INDIA RUBBER MEET 2016

GOA, INDIA. 10&11 MARCH 2016

RUBBER SCENARIO : WHAT LIES AHEAD ?

# CHALLENGES FACING THE TYRE INDUSTRY

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# GLOBAL ISSUE & CHALLENGES AUTOMOTIVE AND RUBBER INDUSTRY

## Environment Challenges

- Impact of climate change is significant
- Climate protection
- Scarcity of Natural resources

## Growing Population & Mobility

•Among the growing middle class in emerging economies

## Economic Challenges

- Shortage of resources

- Rising prices for fossil fuels

## Urbanization

•Almost 60% of the world's population will live in cities by 2030

•Greater traffic density leads to increased noise emissions

## Changing Consumer demands

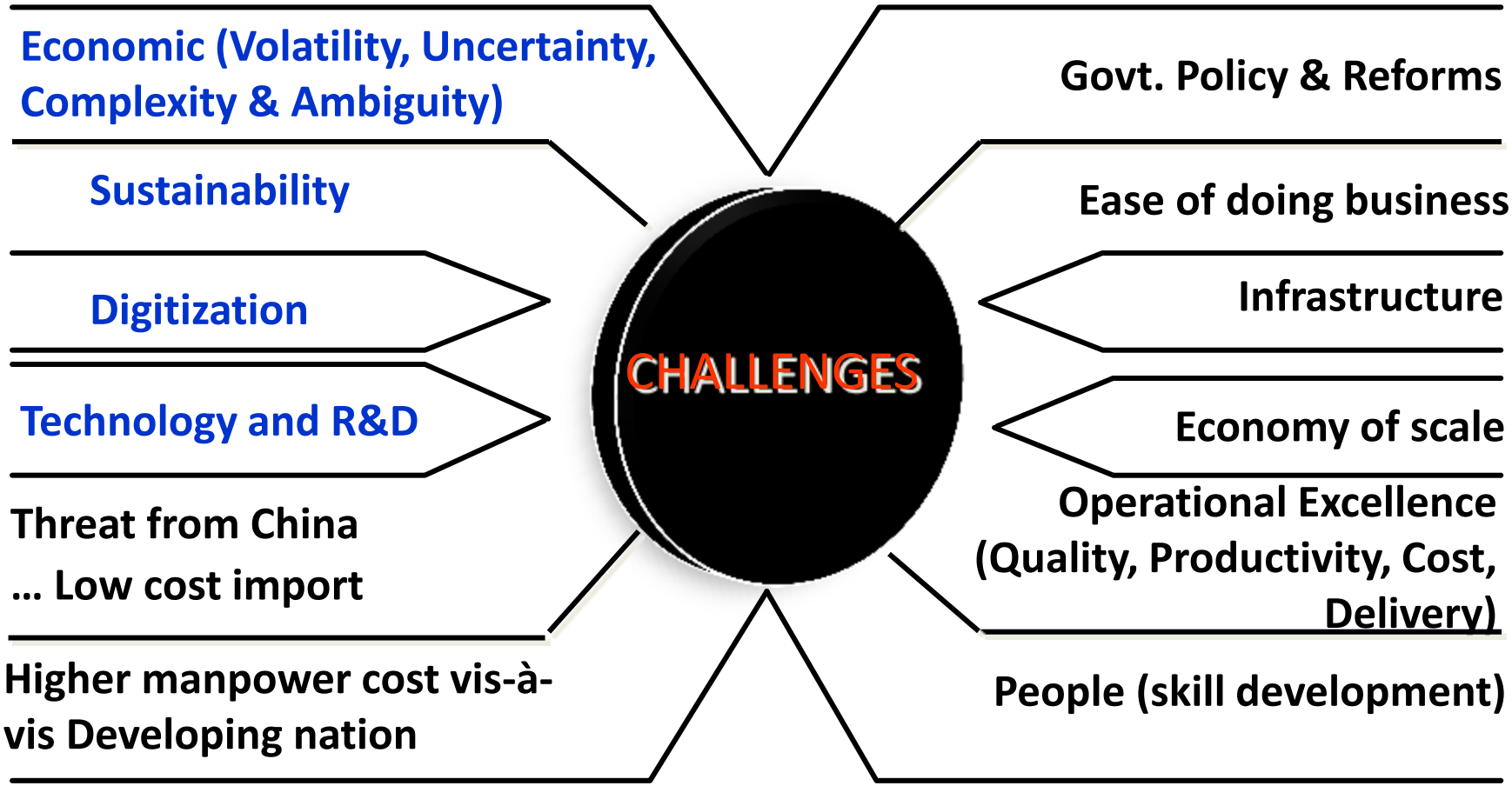
- Trend toward a sustainable lifestyle
- Societal demand for environmental stewardship

