



Making Manufacturers globally competitive with Digital

February 2024

Amit Saluja
nasscom

nasscom
Center of Excellence-IoT & AI
A MeitY Initiative with Govt. of Karnataka, Haryana, Gujarat & AP

Manufacturers face multiple operational challenges...

Operational Costs

- Energy bill of the plant has increased after wear and tear and improper maintenance...

Efficiency & Productivity

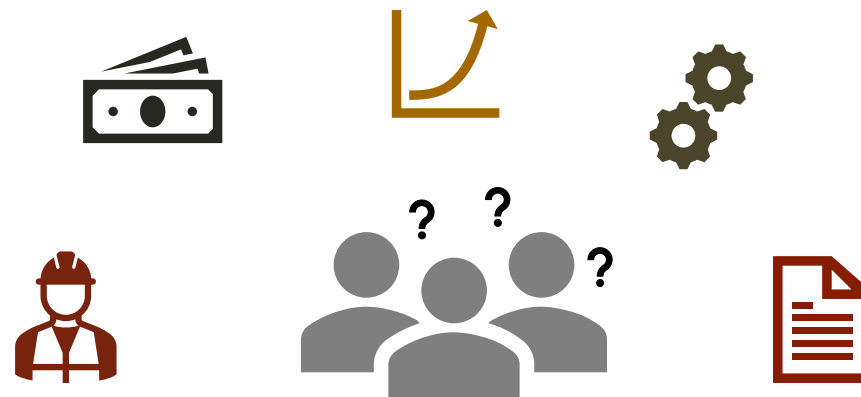
- Not sure at what efficiency plant is running and what is the capacity utilization...
- I rely on only experienced workers to set machine parameters. Not sure if they are setting right values...

Operations

- Frequent breakdowns causing big losses. There are direct and many indirect consequences to business and operations...

Labour

- My Worker leaves without notice. It is difficult to train new ones...
- Lot of workers in plant. Not sure if they are productive...



Data & records

- I store data in registers / papers / excels. Don't know how to use the historical data stored in registers to take future decisions...

... and strategic challenges to start, scale and sustain their manufacturing transformation



Where are we today



Questions enterprises have



The LEAD Framework

- Digital infrastructure with SAP, Cloud and IT networks in place
- Field devices are installed, data getting acquired but still limited analytics and intelligence
- Digitization initiatives still being driven by short term challenges
- Long list of immediate burning challenges in plant which doesn't get addressed by current tech partners

- How to handle new set of manufacturing constraint coming out from uncertain environment
- How do I reach to a level of flexible manufacturing
- Do I have right infrastructure for the future
- What should be approach to validate technology for new ideas
- How do I leverage startup ecosystem

4-STEP TRANSFORMATION JOURNEY



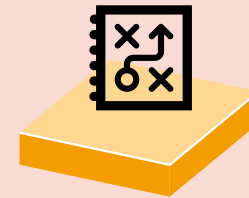
LEARN

the key concepts and build a common language for alignment



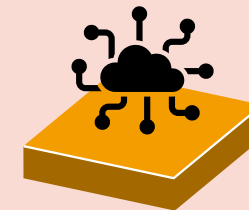
EVALUATE

the state of existing facilities and the company's readiness level for Industry 4.0



