

KUKA

M. Wenzel – CEO Kuka Robotics Thailand/ Malaysia,
ASEAN

Opportunities Thailand:

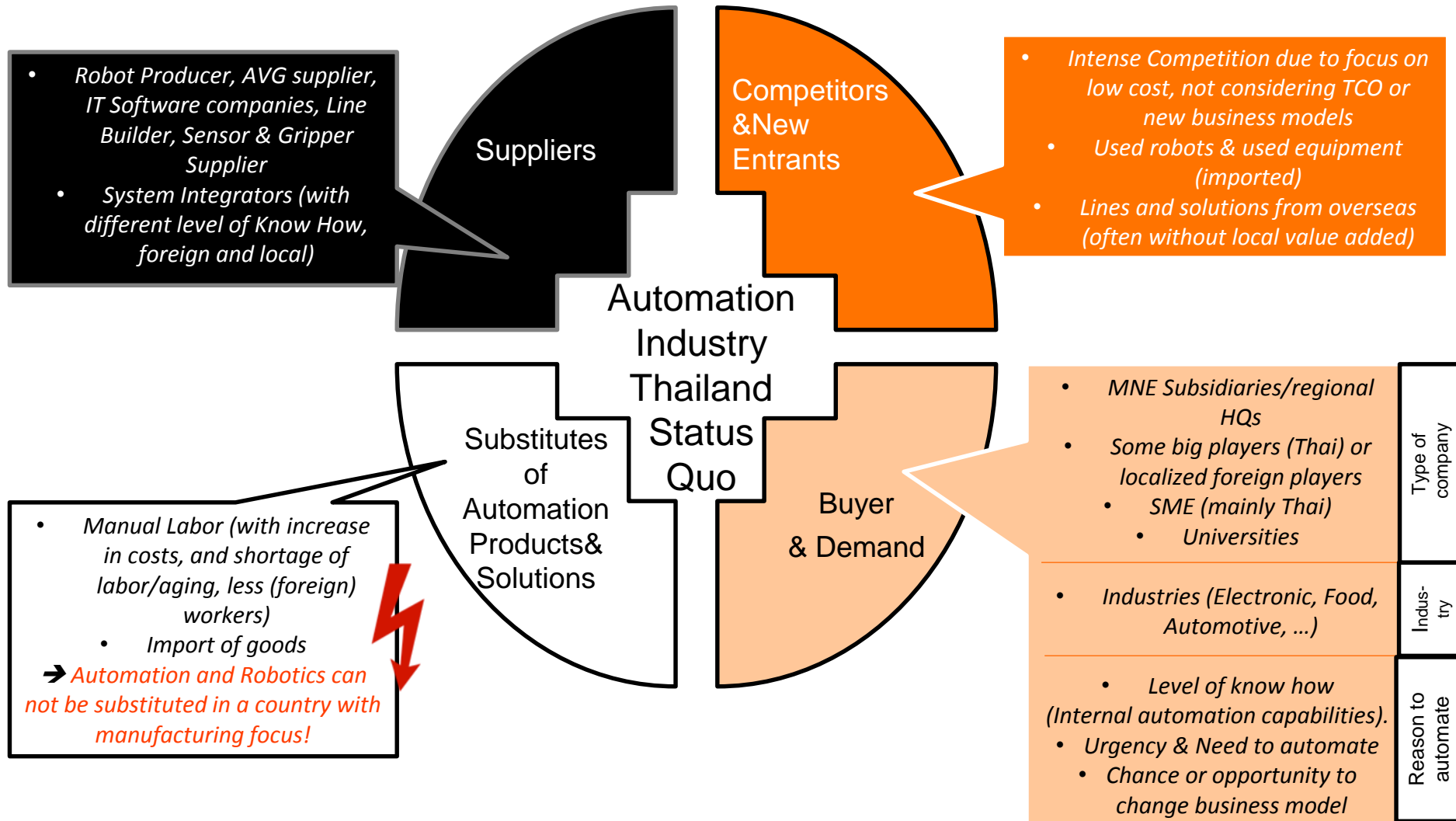
Prospects for Thailand's Automation and Robotics Industry

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!

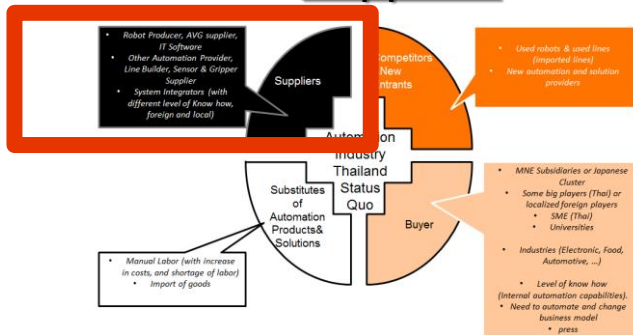
¹⁾Deloitte:Global Manufacturing Index Report 2016

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



Status Quo of Automation Industry in Thailand today I

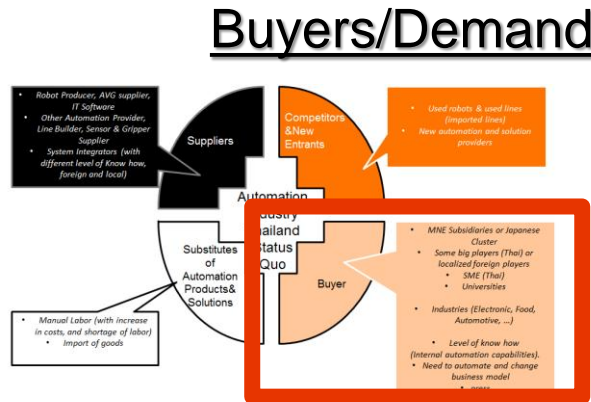
• Suppliers



- 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

- 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

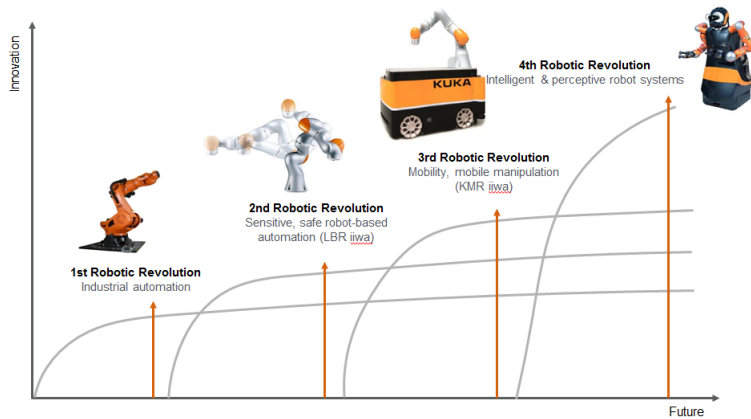
Potential of Automation and Robotics goes beyond labor shortage, aging society, and saving costs for manual labor! Examples:

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)

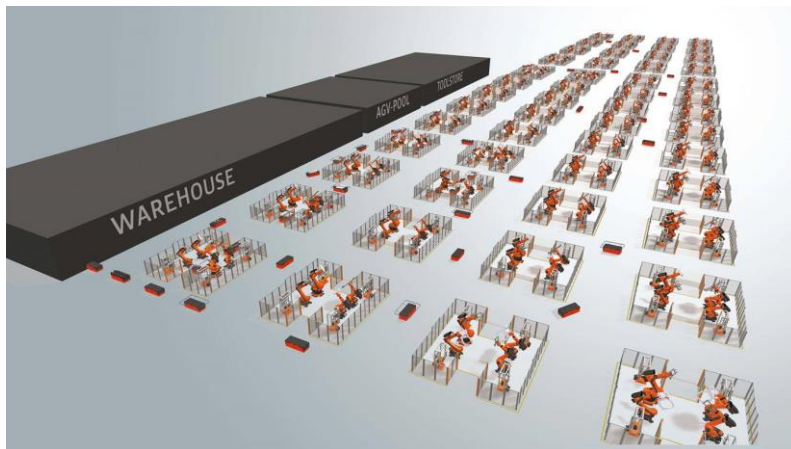
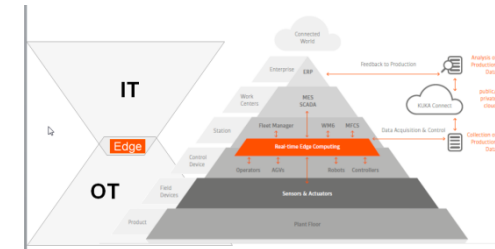
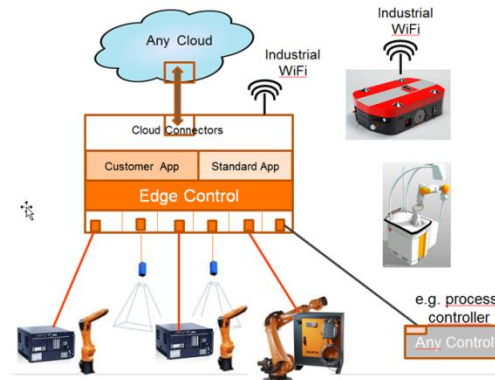
Status Quo of Automation Industry in Thailand today III

Buyers/Demand: (examples of opportunities)

Innovation of Robotics over time

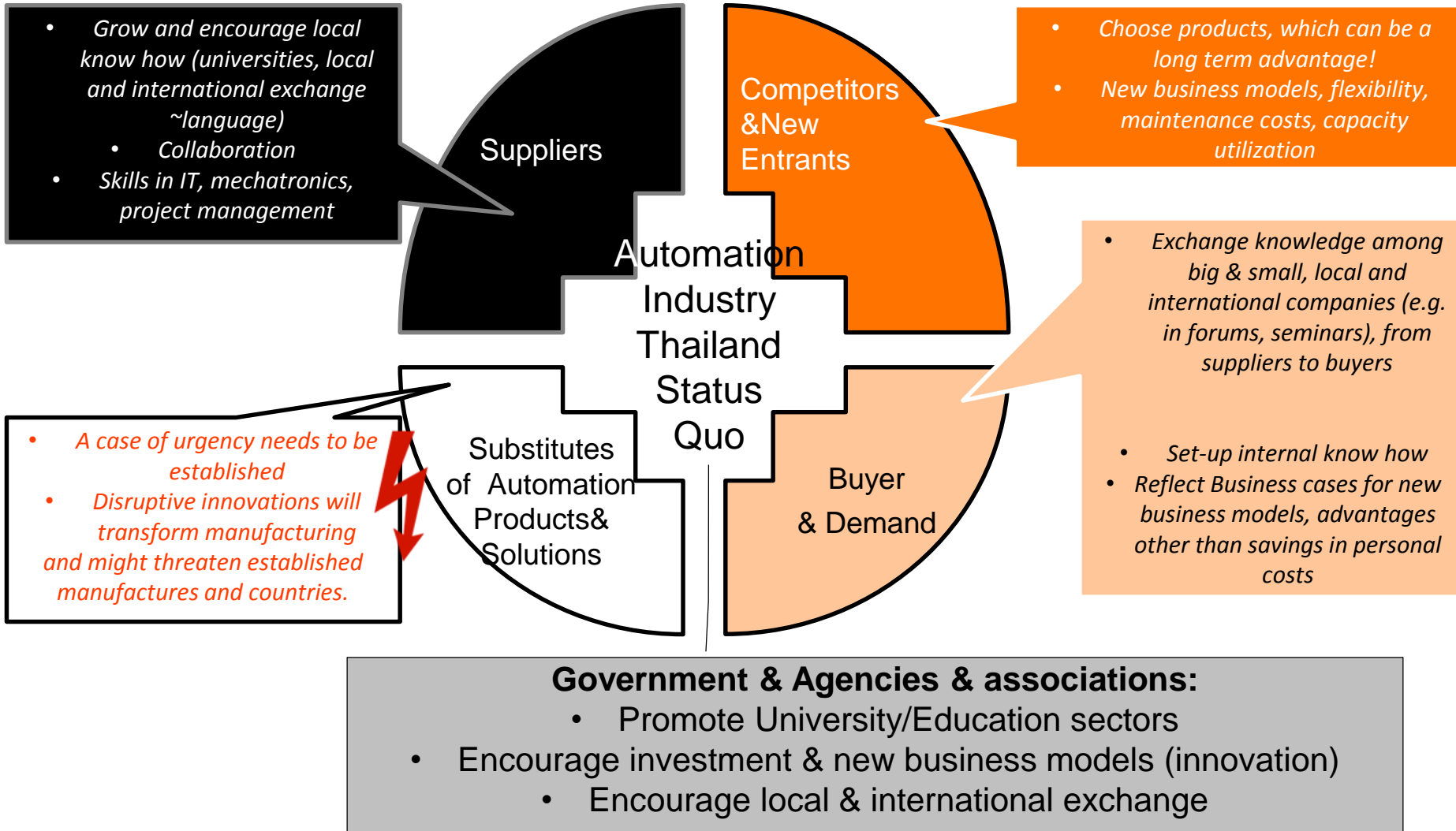


Importance of Communication, Data analyses in Robotics & Automation



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

Challenges for Thailand



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 wide-ranging 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

Level of Progress in Industry 4.0

Based on McKinsey Industry 4.0 Global Expert Survey 2016