



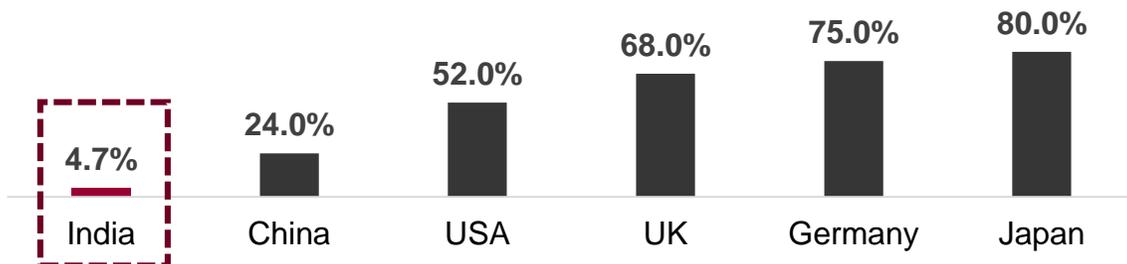
# *Opportunities for Swiss Investors Industry 4.0*

## Industry 4.0 and India

- In India, the sixth-largest manufacturing country, the adoption of Industry 4.0 is at a nascent stage
- The government aims to augment the share of manufacturing in GDP to 25 per cent from the current 17 per cent, by 2022
- A significant portion of the Indian manufacturing sector is still in the post-electrification phase with use of technology limited to systems that function independently of each other

### Lack of skills poses a significant challenge for Industry 4.0 adoption in India

Percentage of Formally Skilled Workforce



## Initiatives Undertaken for Industry 4.0

Initiative	Details
Make in India	<ul style="list-style-type: none"> <li>• Launched by the Indian Government in September 2014</li> <li>• Encourage companies to manufacture their products in India and enthruse with dedicated investments into manufacturing</li> </ul>
Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH)	<ul style="list-style-type: none"> <li>• A national wide initiative, a.k.a Bharat Udyog 4.0, by Department of Heavy Industries</li> <li>• Facilitate ecosystem for propagation of Industry 4.0 set of technologies in Indian manufacturing by 2025</li> </ul>
National Manufacturing Policy, 2017	Government rolled out a new policy to push the manufacturing sector by consolidating Make in India initiative, with focus on adoption of digital platforms for I4.0

**Impact of Industry 4.0 on Indian Manufacturing Sectors**

**Automotive**



- India stands at number 6 in the global vehicle sales market
- Sales of passenger cars is predicted to reach 6 million by 2021

**Electronics Manufacturing**



- India is positioned at number 10 in the global electronic market
- The estimated demand for electronics is poised to cross \$320 billion by 2020

**Photonics**



- Segment key to supply components for high tech machinery in life sciences
- The sector is expected to grow 3x times by 2020 in the sub-continent

**Heavy Machine Tools**



- High Investment in transport and other infrastructure projects to boost growth rate

