Windsor Place Consulting

MINISTRY OF ICT — Smart Thailand

ITU

ITU Forum on Digital Economy

International Practice in Promoting Digital Economy
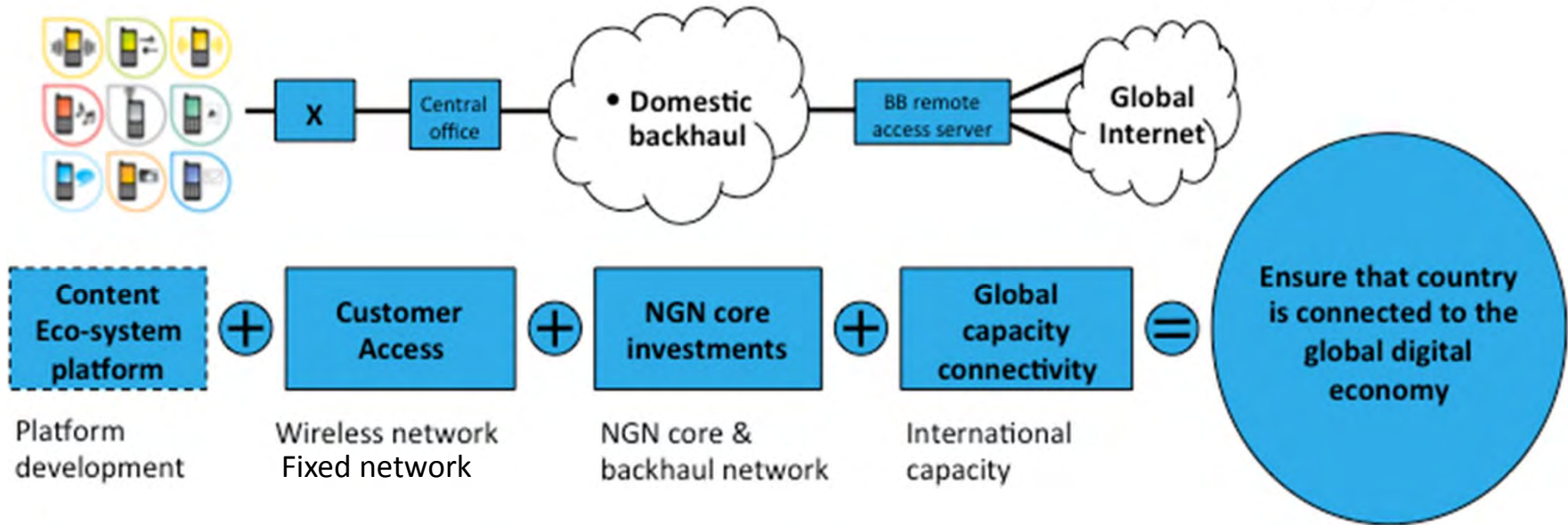
Scott W Minehane

22 August 2015

Bangkok

Principal Company Office

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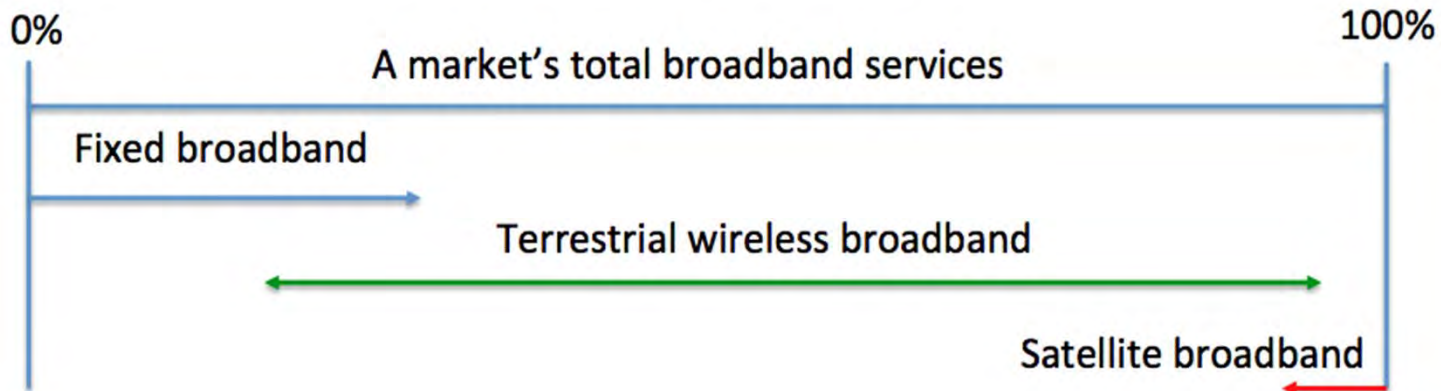Collingwood
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The starting point that any Masterplan must address

| Content Eco-system platform | + | Customer Access | + | NGN core investments | + | Global capacity connectivity | = | Ensure that country is connected to the global digital economy |

| Platform development | Wireless network Fixed network | NGN core & backhaul network | International capacity |

Government Taxes and charges, regulatory regime

0%   100%

A market's total broadband services

Fixed broadband

Terrestrial wireless broadband

Satellite broadband

Ensuring World class institutional frameworks

Roles and responsibilities of the Ministry and Regulator/s should be clearly defined

- The division of responsibilities between the government and various authorities should **minimise regulatory gaps and avoid duplication of responsibility**

- The **Ministry should generally have overall responsibility** for the direction of national communications policy, but may defer part of this to the regulator

- The regulator will have a **range of responsibilities and be independent to the extent possible**

