



UTILITY ENABLEMENT IN THE DIGITAL ERA

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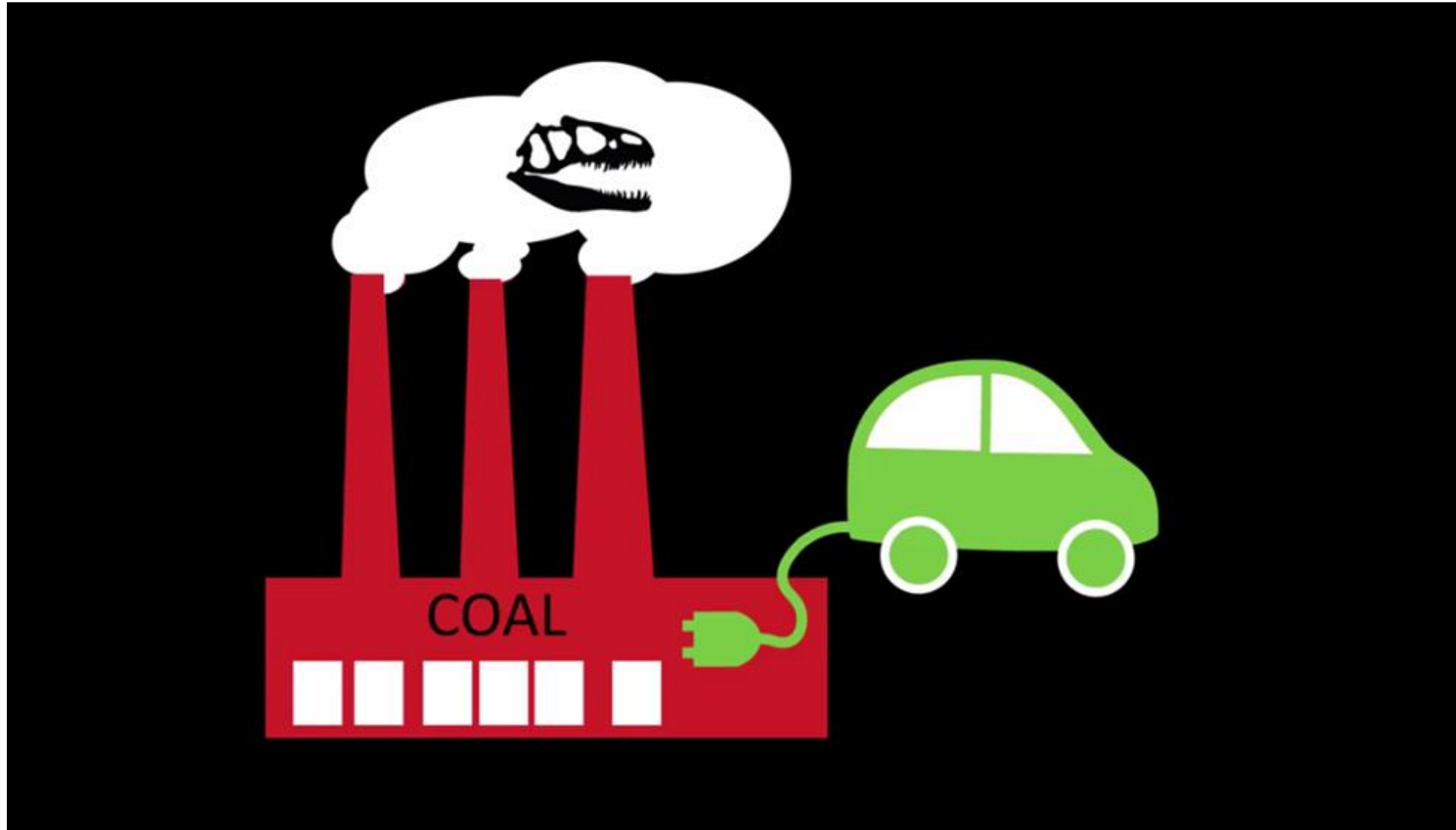
