



**Asia-Pacific  
Economic Cooperation**

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**2015/SOM2/TEL51/DSG/WKSP2/008**

Session 2

## **Thailand's Development Towards Sustainable Foundation of IoT**

Submitted by: Thailand



**APEC**  
PHILIPPINES  
2 0 1 5

**Workshop on Internet of Things Development for  
the Promotion of Information Economy  
Boracay, Philippines  
14 May 2015**



**Thailand's Development towards Sustainable Foundation of IOT**

14<sup>th</sup> May 2015



**TIME Consulting is a management and strategy consulting firm specializing in Telecom, Internet, Media & broadcasting and transformation to digital Economy.**

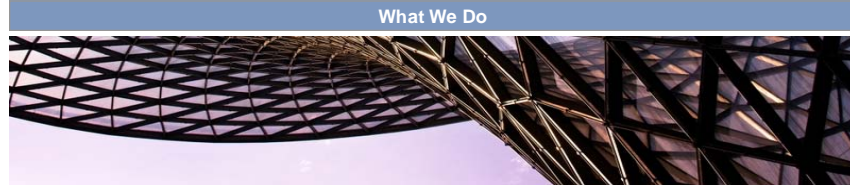
**TIME Consulting**



- TIME Consulting is a management and strategy consulting firm specializing in Telecommunication, Internet, Broadcasting, Media and Transformation to Digital Economy. We advise and help our clients to solve complex issues and overcome their challenges.
- Our consulting services cover a full range of spectrum; from high level strategy to hand on operational programs.
- Our fields of expertise include policy and regulation, business strategy, economics & financial accounting, technology consulting and digital transformation.



**TIME Consulting's main services are based on 3 pillars; strategy consulting, research services and capacity building in TMT and Digital industries.**



What We Do

**Strategy Consulting**

We provide consulting services in many areas of disciplines in TIME businesses. These include topics such as

- Business Strategy and Planning
- Sector Policy and Regulation
- Spectrum and Auction Support
- Technical Solution and Assessment
- Financial and Accounting Control
- Operational and Performance Management

**Research and Insights**

We also conduct research and insights for our clients. These could be in different forms for instance case studies, benchmark studies, business intelligent and market survey. Examples of our works are:

- Case Study: Infrastructure Sharing for Super High Speed Broadband
- Telecom Tariff Comparison
- Pay TV Market Intelligent
- Asia-Europe Regulatory Benchmark

**Digital Potential and Capacity Building**



We serve as a growth vehicle that drives enterprises that need digital transformation, and incubates digital startups and entrepreneur-minded people towards success in the age of digital

- Our programs are inclusive of
- Entrepreneur Boot camp
  - Intensive Excellency
  - Networking Events
  - In-House Transformation



**We have extensive experience in telecom and media/broadcasting business strategy, business modeling, competition analysis, regulatory and policy etc.**

Examples of Our Projects and Clients

Example



20+ projects

Development of Bottom-up Interconnection Costing Model for 2G/3G/4G

Evaluation of NBTC Performance according to the Telecom Master Plan

Business Case in Broadcasting Sector and License Fee Audit

Pay TV Competition Analysis and WMO Regulation

DTT Network Rental Price Strategies and Implementation

Workshop on New Challenges in Telecom Competition Regulation



**Role of internet is changing, from serving as a communication medium between humans, to enabling communication among devices and perform decision makings.**

### Paradigm Shift: Changing in Role of the Internet in IoT

**With IoT**

**Before IoT**

- Internet are to serve as a medium for communication among people.
- Devices and communication software and application enable the communication to happen through connectivity such as internet.

**With IoT**

- Internet still serve as medium for communication, but it expands the scope to communication between devices and simplify decision making process for users.
- For example, refrigerator that can track the information of foods stored and can give the alert when there are low in storage.

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**With IoT's components, from connect devices, collect data, access data, perform analytics, and deliver benefits, it is expected to create economic value of \$1.9 trillion.**

### How does the Internet of Things work?

1

**Connect Device**

- Electronics devices
- Smart devices

2

**Collect Data**

- Through sensors
- Through Storage

3

**Access Data**

- From server
- From Cloud

5

**Unique benefits**

- Ranging from tracking your running pace from wearable , connected cars, smart houses from connect home devices or even to smart cities idea.

4

**Complex Analytics**

- Analysis of big data

**Connected Devices Worldwide**

Year	Billions
2015	9
2020	30

Legend: ■ 2015 ■ 2020

- With IoT's components, it is **currently connecting up to 9 billion** devices worldwide and is predicted to connect roughly **30 billion devices by the upcoming 2020**.
- The connected devices are inclusive from wearable such as watches to connected cars.
- With the expected increment of connected device, it is **expected to contribute to an increase of \$1.9 trillion to the economics worldwide**.


