

# Higher Education in the Future for Thailand 4.0



By  
Clinical Professor Udom Kachintorn  
(Deputy Minister of Education)



**"Our higher education system is facing a crisis"**

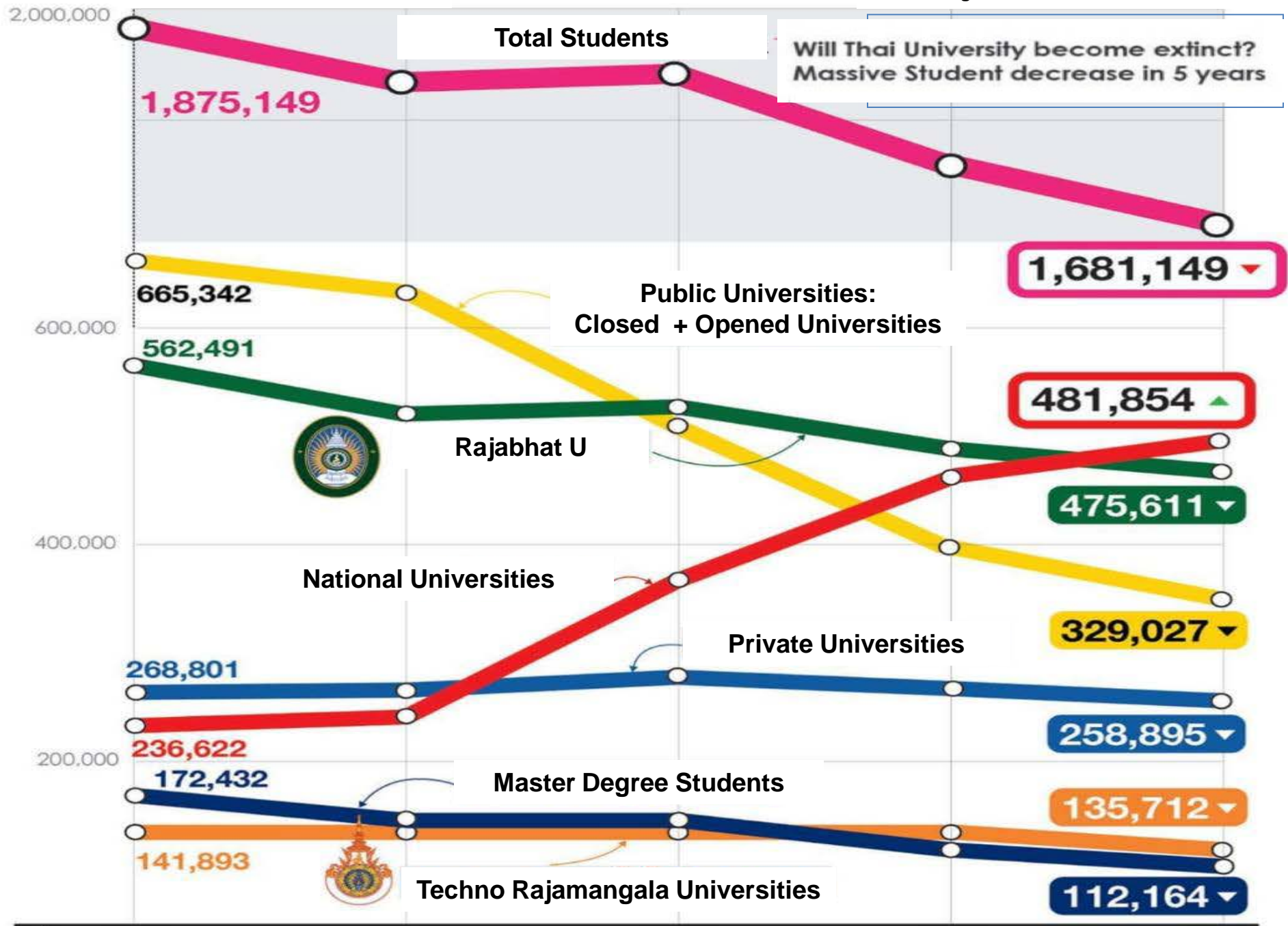




# CRISIS OF HIGHER EDUCATION

## CHALLENGING ISSUES IN THAILAND

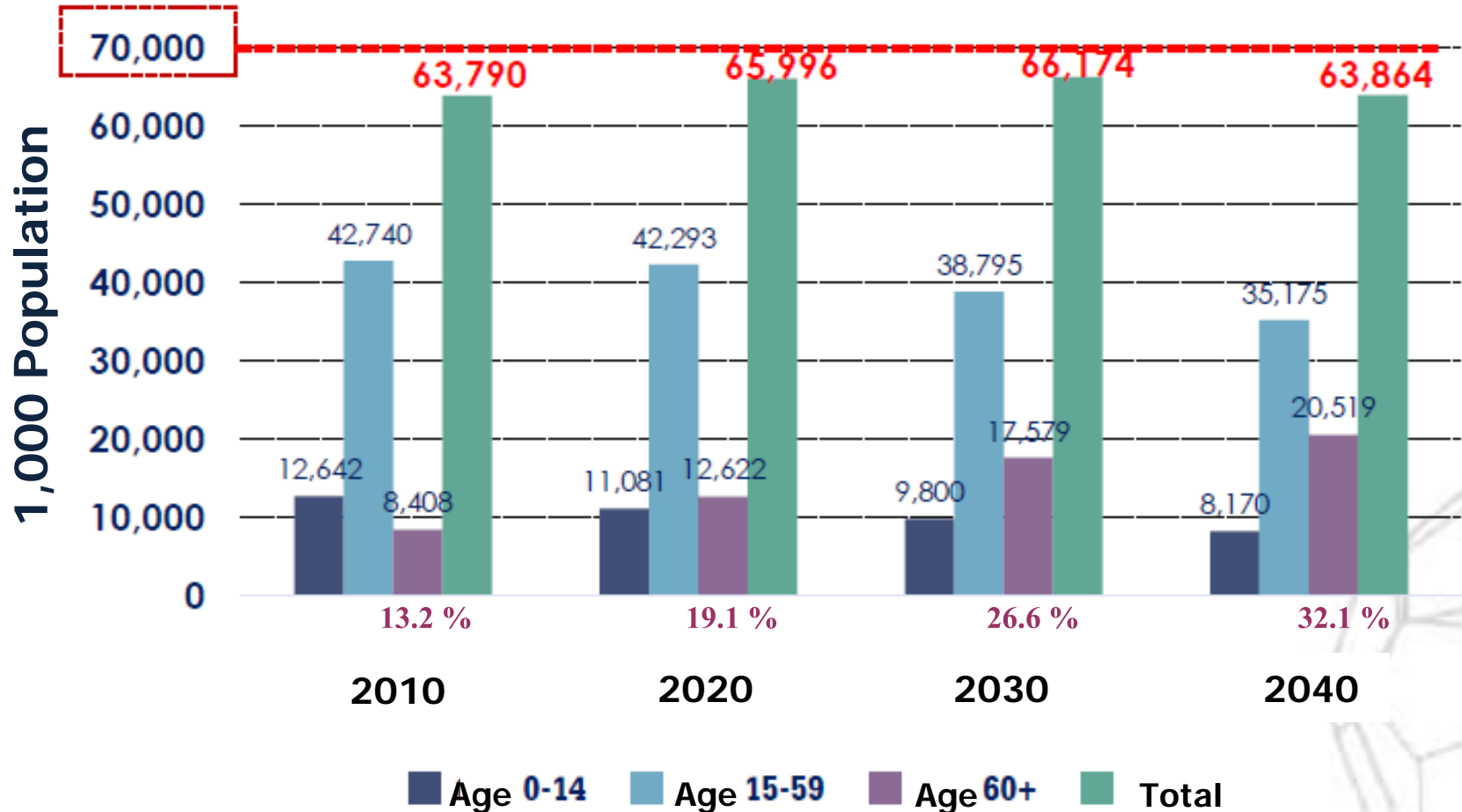
- In population structure, childhood reduction from 21.6% in 2017 to 17.2% in 2037
- In 2017, there were 81,230 admission candidates, among 109,129 available seats, thus 27,000 vacancy = 25% ! (the lowest candidate in 10 years tract record)



Will Thai University become extinct?  
Massive Student decrease in 5 years



# Prediction of Thai Population during 2010 - 2040





# RECESSION OF THAI UNIVERSITY IN THE WORLD UNIVERSITY RANKING

**Reflect to weakness of national education system, especially in the higher education level that responsible to the fundamental capacity building of professional engagement**

**Recession of higher education will reflect the quality of human resource (mindset & will power) that is probably unable to survive, due to lack of mechanism to build up intellectual capital and national innovation**