## Policies

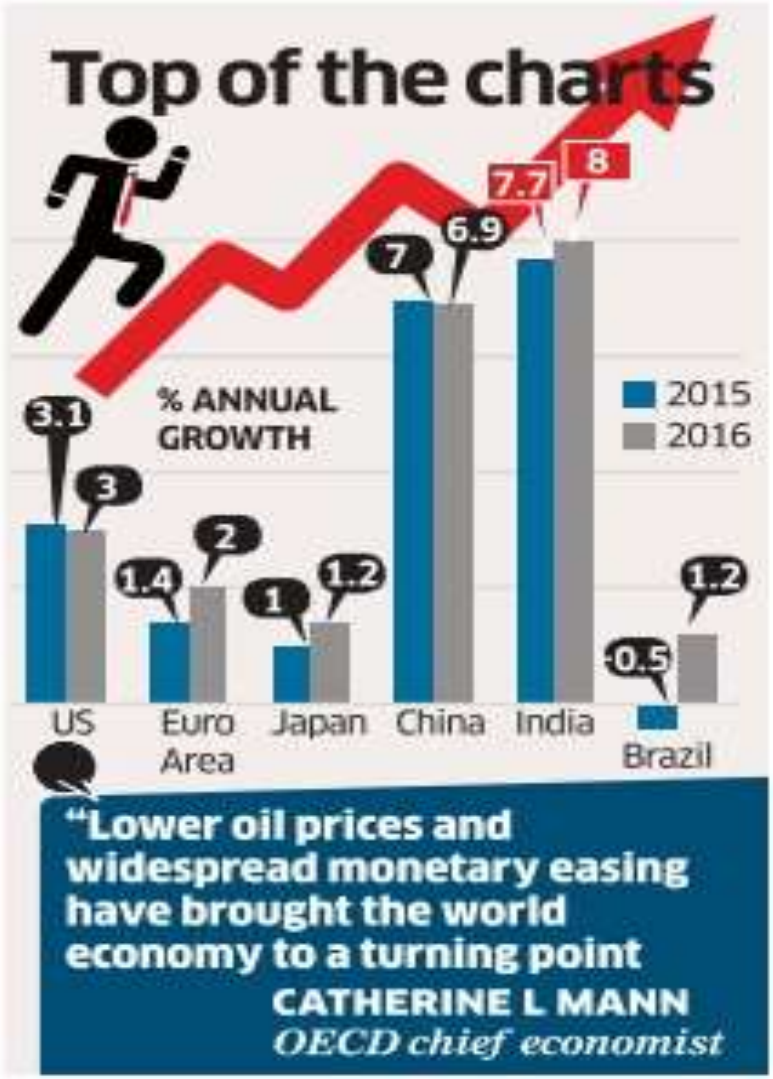
More stringent legislation
-to protect the environment
-to reduce emissions and fossil fuel dependency


Source: United Nations, Department of Economic and Social Affairs

# CHALLENGES - RUBBER INDUSTRY



# GLOBAL ECONOMIC TREND




- OECD forecast – India is expected to become the fastest-growing major economy over the next two years.
- IMF chief Christine Lagarde described India as a "bright spot" on cloudy global horizon.
- India could grow at a potential of 8% on an avg. from fiscal 2016 to 2020 powered by greater access to banking, technology adoption, urbanisation & other structural reforms (Goldman Sachs report-Sept '15)

# VOLATILITY, UNCERTAINTY, COMPLEXITY & AMBIGUITY

**V = Volatility**.

- The nature & dynamics of change
- The nature & speed of change forces
- Change catalysts.