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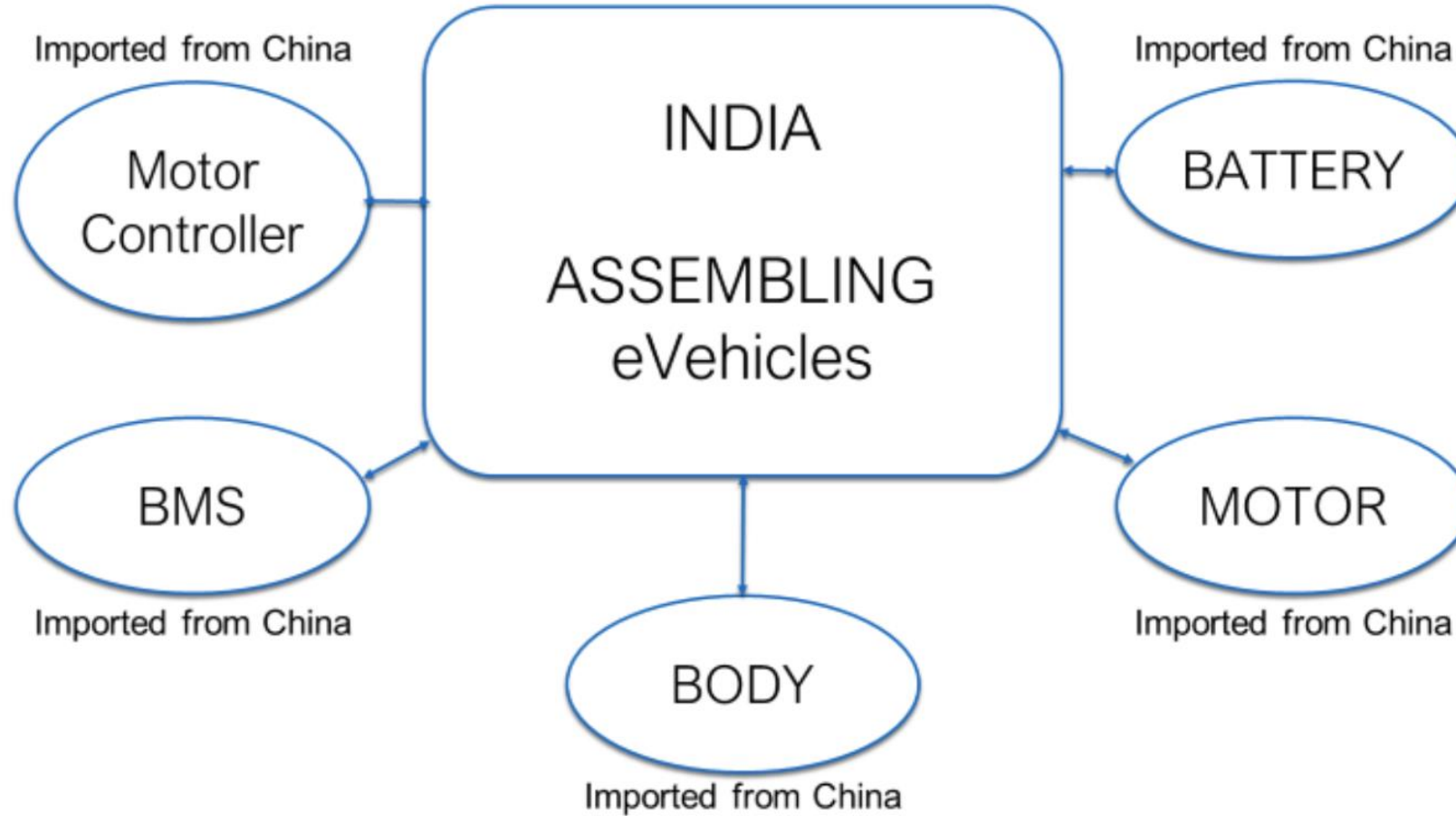
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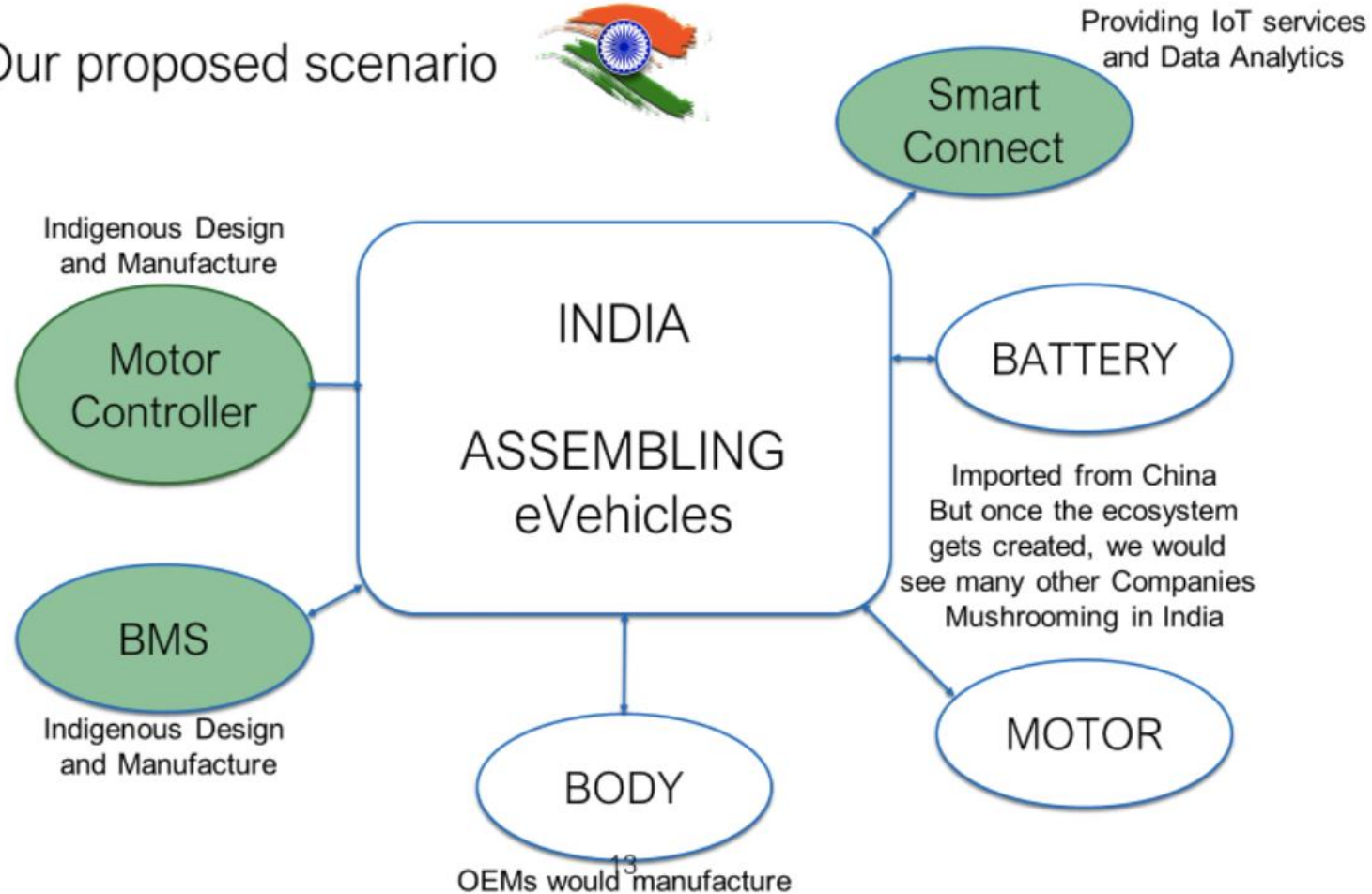
- Comments on sustainability-pressure on utility
- Data driven policies
- Opportunities in leveraging disruptive technologies
- Current status
- Takeaways