**Thailand still struggles with middle-income trap**

# Scientific and Technological Publications of Thailand

## International Publications and Citations

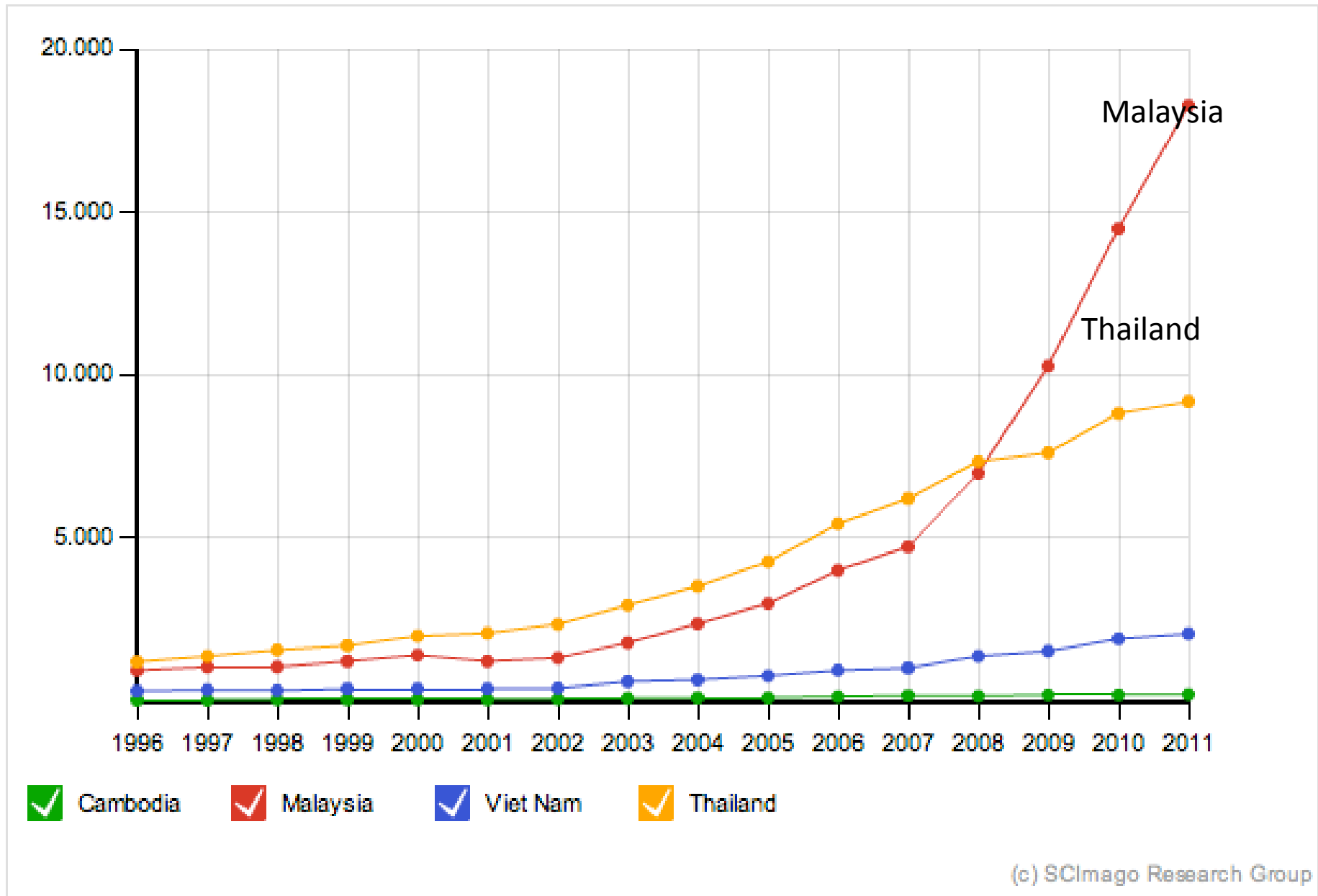
### Number of Publications

Country	International Publications		
	Total	Per 1 M pop.	
US.	502,804	1,625.48	4
China	320,800	239.81	
UK	139,683	2,243.14	2
Germany	130,031	1,590.07	5
Japan	113,246	888.55	
India	71,975	59.70	
South Korea	55,546	1,124.19	6
Taiwan	37,436	1,627.65	3
Malaysia	14,407	509.52	
Singapore	13,913	2,740.56	1
Thailand	9,126	137.43	
Indonesia	2,032	8.44	
Vietnam	1,890	21.74	

### Quality of Publication in Thailand

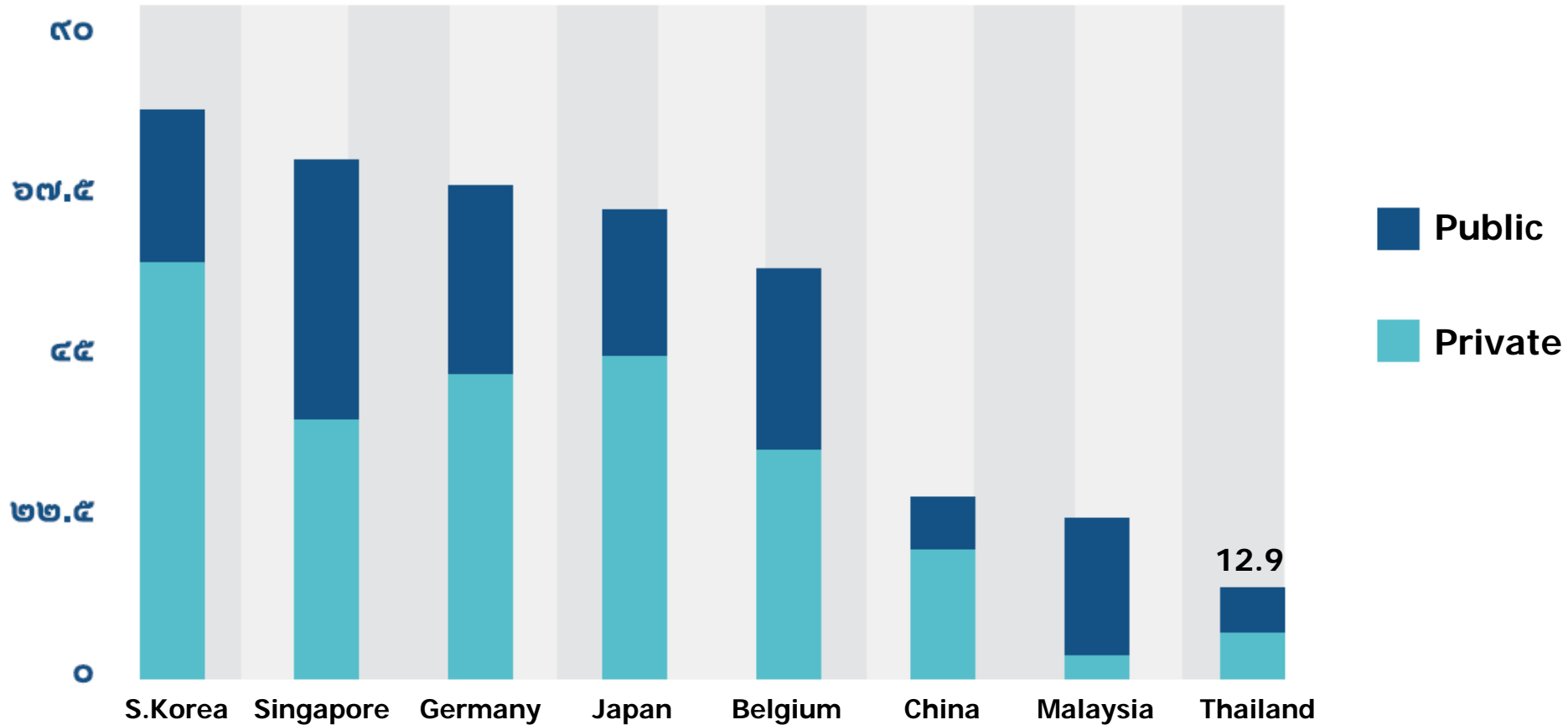
Number of international citations from various countries indicated that the quality of publications in Thailand was rather below the average ranking

# Number of Cited Publications





# Ratio of researcher per 10,000 population in various countries (information as 2014)



# Scientific and Technological Status of Thailand

- Very low number of patents in Thailand reflected to the limitation of scientific and technological status of the country
- In 2011, the application of registration for intellectual property in Thailand possessed 1,137 patents

China	435,608 patents	Mexico	1,863 patents
South Korea	187,454 patents	Brazil	1,662 patents
Singapore	4,529 patents	Indonesia	607 patents
Malaysia	1,927 patents	Philippines	298 patents