**U = Uncertainty**.

- The lack of predictability,
- The prospects for surprise
- The sense of awareness & the understanding of issues and events.

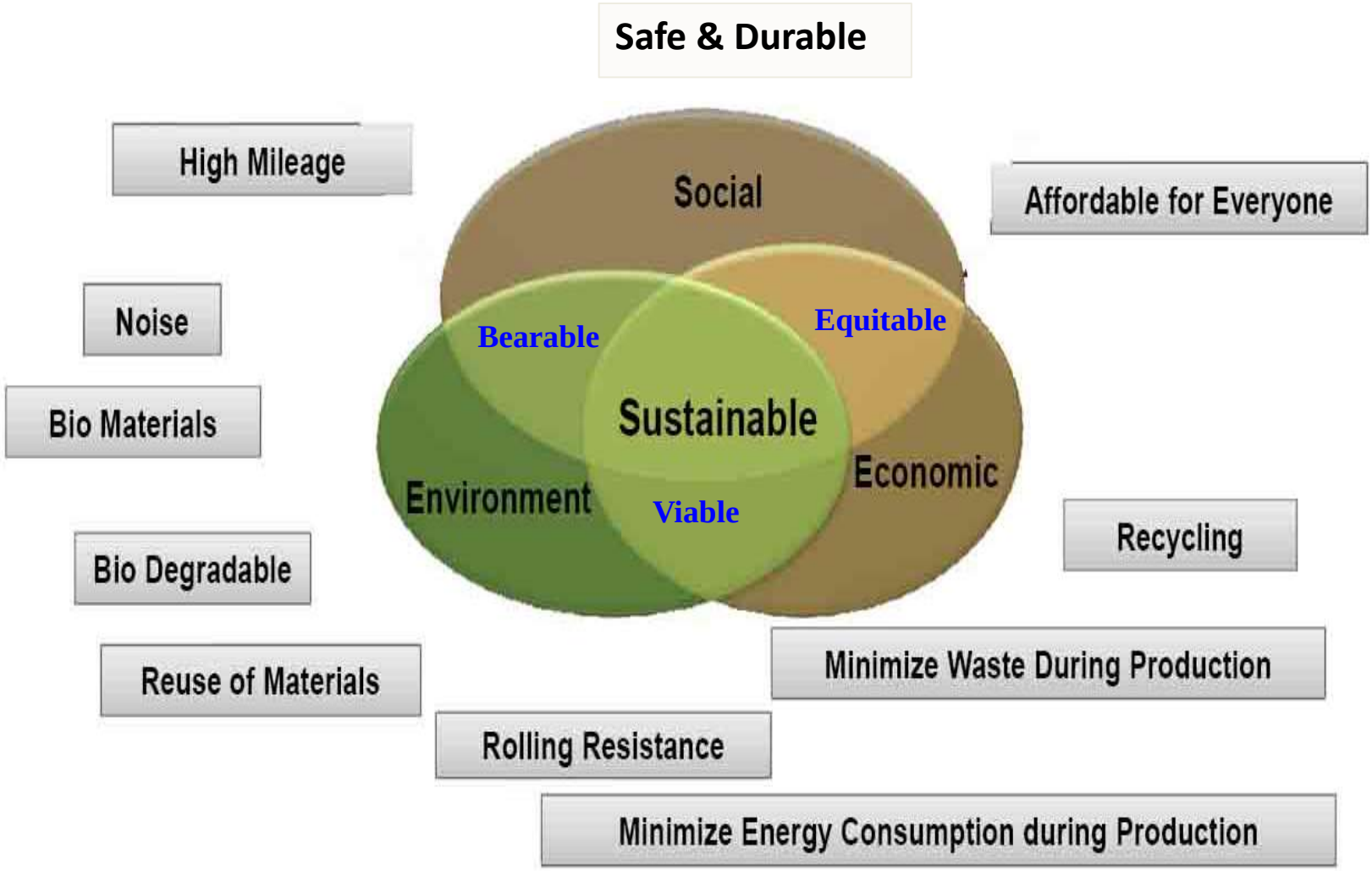

**C = Complexity**.

- The multiplex of forces
- The confounding of issues
- The chaos & confusion that surround an organization.

