah Taman Tun Dr. Ismail, a secondary school in a residential area; Sekolah Menengah Cyberjaya, a secondary school in a sub-urban area; and Sekolah Agama Menengah Bistari USJ, a religious secondary school.

TM will upgrade the broadband connection to these schools and provide some e-applications, while the SKMM will provide an ICT facilitator to each of the said schools, who will facilitate the usage of ICT tools within the schools. This will include searching for educational material over the Internet.

This is expected to be an enhancement of the existing SchoolNet project which provides broadband connectivity to schools. The ICT facilitators will also assist teachers



Interesting content will draw more broadband users

in using ICT tools to develop lesson plans and create an exciting environment for students to learn in.

Through this, the SKMM hopes to create a positive dependency on broadband among schools which will have a cascade effect encouraging students to want to extend the benefits of broadband in schools to their homes.

Schools can also post student attendance sheets and report cards on their own portals, and parents can access these documents online to find out how their children are doing, without having to come to the school personally to see their teacher.

TM launched the second phase of its TM eSchool project in three selected secondary schools within the Klang Valley, namely SMK USJ 12, Subang Jaya, Selangor; SMK Seksyen 11, Shah Alam, Selangor; and the SM (Laki-laki) Methodist, Kuala Lumpur.

Mobile Broadband Highway

The SKMM is also working with PacketOne Networks (Malaysia) Sdn Bhd on the Mobile Broadband Highway Project, a technology showcase and pilot

trial providing mobile broadband access to highway users between Putrajaya and Cyberjaya using WiMAX technology.

The project will use a demo bus with Internet-access facilities on board as a testbed. Under the initial phase, the bus will travel along a route between Putrajaya and the IT city of Cyberjaya, within coverage of PacketOne's WiMAX antennas located on buildings along the route. Coverage will eventually be extended to Shah Alam.

The bus could also be used as a test bed for content developers to test out their applications for mobile users. This would create a good platform for the development of local mobile content such as the provisioning of tourist information, location-based services, information on available accommodation, entertainment, shops and so on.

The Ubiquitous Library

Another work in progress is the Ubiquitous Library (U-Library) pilot project. This ambitious project involves networking five public libraries; including the National Library, Kuala Lumpur Library, Ratu Library in Shah Alam, Hypermedia Library in Subang Jaya and Petaling Jaya Community Library

to facilitate amongst others a shared content database and inter-library book loans.

Books in the five libraries will be tagged using RFID (Radio Frequency Identification) tags. These libraries and their respective book databases will be networked together over broadband connections, with long-term plans for users to search for and book the books they want to borrow, collect and return them to the nearest library.

Kuala Lumpur City Web Portal

The Kuala Lumpur City Web Portal is a work-in-progress, providing all information one needs to know about the



The PacketOne Demo Bus

■ Broadband on the road

PacketOne, a Malaysian wireless service provider has been working on initiatives to provide broadband access to people on the move. They are able to demonstrate wireless broadband communications using the ODMA (Opportunity-Driven Multiple Access) technology which PacketOne has tested to support users moving at up to 120Km/h.

ODMA is a proprietary technology by IWICS, Inc. in the U.S., in which Green Packet has a 5% stake and rights use of IWICS' intellectual property.

PacketOne were keen to demonstrate how users could access the Internet over wireless broadband while travelling in vehicles between Cyberjaya, Putrajaya and Shah Alam as one of the pilot projects under the Klang Valley Broadband 90 initiative.

The demonstration would also showcase WiMAX technology, since being an open standard, all relevant equipment would be widely available and also since the SKMM had granted PacketOne (formerly MIB Comm) the license to operate WiMAX service at 2.3GHz in March 2007.

So the Mobile Broadband Highway Project was born and its first phase would be implemented along the



route between the ICT city of Cyberjaya and government administrative centre of Putrajaya, both within MSC Malaysia.

PacketOne is currently identifying and acquiring sites to install its antennas along the route, with the support of the SKMM and Perbadanan Putrajaya (Putrajaya Corporation).

Each of the antenna will have a range of between 500m to 1.5km, depending on the height of the building they are on, the surrounding landscape and structures.

PacketOne has outfitted a 9-seater bus, with luxury seating, mains power sockets and a plasma screen that will serve as a display for a notebook PC attached to a WiMAX customer premises equipment (CPE or modem).

"This project will also encourage content developers to create applications for people on the move, such as tourist information, possibly one which provides users with relevant information to where they are," said Radzi.

For example, a strong possibility is a WiMAX location-based service that could show a video relevant to a tourist site being viewed based on users' location in relation to its antenna.

Students or members of the general public could also have the opportunity to ride on the bus and experience surfing the Internet from their own notebook PCs via WiMAX modems provided.



Md. Radzi Din in PacketOne Demo Bus

“

Surfing is becoming part of the lifestyle in the Klang Valley

”



city, such as about ongoing events, city celebrations and happenings as well as a comprehensive directory listing of all retail outlets and restaurants in town. Merchants will be able to create their own websites and link it to this portal, thus facilitating electronic-commerce activities.

Cities like Bangkok, Singapore and Boston already have their respective portals, and as such it appears timely and apt for Kuala Lumpur to have its very own portal as well.

The portal is due to be officially launched in conjunction with the World Congress on Information Technology (WCIT) 2008, an international ICT event in Kuala Lumpur in May 2008.

Connected Municipalities

The Connected Municipalities pilot project is meant to develop an integrated approach in deploying broadband, thereby ensuring the objectives of availability, affordability and sustainability. Four municipalities have been selected for this project which is due to be deployed early next year. The municipalities are Shah Alam, Petaling Jaya, Subang Jaya and Nilai. The pilot projects will act as a testbed that will showcase ubiquitous broadband coverage using fibre and wireless technologies such as WiMAX, WiFi, HSDPA and others to determine the best means to provide affordable broadband to the community.

Content is a key factor towards the successful implementation of this project and should be designed based on the needs of the community. This can be in the form of e-learning tools, community bulletin boards and other community based services.

For example, municipal broadband in South Korea provides VoIP, interactive real-time games, Internet Protocol TV and other content and services, while the Kenniswijk project, the Dutch national project for broadband innovation includes various municipalities and allows, for example school students to interact with and obtain information from experts, professionals or trades people in respective fields. The students could then contact, for example, a fireman or motor mechanic for information on a day in their



lives for an essay they are writing on, and also to exchange ideas with other members of their community.

KVB90

Through these pilot projects, the SKMM not only hopes to raise awareness in the value of broadband among users but also to create demand for it and incentives for service providers to deploy broadband.

It sees each of these projects as catalysts that will help create a broadband culture in the Klang Valley which in turn will drive more households and businesses to install and use broadband in their daily routines. [.my](http://www.kvb90.my)

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FULFILLING NEEDS FOR DIGITAL MEDIA

Ahmad Nasruddin shares details of implementation, challenges and digital dividends arising from migrating to digital terrestrial television in the country.

The world has gone digital in a virtual flash. Every conceivable communication service has gone or is going through a rapid digitization and even the word analogue feels odd and ancient. Well, not quite all. One of the last remaining bastions of old analogue technology is our free-to-air (FTA) television service which is still in analogue format but not for much longer. In December 2006, then-Deputy Information Minister, Datuk Donald Lim announced that analogue TV broadcasts in Malaysia will be phased out by 2015, less than 10 years from now.

This is not to say that digital television has not made an appearance in this country yet. Digital television technology is not exactly new to Malaysians as there are three operators that offer digital pay-TV. As of now, Astro has over 100 television programmes, 17 radio and 4 pay-per-view channels plus various interactive services utilising the KU band satellite transmission technology.

This is in addition to the previous offering by MiTV which had 41 programme channels running on IP over UHF and FineTV's 19 channels via broadband. Radio Televisyen Malaysia (RTM) started its trials for digital terrestrial TV

(DTT) in early September 2006 as a step in the plan to move to a fully digital service by 2015.

What exactly can consumers expect and what are the dividends we stand to gain when the country goes fully digital?

DTT in brief

According to Wikipedia, digital TV (DTV) is a telecommunication system for broadcasting and receiving moving pictures and sound by means of digital signals, introduced in the late 1990s. DTV uses digital modulation data, which is digitally compressed and requires decoding by a specially designed digital TV set or our existing TV set with a set-top box or a PC fitted with a television card.

Like any other services, the existing television service is going through rapid changes due to rapid digitization and technological development. This evolution includes the introduction of digital TV to replace analogue TV, from standard definition TV to High Definition (HD) TV, from passive viewing to interactive TV and TV on the move and video on demand. This has contributed to the onset of convergence of broadcasting and telecommunications i.e.



Figure 1: Evolution of TV services

towards a new TV experience. It can be seen that interactivity, mobility and video on demand services are traditional services of telecommunications. Whereas more channels, larger screen and local area TV services are traditionally the domain of TV broadcasters. This new TV service evolution can be summed up in **Figure 1**.

There are many standards adopted by countries around the world such as ATSC in North America, ISDB-T in Japan, DVB-T in Europe and Australia and DMB-T in China and Hong Kong. As for us, the industry has decided that our DTT will be using the DVB-T standard which is a standard widely used in Europe.

This service is transmitted on radio frequency (RF) similar to the traditional TV with the dividend of carrying multiple programme on a single RF channel. Essentially this gives both broadcasters and consumers more channels to play with.

At the moment, the Malaysian national broadcaster RTM is conducting a six-month trial on 2,000 selected households in Kuala Lumpur and surrounding areas. The trial service offers the current two analogue TV channels, RTM1 and RTM2 in digital and two new digital-only channels, RTMi and Music Active. RTMi is broadcasting from 7pm to midnight daily while Music Active is on from 9am to midnight. Also there are seven FM radio stations in digital audio and interactive services. The viewers' response and opinions will be polled after the trial.

Digital TV Standards

ATSC	Advanced Television Systems Committee
ISDB	Integrated Services Digital Broadcasting
DVB	Digital Video Broadcasting
DMB	Digital Multimedia Broadcasting

Around the world

Deployment of DTT is mushrooming especially in Europe as the European Commission (EC) has expressed its commitment for a swift "switchover" with the beginning of 2012 as the deadline for the switch-off of analogue TV for EU Member States.

Countries such as Luxembourg, the Netherlands, Finland, Sweden and Andorra have completed their transition to DTT. Others like UK, France, Germany, Belgium and others are in the transitional process.

As for Asia, South Korea, Japan, Singapore, Saudi Arabia and Taiwan are in their last phases of simulcast and certain DTT services are already available. The region has a mixture of standards including DMB, ATSC, DVB-T and ISDB-T.

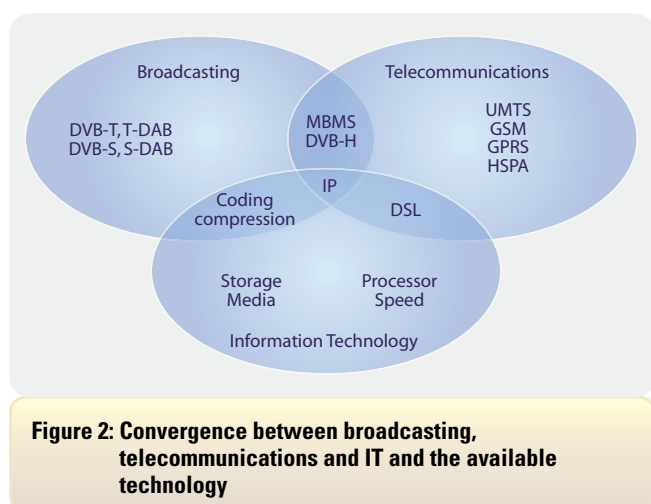
Many countries faced difficult challenges during initial migration efforts due to poor awareness programmes and take up, availability of attractive content, high cost of set top boxes and ability to tap the full benefit of the technology.



Mobile TV

Mobile TV is no stranger when discussing the DTT evolution. But what is actually defined as mobile TV? Mobile reception is broadly defined by the European Broadcasting Union (EBU) as "reception while in motion, covering speeds from walking to motorway driving". However, mobile TV is a name used or generally understood or described as a service to subscribers via mobile telecommunications/broadcasting networks. Mobile TV involves bringing TV services to the mobile phones. It combines the services of a mobile phone with television content and represents a logical step both for consumers and operators and content providers opening up new opportunities.

The DTT (DVB-T) standard initially addressed all the modes of reception from fixed to mobile but not to mobile handheld devices. Handheld device reception has additional issues which are quite different from mobile reception in vehicles. Issues such as battery life, in-built antenna and difficult reception indoor and on small devices are significant factors to be addressed. This was addressed by adding



more robust techniques to the DVB-T standards and is now known DVB-H (DVB-H is a family member of DVB-T).

It can be noted that convergence through mobile multi-media services are brought in from developments in broadcasting, the technology DVB-H which is a broadcasting technology. From telecommunications it is the MBMS (an evolution of 3G). From IT, is the IP platform, compression (MPEG4), processor and storage technologies allowing the possibility to view TV on mobile handheld devices. **Figure 2** illustrates the convergence of the 3 services/technology.

Some key characteristics of reception by mobile handheld devices are:

- Lower in resolution than for fixed reception mode which is meant for smaller screens. There are four classes of resolution in mobile handheld reception as follows:
 - › Class A (128 kbps/10-12 fps),
 - › Class B Low (256 kbps/15-20 fps),
 - › Class B High (384 kbps/20-25 fps),
 - › Class C (768 kbps/30 fps)
- Required to operate from walking pace to high vehicular speeds and with highly variable reception conditions.
- The planning for mobile reception for handheld reception of TV will be more challenging than in-vehicle using external antenna. The approach used is normally similar to the cellular network with dense SFN networks of low power transmitters with low antenna height.

Digital dividends

With the high level of technology and services maturity in the country, it is about time to go digital especially when analogue TV is not spectrum efficient and occupies a lot of spectrum. In the analogue world, each RF channel can only support one TV programme whereas one digital RF can carry multiple TV programme

channels. The savings in spectrum arising from digital technology give rise to what the industry terms as the 'digital dividend'. Spectrum is a very valuable commodity and DTT assists in freeing spectrum resource which could be used to carry more TV programme channels and accommodate other services such as Mobile TV and High Definition TV.

In the Standard Radio System Plan (SRSP) for DTT published by SKMM, it specifies the following broadcasting bands for DTT (there are a total 42 RF channels) when the full migration completes which are:

- VHF Band III: Channels 5-12 (8 x 7 MHz); and
- UHF Band IV/V: Channels 21-54 (34 x 8 MHz)

SKMM has analyzed and estimated the requirements for the analogue digital migration and future needs of DTT and the above bands are adequate.

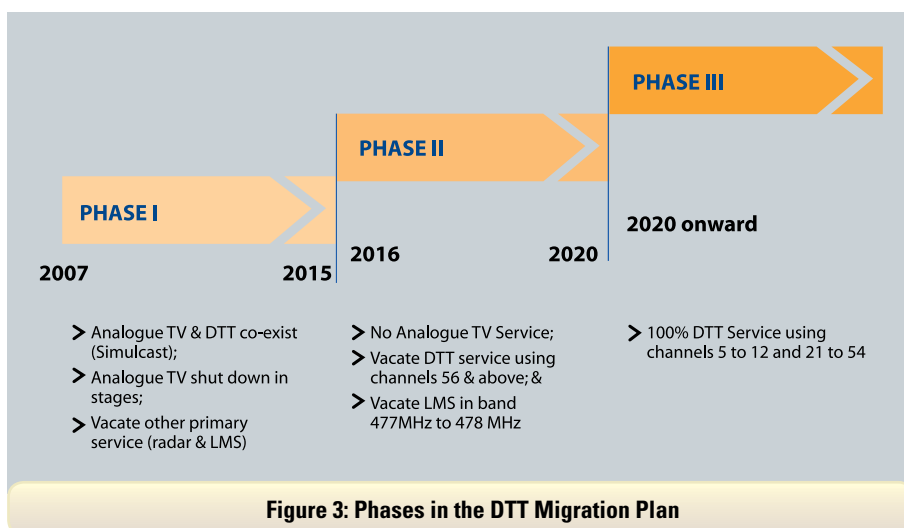
DTT migration

Completing the migration of analogue FTA TV to digital is a major challenge as it is a combination of efforts by all stakeholders i.e. the government, viewers, transmission distribution network owners, vendors, manufacturers and TV stations.

Existing spectrum allocation involves a slew of different parties such as TV stations, radio navigation services, public land mobile operators, aeronautical radio navigation services, personal radio services and so on. Reallocating this chunk of spectrum users and migrating to DTT is a major exercise and to handle the migration effectively, it is divided into several phases (**Figure 3**).

Phase I started with the trials and deployment of DTT network and will end by 2015. In this phase which is also known as the simulcast period, both analogue and digital TV will co-exist. Analogue TV will be shut down in stages during this phase. SKMM will also vacate Land Mobile Services (LMS) and radar services from the band.

Phase II will pick up in 2016 to 2020 where analogue TV will be fully shut down and any DTT services using channels 56 and above will be moved to within channels



21 to 54. LMS operating in 477 MHz will be moved out to an alternative band. Finally, DTT services will operate from channels 5 to 12 and 21 to 54 beyond 2020 (Phase III).

Several criteria have been taken into consideration during the DTT migration plan, namely, number of programme channels, extent of coverage, degree of regionality, whether portable and/or mobile reception, required picture quality (which will be standard definition and in future some High Definition), degree of cross border coordination and reuse of existing analogue sites.

Technical considerations

The digital transmission capacity and spectrum needs must be confirmed to be available to carry all existing TV programmes and new programmes. In the digital world of TV, multiplexer (MUX) is used to aggregate multiple programme channels that are to be transmitted via RF channel. The estimated capacity needed for HD and SD using MPEG4 compression are about 3 Mbps for a SD programme and 6 Mbps for a HD programme.

Assuming six current programmes (RTM1, RTM2, TV3, NTV7, TV8 and TV9), and all on SD, the total capacity required is 18 Mbps. Based on a study, for the migration to be attractive to consumers, more programme channels are needed. Assuming another 10 additional channels are phased in, this would mean a total of 48 Mbps will be required.

To ensure that future FTA is competitive and attractive to consumers, some capacity for HD is needed. Assuming, at least four to six programmes will go HD, the additional capacity need in the future will be about 36 Mbps. Other supplementary services like textual information services, Electronic Programme Guide (EPG) and interactive services will require some additional transmission capacity and may take up as much as 10 Mbps.

It is estimated that the total aggregated capacity will be 94 Mbps comprising about 30 Mbps (10 programmes at launch) initially for SD with another six programmes (18 Mbps) at a later date, another 36 Mbps later for HD and some (10 Mbps) for data services.

For DTT planning, the consideration on various reception modes i.e. fixed (10m), portable indoor/outdoor (1.5m), mobile (in-vehicle and handheld) will require very complex coverage planning and lead to different spectrum requirements. For FTA capacity planning, reception for fixed, mobile (in vehicle), portable indoor/outdoor and

reuse of existing analogue high transmitter power and high antenna sites are considered. It is also assumed good nationwide coverage is needed with some regionality.

The choice of DVB-T parameters is the deciding factor for the number of program channels that can be fitted in an RF channel. It is a trade off between bandwidth efficiency and extent of frequency re-use. This is estimated by an initial study that indicates the use of 16 QAM and $\frac{3}{4}$ code rate will give a data capacity of 18 Mbps per each RF channel. This means two layers of MUX are needed (total 36 Mbps; needed is 30 Mbps) for the initial launch and at a later phase another MUX will be required to accommodate 6 additional programme channels or 18 Mbps.

To cater for the future needs of HD, a further two layers of MUX will be required. Thus the total estimated capacity is 5 layers of MUX nationwide to fully accommodate the needs of FTA programmes.

Technical challenges

There are some concerns about the “hole punching” effect which is due to adjacent channel interference between FTA (high transmitter power, high antenna height network) and mobile broadcast TV (low transmitter power, low antenna height network). This happens when the required protection ratio is compromised and it usually happens at the edge of the reception area when the signal level is lower.

A DVB-T signal will require a protection ratio in the order of 10-20 dB, for co-channel interfering signals. The precise figure will depend on the modulation level, code rate and propagation channel characteristics. This means that the power of the interfering signal should be 10-100 times less than that of the wanted signal.

For a signal on the adjacent UHF channel (i.e. with a centre frequency 8 MHz away from the wanted signal), the protection ratio reduces to around -28 to -42 dB. This apparent tolerance will allow DTT transmissions to be used adjacent to existing analogue signals from the same site.