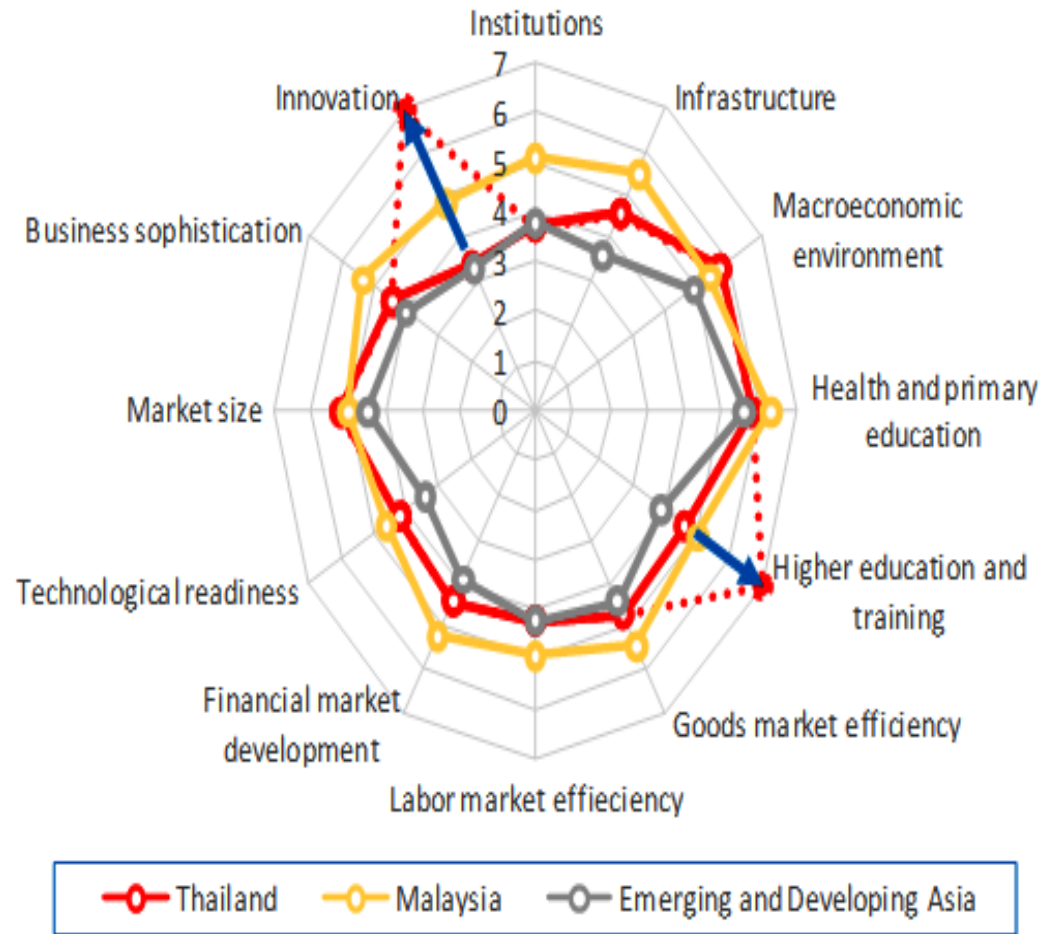
(Source: IMD World Competitive Yearbook 2013)

- Several studies demonstrated that the higher education in Thailand lack of connection to industrial sector compared to other countries
- Tax and monetary incentives that Thai used to strengthen industrial sector and attract foreign company to invest in hi-tech production and innovation, still obsolete and insufficient when compared to other countries

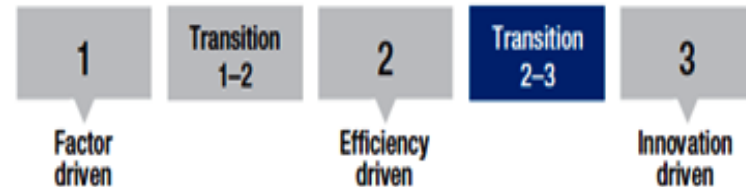
# ASEAN Comparison



Let's wake the rabbit before it's too late!

