



สภาอุตสาหกรรมแห่งประเทศไทย  
The Federation of Thai Industries

# Industry 4.0 & Thailand 4.0

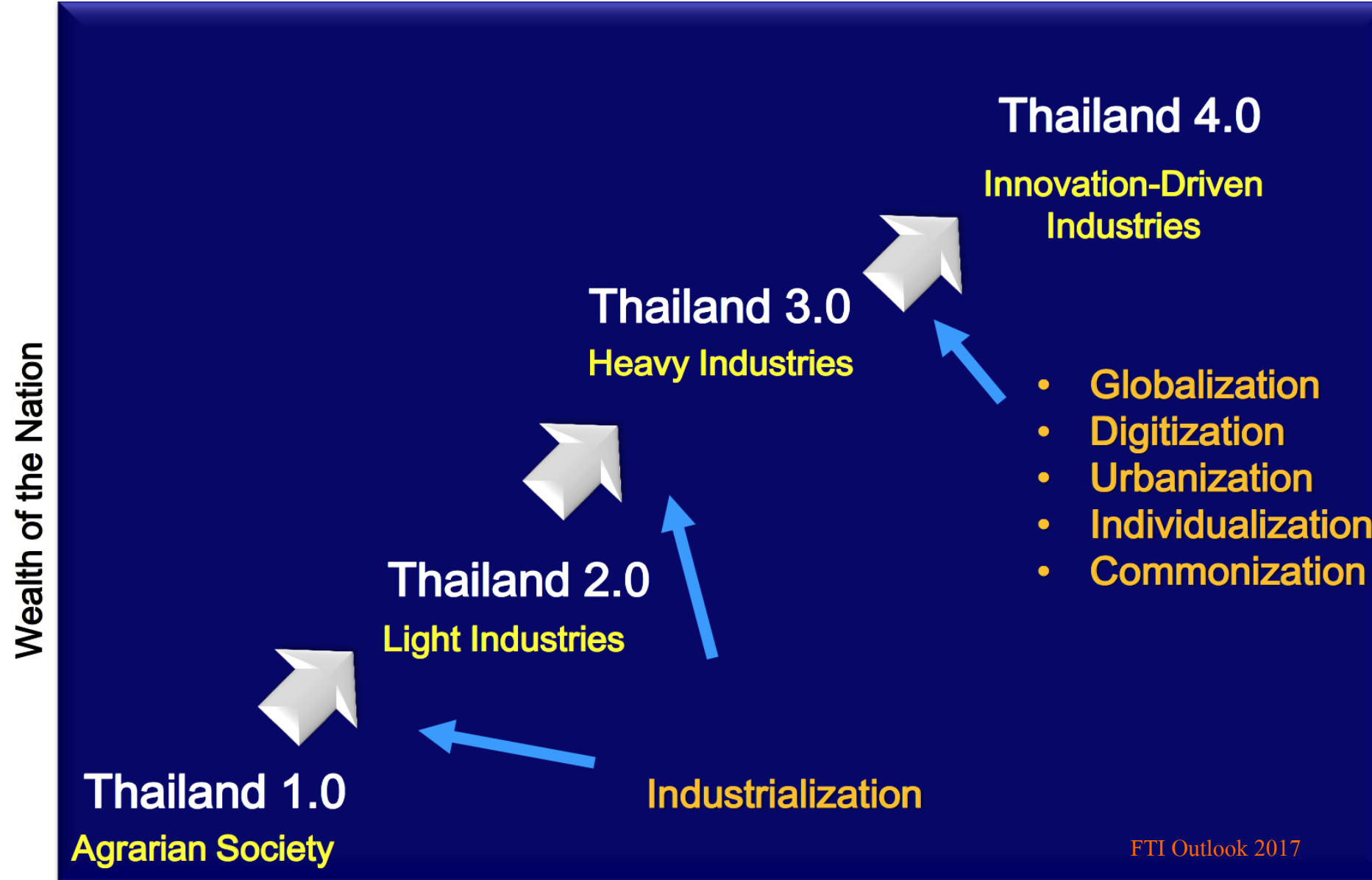
Dr.Katiya Greigarn

June 16<sup>th</sup>, 2017

Gearing toward

**Prosperity**  
**Security**  
**Sustainability**

# Path to Thailand 4.0

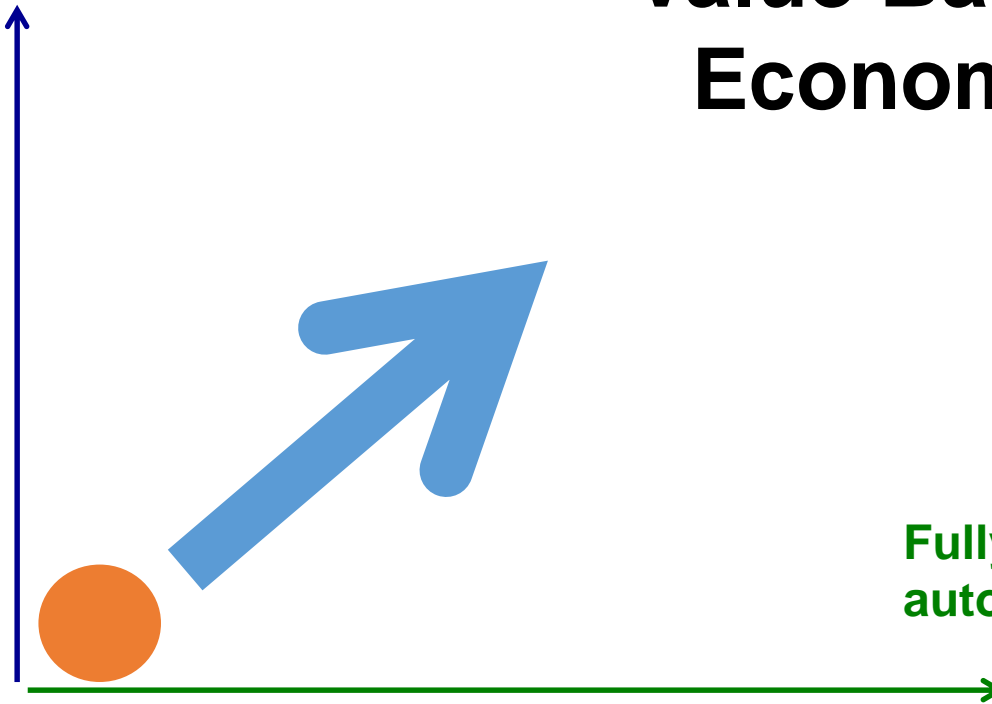