Where both wanted and adjacent-channel signals originate from the same site, their powers will clearly fall off ‘in step’ as distance from the site is increased. If the ratio of powers (including the effect of aerial radiation patterns) at the site is correctly chosen there will be no risk of interference.

A different situation will result where wanted and adjacent transmissions are made from different sites. The possibility then exists that the wanted signal is relatively weak, perhaps at the edge of coverage of a distant transmitter, while the adjacent signal may be from a very local transmitter. In this case, there is a real possibility that the >-28 dB protection ratio will be exceeded.

An example where this hole punching scenario could possibly happen when a DTT transmitter and Mobile TV transmitter co-exist within a geographical area and the RF channel used are adjacent channel (e.g. DTT Transmitter using RF channel 30 and Mobile TV transmitter using RF channel 31 as illustrated in Figure 4).



High Definition Digital TV Set-Top-Box

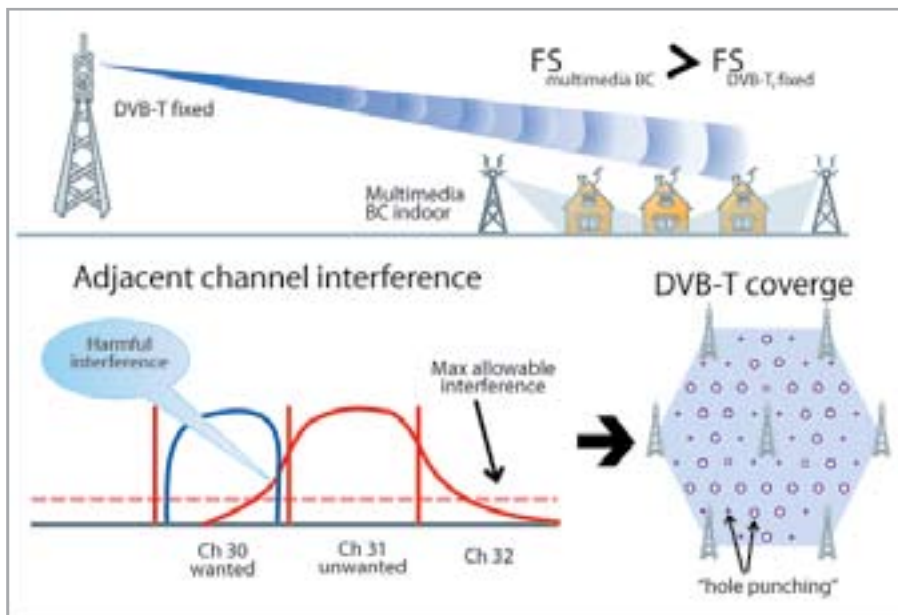


Figure 4: Illustration of hole punching in DTT and Mobile TV ecosystem

Source: CEPT/ECC Task Group 4 Report A

Financial costs

For consumers, the most basic set-top box known as the minimalist set-top box will cost about RM150 but set-top boxes that support interactivity will cost much more. However like most consumer electronic gadgets, prices will drop when demand increases.

The migration period will cost quite a bit. Investments will need to be made for installation, transmitters and studio middleware to fully benefit from digital transmissions. There will also be extra costs during the simulcast period when both analogue and digital transmissions are operating. Investments will also be needed in the production or studio as well as in software and databases to make use of features like interactivity.

In order to handle the above hole punching issue, one method can be considered which is by adding the DVB-T transmitters at the same site/location as the mobile broadcast TV stations site wherever the hole punching occurs.

Another way of solving this 'hole punching' problem is to introduce a 'guard' channel, that is to skip one RF channel, between high power DTT and Mobile TV use (**Figure 5**). And for efficient use of the spectrum, that RF channel can be dedicated for the use of low power devices such as for Program Management Service Equipment (PMSE) for wireless microphone or for low power DTT transmission (in building coverage).

For cases between mobile TV operators or between DVB-T operators, sharing the same site/location is the best practice to avoid hole punching problem. SKMM will proceed on further detailed planning in the SRSP DTT working group using its Chirplus_BC planning tool with the industry players. This exercise is targeted to improve the overall planning requirements by confirming the assumptions used and gaining the exact estimate of bandwidth requirements by the industry players to ensure the success of the DTT rollout in Malaysia.



Minimalist set-up boxes

However it is money necessarily spent as digital migration is vital to better manage spectral resources and allow consumers to benefit from interactive content, HD content, both localized and nationwide. my

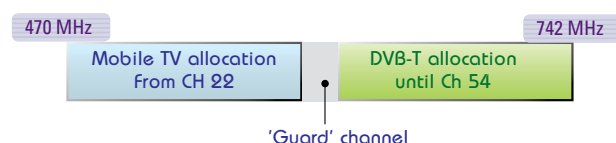


Figure 5: Possible DTT and service clustering

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DATO' SRI DR. LIM KENG YAIK



Dato' Sri Dr. Lim Keng Yaik brought a wind of change to the communications industry since being appointed Minister of Energy, Water and Communications in 2004. Known for his wit, humour and no-nonsense style, he has overseen national developments in two key Ministries since 1986.

In 2007, Dato' Sri Dr. Lim announced that he would retire after the next General Election. On the eve of his expected departure from the national scene, we speak to him about his major achievements and challenges that marked his period of services with a special focus on his contributions to the communications industry.

Dato' Sri, can you go back in time and talk briefly on personal back ground and your foray into politics, especially at the start of your political career and momentous events that you hold dear.

I have been active in politics for 40 years now. As many people know, I come from Perak. I am old boy of St. Michael's Institution. Later I did my medical studies in Queen's University, Belfast, United Kingdom.

I have so many memories that it's hard to pick a few momentous

events. I entered politics in 1968 and became a senator in December 1971 and a minister in January 1972. In May 1973, I left MCA and joined Gerakan in Dec 1973 and became president of the party in 1980.

On your political career, when did you become a member of the Cabinet, i.e. your first appointment to a ministry and your feelings on holding a federal position?

This is a quiz question that many will get wrong. The younger generation probably only remember me as being the Minister of Primary Industries and now Energy, Water and Communications but I was first appointed Minister of Special Functions in January 1972 in the cabinet of Tun Abdul Razak Hussein when I was still in MCA. I took time off and served as Exco member in Perak from 1978 until 1986.

I then became Minister of Primary Industries in 1986. Of course, that was a very hectic and challenging time. Back then, Malaysian industries like palm oil were facing many hurdles.

We had to overcome strong lobbies by the soy bean industry. They were determined to overtake the palm oil industry and they launched many campaigns that could have derailed the palm oil industry.

But thank God, we managed to overcome all the difficulties.

Malaysian palm oil became very well known and we were number one in the world for producing palm oil. Palm oil was and still is one of Malaysia's biggest money earner and job creator.

The timber industry was the same. People thought we were destroying our forests and there were anti-tropical timber campaigns in Europe. We worked hard and formed the Malaysian Timber Council. That helped us gain recognition because we showed that we were managing our resources properly.

The main changes were the transformation of commodities exports to value-added products; rubber to rubber products, especially rubber dipped products; palm oil to refined products, oleo chemicals and biofuels; timber to timber products, furniture; and cocoa to cocoa products and chocolates.

When did you become Minister of Energy, Water & Communications and what were your feelings at the time of taking up this portfolio after having been in charge of primary industries? What is the difference between the previous ministry and the current one?

I became Minister for Energy, Water and Communications in 2004. I had mixed feelings of course. I loved taking on the challenges in my old ministry but at the same time, I realised that my new job is equally challenging.

Yet again, I have been given what you can call, a hot ministry seat. This area, you all are very familiar with. The Malaysian communications industry and also worldwide is an industry where there are always rapid changes.

Of course, this was a very different industry compared to the Primary Industries Ministry. There we had to build markets for Malaysian products like oil palm and timber.

The Malaysian communications industry on the other hand had to address the challenge of rapidly changing technologies amidst the global trend of digital convergence. The broadband age was looming and the country was in danger of being eclipsed by other countries if it hesitated.

If Malaysia did not keep up with the changes, we would be left behind by our competitors. So I took it that we had to keep Malaysia in the forefront of communications and information growth.

What were your impressions of the state of the industry, especially of communications services and the communications industry overall after taking charge?

I thought the communications industry had done well. We have world-class communications companies and the infrastructure was also good in most places.

But there were areas that needed improving. We had not achieved full coverage at all. When I took over, I remember telling the companies that even in Cyberjaya, there were areas without coverage.

It was the same with broadband. Yes, we had broadband and Internet coverage but many people were complaining about poor services and speeds.

Also, our content industry too was just beginning to take root. Like all emerging industries, there was a need to nurture and grow that part of the ICT industry. Content was going to be a vital driver of the broadband and convergent future and I could see that it would help spur adoption.

What steps did you take to address the issues facing the industry?

I focussed on the areas that were important and urgent and I made it clear that excuses would not be accepted. Everywhere I went, I told industry players to buck up. Don't give me words like 'best effort.' I told the service providers if you charge people for 1 Mbps speeds, then make sure you



“ The Malaysian communications industry had to address the challenge of rapidly changing technologies amidst the global trend of digital convergence. ”

give them what you promise. No more excuses!

You also demanded the mobile operators extend their coverage to cover most of the country, with deadlines like Time 1 and Time 2. How well those were achieved and how satisfied are you with the result and if not, what more needs to be done?

Yes, I told the telcos the same thing. Bring coverage to the whole country or I will act. I gave them deadlines like Time 1 and Time 2. I am not fully satisfied but I am proud to say that coverage and services have improved tremendously. But there is more to do yet as we don't have full nationwide coverage yet.

Dato' Sri, you spearheaded the development of the MyICMS 886 national strategy which outlines the key areas and services that will propel Malaysia into the forefront of the Digital and Convergent Age.

An excerpt of a poem recited by the CEO of DiGi, Morten Lundal, during the signing of the definitive agreement between DiGi and Time dotCom in January 2008

*We have a news conference with so much news.
So to make it a bit different, I will use a poem to share my views.
First I will acknowledge we have our Minister here today.
And the Minister will be in focus for what I first would like to say.
We have a Minister who maybe didn't know so much about communications when he came.
But he has been taking some bold initiatives and added to his fame.
The Minister had some strong intuition about what's right and wrong, fast and slow.
He did make some very important calls, helping the industry to grow.
I can mention infrastructure sharing, prepaid registration and MNP.
Or his loud call for increased coverage and improved quality from the big three.
It hasn't been absolutely always been easy to deal with it all.
But seeing it in perspective now, he did make the right call.
And today he is witnessing one more positive thing.
Which even better services and more broadband to Malaysians can bring.*

.....

It is the blueprint of ICT development for the country. What made you decide we needed a national strategy?

We needed a direction so that everyone knows what our priorities are. One of the things that I did a lot when trying to get to know the industry was travel. I was very interested in seeing what other nations were doing. I saw that other countries had their own blueprints and so we decided to work out our priorities and targets.

The MyICMS 886 is a very ambitious strategy. What are your expectations? Are they lofty or achievable?

We have to be ambitious if we want to do well as an ICT nation. But the goals were carefully thought out and achievable if everyone works on them. Companies must be bold and willing to take risks. Communications and information industries are not for the faint-hearted. If organisations are fearful of new technologies, they will be left behind. That is why we gave out licences to new companies. We hope

that they being new will be willing to take risks and work harder.

I think we can make it. Furthermore the goals are no less or more than that set by other nations that are equally determined to do well.

The key to success for the MyICMS 886 strategy is the speedy development of nationwide broadband infrastructure which is my main target at all times.

As for broadband coverage, what are the principal drivers for the future? Can the 50% target be met?

We better meet the 50% target and even exceed it! There are so many drivers that will help us meet our objective. Wireless technologies like WiMAX and 3G technologies will do their part. We are also putting a lot of expectation on fibre optics. The project to bring fibre into homes has been awarded.

Now everyone just have to work on it. I will not tolerate companies that sit on their licences and do not roll out services. As I have said before, I won't hesitate to take licences back.


How would you rate the support you have received as Minister from major players in the industry?

Once they got to know my style, they have been very cooperative. I think they understand that if I push or scold, it is because I want the industry to progress. When the industry does well, it means the major players do well too. So we are on the same side.

What do you plan to do once you are retired? Will you remain active in politics and will you hold any position that can create an impact on our society?

One thing for sure, I would like to spend more time with my family especially after having devoted more than half of my life time in the public office.

As the Chairman of Wawasan Open University Council, I would also like to dedicate my time in ensuring this open university offers flexible, affordable and accessible distance learning program to all deserving Malaysians regardless of their status or background.

Beyond that, of course I will always be available for advice and consultation. 

CONFERENCE ON MALAYSIAN COMMUNICATIONS AND MULTIMEDIA MARKET 2008

"NEW FACES IN COMMUNICATIONS AND
MULTIMEDIA INDUSTRY"

DATE: 1 APRIL 2008

TIME: 8:30am – 5:30pm

**VENUE: MALAYSIAN COMMUNICATIONS AND
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CYBERJAYA, SELANGOR, MALAYSIA**

Participation is free

Conference on Malaysian Communications and Multimedia Market 2008 brings together industry players, investors, vendors, analysts to discuss and witness the trends and developments on Communications and Multimedia landscape in Malaysia and around the world. Benefit from hearing the latest developments direct from the industry leaders and expert panel sessions facilitated by esteemed moderators.



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- ▶ Optimising Customer Loyalty and Personalising Services
- ▶ Mobility! Digital Media Content Anywhere, Anytime
- ▶ Innovative Strategies & Gaining Market Share in an Emerging Market
- ▶ Mobile DVB-H Technology: Towards a New Business Model

Convergence and Transformation Strategies: Leading to Quadruple and Triple-play Services

- ▶ The Role of Convergence in the Malaysian Scenario: Are Customers & Operators Ready?
- ▶ Towards a Digital Transformation: Where Are We Now?
- ▶ Where do Ads Go in Converged Services?
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C&M Industry Trends Performance and Market Outlook in Malaysia & Global (Panelist Session)

WITH PRESENTATIONS FROM:

- Telekom Malaysia Berhad (TM)
- Celcom (Malaysia) Berhad
- Maxis Communications Berhad
- DiGi Telecommunications Sdn Bhd
- ASTRO
- Radio Televisyen Malaysia (RTM)
- Media Prima Berhad
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Blogging

Eneng Faridah takes a look at the Malaysian blogging community.

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A blog (a portmanteau of web log) is a website where entries are written in chronological order and commonly displayed in reverse chronological order. “Blog” can also be used as a verb, meaning to maintain or add content to a blog.

Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs.

Most blogs are primarily textual, although some focus on art (artlog), photographs (photoblog), sketchblog, videos (vlog), music (MP3 blog), audio (podcasting) and are part of a wider network of social media. Micro-blogging is another type of blogging which consists of blogs with very short posts.

As of September 2007, blog search engine Technorati was tracking more than 106 million blogs.

–Wikipedia.org–

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When someone decides to look for some information on the Internet, other than search engines and sites like Wikipedia, one of the best places to get detailed information usually turns out to be a blog run by a lone individual.

There is so much information on the Internet that it is impossible for a person to sieve through everything to find something of interest. Even with search engines like Yahoo! and Google, the credibility and quality of the content is never guaranteed. This is especially true when Weblogs come into the picture. But good weblogs run by people passionate about the subject they are blogging about can match just about any other source of information on the Internet.

Commonly known as a blog, it is basically a list of Website links accompanied by personal commentary and even editorial remarks on any given

topic. Blogs may be based on a certain theme or a collection of ‘random’ thoughts, and is often operated by an individual who compiles it chronologically.

Good blogs are updated frequently with pointers to interesting events, pages, stories and happenings. Implementing the ‘First In – First Out’ principle, new material piles on top of the page while older items is pushed further down.

With no editor or organisation observing the creator through a glass ceiling, blogs tend to be uncensored and more daring in opinions. Sometimes, without a boss breathing down one’s neck, a lack of discipline can lead to a blog which is sloppy, lacking in focus and not updated! Nevertheless, by providing up-to-the-minute archived records blogs provide listings of specific entries that are more or less assured to be what the reader is looking for.

Anyone who relies on the Internet for their daily dosage of information is

bound to feel a natural affinity to blogs. Selecting, criticising, and illuminating the best or the worst of the Internet in a particular area is an activity that many of us already do on a daily basis. Blogs make one’s life much easier in the sense that they provide a complete catalogue of relevant information and with the creator’s comments and opinions to go with it to boot.

On the reverse side, some might say that since blogs are too accessible and are not monitored by any professional body, the trend may cause a flood of amateur commentators who think they have something important to say. This may or may not be true but no matter what, a blog is more fleshed out than a simple link list. It can also be a window into the mind and daily life of its creator and is an avenue of individual expression.

History

If you look at how the Internet really started to catch on, it was really a group of ‘geeks’ who liked to get in



touch with other people to inform them of other geeky stuff such as the development of technology and computer games. They started bulletin boards and forums where they would list an issue to discuss and new information would be added on in the form of threads.

Slowly, this evolved into websites or even personal homepages. If you recall, many websites and homepages would have sections called 'News' where they would list down the latest happenings in their lives or interests. The webmasters would update this section regularly so people would know what they were up to.

Again, the natural evolution took place and as these 'News' sections became a big and popular part of the entire website, it began to take the spotlight. Webmasters would put the section at the front of the websites and started updating more in chronological form. As current news is added, the older ones drop lower. All this was done by manually updating the components of the website.

With a bit more evolution everything became so much simpler with specific tools for blogging being developed. Now we have a lot of browser-based software such as Blogger.com, Wordpress.com, LiveJournal.com that allow even the non-techies to blog. And hence we see today's blogs. Now, it is not just

texts, these days blogs have become a breeding place for multimedia. They incorporate photographs, videos and audio and because they are so user-friendly, they are no longer just for geeks!

So really, blogs started out as online journals, be it for the individual, organisations or groups of people. However, its role has now started to become increasingly mainstream. It is fast becoming a tool for expression, not only for the individual, but for different kinds of people like journalists, politicians, corporations, governments, artists; well, basically everyone and anyone who has got an opinion about anything.

As of 2007, according to Technorati (an Internet search engine specifically for blogs), there are now well over 100 million blogs in existence all around the world, and the numbers are still growing fast. It will surely be the mainstream mass media of the near future.

The local front

Malaysia has not been left out of the blogging phenomenon. By some accounts, there are tens of thousands of blogs run by Malaysians. What are the most famous blogs in Malaysia? The answer you would get right now would be Jeff Ooi's Screenshots and Rocky's Rockybru and the reason is simple. Both are now in the midst of

a highly publicised court case with The New Straits Times Press (NSTP). NSTP is currently suing both bloggers for defamation with both bloggers responding with motions for the suits to be struck out.

Anything that is highly politicised will always garner some attention, be it with the public or with the authorities. It comes as no surprise then that the two bloggers who blog about news and some controversial issues to garner this sort of attention. However, this is the first time a mainstream media organisation is taking individuals to court.

It is important to remember that blogs published on the Internet, just like any other medium, are still subject to the law. Just because anyone can start a blog does not mean that anyone can just say anything they want.

The law, including defamation (be it libel, in the case of text, or slander, in the form of speech – video or audio), still applies. This is because when you publish or webcast something on the Internet, the public is given access to it. Your blog may be a personal blog, but it can be read by all, around the world. And if this is the case, you have the same responsibility as journalists and media professionals towards the public.

Blogs have had impact all around the world. Blogs have been used to bring about social change and highlight injustice. In countries like the United States of America and the United Kingdom, good blogs are taken seriously. They are seen as empowering the public and even governments are embracing it. Office holders have blogs just so they can keep in touch with their constituency.

Malaysians too are embracing blogging with vigour. Increasingly, they have become an accepted feature of the Malaysian media scene and some have become credible sources of news. The government has always welcomed opinions and even criticism and blogs are just about the best media to do that in an electronic age.

But all said and done, blogs are really not just about empowering the public on politics and social issues.



Kenny Sia
KennySia.com

“

Blogs have had impact all around the world. Blogs have been used to bring about social change and highlight injustice

”

There are many blogs out there that cover a myriad of other subjects and issues. Remember, blogs really originated and evolved from forums and bulletin boards which people used to discuss and exchange information.

There are blogs related to entertainment, humour, film, literature, gardening, food, fishing, sports, automobiles, comics, dancing, music, travelling, photography, art and design, language, technology, education, networking, boating, hiking, swimming, extreme sports, e-commerce, animals, pets, whales, dogs, cats, dolphins... et cetera and et cetera. You get the drift.