Source: Goldman Sachs 2014 IDC 2015

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**Deploying disruptive technologies through implementing a complete IoT ecosystem is one of the path to develop and sustain economic growth for Southeast Asia countries.**

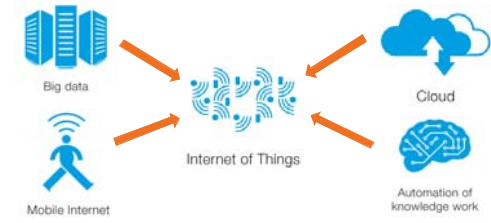
**Creating Sustainability in Digital Era**

**Southeast Asia Strategy**




- Five digital technologies, in particular, are poised to create substantial economic growth and societal change in Southeast Asia during the next decade: **the mobile Internet, big data, the Internet of Things, the automation of knowledge work, and cloud technology**

**Deployment of Disruptive Technologies**



These advances are all closely related and work in concert with one another. Through success Deployment of the 5 digital technologies mentioned are the basic foundation for Internet of Things ecosystem. With these digital technologies deployment, it is expected to **contribute up to \$625 Billion in annual economic value for Southeast Asia region.**






Source: McKinsey Global Institute 2014


**There are different stages of developing towards IoT or even further to IoE, Thailand is in the stage of M2M where devices are connected to simplify decision makings.**

**Where is Thailand towards IoT?**




**M2M**

- Devices are connected
- Captures an event and transmit over a network to an application
- Then an application translates it to a meaningful information



**IoT**

- Network of connected "things" that communicate
- Things are then able to act and decide without human interaction



**IoE**

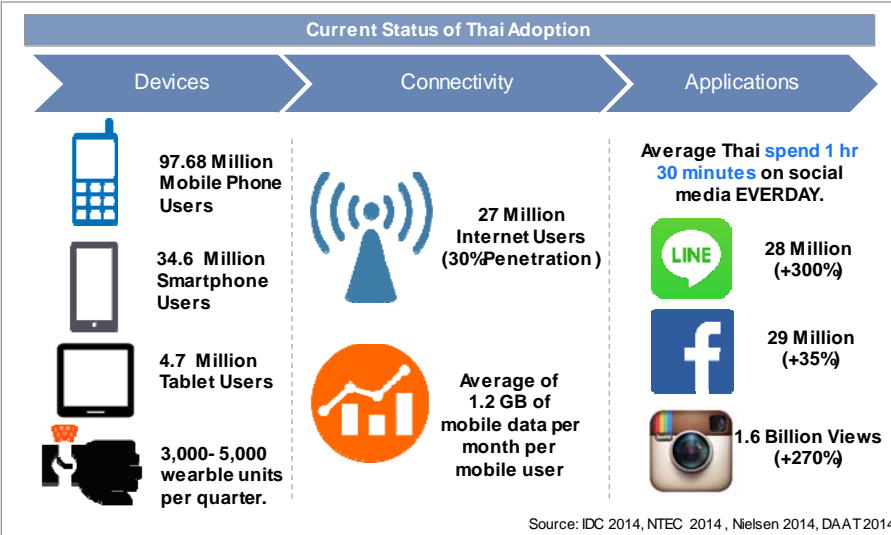
- Bringing together the people, process, data and things
- IoT are apply to the large scale and data collected is efficiently analyze and utilized.



Source: IDC 2014

W1

In Thailand, there is a very high ratio of adoption towards 3 main components of the M2M, inclusive of devices, connectivity, and applications usage.



Wearable devices domestic sales in Thailand increases by 30% to 3,000 - 5,000 units per quarter with smart watches and fitness bands leading the sales.



## Slide 9

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**W1** VMware = 30% only that goes digital, other still care due to security  
Windows 8.1, 5/6/2015


**Usage of NFC (Near Field Communication) and Tracking technology are being implement in varied industries from transportation, restaurants, postal, and banking.**

**M2M Thailand : NFC and Tracking technology**

**NFC Usage**

- Increasing usage of NFC (Near Field Communication) in transportation such as **BTS the sky train system and express system in Bangkok, restaurant in seats reservation and for banking.**

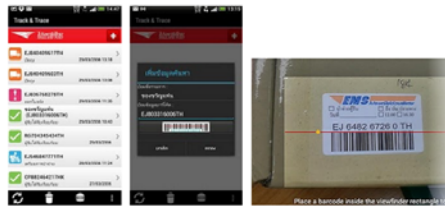
**NFC**



**Track and Trace**

- Thailand businesses are also using the track and trace technology through connecting sensors and barcode on packages to the application of the end users. One example is the track and trace services by the **Post Office Thailand**, by incorporating this technology the post office is able to enhance the customer experience and hence build up the customers relationship further.