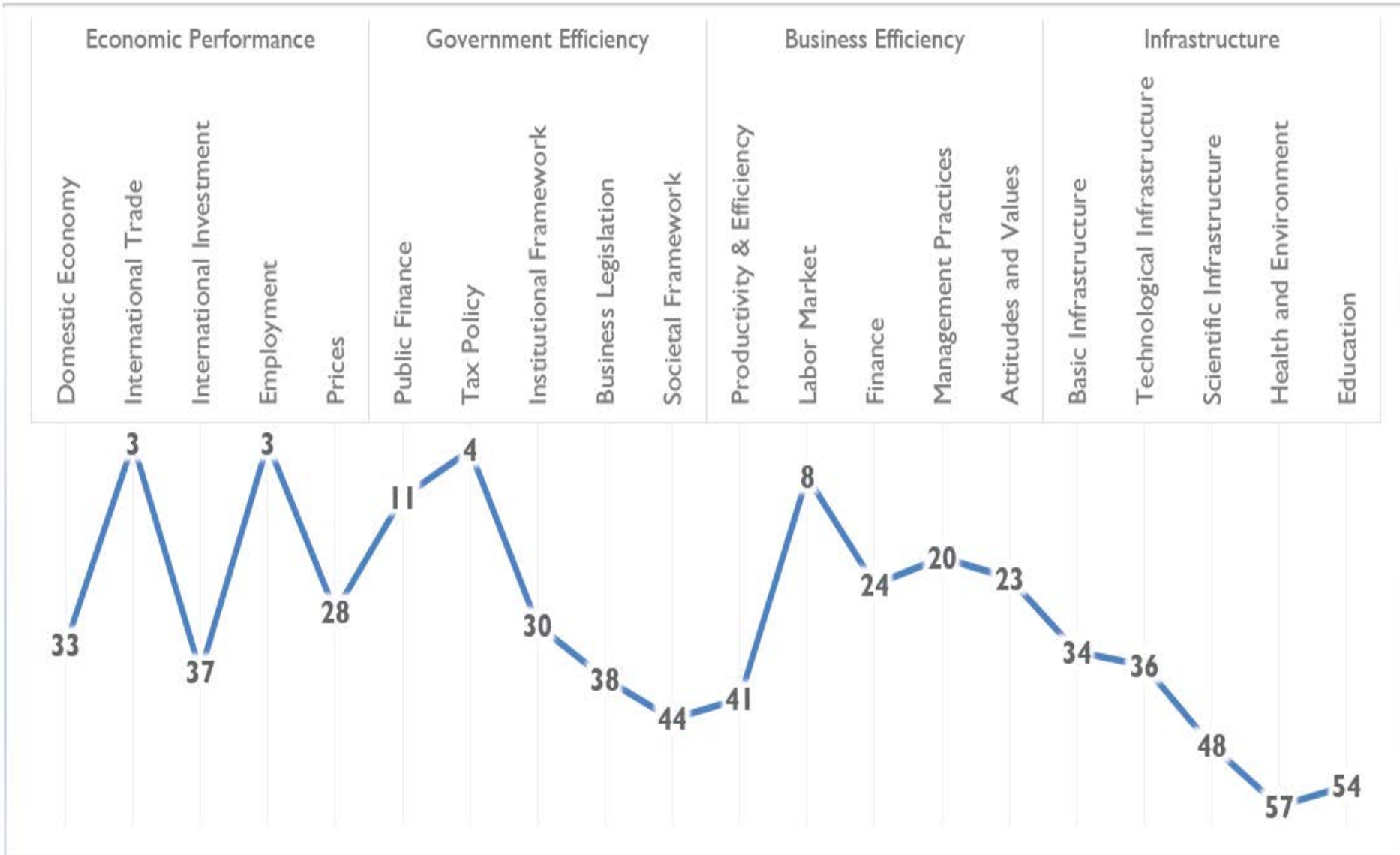


## Stage of development



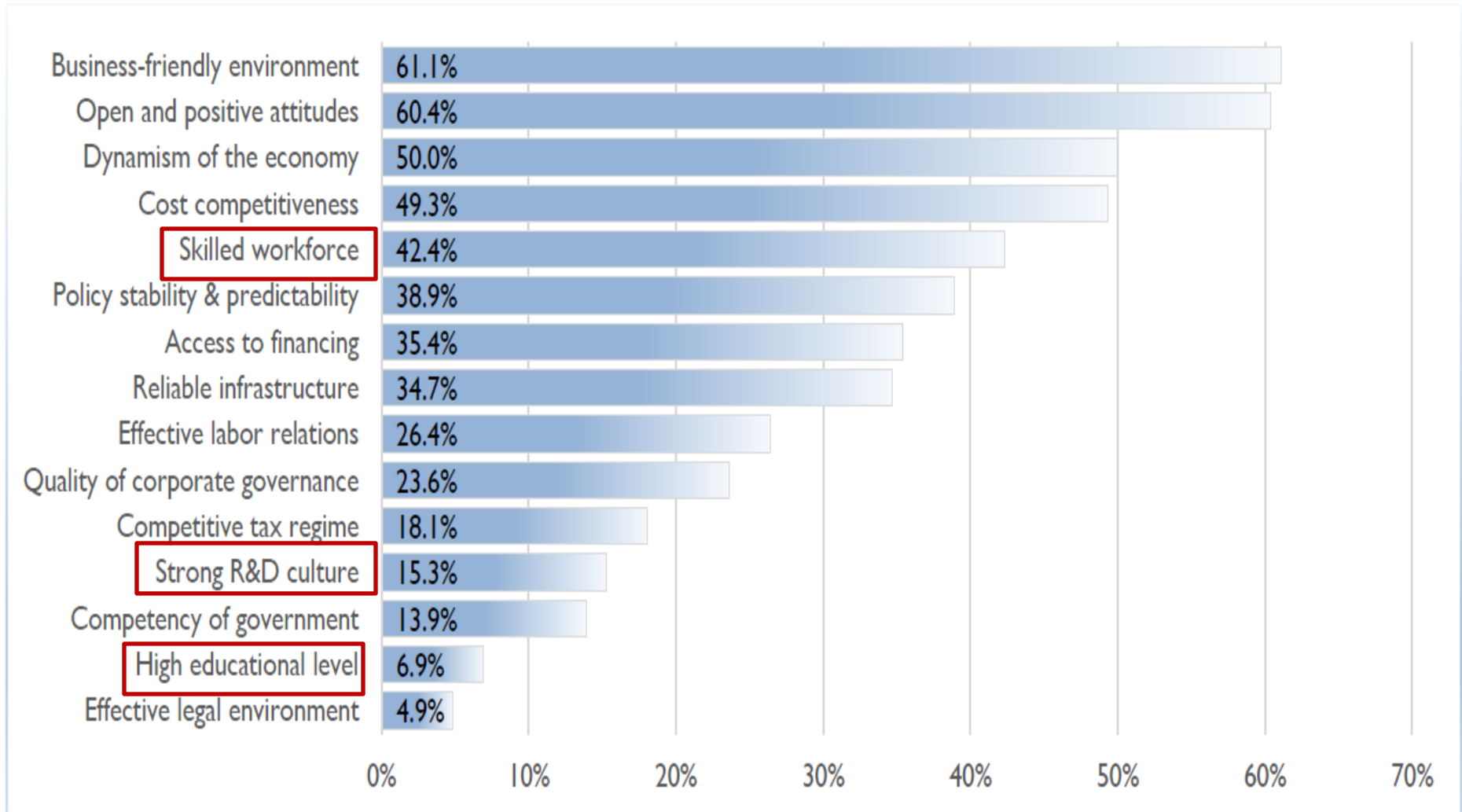
2018	Country	2017	Change	2018	Country	2017	Change
1	USA	4	+3 ↑	33	Portugal	39	+6 ↑
2	Hong Kong SAR	1	-1 ↓	34	Poland	38	+4 ↑
3	Singapore	3	-	35	Chile	35	-
4	Netherlands	5	+1 ↑	36	Spain	34	-2 ↓
5	Switzerland	2	-3 ↓	37	Slovenia	43	+6 ↑
6	Denmark	7	+1 ↑	38	Kazakhstan	32	-6 ↓
7	UAE	10	+3 ↑	39	Saudi Arabia	36	-3 ↓
8	Norway	11	+3 ↑	40	Latvia	40	-
9	Sweden	9	-	41	Cyprus	37	-4 ↓
10	Canada	12	+2 ↑	42	Italy	44	+2 ↑
11	Luxembourg	8	-3 ↓	43	Indonesia	42	-1 ↓
12	Ireland	6	-6 ↓	44	India	45	+1 ↑
13	China Mainland	18	+5 ↑	45	Russia	46	+1 ↑
14	Qatar	17	+3 ↑	46	Turkey	47	+1 ↑
15	Germany	13	-2 ↓	47	Hungary	52	+5 ↑
16	Finland	15	-1 ↓	48	Bulgaria	49	+1 ↑
17	Taiwan	14	-3 ↓	49	Romania	50	+1 ↑
18	Austria	25	+7 ↑	50	Philippines	41	-9 ↓
19	Australia	21	+2 ↑	51	Mexico	48	-3 ↓
20	United Kingdom	19	-1 ↓	52	Jordan	56	+4 ↑
21	Israel	22	+1 ↑	53	South Africa	53	-
22	Malaysia	24	+2 ↑	54	Peru	55	+1 ↑
23	New Zealand	16	-7 ↓	55	Slovak Republic	51	-4 ↓
24	Iceland	20	-4 ↓	56	Argentina	58	+2 ↑
25	Japan	26	+1 ↑	57	Greece	57	-
26	Belgium	23	-3 ↓	58	Colombia	54	-4 ↓
27	Korea Rep.	29	+2 ↑	59	Ukraine	60	+1 ↑
28	France	31	+3 ↑	60	Brazil	61	+1 ↑
29	Czech Republic	28	-1 ↓	61	Croatia	59	-2 ↓
30	Thailand	27	-3 ↓	62	Mongolia	62	-
31	Estonia	30	-1 ↓	63	Venezuela	63	-
32	Lithuania	33	+1 ↑				

# COMPETITIVENESS LANDSCAPE (Thailand)



# KEY ATTRACTIVENESS INDICATORS (Thailand)

From a list of 15 indicators, respondents of the Executive Opinion Survey were asked to select 5 that they perceived as the key attractiveness factors of their economy. The chart shows the percentage of responses per indicator from the highest number of responses to the lowest.



# Thailand is currently ranked 45th in the Global Talent Index, behind Singapore, Malaysia and Philippines

## Thailand ranks 45th in a pool of 60 countries in the Global Talent Index

 1. USA	 35. India
 2. Denmark	 35. Mexico
 3. Finland	 37. Romania
 4. Sweden	 38. Brazil
 5. Norway	 <b>39. Malaysia</b>
 6. Australia	 39. Saudi Arabia
 <b>6. Singapore</b>	 41. Colombia
 8. Canada	 42. Ukraine
 9. Switzerland	 43. Turkey
 10. Hong Kong	 <b>44. Philippines</b>
 11. Germany	 <b>45. Thailand</b>
 11. Israel	...
 13. Netherlands	 <b>53. Vietnam</b>
 14. United Kingdom	 54. Pakistan
 15. New Zealand	 55. Iran
... ..	 <b>56. Indonesia</b>

## Both talent formation and flow key issues for Thailand

		score
<b>Demographics</b>	Demographics (Growth)	19.7
<b>Talent Formation</b>	Quality of compulsory education	62.2
	Quality of university education	28.3
<b>Talent flow</b>	Quality of the labor force	44.0
	Talent environment	45.8
	Mobility and openness of local labor market	35.7
	Proclivity to attracting talent	19.1



# Challenges / Changed Conditions

- **Tremendous changes in Labour Need**
- The world in 21<sup>st</sup> century is very dynamic
- Disruptive Technologies, IoT, Mobile phone
- New Globalized Knowledge-based Economy
- Increasing in competitiveness eg. ASEAN, Striving to be a World Class University
- High quality university from abroad is increasing
- Aging society is coming soon
- Child population is decreasing
- Change of Generations : Gen Z





Meet “Generation Z”

# Snapshot of the Generations We Work With

## **Millennial Generation**

- Tech Savvy: 2 Screens
- Think in 3D
- Radical Transparency: Share All
- Slactivists
- Multi-cultural
- Tolerance
- Immature
- Communicate with Text
- Share Stuff
- Have Confidence
- Now Focused
- Optimists
- Want to be Discovered
- Team Orientation

## **Generation Z (Born Year 2000-today)**

- ★• Tech Innate: 5 Screens
  - Think in 4D
  - Judiciously Share (GeoLoco Off)
- ★• Active Volunteers
  - Blended (race and gender)
- ★• Togetherness
- ★• Mature
  - Communicate with Images
  - Make Stuff
- ★• Have Humility
- ★• Future Focused
- ★• Realistics
- ★• Want to Work for Success
- ★• Collective Conscious

# Their attention spans are getting shorter

## 8 sec

is the average American attention span (down from 12 sec in 2000)

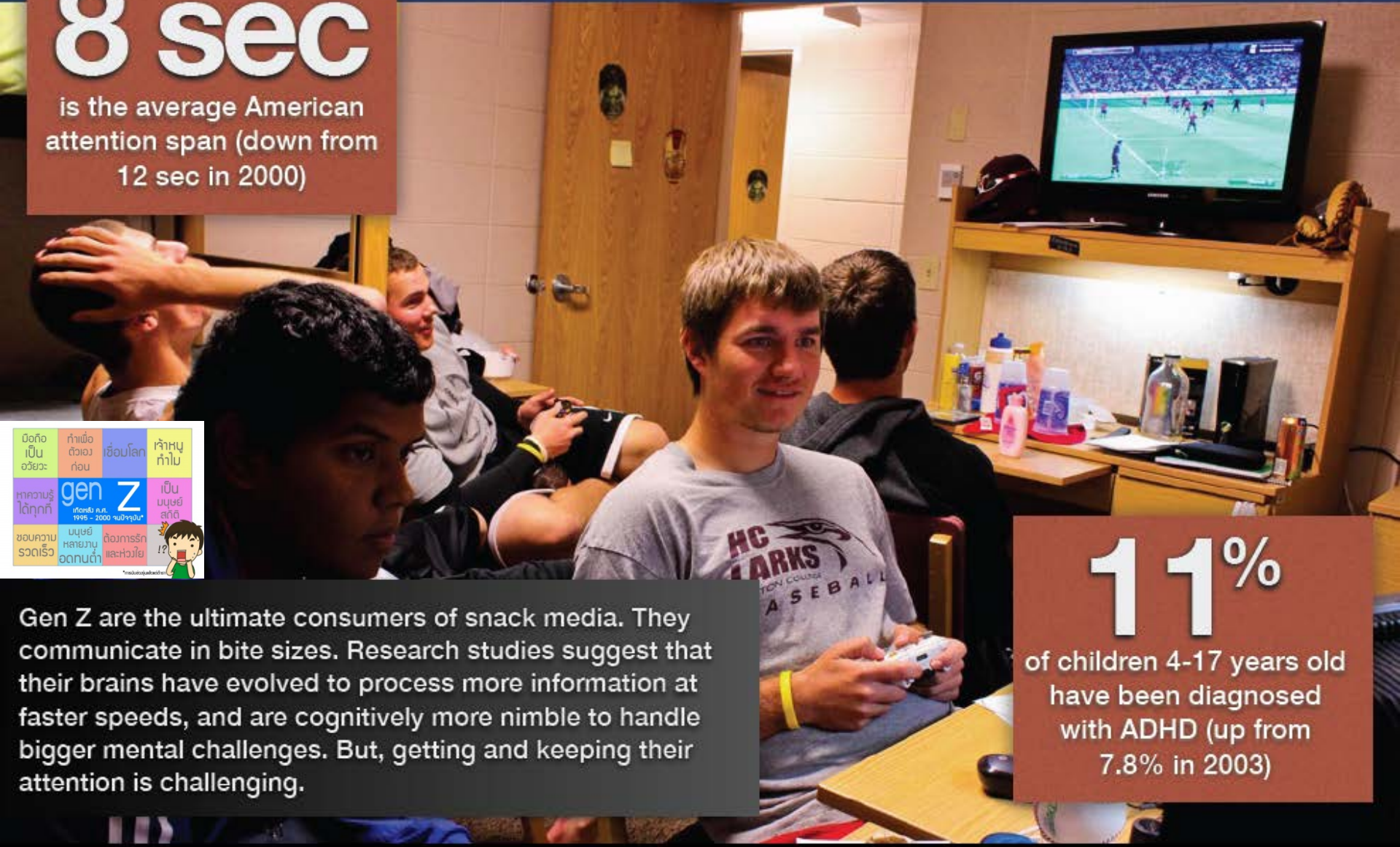
มือถือเป็นชีวิต	ทำเพื่อตัวเองก่อน	เชื่อมโลก	ไร้หยุดคำไป
หาความรู้ได้ทุกที่	<b>gen Z</b> (เกิดปี พ.ศ. 1995 - 2000 "มิลเลนเนียล")	เป็นมนุษย์สุดดี	!
ชอบความรวดเร็ว	มนุษย์หลายภาษาพูด	ต้องการรักและห่วงใย	!