FTI Outlook 2017

# Thailand 4.0 Challenging Issues

High skill talent

## Value Based Economy



Fully integrated automation

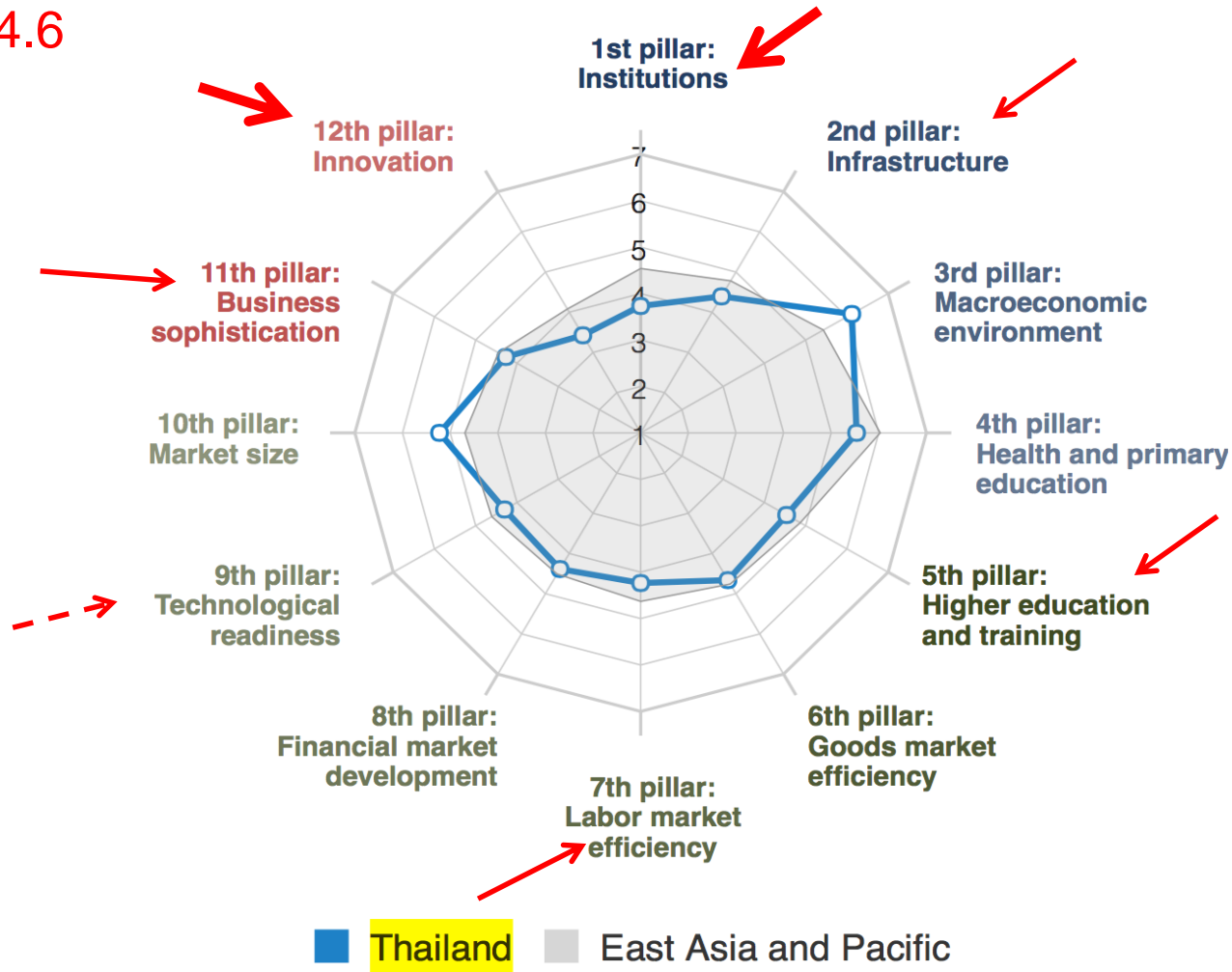
FTI Outlook 2017

# WEF Thailand Competitiveness Index (2016-2017)

Global Competitiveness Index (2017)