ARCHITECT

a comprehensive transformation strategy and implementation roadmap



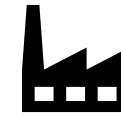
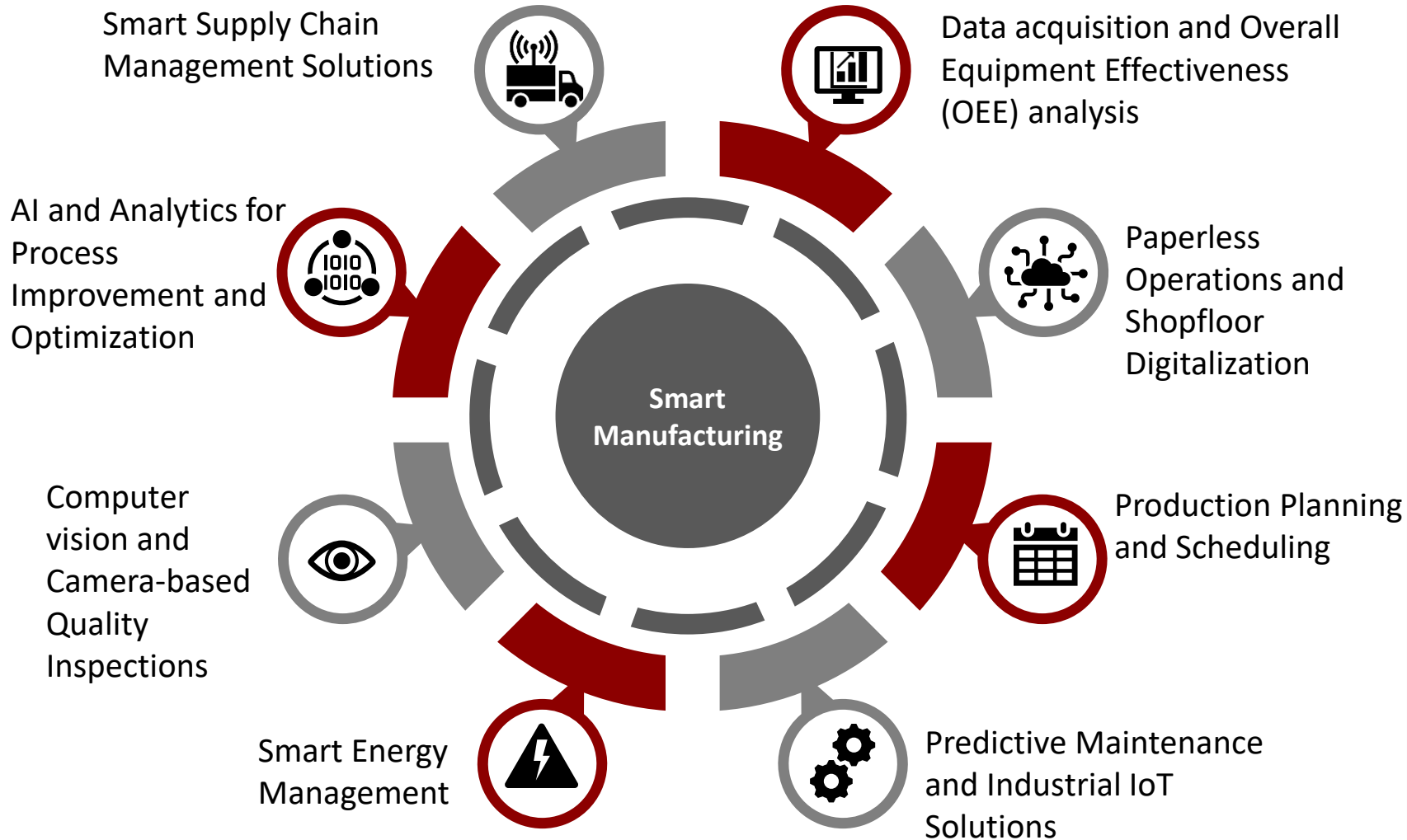
DELIVER

impact and sustain transformation initiatives

Source: LEAD Framework by INCIT

We have come to an era of Industry 4.0, where Innovation thrives...

Industry 4.0 - Smart Manufacturing



Process Optimization

- Batch Monitoring
- Golden Batch Analysis



Intelligent Operations

- Asset Utilization (OEE) Monitoring
- Proactive Alerts and Predictive Maintenance
- Remote Operations
- Energy and Water Consumption reduction