**Renewable Energy**



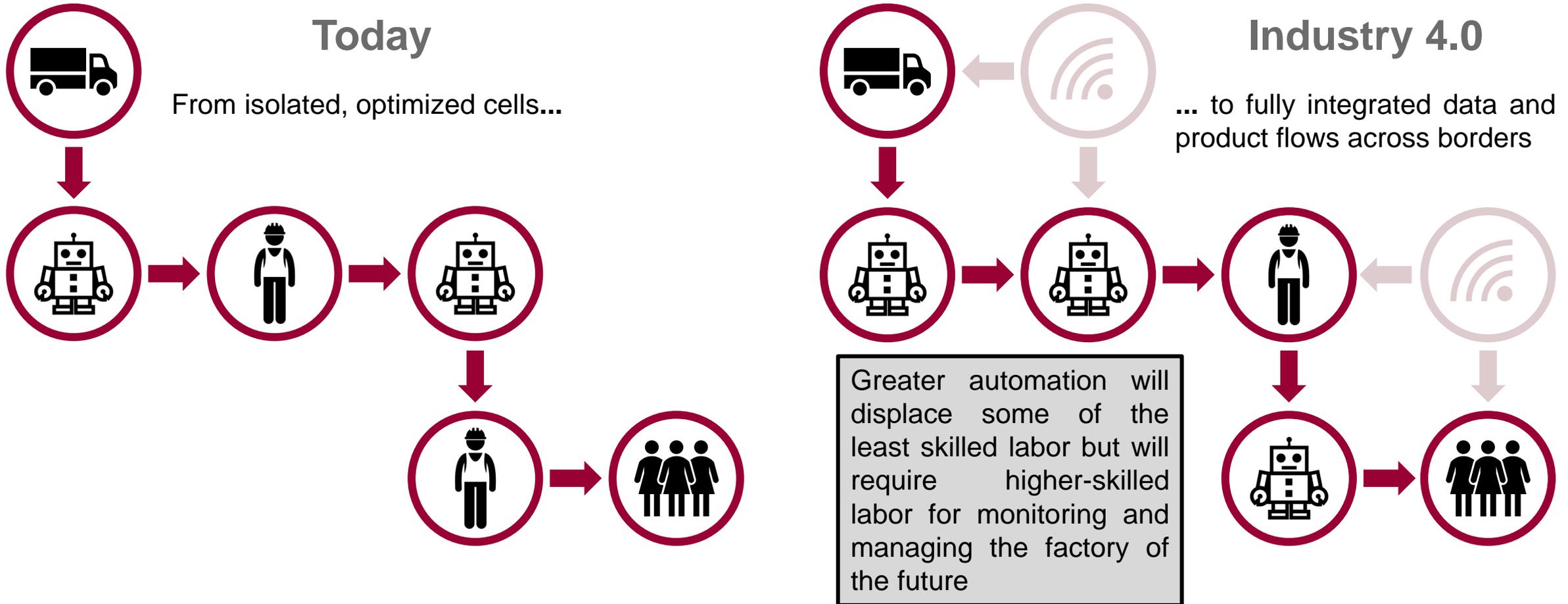
- Renewable energy is estimated to contribute up to 35% of total power generated in the country by 2025

**Defense**



- India imports over 60% of its military requirements
- Government plans to spend USD130bn on military modernization in the next 5 years

# How is I 4.0 Poised to Change Traditional Indian Manufacturing



## India's Competitive Advantage for I 4.0 in Manufacturing Sector



India is a global pioneer in engineering R&D and design outsourcing and country's engineering process outsourcing sector is expected to reach \$40 billion by 2020, around 30% of the global market.



Investments in the Indian manufacturing sector have been on the rise. Gross fixed capital formation, has grown 10.44% annually between FY16 and FY18



Favourable sector-wise government policies such as:

- ✓ 100% FDI through automatic route in most sectors
- ✓ Tax incentives for R&D, lower excise duties
- ✓ Sector specific incentives including FAME, NEMMP 2020

### Indian Youth

- ❑ 2/3<sup>rd</sup> of the workforce under the age of 35 and half under 25
- ❑ By 2020, India to be the youngest country in the world with the median age of 29
- ❑ India's large youth population can potentially make it the biggest consumer market and the biggest labor force in the world
- ❑ India has a young tech-savvy and educated population which creates a consumer market deeply tied into mobility and connectivity