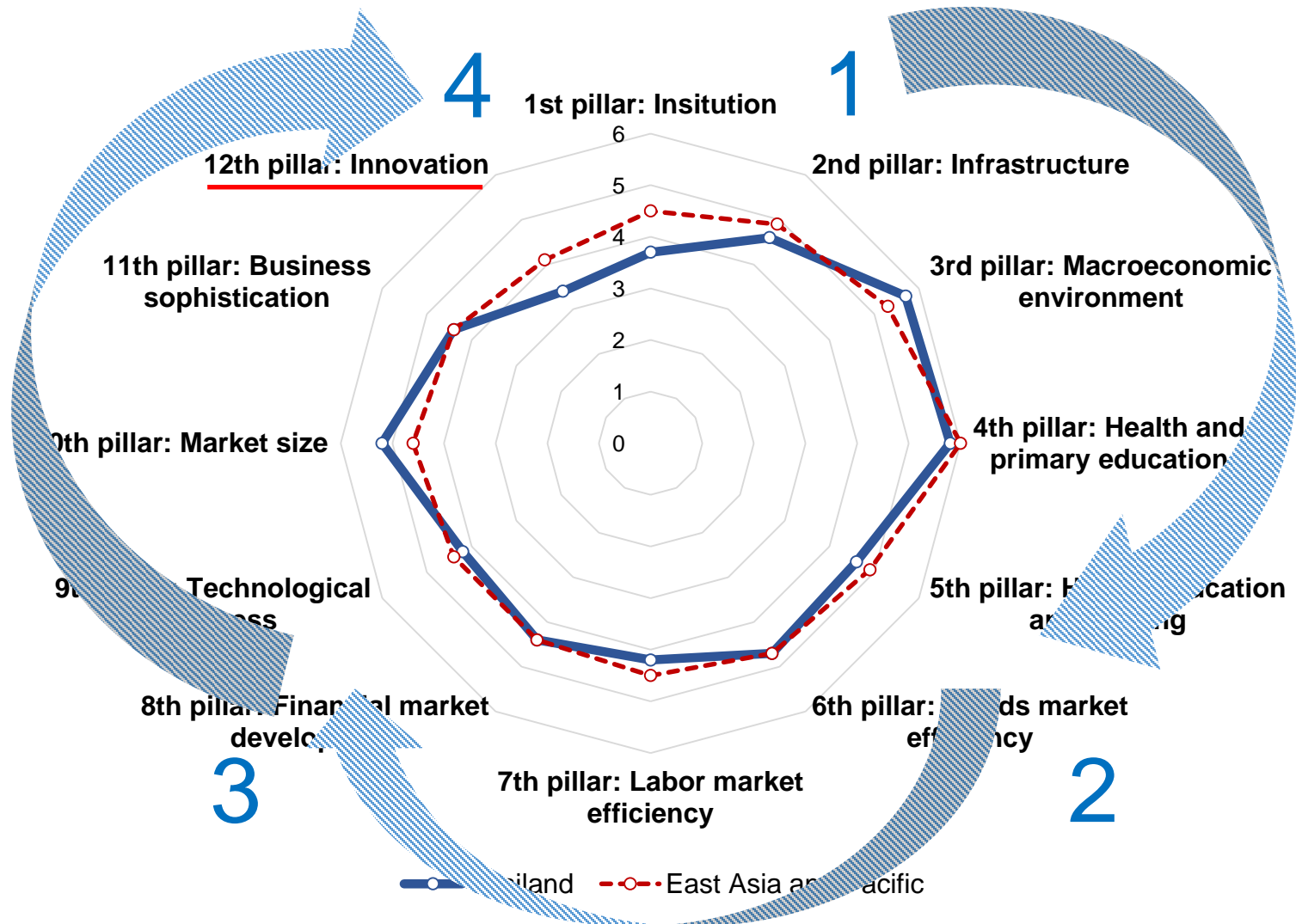
34/138

Score 4.6

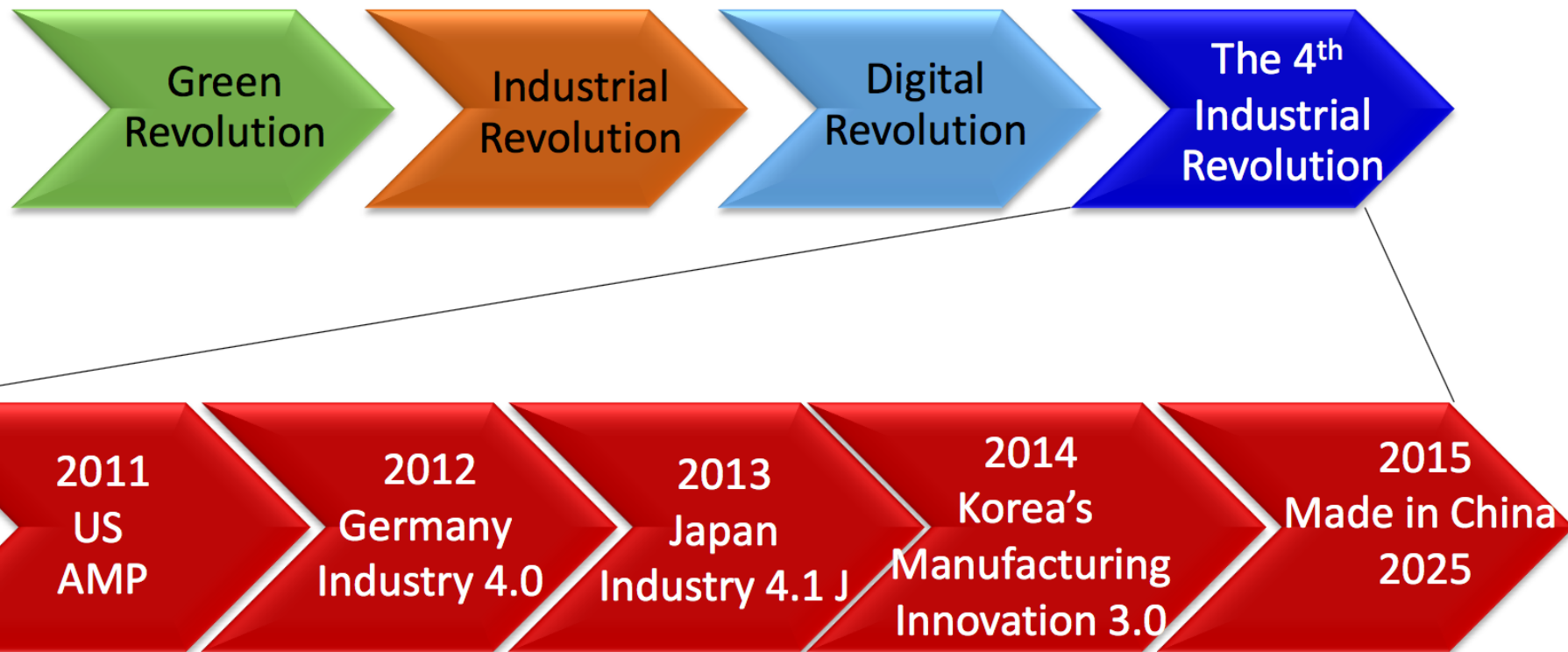


GDP per Capita 2015  
US\$5,742.-