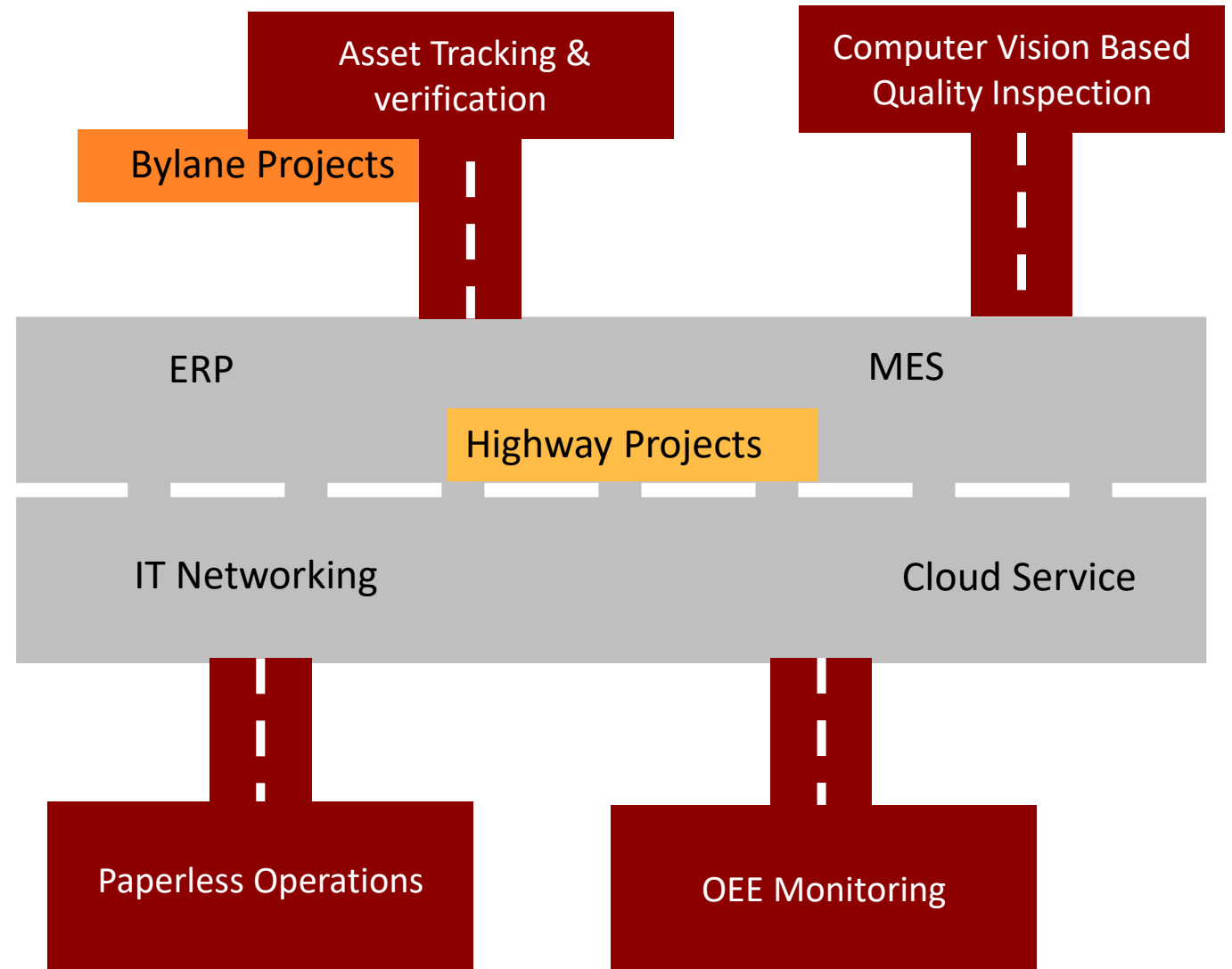
Safety & Digital Workforce

- Functional and Safety Training
- Hazardous Operations Tracking

An Agile Mindset and an integrated approach will be needed to deploy solutions



- For Highway Projects – manufacturers engage with technology and consulting partners
- For Bylane projects – In addition to Tech companies, manufacturers can leverage Startup ecosystem for co creation of solutions



SIRI – Smart Industry Readiness Index brings Comprehensive Approach to address complex Industry 4.0



Operations

The planning and execution of processes which lead to the production of goods & services



Supply Chain

The planning & management of raw materials & inventory of a company's goods & services, from the point of origin to the point of consumption