# Industry 4.0 & Automotive Sector in India

## Demand Drivers



**3<sup>rd</sup>**  
Largest  
Automotive  
Market by 2026



**100%**  
FDI Allowed



**Infrastructure**  
Automotive  
training institutes,  
auto parks, virtual  
SEZ



**Cost  
Efficiency**  
6<sup>th</sup> Largest  
Vehicle  
manufacturer

## Opportunities



### Cloud Based Services

Maximise internal capabilities and  
real time computation power



### Cyber Security Services

Integration of security  
protocols at all touch points



### Use of Big Data & Analytics

Analysing consumer behaviour,  
optimization of resources

## Case Example

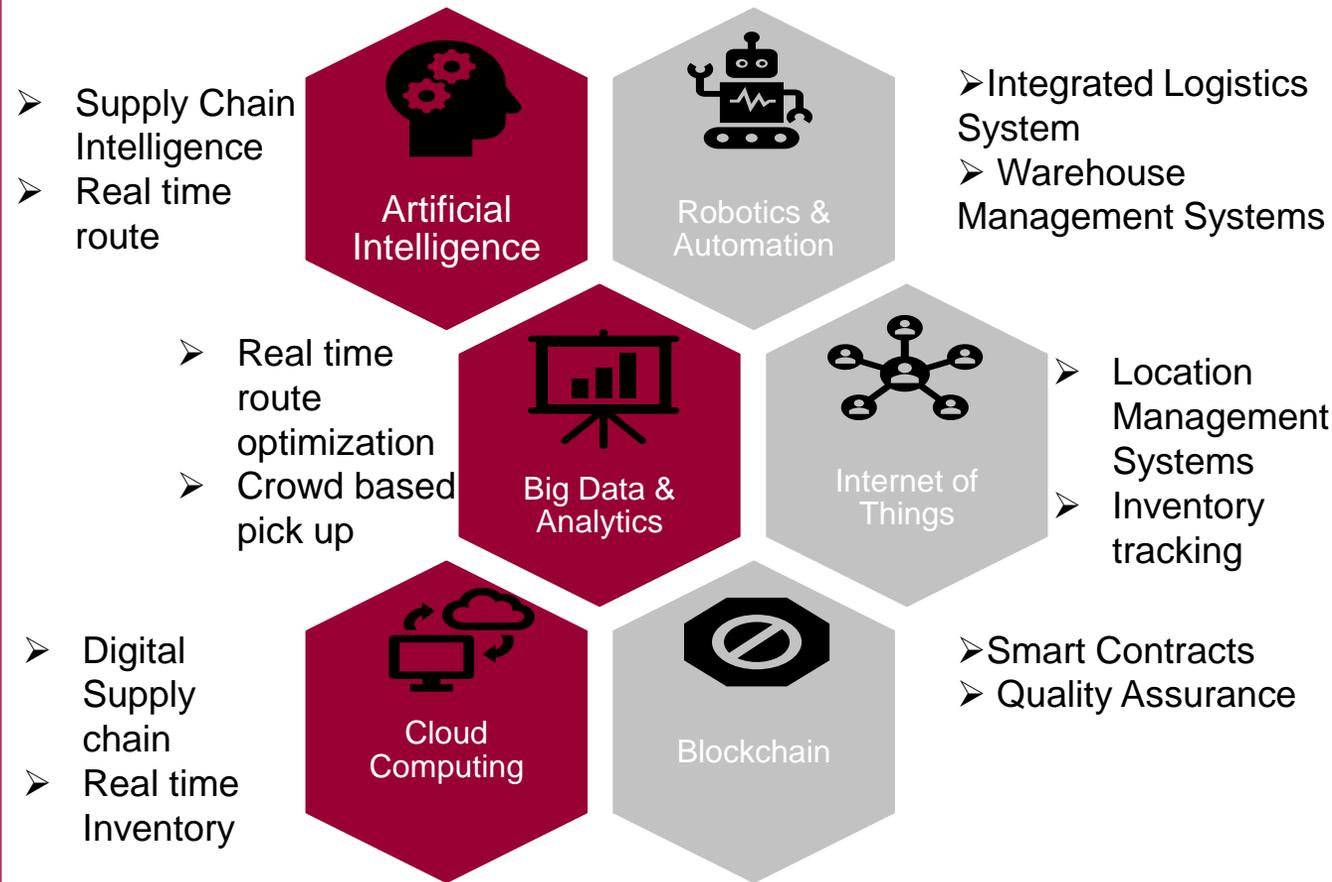
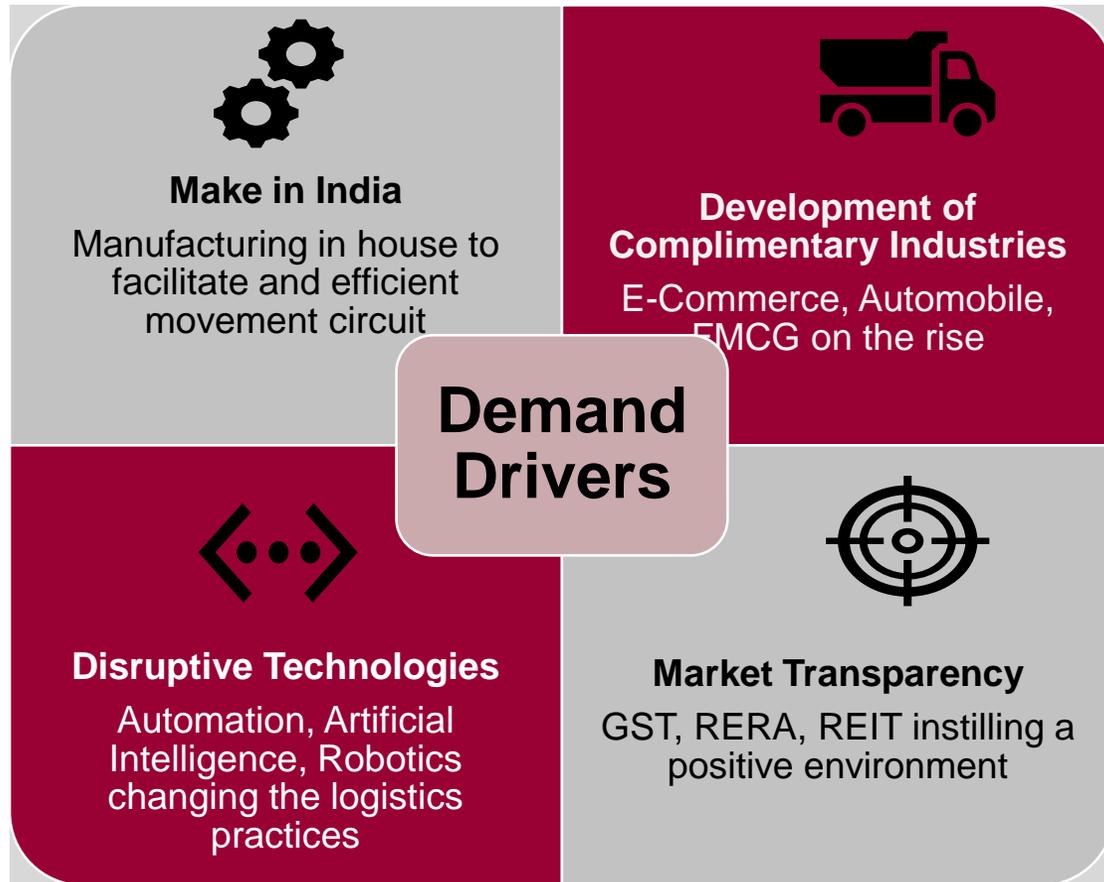
### Bosch

- German Auto component manufacturer to begin implementation of smart manufacturing at its India centre

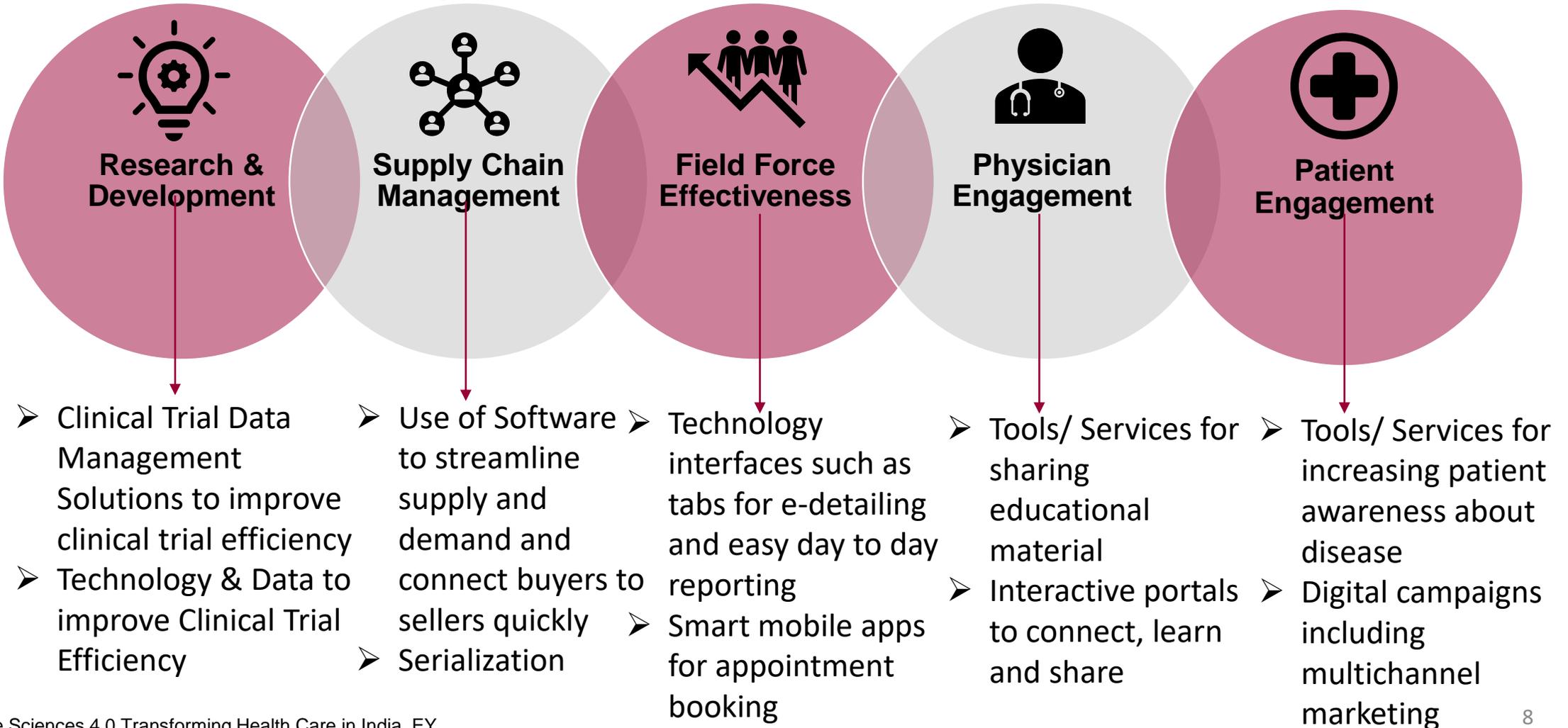
### General Electric

- Invested USD 200 million at its multi modal factory
- Digitally interlinked supply chains, distribution networks and servicing units

# Industry 4.0 & Logistics Sector in India



## Industry 4.0 & Life Science Sector in India



# Key Challenges Towards I 4.0 Adoption

## Lack of adequate infrastructure

India's telecommunication network still suffers from low data speeds and unstable connection



## High cost of digital technologies

Setting up smart factories requires significant capital outlay, hence, getting access to digital technologies for MSMEs remains a challenge due to the high cost of these technologies



## Cybersecurity

Vast majority of corporations India acknowledges cyber security as one of the top-five business risks along with the regulatory environment pertaining to data privacy

## Leadership and workforce skill gap

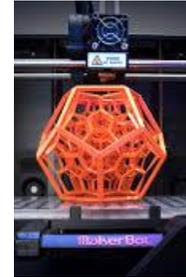
India faces an acute shortage of business leaders as well as labour force ready for the I 4.0 era, which could hinder the adoption of industry 4.0 in the country

## With expertise in the following technologies, Switzerland can enable industry 4.0 adoption and integration in India



### Advanced Robotics

- Autonomous, cooperating industrial robots
- Numerous integrated sensors and standardized interfaces



### Additive Manufacturing

- 3D printing particularly for prototypes and spare parts
- Decentralized 3D facilities to reduce transport distances and inventory



### Augmented Reality (AR)

- AR for maintenance, logistics and, all kinds of SOP
- Display of supporting information, eg: through glasses



### Cloud, Big Data, and Analytics

- High level networking between intelligent machines and systems
- Real-time decision-making support and optimization



### Industrial Internet

- Network of machines and products
- Multidirectional communication between networked objects



### Cybersecurity

- Operation in networks and open systems
- High level of networking between intelligent machines, products, and systems

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**THANK YOU**

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