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Opportunities Thailand:

Prospects for Thailand's Automation and Robotics Industry



Status Quo of Automation Industry in Thailand today

- Thailand is 16th biggest manufacturing country (ranked by manufacturing output), and 14th in Manufacturing Competitiveness (2016) ¹⁾
- Big players and MNE's are investing in automation, but often other players are still relying on manual labor or isolated automation solution.
- Automation potential can be large in Thailand, but currently the automation industry is not yet fully advanced, limited demand makes market very competitive.
- Changes initiated in the industry environment indicate, that there is a positive outlook!

1)Deloitte:Global Manufacturing Index Report 2016

Opportunities Thailand – Potential of Automation



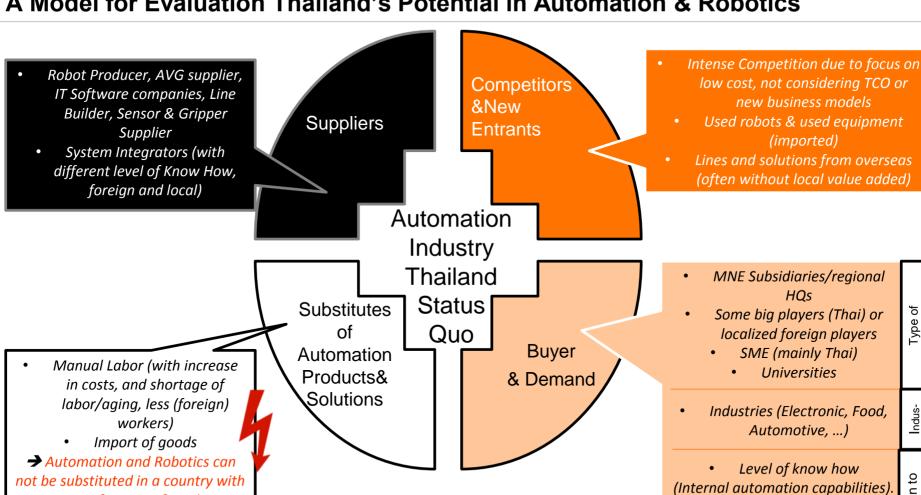
Type of company

Indus-try

Reason to automate

 Urgency & Need to automate Chance or opportunity to change business model

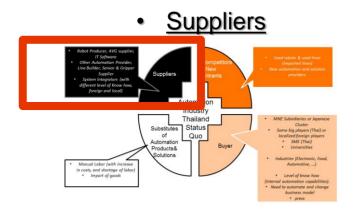
A Model for Evaluation Thailand's Potential in Automation & Robotics



manufacturing focus!



Status Quo of Automation Industry in Thailand today I

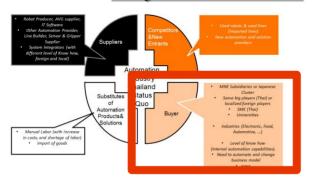


- Some system integrators with good know-how, but focus on solutions of so called 1st Robotic Revolution, on some application (low hanging fruits)
- Relative small local integrator companies (Engineers, Capital), few foreign integrators with local presence due to market conditions
- Limited exchange of local integrators to know-how from countries with more advanced automation
- → More integrators needed with more special technology / Application Know how, focus on IT & smart factory, Human Robot Collaboration, later Mobile robotics



Status Quo of Automation Industry in Thailand today II

Buyers/Demand



 Different level of Automation and Robotics in Thailand depending on type of company and industry.

SME (Thai)	Subs.MNE	Japanese Subs. (Auto- motive)	Large Scale Thai business
?	HQ processes	According to business Model of HQ	Full automation

Potential of Automation and Robotics goes beyond labor shortage, aging society, and saving costs for manual labor! Examples:

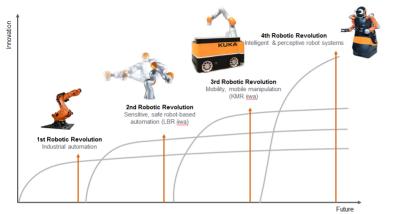
Quality Costs	Reduce Maintenance Time & Costs Downtime	Time to Market	Capacity and Inventory costs	Human Robot Collaboration	Flexibility of Production
- Data analyses, Automated Quality control	- Robots and equipment with less need to maintain -remote & predictive maintenance	- More flexibility in changes in production, IT	-linking supplier by IT, flexibility of production allows better capacity utilization	- Support of human activities with robot (heads- up display car)	e.g. Batch size one (mass personalization, manufacturing as service)



Status Quo of Automation Industry in Thailand today III

Buyers/Demand: (examples of opportunities)

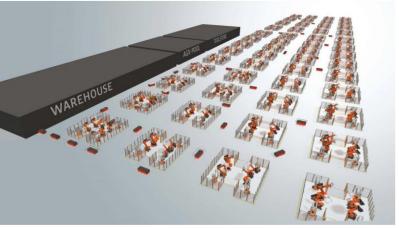
Innovation of Robotics over time



Importance of Communication, Data analyses in Robotics & Automation







Smart Factory (fully flexible manufacturing)
Allows less lead time, increase capacity utilization, inventory reduction, mass personalization.

Opportunities Thailand – Potential of Automation & Robotics



Challenges for Thailand

- Grow and encourage local know how (universities, local and international exchange ~lanauaae) Collaboration Skills in IT, mechatronics, project management
- Competitors &New **Suppliers Entrants**

Automation

Industry

Thailand

Status

- Choose products, which can be a lona term advantage!
- New business models, flexibility. maintenance costs, capacity
 - Exchanae knowledae amona big & small, local and international companies (e.g. in forums, seminars), from suppliers to buyers
- Quo A case of urgency needs to be Substitutes Set-up internal know how established
- Buyer of Automation · Reflect Business cases for new Disruptive innovations will business models, advantages Products& & Demand transform manufacturing other than savings in personal Solutions and might threaten established costs manufactures and countries.

Government & Agencies & associations:

- Promote University/Education sectors
- Encourage investment & new business models (innovation)
 - Encourage local & international exchange



Thank you for your attention!





Barriers for Manufacturers to Automate and enter I4.0 (applicable to Thailand?)

5 most mentioned Barriers to Industry 4.0

- Difficulties in coordinating actions across functions (due to multidisciplinary, project management)
- Hesitant to initiate wideranging transformation
 - Talent: skillset
- Concerns on Cybersecurity
 - Lack of business case

Additional mentioned Barriers to Industry 4.0 from advanced manufacturer

- Challenges with Integrating data
- Uncertainty about in- or outsourcing services
 - · Concern about data ownership

Based on McKinsey Industry 4.0 Global Expert Survey 2016