And some of these blogs are actually very popular in Malaysia. One of the more visited ones is PaulTan.org, which is a blog that is all about cars. The blogger Paul Tan is a huge car enthusiast and he discusses and reviews different cars, offers automotive advice, and also highlights



Paul Tan
paultan.org

second hand cars that are up for sale. He has a large following and now car companies are offering him cars for free to review because it would be niche publicity for them.

Then we have KennySia.com, which is all about comedy and clowning around. Kenny Sia seems to have a knack of making smart remarks and comments about everything and many visitors go to his side just to get a kick (and laugh) out of his different entries everyday. For example, he has blogged about why he feels girls aren't allowed to ask for a guy's phone number, what will happen if Vietnamese people spoke Hokkien, and just about anything absurd or random.

There are also the publicity seekers such as Fireangelism.com. Fireangel is a girl who fiercely craves attention. The term 'camwhoring' which has become synonymous with blogs like Fireangelism is an apt description of her blogging style. Although it may sound vulgar, it really isn't, it simply refers to individuals who like to post pictures and videos of themselves and their daily lives for others to see. Everything is in fun and jest. She likes to write about her life, gripe about things that irritate her and post pictures and videos of herself. People enjoy this harmless form of voyeurism and they keep coming back for more.

Muzaffar who is blogging under the name of sultanmuzaffar



Fireangel
Fireangelism.com

(sultanmuzaffar.blogspot.com) has been blogging for five years on the local entertainment scene. His blog has become well known as an excellent site to catch up on local movies, TV series and singers. Muzaffar blogs in Malay and the site is very heavy on content.

Daphne Ling, on the other hand, is a young girl that uses her blog as a platform to raise consciousness on her favourite passion which is volunteerism. She blogs at <http://daphneling.blogspot.com> about her visits to hospitals where she volunteers time with terminally ill children and also her volunteer work with abandoned children. Daphne has successfully used her blog to raise funds for families and individuals



1

that are in need of medical care and support.

There are a lot of local tech bloggers too. Some specialize on hardware and others on applications. The local wireless industry is the focus of the blog located at malaysianwireless.com. This blog is maintained by K. Kugan, a college student studying telecommunications. The blog picks up all the happenings in the mobile and broadband sectors. From his blog, it's evident that telecommunications is his passion.

Corporate blogging is fast picking up in Malaysia too. One of the first would have to be Wiley Chin, CEO of Ximnet Malaysia, an IT company (www.ximnet.com.my/thelab/blog). He feels that corporate blogging actually provides transparency into the culture and practices of an organisation. It also gives a human aspect to the corporate world and when this connection is established with the people, they will want to get to know your organisation better.

There are also many bloggers who use their blogs for networking and building relationships. Many students who further their studies abroad blog to help their friends and families keep up to date and in touch with their lives. This is also the same for working expatriates who live far away from their home countries.

So yes, there is a wide range of diversity when it comes to blogs.



2

Start blogging

How is all that for a sales pitch? If you are interested, there are many automated tools and scripts that you can use to create your own blog. These programs help to ease the gathering, organizing, and publishing of your blog.

One of the more popular sites is Blogger.Com (www.blogger.com), which gives you complete control of the look of your blog. Its features enables you to blog any website that you happen to be viewing by right clicking on an icon, and the title of the Website and its URL address are automatically added to your update form. You can also search and review news headlines and topics to select items that you wish to capture and edit.

GrokSoup (www.groksoup.com) is another such site. At GrokSoup, there are discussion groups for every article, automatic archiving, the ability to load multiple news sites, and mailing lists.

Pitas.Com (www.pitas.com) is yet another popular blog creation and

1. Wiley Chin

ximnet.com.my/thelab/blog

2. Kugan Kathegesen

malaysianwireless.com

3. Daphne Ling

<http://daphneling.blogspot.com>




3

hosting site. The software is easy to use and the site offers a choice of default design templates. The adventurous designers can also create his or her own custom look.

LiveJournal.Com (www.livejournal.com) is another site that provides the blogger with tools that help with gathering and editing blog entries. One nice feature of LiveJournal.Com is the ability to integrate your blog with your own Website.

Blogs can be made more interesting by incorporating interactive features. Providing commentary and a context for the stories or links can be very useful to your readers, but with the right software, your readers can participate by subscribing to your blog. They can then receive updates through email alerts, and even take part in online discussions and chats. They can also visit the blog at anytime and search the archives or, using the calendar, view articles by date.

So, blog away! 

Eneng Faridah Iskandar is the Director of the Content Regulation Department of SKMM. She can be contacted at eneng@cmc.gov.my.

Evolution to the Next Generation Mobile Network

Exciting new mobile networks are being developed and these networks will replace current technologies gradually says Paul Salmon.

While there is much hype over Next Generation Network (NGN) service, content and applications to homes and offices over fixed infrastructure, it will take about 10 years more before true Next Generation Mobile Networks (NGMN) are available for mobile phones and handheld devices; based on past experience with earlier radio-access technologies.

Cellular mobile networks continue to evolve, but it typically takes about 10 years from worldwide spectrum allocation to commercial launch.

For example, in 1969, the Nordic Telecommunications Conference established the Nordic Mobile Telephone Group to develop a new mobile telephone system and about 12 years later in 1981 the first NMT450-based analogue, first-generation mobile telephone system began commercial operations in Saudi Arabia, followed soon after on 1st October in Sweden and a week later in Denmark.

Telekom Malaysia (TM) launched Malaysia's first mobile phone system, ATUR 450 based on NMT450 in 1985. Development of the digital, second generation, GSM (now known as Global System for Mobile communications) began with the establishment of the Groupe Spécial Mobile (GSM) by CEPT, the European Conference of Postal and Telecommunications Administrations in 1982 and only on 1st July, 1991 did Radiolinja in Finland begin commercial GSM operations.

In 1985, the IMT-2000 (International Mobile Telecommunications-2000) study began with the establishment of Interim Party 8/13 and in 1992, the World Radio Conference in Malaga allocated frequencies for future, third-generation UMTS use worldwide and it was only on 1st December, 2001 that Telenor launched the first commercial UMTS network in Norway, with UMTS terminals expected to be available in the third quarter of 2002.

IMT-2000 specified 384 Kbps data rates for mobile users and 2 Mbps for stationary users but this was only realised by HSDPA, the first evolution of 3G, in 2006. Another thing to note is that technology often falls far short of the theoretical maximum. For example, GPRS, the first 2G evolution claimed data rates of 114 Kbps but only achieves around 45 Kbps today, while its next evolution, EDGE claimed rates of 384 Kbps but at best achieves around 232 Kbps today, while 3G achieves around 384 Kbps.

The 10-year journey to the IMT-Advanced 4G (fourth generation) network began at the World Radio Congress in Geneva, Switzerland held in November, 2007.

The conference assigned blocks of candidate spectrum from 450 – 470 MHz, 698 – 862 MHz, 2.3 – 2.4 GHz, and 3.4 – 3.6 GHz for use by IMT-Advanced 4G, which is only expected to commence commercial deployment after 2015.

All IP-based

Fixed and mobile NGNs will be all Internet Protocol (IP) based, with sufficient bandwidth to carry a range of services, including Voice-over-IP (VoIP), video, audio and multimedia combined. Fixed NGN connections into homes and offices will provide from 10 to 100 Mbps, including over ADSL2+ and optical fibres.

Currently, broadband Internet access networks use an IP-based core, while older fixed and mobile core networks comprise more traditional, circuit-switched E1 and Synchronous Digital Hierarchy (SDH) cores, resulting in duplication. Next Generation Networks will exclusively comprise a single IP and MPLS (Multi-Protocol Layer Switching) based core serving broadband Internet, fixed line and mobile communications.

Fixed network operators are moving in this direction, since a single converged infrastructure can reduce their operational and capital costs by over 50%. For instance, BT

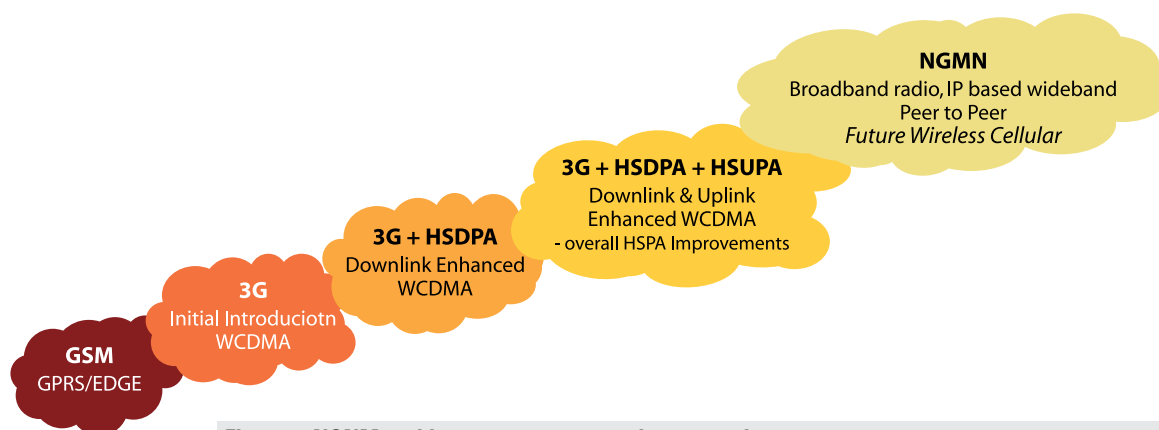


Figure 1: NGMN architecture next generation network

Source: NGMN Group

(British Telecom) rolled out its 21st Century Network on a cost reduction argument.

At the same time, consumers are demanding more user-centric and quadruple-play services, which will bring current PC-based telecommunications to the masses.

Operators will also embrace third-party opportunities to differentiate themselves competitively to avoid becoming a provider of high capacity communications connections and nothing more.

IP Multimedia Subsystems (IMS) enabling delivery of a whole range of content, applications and services over an IP-based core will become viable with high-speed access and when fixed-mobile convergence goes mainstream, delivering quadruple-play services will become possible and voice service could well become almost free.

Mobile wants it too

Mobile operators also want to move in the same direction to cut costs but while they are already implementing mobile soft-switches in their networks, it hardly makes them next-generation mobile networks (NGMN) and does not alter the services they provide.

However, it is hard for wireless to match the data rates of fixed connections, as the cost-effectiveness of NGN over radio networks is currently difficult and expensive to achieve

because the technology required to deliver it is not yet on a reality and many of the standards for an all IP-based NGMN are still being developed and won't be available till well after 2010.

Despite the industry push to implement IMS, it still has a long way to go before IMS becomes mainstream on mobile devices.

3G HSDPA (High-Speed Downlink Packet Access) currently uses 16 QAM (Quadrature Amplitude Modulation) modulation techniques and will evolve to 64 QAM in 2009. WiMAX uses 64 QAM, as will the evolved form of 3G known as 3GPP LTE (3G Partnership Project, Long-Term Evolution) which is expected to begin deployment from 2010.

QAM varies the height of the peak of the carrier signal as well as the carrier's phase-shift (advance or delay) in discreet steps, so that each unique amplitude & phase combination corresponds to a unique set of multiple 1 and 0 (one and zero) bits, enabling greater data capacity for given spectrum.

With 16 QAM, each unique amplitude & phase-shift pair corresponds to a unique set of four bits ranging from 0000 to 1111, while each of the pairs in 64 QAM correspond to six bits from 000000 to 111111, hence greater data carrying capacity resulting in greater spectral efficiency for a given bandwidth.

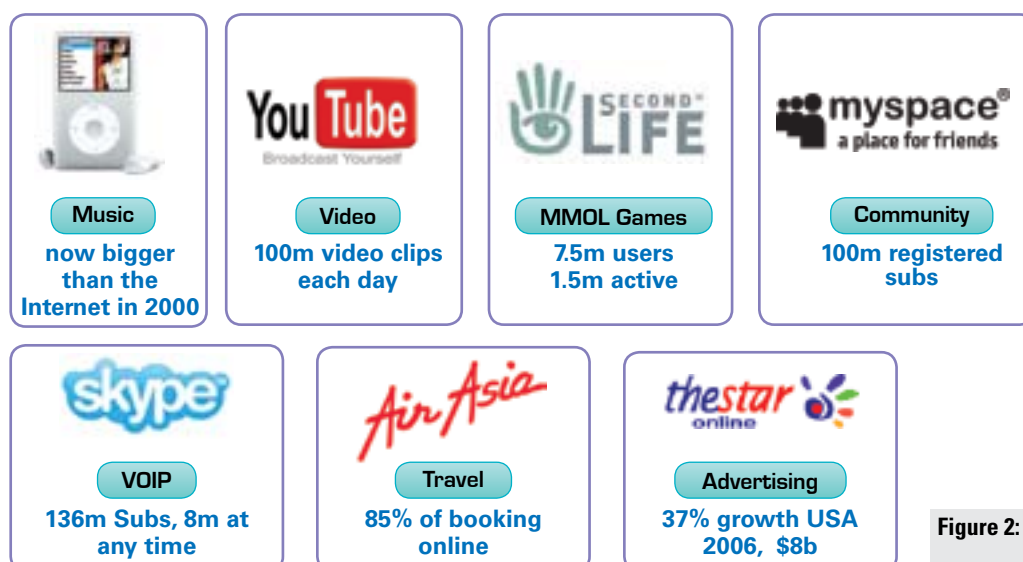


Figure 2: Huge Consumer Demand for broadband

In theory, 64 QAM can achieve higher speeds, but requires better reception to work.

Moreover, the Orthogonal Frequency Division Multiplexing (OFDM) technology used in fixed ADSL, cable, powerline Internet, WiMAX, WiFi 802.11a & g, and later with 3GPP LTE, employs multiple, differently modulated sub-carriers transmitted simultaneously to achieve higher capacity for a given channel spectrum.

It also can be used with MIMO (Multi-Input, Multi-Output) transmission reception, where two or four antennas transmit different or same signals in parallel to single or multi-antenna handsets to achieve either higher capacity under good signal conditions or higher redundancy for lower error rates, especially where there's multi-path interference at the receiver.

Adaptive array antennas focus the signal strength on customers' handsets or equipment by shifting their signals' phase, so they reinforce each other where their power is needed and cancel each other where it is not.

Intellectual property issues

Intellectual property rights also played some part in the 3 GPP's move to adopt OFDM. Having one or two parties owning a large proportion of the essential patents over CDMA (Code Division Multiple Access) chips has a bearing on the cost of Wideband CDMA (WCDMA) chips currently used in 3G today.

Both WCDMA and OFDM radio technologies are implemented using dedicated digital signal processors (DSPs) which, like dedicated graphic or sound processors on PCs, relieve the phone's main processor and operating system that may otherwise lack the power and speed to handle signal processing quickly enough.

However, it's expected that intellectual property rights will be more evenly distributed among OFDM & OFDMA (Orthogonal Frequency Division Multiple Access) stakeholders, so it will be more intellectual property-neutral,

hence an opportunity for lower cost chips and cheaper devices.

VoIP a challenge

Meanwhile, while making voice calls using VoIP incurs no additional cost over fixed networks, achieving low cost voice quality with VoIP on mobile handsets is a challenge. Data charges could be expensive and quality is hard to maintain, so it won't be until 2009 or 2010 when HSPA (High-Speed Packet Access) speeds reach peaks of 20 Mbps and 3GPP LTE is available that we will see quality mobile VOIP.

Until then, it's still more effective to carry mobile voice over traditional, dedicated, voice channels, which in the case of 3G, employ quality of service management and adaptive, multi-rate encoders to reduce the bandwidth required to about 12 Kbps per conversation, while maintaining speech quality.

NGMN is meant to solve the quality problem in VoIP and allow operators to deliver 'real - Internet' content, applications and services such as videos, music, games, access to social networking sites, travel bookings and advertising on mobile devices, as is available on PCs today.

However, today's mobile phones and PDAs, struggle to load and render web pages while surfing popular web sites, resulting in higher error rates compared to PCs, according to an internal study of PC processor and phone processor performance conducted by Intel in 2007.

Intel believes Moore's Law will enable Mobile Internet Devices and Ultra-Mobile PCs based on Intel architecture to solve this problem on mobile devices.

The next generation

Meanwhile, growth in fixed line access speeds is expected to reach 10 Mbps and support standard-definition triple-play by around 2008 and reach 1 Gbps by around 2020, while wireless access appears to be following suit with 3GPP LTE speeds over 1.5 Mbps by around 2010, compared to about 500 Kbps with HSDPA today.

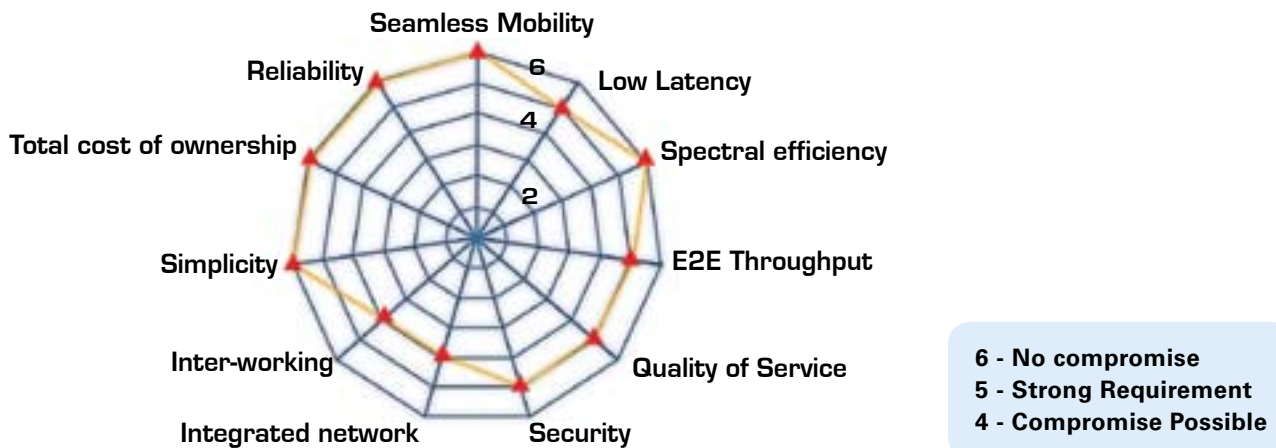


Figure 3: What telcos want from NGMN

Source: NGMN Group

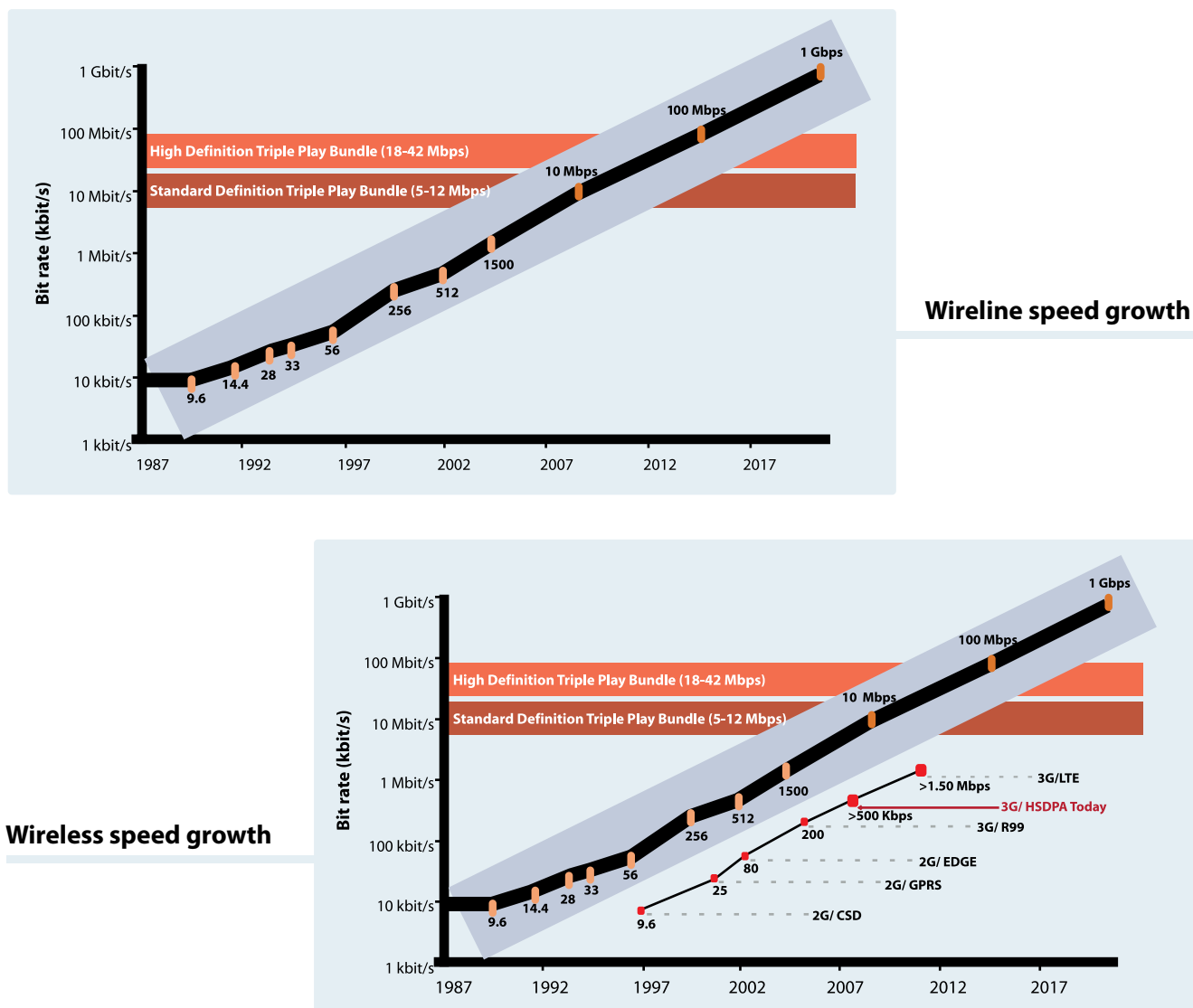


Figure 4

Source: Alcatel

Meanwhile, growth in typical consumer fixed line access speeds is expected to reach 10 Mbps and support standard-definition triple-play in many countries by around 2008 and reach 1 Gbps by around 2020, while wireless access appears to be following suit with 3GPP LTE speeds over 1.5 Mbps from 2010, compared with typical user rates around 500 Kbps with HSDPA today.