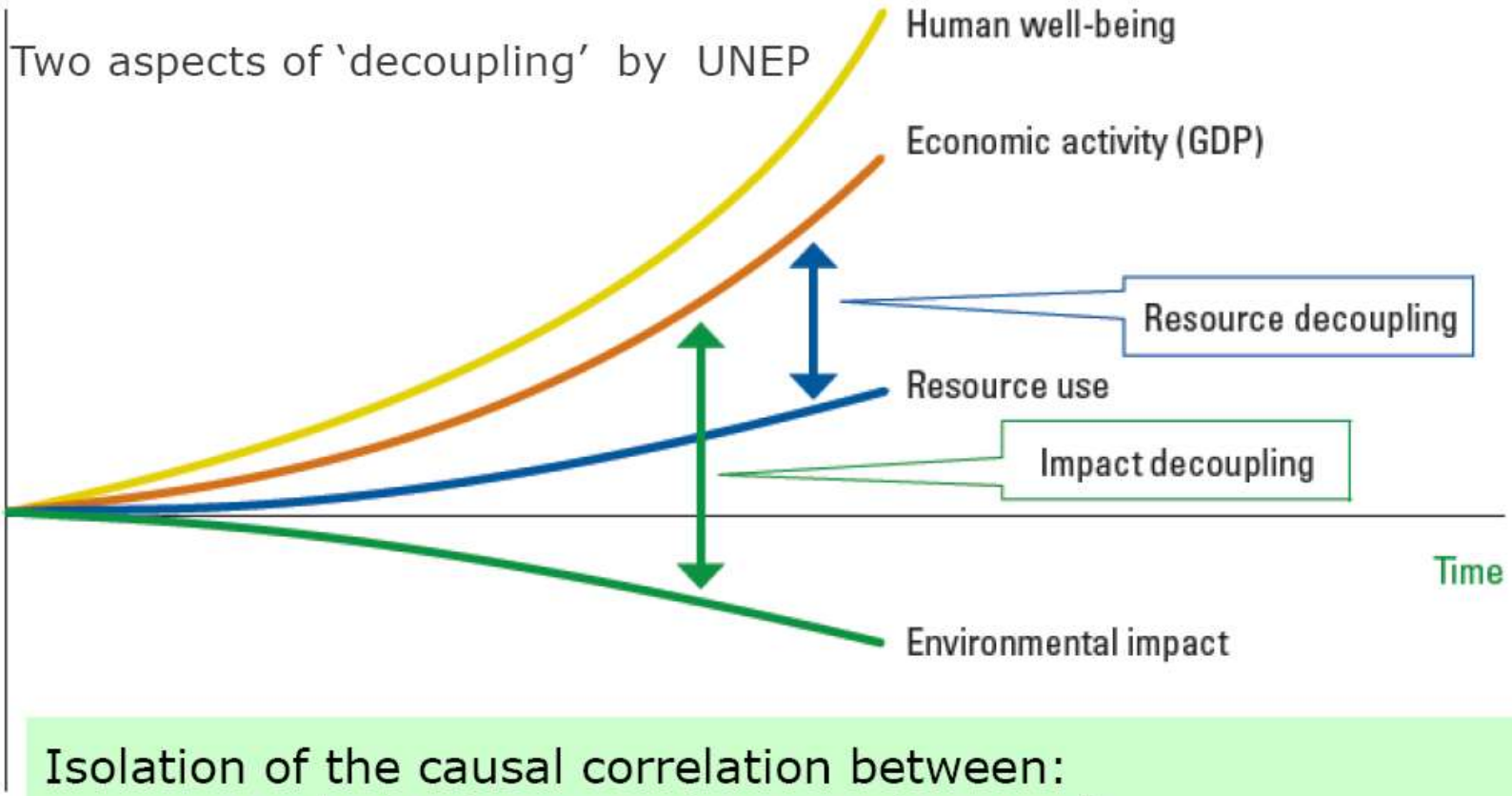
**A = Ambiguity.**

- The haziness of reality
- The potential for misreads,
- The mixed meanings of conditions
- Cause-and-effect confusion

# SUSTAINABILITY CHALLENGES



# SUSTAINABILITY CHALLENGES




Isolation of the causal correlation between:

- population increase / economic growth
- resource consumption / environmental impact