# Thailand Transformation 1 > 2 > 3 > 4



# The World is still developing : Global Industry Trend

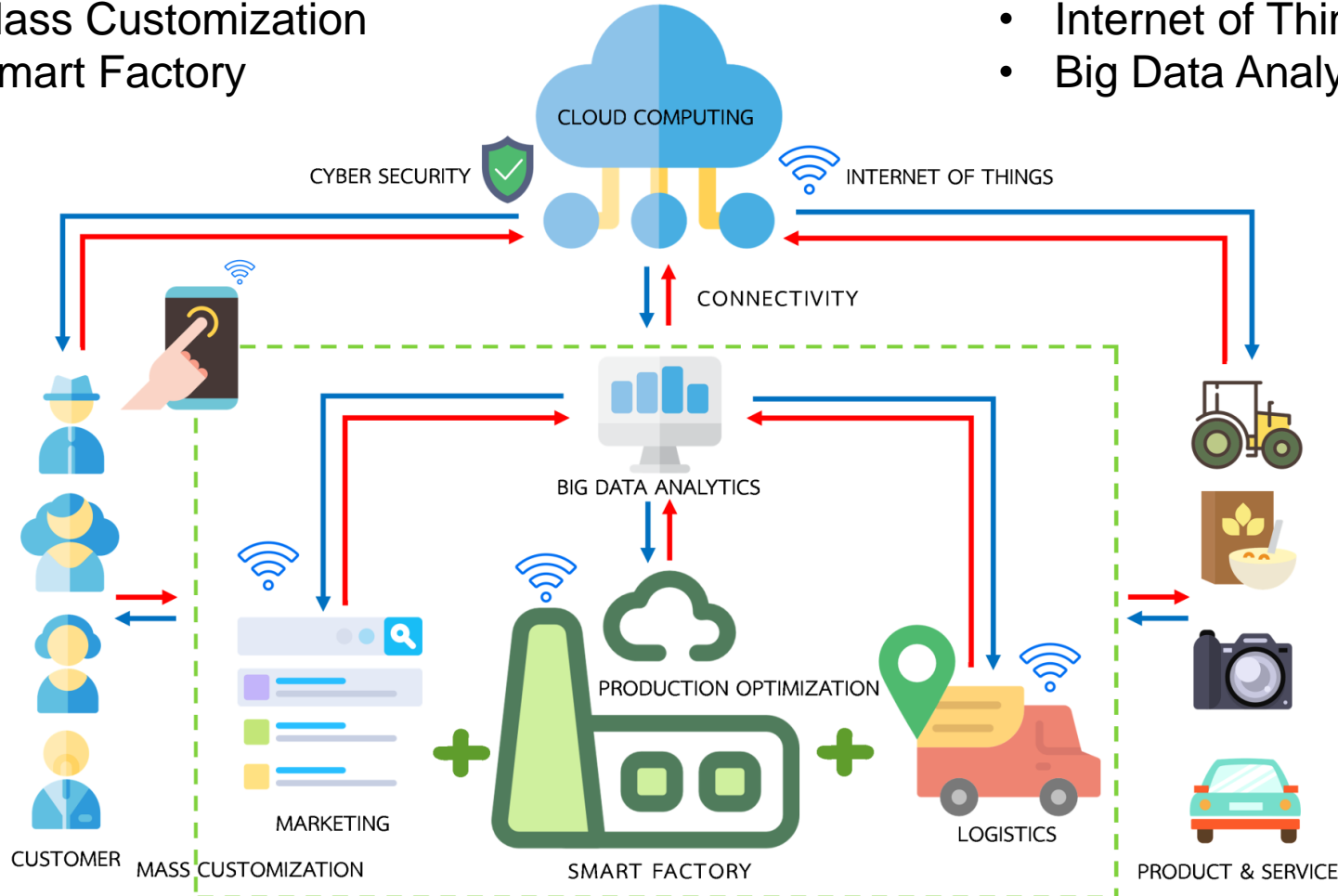


FTI Outlook 2017

# FTI Industry 4.0 (R)evolution Eco-system

- Mass Customization
- Smart Factory

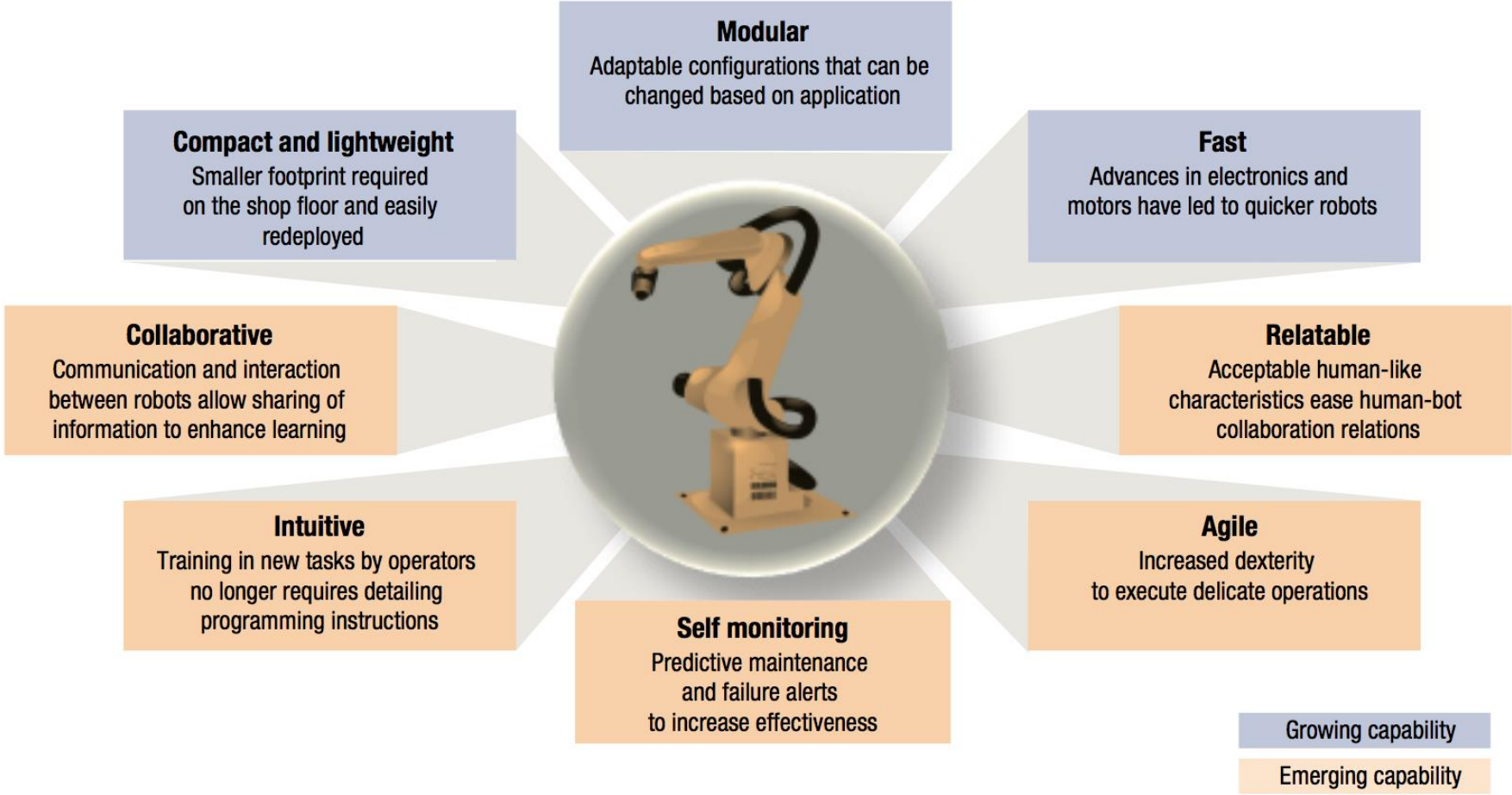
- Internet of Things
- Big Data Analytics