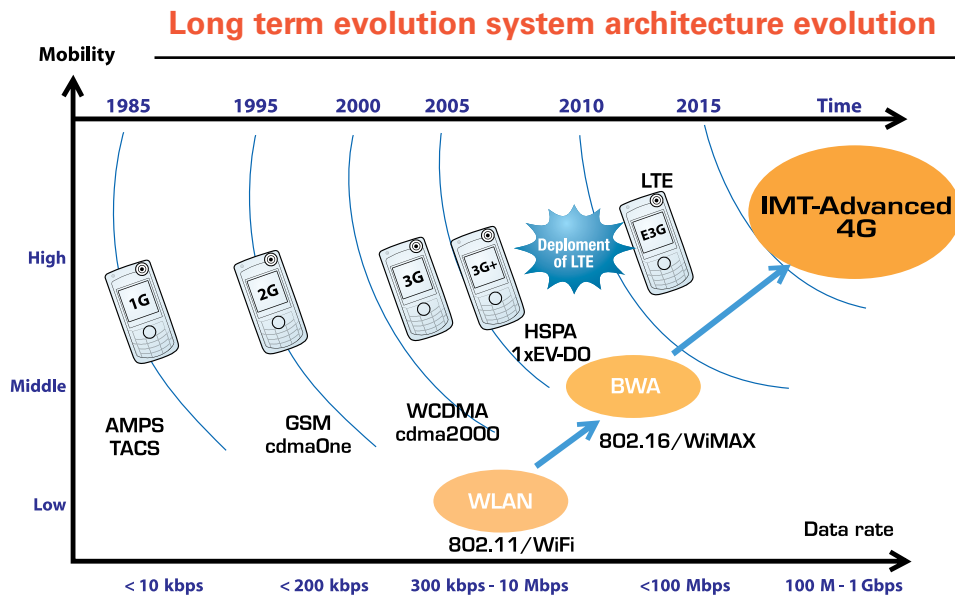
The NGMN Group, www.ngmn.org, an association of operators sees the imperatives for Next Generation Mobile Networks as effective reuse of existing assets, including maximum spectral efficiency; addition of a minimal number of sites and antennas of comparable size to existing ones; competitiveness in terms of cost efficient end-to-end low latency, always-on connectivity, quality of service, mobility and roaming at time of introduction ahead of rival technologies. NGMN must not impact upon their current HSPA roadmap and it must be ready in time to capture the appropriate window of opportunity. Also, the new intellectual property regime must be more transparent and predictable

in terms of intellectual property costs for all, compared to other technologies.

The group is an initiative by major operators, China Mobile Communications Corporation, KPN Mobile NV, NTT DoCoMo Inc., Orange SA, Sprint Nextel Corporation, T-Mobile International AG & Co KG and Vodafone Group PLC to provide a set of recommendations for the creation of networks suitable for the competitive delivery of mobile broadband services and cost-efficient eventual replacement of existing networks.

Its top requirements from NGMN are seamless mobility, reliability, lower total cost of ownership, simplicity and spectral efficiency, while its strong requirements are low latency, end-to-end throughput, quality of service and security. Of lower importance, and where it is willing to compromise are on network interworking and integration.

Central to the NGMN system architecture is a packet-switched core interworking directly with the service layer above it and indirectly via service control comprising for



Source: Samsung

example, IMS, SIP (Session Initiation Protocol used in VoIP) and others.

The packet-switched core interacts with enablers and connects the NGMN to other access networks such as wireless LAN, PSTN (public switched telephone network), the Internet and to the current mobile network which consists of the circuit-switched core (CS Core) connected to the GSM EDGE Radio Access Network (GERAN) and UMTS Terrestrial Radio Access Network (UTRAN). Current mobile networks, of course, are due to be phased out over time.

The NGMN Group sees 3GPP and SAE (System Architecture Evolution) as the prime candidates for delivering the system architecture of NGMN. GSM, UMTS and NGMN will co-exist as they move towards an integrated network, and LTE and SAE are viewed as the beginning of the NGMN era, evolving into a converged IMT-Advanced 4G network, available from 2015.

LTE standardisation in 3GPP Release 8 is now approved, specifying variable carrier bandwidth from 1.25 to 20 Mhz, initially in the 2.5 GHz band.

It will use FDD (Frequency Division Duplex) to enable simultaneous bi-directional communication, with OFDM in the downlink and SC-FDMA (Single Carrier – Frequency Division Multiple Access) in the uplink for better peak-to-average power ratio (PAPR), and it will use adaptive modulation and coding up to 64 QAM.

It is expected to deliver peak speeds of 100 Mbps download and above 50 Mbps upload with a 20 MHz channel and twice that with 2 x MIMO antennas, though average download speeds are likely to be about 36 Mbps. Latency (delays) in LTE networks are expected to be under 20ms, compared to under 100ms with HSPA.

LTE is expected to initially be available for interoperability testing by 2009, followed by expected deployment

from 2010. However, it's still unclear when LTE-capable terminal equipment, including desktop modems, wireless data cards and handheld devices will be available.

Multiple antenna schemes will be well integrated into LTE from the start, with at least two transmitting antennas and maybe two on the user equipment, while adaptive array antennas will focus signal strength on users and improve coverage at cell edges.

MIMO will be used under good signal condition where the signal-to-noise ratio is good and it will enable a rich signal scattering environment and high spatial diversity, thus improving throughput in the cell centre.

On the other hand, if channel conditions don't allow for MIMO, multi-antenna diversity will allow for fallback to single-input, single output operation.

System Architecture Evolution (SAE) will comprise an evolved packet core connected to an all IP network, which is backward compatible with earlier radio access network technologies. SAE will comprise a 3GPP mobility anchor bridging 2G and 3G with LTE radio access networks.

We could also see new forms of mobile network infrastructure, including high-speed cellular infrastructure, large scale indoor infrastructure using femto cell base stations in office buildings, single Femto cell base stations in homes, relay base stations in vehicles such as buses and passenger vans and ad-hoc infrastructure where mobile devices within proximity of each other serve as base stations for the others as well.

IMT Advanced 4G

Meanwhile, the International Telecommunication Union's requirements for an IMT-Advanced (also commonly known as 4G) network won't be released till 2008 or 2009. WiMAX and Ultra Mobile Broadband (UMB), both non-3GPP

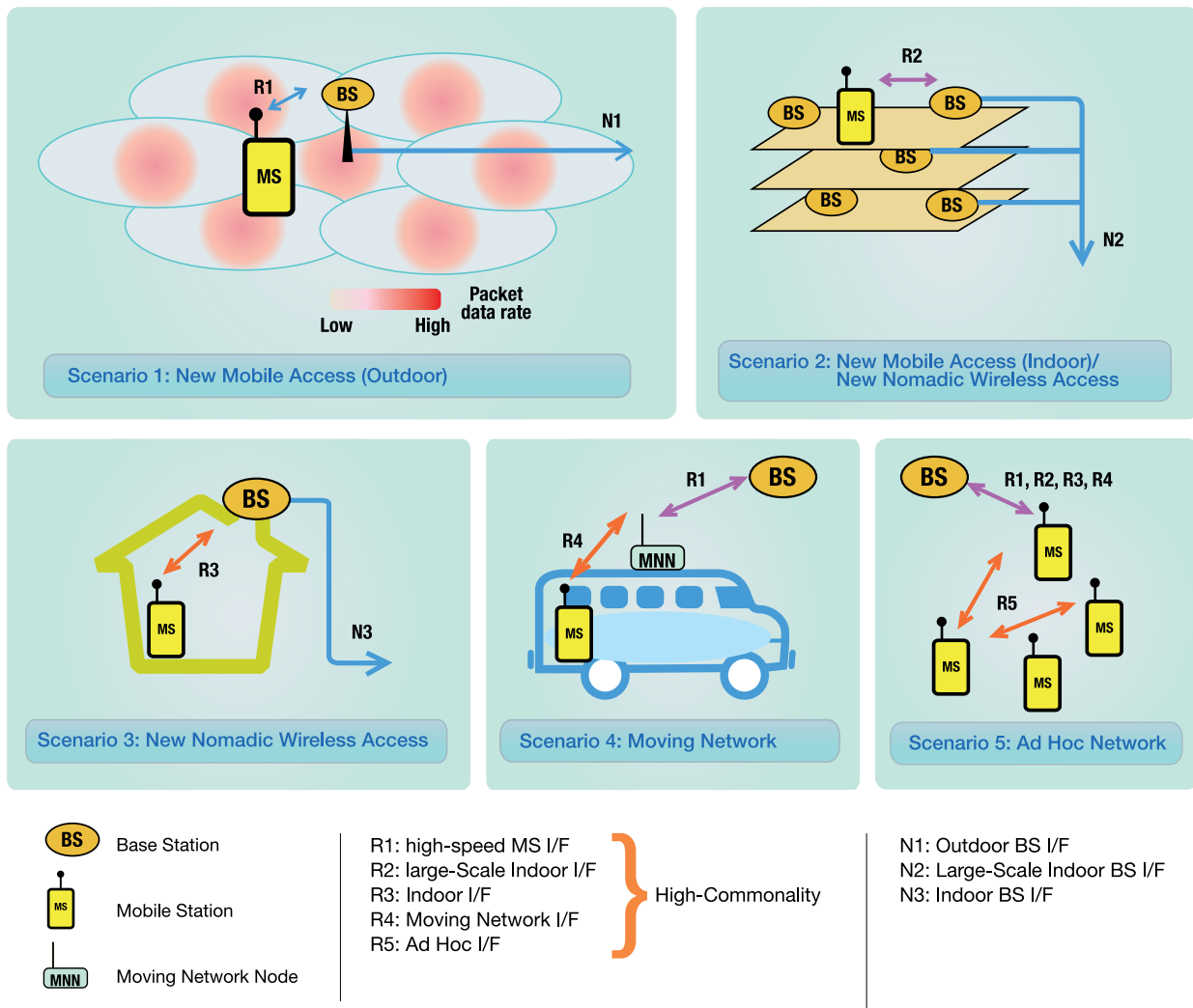


Figure 6: Future Possibilities

Source: mIMTF (mobile IT Forum)

technologies are expected to converge with LTE into IMT Advanced 4G, with the common denominator between them being OFDM.

UMB is the brand name of the 3GPP2's evolutionary roadmap for CDMA2000 technologies. The 3GPP2 is the American counterpart of the 3GPP and is dedicated to CDMA2000 evolution, while WiMAX is based on the Institute of Electrical and Electronic Engineers' (IEEE's) 802.16 standard for wireless metropolitan area networks (wireless MAN).

In 2003, the ITU's framework and overall targets for future development of IMT-2000 and systems going beyond it include data rates up to 100 Mbps for high-mobility users and up to 1Gbps for stationary users, ubiquitous coverage and flexible spectrum.

The ITU and Wireless World Initiative New Radio subsequently came up with new criteria for IMT-Advanced, including 50 Mbps sustained average top data rate per link, 5 Mbps consistent ubiquitous data rate per link, support for users travelling at up to 500 km/h, peak spectral efficiency of 10 bits per Hertz per site in wide-area deployment for

high load and peak spectral efficiency of 25 bits per Hertz per isolated site.

The oft-stated fixed-mobile convergence (FMC) is not needed on mobile phones for voice, since voice sounds the same anyway over fixed or mobile networks. However, fixed mobile convergence is truly needed for data and when very high speed wireless access eventually arrives, it will complement wireline data. [mym](http://www.mym.com.my)

This article is based on a public lecture presented by Paul Salmon, head of Technology Department at Maxis Communications Berhad. He can be contacted at psalmon@maxis.com.my.

Mission Statement of the NSC

To reduce and mitigate the probability of cyber security risks from crystallizing by disseminating early warnings and to share information among the stakeholders thus minimizing any adverse impact to the overall network infrastructure in Malaysia



The SKMM Network Security Centre

Shamsul Jafni Shafie shares how the centre is ensuring information security and reliability of the network.

We are living in a converged communications environment. Security in the converged environment is essential. Its importance cannot be stressed as what is seen from the endless surveillance and attacks from malicious hackers and other intruders.

Security in the digital world is also imperative as a business enabler. It is about mitigating the risks of the networks interconnected to each other. No network is a stand-alone compartment. It is not an island by itself. All networks are interdependent and are interconnected. Hence information sharing is not only encouraged but is an important element.

As it is with other network infrastructure found in most parts of the world, the infrastructure in Malaysia is privately owned. They service consumers; the private sectors, businesses and organizations such as the

government and other critical national infrastructures.

End terminals (PCs, mobile phones etc) have also become an active element in the network architecture and can be connected to different networks. A significant part of today's communication is also cross border or transits through third countries.

Networks are systems on which data are stored, processed and through which they circulate. They are composed of transmission components (cable, wireless link, satellites, routers, gateways, switches, etc) and support services (domain name system including the root servers, caller identification service, authentication services, etc). Attached to networks is an increasingly wide range of applications (e-mail delivery system, browsers, etc) and terminal equipment (telephone set, host computers, PCs, mobile phones, personal organizers or PDAs, domestic appliances, industrial machines, etc)

The marriage and convergence of technology between communications and the multimedia industry has allowed other forms of data and voice to be transmitted seamlessly using the same network through various forms of medium. Over and above that, we can also store information virtually, eliminating costs of storage in the physical world. All of the above require that the network be secured.

The Internet itself was born from the marriage between communications and multimedia. It allows people from all over the world to sample communications where data, text, pictures, voice and multimedia features is easily transmitted across the continent with ease and with little cost too.

Businesses and governments have seen the promises of such convergence. It is a cheap and easy way of communication. The benefits have presented multiple platforms upon which businesses transact and governments communicate. The proposition

Figure 1:
In the future and with different entities or stakeholders in the NSC, the NSC would be able to measure the threats faced in the networks within Malaysia.



is very attractive: the ability to knock down geographical barriers to reach unthought-of customers the world over.

The use of electronic communications and the related issues of security are not new. As the Internet and other info-communication networks become an ever-increasing part of Malaysian's daily lives, so does our dependency upon their underlying infrastructure. Unfortunately, so too have hostile attacks on infrastructures by network predators.

In developing and initiating plans for the development of the communications and multimedia industry in Malaysia, it was also realised that, to ensure that Malaysia achieved such goals, it needs to ensure consumers, businesses, industry players, investors, venture capitalist (VCs) and the global fraternity that it is a "safe" and "secure" place to do business.

Given the present dependence and the overall vision that communications and business in Malaysia will be fully digitised, securing the information and network systems in Malaysia is imperative and cannot be relegated to second place in terms of having the right strategies, policies and action plans. Every country has taken steps to prepare in terms of capacity building, policies and strategies to face any consequential effects. Issues concerning security have gradually come up; as a top policy issue in the later part of the years and it will not be one that will go away. It will continue

to play a major role in any decisions relating to the development of technology in the communications and multimedia environment.

Malaysia has set itself goals to achieve in the ICT, communications and multimedia world. It has set itself to become a global centre and hub for the communications and multimedia industry, understanding and realising that the future of a country will be built upon these factors. As a nation, it understands that it must not be left behind as it strives towards realising vision 2020.

Taking into account all of the above matters, the Malaysian Communications and Multimedia Commission (SKMM) initiated the setting up of the Network Security Centre (NSC).

Background

Section 3 (2) (j) provides for the 10th National Policy Objective of the Communications and Multimedia Act (CMA) 1998, which is to ensure information security and the reliability and integrity of the network. Therefore, it is incumbent upon SKMM to establish a regulatory framework in support of the 10th national policy objectives.

The concept of establishing a network security centre was first mooted under SKMM's Framework for Industry Development (FID) Plan 2001 – 2006. The plan to set up the NSC was in line with the growing challenges that SKMM saw in the communications and multimedia industry and the need for a body that can function

to coordinate incident response to the ever-growing threats to the network.

The NSC will serve as the national Internet network thermometer to provide overall understanding of macro cyber threat level with the involvement and cooperation of both public and private sectors (**Figure 1**).

The first phase of the NSC will include the seven major Internet Service Providers (ISPs) namely TM, Jaring, Time, NTT MSC (Arc.Net), Celcom, Maxis and DiGi. Later, the NSC will be further extended to other ISPs.

By formalising the NSC, it will be the platform for SKMM to reaffirm its commitment to achieve the policy objective of information and network security under the CMA.

The Need for the NSC

SKMM expects that all owners of network have in place security precautions in order to ensure that risks are mitigated and their network secure.

However, one of the challenges in addressing cyber security is the lack of a culture among organisations to share information on incidents and threats experienced, with each other. In short, the threats that organisation "A" is facing are not known to organisation "B" whereas organisation "B" may be subjected to the same source of threats that organisation "A" is facing. As such, there is a need for a trusted third party that can fill the gap that will then be able to ensure that threat information is shared with other third parties

Network Security Processes

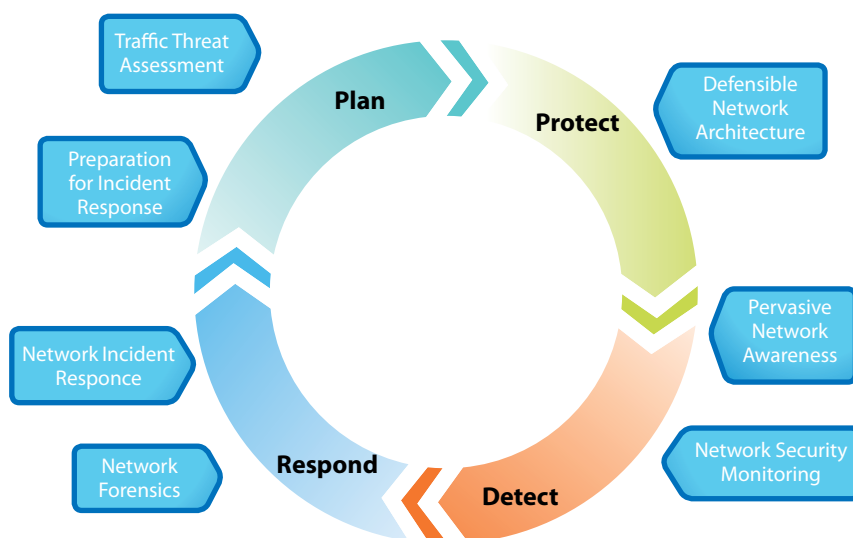


Figure 2

without disclosing the current party that is being threatened. By sharing the information, other organisations can then take protective and corrective measures to secure themselves.

The NSC provides for the supervision, monitoring and early warning measures to all relevant stakeholders, as well as mass-scale security threats and attacks entering Malaysia through the international gateways.