**Track and Trace**

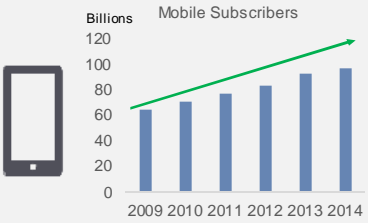




**With early adoption of M2M communication on Thailand, there is a potential increase in demand for mobile devices and mobile data usage in Thai telecom industry.**

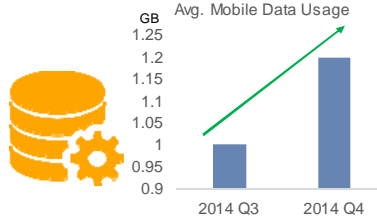
**How does it Affects Thai Telcos?**

**More Demand in Mobile Devices**



- People will have more incentives to purchase a mobile device such as mobile phones and tablets due to the expansion in its ability for M2M communications. With more M2M technology establish and implement, there will be more demand for mobile devices.

**More Demand in Mobile Data Usage**



- To be able to use M2M communication, the device connected must have connectivity such as mobile data like 3G or WiFi. With more M2M communication being available, there will be more usage of data occurred in Thailand.














W1

**Currently Thai 3 major operators are adapting through innovating their customer relationship channels, expanding service scope, and diversifying into technology.**

**How Thailand Telcos are adapting**

Innovate	Expand	Diversify
Innovating channels to enhance customers relationship such as application services.	Expanding the scope of their services, enabling communications, through starting to covers devices too.	Diversifying their investment on technology innovations by supporting startups community.
 <p><b>DTAC e-service app</b></p>	 <p><b>DTAC Eagle 5.0"</b></p>	
 <p><b>AIS Serenade app</b></p>	 <p><b>AIS Super Combo Pro</b></p>	
 <p><b>TRUE App Center</b></p>	 <p><b>TRUE Lenovo 4G 5.0"</b></p>	 <p>Sources: IMC 2015, IDC 2015</p>

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W1

**Aside from current adaption from Thai telcos, we also started to see M2M application being offered for corporates clients of Thai telcos such as in the case for DTAC.**

**Thailand Telcos towards M2M**

**Dtac TriNet to drive M2M in Thailand using Ericsson platform**

**How does it work?**

Dtac TriNet's enterprise customers gain the ability to monitor devices anytime and anywhere, access information quickly and accurately, and integrate easily into existing systems. dtac's current M2M offerings include smart metering and point of sales solutions, fleet management, logistics and delivery, personal tracking and mobile surveillance.

**Benefits to Enterprise**

- dtac TriNet gets greater flexibility and manageability in developing and delivering innovative machine-to-machine (M2M) products and services for enterprises through M2M connectivity as a service from Ericsson delivering higher work efficiency.
- Utilizing Ericsson's Device Connection Platform, dtac TriNet and its customers are able to deploy, manage and monetize millions of M2M and consumer electronics devices







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### Slide 13

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**W1** VMware = 30%only that goes digital, other still acare due to security  
Windows8.1, 5/6/2015


### Slide 14


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**W1** VMware = 30%only that goes digital, other still acare due to security  
Windows8.1, 5/6/2015

In response to larger scope of M2M communication beyond corporate. We also expect to see innovations for typical consumer similar to T-Mobile's eSim to take place

**International Case Study: T-Mobile's eSim**








**T-Mobile's M2M application : eSim**

**How does it work?**

- **Connected devices outside of smartphones** such as your car and navigation, mobile health and wearable , and other 'Internet of Things' device
- **Enabled always-on connectivity** for products and services through T-Mobile's nationwide network and international partners.

**Benefits to users**

- Save money of roughly \$2,400 per year for a **truck traveling between US and Canada**. As the roaming cost is about \$200 per month while slipping over the Canadian border.
- **Only offered to businesses and for Canadian travel**, but with a plan of expansion to empower the borderless ability of M2M.

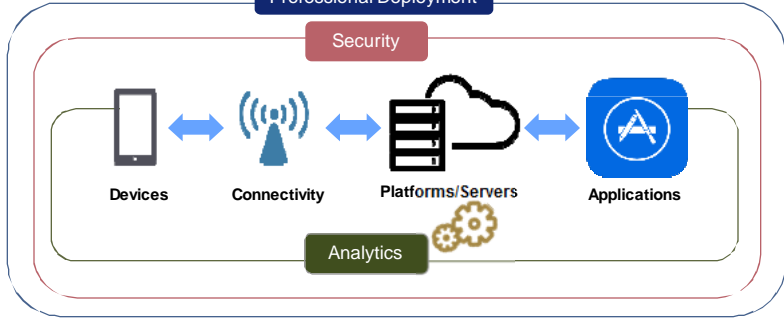

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With devices connected and communicated via M2M, Thailand can create a complete IoT ecosystem by developing analytics, security and deployment components

**Moving Thailand towards IoT**

Professional Deployment

Security



Security

Professional Deployment

Analytics


- With devices connected and transmitted bunch of data, how can we turn those data into meaningful information.