## Cyber-Physical System

**Figure 8:** Innovations in advanced robotics

**Modern robots are benefiting from several innovations that enhance their capabilities in the digital production environment:**

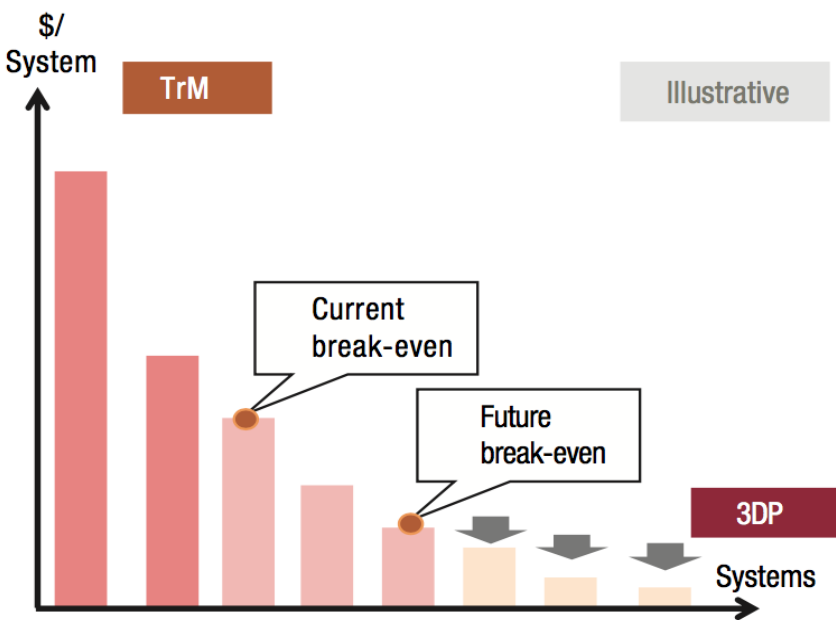


Source: International Federation of Robotics, World Robotics: Industrial Robots 2015

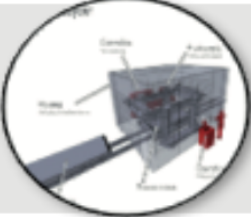
**Figure 10:** Traditional versus additive manufacturing (3D printing)

**3D printing is becoming integrated in shop-floor production systems and slowly improving "break even" versus traditional manufacturing**

Traditional manufacturing (TrM) vs. 3D Printing (3DP)

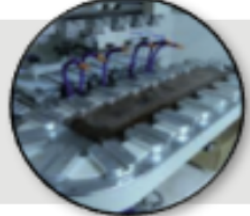



• TrM's cost advantage over 3DP will continue to erode as AM technologies mature rapidly



"Voxeljet created the first commercially available **continuous 3D printer** ... this establishes a new generation in 3D printing ... without having system operation interruptions."<sup>1</sup>

3D Systems' "racetrack" 3D printer "enables **continuous printing** of higher functionality polymers at speeds 50x faster than all jetting technology".<sup>2</sup>



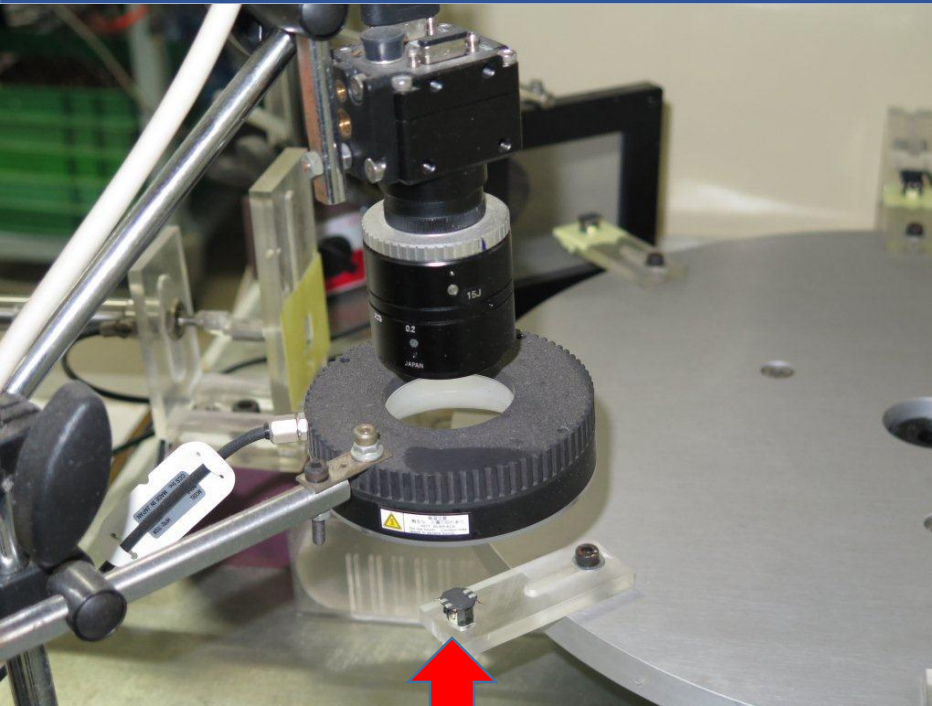


Ten times faster than competitive technologies and intended for the factory floor, "HP's new **3D printer** ... [is] not only a **game changer**, it's going to rewrite the rules in the 3D printing industry".<sup>3</sup>

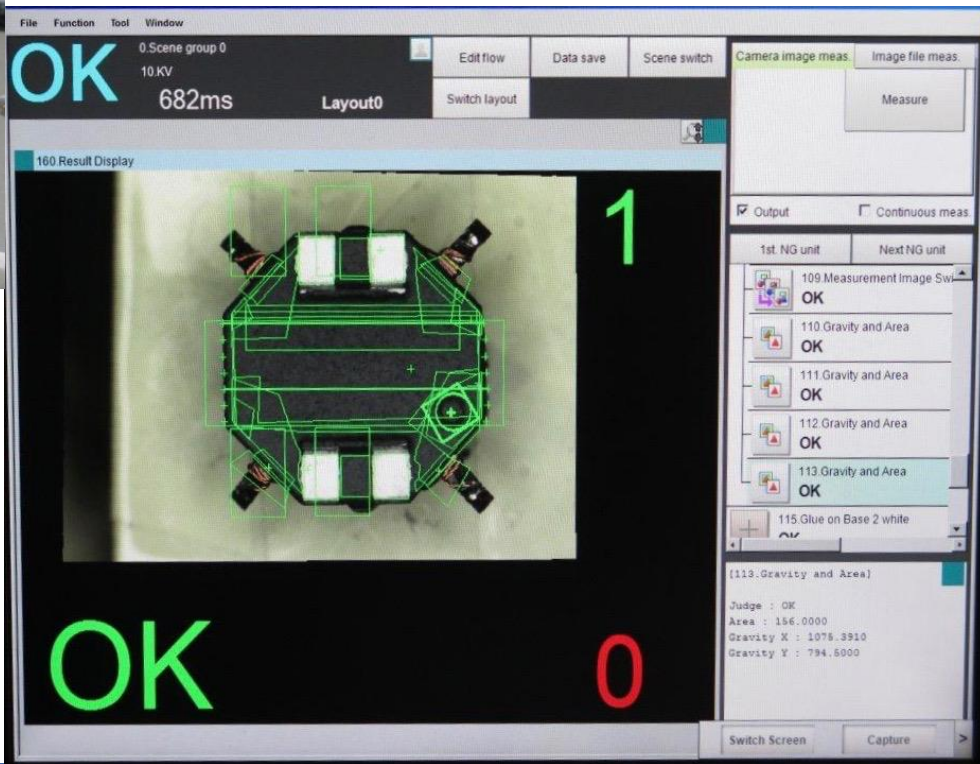
**Production system integration and continuous printing will drive the 3DP vs TrM tipping point**

Sources:  
 1 Case: Voxeljet, Technology Solutions Delivered by Voxeljet, [http://www.tc.umn.edu/~ssen/IDSC6050/Case5/Group5\\_index.html](http://www.tc.umn.edu/~ssen/IDSC6050/Case5/Group5_index.html)  
 2 3ders.org, 3D Systems releases more details of their continuous, high-speed, fab-grade 3D printing platform, <http://www.3ders.org/articles/20141209-3d-systems-continuous-high-speed-fab-grade-3d-printing-platform.html>  
 3 The Motley Fool, HP's 3D Printing Technology: How Concerned Should Stratasys Ltd. (SSYS) Investors Be?, <http://www.fool.com/investing/general/2014/11/09/hps-3d-printing-technology-how-concerned-should-st.aspx>

# In-process Machine Inspection



Component under inspection



# Collaborative and Social well-being of people in the factories



# Industry 4.0 supports 17 Sustainable Development Goals



# FTI Preparation toward Industry 4.0

## White Paper



สภาอุตสาหกรรมแห่งประเทศไทย  
The Federation of Thai Industries

การยกระดับอุตสาหกรรมไทย  
สู่อุตสาหกรรม 4.0 (Industry 4.0)

Download: <https://goo.gl/aKNhU3>  
or <https://goo.gl/VUN21u>

## Self-Assessment

ขอเชิญผู้ประกอบการร่วมตอบแบบสอบถาม  
ประเมินตนเอง (Self-Assessment) ของอุตสาหกรรมไทย  
เพื่อเข้าสู่อุตสาหกรรม 4.0 (Industry 4.0)