The NSC provides information and advisories about global threats, vulnerabilities and security issues affecting ISPs in Malaysia. It collects and analyses malicious traffic entering Malaysia and coordinates with ISPs to prevent damage caused by large-scale attacks. It will also facilitate information sharing and disseminate results of real-time analyses among ISPs and all relevant stakeholders in Malaysia.

It will also serve as a central point of contact for reporting of major incidents through a Centralised Abuse Reporting Portal. Through this, reliable trusted information on cyber attacks, incidents and malicious code affecting one ISP will be known to the others, so they will be able to act to pre-empt them from affecting them as well.

From the national and CMA perspective, the NSC will ensure the security of the information and network infrastructure of the communications and multimedia industry from the national level (i.e. above individual networks of service providers and critical users). Benefits obtained from such assurance include:

- Ensuring network reliability (and availability), integrity and the protection of the information system
- Ensuring that all critical national infrastructure sectors will be advised on to ensure that they are secured against any cyber intrusion, vulnerabilities, equipment failure and human error. This can be achieved by forming cooperative relationships among all local relevant stakeholders and international coordination.

- Assuring the credibility and integrity of the nation's information system that is crucial to drive the economy which is based on ICT.

The NSC would give the ability to detect/spot early warning against cyber attacks before they spread and become a nationwide problem and would use aggregated data to model the effects of a virus or cyber attacks on key networks. However, it should be stressed that the NSC will not be a substitute for the security team for each organisation. It does not assume responsibility to ensure the security of the networks and it will not replace internal teams. What the NSC does is that it complements and supports the activities of internal teams by ensuring that information sharing between two or more different organisations are enabled and facilitated.

The Roles and Functions of the NSC

There will be a host of responsibilities that the proposed NSC will take upon. These responsibilities will ensure that SKMM strategically plan and initiate policies and action items to ensure the security of the information and network systems in Malaysia, whilst positioning Malaysia as a Centre of Excellence in the field of information and network security. The roles and

responsibilities include but are not limited to:

- Work in partnership with the owners of critical systems to ensure that appropriate levels of protection are in place;
- Provide service of alerts and briefings of electronic attack;
- Encourage and facilitate information sharing on incidents, vulnerabilities and countermeasures;
- Assist the owners of critical systems in responding to electronic attacks;
- Investigate and access the threat of electronic attack and make available as much information as possible about the origins and nature of this threat;
- Cooperate fully with other national and international organisations engaged in work complementary to the Centre's role;
- Advancing work on raising information and network security awareness in both the public and private sectors;
- Ensuring that international activities in information and network security are properly coordinated;
- Address information and network security skills and R & D issues;
- Defining and ensuring information and network security including identifying potential incidents of a critical nature;

- k. Encouraging private sector leadership and self-regulation where possible;
- l. Lead and coordinate international efforts in relation to information and network security;
- m. Undertake incident analysis and provide a response capability for law enforcement purposes;
- n. Provide analysis, intelligence and threat assessment advice;
- o. Work closely with the public and private sector, academia, law enforcement agencies and international bodies/agencies;
- p. To position Malaysia as a centre of excellence for information and network security and as a training hub in the Asia Pacific region;
- q. Publicising security best-practice procedures and standards;
- r. Analyse trends of information and network security markets at both home and overseas;
- s. To work with critical infrastructure organizations and other sectors nationally and internationally to improve awareness and communications regarding information and network security.

In summary, the NSC will have 3 main tasks and functions. They are:

- a. Network Threat Monitoring and Management;
- b. Vulnerability Management; and
- c. Incident Management, Warnings, Response and Network Forensic.

It is to be noted that ISPs and organisations will already have some form of network monitoring activity within its own network. These activities will however only be limited to what happens within their own network. Thus a top-level multi-network monitor such as the NSC is necessary to ensure overall security across all networks. With this, a security breach on one network could be detected early and counter action/measures coordinated and shared with the industry and other relevant stakeholders curbing the problem before it becomes widespread.

The NSC coordinates three main activities:

Network Threat Monitoring and Management

- a. The proposed threat monitoring and early warning will generate early warning of massive attacks or malicious propagation through threat monitoring. This is to ensure continued protection of networks and ICT systems of ISPs and other key organizations from the security infringements.
- b. It also provides direct analytical support for information and network security investigations and will serve as an information database for network analysis and unlawful acts on the nation's infrastructures. Early detection will reduce any widespread attack or propagation that may bring down the infrastructure and cause downtime and cripple the service.
- c. One of the means to protect is to get early warnings on such incidents and advise the ISPs and related organizations to take preventive measures on the threats.

Vulnerability Management

- a. The objective of this activity is to ensure continued ICT infrastructure of ISPs through periodic identification and mitigation of vulnerabilities in a cost effective manner.
- b. One of the means to protect is to identify the vulnerabilities in the network devices, operating system, databases and applications and mitigating these vulnerabilities. This can be done through internal and external penetration testing.
- c. As new vulnerabilities keep emerging worldwide on regular basis, such testing should be undertaken on a periodic basis.
- d. The vulnerability testing results and recommendation reports will have greater impact and higher potential for action amongst ISP. This ensures that each ISP takes up mitigation action in a timely fashion.

- e. There is a need to keep track of security status amongst ISPs and conduct network security audit and benchmarking study. The NSC will generate the required vulnerability status data for such statistics and benchmarking.

Incident Management, Warnings, Response and Network Forensic

- a. The objective of this activity is to provide timely and efficient information and recommendations to manage security incidents, to contain the damage and conduct forensics activities. This will achieve through tools, processes and skilled personnel as well as sharing of information among the stakeholders.
- b. Any security incidents, which can cause extended downtime, should be managed in a proper manner in order to contain the damage and to restore the functionality to normal status.
- c. One of the means to protect is to have a rapid response team with necessary tools and processes to investigate reported incidents and further to take remedial action.
- d. The incident management and forensics activity will be manned with skilled personnel and necessary tools to act as a rapid response team. Any incidents reported to SKMM will be investigated, remedial actions recommended, reports sent to the relevant parties and lessons learned shared among other stakeholders.

In short, threat monitoring and management will provide early warning of massive attacks and malicious code so that ISPs can take preventive measures to defend against them.

Vulnerability management will conduct periodic tests to identify vulnerabilities as early as possible, so that ISPs can take remedial measures in the spirit of "prevention being better and cheaper overall than cure."

Incident management and forensics will provide timely information and recommendations to manage security incidents and contain the damage. Its

rapid response team will use tools and processes to investigate reported incidents to effectively manage and contain the damage.

Besides providing timely remedies, it will provide advice on recent events to all relevant stakeholders and all bodies critical to the security of the national information infrastructure. It will advise on how to counter them. There are also monthly reports on how they can secure themselves against the latest threats, vulnerabilities and international trends in threats.

NSC Operations

The NSC's security professionals monitor the ISPs' networks 24 x 7, all year round, with teams of 20 to 25 staff working in groups of four to five, in three shifts, checking on any known threats and anomalies.

Pre-empting Attacks

The NSC's intelligent attack management team will also be able to drill down on information to provide details on incidents. However, since watching out for known threats will only help detect already known dangers, relying on them alone for identification of threats will not be able to detect new and unknown threats.

Thus the NSC team also looks for anomalies in signatures that have not been flagged as suspected malicious traffic so that they can nab unknown or new threats as these emerge. The NSC will create its own database of these threats, which will be shared with other cyber security organisations.

The Future of the NSC

The NSC's future plans are to link up to different sectors critical to the economy and national security, including healthcare, emergency services, government, defence and security, transport, energy, telecommunications and to more international information sources, security agencies



Figure 3: NSC in the Future

and computer emergency response teams (Figure 3).

The NSC plans to be the hub for information sharing, warning, alerts and advisories on network threats for the country. By doing so, it is foreseeable that the culture of information sharing will be spread widely throughout the country and that there will be improvement and enhancement to information sharing involving cyber attacks, threats and vulnerabilities within the public and private sector.

Conclusion

The first national policy objective of the CMA is for Malaysia to become a major global centre and hub. To do so, it must also initiate strategic plans and policies to promote a high level of consumer confidence in service delivery from the industry. To support all of the above initiatives, Malaysia must also demonstrate a high level of security in its information and network systems.

All of the above factors hinges upon the initiatives and plans that the SKMM has. The setting up of the NSC will coordinate not only the SKMM's efforts towards securing the nation's information and network systems but will also effectively coordinate other efforts in Malaysia. [.my](mailto:sam@cmc.gov.my)

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SchoolNet kicks off

SchoolNet

A nationwide project is introducing broadband into thousands of schools. The company entrusted with this task reports on progress.

When we think of the digital divide, the first thing that comes to mind is that we have to 'bridge it'. The need to bridge this divide becomes more pressing when we compare ourselves with countries such as South Korea and Singapore. Taking Internet access as an example, statistics from SKMM's *Communications & Multimedia; Selected Facts & Figures Q3, 2007* (ISSN 1675-6223) has current dialup penetration at 14.3 and broadband at 4.5 per 100 inhabitants on a "subscriptions" basis. In comparison, Korea's broadband at penetration was already 25.24 and Singapore, 15.3 per 100 inhabitants in 2005 on an equivalent basis (<http://www.itu.int/ITU-D/icteye>). The regulator in its annual *Household Use of the Internet Survey 2005* revealed that main users of the Internet in households are predominantly urbanites in Klang Valley. The 2006 survey is expected to reaffirm this. Interestingly enough, a gender divide was not present.

We have actually seen lots of initiatives being taken by the government and even the private sector. This actually shows if we look at the trend in Internet growth in the country. According to the same studies, the penetration has increased tremendously from 15% in 2000 right up to the current 47.8%. One of the more successful initiatives has to be the SchoolNet project.

The SchoolNet project is a joint effort between the government, Government Integrated Telecommunications Network Sdn Bhd (GITN), eB Technologies (M) Sdn Bhd and MIMOS Bhd. The main objective of the project is to provide broadband infrastructure and Internet access to specified school sites using different technologies to suit the varying appropriateness.

The parties involved realize the importance of educating the youth in the benefits of the Internet and therefore have undertaken this task as their responsibility. Under the project, almost 10,000 schools from all around Malaysia are being fitted with the right technology to get them connected to the Internet. It was initiated in 2004 and full implementation is through to 2009.

"We use different technologies depending on the infrastructure available at the particular schools," says Shahrudin Salehuddin, CEO of GITN.

He goes on to explain that the schools with good communication infrastructure requires less effort and they use mainly ADSL connections to get these schools up and running. The schools that are not able to enjoy ADSL are given connectivity via wireless technology. As for schools that are just too rural such as the heartlands of Sabah and Sarawak, a satellite system (VSAT) makes it possible.

"Basically we check for ADSL first, then wireless. And if all else fails, we use satellite technology," he explains.

The lines that are installed in the schools are usually connected to the computer labs. Other areas in the school premise that can be connected include any teaching resource areas, the school office and even the headmaster's room. The main aim is to have the whole school connected. However, GITN's jurisdiction only includes the infrastructure.

GITN also provides a monitoring service that can be accessed by authorized personnel at pmis.gitn.com.my. Any failure in any of the schools will immediately show up and can be rectified within 24 to 72 hours depending on the accessibility of the location. To help everything to be more efficient, a 24 hour network operating centre has been set up in Cyberjaya, and GITN has assigned staff to be based in every state in the country where the selected schools are located.

"Mind you, the staff we hire as the regional maintenance team are trained fresh graduates. So we are also helping out by creating employment opportunities for the youth," smiles Shahrudin.

The SchoolNet project, being in the midst of implementation, is currently enjoying bandwidth of up to 1 Mbps/128



The satellite system at SK Tagop Darat Ranau



Internet connection at SK Pulau Sanghai



kbps. Starting this year, 88 smart schools around the country have been selected to undergo the project's first phase of bandwidth upgrading. These smart schools are now enjoying speeds of up to 4 Mbps/768 kbps. If everything goes smoothly, the upgrading of the rest of the 10,000 schools will soon take off.

Other enhancements of the SchoolNet project include the implementation of solar power for schools that do not have sufficient power. The implementation of the SchoolNet project for 365 schools suffering from power supply related problems was put on hold. These schools were receiving electricity supply from generator sets which are not able to provide adequate and reliable power for the VSAT units and computer lab. But as of early this year, a solar power system was implemented.

Security features are also high on the priority list of the project. The Managed Security Services (MSS) initiated by the government addresses security issues at four levels.

Level 1

GITN provides basic computer maintenance training to teachers and users.

Level 2

Over 200,000 computers are installed with anti-virus softwares.

Level 3

These 200,000 computers are installed with applications and operating software updates and patch management.

Level 4

This level is undertaken at the SchoolNet gateways whereby content filtering and end point policy enforcement is implemented.

It is also important to note that all daily security risks activities are managed by a security management appli-

cation and also by staff through the centralised Security Operation Centre (SOC).

GITN has done a lot to make sure that the SchoolNet project succeeds. But everyone realizes that it takes more than just connectivity. The people who are connected need to maximise the full potential of what it brings and the way to make sure this happens is to change their mindset.

"Setting up the network is actually the least of all the challenges when it comes to the SchoolNet project," adds Shahrudin.

One of the projects that GITN has embarked on to ensure this happens is the *Sekolah Angkat* (Adopted School) program. Under this program, 25 schools around the country are selected to undergo special training depending on their needs. What happens is that GITN assigns each school with a special ICT coordinator who will help train the teachers not only in utilizing the network, but also how to teach the students.

"We will also look into furthering this program to the country's *Sekolah Agama Rakyat* (Public Religious Schools) in the very near future. In fact, the groundwork is already underway," says Shahrudin.

Apart from the programme *Sekolah Angkat Program*, GITN also hopes to engage the community by using schools. Since schools are the heart of a community, they will make it as a resource centre to serve not just the students, but the rest of the people as well. Hopefully, the SchoolNet project can be extended this way to also increase Internet penetration. www.gitn.com.my

For more information on SchoolNet and GITN, please visit www.gitn.com.my



Networked Content Development Grant

SKMM is known to the industry and citizens as the regulator. What many don't know is that SKMM is also nurturing and developing a key industry. Roslan Mohamad has the story.

Digital content is an important industry for Malaysia in its drive to develop a knowledge-based economy. The importance of the digital content industry can be viewed in two aspects. Due to its digital form, content can be easily transferred, shared and leveraged widely around a globe that is connected through its worldwide digital network and new media channels. It is also important due to its ability to generate new economic activities and opportunities.

The market size of this industry is expected to grow to USD600 billion in 2009. Digital content include among others broadcast content, mobile content, online content and advertising content. It can be in the form of animation, games, training and education module, documentary, films, music, video, entertainment, simulation etc.

In the ICT Chapter of the 9th Malaysian Plan, the Government clearly indicated that digital content development is one of the new sources of growth for the ICT industry in accordance with the emphasis on broadband

ICT infrastructural deployment. It also emphasized the urgent need to produce “Malaysian content” for Malaysia and the world, and for Malaysia to be positioned as a hub for content creation, production, broadcasting and outsourcing activities.

The MyICMS 886 strategy, which is the blueprint for the communications and multimedia industry, has identified content development as one of the growth areas in the next 5 years.

The expected results from the MyICMS 886 strategy are, among others:

- ▶ Adequate local content, reflecting the culture and values of the nation are digitally available and accessible for the various application requirements; and
- ▶ Content will be a sizeable export revenue contribution for Malaysia.

All the strategies stated above were derived from the National Policy Objectives as outlined in the Communications and Multimedia Act (CMA) 1998 whereby the Malaysian Communications and Multimedia Commission (SKMM) was tasked to work towards :-

- ▶ establishing Malaysia as a major global centre and hub for communications and multimedia information and content services;
- ▶ growing and nurturing local information resources and cultural representation that facilitates the national identity and global diversity;
- ▶ promoting the development of capabilities and skills within Malaysia’s convergence industries.

DEFINITION OF NETWORKED CONTENT

There are many terms used in the industry to describe content such as creative content, digital content, multimedia content, networked content, broadcast content, printed content etc. All are applicable and valid since the terminologies used are derived from the production, transmission, technology and medium of distribution aspects. For example creative contents are contents that are created by focussing on creativity and innovation through manipulation of technology and software. Examples include animation and feature films leveraging on CGI (Computer-Generated Imagery). Factual content on the other hand are created by focussing on facts, information and figures such as documentary, news and sports.

It is SKMM’s duty, as regulator and developer of the communication and multimedia industry, to ascertain the boundary and domain of content it regulates and develops. The appropriate way

to do this is to refer to the definition of content in the CMA which is the only Act that defines content.

Content is defined in Section 6 of the CMA as “any sound, text, still picture, moving picture or other audio-visual representation, tactile representation or any combination of the preceding which is capable of being created, manipulated, stored, retrieved or communicated electronically.”

From this definition, the term networked content was introduced during the first strategic study on content industry in Malaysia in 2003 in which networked content is “all text, audio, audio-text, still pictures, moving pictures and software that is accessible over publicly accessible electronic networks which includes broadcasting (TV and radio), moving pictures (excluding cinema distribution and VCD/DVD sales), online content, mobile/wireless data services (3G, Mobile TV etc), interactive digital TV and other content which can be created, manipulated, stored, retrieved and communicated through the use of a network facilities and services. Please refer to **Table A** for details.

The advancements in new communications and multimedia technology and digitisation have created an interconnected or a networked society. With this advancement, networked content will be easily distributed across many different platforms, across all borders, quickly and seamlessly.

Thus, opportunities in the networked content industry will be huge as time goes by but the same can also be said of the challenges for a country to protect and nurture their

TABLE A

Definition

Networked Content is all content that is accessible over publicly available electronic networks

Definition of Network

A Network is defined as an interconnected electronic channel for the distribution of content

In-Scope

- TV (Free-to-air, Subscription, Digital, Interactive)
- Radio (Analogue & Digital)
- Online Networks (PC, WebTV, Wireless, e.g. 2.5G, 3G, 4G, Wi-Fi, Public Kiosks)
- Electronic Billboards
- Digitally Distributed Cinemas

Out-of-Scope

- Print (Newspapers, Books, Magazines, Billboards)
- Traditional Cinemas
- Electronic Offline Storage (CD, CD-ROM, DVD)
- Company Intranets

Definition of Content

Content is defined in the Communications and Multimedia Act, 1998 and includes the following:

- Text
- Audio
- Audiotext
- Still Pictures
- Moving Pictures
- Software

Including, but not limited to:

- Advertising Content
- Animation
- Foreign Content
- Live Events
- Online Newspapers
- Online Gaming/Gambling/Computer Games

culture, values and identity in the midst of this highly networked world.

The easy access climate works both ways and could have the effect of turning Malaysian into mere 'consumers', absorbing negative ideas and values which could undermine our national identity and economic well being.

Accordingly, to tackle the above issue comprehensively, a two-pronged approach i.e. content regulation and developmental strategies must be undertaken. The SKMM has put in place the regulations on content but the need for the developmental strategy is now more prevalent in line with our effort to provide broadband infrastructure throughout Malaysia.

SKMM ROLE IN NETWORKED CONTENT DEVELOPMENT

SKMM has always been cognisant of the importance of the development of the networked content industry in Malaysia and based upon this realisation, it appointed AT Kearney to conduct a strategic study in year 2003 which in a nutshell encompassed the following:

- ▶ to review the current state of the networked content industry in Malaysia and the existing framework (i.e. institutional, policy and regulatory) of the said industry; and

- ▶ to recommend and develop a forward looking strategic plan for the future development of the networked content industry in Malaysia taking into account the advent of convergence.

The consultancy found four main factors which are hindering the growth of the networked content industry in Malaysia. These are:

- ▶ the lack of funds available for content creators;
- ▶ ineffective regulations and enforcement;
- ▶ lack of access/coverage for content distributions and
- ▶ lack of sufficient skill and creative manpower resources.

Recognising the intent of the National Policy Objectives, the 9th Malaysian Plan and MyICMS 886, the SKMM recognised the need to take a leadership role in providing much needed assistance in the development of networked content in Malaysia.

Over the past 10 years or so, the SKMM has focused on driving and guiding development and deployment of Malaysia's information and communications highways which among others include the Cabinet Committee on Broadband, MyICMS 886 Strategy, 3G, Digital Terrestrial TV Broadcasting, WiMAX, satellite and others facilitating guidelines and regulations.