- Training and Capacity Building of Utility Personnel
- Sharing of Resources amongst Utilities
- New Tools and Skills in the Digital Era





Our proposed scenario



What are the changes we expect from an organization that has launched the 4th Industrial Revolution journey?



Industry 4.0

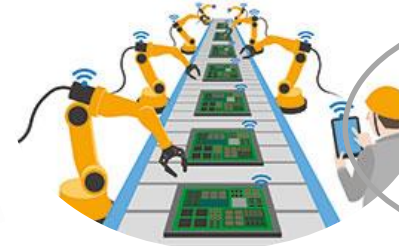
**Stronger Customer
Centricity**

Agility



**More Efficient Production
Processes**

Efficiency



**INDUSTRY
4.0**

Innovation

**New Marketing & Business
Models**



2019-
2022

Value Chain
Transformation
through Networked
Processing & Objects

1st, 2nd, 3rd and 4th Industrial Revolution



Water and steam power is used to create mechanical production facilities (1784 First Mechanical Loom) (1st)



Automation of production system (1969 Programmable Logic Controller) (3rd)

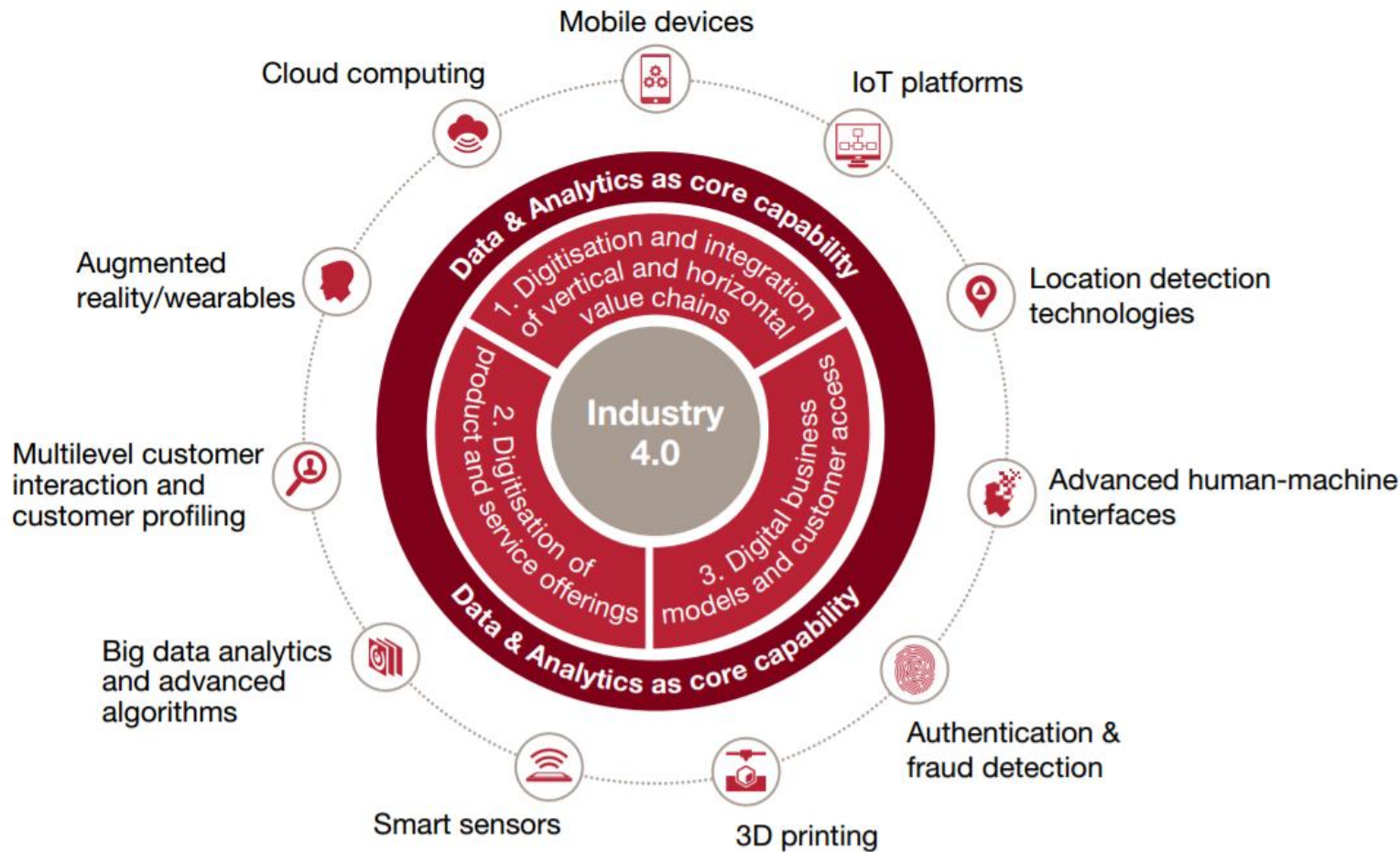


Electricity supports division of labor and mass production (1870- First production line) (2nd)



IoT & Cloud Technology automate complex task (4th Industrial Revolution)