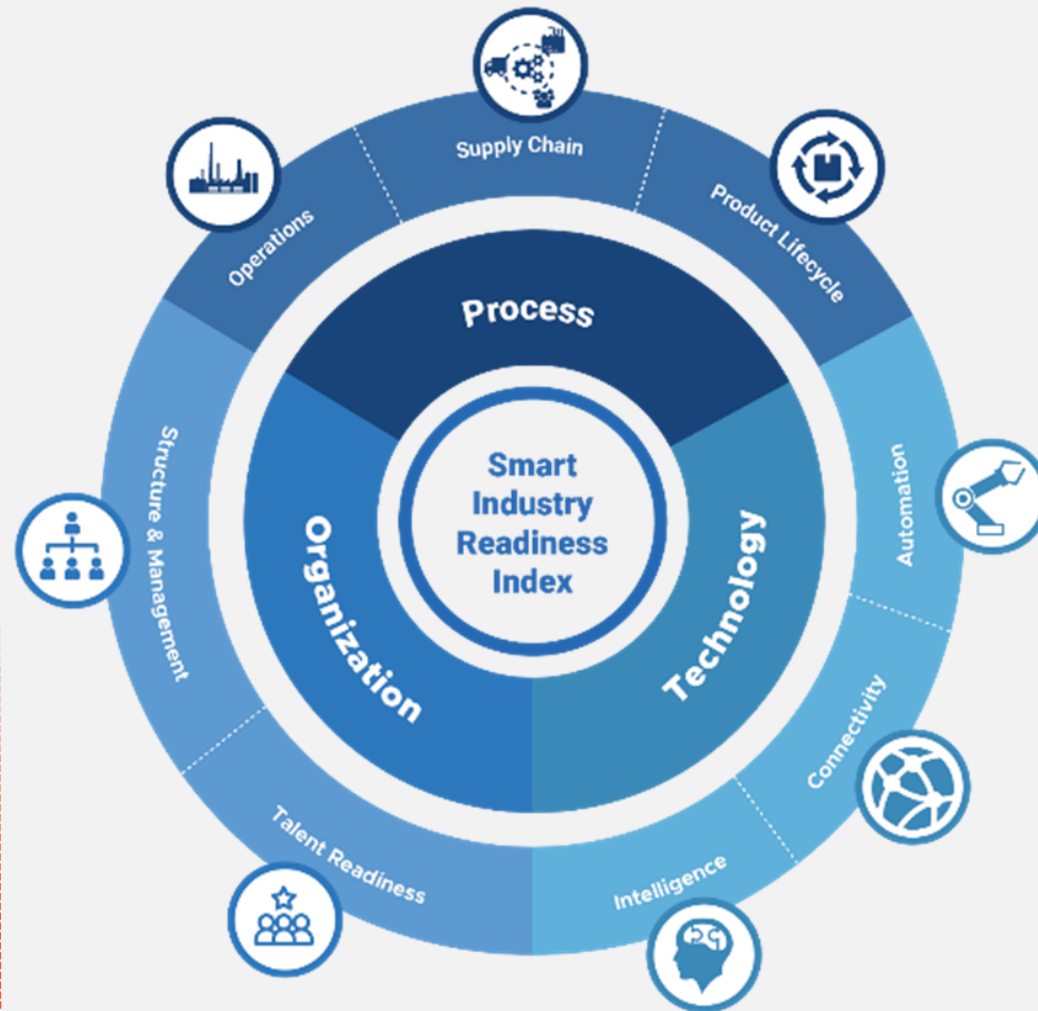
Product Lifecycle

The sequence of stages that a product goes through, from its initial conceptualization to its eventual removal from the market



Automation

The application of technology to monitor, control, & execute the production & delivery of products & services



Source: SIRI Framework by INCIT



Connectivity

The state of interconnectedness between equipment, machines, & computer-based systems to enable communication & data exchange across assets



Intelligence

The processing & analysis of data collected, to diagnose problems & identify opportunities for improvement