\*ขอบคุณคุณกานดา

Gen Z are the ultimate consumers of snack media. They communicate in bite sizes. Research studies suggest that their brains have evolved to process more information at faster speeds, and are cognitively more nimble to handle bigger mental challenges. But, getting and keeping their attention is challenging.

## 11%

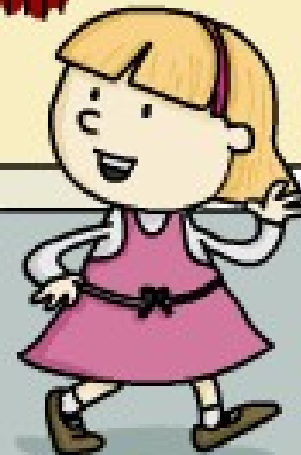
of children 4-17 years old have been diagnosed with ADHD (up from 7.8% in 2003)





HI SWEETIE,  
HOW WAS  
SCHOOL TODAY?

YOU CAN READ  
ALL ABOUT IT  
ON MY BLOG, DAD.



นี่คือ เป็น อัยยะ	ทำเพื่อ ตัวเอง ก่อน	เชื่อมโลก	เจ้าหนู คำไล
หาความรู้ ได้ทุก ที่	<b>gen Z</b> <small>(เกิดปี พ.ศ. 1996 - 2000 "มิลเลนเนียล")</small>	เป็น มนุษย์ สุดดี	
ชอบความ รวดเร็ว	มนุษย์ หลายบุ คลิก	คือพรรค และหัวใจ	!?

\*มีเดีย@kubkhan



# MEGATRENDS in 21<sup>st</sup> CENTURY



**Adaptation to the Globalizing  
Knowledge-based Economy**



**Adaptation of Policy and Supply Chain  
towards the Value-added Segment**

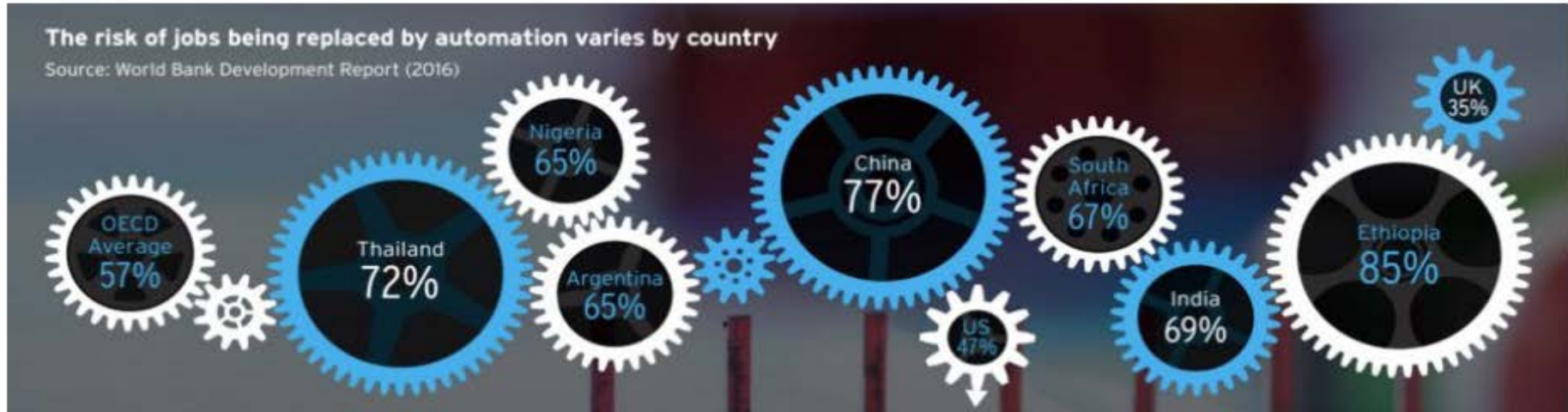


**Move toward Knowledge Intensive and  
Innovation Driven Products and  
Services**



# CHALLENGES IN 21<sup>st</sup> CENTURY

Labour in Thailand will be replaced by automation and AI



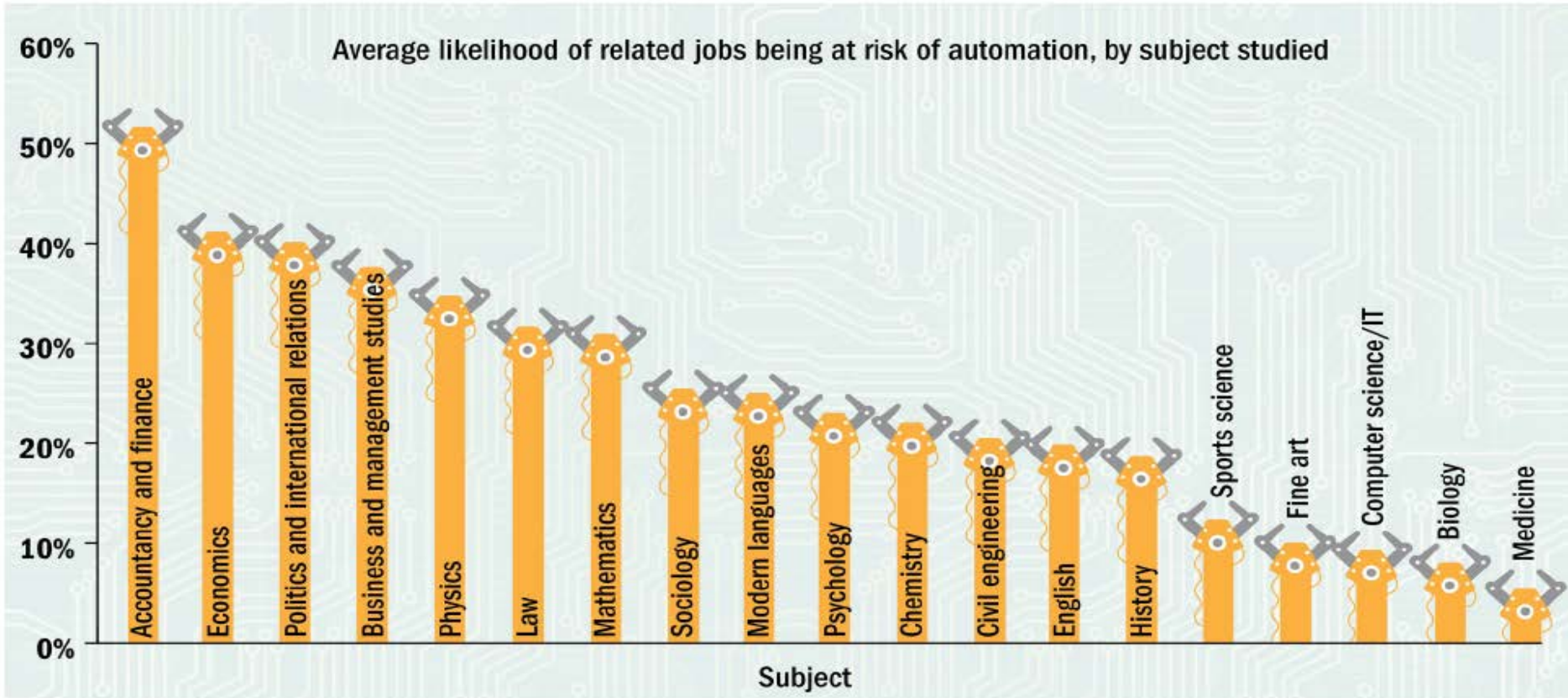
Examples:

1. ThaiBev: 30-40 factories will be adapted to 70-90% automation
2. Oishi: already 90% automation
3. CP: Food factory in Belgium running by 7 workers / rotation



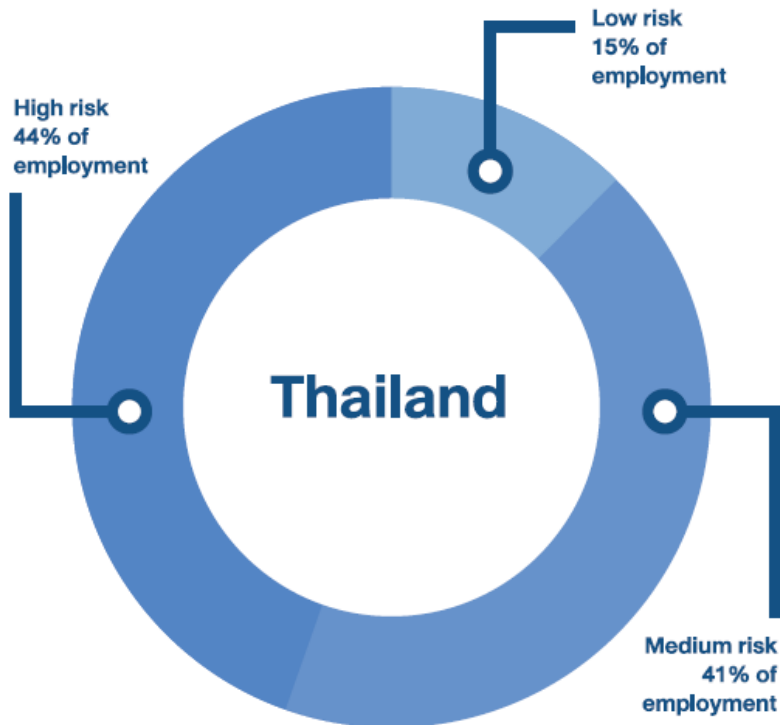
# CHALLENGES IN 21<sup>st</sup> CENTURY

## Subjects that were risky to automation replacement

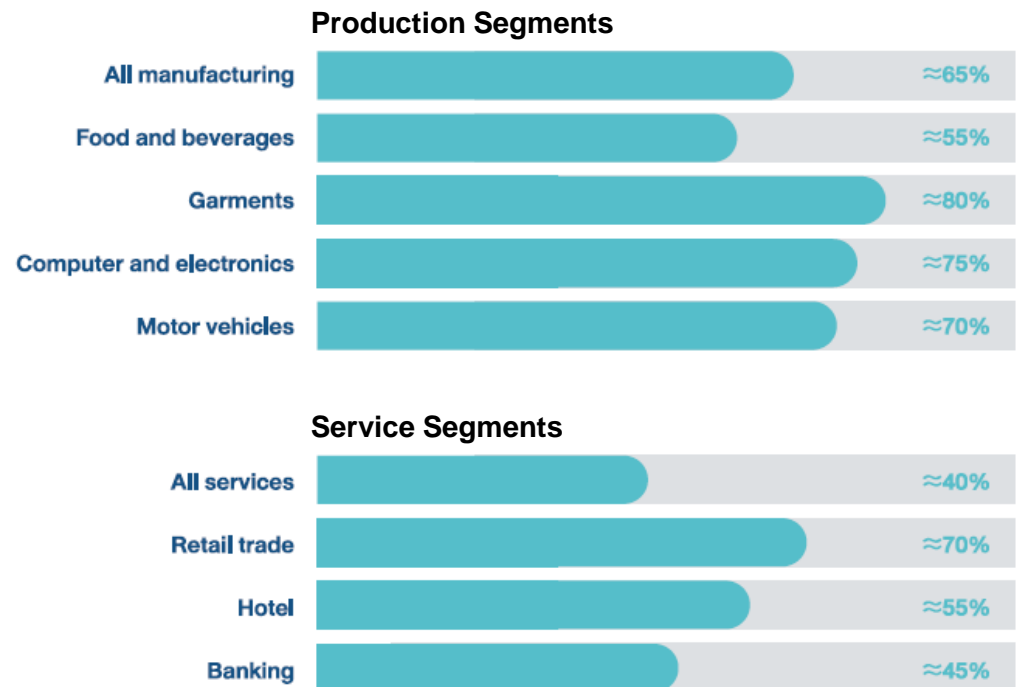


# SEQUENLAE OF AUTOMATION SYSTEM

Ratio of employment that was risky to automation replacement



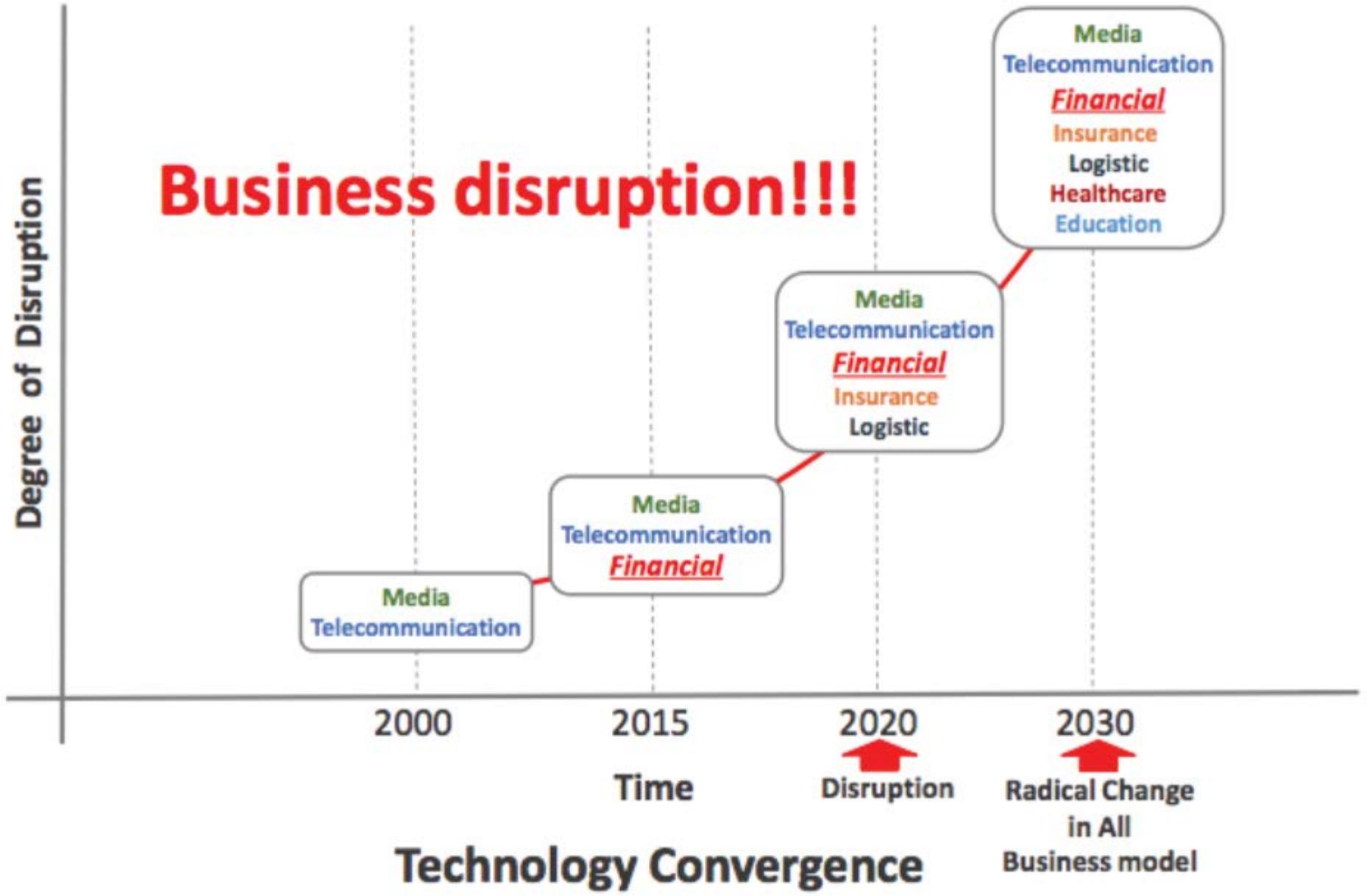
Ratio of employment that was risky to automation replacement by industrial segments



Source: ILO (2016). ASEAN in Transformation: The Future of Jobs at Risk of Automation



# Business disruption!!!





# CHALLENGES : 21<sup>st</sup> CENTURY LEARNING



Learning and working are combined in one process.



Learning is a lifelong challenge. Inspiring and motivating students are crucial to change their lives.



Curriculum will be in module, no subject, no barrier, focus on competency & skills rather than knowledge.



Organization has to be knowledge-based organization.



Novel learning platforms (on-line, digital ...etc) are essential for learning and working.



No more conventional education. Everyone can learn outside the university, anywhere, any time.