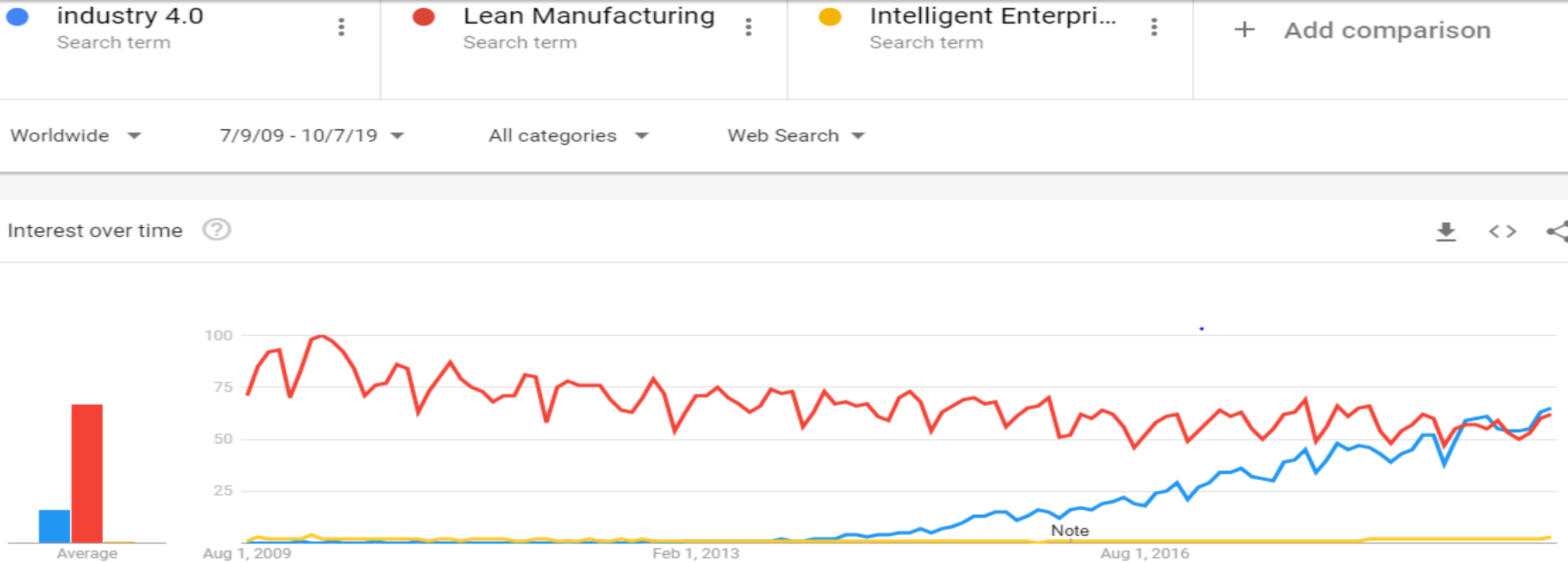




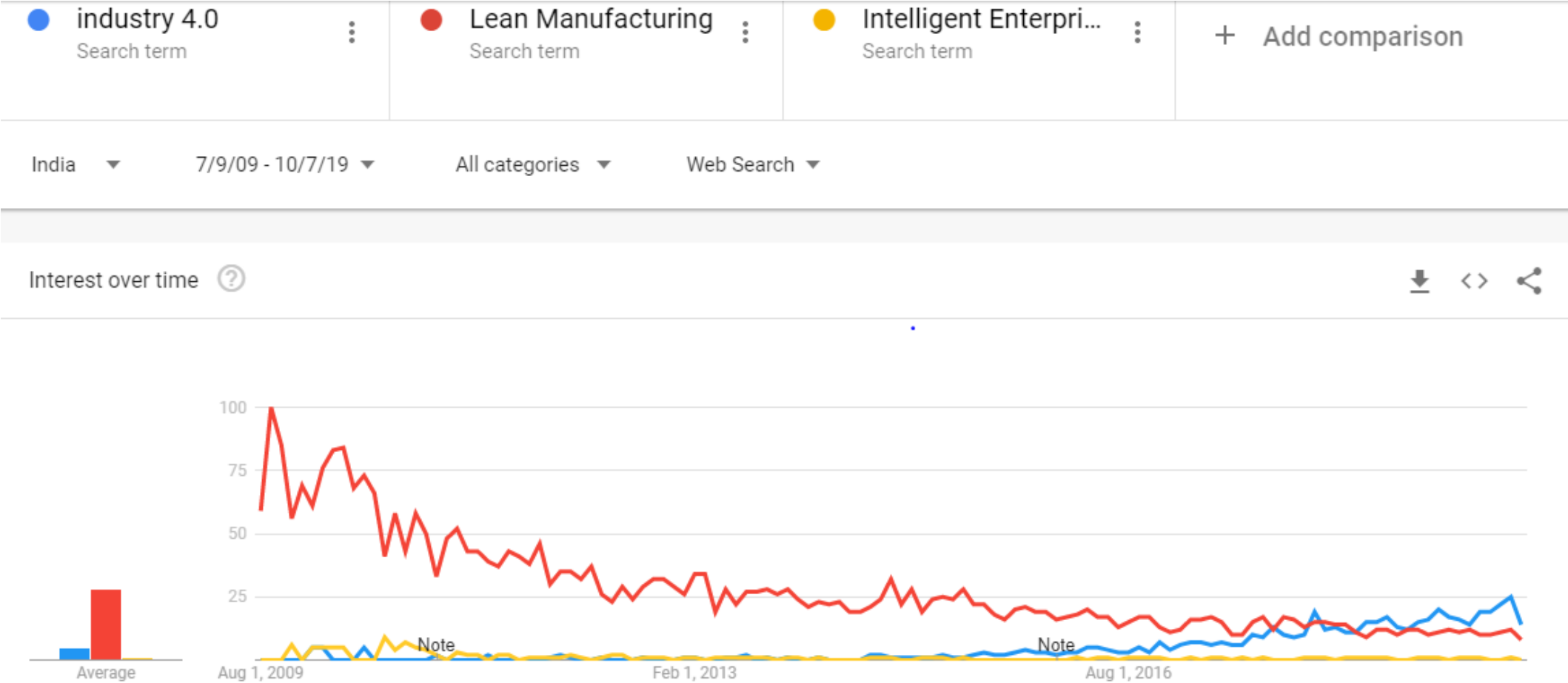
From just automation of back-office processes to:

- 1) Integration with potential end consumers
- 2) Internal collaboration with relevant stakeholders
- 3) Digital continuity in the value chain

Worldwide Google Trend: Industry 4.0, Lean Manufacturing & Intelligent Enterprise (2009-2019)



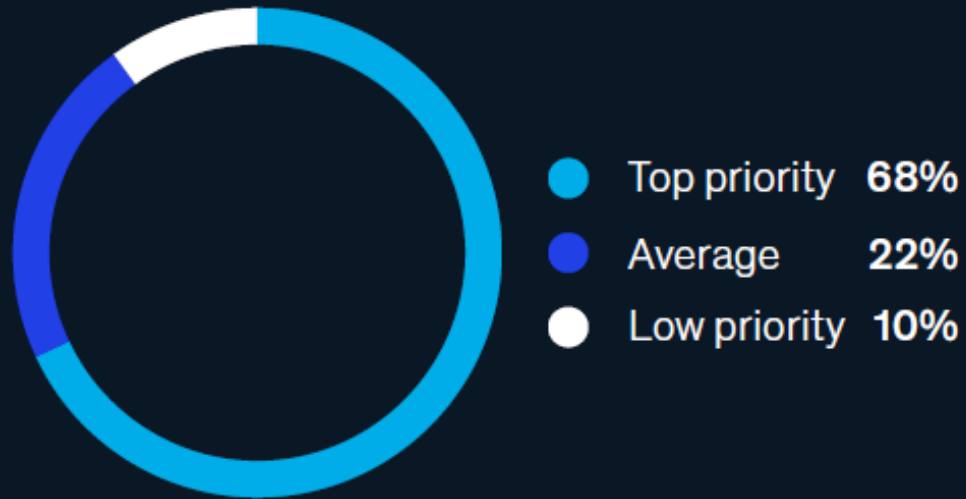
<https://trends.google.com/trends/explore?date=2009-07-09%202019-10-07&q=industry%204.0,Lean%20Manufacturing,Intelligent%20Enterprise>



While Industry 4.0 is a strategic priority, value capture at scale is lagging behind

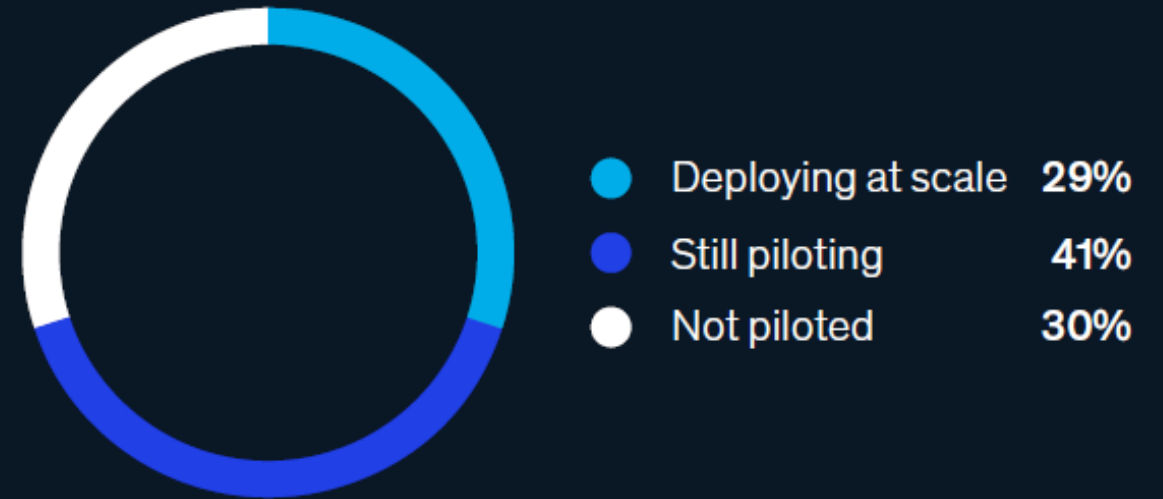
How much of a priority is Industry 4.0 on your company's strategic agenda?²

Percent



Status of Industry 4.0 solutions²

Percent

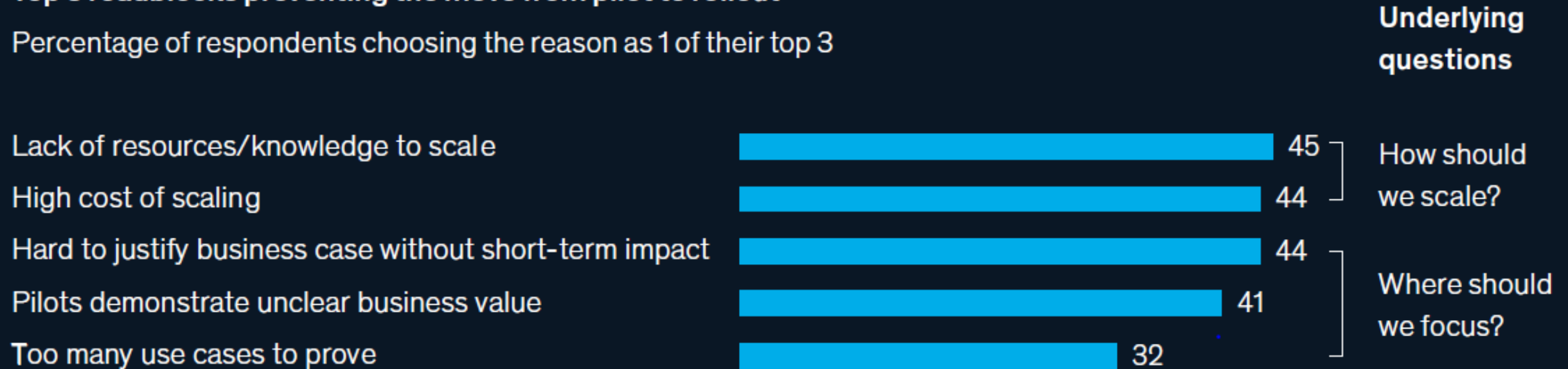


Christoph Schmitz, Andreas Tschiesner, Christian Jansen, Stefan Hallerstedde and Florian Garms:
Industry 4.0: Capturing Value at Scale in Discrete Manufacturing, McKinsey & Company
Report, July 2019, p.58

To unleash the power of Industry 4.0, key roadblocks need to be overcome

Top 5 roadblocks preventing the move from pilot to rollout³

Percentage of respondents choosing the reason as 1 of their top 3



Christoph Schmitz, Andreas Tschiesner, Christian Jansen, Stefan Hallerstedde and Florian Garms: **Industry 4.0: Capturing Value at Scale in Discrete Manufacturing**, McKinsey & Company Report, July 2019, p.58

Workforce of the future :

The competing forces shaping 2030



We need to protect people, not jobs

- Organizations can't protect jobs which are made redundant by technology & intelligent machines.
- A third of workers are anxious about the future and their job due to automation – an anxiety that kills confidence and the willingness to innovate.
- We need to nurture employees' agility, adaptability and re-skill them.

Source: Workforce of the future: The Competing Forces Shaping 2030-A PWC Report

- 1) Intelligent and innovative technologies offer great opportunities to utilities
- 2) Innovation and creativity will be a must for survival
 - a) Commit to sustainability and adhere to regulatory norms
- 3) Develop skills on emerging technology and new business models
 - a) Complex problem solving
 - b) Learning to learn
 - c) Digital technologies
 - d) Collaboration with human and robots
 - e) Cybersecurity