The Mobile Content Challenge launch 2007



1. Mobile Content Challenge promotion booth
2. Meeting with Universiti Malaysia Sabah



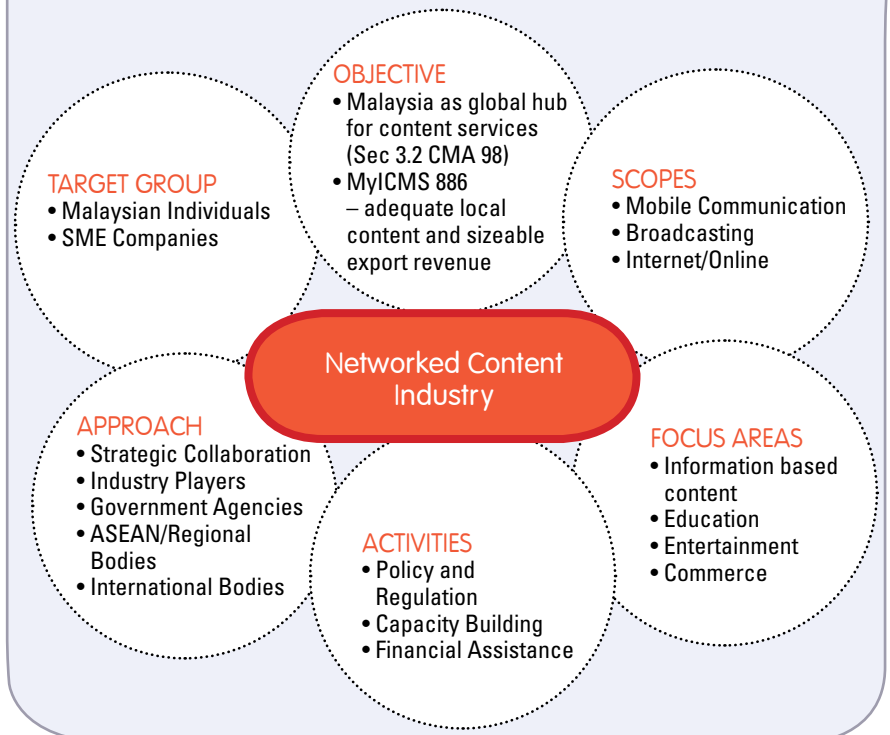
Now that these plans of deploying info-highways and infrastructure are in place (these efforts address the lack of access/coverage for content distribution), SKMM has expanded its focus on facilitating the development of networked content by addressing the other three challenging areas specified in the strategic study. These activities are tasked to a newly-created department focusing on content industry development. The department has developed a framework for the networked content industry development as per **Table B**.

The department has also developed a three-year plan for the development of the networked content industry. There are three phases of development as envisaged by the SKMM namely:

- Phase 1 - Creating Excitement in the industry
- Phase 2 - Creating Value for the industry
- Phase 3 - Creating Image of the industry

TABLE B

Framework



The Networked Content Development Grant Factsheet

Focus areas of the NCDG

Focus areas of the NCDG are Mobile content (for 2.5G, 3G and beyond) and TV content. The types of content are:

- a. Information based content – content created based on information such as tourist attraction locations, nearest hotels with ratings and prices etc.
 - c. Entertainment – content created for entertainment such as multiplayer gaming, folklore music and jokes, funny video clips etc.
 - d. E-commerce – transactional based content such as mshopping, interactive advertising etc.
 - e. Education – content utilised for educational purpose such as quick notes and formulas; interactive education content etc.
2. Business potential, the ability to be exploited through
 - a. different platforms/channels
 - b. market size
 - c. marketing strategies
 - d. potential revenues
 - e. subscribers
 3. Operational capacity of the applicants
 - a. key manpower experiences
 - b. technical and technology knowledge
 - c. strategic collaborations with any third party
 - d. financial commitments and investments

- b. 70% drawn down in phases based on delivery and milestones as agreed by both parties.
- c. Funding period will not exceed 12 months. An extension will be considered on a case-by-case basis upon approval.
- d. Effective funding period will commence from first drawdown to last drawdown within a calendar period based on proposed milestones.

Eligibility

- a. Applicants must be a Malaysian individual or registered business or small and medium company as defined by SMIDEC.
- b. Applicants have yet to be given grants or subsidies from other content development funds.
- c. Applicants are not blacklisted or have records of failure in their past project implementation upon receiving similar types of grants from other government agencies.
- d. Applicant's proposal is in line with objectives and focus areas of NCDG.

Fund Size

- a. The amount of funding will be up to a maximum of 70% of the total project cost.
- b. The procurement of infrastructure (consisting of hardware and software) is allowed up to 20% of the approved grants.
- c. Only one grant per applicant (the applicant can apply for subsequent grants but not more than three times based on the successful commercialization of the first project funded by the grant).

Assessment of application

1. Concept
 - a. creative and appealing
 - b. unique value proposition
 - c. demonstrate export potential/universality

What we need from you

Eligible applicants will be invited to submit project proposals to SKMM for consideration. Companies are to submit duly completed application forms, together with the following:

Concept

- a. Full description of the content's concept and its unique value proposition; and
- b. The focus areas that the content grant wishes to address i.e. education, information-based or e-commerce.

Business Potential

- a. Business model, target market;
- b. Potential revenue and number of subscribers;
- c. Anticipated market sizes;
- d. Cost breakdown i.e. manpower, hardware, software, IP licensing fee, training etc; and
- e. International collaborations if any.

Operational Capacity

- a. Track record (if any), experience and profiles of key manpower;
- b. Project timelines i.e. trial, launch etc;
- c. Technology and technical arrangements/agreements (if any);
- d. Strategic collaborations with the third parties (if any); and
- e. Financial commitments and investments

Disbursement of Fund

- a. 30% of the grant to be disbursed upon approval.

Project Monitoring and Reporting

- a. Monthly progress reports are to be submitted to SKMM.
- b. Monthly meetings with SKMM to evaluate progress in terms of timeliness and quality.
- c. Site visit for auditing purposes.

Intellectual Property

- a. If more than one party is involved in the project, a binding letter of understanding between project partners setting out existing and proposed ownership, disposition of intellectual property rights associated with the project, and exploitation of the project result must be submitted to SKMM before funds are disbursed.
- b. The IP shall be owned by the content developers with SKMM being recognized as a partner in the development of the content and would be allowed to use the content for other purposes except for commercial use.

Other Terms and Conditions

- a. Successful applicants shall enter into a contract with SKMM upon approval.
- b. SKMM shall be acknowledged in the credits upon successful distribution/commercialization of the product.
- c. SKMM shall seek full reimbursement of funds disbursed in the event of the incompleteness of the project or termination due to contravention of terms or failure to meet milestones satisfactorily.
 - i. The full amount is to be repaid based on zero interest rate.
 - ii. Repayment period is to be determined on an agreed term by both parties prior to disbursement.

Email contact: ncdg@cmc.gov.my

TABLE C

Phases

excitement

- Framing the local content definition and enforcement
- Availability of quality information
- About the industry
- Introduction of demand creation policy
- Establishment of NCDF
- Strategic Collaboration initiatives with industry players
- Conduct hands on capacity building workshops
- Well developed focused capabilities, for example in:
 - Information Documentaries
 - Education
 - Entertainment Animation
 - Commerce

value

- Enforcement of the demand creation policy
- Continuous monitoring and review projects and its mechanic
- Inter regional capacity building initiatives
- Increase NCDF allocations
- Intensified Strategic Collaboration initiatives with industry players including international players
- Host ASEAN or regional contents exhibition expo seminars
- Showcase Malaysian content overseas
- Ensuring rapid deployment of new contents distribution channels i.e. DTTB, WiMAX, 3G & Broadband

image

- Review and introduce new demand creation policy
- Continuous monitoring and review projects and its mechanic
- International capacity building initiatives by exporting our expertise to other countries
- Review NCDF and introduce new mechanism
- Host international contents exhibition expo seminars
- Showcase Malaysian content overseas
- Establish strong support
- System for Malaysians to venture overseas market

2007

2008

2009

2010

The details of the three phases with specific activities are as per **Table C**.

CONCLUSION

The SKMM is committed in fulfilling its obligations as per the National Policy Objectives of the CMA and the Government's strategic plans in the 9th Malaysian Plan and MyICMS 886 to develop digital content as a new source of economic growth for the communications and multimedia industry in Malaysia. This commitment can be clearly observed when the YB Minister of Energy, Water and Communications announced the establishment of a RM20 million Networked Content Development Grant in July 2007 (see accompanying column).

SKMM in its plan to create excitement in the industry had conducted a nationwide Seminar on Opportunities in Networked Content Industry with all relevant and related parties. The objectives of this seminar are to create awareness about the potential and opportunities offered by the networked content industry and also to provide detailed information of the financial incentives offered by the Ministry of Science Technology and Innovation (MOSTI), SKMM, Malaysia Debt Ventures (MDV), Multimedia Development Corporation (MDeC) and National Film Development Corp (FINAS). The seminar attracted more than 1,500 participants from five different regions.

In its efforts to create pools of talented content developers that will address the lack of sufficient local skill and capacity, SKMM has worked with industry players such as Maxis and ASTRO in organising content competitions such as Mobile Content Challenge 2007 and NextGen Contrepreneur Award. These competitions focus on students of Institutes of Higher Learning who are the next generation of content developers.

SKMM has also made recommendations to the Ministry of Energy, Water and Communications on the urgent requirements by the industry to have a clear definition of "Malaysian Content" and the draft of what characterises Malaysian Content for the purpose of development and regulatory has been drafted.

SKMM is also involved in the market access program with MDeC and FINAS to assist local Malaysian content developers in promoting their creations overseas by offering them assistance in the form of space in major international content event for free.

The future of digital networked content industry in Malaysia is at an important and exciting juncture at this point in time and SKMM hopes all related and relevant parties realise its important roles and strategic contribution to the nation building. my.gov.my

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Postcodes – Power in Numbers

Mohd Zaidi details how postcodes keep the Malaysian mail system flowing smoothly.

Though the postal service has changed drastically since its conception in ancient times, the emergence of a growing world population has given rise to the need for increased use of new technology to process larger volumes of mail. As such, modern postal systems rely heavily on state-of-the-art technology to deliver mail efficiently, easily and safely.

Postal systems play a big role in our daily lives, yet most people know next to nothing about them. People only

see the end result of a mass network at play on a domestic and global scale. Vastly different postal systems worldwide cooperate together to form an international network, with air and sea-mail routes, making it the most underrated humanitarian service in this modern age. International mail cannot be delivered without the cooperation of several countries, and each country's postal service has its own unique aspects.

The history of Malaysia's postal services goes back to the early 1800s but it wasn't until after achieving

independence in 1957 that it became a member country of the Universal Postal Union (UPU) on 17 January 1958. Its participation in the UPU was a proactive move to stay abreast with international, social and economic development.

Today, the postal service in Malaysia continues to evolve to meet the growing demands and needs of changing consumer and marketplace behaviours.

Despite all the technological breakthroughs and various systems employed by the postal service, the postcode system is probably the most effective system initiated by the UPU. Germany was the first country to introduce a postal code system in 1941. The system was first introduced in Malaysia in 1974 based on a 4-digit system (e.g.: 14-02 Kuala Lumpur).

Understanding Postcodes

A postcode is the fundamental, essential element of a modern address with numeric and/or alphanumeric characters. It is a series of numbers representing specific areas within a country. In Malaysia, postcodes are

now a series of five numbers. The five-digit system was introduced in October 1985 to replace the 4-digit system and are arranged in accordance with the National Mail Distribution system. The first two numbers identify the main mail centre or post office for a particular area and the last three numbers indicate the type of mail delivery used.

It is an erroneous assumption that postcodes are allocated according to districts or townships. In fact, these allocations, which are managed by Pos Malaysia, are determined by the distance between an area to the Delivery Office and the last Delivery Point.

The most obvious implementation of the postcode system is to facilitate the handling and sorting process of mail. In Malaysia, mail is sorted by postal code, before being allocated to specific postal delivery routes. This smoothes the progress of mail exchange within the country and abroad. Though the process is fully automated, there are some instances where it has to be done manually if the postcodes are illegible and the

machines are unable to interpret them accurately.

Postcodes are essential for streamlining organizations, improving quality of service and coping with rising mail volumes. They also reduce the risk of confusion between destinations with similar names.

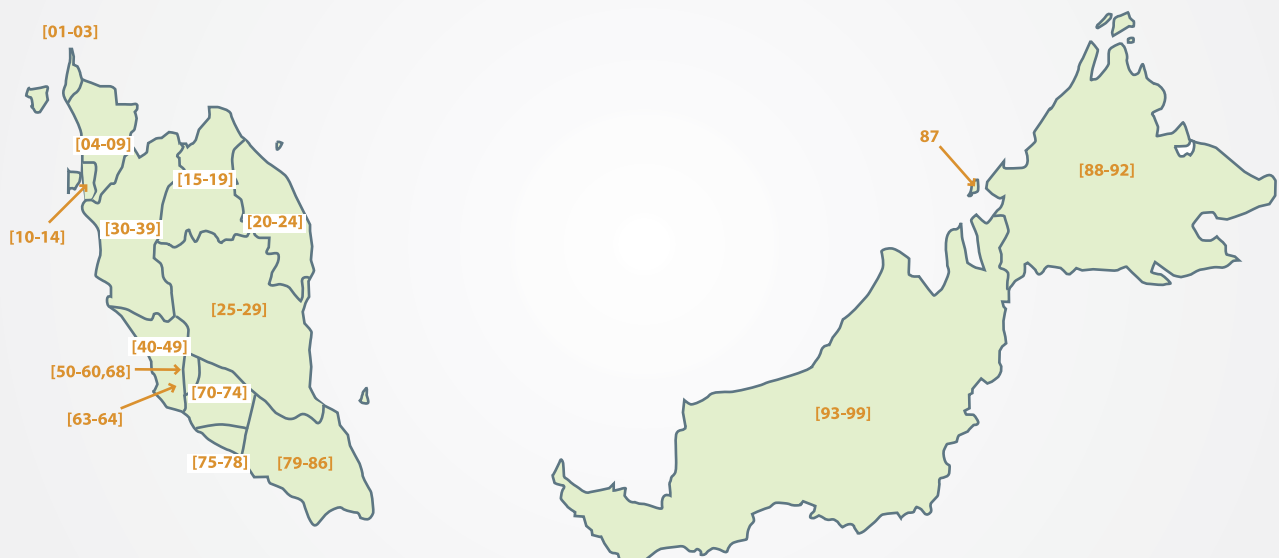
It is interesting to note, that this seemingly unimportant series of numbers are actually an asset and resource used by various industries for a multitude of reasons. It is a standard component of a modern information society.

There have been fears that the advent of e-commerce and widespread use of the Internet would sound the death-knell of traditional mail delivery. However, the fears have proven unfounded. Though the increasing growth of e-mail has proven to be a threat to social mail, business mail has still survived the onslaught. Moreover, physical mail delivery is a crucial part of the e-commerce process.

Industry Utilisation

Thus, for the advertising and service industry, not only are postcodes useful for commercial mailers but to also

▼ Map below shows the allocation of the first two digits of postcode.





Lesson in Postal Delivery

Ever wondered how the mail gets delivered? Most people are oblivious to how much goes into getting their mail to them, quickly and safely. When a letter or a package is sent, it is taken to a post office where all of the mail has to be sorted in order to reach the correct destination. Today, much of this process is now handled with modern machinery. First, the mail is separated into piles of letters and packages, by class, and the stamps are cancelled. Next it is sorted into groups of mail heading to the same destination or direction.

Low class mail is sent by the cheapest mode of transportation, such as ground or sea. It normally sits around for long periods of time so that enough of it can be collected to ship in bulk loads. On the other hand, high class mail is delivered faster, possibly by airplane, and will not wait as long between stops.

Along its journey, each piece of mail can be checked for security hazards in a variety of ways. It could be as simple as a check for any odd-shaped packages, or perhaps it could pass through an X-Ray machine. Any item which poses a possible threat can be confiscated at the post office.

At the airport, bags of airmail are loaded on to commercial flights headed to the same destination as the mail. When the flight reaches another country, it becomes the sole responsibility of that country to ensure that the mail is delivered, and it is no longer in the hands of the country from which it was sent.

The majority of all mail will travel through several post offices before it reaches its final destination. For domestic mail, many countries use a postal code. These codes help to make the sorting process more mechanical and efficient.

When the mail reaches the last post office stop before its final destination, it is sorted by a mail carrier and then delivered during the daily routes. The next time you receive your mail, think of the countless hands that have probably handled it and numerous destinations it must have visited, especially if it is international mail... before reaching you.

▼ The structure of Malaysian postcodes: Postcode coding method

Main Mail Centre **43000** Type of delivery

▼ The last three digits indicate the different types of mail delivery:

xx000 to xx499	Beat Delivery Zone (Direct mail delivery made by the postman)
xx500 to xx699	Government Agency Delivery (Mail delivery to government offices and agencies in major cities nationwide)
xx700 to xx899	P.O. Box mail delivery
xx900 to xx989	P.O. Box mail delivery exceeding 500 letters a day
xx990 to xx999	Locked Bag Service delivery



drive new business opportunities and target specific areas to categorise potential customers. Postcodes are also a reliable and lasting frame of reference for location identification, essential for transportation, health and social services.

A system of postcodes has social, economic and environmental value.

It has tremendous potential for providing valuable and necessary data to policy-makers and citizens. For example, postcodes could be used to identify and spatially map the location of schools, housing, business premises, and for epidemiological research. They can assist in the formulation and analysis of

Other Postcode Usages around the World

Country	Postcode Usage
USA	ZIP codes are used not only for tracking of mail but in gathering geographical statistics in the United States. The U.S. Census Bureau has data that include the latitude and longitude of the centre-point of some ZIP codes (called ZIP Code Tabulation Areas or ZCTAs).
United Kingdom	Postcodes are also used to define pension benefits. It is thought that those living in more affluent and healthy areas will live longer and should therefore receive a lesser pension than those in less prosperous areas.
Ireland	A big advantage of a postcode system here would be for creating databases of local services. Imagine being able to figure out what public transport to take between two addresses just by keying the two numbers into a database. You can also look up an events database of shops or things happening within one or two place code districts of where you are.
Cayman Islands	The postal service is offering unique postcodes for purchase by the public. It is more suitable for those receiving a high volume of mail and is not sorted with all the other mail at the post office.
Germany	Users can enter their postcode into an online comparator to see the sort of prices their local companies are charging for electricity.
South Africa	Using GSM technology, companies that regularly need to redeploy their vehicles or check the journey progress of their mobile workforce, can do so by remotely identifying the locations of their mobile workforce. They can identify which vehicle is closest to a specific postcode so that jobs can be allocated to the nearest driver.

Some interesting trivia on postcodes

- ZIP codes can take on a certain amount of cachet or become bywords: 90210, in Beverly Hills, California, probably the most famous example, appears in the titles of two Beverly Hills-centred television shows: Beverly Hills 90210 and Dr. 90210.
- The Shoe Department at Saks Fifth Avenue New York City was given a special ZIP code 10022-SHOE.
- ZIP code 12345 belongs to the world headquarters for General Electric in Schenectady, New York. Each year, the facility receives many letters from children to Santa Claus, addressed to "North Pole 12345". North Pole Zip Code. A group of employees has for several years volunteered their time to answer this mail.
- 43210 is the ZIP code of The Ohio State University Campus Station post office and all residential dorms on Campus.

cross-departmental service provision by the public sector. They can also facilitate the compilation of the small area data required by Government for developing and analysing economic, social and environment information. While postcodes are typically associated with address points, it should be equally possible to allocate a postcode to non-address points so as to realise their environmental and heritage value.

Politicians too can benefit from up-to-date data quality systems, using postcode information to target prospective voter support. The police on the other hand, can use them to identify potential trouble spots or troublemakers.

The postcode has evolved into a crucial tool for postal organization and consequently postal development. As Malaysia forges ahead to achieve Vision 2020, the postal services also follows

in its wake by taking the initiative to further improve the postcode system and its mailing operations for better efficiency. [my](#)

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BRINGING EVERYONE INTO THE INTERNET AGE

The USP programme is bringing Internet access to underprivileged populations across Malaysia. Md. Rusli visits two libraries in Terengganu that have been equipped with PCs and Internet connections for the use of the locals.

The Universal Service Provision (USP) programme, a global programme championed by the International Telecommunication Union (ITU), strives to ensure that communication and Internet services reach outlying areas and isolated populations. Left to private initiatives alone, these marginalized areas would be left out as they would not be commercially viable.

In Malaysia, the push to narrow the digital divide has been entrusted to the SKMM. The government places great importance to bring modern communication services to every corner of the country and since the turn of the millennium, the SKMM has overseen projects that have

steadily reduced the numbers of areas that were not served by telecommunications services.