Talent Readiness

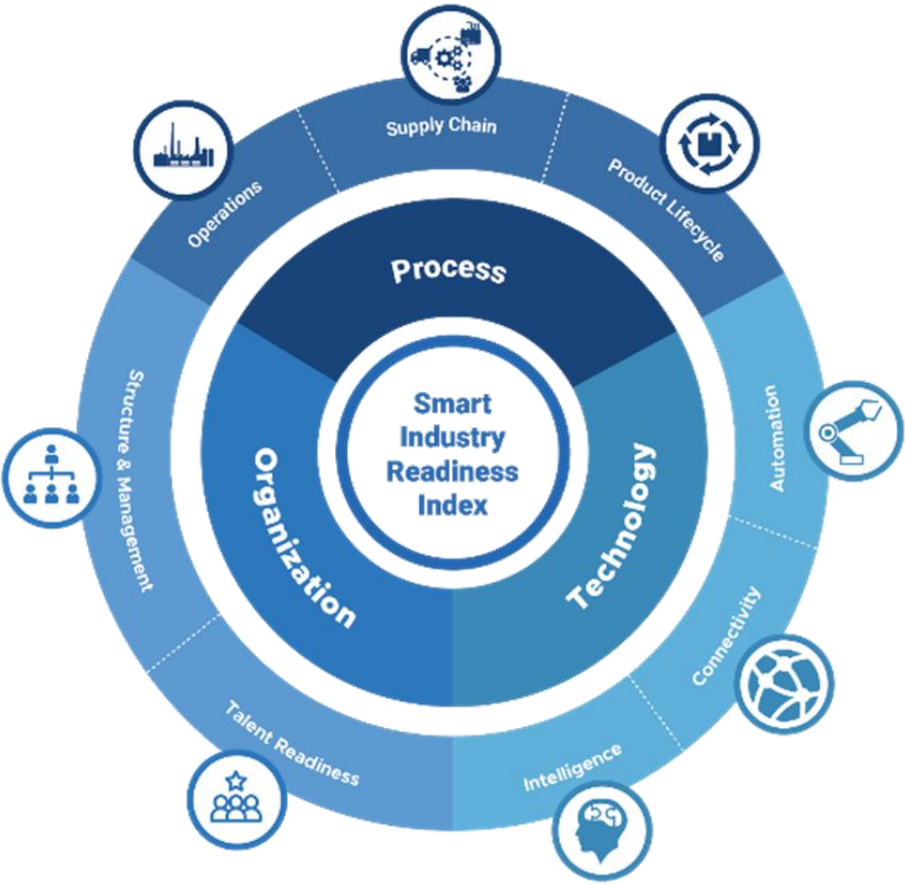
The ability of the workforce to drive and deliver Industry 4.0 initiatives



Structure & Management

Strong leadership, supported by a clear strategy & governance framework, will enable firms to be more flexible, collaborative, & empowered to design & implement Industry 4.0 strategies effectively

The TIER framework involves review of other factors such as Cost, KPIs and Benchmarks in addition to the assessment, to build a digital roadmap



T



TODAY'S STATE

Develop an in-depth understanding of the company's current Industry 4.0 maturity level

I



IMPACT TO BOTTOM LINE

Analyse how distinct Industry 4.0 areas affect profits and identify those that can generate the greatest financial return

E



ESSENTIAL BUSINESS OBJECTIVES

Determine the most critical business objectives to guide the selection of relevant Industry 4.0 areas