# SUSTAINABILITY CHALLENGES

**Crude Oil based Materials**

Non crude oil based materials

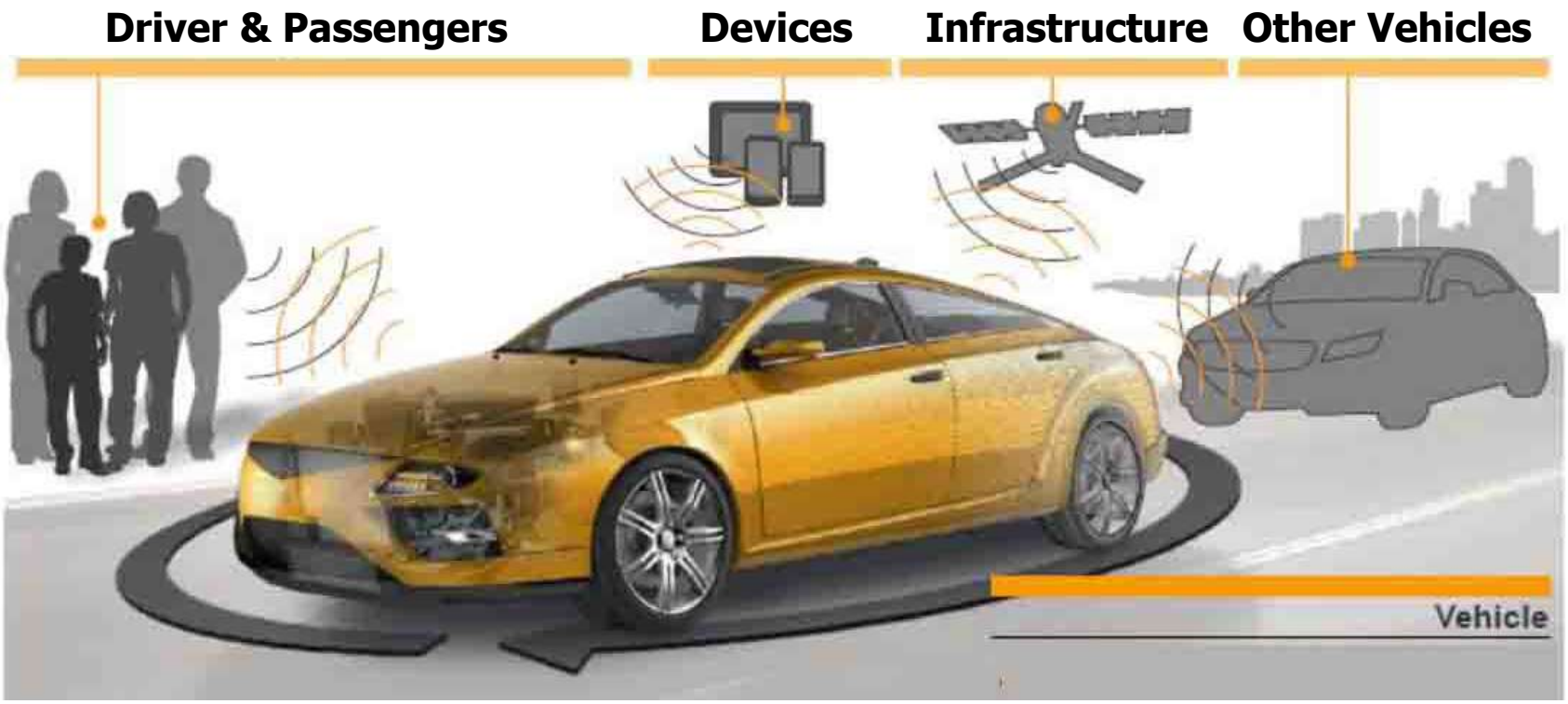
**Renewable**


**Mineral Based**


**Recycled**


- **It is possible to produce a tire with > 95 % non-crude oil base**
- **However, the application range today is still limited**