# Future Direction of Higher Education in Thailand



# **University Needs CHANGE**

**Mindset**

**Platform**

**Structure**

**Competency-based Education**

**Global and Country Needs**

**Toward Excellence**



# 20 yr-National Strategy and THAILAND 4.0

Average Capital Income  
32,000 baht/month

unchain  
country  
from  
middle-  
income trap

**Movement by Innovations  
For Building up  
Growth & Competitiveness**

**The First Priority**

Human, QOL, Knowledge,  
Justice

**Wealthy**

Infrastructure/ Productivity/  
R&D

Optimize  
and reform  
gov. admin

**Stability**

**Sustainability**

Building up  
growth on QOL  
&  
environmental  
friendly

Opportunity,  
Social Equity  
& Equality

Reduce  
inequality

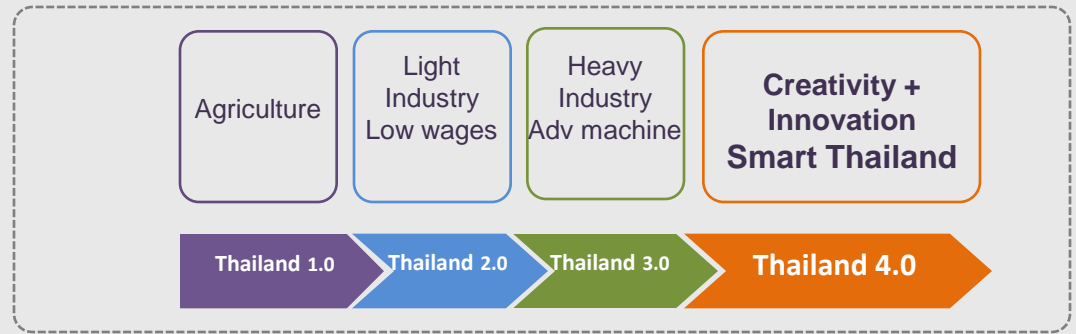
Environmental  
friendly

(Green Growth)

(Inclusive Growth)

**Rule & Law**

# THAILAND 4.0



Upgrading the national competitiveness by focusing on high-quality human resource development, innovation and value-added economy. In order to bring Thai society toward knowledge and value-based economy (Thailand 4.0 : Value-based Economy), **the universities have to be the head-engine to reform country development**

**Future direction of university** need to solve the problems of country and the world, then upgrading to Thailand 4.0 for supporting Thailand to move on and unchain our country from middle-income trap

# Value-based Economy

THAILAND

4.0

ECONOMY 4.0  
SOCIETY 4.0

## OBJECTIVES

1. Independent
2. Import Reduction
3. Social Sharing/  
All are Happy

Knowledge /  
Innovation

Human  
Capital

THAI

4.0

Master-PhD/  
Graduate study

Research &  
Development

Education

Bachelor/  
Undergrad

EDUCATION

4.0

UNIVERSITY 4.0

UNIVERSITY 1.0, 2.0, 3.0

Thai with limited  
knowledge and skill



Thai with high level of  
knowledge and skills

Thai with  
selfishness



Thai with  
high responsibility

Analog  
Thai



Digital  
Thai

Thai – Thai



Global – Thai

- Getting chance in high quality education
- Appropriate social welfare all their life
- Being modernized and keeping up-to-date in technology
- Globalization for better world and better life





# BUILDING UP PEOPLE FOR THAILAND 4.0

## World change, Men have to adapt

### Living Culture

- Social System → Socio-Technical System
- Physical Humanity → Digital Humanity
- Negative side of Good → Positive side of Bad

### Learning Culture

- Democratization of Information → Learn
- Demonopolization of Knowledge → Unlearn
- Disruption of Technology & Innovation → Relearn

### Working Culture

- Power of Knowledge → Power of Shared Knowledge
- Producing Knowledge → Producing Meaning
- Production System → Cyber-Physical System

**New Mindset**

**New Skillset**

**New Toolset**

**New Behavior set**



# Global Citizen in 21<sup>st</sup> Century

## 21st-Century Skills

### Foundational Literacies

How students apply core skills to everyday tasks



1. Literacy



2. Numeracy



3. Scientific literacy



4. ICT literacy



5. Financial literacy



6. Cultural and civic literacy

### Competencies

How students approach complex challenges



7. Critical thinking/ problem-solving



8. Creativity



9. Communication



10. Collaboration

### Character Qualities

How students approach their changing environment



11. Curiosity



12. Initiative



13. Persistence/ grit



14. Adaptability



15. Leadership



16. Social and cultural awareness

Lifelong Learning





# Direction of University in 21<sup>st</sup> Century

- University is not the place for teaching but it is a learning space in a more flexible way and more motivated context
- Universities have to prepare students for jobs that do not yet exist, now teaching global perspectives, resilience and creativity
- The most important skills a university can pass down to its students is the ability to motivate and leverage themselves
- In the 21<sup>st</sup> century, universities should see it as their job to develop strong personalities

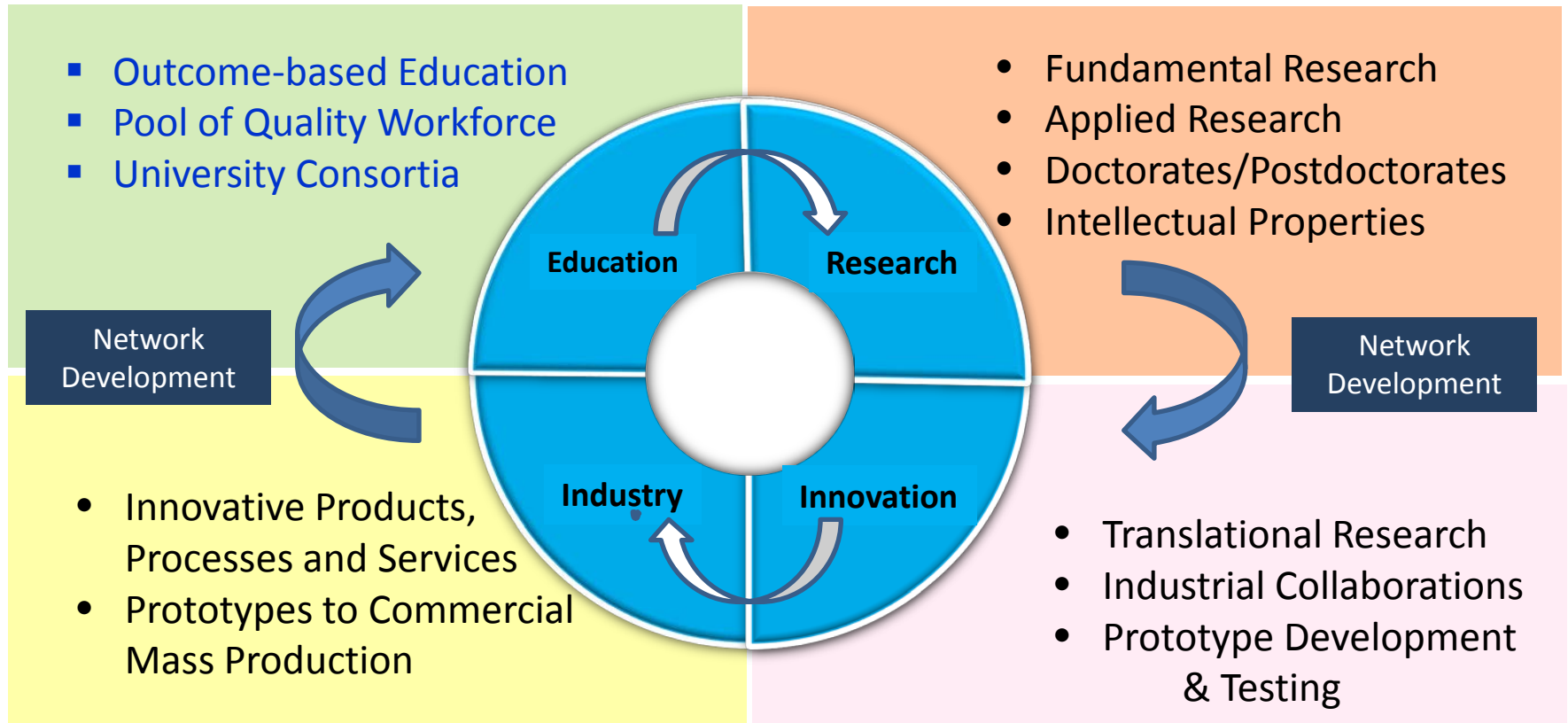


# Higher Education in 21<sup>st</sup> Century

## Differentiation through:

- **Excellence... Research-led**
- Relevance with Graduate study > Undergrad
- Innovation & Leadership
- Students' Experience and Entrepreneurship
- Partnerships (both national and international)
  - increase in quality and impact
- Academic Mobility and Internationalization

# University Ecosystem





# European Commission (2016)

## In the year 2025

- About half of the jobs will require **high-level qualifications**
- 65% of children entering primary school now will be working in **occupations that do not yet exist**
- Widespread digitalization will bring about significant **changes in the skill-sets needed** from the labour force
- For European citizens to prosper and thrive in increasingly competitive and knowledge-based economies, Europe will have to keep up in terms of **research and innovation**, as well as promote **effective and coordinated education and training systems**
- **Higher Education Institutions (HEIs)** are the better equipped to support this development



# The university experience has changed

- Today, employers want **fresh graduates who they don't have to train**
- In the ongoing global drive for efficiency and competitiveness, **education and training are the key role, moreover are now seen as the responsibility of the universities**
- This idea of **learning by doing** is what is now called "**experiential learning**" and though it's demanding, it is also very effective



# The university experience has changed

- **Work-integrated learning** sees students stepping into the actual workplace as part of their formal education
- **We want students** to understand and approach the grand challenges and wicked problems facing our world, which are not solely issues of science or technology, sociology or economics, but complex layered issues that demand **broad thinking** and **collaboration**

World Economic Forum, Davos 2018





# NUS changes education model

## Starting April 2018 : launching 5 initiatives

1. Experiential learning : learning by doing
2. Promote digital literacy having a computational thinking and data science skills
3. Diversify higher education pathways
4. Encourage lifelong learning
5. Broadening the role of universities




# Salman Khan (2018)

- Specialized education will be more essential, stress on **Competency and Skills rather than Knowledge**. Because technology leads to novel educational platforms, thus anyone can focus on what they want to learn, to know and to be straightaway, then go on what they desire.
- **Formal educational degrees will be no value**, because private segments will create their own curriculum i.e. Google Education. Everyone can learn without fundamental requirement. Their own certificates could be approved and used for work application.  
Why we have to waste 20 years in school, then work with disparate job?
- In the future, one can work prior to learn. **Educational degree alone would not guarantee for the success, but portfolio and real experience will be more crucial.**



# FUTURE DIRECTION OF HIGHER EDUCATION IN THAILAND

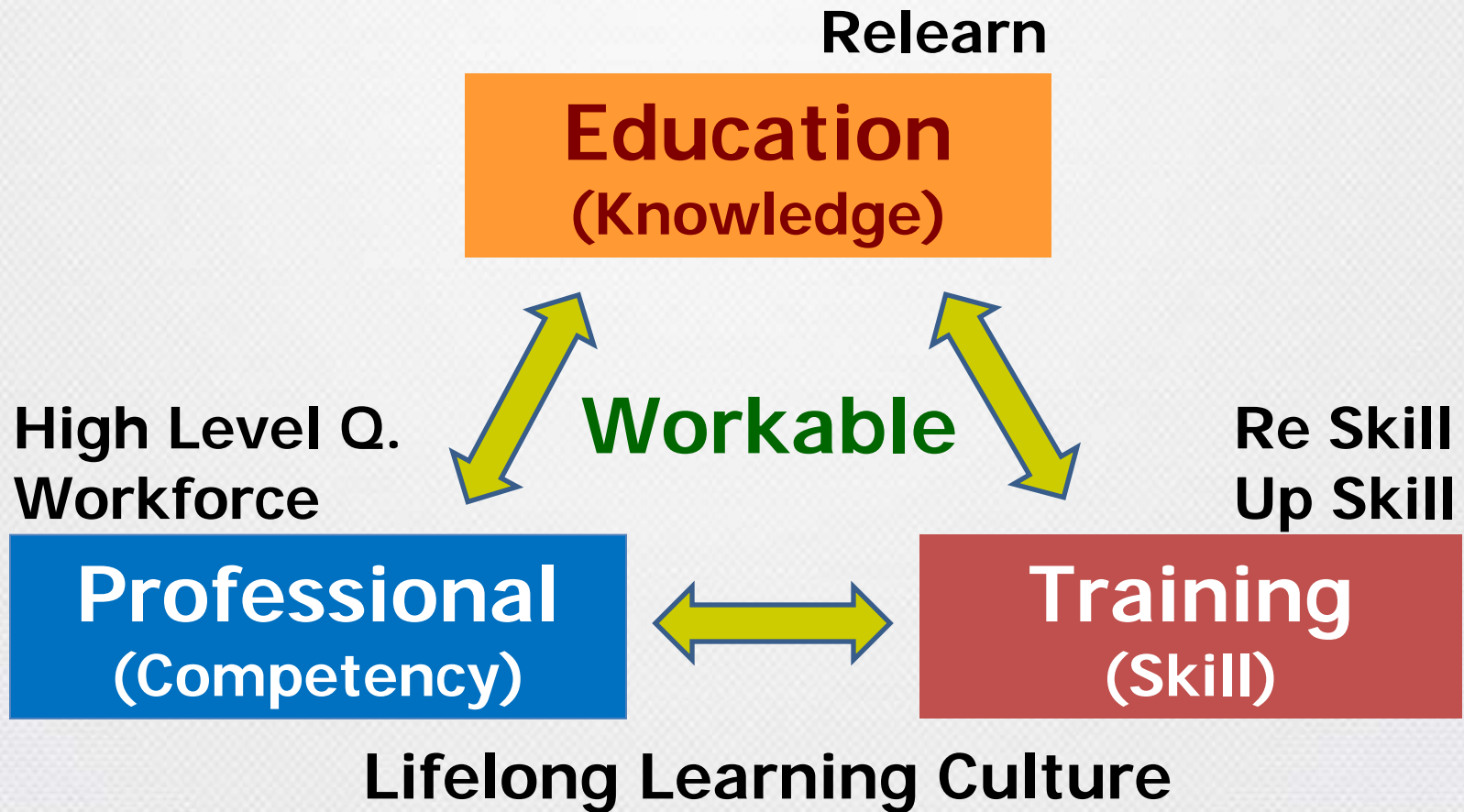
## Change of mission in education to suit the 21<sup>nd</sup> century dynamics

- Focus on curriculum development/Trainer domination (Supply Side)
  - Focus on curriculum completion / compulsory learning (Mass Education)
  - Cognitive-Based Learning
  - Classroom learning/in school/regular system
  - Focus on age group 18-22 yr
  - Focus on curriculum with certificate/ diploma
- 
- Focus on professional development/Trainee domination (Demand side)
  - Focus on fulfilling insufficiency (essential knowledge and skill)/ Personalized Education
  - Experience-Based Learning
  - Outside-classroom learning
  - Focus on **all period of life** (reskill, upskill, multiskill, recycle)
  - Focus on curriculum without certification/diploma



# UNIVERSITIES NEED CHANGE

To build mechanism of comprehensive education, training and professional development in responsible to industrial requirement and ready to cope with future change





# ROLE OF TEACHER MUST CHANGE

- Teachers do not teach, but **Design & Facilitate** the learning process
- Students learn from practicing & **Coaching**
- Use experience-based learning (**Mentoring**)
- Learning occurs from inside by **Motivation and Inspiration**

**The obstacle is how to find teachers who are ready to education reform**



# University Needs **REFORM**

## University has to adapt

**Positioning**

- Unique Value Proposition

**Target**

- Everyone can learn (Aging, Workforce, Internationals)

**Capability**

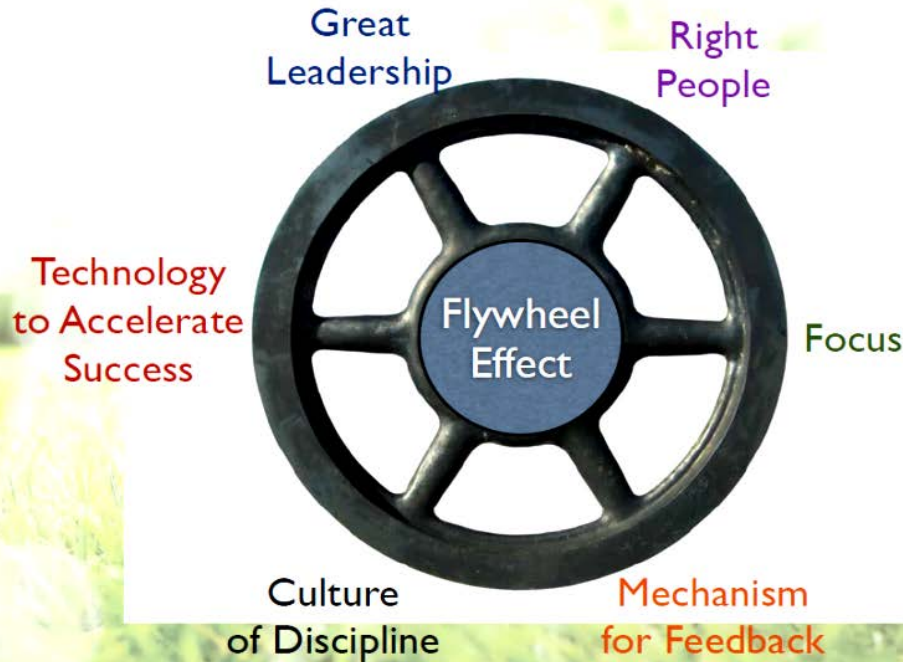
- Learn, Unlearn, Relearn

**Capacity**

- Network, Collaboration, New methods & Educational Technology



# Sustainable & Successful University



Adapted from Jim Collins – Good to Great

**FOCUS**

**FOCUS**

**FOCUS**

*.....With limited resources and less support from Government.....*

# FATHER OF HIGHER EDUCATION OF THAILAND

True success is not in the learning, but  
in its application to the benefit of mankind.

M. Songkro



THANK YOU