Security

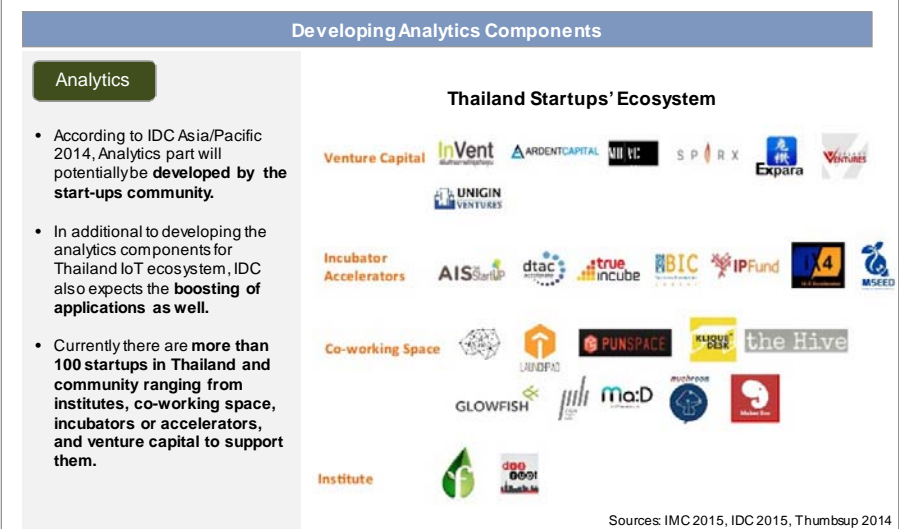
- After you have data acquired and analyzed, how do you secure those data so it doesn't fall for black market?

Professional Deployment

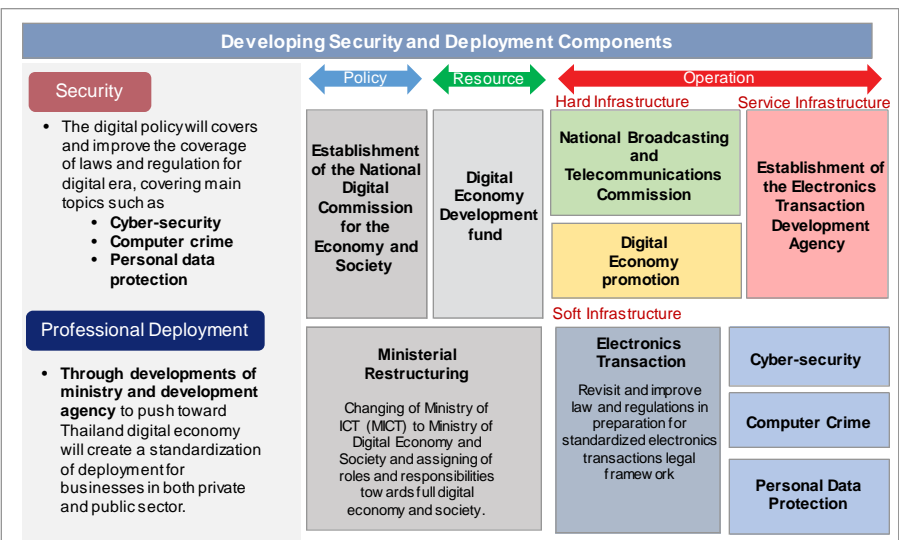
- This will then create an ecosystem for use in your businesses, how can you manage it to run at its best?


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**Analytics components are forecasted to be developed by startups community. Currently there are 100+ startups in Thailand along with a supportive ecosystem.**



**Thailand's draft digital economy policies covering legal, resource, and operation aspects will serve as a foundation towards security and deployment components.**



**Thailand's adoption of M2M, active startups community and digital economy policy are paving a concrete foundation of IoT, aiming for sustainability in the age of digital**

**Key Implications of Thailand Developments towards IoT**

**1 Digital Sustainability**

- To sustain economic growth in Southeast Asia, developing full ecosystem of IoT is needed as it is expected to contribute up to \$625 Billion in annual economic value for Southeast Asia region.



**2 Thailand's M2M**

- With Thailand established components of devices, connectivity, and application adoption, M2M communication are being increasingly use and implement by individual and corporates throughout Thailand.



**3 Developing IoT Components**

- In stepping towards complete IoT ecosystem, Thailand is still in process of developing analytics, security and deployment components, which will be supported by Thailand startups community and draft digital economy policy.



**For more information on our services, please visit our website at [www.timeconsulting.co.th](http://www.timeconsulting.co.th) or feel free to contact us!**

**Thank you and Please Contact Us for More Information**



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