R



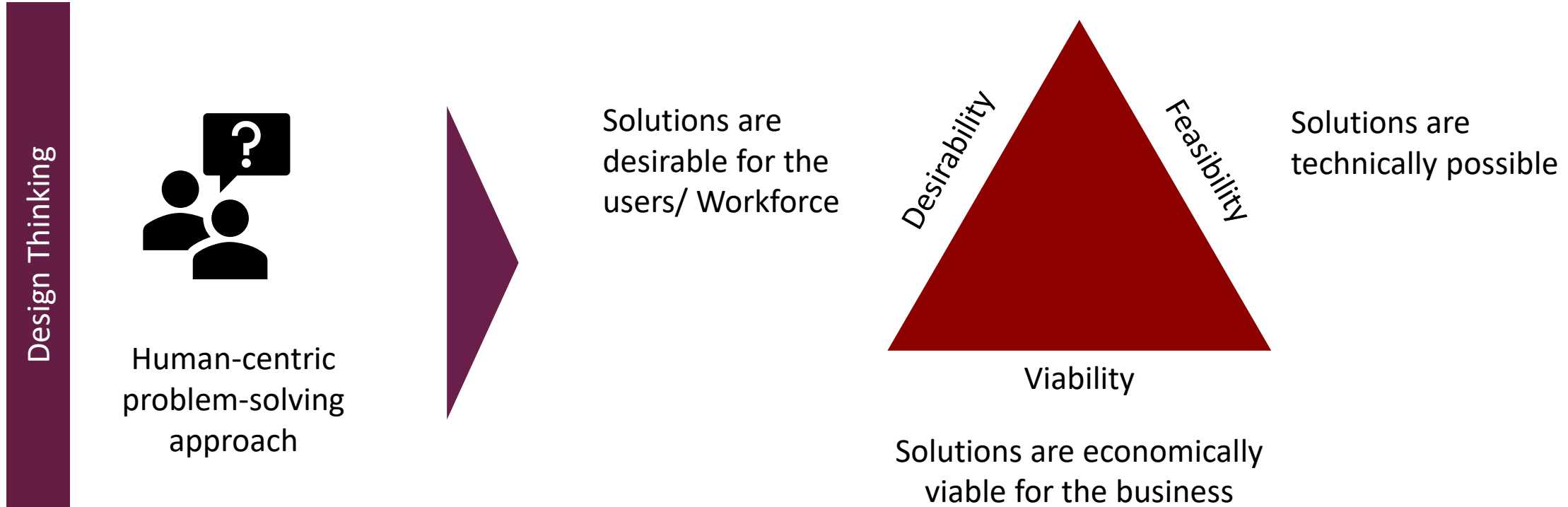
REFERENCES TO THE BROADER COMMUNITY

Emulate the successes of the broader manufacturing community, and learn from their mistakes as well



Source: SIRI Framework by INCIT

Combined with Design Thinking Workshop, it will help to create a roadmap for the digital led growth of the organization



- Aims for **Organization transformation** and not just incremental improvement
- **Brings together** the multi disciplinary workforce from different silos to solve the challenges
- Cyclic process with **better efficiency** in problem solving and execution