One common perception is that USP is all about bringing telecommunications services to underserved areas. That is certainly one of the aims of the USP project in which it improves infrastructure in areas that commercial interests tend to ignore. In that aspect, USP initiatives aid in progressively blotting out areas where communication services have failed to reach.

But there is another aspect to the USP programme, that of bridging the digital divide that exists among the population. The focus on improving infrastructure in underserved areas will not mean anything if underprivileged groups cannot make use of the infrastructure because of lack of

knowledge. For example, there is not much use to extend Internet coverage using USP funds into a rural area if the lower income people there cannot benefit because they are not able to afford computers or do not know how to use them. That would mean only the rich would benefit which is hardly the point that drives the USP programme.

Thus, the USP programme has also focused in improving access to communication services among underprivileged pockets of populations. One of the projects that have been implemented with notable success in 2007 is the provision of Internet access service to libraries located in underserved areas.

Bringing rural libraries into the Internet Age

The aim is to bring Internet access to communities that surround these libraries. This will help ensure the continued and even growth of a knowledge based society which is one of the main targets being pursued under the National Broadband Plan and the MyICMS 886 Strategy.

Planning for this project started in August 2006 and SKMM visited potential libraries in September 2006. Officers from State Library Organisations, USP service providers accompanied the SKMM officers on these visits. Also present were officers from the Public Works Department which was commissioned to monitor the project on behalf of SKMM.

These libraries were accessed for suitability. The selection of libraries for this project was based on feedback from the National Library of Malaysia and the State Library Organisations. These libraries had to be in areas where Internet penetration rates were low and which were surrounded by populations that were in the lower income brackets. Since there were similar projects undertaken by the Energy, Water & Communications Ministry, care was also taken to ensure that there were no duplication of efforts and that the libraries were not located near other areas that provided Internet access to the underprivileged.

Finally 78 libraries were identified within 89 USP districts as being suitable for implementation of the Internet access programme. The various USP service providers were then asked to submit draft proposals on each of these areas for the consideration of SKMM. These proposals were evaluated and the SKMM approved plans for 44 libraries which were submitted by TM and Maxis Mobile Sdn Bhd.

The project involved equipping the libraries with state of the art PCs and high speed Internet connections. Typically, each centre had six computers, a server, a printer and a broadband connection. To ensure effective usage, the project also had the provision to hire a supervisor who would run awareness and training programmes so that the target population could increase their IT skills. The supervisor would also monitor computer usage so that access was shared fairly among the users and also to prevent the PCs being used for non productive purposes.

The Terengganu experience

By mid 2007, implementation had been carried out in some areas. Among the areas that saw the implementation of the library Internet access project were the towns of Marang and Dungun in Terengganu.

Some months later, both areas have positive reports to share.

Marang is just a half hour drive south from the state capital, Kuala Terengganu. Once a fishing village, it has grown into a town. Tourism has also become a major economic activity. The town is also surrounded by villages. Many of the people who live here have no Internet access.

Haini Hamzah has served as Pembantu Perpustakaan (Library Assistant) for 27 years, all in the Marang library. She says that the response to the library Internet access project has been very encouraging. The facilities are so popular that the supervisor usually sets an hour limit on each user so that everyone gets a chance to use the facilities.

"The number of users has been increasing since we put in the PCs. During the school holidays, we get students the whole day round." Other users include working people pursuing distance education, university students working on their assignments etc. Haini also said that they also get a number of small business owners and farmers coming in to access the Internet. For example, Haini said that a few fish prawn crackers (*keropok*) makers have been using the PCs to source for distributors outside the state.

According to Haini, the supervisor ran regular classes to train users how to use the PCs effectively. The classes were on basic PC usage as well as an introduction to common office applications.

The young people who use these new PCs live all across town and the surrounding villages. Wan Mohd Muttaqim lives in the village of Rhu Muda. He is in Primary 5 and was taught to use the PC by his older brother. Another user, Mohd Ikhwan is in Secondary 2 and he uses the facilities to access the 'Score A' online educational application as well as check his email.

A slightly older user was Zulhelmi, back home for holidays from University Putra Malaysia. He is a third year student in computer engineering and communication



Haini Hamzah



Dungun and Marang and their surrounding areas



Azmi Ibrahim

“
The young people who use these new PCs live all across town and the surrounding villages
 ”

Ernee Abdul Rahman



systems. Zulhelmi is from Kampong Kijing and he uses the SKMM provided facilities to catch up on news and the latest knowledge in his field of study. He feels that the move to provide free Internet access is excellent as it is bringing information to his hometown.

Over in Dungun, another town about one hour drive south of Marang, the report is even more glowing. Like Marang, this town has fishing villages and smallholdings surrounding it. Some of the residents also work in the petroleum industry as Terengganu's oil facilities are located not far from it.

'Business' is booming in the Dungun library. The library officer, Azmi Ibrahim, says that they are facing a problem, they have too many users. Since the PCs were installed, she says that the library membership figures have gone through the roof.

In June 2007, before the PCs were installed, there were 76 new members. In July, the figure had grown to 615 and in August, 433 more people joined the library. The demand for Internet access is so acute that she says they only allow users half hour sessions.

Ernee Abdul Rahman, the supervisor at this library, says that she has been delighted with the response from

users. Ernee completed a diploma in IT at Kolej Teknologi Bestari before taking on this post.

She gets users coming in from miles away on their bicycles just to use the Internet facilities. Other than the usual children and youth, the Dungun library also gets a fair number of adult users who come in to get information on agriculture and farm animals.



Zulhelmi

Ernee and Azmi both notice one thing; the youngsters using the facilities quickly advance to become power users. According to Ernee, "they are using the

USP in a nutshell

The Universal Service Provision (USP) programme's main objective is to provide collective and individual access to basic telephony and Internet services to underserved areas or groups throughout the country.

The aim is to narrow the gap between the “haves” in urban areas, and the “have-nots” in rural areas, often referred to as the Digital Divide, this imbalance in communications access can have social ramifications if not addressed at the national level.

USP targets are divided into underserved areas and underserved groups within the community. For classification, SKMM defines these as areas where the penetration rate for Public Switched Telephone Network (PSTN) subscribers in Malaysia is 20% below the national penetration rate or any locality where in the opinion of the SKMM, applications services are not sufficiently available to the community at large.

How it works

The USP programme acts as a mechanism for channelling private sector investment into unprofitable rural areas. The key tenet here is one of “no gain, no loss.”

This means that a designated USP service provider incurs no loss, or makes a profit, when implementing this programme. The service provider claims only for expenses incurred, at cost, and the SKMM reimburses them based on a detailed claims template.

How the Fund is maintained

The Universal Service Provision Fund (USP Fund) was established under the provision of Section 204 of the Communications and Multimedia Act (CMA) 1998. The Communications & Multimedia (Universal Service Provision) Regulations 2002 (the USP Regulations) stipulate that, among others, contributions from licensees shall be based on these three factors:

- i) The list of designated services;
- ii) Weightage factors; and
- iii) Six per cent of weighted net revenue.

All licensees except Content Applications Service Provider (CASP) licence holders, whose weighted net revenue derived from the designated services exceeds RM2 million in a calendar year (minimum revenue threshold) have to contribute 6% of their weighted net revenue to the USP Fund.

As of 31 December 2006, the balance of the USP Fund stood at RM1.987 billion. This amount is inclusive of the committed cost of RM497 million yet to be paid pending the claims from the designated service providers for rolling out the USP projects.

In 2007, several projects amounting to RM1.3 billion had been lined up for implementation.



Zailatul Hawa

We had the opportunity to observe this with our own eyes at one of the workstations. Eight year old Zailatul Hawa was busy working on a document using a word processing programme and she was expertly maneuvering her way around. This young girl had clearly mastered that particular application, a feat even some adults may have difficulty with. Zailatul's father is a fisherman and she spends most of her free time at the library because her family does not have a PC at home.

Azmi has one request for SKMM, “Please send us more PCs!” She estimates that they need another six PCs to keep up with demand; a heartfelt validation of this USP initiative by SKMM. [.my](#)

PCs beyond the basic level. I find that they have picked up advanced formatting knowledge and they spend time sprucing up their assignments with graphics and layout work.” On a side note, this phenomenon perhaps explains why Terengganu students regularly do well in government exams.

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Capturing The Ethos of a Nation Through Philately

V. T. Nathan tracks how stamps document Malaysian history



The 10 sen bistre-brown stamp issued to commemorate the 31st August 1957 proclamation of independence.

It is ironic that the most dispassionate, objective documentation of a nation's history, its development, its ethos is found not in voluminous tomes but on square inches of papers that most people either hardly ever notice or even discard without a moment's thought.

The humble postage stamp can be described as a window to a country's history, its people, culture, heritage, achievements and progress. It is a moment in time, forever froze.

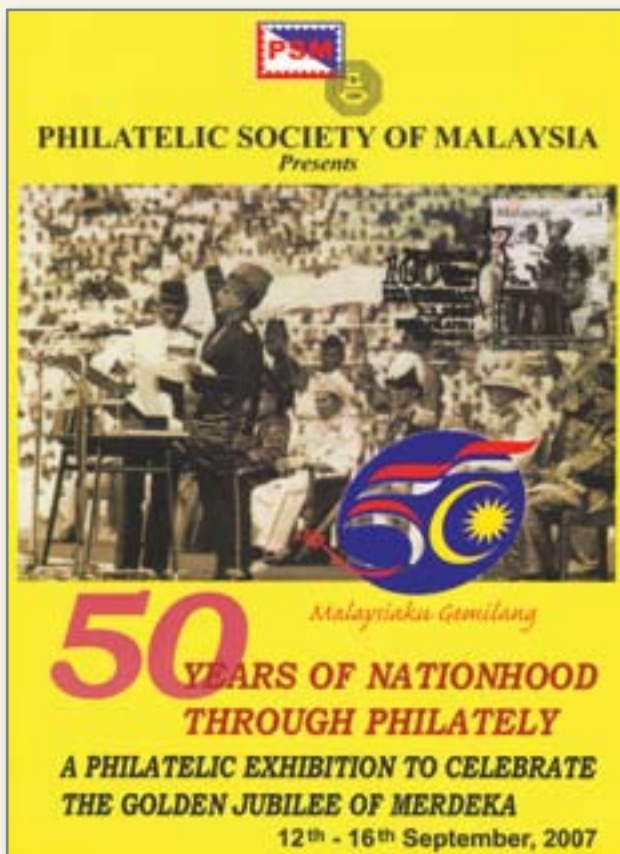
Albertino De Figueiredo of Spain aptly postulated, "postage stamps provide us both culture and inspiration; they give us access to history, art, the customs of different people, we learn about their important characters, we get to know their social and political reality... a stamp is a kind of paper ambassador..."

As Malaysia was celebrating her 50 years of nationhood, her Merdeka on 31st August 2007, the story of her birth, her

struggle for independence, her formative years, her rapid development and her proud achievements as a nation State was all being showcased in a philatelic exhibition organised by the Philatelic Society of Malaysia. It was a philatelic exhibition like no other. Hosted by the forward looking, dynamic Petaling Jaya City Council, it was held at the Petaling Jaya Library Community Hall and supported by the Malaysian Communications and Multimedia Commission, Pos Malaysia and the Malaya Study Group, London.

Philatelically Speaking

The word philately (from Greek philo, which means loving and ateleia, meaning 'exemption from payment') refers to the franking mark or postage stamp applied to a postal communication to denote that the recipient is exempt from payment for the service provided. The stamp or postal mark, when introduced represented the receipt for the payment of



inland letters up to certain weights within their own countries. Over time special-use categories were thought necessary by some postal organisations. Different types of stamps for pre-payment of different postal charges came into vogue. Philately has now come to represent a wider field of study and appreciation. It now includes not only the love for stamps but also the study of stamps and all materials related to postal communications.

For a brief overview of what is philately, it can safely be said that it encompasses four basic areas of study:

- Basic or technical philately, is the study of the technical aspects of stamp production and stamp identification. This includes the initial stamp design process, the paper, printing methods (engraving, typography, etc), gum, separation (perforation, rouletting), overprints on existing stamps and philatelic fakes and forgeries, and the identification of forgeries.
- Topical or thematic philately is the study of pictorials depicted on stamps, such as historical or cultural heritage, customs and traditions, the flora and fauna, sports, maps, etc. Interesting aspects of topical philately include design mistakes, design alterations and the stories of how or why particular images came to be used.
- Postal history focuses on the use of stamps on mail including the study of postmarks, post offices, postal

THE MOST EXPENSIVE MALAYSIAN STAMP

From a philatelic point of view, the most expensive Malaysian stamp is the bicoloured 1911, King Edward VII S500.00 Straits Settlements stamp. At the then rate of exchange, this was equivalent to £58.33 sterling, making it the highest denomination of any stamp in the world. Today, this \$500 stamp, in mint condition, is worth more than RM500,000.

authorities and the process by which letters are moved from sender to recipient, including routes, rates and the choice of conveyance.

- Cinderella philately is the study of objects that look like stamps but aren't stamps. Examples include festive season seals and propaganda labels.

The 1957 – 1963 General Issue stamps for the State of Trengganu



The 10 cents Deep brown issued on 4th August 1957



The 5 cents Carmine – lake issued on 21st August 1957

The 1965 National birds series and the 1970 National Butterflies series general issues



The 50 cents black-eyed Oriole



The RM10.00 Royal Assyrian

How The Humble Postage Stamp Came Into Being...

As the story goes, in 1836 Rowland Hill was walking through a Scottish village when he saw the postman offer a letter to a young countrywoman who refused to accept it on the grounds that the postage was too much to pay. Hill being a gentleman offered to pay it for her but the young woman declined the offer with her thanks. The postman continued on his way, carrying the letter which, since it had not been delivered, would be returned to the sender.

Hill watched the play of events most attentively, suspecting that the girl's refusal concealed a secret. Intrigued, he gained her confidence enough for her to explain that her fiancé lived in London and that they had arranged to correspond by means of signs on the back of the folded sheet of paper which took the place of a letter. Through these signs they were able to pass messages to each other without paying the postage, the correspondence being naturally limited to essentials.

A year later Hill published a pamphlet entitled *Post Office Reform: Its Importance and Practicability*. As soon as it appeared, this pamphlet became the talk of the town. Hill proposed that inland letters should be subject to a prepaid postage.

The results of this reform was that on 6 May 1840, small pieces of paper with gum on one side and an effigy of the Queen Victoria on the other, were sold at post office counters for the very first time for the prepayment of post. The public response was most favourable. These are the now famous, penny blacks and two-penny blues.

A Look at the Ordinary

Definitive postage stamps are the regular or general issue stamps. Unlike commemorative stamps, definitive stamp designs usually do not honour a specific time-dated event but reflect the people, their culture, the tradition, the flora, the fauna, the history, etc. These are the 'common' stamps intended for normal everyday use as prepayment for postal transmission, issued in larger quantities than commemorative or special issue stamps and are generally valid for a decade and five years or more or until demonetised. Because of their use over extended periods of time they are often perceived to be too common and are discarded after use. To a true philatelist these stamps offer tremendous scope for study particularly as their inevitable multiple reprints, often have unintended consequences, such variations in

colour, watermarks, perforations and the like making them far more interesting.

Presently, the definitive series - Birds of Malaysia - which was issued in 2005 replaced the Malaysian Fruit series that ran for about two decades. And before that, we had the Butterflies series, the Flowers series and the Animal series. It is interesting to note that the States butterflies definitive reprints were of philatelic importance as they were considered a provisional / intermediate issue and a modern rarity as these stamps were used for a very short period only.

Using the ordinary to showcase the magnificence of a country is not only good public relations but on a deeper level, but also in a subtle way showcases the uniqueness of the country all in a neat package of ordinariness.

Commemorative stamp issues mark a nation's progress. It records for posterity events of significance and the achievements of the nation and of its citizens. These stamp issues are often limited in quantity and period of use. However, they may continue in use for long enough to become recognized as definitive and the distinction becomes artificial and blurred. Commemorative issues represent a permanent record of a nation's achievements.

A Record of Achievements

The first and most important commemorative stamp of the nation is the stamp that was issued on 31st August 1957 to mark Independence Day.



The 10 cents bistre-brown stamp issued to commemorate the 31st August 1957 proclamation of independence.

When Malaysia first won independence in 1957, foreign dignitaries and VIPs who attended the declaration of Independence were welcomed with as much pomp and grandeur it could muster at a small military airstrip in Kuala Lumpur.

Within eight years of independence, the Kuala Lumpur International Airport at Subang was proudly unveiled as the modern landmark more befitting a developing nation. And to commemorate the occasion, the Post Office issued a stamp depicting the new airport.

The 2 stamps issued to commemorate the opening of the International Airport, Kuala Lumpur on 30th August 1965



The 15 cents Black, green and blue

The 30 cents Black, green and magenta

The 2 stamps issued to commemorate the Official opening of the new state-of-the-art, environmentally friendly KL International Airport on 27th June 1998



The 50 sen Blue, Airport Terminals

The 30 sen Rail system / Plane



The Petronas Twin Towers were featured in a special issue of commemorative stamps on the 30th August 1999. The 30 sen stamp issue shows a daytime view of the twin towers, the 50 sen stamp shows construction sketches and the RM1.00 shows a view of the towers at night. A miniature sheet completes the set with the twin towers against a backdrop of the Kuala Lumpur skyline and the Jalur Gemilang (Malaysian Flag).

By 1998, unable to cope with the ever increasing demand for air transportation, the International Airport at Subang was replaced by the more state-of-the-art, environmentally friendly KL International Airport (KLIA), at Sepang as the new international gateway to Malaysia. Again the Post Office issued a stamp to commemorate this achievement.

As one of the most successful rapidly industrialising, developing economies, the signposts of our progress and successes visibly dot the landscape of the country. From the majestic Petronas Twin Towers and the hundreds of skyscrapers that fill the city's skyline, to the ultra modern transport and other facilities, all bear testimony to the country's rapid infrastructural growth, and the Post Office has meticulously maintained a philatelic record.

If indeed a picture paints a thousand words, not only are we eyewitnesses to historical events after the fact, frozen in time like the now familiar image of Tunku Abdul Rahman and his enthusiastic 31st August 1957 proclamation, "Merdeka!" to an equally vibrant but voluminous public response, but also to the nations achievements in the last 50 years.

And as we venture into the next stages of our development, there is one thing we can be assured of. Whatever the achievement or event that will next put us on the map or raise our heads in pride, our story will be told as it has countless of times on a little square inch of paper. my

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Mobile Number Portability (MNP) Nationwide Launch in August 2008

The Malaysian Communications and Multimedia Commission (SKMM) signed an agreement in December with Talian Gerak Alih Sdn. Bhd. (TGA) in relation to the establishment of the MNP Clearinghouse for the implementation of MNP in Malaysia. The signing ceremony was witnessed by Y.B. Dato' Sri Dr. Lim Keng Yaik, Minister of Energy, Water and Communications (KTAK).

MNP allows mobile phone customers to retain their existing cellular numbers while switching from one service provider to another. The main benefit of MNP to consumers is the cost savings to the porting customer of having to change telephone numbers while at the same time having the freedom to choose the supplier with the best overall value.

The signing ceremony between SKMM and TGA on 5 December 2007 not only signifies the establishment of contractual ties between the parties but more importantly, it marks an important milestone in the implementation of MNP in Malaysia. This event also marks the completion of work in the Plan Phase and the Build Phase for the industry and TGA and this has laid the foundation for the Test Phase in January 2008.



Datuk Dr Halim Shafie of SKMM and Mr Raja Sekaran of Talian Gerak Alih Sdn Bhd exchanging documents after the signing ceremony between the two parties on the establishment of an MNP Clearinghouse, witnessed by Dato Sri Dr Lim Keng Yaik. Also present during the ceremony were Mr Wong Tze Leng of Talian Gerak Alih and Tuan Haji Mohd Aris Bernawi of SKMM.

Currently, the industry is in the final phase of preparing their networks and IT systems for the MNP testing which will begin in January 2008. Upon completion of the Planning and Testing Phase, a Pilot Launch in Klang Valley will be held in April 2008. With the experience gained during this Pilot Launch, all parties will be better poised to ensure that all technical and operational issues are resolved so as to guarantee a positive user experience before the nationwide launch in August 2008.

Malaysian to lead a High-Level Experts Group for the Global Cybersecurity Agenda



Malaysia continues to keep the flag high in the international arena when one of SKMM's officers, Mr Shamsul Jafni Shafie, Director of Security, Trust and Governance Department was appointed as leader of one of five work areas set by the High-Level Experts Group for the Global Cybersecurity Agenda, at its inaugural meeting held in October 2007 in Geneva.

The deliverables of this group will be five strategic reports that will be consolidated into a global roadmap delivered to the ITU Secretary-General on how best to achieve the goals of the Global Cybersecurity Agenda. Mr. Shamsul Jafni will lead the identified work area on International Cooperation.

The Global Cybersecurity Agenda (GCA) is an ITU framework for international cooperation aimed at proposing strategies for solutions to enhance confidence and security in the information society. It will build on existing national and regional initiatives to avoid duplication of work and encourage collaboration amongst all relevant partners.

Mobile Coverage Reaches East West Highway

The East West Highway has been one of the last major highways in Peninsula Malaysia without adequate mobile coverage. Travellers used to lose mobile phone signals a short distance after Grik, Perak and coverage only resumed towards the end of the highway, near the town of Jeli, Kelantan.

The lack of mobile coverage will soon be a thing of the past. As part of SKMM's USP strategy to bring telecommunications services to underserved areas, a project was launched in October 2007 to bring mobile telecommunications services to this underserved area.

The initiative, which will be undertaken by Telekom Malaysia, will see towers erected along the highway. This network of towers will bring mobile coverage to a highway that still occasionally sees elephants crossing it.

Mobile coverage in this area will also benefit the few homes along the area and especially, the expanding resort area of Banding that lies on the edge of the Temenggor Dam.



SKMM Chairman Datuk Dr Halim Shafie (middle) explaining the need for extensive mobile coverage to Perak Executive Councillor YB Dato' Chong Ko Youn at the launch of the project in Grik.

Malaysia to introduce laws to control spam

In order to address the issue of spam in Malaysia, the Malaysian Communications and Multimedia Commission (SKMM) in November appointed Messrs. Raslan & Loong to carry out a strategic study and draft an anti-spam legislation.

Spam is often defined as unwanted or unsolicited electronic messages or electronic 'junk mail'. It is flooding the electronic networks and remains a threat to the development and effectiveness of electronic communication.

There is no single solution to the problem of spam. A multi-disciplinary approach focusing on regulatory and self regulatory measures, technical solutions as well as consumer and business education is required to develop sustainable solutions to combat spam.

In line with this, Malaysia has always promoted a multi-prong approach in its fight against spam. However, it is important to have a

strong legislative recourse to address enforcement matters and also to serve as a deterrent to the spammers. This is evident in the fact that numerous countries around the world such as Australia, New Zealand, Singapore, Hong Kong, United States of America and many more have enacted anti-spam legislation to curb spam in their countries.

On the strategic study and drafting of anti-spam regulation for Malaysia, Messrs. Raslan & Loong, together with an internal team from SKMM, is tasked to do a review of the current regulatory framework on spam in Malaysia, map a recommended approach and propose necessary regulatory changes in addressing spam in Malaysia including the drafting of relevant legislation.

Feedback and comments will be sought from all relevant stakeholders on changes in the regulatory framework and the proposed anti-spam legislation.

Mobile Content Challenge winners announced



◀ Deputy Energy, Water and Communications Minister YB Dato' Shaziman Abu Mansor (third from right) and SKMM Chairman Datuk Dr Halim Shafie with the winners.

▼ SKMM's Content Development Director Roslan Mohamad giving a brief explanation to the Deputy Minister on the contest which will be held annually.



SKMM Chairman Datuk Dr Halim Shafie dropped in on students of Sekolah Menengah Kebangsaan Miri in Sarawak to see how they utilise broadband in their classrooms while in Sarawak to officiate the opening of SKMM's new branch office in Miri.



Team Focus IT from Universiti Malaysia Sarawak won the top prize of RM30,000 for their Halal Food Product Verification system for Muslims using bar codes in the inaugural Mobile Content Challenge 2007. The team also won RM30,000 for their university.

The second prize of RM20,000 went to Team Kids Cashier from Universiti Teknikal Melaka for their downloadable, Flash-Lite based, educational mobile game which lets players serve customers in a virtual shop on their phone. The Third prize of RM10,000 went to MMU Team 2 from Multimedia University, Cyberjaya for their Mobile Interactive TV, a Java-based application which lets viewers not only select the TV programmes to view on their 3G phones but also to vote, obtain information on videos, dedicate videos to others and download videos to their phone.

The challenge was jointly organized by Malaysian Communications and Multimedia Commission (SKMM), the Ministry of Energy, Water and Communications (KTA) and Maxis. The competition was officially launched by the Dato' Sri Dr. Lim Keng Yaik in Cyberjaya in May 2007.

The content challenge will be held again next year, though prizes are yet to be decided.



PLACES

Trekking on the treetops

Canopy walks have always been a superb way to appreciate the beauty of Malaysian nature. The Malaysian rainforests look exceptionally awesome when viewed from canopy walkways strung up high between gigantic trees.

Now, someone has come up with a twist to canopies. A Frenchman has created an adventurous experience that mixes the canopy walk with a mild version of mountain trekking.

The Skytrex Adventure which opened recently at the Bukit Cerakah Agricultural

park in Shah Alam offers a thrilling but perfectly safe experience. Visitors get the chance to walk along canopies, swing from treetop to treetop, cross high altitude bridges and climb up gigantic nets.

The entire experience is safe as everyone is issued protective equipment for the whole course of the Skytrex Adventure. The circuit has been certified safe by APAVE, which is an independent and worldwide Third Party Inspection Agency (TPIA). The agency provides inspection and safety certification services to projects all over the world.

There are two courses, one for adults and the other for children. Skytrex Adventure is currently open only on weekends and public holidays from 9am to 5pm. The entire adventure will take up to two hours and the entrance fee is RM35 for adults and RM20 per child.

And if the Skytrex adventure promises a bit too many thrills, there are other traditional canopy walks located all over Malaysia.



A popular one can be found at the Forest Research Institute of Malaysia (FRIM), Kepong. It's the perfect place to experience a canopy walk as it is in the city and easily accessible.

A more challenging one is constructed at Taman Negara, Pahang. Another canopy walk can be experienced at Bukit Bendera, Penang. Over in Sabah, there is one at The Poring Hot Springs in Sabah which is located within the Kinabalu State Park.



HEALTH

5 health tips for the desk bound

If your job demands long hours on the computer, chances are that headaches, back pain, erratic sleep patterns and many other ailments have been troubling you. It probably won't be possible to cut down too much on the time you spend at the PC but you can always follow these tips towards a healthier life.

1. Stretch.

Exercise can make a dramatic difference to your life. Make sure you fit in an exercise programme into your daily schedule. You can stretch during short breaks at your desk. Just stand up and stretch backwards and sideways with your hands up in the air or behind your neck. Don't forget to move your head in those same directions later so that your neck gets some relief too.

2. Take a break, get some sun

Don't do marathons; take 10-minute breaks several times a day. Use those breaks to actually walk around. Even better, walk up and down the stairs. Also, being cooped up all day under artificial lighting can cause health problems. Get outdoors at least twice a day and soak in some natural healthy sunshine.

3. Drink enough water

Office air conditioning systems keep you cool but they are pretty good at dehydrating your body too. Make sure you drink enough water. Pure water is better for your body than any other drink. Water helps to detoxify your body. But remember, don't overdo it. Too much water can cause water intoxication and is potentially deadly. Eight glasses of liquid is about right in a day and that includes drinks other than pure water.

4. Practise deep breathing exercises

Most people simply do not get enough air into their body. Go look for instructions on deep breathing exercises (Google the word 'Pranayama', which is the breathing technique in Yoga). Deep, slow breathing, advocated by Yoga and Pilates practitioners has many benefits. It relaxes the mind and body and it helps takes the load off your heart.

5. Change your posture.

Get your posture right and you are on the way to less back problems. Obesity, poor muscles strength, wrong shoes and poor sitting and standing habits will cause posture problems. There is a lot of information online on building a good posture. One good place to start is Cornell University Ergonomics Web at www.ergo.human.cornell.edu



FOOD

Good old *ikan bakar*

Grilled fish Malaysian style is delicious, if you know where to go. *Ikan bakar* is never hard to find in Malaysia, almost every hawker centre will have at least one stall selling grilled fish, but as every true blue *ikan bakar* fan will know, not every stall gets the sauce and grilling just right. The spicy sauce, either a mixture of onions, chillies, *belacan* (fish paste), sugar and tamarind or soy sauce, lime, onions, *belacan* and sugar, is the X-factor that makes a great *ikan bakar*.

The best time and place to have *ikan bakar* is of course at night and beside the sea. But Klang Valley residents have not let that stop them from enjoying *ikan bakar* during lunch.

The place usually voted the best to have *ikan bakar* for lunch are the stalls behind the National Palace, at Jalan Bellamy. Both **Gerai Seri Menanti** and **Gerai Seri Melaka** have excellent fare. Try the Stingray (*Ikan Pari*) and the Sea Bass (*Siakap*) when you go there. Another popular *ikan bakar* stall is at the Tanglin Food Court behind the National Mosque. The **Ikan Bakar Asli Pak Din Stall** is always thronged by customers from 10 am until they run out of fish.

The nearest place to have *ikan bakar* at night beside the sea is at Tanjung Harapan, Port Klang which is less than an hour drive on a good day. There are quite a few good open air restaurants along the beach and overseas visitors will definitely appreciate the authentic ambience.

For the more adventurous, try the seafood joints located at Bagan Lallang near Sungai Pelek, Selangor. The drive will take one and half hours and do remember to set aside more time as *ikan bakar* is always cooked after you have selected the fish by hand and that can take another half hour.

Arguably, the best *ikan bakar* in Malaysia can be found in Melaka. There are famous groups of stalls at Umbai, Serkam and Duyong. That can take you up to three hours of driving from KL to get there so only try it



when you are visiting the city of Melaka. Also on busy days, be prepared to wait up to one hour or more hours for your fish to be grilled.

And finally, for a different kind of *ikan bakar*, make sure that you find your way one day to Kuantan, Pahang. The many stalls located at Tanjung Lumpur prepare the *ikan bakar* with lots of spices, including *petai* (a local bean with a pungent smell). **Ana Ikan Bakar Petai** is one of the popular restaurants there.



PRODUCTIVITY

Timeless productivity tips

Amidst all the productivity tips that abound these days, there are a few that recur in most top lists. These tips are generally recognized to help anyone organize their lives. Here are five such tips.

Write It Down

It's so simple and yet very effective. All you need is a pen or paper or a digital tool like a PC or mobile phone. Whenever an idea comes, write it down. Do the same whenever you come across a piece of information that looks like it might be useful one day.

One good way to start doing that is to cut empty papers or cards into shirt pocket sizes and put them in shirt pockets ready to be used at anytime. Learn to look, and act, on those bits of written stuff every morning and you've got the first tip internalized.

Handle Incomings Efficiently

Handle documents and emails efficiently. Don't check emails every other minute. Set aside a reasonable time to check emails, say every 90 minutes. Then reply to as many of those emails when you read them. Similarly most papers can usually be handled the same way. The vast majority of your incoming stuff can usually be handled immediately.

Your Private Moment

Set aside a time everyday, say half an hour and give yourself time to think and strategize. Use that time to think and work out key things

and tasks that need to be done. Let nothing interrupt the moment that you're giving yourself.

What's Your Prime Time?

Which time of the day are you in peak work condition? We all have a particular time of the day when we feel energized and enthusiastic. Some find that they are best in the morning, others in the evening. Use that time to tackle your most important work.

Disconnect Yourself To Concentrate

When you are doing a very important task, switch off mobile phones and don't check your emails. Concentrate on the work at hand. The world will still be around when you switch on your phone. Also, studies show multitasking is not efficient as in doing a few things at the same time. Multitasking is perfect when it means taking on simultaneous projects over periods of time, but work on one thing at any particular time.

Reward Yourself

If you have the tendency to procrastinate, try rewarding yourself. Only do something you enjoy after you've completed one of your important jobs. It's best to always do the worst jobs first.

Be disciplined and stick to the goal you set yourself. Set milestones for each job and don't stop until you've reached that milestone. Better still, finish the whole job in one go.

World Radiocommunication Conference Highlights

● **The International Telecommunication Union (ITU) World Radiocommunication Conference (WRC-07)** in Geneva from 22 October to 16 November saw intense negotiations on the future of wireless communications, with rapid technological developments and growth in the information and the communication technology (ICT) sector having driven demand for spectrum.

The Radio Regulations, an international treaty governing the use of the radio-frequency spectrum and satellite orbits were revised and updated by the conference to achieve the global connectivity goals of the 21st Century.

The conference addressed some 30 agenda items related to almost all terrestrial and space radio services and applications, including future generations of mobile telephony, satellite services, maritime distress and safety signals, digital broadcasting, and the use of radio in predicting and detecting natural disasters.

Its key highlights included the global harmonisation of additional spectrum identified for use by International Mobile Telecommunications (IMT), representing an important step in the worldwide development of IMT systems.

On aeronautical security and modernisation of civil

aviation telecommunication systems, the conference upgraded radiolocation service to primary allocation status in the bands 9000–9200 MHz and 9300–9500 MHz, allocated additional spectrum for aeronautical telecommand and high bit-rate aeronautical telemetry and added new allocations for the aeronautical mobile (R) service.

The conference also approved proposals concerning the use and further development of satellite systems using highly inclined orbits, high altitude platforms, as well as compatibility and sharing between different space and terrestrial services.



It also revised the technical and regulatory provisions for fixed-satellite service (FSS) in the 600 MHz bandwidth used in different regions under varying climatic conditions for applications such as communications, TV, Internet and others.

ITU accepts WiMAX into IMT-2000 family

WiMAX or Wireless interoperability for Microwave Access based on IEEE 802.16 standards for wireless metropolitan area networks (MAN) was often seen as a competitor with the International Telecommunication Union's (ITU) IMT-2000 family of third-generation (3G) mobile communications technologies until the ITU accepted WiMAX-derived technology as the sixth member of the IMT-2000 (International Mobile Telecommunications 2000) family in October 2007.

This globally important move opens the way for deployment of a range of voice, data, and multimedia services to both stationary and mobile devices, significantly enabling the deployment of mobile Internet in both urban and rural areas.

According to WiMAX Forum president Ron Resnick, **WiMAX technology will facilitate the provision of broadband wireless access services at lower cost and will include multiple wireless broadband Internet services, including VoIP (Voice over Internet Protocol).**



Singapore's Ultra-high Speed Digital Highway Ready by 2015

● **Singapore took a step closer towards** having an open access Next Generation National Broadband Network (Next Gen NBN), which will offer pervasive ultra-high speed connectivity by 2015. It has issued a Request-For-Proposal (RFP) open to all interested parties to submit their bid to design, build and operate the passive infrastructure layer of the Next Gen NBN.

The Next Gen NBN is expected to be available nationwide by 2015, although consumers can begin to look forward to a range of new and exciting Next Gen Services such as high-definition video conferencing, telemedicine, Grid Computing-on-Demand, security and immersive learning applications on the Next Gen NBN from around 2010.

Malaysian girl pleads on behalf of tigers and wins international competition

● A 14 year old Malaysian girl, **Sze Ee Lee**, has won the 36th Universal Postal Union International Letter-Writing Competition. This is the first time that a Malaysian won this competition since it began in 1972.

More than three million youngsters from all over the world took part in the competition which addressed the issue of climate change. Participants were asked to put themselves in the position of a wild animal whose habitat is threatened by environmental or climatic change. Their letters were to be addressed to the peoples of the world to explain how humans could help them survive.

Sze Ee Lee took on the role of a tiger cub living in the rainforest. In her letter she asked, *"Why do humans still need to invade our jungle besides hunting us like in those primitive days?"* She pleaded, *"We have no other place to go."*

The letter ended with a poignant plea, *"It is said that 'the pen is mightier than the sword'. So please publish more books, magazines, pamphlets. I believe many people of the world are still ignorant or lack information about wildlife. There is a Malay saying 'tak kenal maka tak cinta' which means 'to know you*



is to love you'. So please get as many people to know us and consequently to love us."

Her composition – well written and moving, and above all positive – won unanimous praise from the UNESCO jury.

Ultra-Modern Technology on a Conventional Stamp

● **Swiss Post** is issuing the world's first stamp with an integrated BeeTagg, combining a conventional stamp with ultra-modern technology. Swiss Post's partner in this first tagging venture is Schweiz Tourismus, which is using the stamp and integrated BeeTagg as part of its winter advertising campaign.

The Swiss Post BeeTagg special stamp was created in conjunction with Schweiz Tourismus and Swiss Snowsports, the umbrella association for all Swiss ski and snowboarding schools and teachers, and depicts two skiers surrounded by magnificent Swiss mountain scenery. This image, together with the BeeTagg, is part of Schweiz Tourismus's 2007/2008 winter advertising campaign aimed at getting people excited about the winter season in Switzerland.

Schweiz Tourismus is incorporating the BeeTagg in its campaign as an additional means of communication, enabling its customers to order catalogues and brochures as well as taking part in a competition.

The BeeTagg mobile application makes use of mobile tagging. It enables the user to establish a connection to a predefined and mobile-friendly web page via their mobile phone. The BeeTagg is a two-dimensional code that looks like a honeycomb and functions in a similar way to a bar code. The user simply installs the free BeeTagg reader, then scans the tag incorporated into the Swiss Post stamp with the camera on their mobile phone. The reader recognizes the tag and connects the phone to a predefined web page.



BeeTagg

4G officially named IMT Advanced

● After several years as an undefined industry buzzword, generally referring to the wholly Internet Protocol (IP) based next generation of mobile communications following the IMT-2000's third-generation (3G) technologies, the ITU Radiocommunication Assembly (ITU-R) in Geneva last October formally named the fourth-generation (4G) as IMT-Advanced.

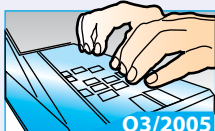
There will be an open call in 2008 and 2009, for candidates for IMT-Advanced to be submitted to the ITU and the start of assessment of candidate technologies and systems. Services based on IMT-Advanced are expected to be commercially available as early as 2011, subject to market demand.

The ITU-R also agreed to expand the IMT-2000 3G radio interface family with the addition of OFDMA (orthogonal frequency division multiple access) technology.

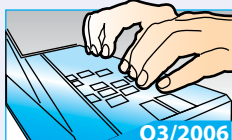
Penetration rates:

**Internet Dial-Up,
by persons**

13.8%



14.0%



14.3%



6.086
Billion



Q3/2005

8.313
Billion



Q3/2006

14.690
Billion



Q3/2007

**Number of
SMS text messages**

Penetration rates:

**Cellular Phones
by persons**

66.8%



Q3/2005

81.6%



Q3/2006

80.8%



Q3/2007

Penetration Rates:

**Fixed Lines
by persons**

16.5%

Q3/2005



16.2%

Q3/2006



16.0%

Q3/2007



**Number of
Broadband
Subscriptions
by technology ('000)**

	ADSL	SDSL	Wireless	Others	Total
2005	477.7	3.7	5.9	14.4	501.7
2006	735.9	4.8	15.1	141.4	897.2
2007 (Q3)	932.2	6.1	31.1	259.6	1229.0

Penetration rates:

**Broadband
by persons**



Q3/2005

1.2%



Q3/2006

2.8%



Q3/2007

4.5%

Number of Post Offices


114
2004

112
2005

114
2006

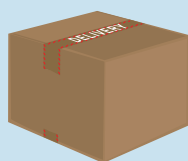
Number of Courier Companies

Traffic Postal - Domestic

(Million)



Letters



Parcels

1,154.9	0.9	2004
1,153.5	1.0	2005
1,154.3	1.1	2006
613.8	0.4	2007 (1H)

Traffic Courier - Domestic

(Million)



Documents



Parcels

13.6	8.3
13.0	4.2
13.2	6.2
10.4	3.8

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The Future Just Got Closer

SERVICES



- High Speed Broadband
- 3G & Beyond
- Mobile TV
- Digital Multimedia Broadcasting
- Digital Homes
- Short Range Communications
- VoIP/Internet Telephony
- Digital MM Broadcasting
- USP-Universal Service Provision

INFRASTRUCTURE



- Multiservice Convergence Networks
 - 3G Cellular Networks
 - Satellite Networks
- Next Generation Internet Protocol (IPv6)
 - Home Internet Adoption
- Information & Network Security
 - Competence Development
 - Product Design & Manufacturing

GROWTH AREAS



- Content Development
- ICT Education Hub
- Digital Receivers
- Communication Devices
- Embedded Components & Devices
- Foreign Ventures