

# Being Digital

**Bob Fox** Chair Digital Economy / ICT group

**JFCCT with EABC**

**Thai-Swedish Chamber 9 November 2017:**

**“Tools for Success in the Digital Economy: Winning by Being Digital”**

circulation version

JFCCT/EABC for Swecham 9 Nov 2017



# Agenda

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- 1) Being Digital
- 2) What is the Digital Economy, exactly?
- 3) Thailand 4.0 (what is an 'S' curve anyway?)
- 4) Transformation at personal, company, industry and economy-wide levels; skills development capacity building
- 5) a Trusted Internet
- 6) a world of platforms, applications and ecosystems (ePayments; Fintech; communication; managing work and so many more).

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# Being Digital

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Mid 1990's : bits and bytes – start appreciating big(ish) data

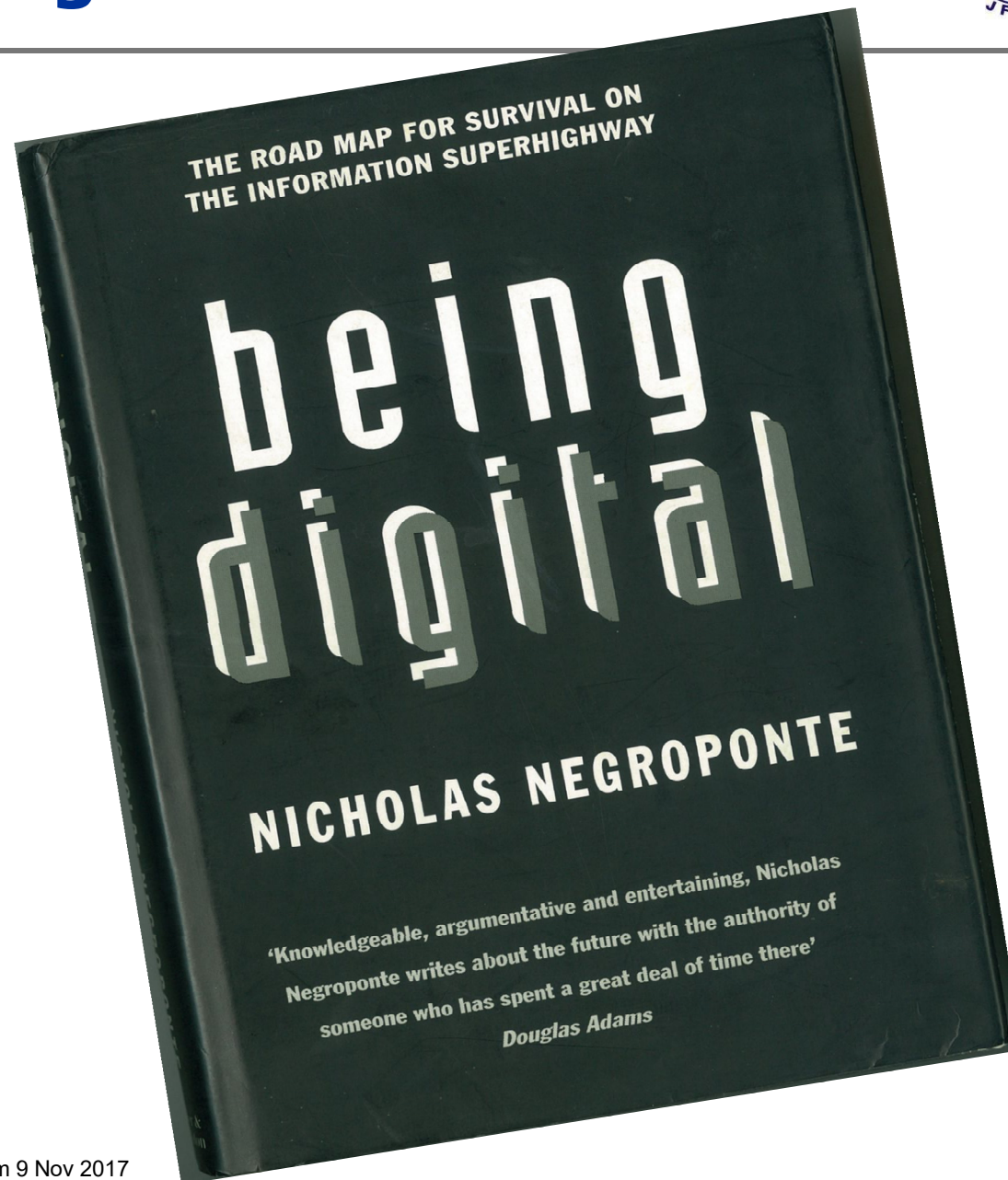
The opposite ?

Being analogue

Being off line

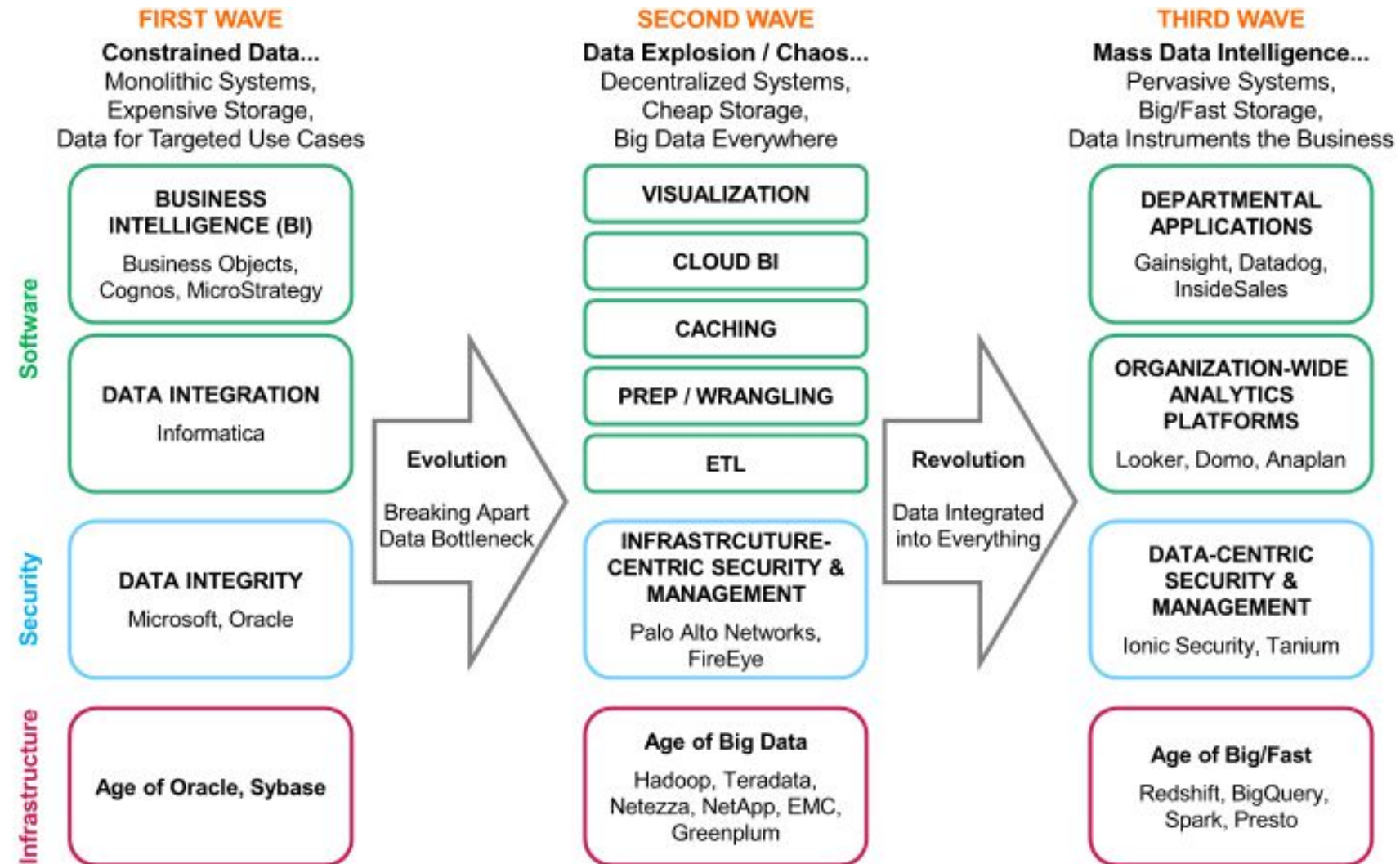
= not being able to participate or benefit.

# Being Digital



1995

# Evolution of Data 1996 - 2016



@KPCB

Source: Looker, Ionic Security, KPCB

KPCB INTERNET TRENDS 2016 | PAGE 4/11

Source: Mary Meeker, Internet Trends 2016

# Data as an asset

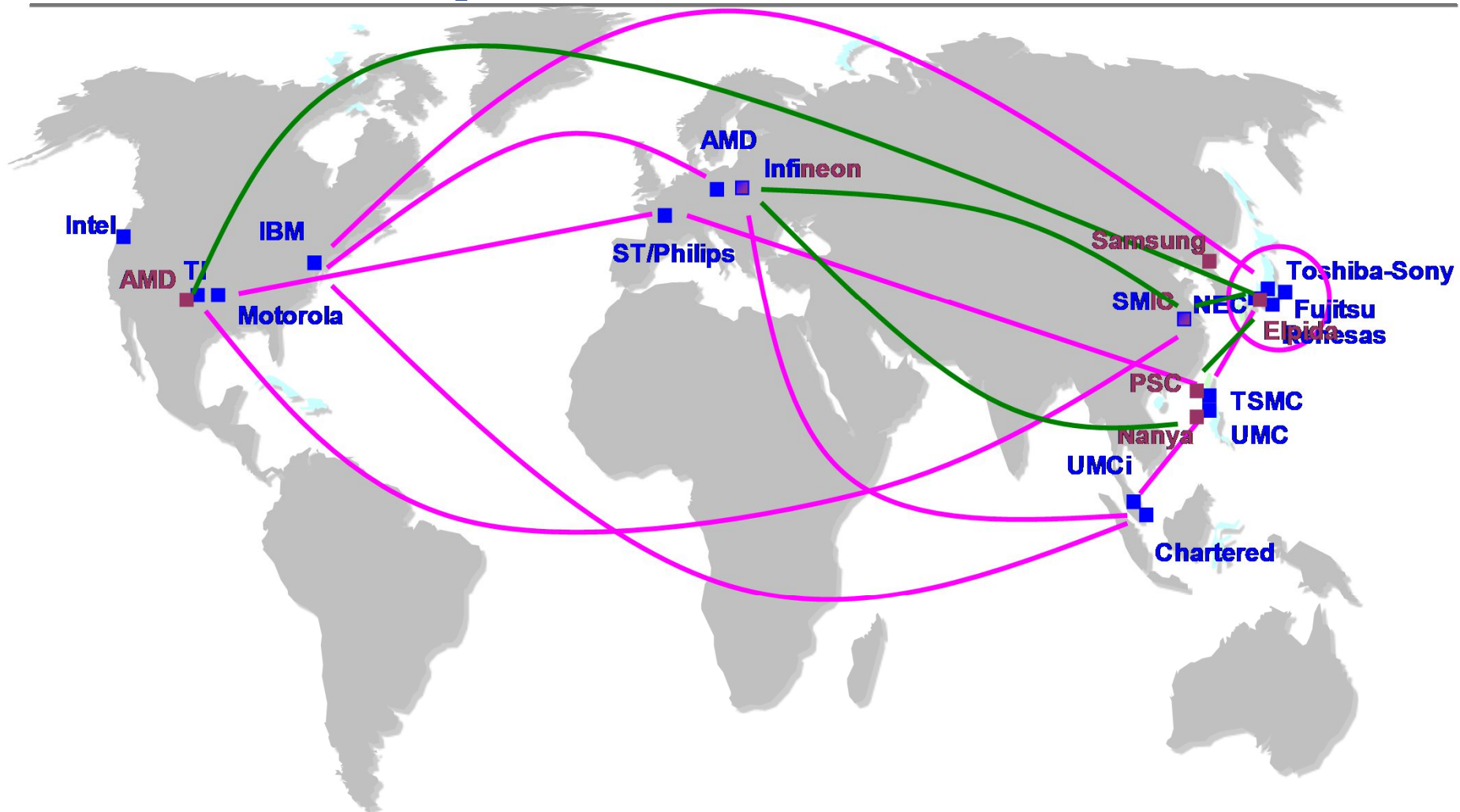


Digitization is transforming business models in ways that enable more cross-border activity

		Flow type				
		Data	Goods	Services	Finance	FDI
Cross-border implications of digitization						
Remote monitoring	Remote tracking	●	●			
	Remote maintenance	●	●			
Supply-chain management	Remote inventory management	●	●			
	Supplier management	●	●			
Access to global markets	Cross-border access to customers	●		●	●	
	Cross-border access to labor	●		●		
	Cross-border access to finance	●			●	
Business operations and strategy	Centralized back-office operations	●		●		
	Cross-border digital payments	●			●	
	Real-time communications and collaboration	●		●		
	Data sharing and analytics-driven decision making	●	●	●	●	●

SOURCE: McKinsey Global Institute analysis

# Multi-Region Production Partnerships



**Logic Technology/Production Partnerships/Consortia**

**Memory Technology/Production Partnerships**

Source:

William F Miller - Herbert Hoover Professor of Public & Private Management Emeritus, Stanford University

President and CEO Emeritus, Stanford Research Institute (SRI) International in 'New Regions of Talent & Innovation'



# Consumers' Top Privacy Concerns

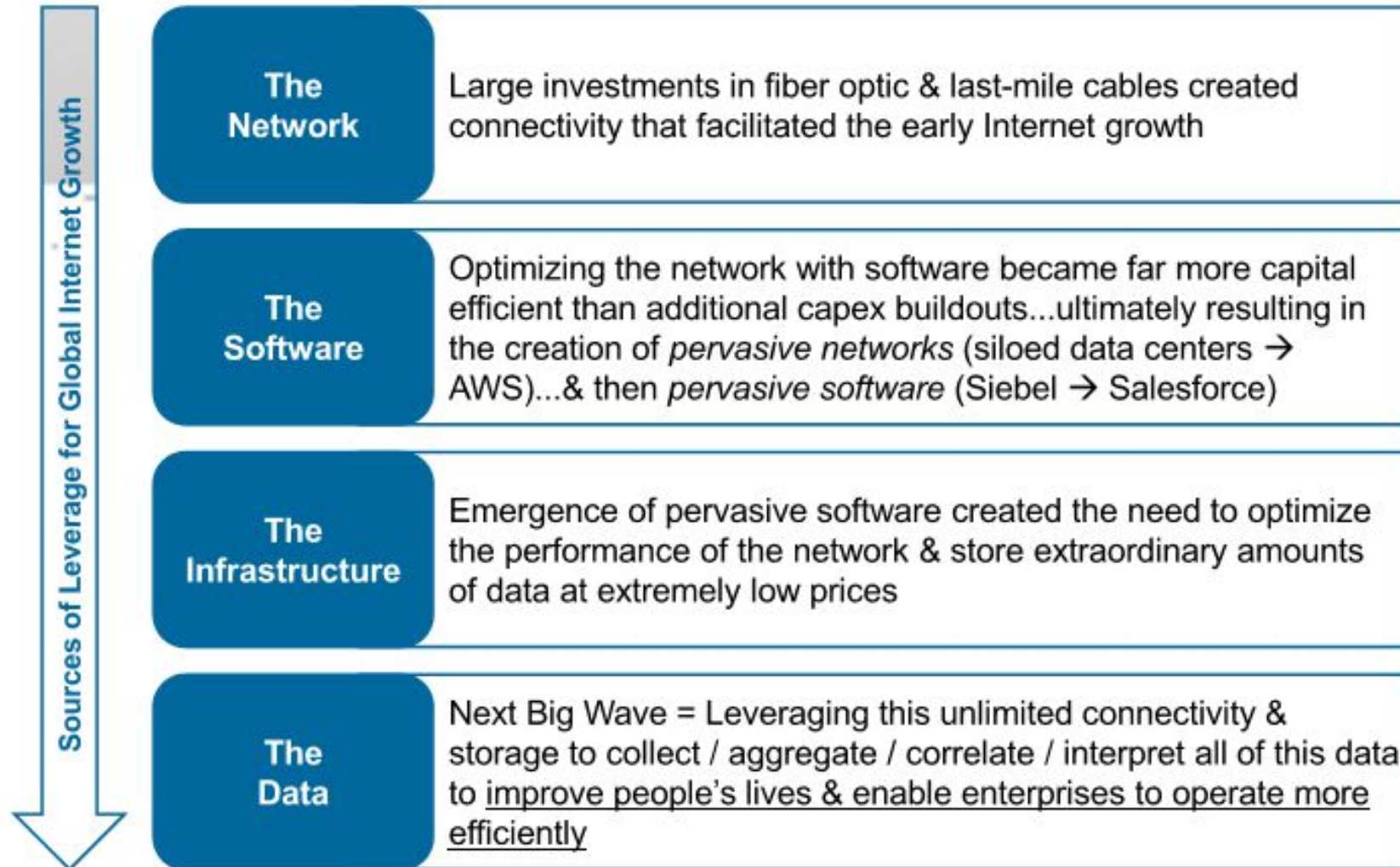
In the digital world, privacy is an economic, business, personal and innovation issue

## Rate Level of Privacy Concerns Across Each of the Following Ways Companies Interact with Personal Data, n = 2,062

(These percentages reflect all respondents who rated their privacy concerns on a 1-5 scale, with 5 = Extremely Concerned, 4 = Very Concerned, etc.)



# Data = A new growth platform



@KPCB

Source: Adam Ghetti, Ionic Security; Ted Schlein, KPCB

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Source: Mary Meeker, Internet Trends 2016

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# Digital Economy

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

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

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

- **intrinsically digital** – streaming video, ebooks, computing services, Software-as-a-Service, social media (e.g. Facebook, LINE)
- **substitutes for established equipment and services** – virtual private communications networks, security services, virtualised PBXs, and services delivered on-line (e.g. accounting / other business processes, graphic design, software development, Software-as-a-Service, data analytics, knowledge-based outsourcing)
- **marketing, sale, logistics, etc. of physical goods** – e.g. Amazon, eBay, Alibaba, Tarad.com, Pantipmarket

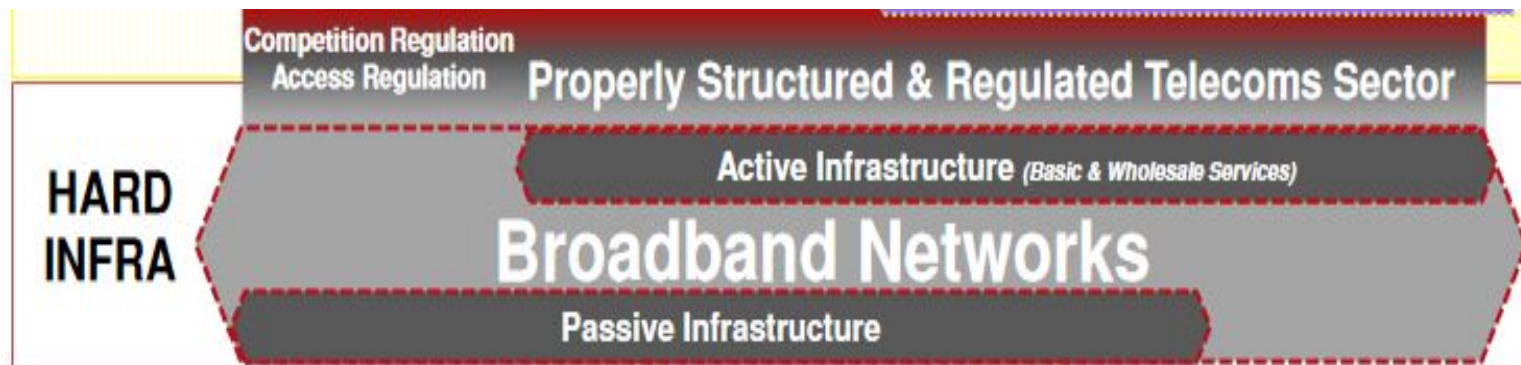
Digital Economy is the means of enabling participation by all in social and economic enterprise, and also includes the role played by governments in developing infrastructure and services.

**The definition recognizes the role of the telecoms industry – D.E. relies on an effective and efficient industry. Soft and hard telecoms infra is a critical success factor.**

# Digital Economy layers



Digital Economy works in 3 layers / building blocks;  
base layer:

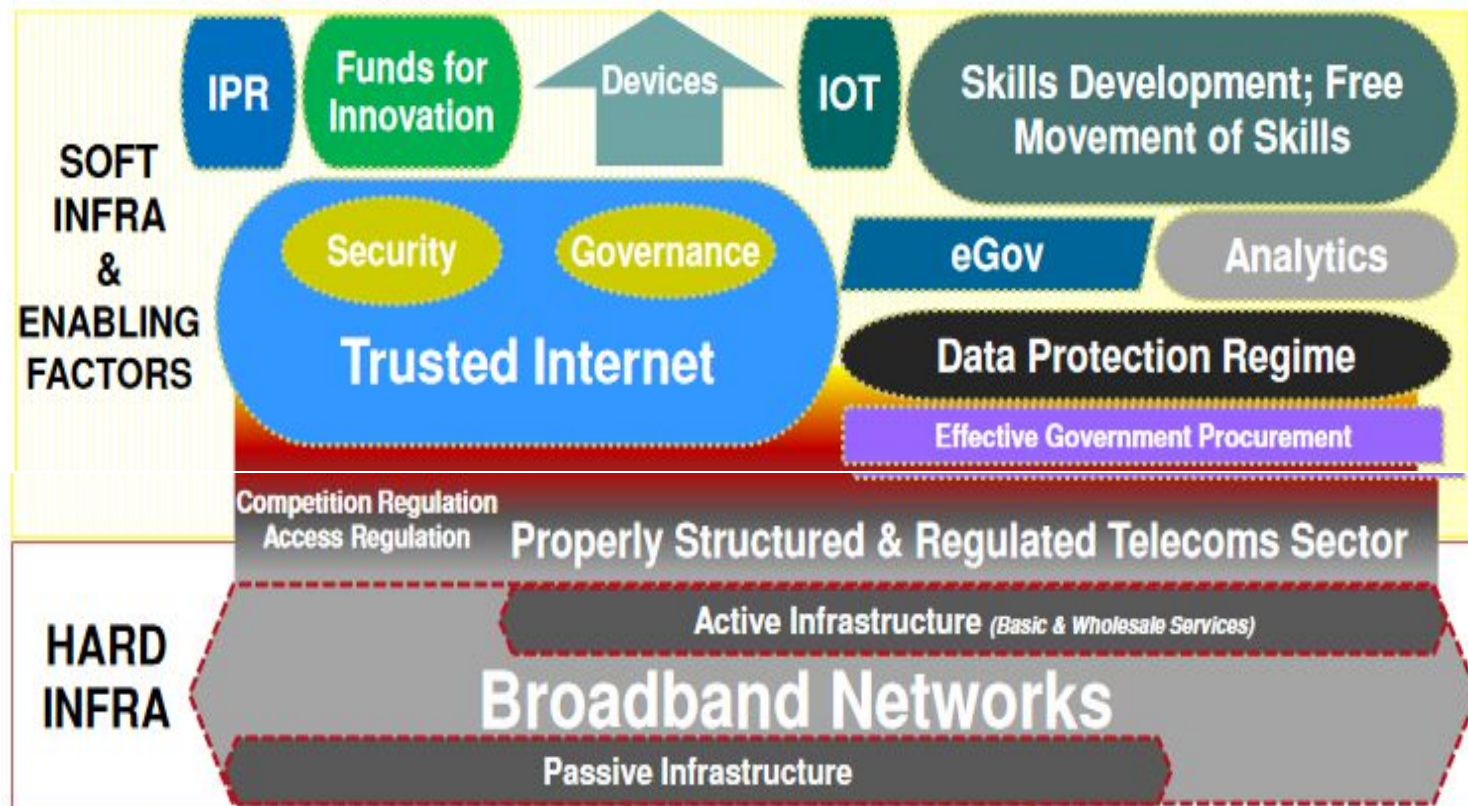


Digital Economy relies in Telecoms infrastructure (soft and hard)

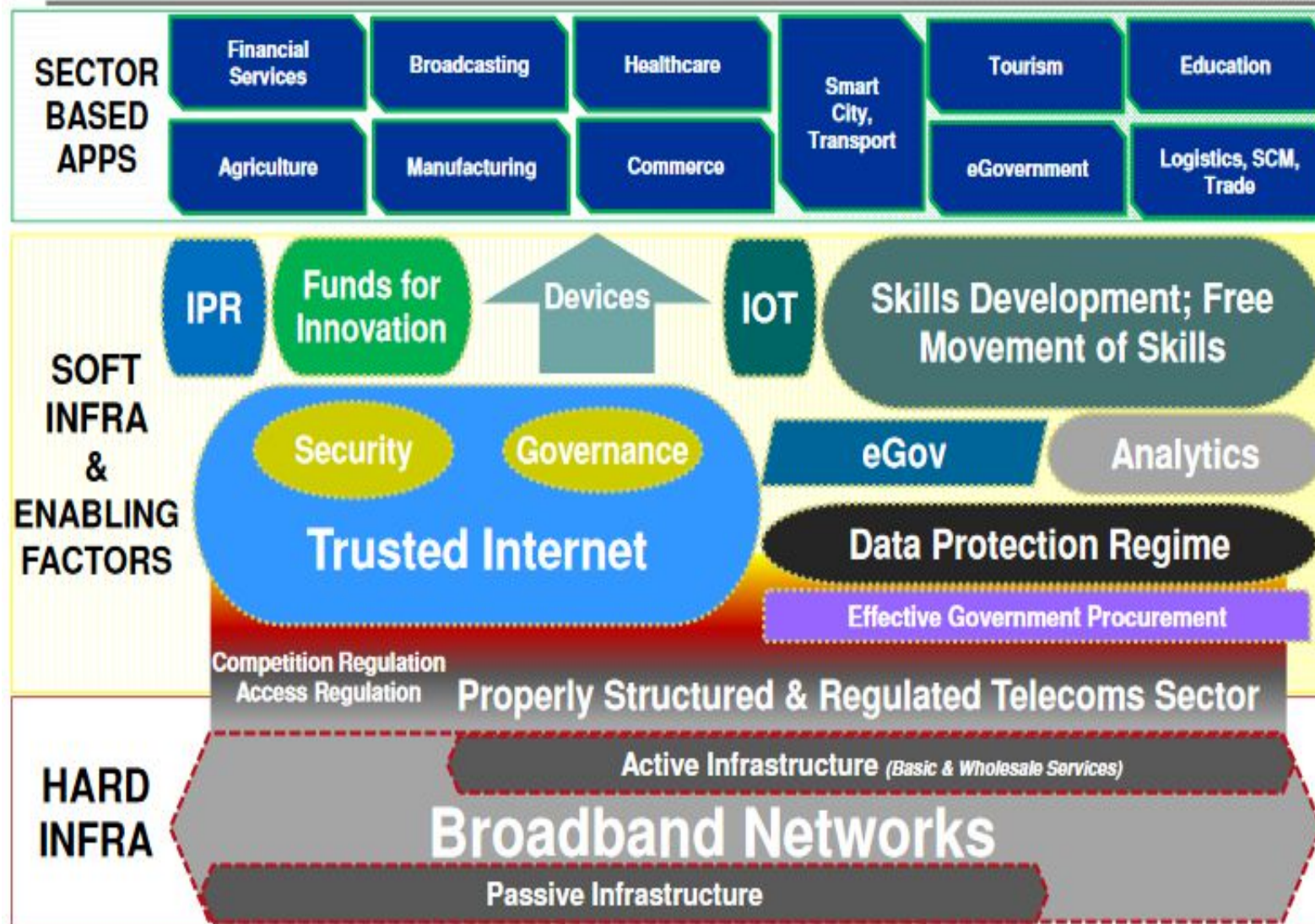
# Digital Economy layers



2<sup>nd</sup> layer added



# Digital Economy layers



All 3 layers

# Digital Economy

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# Networked Readiness Index (NRI) 2016



Thailand  
Ranking 62/139

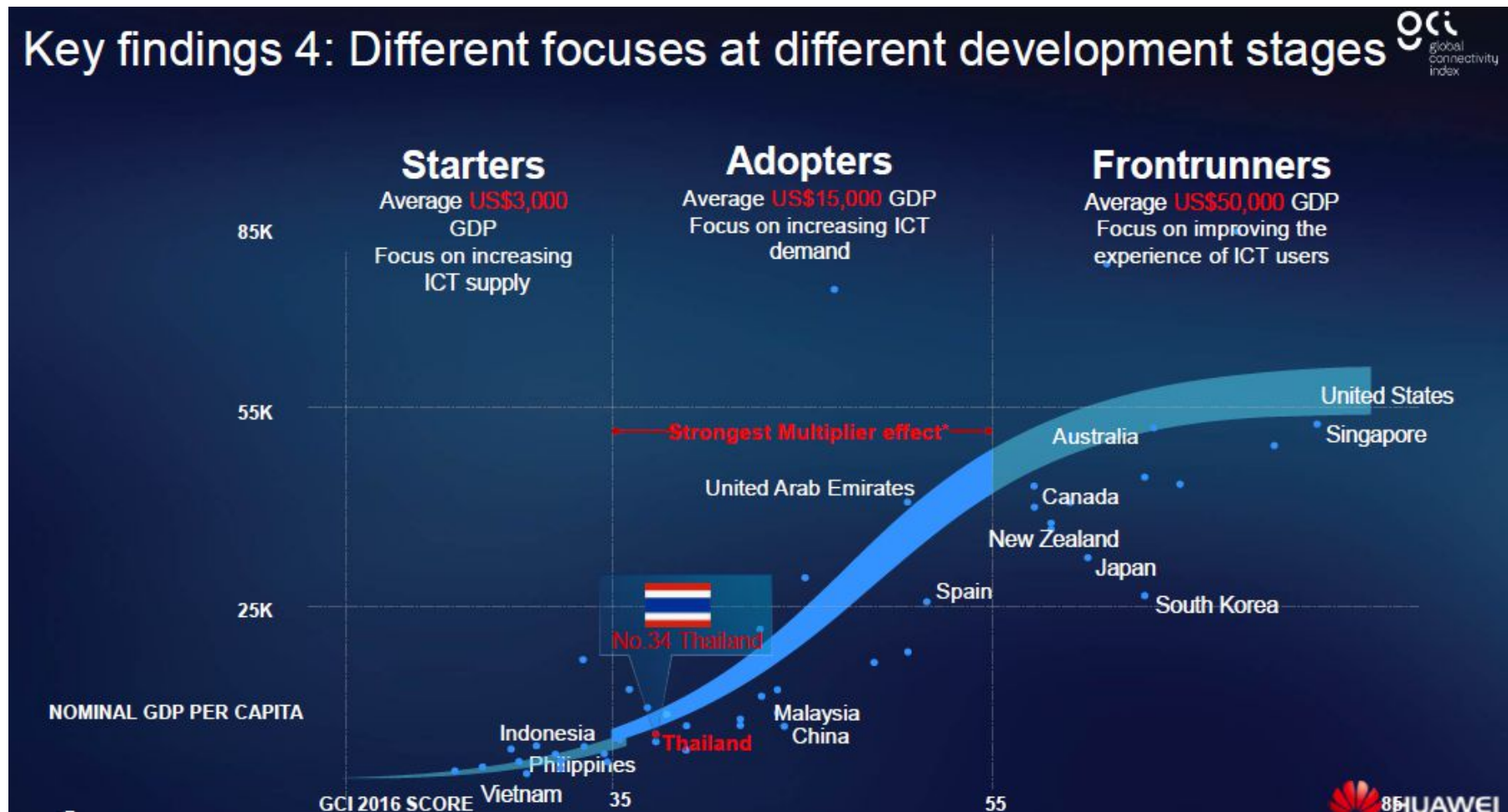


	Info	Rank / 139	Score	Trend	Distance from best
▼ Expand All Pillars					
<b>Networked Readiness Index</b> 1-7 (best)	ⓘ	62	4.2	—	■
Subindex A: Environment subindex 1-7 (best)	ⓘ	54	4.2	—	■
1st pillar: Political and regulatory environment 1-7 (best)	ⓘ	80	3.7	—	■
2nd pillar: Business and innovation environment 1-7 (best)	ⓘ	48	4.6	—	■
Subindex B: Readiness subindex 1-7 (best)	ⓘ	62	4.9	—	■
3rd pillar: Infrastructure and digital content 1-7 (best)	ⓘ	67	4.3	—	■
4th pillar: Affordability 1-7 (best)	ⓘ	64	5.5	—	■
5th pillar: Skills 1-7 (best)	ⓘ	73	5.0	—	■
Subindex C: Usage subindex 1-7 (best)	ⓘ	63	4.0	—	■
6th pillar: Individual usage 1-7 (best)	ⓘ	64	4.3	—	■
7th pillar: Business usage 1-7 (best)	ⓘ	51	3.9	—	■
8th pillar: Government usage 1-7 (best)	ⓘ	69	3.8	—	■
Subindex D: Impact subindex 1-7 (best)	ⓘ	65	3.7	—	■
9th pillar: Economic impacts 1-7 (best)	ⓘ	74	3.2	—	■
10th pillar: Social impacts 1-7 (best)	ⓘ	57	4.3	—	■

# Key features



50 countries, 40 indicators ; Thailand at 34/50



Source: Global Connectivity Index (Huawei) at 'Opportunity Thailand' 15 Feb 2017

# Truths about telecomms

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A Interdependent industry

Works in layers

Regulated: access to infra, competition

Global norms are as valid in Thailand as elsewhere,  
each has a local flavour

Competition on a level playing field:  
services, and  
facilities-based

# Which means..

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Away from rent-seeking, concession mindset (in Thailand we are now at Concession 3.0)

Independent regulatory authority

Regulation enforced

Wholesale market

Liberalisation mindset and policy

Make the industry work as a whole, unreformed  
SOEs should not be instruments of policy

# High cost of concession

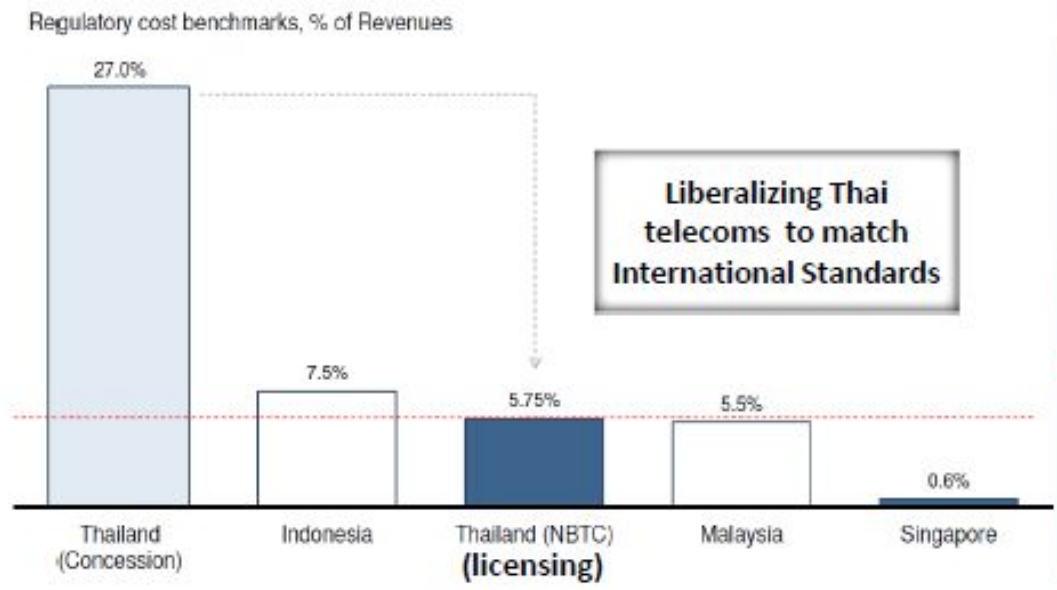
## Transcend from Traditional Concessionaire Regime to Licensing Regime

**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

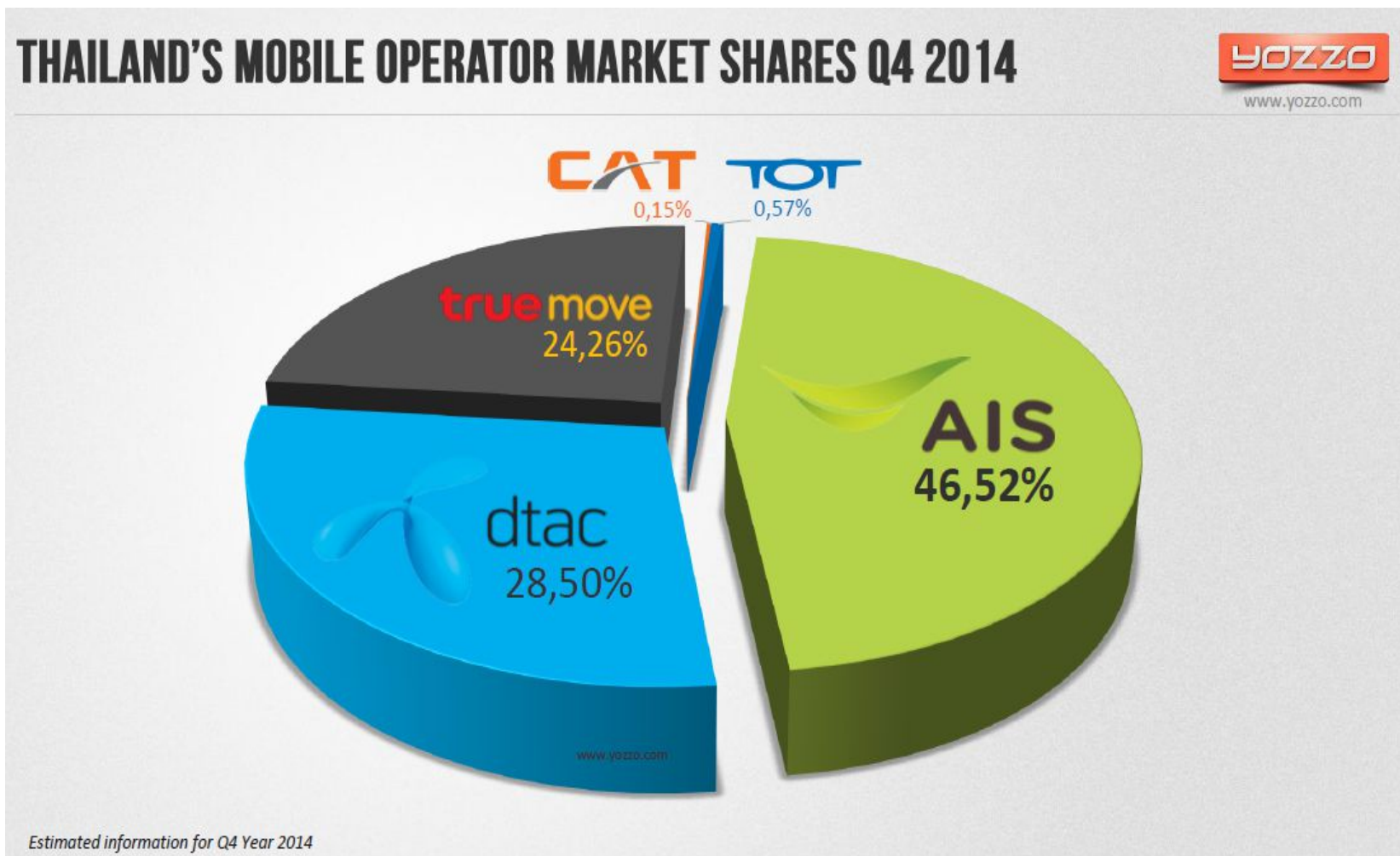
This spectrum auction is the first act in injecting spectrum supply where demand has been growing exponentially for almost a decade

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



Source: NBTC

# Mobile Market – why are SOEs doing retail mobile?



Source: Yozzo, with permission. (Some change in relative %s amongst the three since Q4 2014).  
Use of Yozzo data does not imply Yozzo endorsement of views or recommendations.

# Evolution of the SOE

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*Based on global experience and state practice – stages in evolution.*

- i) Government departments providing monopoly post, telephone and telegraph ('PTT') services
- ii) A separated regulator which become independent.
- iii) Corporatisation, often with postal services restructured to another entity
- iv) At least partial privatisation ***Stalled here about 2002-2003***
- v) Injection of different financial targets and seeking out value-adding roles
- vi) The reformation or restructuring of the SOE (more than just pooling certain asset classes)

***Many examples: TM, Telstra, Singtel, TM, NTT, BT, Oreedoo, Telenor***

# Role of SOEs 1 – Recommended policies

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Transform/evolve from instrument of national policy, to competitive, innovative network operator

Not holding the torch of competition to the SOE (stopping it going through a painful transformation) hinders efficiency gains in the whole industry, hampers cost effectiveness and innovation, holds back the 'hub' status; locks in, then destroys value

Should not be able to block/ influence spectrum allocation

Focus on strengths: infrastructure, local fixed



## Role of SOEs 2 – Recommended policies



Global experience shows that this is a difficult but necessary process. It is still not being addressed in Thailand.

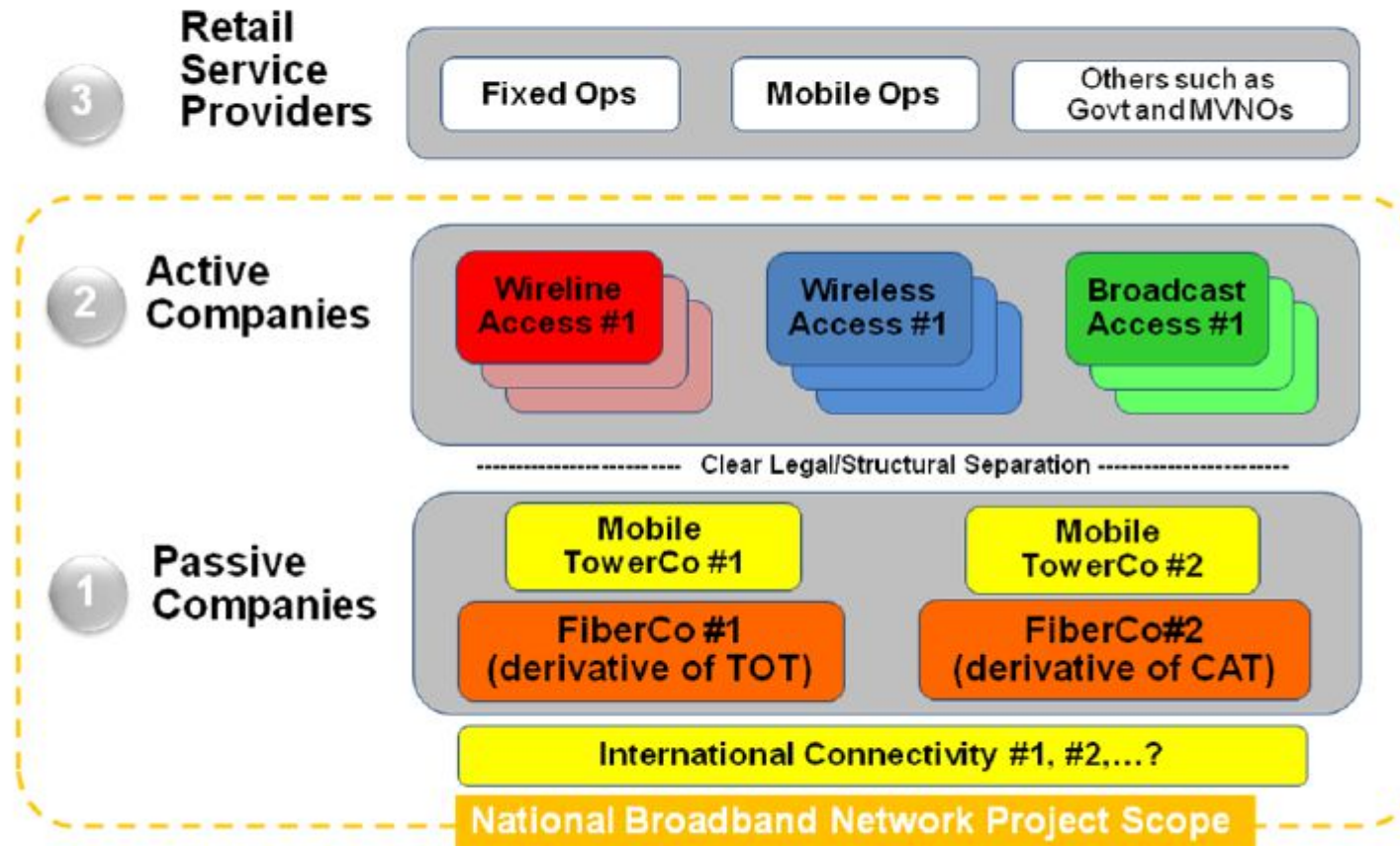
We see a missing to cover this. Needs:

- Company alone cannot do this (needs political will)
- Focus of SOE strengths -- strategy on wholesale, infrastructure and base fixed services supply
- Do not pursue retail mobile – exit from that space
- Industrial issues: all personnel should have a job – but invest retraining, re-skilling; transfer elsewhere as necessary
- Become directly licensed by NBTC on fair terms for all

# Model ca 2010 - Thailand



## New 3-Layer Open Access ICT National Broadband Network Model



Source: Thailand National Broadband Network Committee

We need something like this....

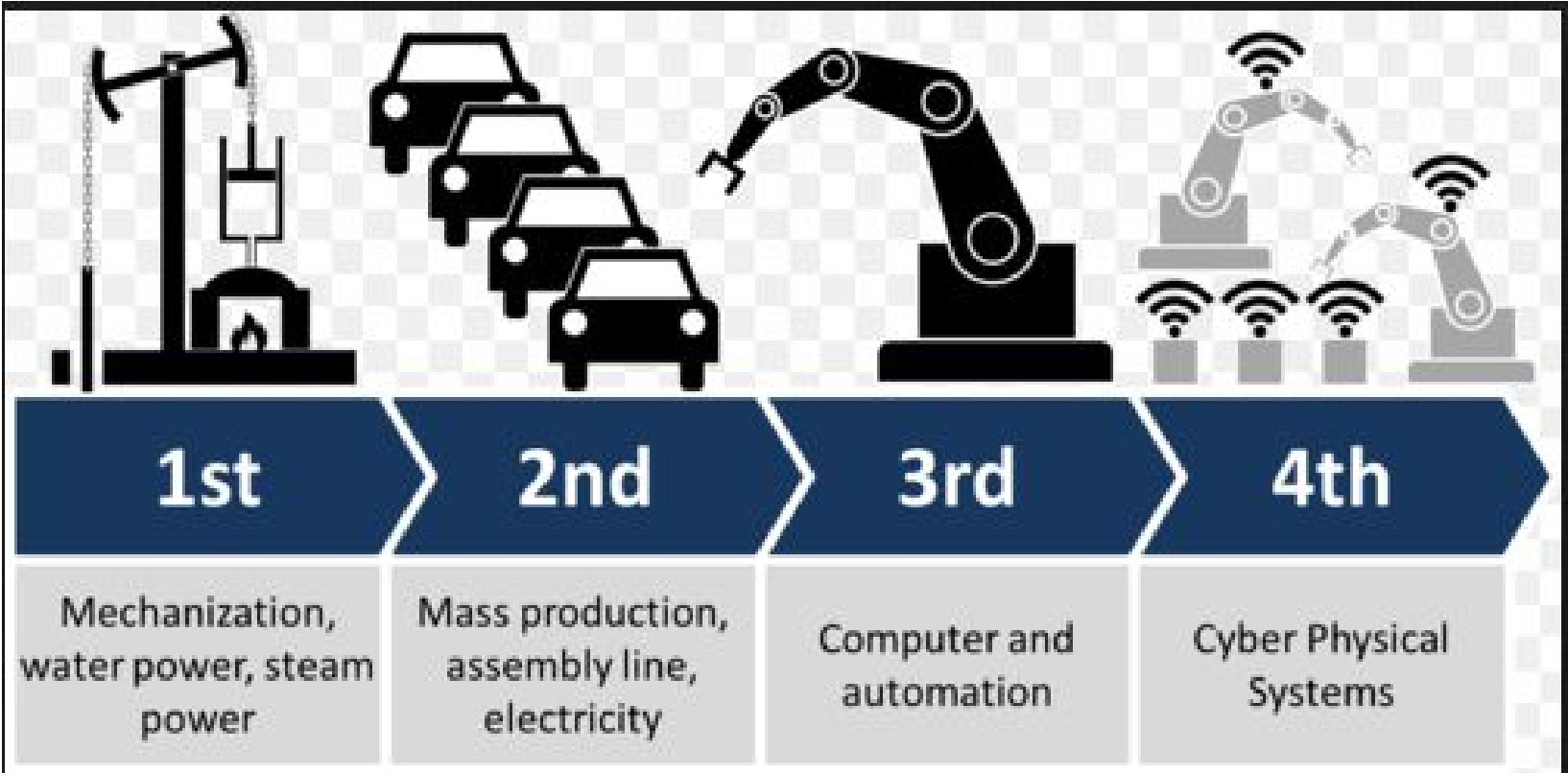
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# Industry 4.0



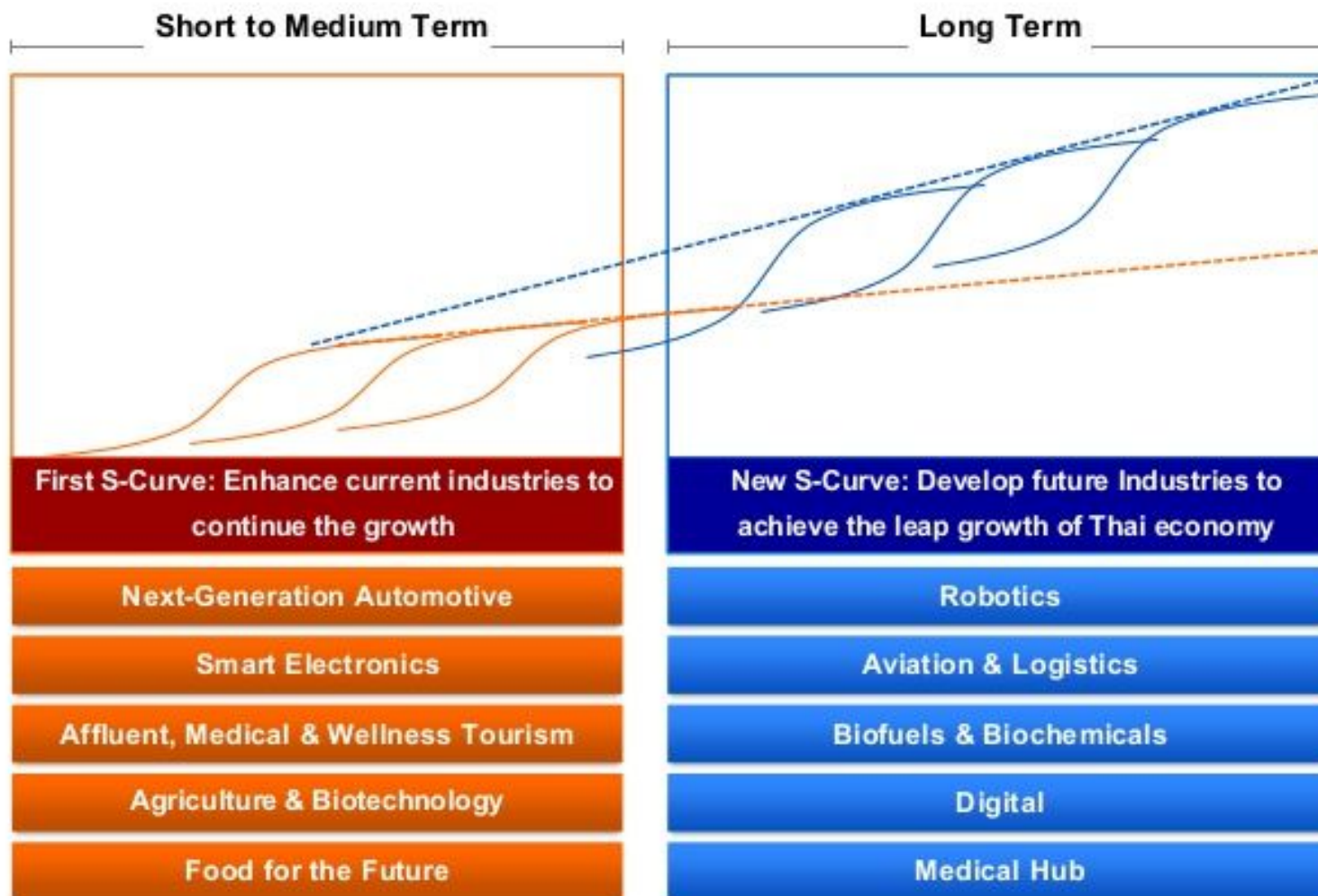
Trend of automation and data exchange in manufacturing technologies. Includes cyber-physical systems, IoT; cloud computing

Industry 4.0 implies higher skills in the economy, pervasive digital literacy, use of big data, analytical skills

# S curve



## 5 + 5 TARGETED INDUSTRIES



# EEC – focus of S curve investment 1



## Most investment in EEC will come from expanding existing S-Curve industries

S-curves	Investment	Nature of Investment	Reasons
Next-generation automotive		Assembly of hybrid cars, not BEVs, are likely to happen, creating opportunities for supporting industries	Frontier products will be produced in developed countries or large markets such as China
Smart electronics		Only firms with existing production facilities are likely to expand investment	There are little additional tax incentives to locate in EEC
Affluent & wellness tourism		More investment in tourism and related business is likely to happen	Expanded U-Tapao airport will facilitate traveling
Agriculture & Biotech		Only firms with existing production facilities are likely to expand investment	There are little additional tax incentives to locate in EEC
Food for the future		Only firms with existing production facilities are likely to expand investment	<ul style="list-style-type: none"> <li>• Many firms have already invested in Food Innopolis</li> <li>• There are little additional tax incentives to locate in EEC</li> </ul>

# EEC – focus of S curve investment 2



Among the new S-Curve industries, investments can be expected in only aviation MRO & logistics services

S-curves	Investment	Nature of Investment	Reasons
Industrial robotics		Very limited investment is expected	There is too small domestic demand for industrial robotics investment
Biofuels and Biochemicals		Limited investment is expected	Thailand has limited capacity to develop advanced biofuel. Bioplastic is not cost competitive
Integrated healthcare		Limited investment is expected	<ul style="list-style-type: none"> <li>Service opportunities could arise if foreign medical professionals are allowed to practice</li> <li>There are little incentives for production in EEC. Fast-track drug approval by FDA is crucial</li> </ul>
Digital business		Very limited investment is expected	There is little rationale to locate in EEC except for faster internet connection
Aviation and logistics		Possible investment from big players, including Airbus and Lazada	Demand is real due to location advantage. Supply for qualified technicians will be a bottleneck

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# Transformation

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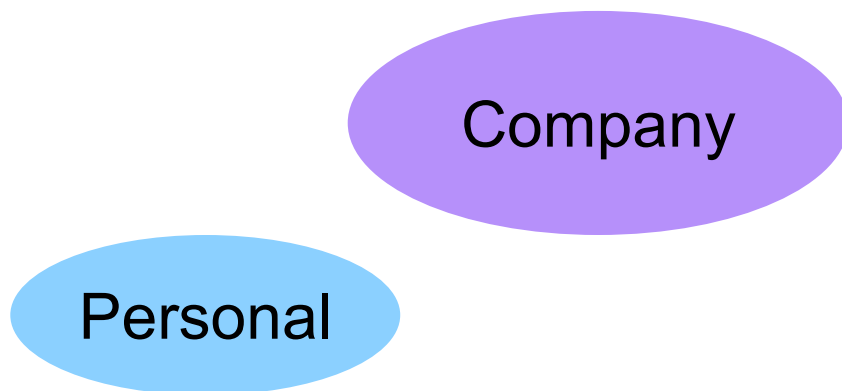


## Personal

How we behave, how enquiring we are; how prepared we are to innovate; how skilled we are; At the personal level all this impacts our company.

# Transformation

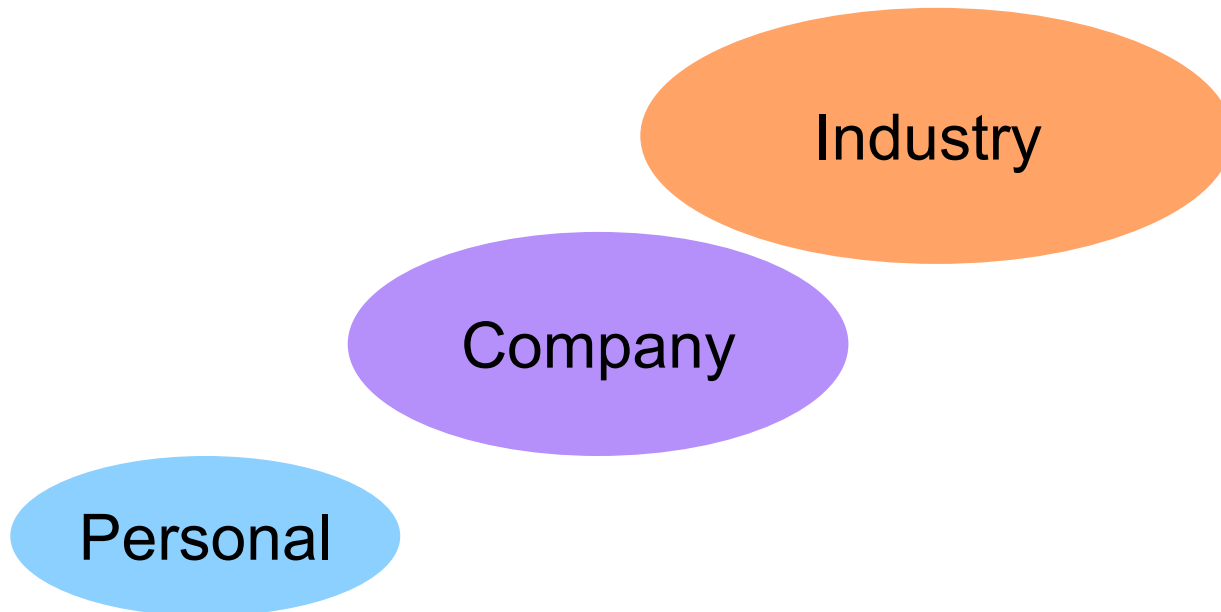
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How our company can contribute and excel; impacts the industry and the economy

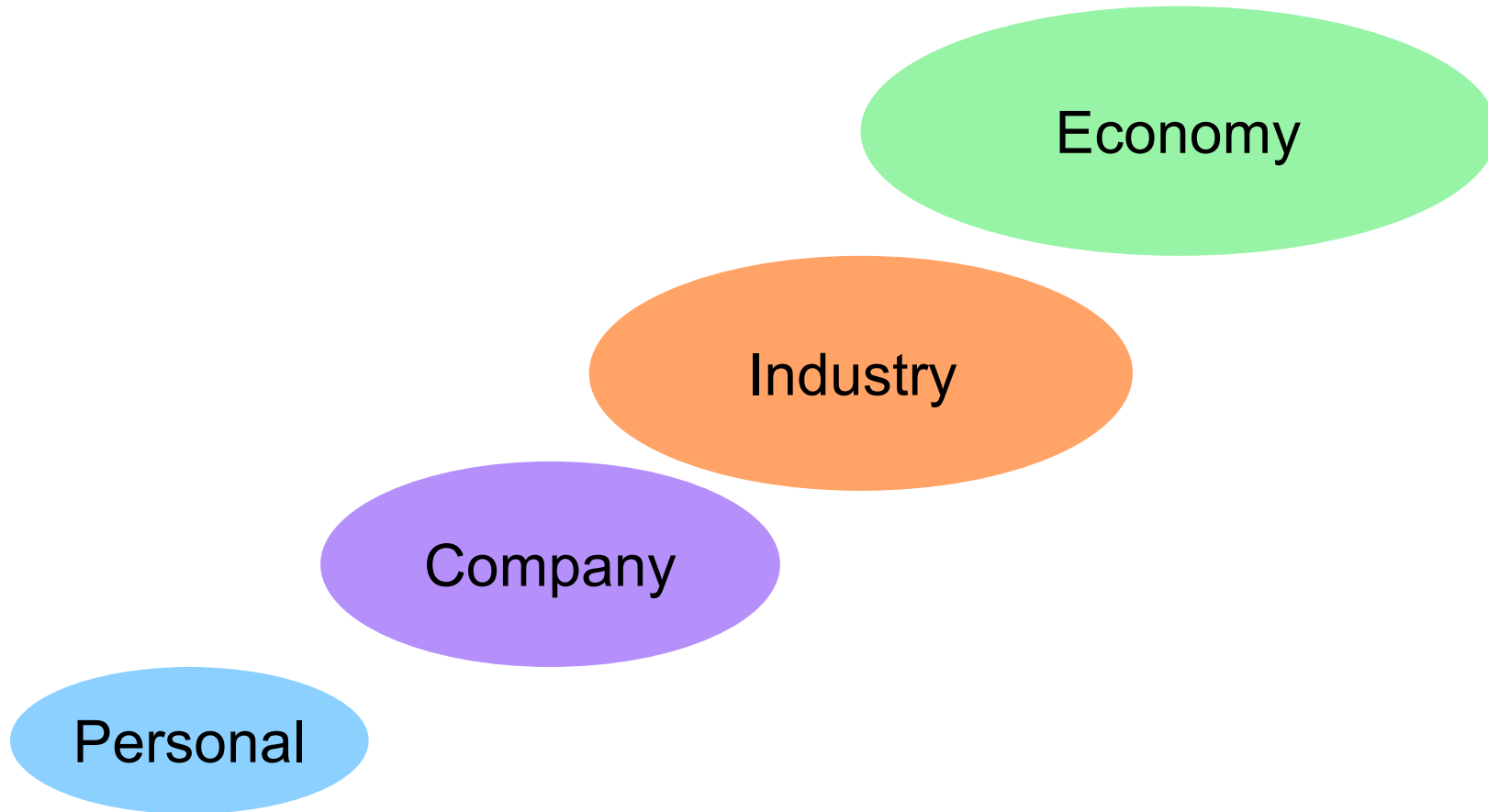
# Transformation

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How 'digital' is an industry? - compare agriculture vs professional services vs govt services

# Transformation



*Objectives:* innovation, efficiency; collaboration and sharing; competitiveness.

How we behave, how skilled we are, at the personal level, impacts other levels. Industry and National level will impact us.

# Digital Literacy

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Ability to use, create and share digital content safely and responsibly. It is an overarching concept for a wide range of skills:

*technology competency*, which is the use of digital technology;

*information literacy*, which is the ability to locate, identify, retrieve, process and use digital information optimally; and

*media literacy*, which enables us to comprehend, contextualise and critically evaluate information, as well as to create and communicate content effectively across digital media platforms.

*cyber wellness*, includes taking personal responsibility to use the internet for the good of the community, and understanding the risks of online dangers and negative online behaviours.

## APEC: 2017 Women and the Economy Forum Statement 29 September 2017

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“17. We acknowledge the opportunities and challenges for women and girls, in particular vulnerable groups, of the **4th Industrial Revolution**: the convergence of smart phones, cloud computing, the Internet of Things (IoT), sophisticated artificial intelligence, smart cities, and advanced robotic technologies into interoperable global value chains. We welcome the recently endorsed Framework for Human Resources Development in the Digital Age to address **capacity-building priorities** in this area and where appropriate:

“We call for targeted technical training to improve women and girls’ **digital literacy** to unlock job opportunities and entrepreneurship.

“We encourage economies to strengthen the ecosystem for women and girls regarding STEAM education and employment to bridge the digital divide; leverage women’s and girls’ talents; and take advantage of new opportunities presented by the Digital Age, including online learning and the **removal of the digital gender divide** in accessing ICT.”

## Capacity building / re-skilling

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- 1) Revised IT education with emphasis of soft skills such as problem solving and project management; changes from early primary (to develop enquiring minds); learning English
- 2) IT Competency Framework and a holistic and strategic approach to skill gaps; identification of which specialist areas might be areas of special comparative advantage and excellence; Revise STC process to include a competency framework
- 3) Avoiding Thai-specific certifications (unless it is about something which is uniquely Thai) but better adoption and recognition of global standards
- 4) Major revisions to work permit and visa regulation; Smart Visa a start
- 5) Personal tax incentives.
- 6) Twinning arrangements with foreign leading institutions. A non-Thailand example (just an example) might be LARC CMU- SMU - <https://larc.smu.edu.sg/> . Thailand is now about to recognize leading foreign institutions (eg CMU).
- 7) Specialist academic–industry collaboration (there are several good examples)
- 8) Support for private-sector in-house training but with a development path
- 9) Recognition of nation-wide programmes, not just having to be located in one place.

Recommendations made to HE the Minister for Digital Economy & Society; HE the Minister for Industry and HE the Minister for Science & Technology during 2017

# Innovation – what is it?

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Creating, and bringing into use,  
profitable, new:

- products,
- services,
- processes,
- ways of doing business.

*Source: presenter's own; based on Pinchot – Intrapreneurship*



## **Purpose of Innovation (IT focus)**

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***Purpose of IT innovation:***

**both radical & incremental business innovation:**

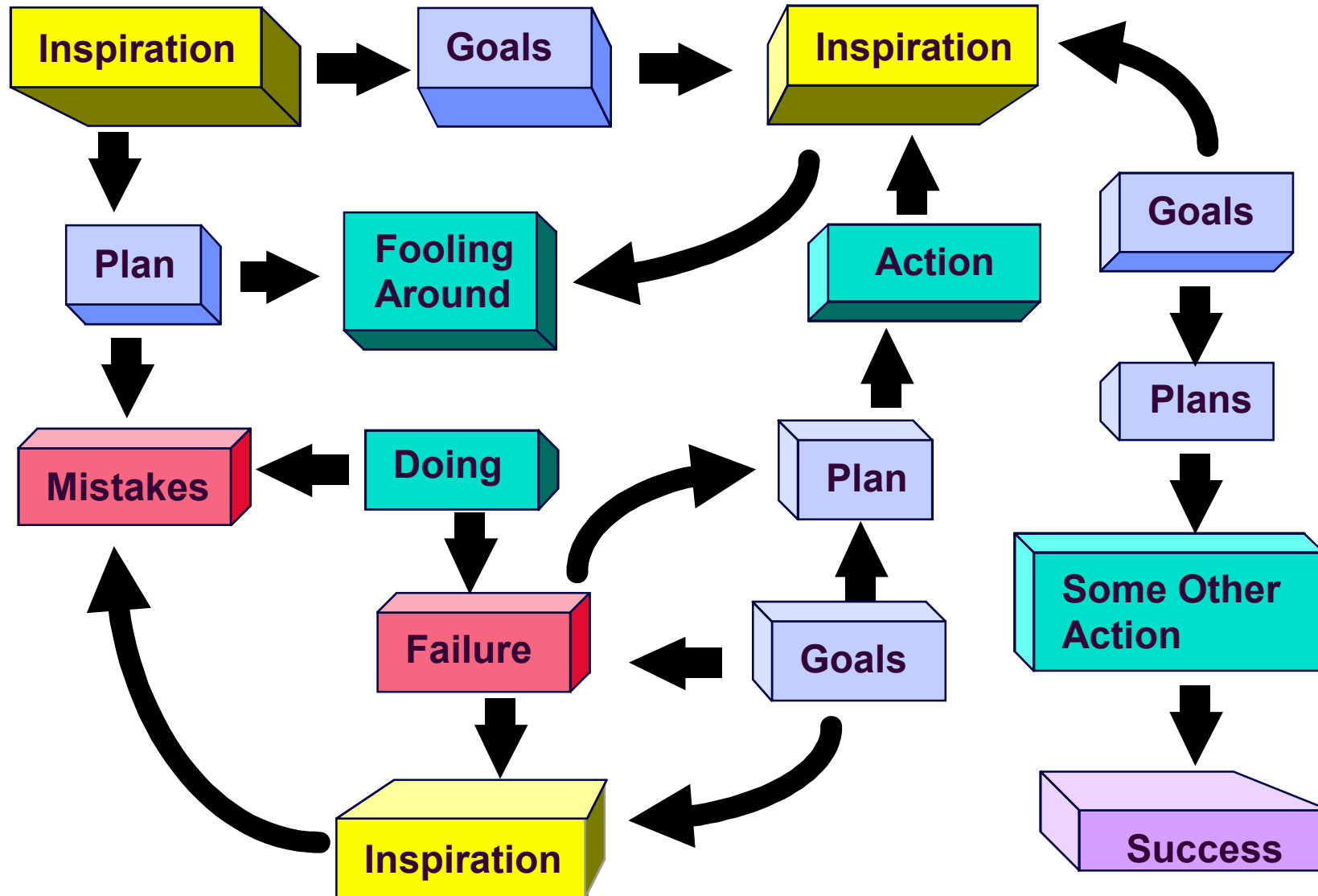
- at the workgroup level
- a line of business level
- the enterprise level

**and most crucially (for the 21st century) at the  
inter – enterprise level**

**and to accelerate building talent & capability at all  
levels**

*Source: John Seely Brown*

# How Innovation Actually Happens



Graphics source: Pinchot 2002

# Innovation – measured how?

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**Number of patents registered –  
(eg Global Innovation Index, others)**

**Value of Patents realised**

**Qualitative, anecdotal and ‘brand’ factors –  
eg recognition of ground breaking innovations.**

**Creative industries’ output is not all reflected  
in recognised forms of IP, but much will be**

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# Trusted Internet 1

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1. An essential business tool
2. A key enabler for an intelligent society

Governance: Multi-stakeholder model (MSM); top down, especially via difficult laws does not work.

Maintain an open internet while respecting privacy and supporting security. Security and Private are not opposite extremes

Network / operational security is everyone's job; national security by an agency with right Rule of Law governance; not the primary job of operational SOEs

# Trusted Internet 2

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In the Digital Economy family of laws:

One huge gap: SOE reform & industry structural reform; also competition regulation lacking.

Too much power in single committees which all look similar; not addressed: Cross border – need Rule of Law basis

CCA changes and Cybersecurity law: Conceptually essential but do not give the right business or societal confidence

But ePayments could turn out better.

Difficult laws: almost impossible to comply with, often unclear, then selectively enforced. Rule of Law means clarity, consistency, predictability, fair enforcement

Top down rules “If you’ve done nothing wrong you have nothing to worry about”

# Laws 1

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*Constitutive / Administrative laws:* Power concentrated; command-style; usually not supporting civil society well.

Examples: Typical admin approach – one committee; way more community education needed (as ETDA did throughout 2015); Fintech law; Frequency law.

*NBTC Act (aka Frequency Act)* – evolved concept of NRA governance needed

*Computer Crimes Amendments; Cybersecurity:* main aim should be based on MSM model of governance; Most of world has adopted MSM. (See other notes earlier slide under 'Trusted Internet'). CCA on IP – needs a balance which respects limitations of on-line intermediaries.

*Enablers:*

Electronic Transactions Act; e Signatures; later digital signatures.

E Commerce

PDP draft: Lack of policy clarity on cross border. Some positive aspects.

Licence Facilitation Act: No eGov targets; need process re-engineering

# Laws 2

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## **GAPS:**

- SOE reform; real industry reform vs. 'bolted on' – additional laws (Thailand now almost unique in the world in not reforming two key SOEs)
- Competition regulation and a wholesale market

## ***On going reform:***

Pervasive Mandating and effective implementation of being on-line

Need a 'guillotine' approach, and continued use of s. 44

Need a permanent, effective law reform commission



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# Digital Economy layers



Applications, platforms, solutions


May be stand-alone, may work with an entire industry or sub group

Disruption / change occurs through adoption

Top layer of 3

## Will Thailand E-Commerce growing up?

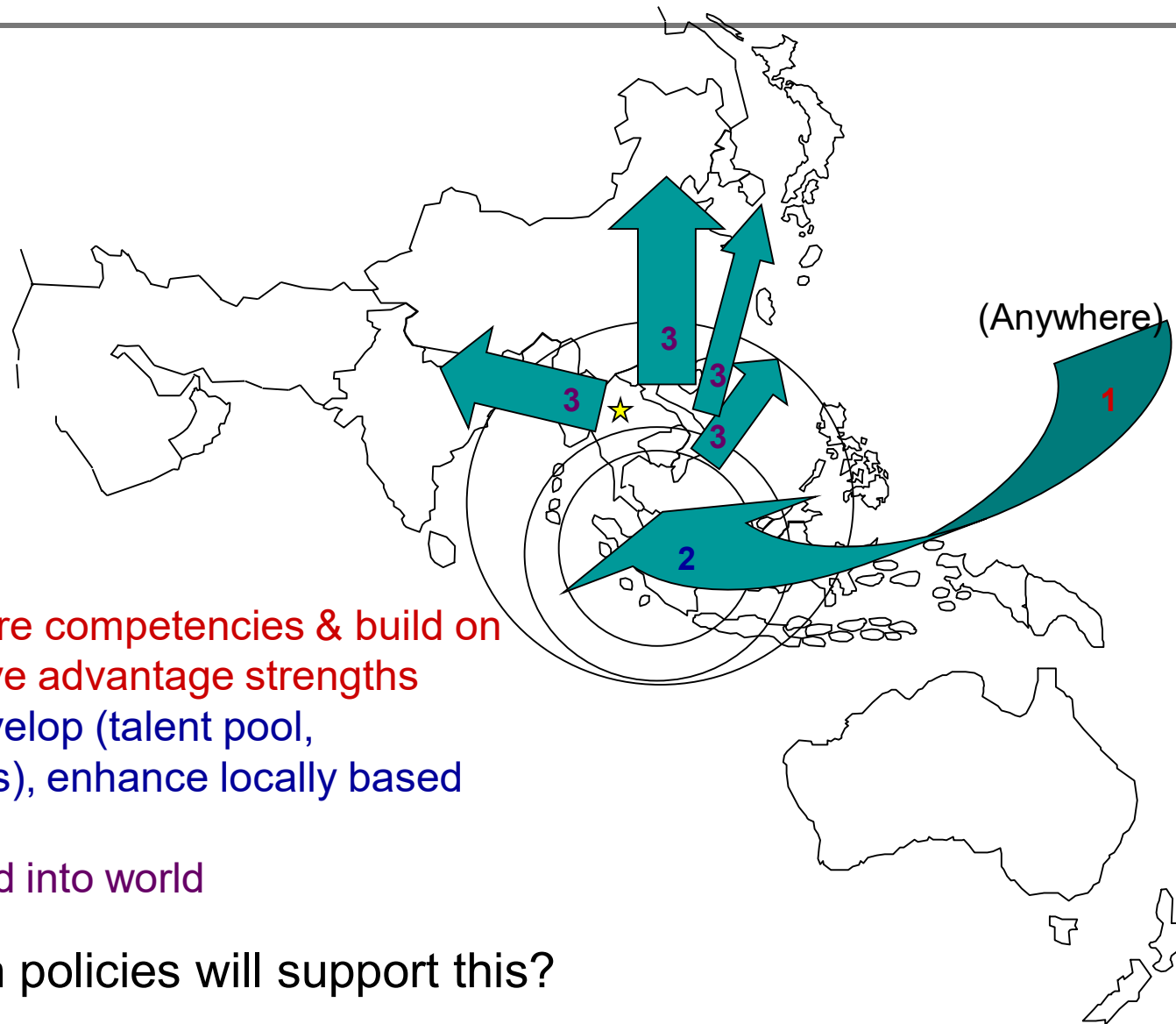
### What is problem statement?



- 1** High Cost of e-Payment and logistics
- 2** Telecommunications Infrastructure (Internet) : expensive, non-stable and non-inclusive
- 3** E-Commerce Disruptive technologies
- 4** Lack of capital for Startup
- 5** Lack of “Intellect” (Manpower)
- 6** Have A Problem But do not know who can help
- 7** Foreign invasion intensify (eWTP: e-World Trade Platform)

Source: ETDA at regional event on eCommerce and Competition March 2017

# “Made in Thailand”



1 Transfer core competencies & build on comparative advantage strengths

2 Deploy, develop (talent pool, collaborations), enhance locally based talent

3 Springboard into world

Which policies will support this?

A ‘Made in Thailand’ brand recognized the need for talent and collaboration

# “Made in Thailand”

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“Send us your capital and skills”

“Come and do your thing in Thailand”

Much raw creativity, but real innovation?

- New specific support for Start Ups –but it’s not all about Start-Ups / entrepreneurship
- Some ‘Doing Business’ fundamentals addressed by new WB ranking of 26 is the same as for 2015 (before revised methodology). Still much regulatory burden
- Transformation; not obsession with entrepreneurship (although it is a factor)

*examples:*

- Work Permit & Visa – use a changed definition of ‘work’; Smart visa and, wider Visas for Thailand 4.0
- De clutter admin (eg 90 day reporting)
- Company incorporation and operation – still more difficult than it need be

# What to do?

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- 1) Personal change and development – change of mindset; take a risk; Company reform/ industry reform
- 2) Reskilling / capacity building; variety of measures for skills for citizens, foreigner *and* teams.
- 3) Policies for transformation – especially SME – quality not quantity; real support and assistance for SME transformation
- 4) Fundamental change of mindset about laws and the Rule of Law.
- 5) Many laws are our Achilles heal, not intentionally.
- 6) Real reform policies and laws to address the gaps.

# Thank you

**Bob Fox**

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