- The divisions of roles, responsibilities and powers **between the Ministry and regulator**, as well as **between different regulators**, should be clearly defined. Too many players may defuse the message.
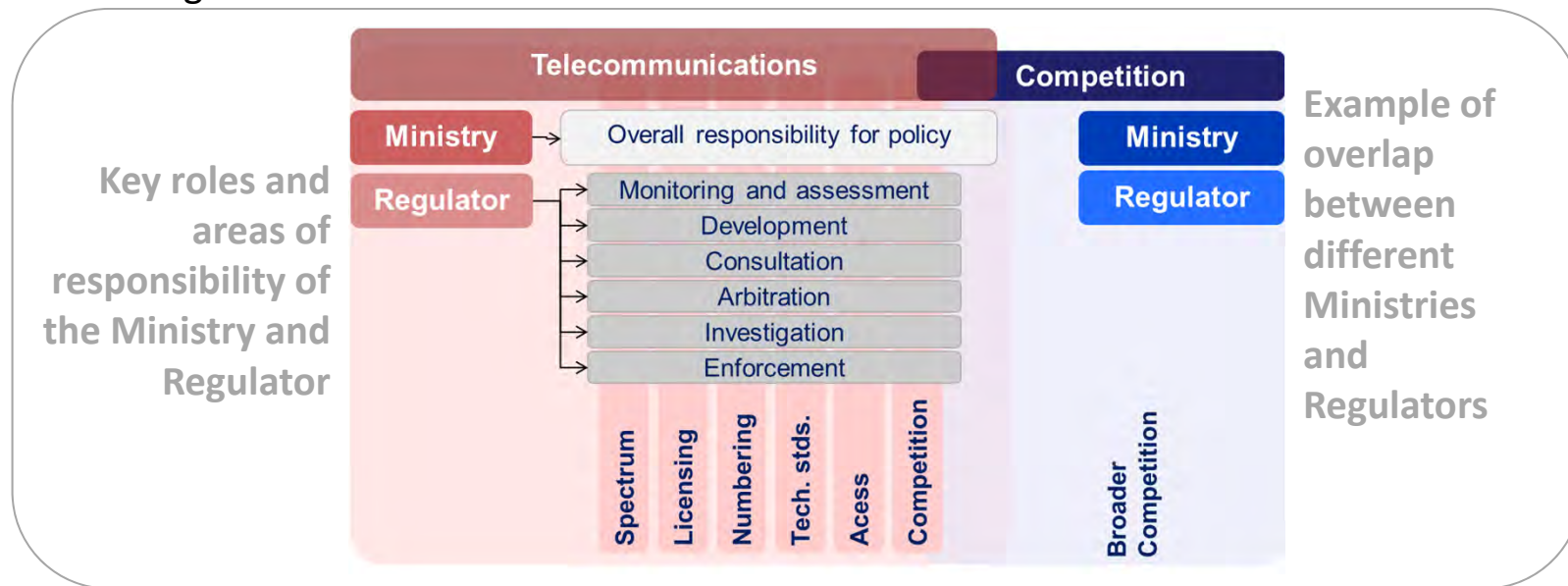
Outline of WPC's Presentation

1. Optimal Spectrum Allocations to support data growth

1. e-Identity – a necessary building block for a digital economy

2. Regional examples on how to transition the fixed incumbent - Malaysia

3. Closing remarks

1. Optimal Spectrum framework to support data growth (1)

● While recent ITU and GSMA reports recommend the allocation of even more IMT spectrum, in overall terms WPC consider that it is exemplar practice to have a target of **of 840MHz of total wireless IMT allocated spectrum per market with 1,000 MHz allocated as a stretch goal. The current allocation in Thailand is only 355 MHz!! Malaysia's is currently 735 MHz.**

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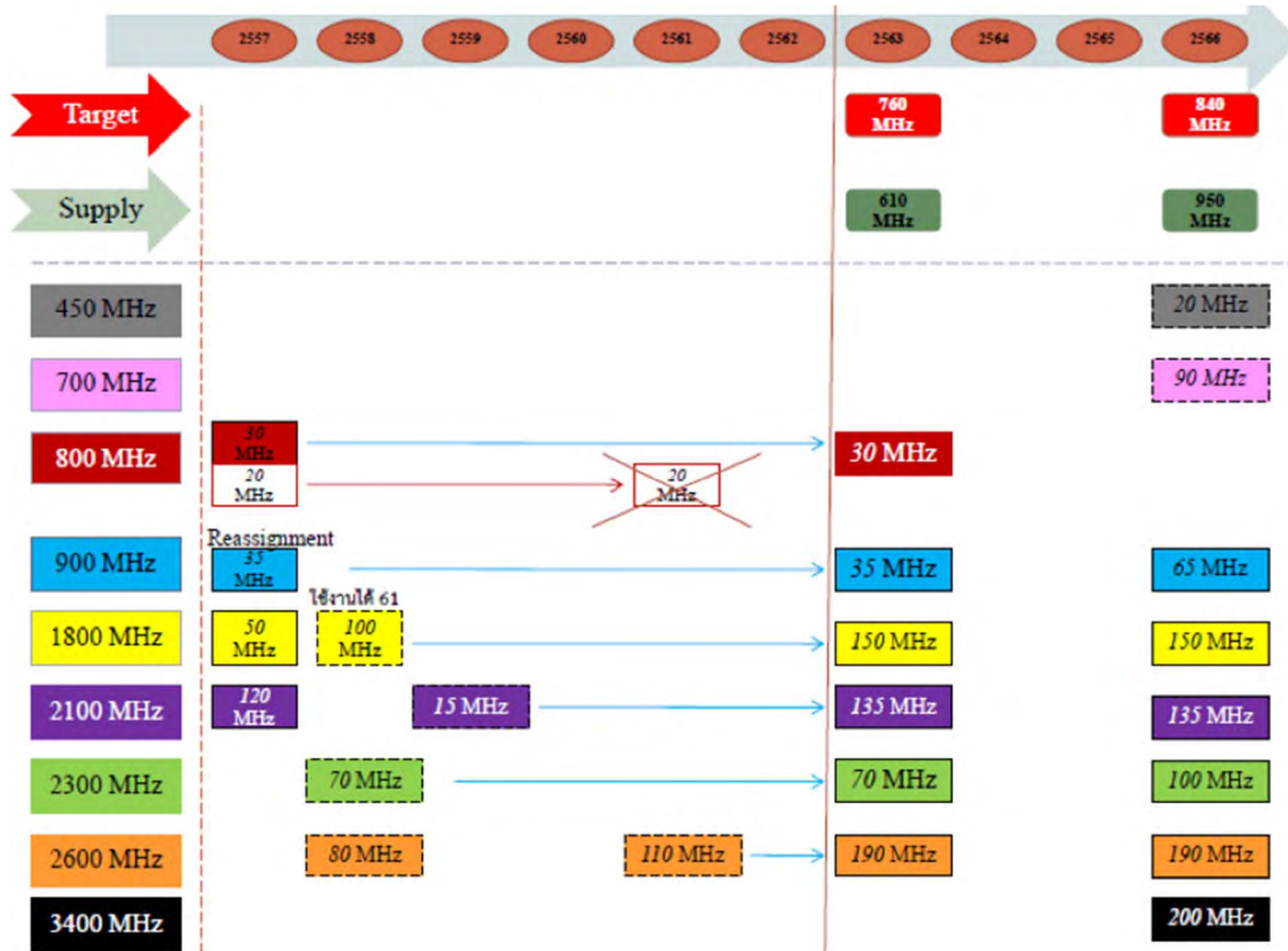
1. Optimal Spectrum framework to support data growth (2)

- We **support an IMT spectrum roadmap**– which it has already done in part by the NBTC in 2014 – in order to inform industry of upcoming spectrum availability especially in run up to WRC-15 and beyond.

- While we recognise Thai market differences like commuting, lack of Thai apps, need for affordable devices, etc, there is a **tremendous growth in Thai smartphone penetration** – now 49 percent penetration. IDC reports that this will arise as **Half of Top 100 Companies Will Embrace "Mobile-first" Strategies**, in 2015.

- Therefore operators **spectrum holdings across different spectrum bands (spectrum portfolio) to enable LTE and LTE-A deployments. Allocations should be technology neutral allocations**, support carrier aggregation, and the ability to rapid pace of LTE deployment/take-up in key markets (eg BKK, CM, CR etc) and harmonised in terms of allocations, block sizes etc

- There should also be **no regulatory impediments to operators adopting spectrum layering strategies** including LTE deployments in urban areas versus WCDMA in rural/regional eg 900 MHz

- It is also critical that operators be **given the opportunity to secure additional sub 1 GHz spectrum**. The early availability of the 700 MHz band following the APT700 band plan is supported. **IMT Spectrum pricing should be reasonable** with other factors not just Government revenue generation driving allocation decisions.
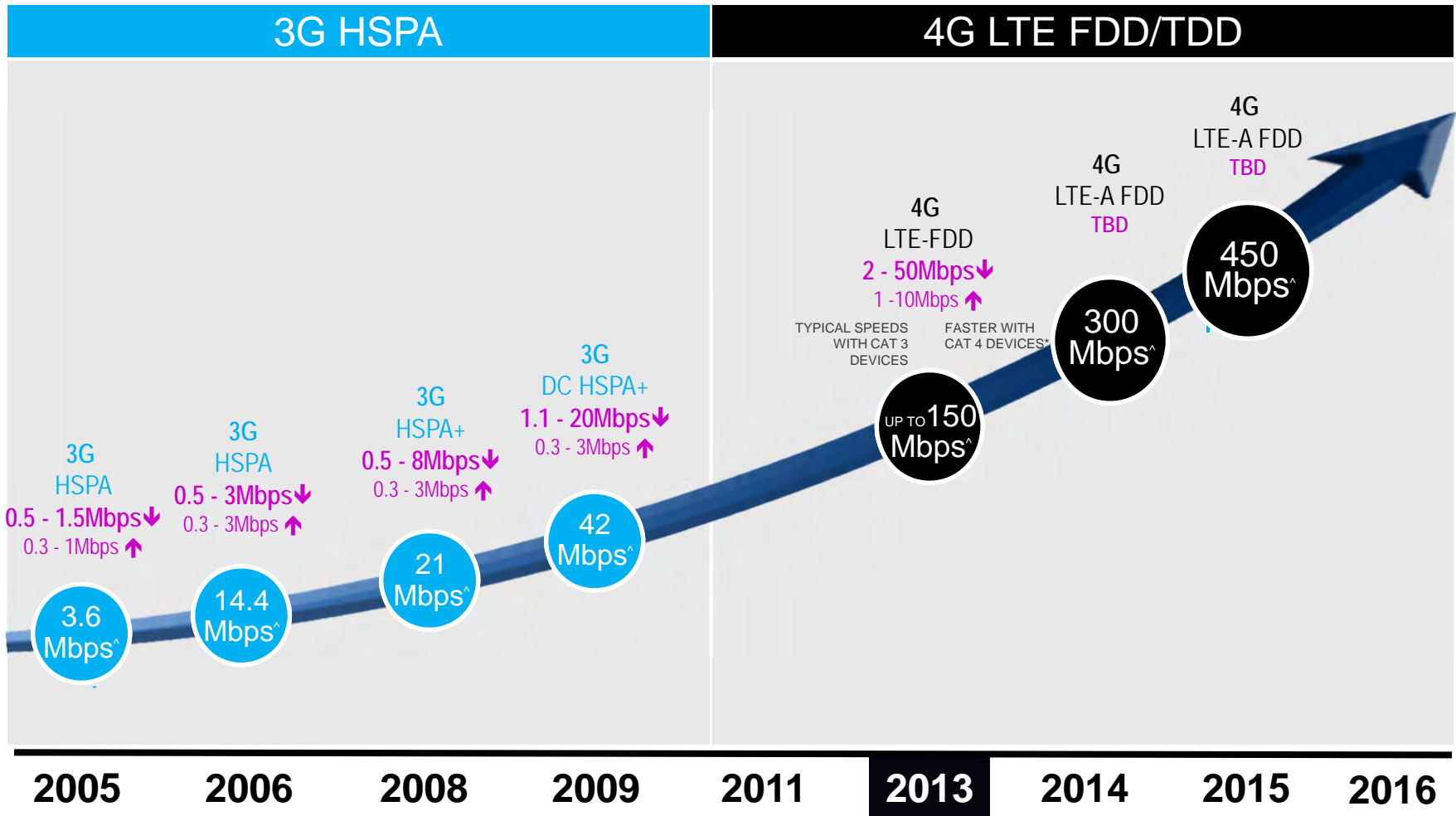
1. Optimal Spectrum framework to support data growth (3)

- Telecom carriers across the world are in the middle of replacing their 2G/3G technology with the LTE technology. This transition is almost complete in major markets like the US, Korea, and China. In the US, about 79% of total data traffic on Verizon (VZ) is carried on its LTE network. Telstra has announced its 2G network switchoff from 2016 and all Singapore carriers from 2017. As at 22 July 2015 422 operators have commercially launched LTE in 143 countries.

- **In the medium to long term it is highly likely that ALL mobile networks will be LTE** ….
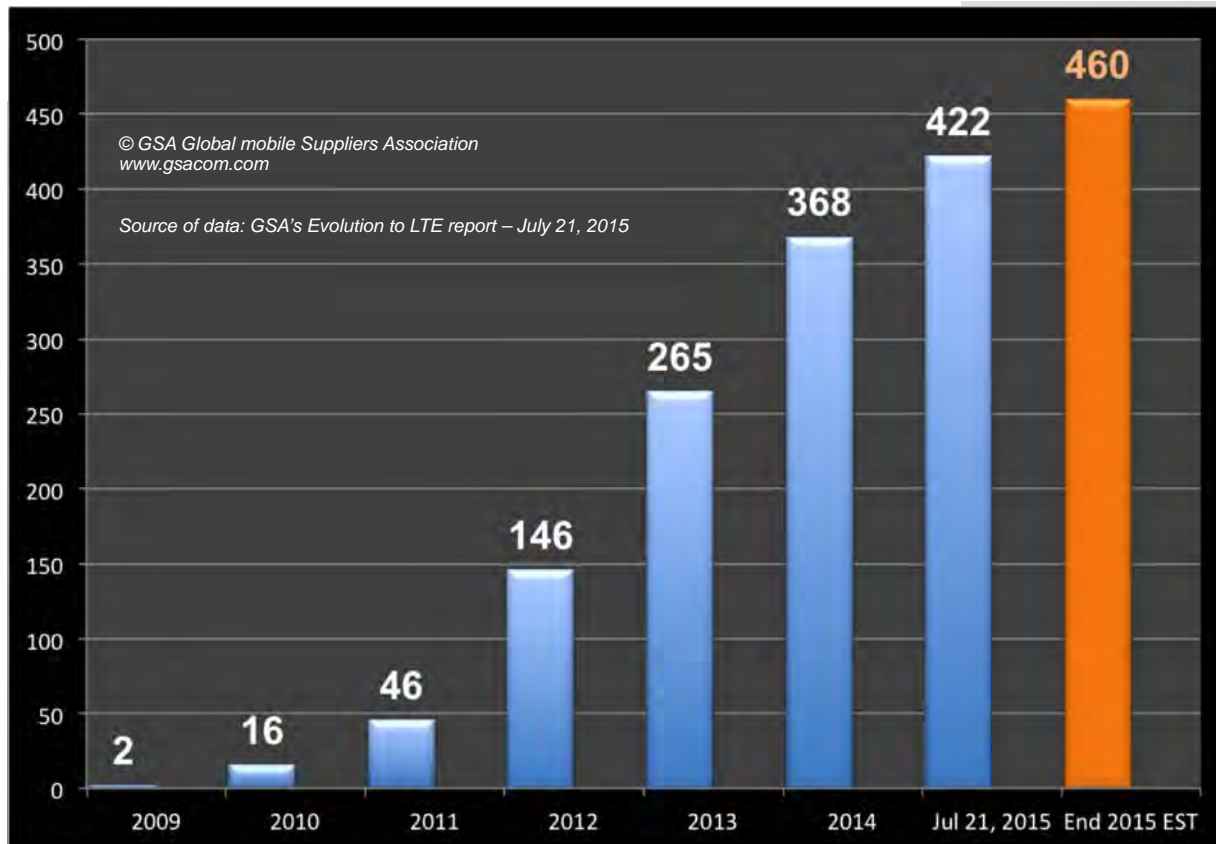
LTE is almost twice as spectrally efficient as WCDMA (HSPA+) 30 bps/Hz versus 16.8 bps/Hz

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Major carrier technology roadmap

3G HSPA	4G LTE FDD/TDD

3G HSPA

4G LTE FDD/TDD

3G HSPA
0.5 - 1.5Mbps↓
0.3 - 1Mbps↑

3.6 Mbps^

3G HSPA
0.5 - 3Mbps↓
0.3 - 3Mbps↑

14.4 Mbps^

3G HSPA+
0.5 - 8Mbps↓
0.3 - 3Mbps↑

21 Mbps^

3G DC HSPA+
1.1 - 20Mbps↓
0.3 - 3Mbps↑

42 Mbps^

4G LTE-FDD
2 - 50Mbps↓
1 -10Mbps↑

TYPICAL SPEEDS WITH CAT 3 DEVICES

FASTER WITH CAT 4 DEVICES*

UP TO **150 Mbps^**

4G LTE-A FDD TBD

300 Mbps^

4G LTE-A FDD TBD

450 Mbps^

2005	2006	2008	2009	2011	2013	2014	2015	2016

Access to these enhanced speeds also depends on the category of LTE capable phone. Current standard is Category 3 with a number of Category 4 devices also available, which make use of 20 and 40 MHz respectively. Category 6 devices are planned for release, and will make use of up to 60 MHz of spectrum.

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1. Optimal Spectrum Allocations to support data growth

1. e-Identity – a necessary building block for a digital economy

2. Regional examples on how to transition the fixed incumbent - Malaysia

3. Closing remarks

2.   e-Identity – a necessary building block for a digital economy (1)

- Digital governance is the central challenge facing governing institutions and societies in the coming decades. It offers a framework for establishing accountability, roles, and decision-making authority for digital presence of organisations, institutions etc.

- As **digital governance issues are as complex as they are broad** – I thought I would focus on a single issue which integral, critical, universal and essential to empower a smart digital nation and digital governance. Addressing this issue promotes accountability and responsible online interactions.

- Addressing this issue is necessary to empower and transform the Thai and other South East Asian economies into digital economies, given *inter alia* global rules on anti-money laundering (AML), terrorism funding and tax avoidance.

- **That issue is Identity. Specifically electronic or digital identity**.

- And identity is not something that can be left to the central role to play, in crafting the appropriate rules establish that you are, who you say you are, online!

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2. e-Identity – a necessary building block for a digital economy (2)

- The challenge is more than transitioning from legacy ID cards to electronic ones that are on smartphones …

NSW Government proposes digital driver's licenses for smartphones

Forget fumbling for your license in a wallet full of cards – NSW drivers could soon by displaying their driver's license, boat license or photo ID on their smartphone.

by Claire Reilly 🐦 @reillystyley / 13 March 2015, 2:56 pm AEDT

💬 1 / 🌐 275 / 🐦 23 / in 1 / 🔴 / ⋯ more +

NSW residents could soon be cutting up their plastic licenses and flashing their ID on a smartphone under changes proposed by the State Government.

In a bid to simplify the licensing system, cut down on the millions of plastic cards issued every year and stay in touch with the growing "private sector" trend towards digitisation, the NSW State Government has announced a proposal to introduce the scheme.

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2. e-Identity – a necessary building block for a digital economy (3)

- It involves – optimally – the integration of banking, SIM card registration processes which will be deprecated by the introduction of the e-SIM (in 2016) and then over time disappear, Financial Action Task Force (FAT-F) rules on AML, Know your customer (KYC) etc into a *true digital identity.*

- This *will necessitate significant co-ordination between various agencies of Government to achieve the required e-identity functionality and security*. There are also significant positives for digital inclusion.
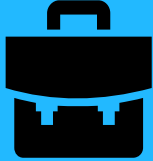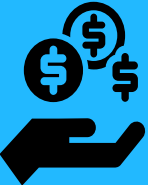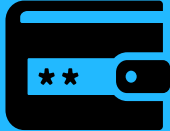

Your Next iPhone, Samsung Galaxy S7 Or Next Galaxy Note Might Sport An eSIM

By Aaron Mamiit, Tech Times | July 17, 8:24 AM

FATF
FINANCIAL ACTION TASK FORCE

กสทช.
โทรคมนาคม
2 แฮ ะ!
แวะลงทะเบียนซิม

2. e-Identity – a necessary building block for a digital economy (4)

Who needs identity?

Government Services

- Health services
- Social security, pensions, etc
- Transport, licensing
- Education
- Taxation returns
- Passports
- Voting.

Communications

- Mobile services (eg SIM card/Soft SIM registration)
- Publications, online content, commenting etc
- Social Media (China)

Payment Processing

- Payment processors : compliance requirement for AML KYC including In Europe ECB SecuRE Pay.
- eMerchants. For example Strong Customer Authentication.

Professional Services

- Real Estate Sales/Rental Agents
- Travel Agents (US Patriot Act)
- Life Insurers
- Accountants/Auditors/Lawyers
- Financial Advisors/Super Funds

Financial

- Stock Brokers
- Financial Systems requiring two factor authentication technology
- Banks (incl debit, card issuers)
- Commodity/Bullion Brokers
- Crypto Currency Exchanges (e.g. bitcoin)

Others

- eWallets/ mWallet Providers
- Money remittance p2p
- Loan/Pawn Providers
- eCasino/ eGaming/ eWagering
- Any business routinely trading > US $10k/transaction
- Currency Exchange

1. Optimal Spectrum Allocations to support data growth

1. e-Identity – a necessary building block for a digital economy

2. Regional examples on how to transition the fixed incumbent - Malaysia

3. Closing remarks

3. Regional examples on how to transition the fixed incumbent – Malaysia (1)

Globally projects supported by Governments are being used to support high-speed broadband.
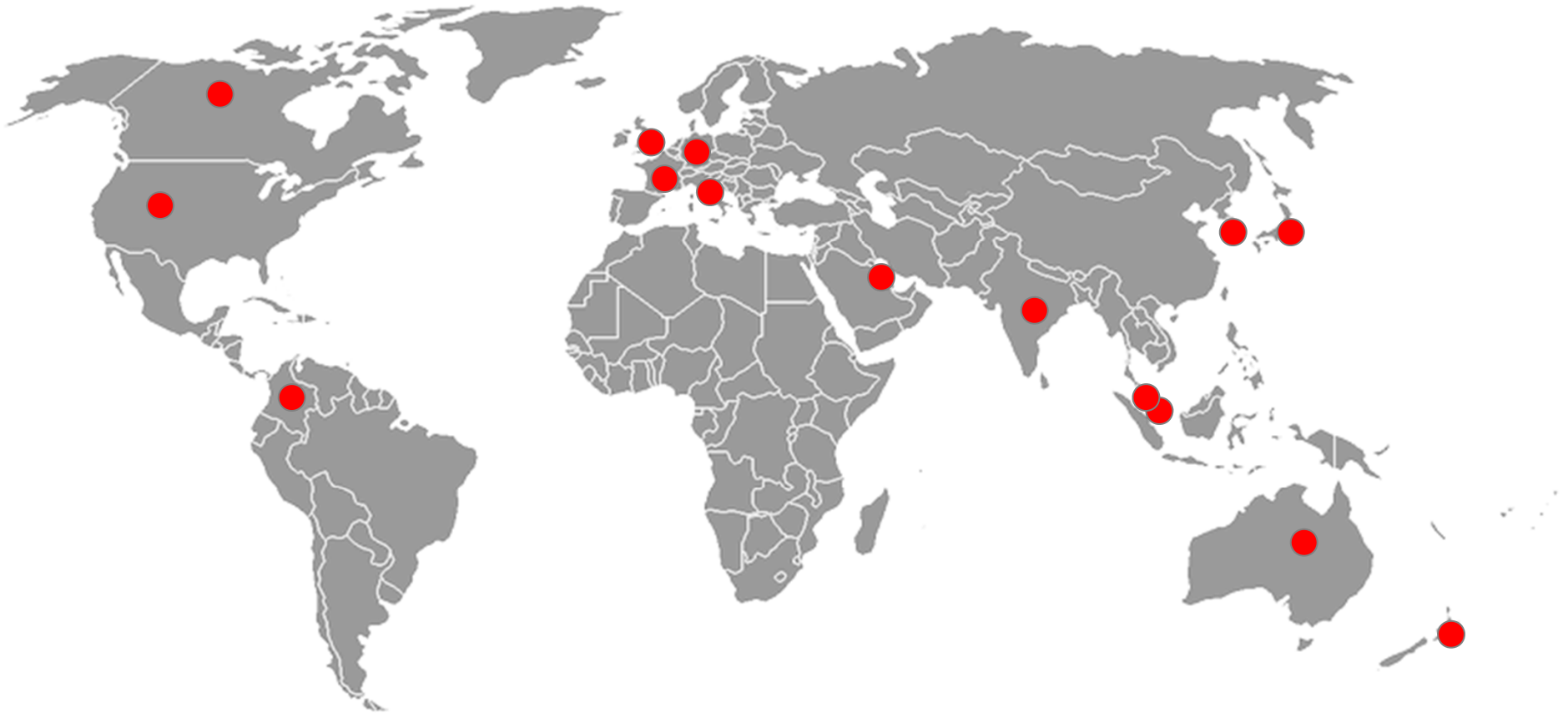
Those national broadband network plans and initiatives are transforming the global telecommunications landscape! The question for Thailand is what must it do to remain competitive …. It cannot afford to have another delay like 3G …

To address high speed broadband deficiencies and the demerger of TM into TM & Axiata

- On 16 September 2008, the Malaysian Government signed an agreement with Telekom Malaysia ('TM') to deploy a **High-Speed Broadband ('HSBB')** network in partnership with Government. The expected total cost of the rollout was **RM 11.3 billion** (Baht100 billion). Under the terms of the agreement, the Malaysian Government's investment was RM 2.4 billion over three years, with TM investing up to RM 8.9 billion over 10 years (2008-2018).

- The HSBB network provides speeds between 5 and 50 Mbps uses three main technologies to deliver broadband services: FTTH, ETTH, and VDSL2.

- Revenue sharing arrangement. Government will receive annual revenue of RM 50 million from 2014-2017 and a variable amount from 2018-2025 based on TM subscribers.

HSBB rollout

- The rollout of the HSBB network was to be done in two phases. **Phase 1** of the project was completed in 2012 and covered the Inner Klang Valley, all economic and industrial zones throughout the country, the Iskander Malaysia Region, all IPTAs (public institutions of higher learning) and all IPTS (private institutions of higher learning.

- As at end of Q1, 2015, TM had deployed HSBB infrastructure at 106 exchange areas, with 1.66 million premises passed and 757,000 HSBB customers. Under **Phase 2** of the project, some 2.2 million additional households are to be connected to the HSBB by 2018.

3. Regional examples on how to transition the fixed incumbent – Malaysia (3)

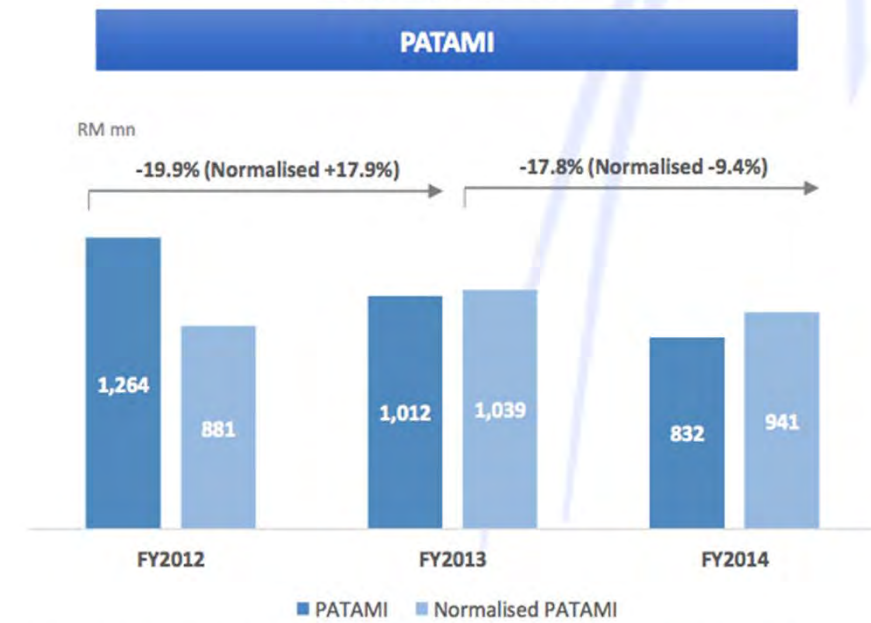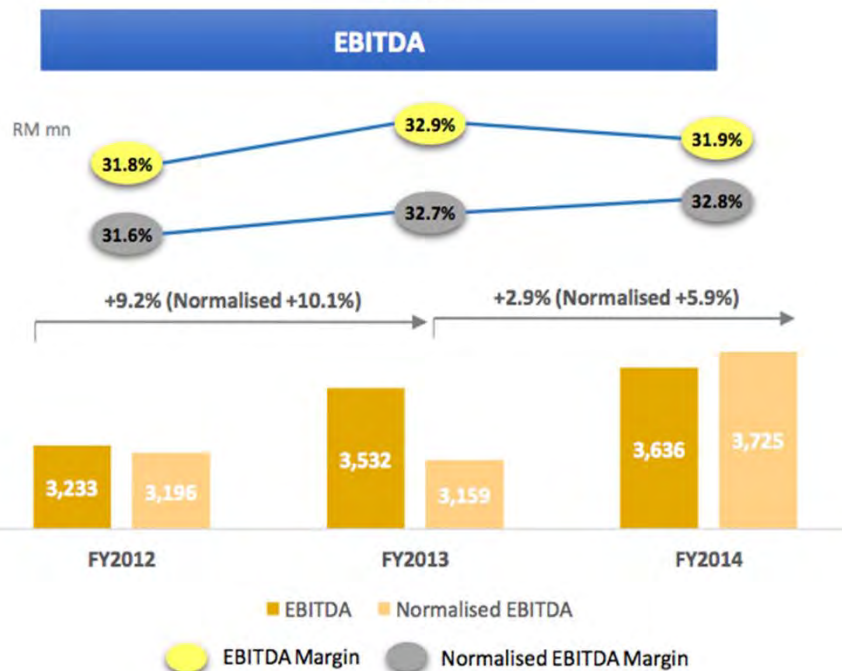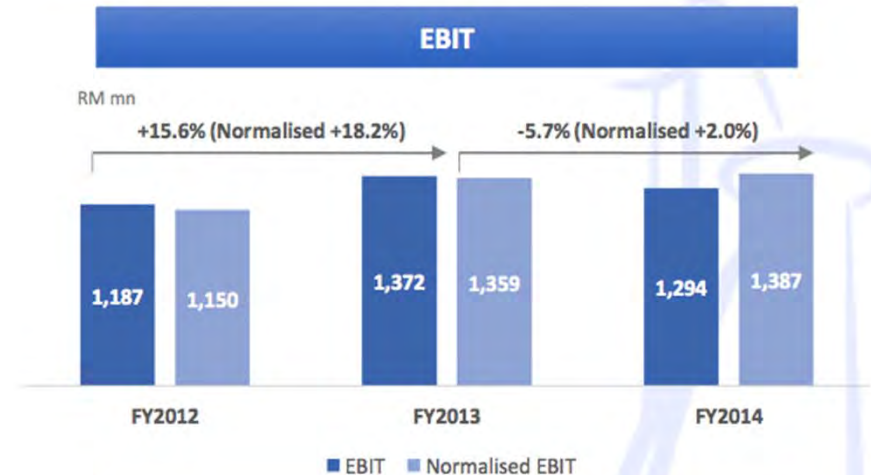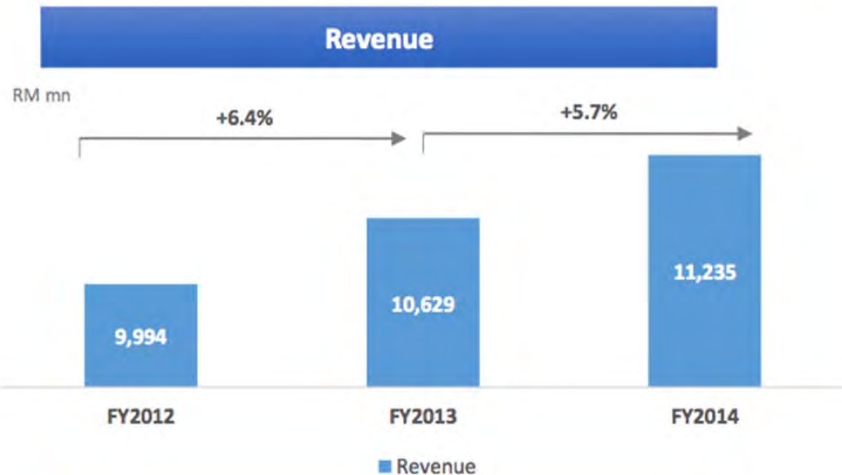**Phase 2 of the HSBB rollout is underway**

- In the 2014 budget, the Malaysian Government allocated RM 3.4 billion for phase 2 of the HSBB rollout (known as HSBB2). This was announced in February 2015.

- Of this, RM 1.8 billion will be spent on expanding coverage in mainly urban areas to benefit 2.8 million households. Another RM 1.6 billion will be spent on expanding the HSBB to suburban areas, with Internet access speed increasing to between 4 and 10 Mbps for ~2 million customers.
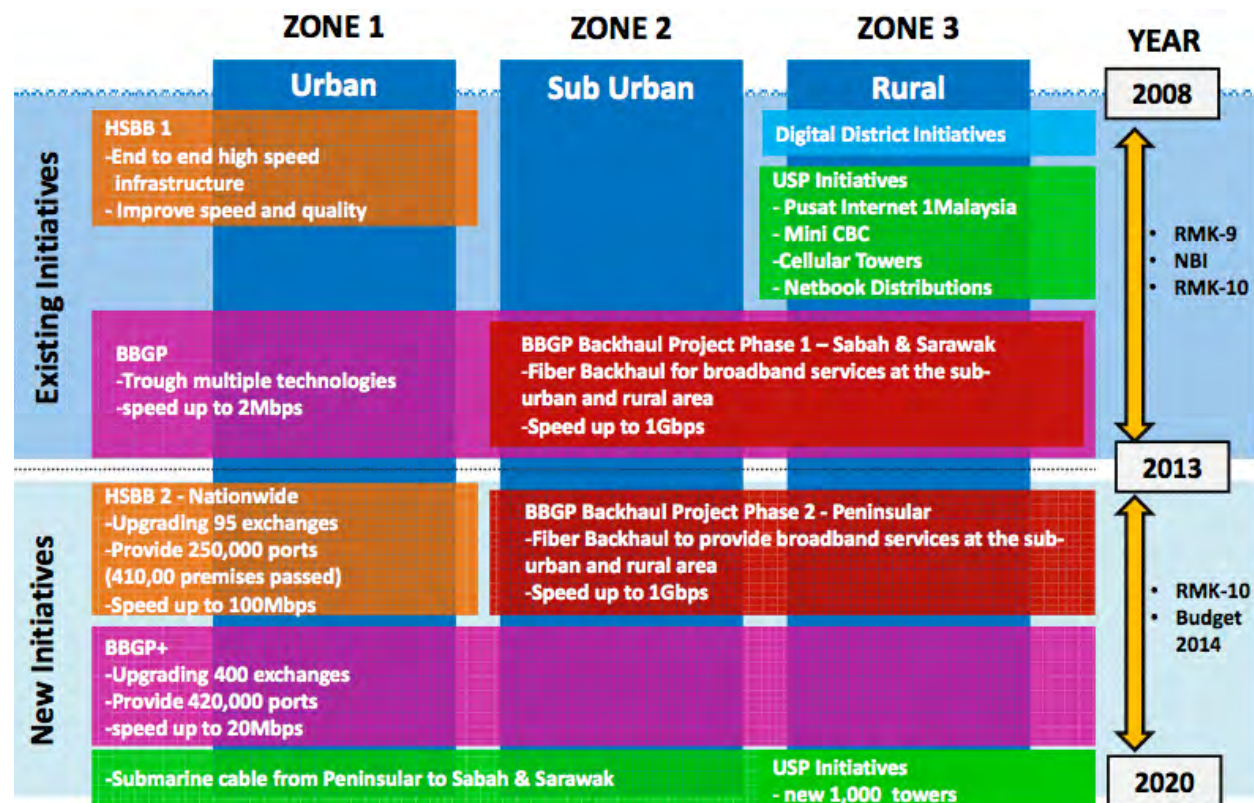
Source:
www.thestar.com.my/Business/Business-News/2013/10/26/Broadband-phase-2-set-to-take-off-RM34bil-allocated-for-HSBB2-to-reach-more-households-and-deliver/?style=biz
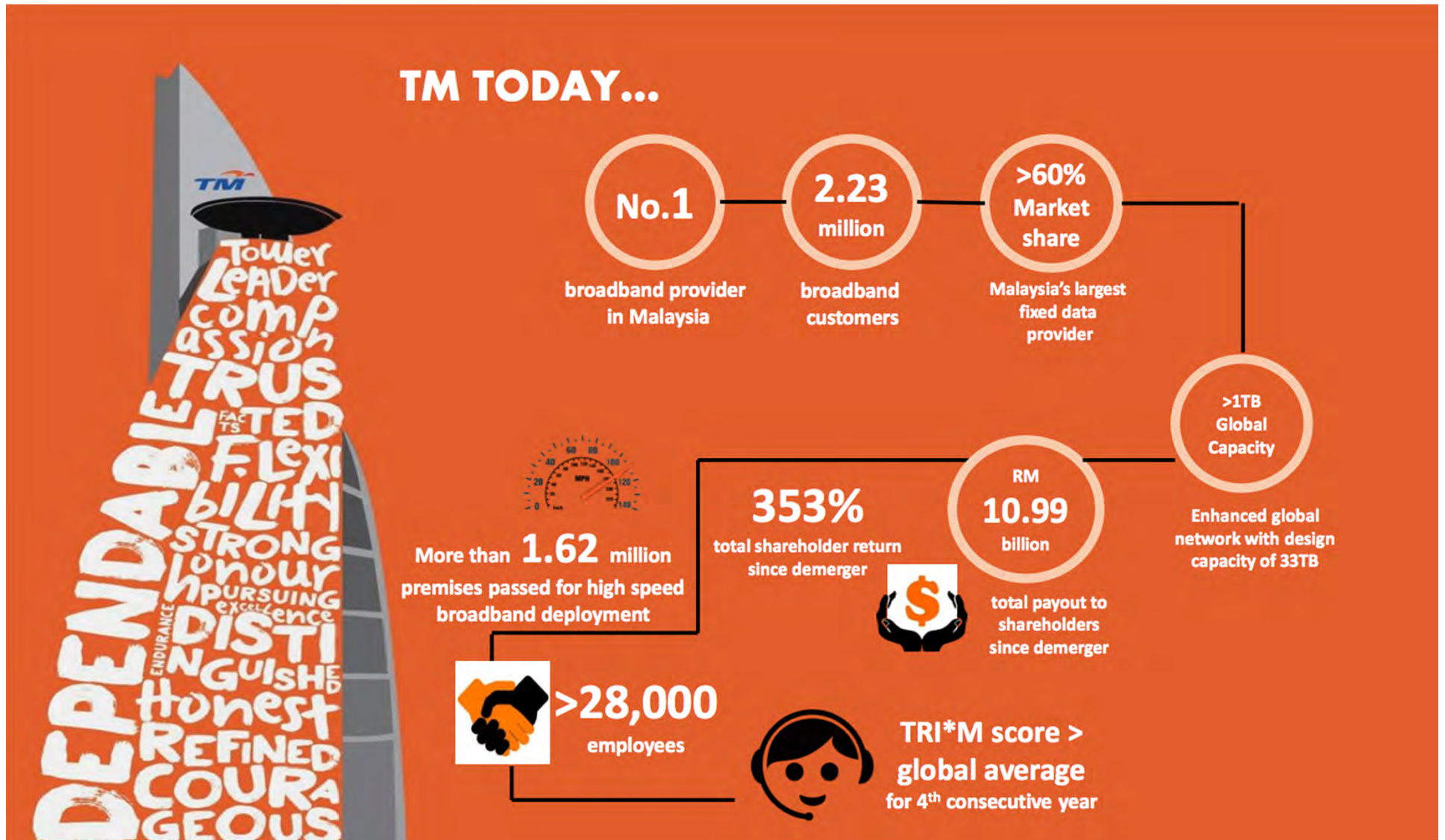
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3. Regional examples on how to transition the fixed incumbent – Malaysia (4)

Group Results: 3-Year Performance

Revenue (RM mn)

- FY2012: 9,994
- FY2013: 10,629 (+6.4%)
- FY2014: 11,235 (+5.7%)

EBIT (RM mn)

- FY2012: EBIT 1,187 / Normalised EBIT 1,150
- FY2013: EBIT 1,372 / Normalised EBIT 1,359 (+15.6% (Normalised +18.2%))
- FY2014: EBIT 1,294 / Normalised EBIT 1,387 (-5.7% (Normalised +2.0%))

EBITDA (RM mn)

- EBITDA Margin: FY2012 31.8%, FY2013 32.9%, FY2014 31.9%
- Normalised EBITDA Margin: FY2012 31.6%, FY2013 32.7%, FY2014 32.8%
- FY2012: EBITDA 3,233 / Normalised EBITDA 3,196
- FY2013: EBITDA 3,532 / Normalised EBITDA 3,159 (+9.2% (Normalised +10.1%))
- FY2014: EBITDA 3,636 / Normalised EBITDA 3,725 (+2.9% (Normalised +5.9%))

PATAMI (RM mn)

- FY2012: PATAMI 1,264 / Normalised PATAMI 881
- FY2013: PATAMI 1,012 / Normalised PATAMI 1,039 (-19.9% (Normalised +17.9%))
- FY2014: PATAMI 832 / Normalised PATAMI 941 (-17.8% (Normalised -9.4%))

Note: Unless stated otherwise, all figures shall be inclusive of P1

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4. Closing remarks

- Securing the transformation of the Thai economy into a digital economy requires delivery on the five pillars, namely hard infrastructure, service infrastructure, soft infrastructure, digital economy promotion and digital society promotion. **This is not easy and will be ongoing.** If this can be done there are a number of substantial benefits for the Thai economy and society

	Economic Development Policy	Social Equity Policy
Objective	• Accelerate productivity, international competitiveness, facilitate economic growth and carbon reduction	• Improve social equity, access to connectivity services
Emphasis in Digital Economy	• High Speed Broadband in high value economic zones including Bangkok to compete against KL, Singapore, HCMC	• Ubiquitous access to basic/wireless broadband at affordable prices
Necessary Regulatory Settings	• Incentivise investment by ensuring adequate return on high speed broadband investment	• Secure digital dividend spectrum @ 700 MHz spectrum at reasonable cost • Subsidies for high per user cost rollout • Possible Infrastructure bonds with Government guarantee to reduce cost of financing

A possible partnership between TOT/CAT and Government

Thank you

I am happy to answer any questions

ITU Wireless Broadband Masterplan report (2012)

The Generic Guidelines provide a recipe for the development of a Wireless Broadband Masterplan that is best suited to the individual country's situation. A 'how-to' guide for countries like thailand in developing their Masterplans which include spectrum roadmaps.

Generic Guidelines address key differences across countries:
 ➢ Population size, demographics and geography
 ➢ Developed v emerging markets
 ➢ Legal and regulatory framework
 ➢ Market structure
 ➢ Spectrum management and allocation
 ➢ Technology availability and development
 ➢ Content industry
 ➢ Regional (ASEAN, SAARC, or Forum) and international commitments made

REGIONAL INITIATIVES – ASIA-PACIFIC

GUIDELINES FOR THE PREPARATION
OF NATIONAL WIRELESS
BROADBAND MASTERPLANS FOR
THE ASIA PACIFIC REGION

OCTOBER 2012
Telecommunication Development Sector

ITU