# DIGITIZATION CHALLENGES

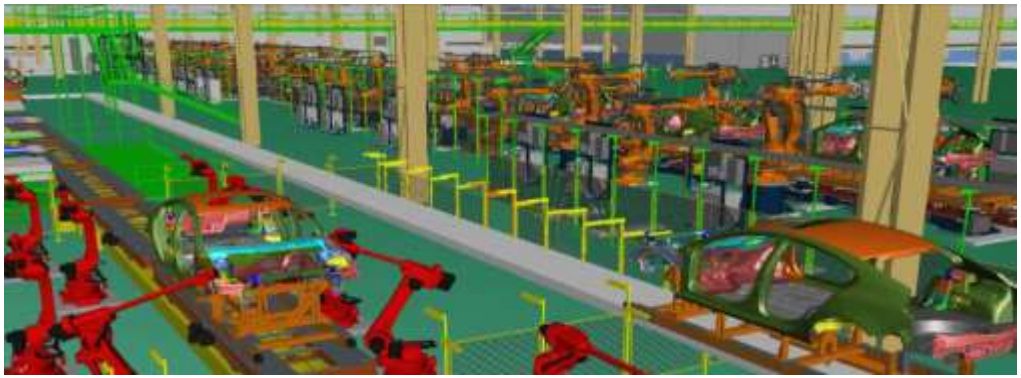


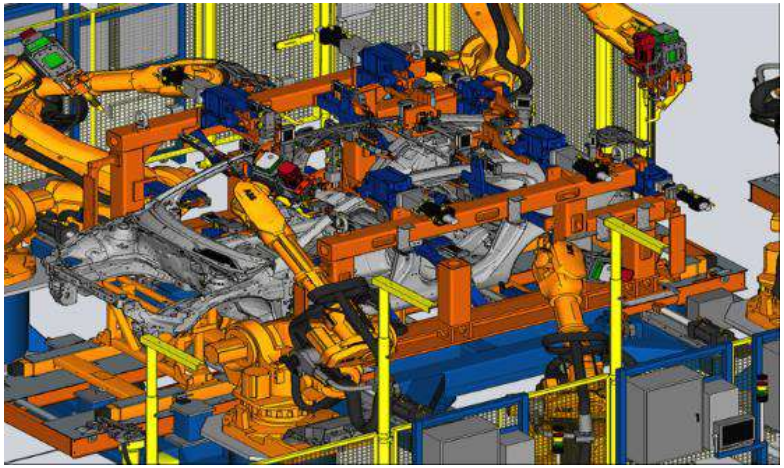

Managing and Optimizing the information flow by system integration of components

# DIGITIZATION ENABLERS

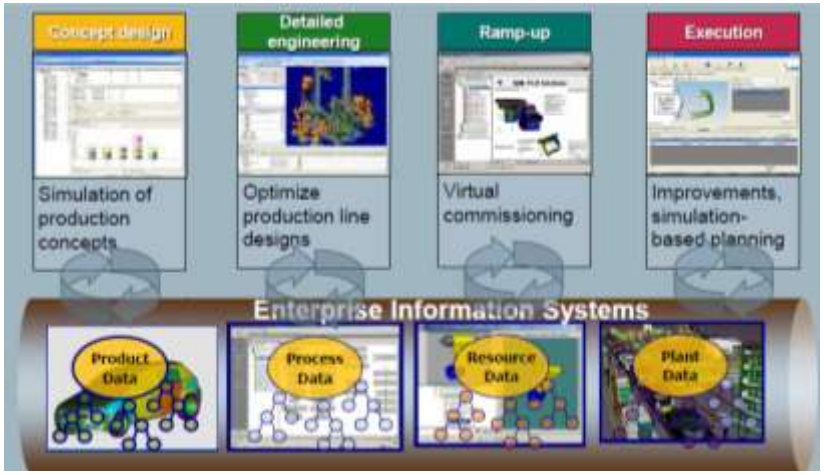