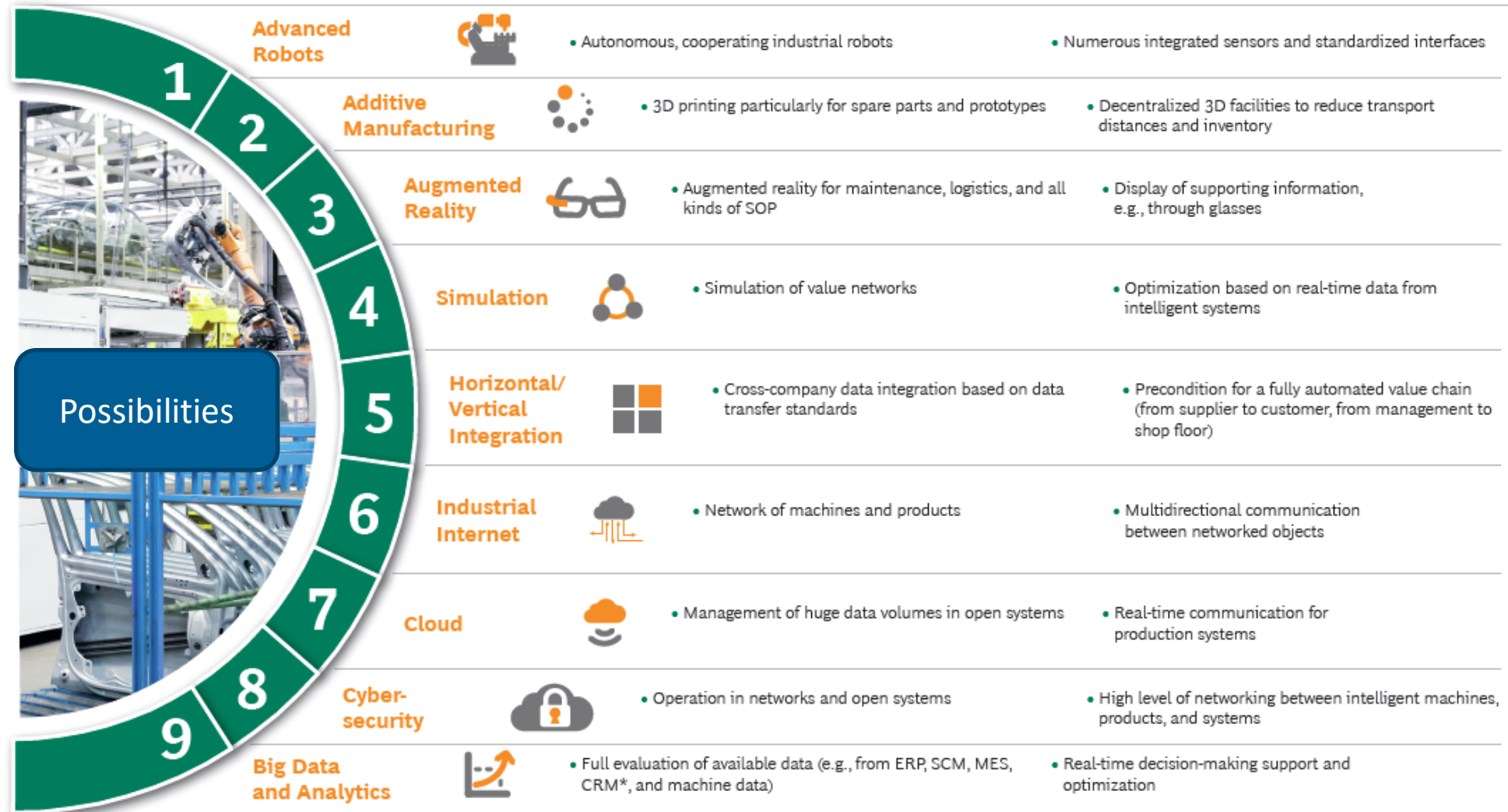
Thank You



Mention Some Enablers of Digital Continuity



Some Enablers of Digital Continuity



- Chair: Juthika Patankar, Additional Secretary, Ministry of Skill Development and Entrepreneurship*
- Moderator: Anant Venkateswaran, Director of ISGF Master Classes

Expert panel

- 1) Chandan Chowdhury, Dean, ISB
- 2) Ganesh Das, COO, Incubation Centre, TPDDL
- 3) Sushil Srivastava, Tata Power Delhi Distribution Ltd
- 4) Apurva Chaturvedi, Sr Clean Energy Specialist, USAID
- 5) Swetha Bhagwat, FSR Global
- 6) Pradeep Parera, Asian Development Bank*
- 7) Mani Khurana, Sr Energy Specialist, World Bank
- 8) Vinod Behari, CEO, Power Sector Skill Council