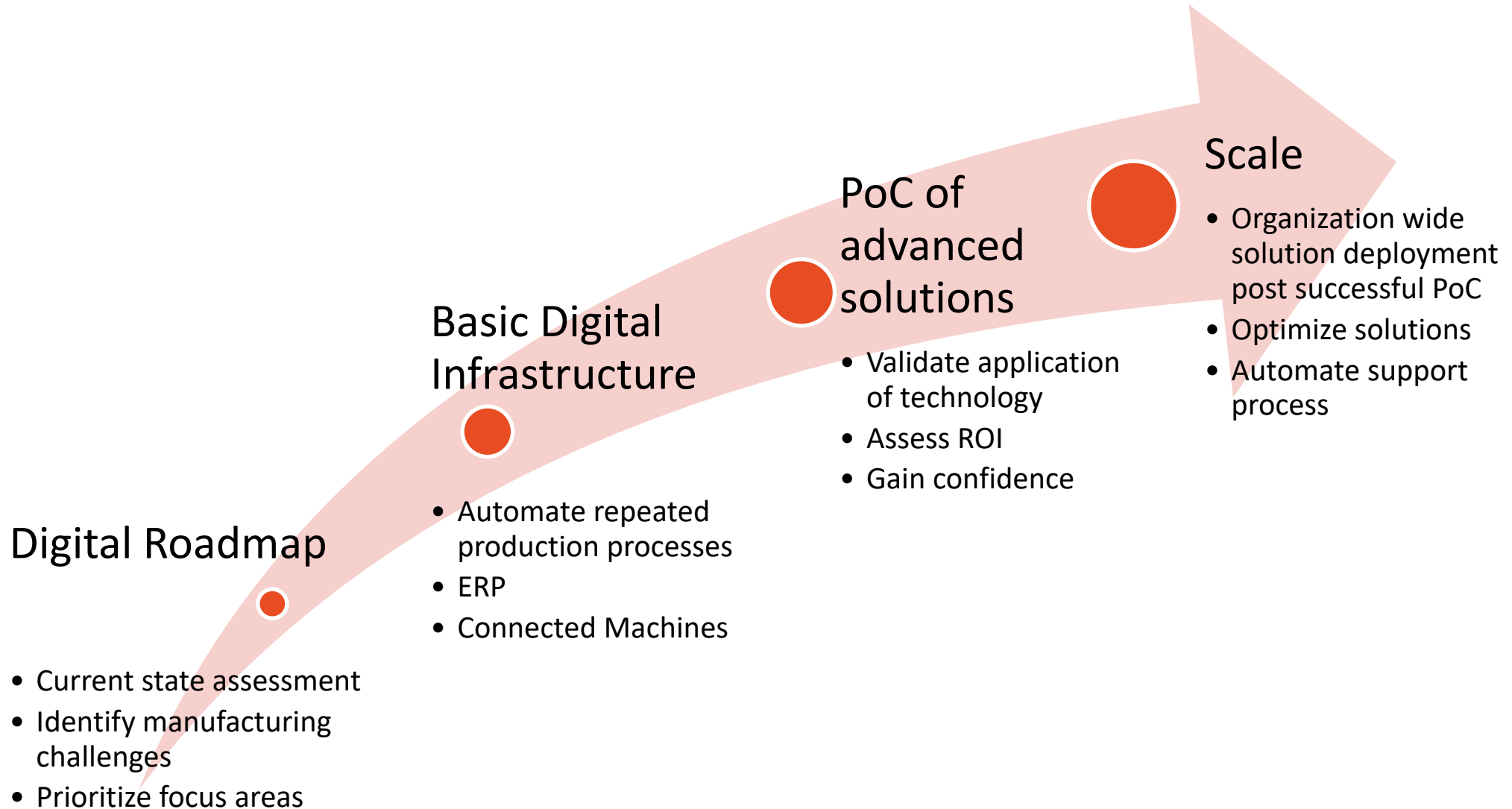
Clarity of Actionable

Involvement of workforce

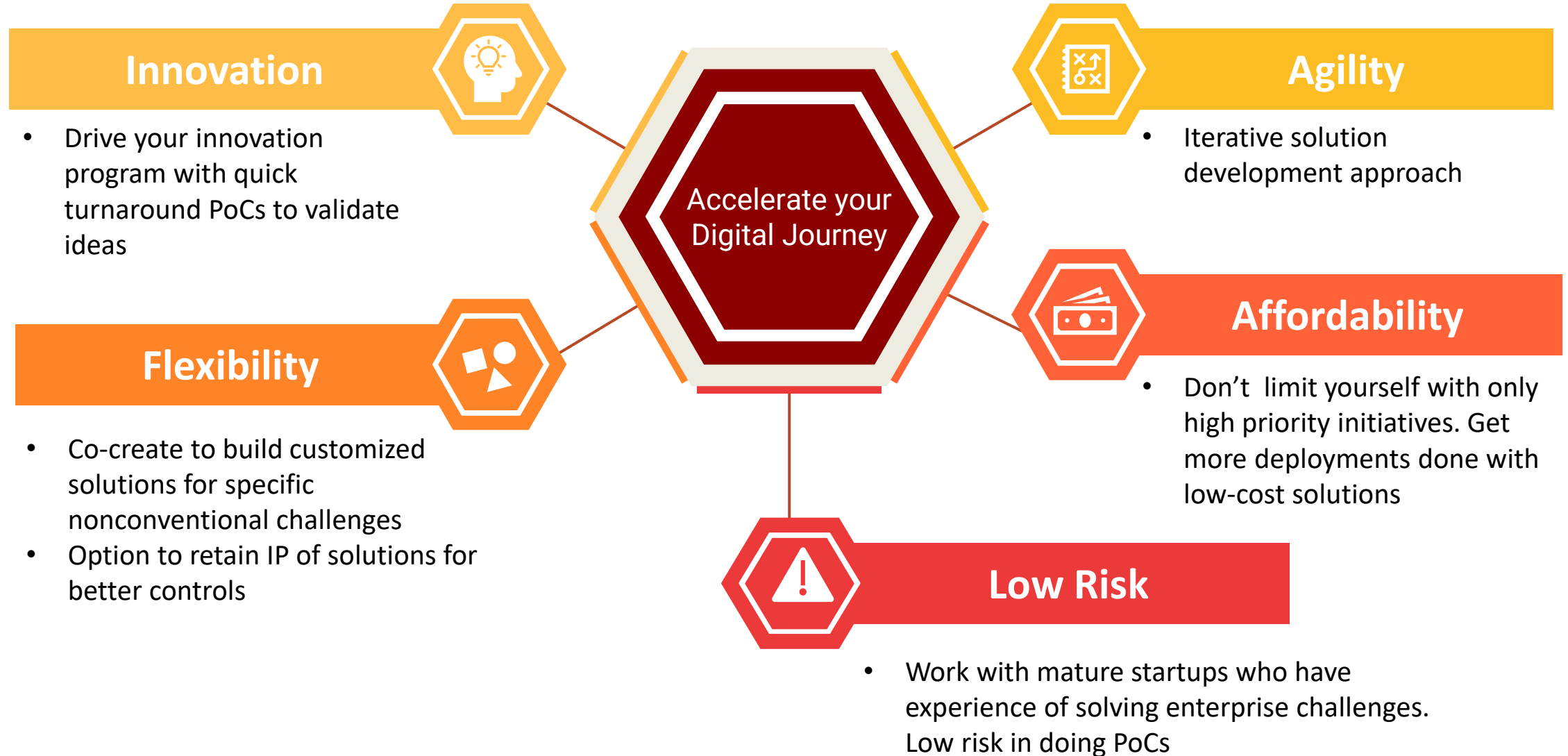
360° approach

Digital led Growth

Digitalization is a journey, the adoption will need a Step-by-Step approach



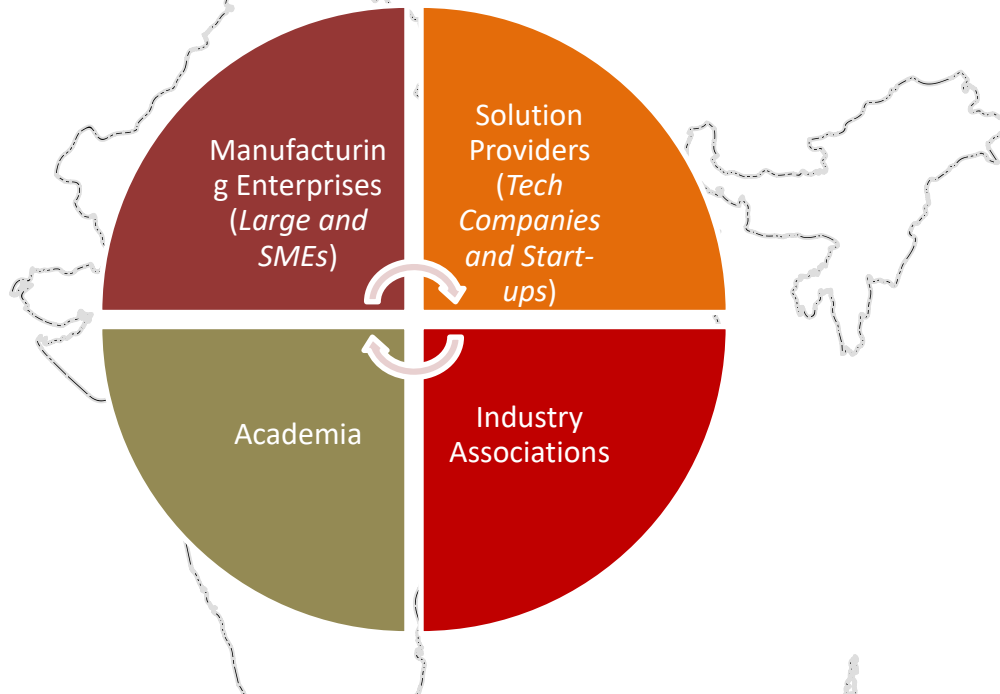
Startups are playing a very important role in Manufacturing Transformation... why enterprises should leverage startups?



Largest deep tech innovation ecosystem in India for Manufacturing Digitization



Go to place for manufacturing Enterprises to co-create AI & IoT led digital technologies by working with innovative solution providers and academia



-  Industry 4.0 Thought Leadership
-  Deep Tech Start-up Factory
-  Digital Maturity Assessment
-  Co-Create Solutions
-  Solution Showcase
-  Research & Development

CoE
Impact

1000+
Industries
Connected

750+
Connected
Startups

40+
Manufacturing
Partners

80+
Enrolled Startups

50+
Plant
Assessments

50+
Use cases POC

15+
Academia
Partners

Thank You



NASSCOM Center of Excellence

Email : smartmanufacturing@nasscom.in or visit <https://gujarat.coe-iot.com/>

Follow us on:

