A Tale of Two ASEAN Markets

Insights on Thailand’s ICT spaces

Malaysian references

MATRADE Information and Business Matching Event

28 October 2015

Bob Fox – Chairman ICT Group – JFCCT
1. Many similarities in the two markets
2. Aspects of the Thailand market
3. Digital Economy policy & laws / Current developments in Thailand
4. Foreign Investment & Opportunities
Agenda

1. Many similarities in the two markets
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<table>
<thead>
<tr>
<th>Metric</th>
<th>Thailand</th>
<th>Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>68m</td>
<td>30m</td>
</tr>
<tr>
<td>Mobile subs</td>
<td>95m</td>
<td>46m</td>
</tr>
<tr>
<td>Mob pen</td>
<td>145%</td>
<td>152%</td>
</tr>
<tr>
<td>3G/4G as %</td>
<td>85%</td>
<td>48%</td>
</tr>
<tr>
<td>Broadband pen</td>
<td>8.5%</td>
<td>22.5%</td>
</tr>
</tbody>
</table>
## Two Markets - 1

<table>
<thead>
<tr>
<th>Thailand</th>
<th>Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still many foreign investment restrictions - but BOI, FBA permissions.</td>
<td>Some foreign investment restrictions – but MSC, Service sectors more open 2009</td>
</tr>
<tr>
<td>Three main mobile operators, negligible MVNO activity</td>
<td>More than 4 mobile operators, others, some MVNOs</td>
</tr>
<tr>
<td>4G (LTE) nascent, spectrum auctions later in 2015.</td>
<td>4G (LTE) launched some years ago</td>
</tr>
<tr>
<td>No regulated wholesale market, no structured broadband plan yet</td>
<td>Structured broadband market; effective wholesale market; structured broadband plan, rolled out</td>
</tr>
</tbody>
</table>
## Two Markets - 2

### Thailand

Merged regulator 2011 (no independent regulator – NTC – until about 2004). SOEs still have some quasi – regulatory functions. Not fully independent. Competition enforcement to be developed

- Digital Economy policy taking shape
- Large number creative local and foreign doing software development etc; also some government promotions

### Malaysia


- Digital Economy policy (by different name) in place for some time
- A government promoted software industry
## Two Markets - 3

<table>
<thead>
<tr>
<th>Thailand</th>
<th>Malaysia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some restrictions on international capacity (eg cable landing stations); single international internet policy. Higher cost of international capacity.</td>
<td>International connectivity a plus; lower cost of international capacity.</td>
</tr>
<tr>
<td>Industry wages lower</td>
<td>Industry wages slightly higher</td>
</tr>
<tr>
<td>Stable currency – for now</td>
<td>RM is currently down</td>
</tr>
</tbody>
</table>

JFCCT for MATRADE 28 Oct 15
Model ca 2010 – for Thailand

New 3-Layer Open Access
ICT National Broadband Network Model

1. Passive Companies
   - FiberCo #1 (derivative of TOT)
   - FiberCo #2 (derivative of CAT)
   - Mobile TowerCo #1
   - Mobile TowerCo #2
   - International Connectivity #1, #2,....?

2. Active Companies
   - Wireline Access #1
   - Wireless Access #1
   - Broadcast Access #1

3. Retail Service Providers
   - Fixed Ops
   - Mobile Ops
   - Others such as Govt and MVNOs

Source: Thailand National Broadband Network Committee
Malaysia – HSBB – targeted focus – TM view

Northern Economic Corridor Region
Ports: 100,000

Iskandar Malaysia & South Johor
Ports: 103,000

Sarawak
Ports: 26,000

Negeri Sembilan & Melaka
Ports: 25,500

Klang Valley
Ports: 1.23 million

Northern Economic Corridor Region
Ports: 100,000

Kuala Lumpur

Note: Graphics not to scale
Source: TM internal

33% household coverage & over 40% take-up in 5 years

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2013 BSA Global Cloud Computing Scorecard

Several countries have made marked improvements in the policy environment for cloud computing in the past year. These findings are based on the BSA Scorecard’s one-of-a-kind examination and ranking of 24 countries that account for 80 percent of the global ICT market.

7 KPIs

24 economies representing 80% of the world’s IT spend

Source: Business Software Alliance 2013

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I. Data Privacy
II. Security
III. Cybercrime
IV. Intellectual Property Rights
V. Industry-led standards & int’l harmonisation of rules
VI. Promoting Free trade
VII. ICT Readiness
Typical model in telecoms structure

One regulator only

Sound competition, interconnect & access regime

Many application service providers
More service providers
Fewer facilities-based network operators

Basis for an attractive, competitive effective industry
Layers in industry structure

Conceptually similar industry shape

Malaysia

Thailand

Singapore

CASP
ASP
NSP
NFP

First cat
Second cat (no network)
Second cat (w network)
Third cat

CSBO
SBO (I)
FBO
TBA Distinction amongst categories

Structure anticipated by the TBA is OK; but wholesale; enforced competition?
Agenda

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From concessions to licensing

3 major phases of Thai telecom liberalization

Phase 1: Monopoly
- 2 monopolistic operators (TOT for domestic telephony, CAT for international networks)
- Concession regime

The Old NTC & NBC Act
NTC was appointed
Licensing regulations were issued

Phase 2: Introducing competition
- Liberalized Internet and fixed line market
- No new mobile operator due to legal constraint

The New NBTC Act
NBTC is in place

Phase 3: Enhancing competition
- 3 licenses on 3G 2.1 GHz (though some concession contracts are partly existed)
- Auction on 4G spectrum will be delivered
- Strengthening consumer protection mechanisms

Auction on 2.1 GHz in October

Source: NBTC
High cost of concession

Transcend from Traditional Concessionaire Regime to Licensing Regime

Due to concessionaire regime, spectrum has not been injected into the Thai telecommunications for more than a decade.

First time in implementing auction according to NBTC Act (2010). Auction allows basis for fair and transparent spectrum assignment.

This spectrum auction is the first act in injecting spectrum supply where demand has been growing exponentially for almost a decade.

First milestone to transform from traditional concessionaire regime to licensing regime.

Source: NBTC
Mobile Market

THAILAND’S MOBILE OPERATOR MARKET SHARES Q4 2014

- dtac 28,50%
- true move 24,26%
- CAT 0,15%
- TOT 0,57%
- AIS 46,52%

Source: Yozzo with permission. Use of Yozzo data does not imply Yozzo endorsement of views.
There are about 30 MVNOs with Type 1 licences
Complexity of concessions + direct licensing

THAILAND’S TELECOM STRUCTURE

- **License ends 2015**
  - **900 MHz**
    - 17.5 MHz Bandwidth
  - **BTO contract ends 2015**
    - **AIS**
      - 17.5 MHz

- **License ends 2025**
  - **2100 MHz**
    - 15 MHz Bandwidth
  - **MVNO Wholesale contracts**
    - **MVNO**
      - 15 MHz

  - **Auctioned license**
    - **AIS**
      - 15 MHz

- **License ends 2027**
  - **2100 MHz**
    - 45 MHz Bandwidth
  - **Auctioned license**
  - **Auctioned license**

- **Ended 2013**
  - **1800 MHz**
    - 75 MHz Bandwidth
  - **BTO contract**
  - **Ended 2013**
    - **DPC**
      - 12.5 MHz

- **License ends 2025**
  - **850 MHz**
    - 25 MHz Bandwidth
  - **BTO contract ends 2018**
  - **Wholesale - Resell**

Source: Yozzo

Presentation by Yozzo Co., Ltd. • www.yozzo.com • March 2015
Agenda

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**Definition of Digital Economy**

The ‘digital economy’ is all economic activity mediated by software and enabled by telecoms infrastructure.

This includes core telecoms services such as **voice**, **messaging** and **data**.

The goods and services within the digital economy can be broadly grouped as:

- **intrinsically digital** – streaming video, ebooks, computing services, Facebook

- **substitutes for established equipment and services** – virtual private communications networks, security services, virtualised PBXs, and services delivered on-line (eg accounting, software, KBO etc)

- **marketing, sale, logistics etc of physical goods** – Amazon, eBay, Alibaba, Tarad.com, Pantipmarket

It also includes the role of governments in the development of infrastructure, services, and the enablement of people and of social and economic enterprise.
Digital Evolution Index

HOW COUNTRIES SCORED ACROSS FOUR FACTORS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)

STALL OUT

Netherlands

Finland

Denmark

Norway

France

Belgium

U.K.

Canada

Australia

Germany

Japan

Austria

Sweden

New Zealand

Ireland

U.A.E.

Korea Rep.

Singapore

Hong Kong

STAND OUT

Switzerland

Israel

Estonia

Malaysia

WATCH OUT

Portugal

Slovenia

Saudi Arabia

Poland

France

Hungary

Poland

Indonesia

Egypt

Kenya

Nigeria

Rapidly receding

Slowly receding

Slowly advancing

Rapidly advancing

RATE OF CHANGE IN DIGITAL EVOLUTION FROM 2008–2013

SOURCE DIGITAL EVOLUTION INDEX, THE FLETCHER SCHOOL AT TUFTS UNIVERSITY

HBR.ORG

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**Broadband – which model for Thailand?**

A new monopoly – no competition allowed? – eg NBN 1 Australia

A new fibre company – competition allowed? – eg NGNBN

Targeted development – eg HSBB Malaysia

Whichever model – needs a wholesale market to be cost effective.

Pooling of infrastructure may work IF facilities completion is allowed (policy should be a base network; backbone, backhaul is important.

Mobile broadband will continue to development in spectral efficiency

How will a government-run last mile policy work? What about private sector mobile?
Data Centres

Layers
- Secondary operator
- Primary operator
- Real Estate

Commercial returns exist – why a policy for government to build, own and even operate (operate other than possibly for some government functions)?

BOI promotion available.

Also needs backhaul, full international gateway liberalization and work permit, visa reform for it to work
# Digital Economy Laws – Thailand. Gaps in blue

<table>
<thead>
<tr>
<th>Ref</th>
<th>Name of Law</th>
<th>Purpose</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 1   | Frequency Act, aka NBTC Act                                               | Amends Frequency Act 2010, role of NBTC and how spectrum is issued.  | • Robust independent NBTC important;  
• ‘policy’ vs ‘regulation’.  
• Too much power to a committee |
| 2   | Personal Data Protection Law                                              | PDP law will affect all                                                | • Purpose should be about confidence in the jurisdiction and consumer protection,  
• Cross border insufficient; |
| 3   | Computer Crimes Act amendments                                            | Tighten CCA                                                           | Surveillance, record keeping?                                                            |
| 4   | Digital Development for Economy and Society                                | Consolidates into one law, these three laws:  
• Committee for Digital Economy and Society  
• Promotion of Digital Economy  
• Digital Development Fund for Economy and Society law | Policy making powers in a committee.  
What checks and balances?  
Establish National Digital Economy Promotion Committee and committee office  
Establish Digital Dev Fund for Economy and Society, DDF for E&S Committee. |
| 5   | Ministry, Department and Bureau Reform law                                | Reforms MICT into MoDE.                                               | Powers?                                     |
| 6   | ETA amendment.                                                            | Upgrade ETA / ETDA                                                     | Liabilities?                                 |
| 7   | Cybersecurity law                                                         | Due process?  
Establish NCSC, powers?                                               | s. 35 controversial.  
Note ‘trusted internet’ concepts. |
| 8   | Draft Royal Decree establishing ETDA                                      | Revises ETDA                                                          |                                             |
| 9   | Competition Law upgrade (missing)                                         | Promote and regulate completion.                                      | Should apply to telecoms sector. See separate paper on this. |
| 10  | Structural reform - Mandated access to wholesale services and infra from SOEs (missing) | Towards properly structured industry |                                             |
Recommendations- for Thailand

1. Two missing laws: Competition upgrade, evolution of industry and SOE

2. Too many powers concentrated in a committee

3. Government as enabler, facilitator, not as operator

4. NBTC needs to be and be seen to be effective, independent regulator and industry developer – transform to embrace new technologies and business models. NBTC should do spectrum planning, issuance

5. NBTC needs three clear dimensions of independence

6. All commercial spectrum issued by auction (pre-qual by beauty contest or other may be OK)

7. Multi-stakeholder model of internet governance. Trusted Internet aim
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Foreign Investment

Commercial Presence

1. Thai partner (eg 51% shareholder in company)

2. BOI promotion – eg software development, eCommerce, data centres, some cloud, TISO, BPO. Allows up to 100% foreign equity; also special software areas – Chiang Mai, Phuket

3. Permission for greater than 49% foreign equity – FBA licence

Supply via distributor

Direct on-line supply
Building blocks in the telecommunications industry – licensing perspective

Foreign equity limits

Under FBA
- Category 1 licensees
  - More cat 1 than 2, than 3.

Under TBA
- Category 2 licensees
- Category 3 licensees
  - Cost-based access to infra, backhaul etc

Category 1 licensees
Category 2 licensees
Category 3 licensees
## AFAS – Expected foreign equity levels

<table>
<thead>
<tr>
<th></th>
<th>Air Transport. e ASEAN. Healthcare. Tourism.</th>
<th>Logistics</th>
<th>All remaining Service sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>51%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>2010</td>
<td>70%</td>
<td>51%</td>
<td>51%</td>
</tr>
<tr>
<td>2013</td>
<td>70%</td>
<td>51%</td>
<td>51%</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td>70%</td>
</tr>
</tbody>
</table>

-------Priority sectors---------

Competition for skills and capital – will we be ready?

ASEAN Framework Agreement on Services
### Networked Readiness Index – ASEAN extracts

<table>
<thead>
<tr>
<th>ASEAN Member State</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>54</td>
<td>57</td>
<td>45</td>
</tr>
<tr>
<td>Cambodia</td>
<td>108</td>
<td>106</td>
<td>108</td>
</tr>
<tr>
<td>Indonesia</td>
<td>80</td>
<td>76</td>
<td>64</td>
</tr>
<tr>
<td>Laos</td>
<td>N/A</td>
<td>N/A</td>
<td>109</td>
</tr>
<tr>
<td>Malaysia</td>
<td>29</td>
<td>30</td>
<td>30</td>
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<tr>
<td>Myanmar</td>
<td>N/A</td>
<td>N/A</td>
<td>146</td>
</tr>
<tr>
<td>Philippines</td>
<td>86</td>
<td>78</td>
<td>86</td>
</tr>
<tr>
<td>Singapore</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Thailand</td>
<td>77</td>
<td>74</td>
<td>67</td>
</tr>
<tr>
<td>Vietnam</td>
<td>83</td>
<td>84</td>
<td>84</td>
</tr>
<tr>
<td><strong>Total economies</strong></td>
<td><strong>142</strong></td>
<td><strong>144</strong></td>
<td><strong>148</strong></td>
</tr>
</tbody>
</table>

2015:  Malaysia 32, Thailand 67
## Liberalisation of services – applied to ICT

<table>
<thead>
<tr>
<th>General</th>
<th>ICT – esp Info-Comms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberalise foreign equity limits</td>
<td>Probably in a structured way</td>
</tr>
<tr>
<td>Free movement of skills (talent).</td>
<td>Especially specialist skills (technical and non technical)</td>
</tr>
<tr>
<td>Sector specific changes and mandates</td>
<td>Permits, licences and operating rules not skewed against new entrants (local or foreign); remove targeted anti-foreign laws</td>
</tr>
<tr>
<td>Other sector-specific reforms</td>
<td>Structural change – access to facilities, query role of SOEs.</td>
</tr>
</tbody>
</table>
Foreign Dominance Notification

Applies to all cat 2 and cat 3 TBA licensees – an additional layer of regulation.

Most seem to cope with it for now, but if it’s enforced, would be very difficult for an investor and a deterrent. It can be a deterrent due to uncertainty.
Internet governance vital

Multistakeholder model works; top down (only) will not

Essential tool for business – we must be able to continue to have confidence in it.
Opportunities

Example of opportunities:

• See Digital Economy schematic: eGov; eCommerce; network and operational security; mobile broadband apps, SME Accounting; many other areas.

• Various enterprise business applications.

• Mobile services tools for operators.

• Infrastructure management

• Regulatory / competitive, services.

• Internet governance services.

• Others.

In making your investment, be aware of market and regulatory conditions, propose changes – your contribution to market development is most valuable and valued.
Robert Fox ("Bob") is Chairman ICT Group JFCCT, Vice Chairman ICT Group EABC and takes a keen regional interest in ICT / Digital Economy markets and policies.

He has served as a regional director for Asia Pacific for BT (British Telecom) and was group CEO of Time dot Com Bhd, then one of Malaysia’s largest listed companies. He has held regional director roles with a listed US broadband services company, with a consumer analytics company and now with a media technology services company. He has been involved with several tech start-ups.

He was one of the founders of Starhub Singapore, a member of the senior executive team to launch the UAE’s second telecoms operator, project director and main board (Council) member for Australia’s first and only full scale private university (now in its 26th year) and CEO of Australia’s first high end mail order company. He was with Baker & McKenzie as an attorney for some years. Qualifications include a masters degree from Stanford University Graduate School of Business and various listed board and technology management qualifications.
Thank you

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