**TYRE/INTEGRATED SENSOR**

**MANUFACTURING/INTEGRATED SENSOR**





**DESIGN/INTEGRATED SENSOR**



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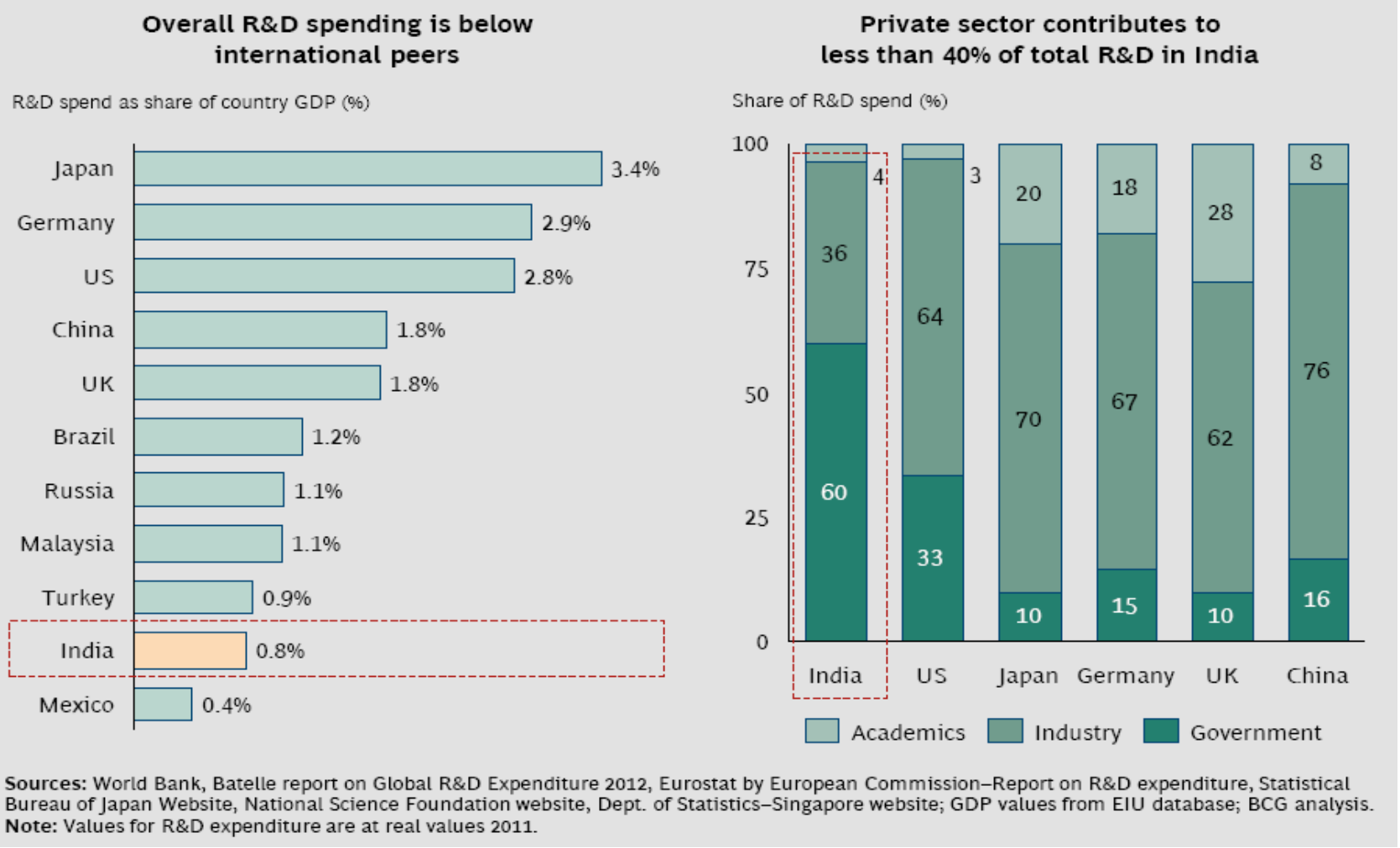
# TECHNOLOGY SCENARIO