อุตสาหกรรม 4.0  
**INDUSTRY 4.0**  
The Next Industrial Revolution

Link : <https://bit.ly/2bFyofm>  
หรือ  
Download File : <https://goo.gl/IAE7se>

Link: <http://bit.ly/2bFyofm>  
Download: <https://goo.gl/IAE7se>

# FTI Industry 4.0 Strategies



**Demand Driven Strategy**



**Develop Industrial Service Providers**



**Industry 4.0 Strategies**

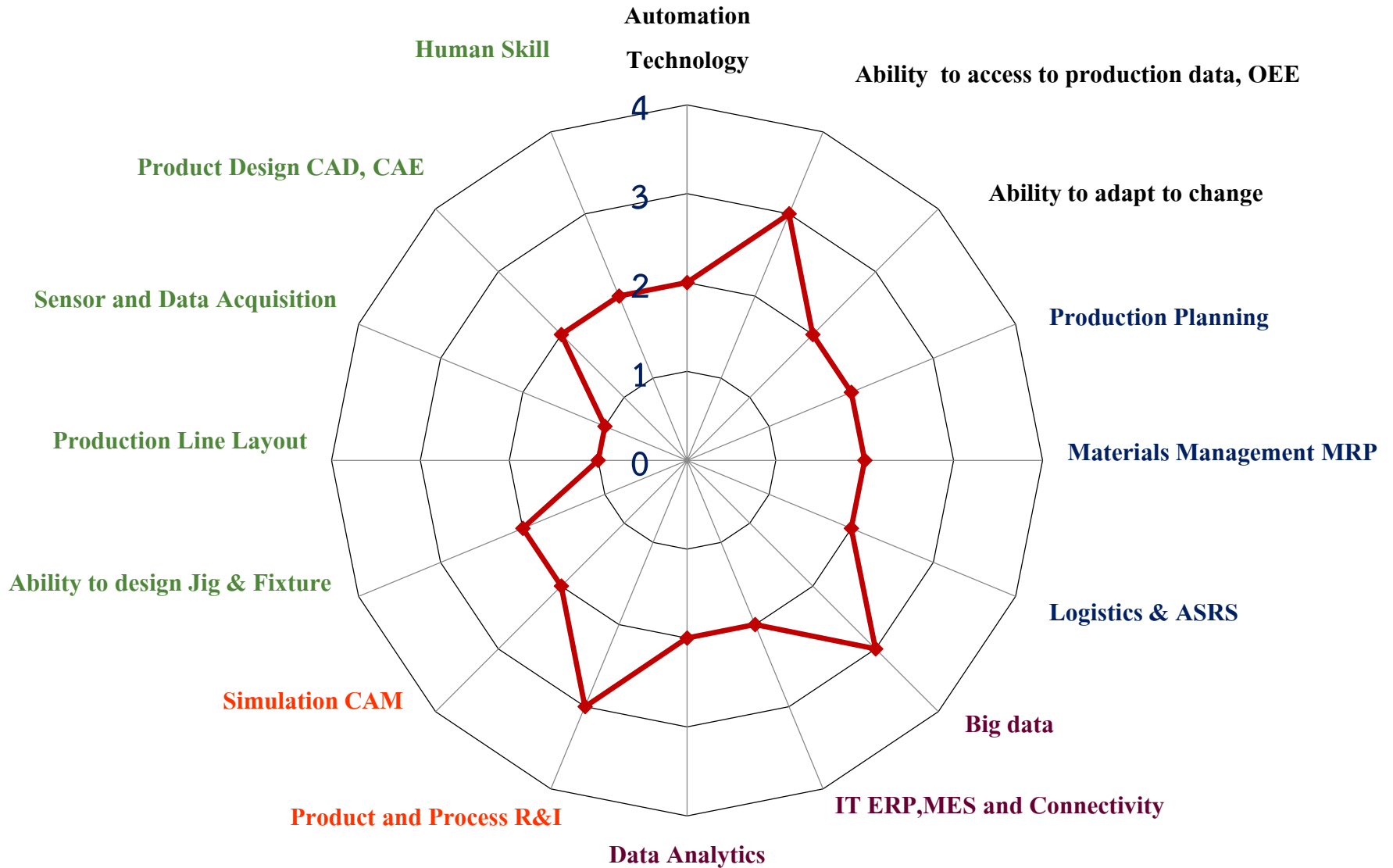


**Technologies Development**



**Infrastructure and Regulation Improvement**

# (Self-Assessment 2.0-2.5)



# Public-Private Partnership PPP

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Ministry of Industry

Ministry of Science and Technology

Ministry of Digital Economy and Society

Ministry of Labour

Ministry of Education

Board of Investment

Federation of Thai Industries

Etc.

# ACTIVITIES

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- Self-assessment
- Automation Feasibility Study for SMEs
- Small Automation Pilot Projects for SMEs
- NSTDA Automation Research Fund
- BSID/MOI Business matching SME&S.I.
- MOL ; MARA-Human Resource Development; Builder, SI and Maintenance
- BOI Incentives for new Investment in Automation and Robotics
- (Restructure import duty of parts and components)
- Etc.

# Thailand 4.0

Innovation

Agriculture

Industry 4.0

Service

Public & Private Partnership



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ขอบคุณครับ