**India's Share of GDP Spent in R&D is Lower than Peers and Private Sector's Contribution is Limited**




**Sources:** World Bank, Batelle report on Global R&D Expenditure 2012, Eurostat by European Commission–Report on R&D expenditure, Statistical Bureau of Japan Website, National Science Foundation website, Dept. of Statistics–Singapore website; GDP values from EIU database; BCG analysis.
**Note:** Values for R&D expenditure are at real values 2011.



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# TECHNOLOGY CHALLENGES

**1 - New Concept Development**
- Dematerialisation
- Shared used of the product
- Integration of functions
- Functional optimisation of products & components

**2 - Selection of low impact materials**
- Non-hazardous materials
- Non-exhaustable materials
- Low energy content materials
- Recycled materials
- Recyclable materials

**3 - Reduction of material**
- Reduction in weight
- Reduction in volume

**4 - Optimization of production techniques**
- Fewer production processes
- Low/clean energy consumption
- Low generation of waste
- Few/clean production consumables

**5 - Efficient distribution system**
- Less/clean packaging
- Efficient transport mode
- Efficient logistics

**6 - Reduction of the environmental impact in the user stage**
- Low energy consumption
- Clean energy source
- Few consumables needed during use
- Clean consumables during use
- No energy/auxiliary material use

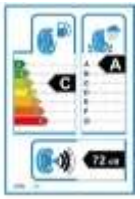
**7 - Optimization of initial life time**
- Reliability and durabiliy
- Easy maintenance and repair
- Modular product structure
- Classic design
- User taking care of product

**8 - Optimization of end-of-life system**
- Reuse of product
- Re-mfg./refurbishing
- Recycling of materials
- Clean incineration

# LEGISLATIONS & REGULATIONS

**Growth of tyre related legislations around the world…**

- **TREAD Act** :
  - Transportation, Recall Enhancement, Accountability and Documentation Act
- **REACH:**
  - Registration, Evaluation, Authorization and restriction of Chemical
- **End of Life Vehicles – EU legislation**
- **Labeling of Tyres – EU legislation**
- **Uniform Tire Quality Grade (UTQG) Standards**
- **Global Technical Regulation on Tyres – under consideration**



These stringent global regulations throw up challenges of adherence and…
…optimizing various product performance goal conflicts…

# SUMMARY & CONCLUSION

**Strategic Capability to be built to overconme various Challenges:**

**Market back Innovation Excellence**

- Evolve from Manufacturing Company to a consumer centric Compan
- Cost Efficient R&D
- Speed of Delivery
- Value proposition to Customers
- Digitization

**Operational Excellence**

- Driving Efficiency (Quality, Productivity, Cost,Delivery & Safety)
- Customer Service
- Environmental Concerns
- People Skill Development

**DON'T LIMIT YOUR CHALLENGES, CHALLENGE YOUR LIMITS**