NASSCOM®

CATALYSING INDUSTRY GROWTH | TRANSFORMING BUSINESS TRANSFORMING INDIA

EU India Digital Collaboration

October 2020

Gagan Sabharwal
Senior Director

Agenda

- About NASSCOM
- Indian Tech Sector –introduction
- Indian Start-up Ecosystem
  - Startup company profiles
  - Virtual pitching session – format
- Promoting EU India Digital Partnership
  - Business matching session

ABOUT NASSCOM

- Premier trade body and chamber of commerce of the IT-BPM companies in India
- Over 2800 members – includes Indian Companies, MNCs and GCCs

"There is hardly any organization in the country which has become a revolution and changed the way the world looks at India.

NASSCOM is that ONE organization which has done this for India."

Shri Narendra Modi

Prime Minister of India

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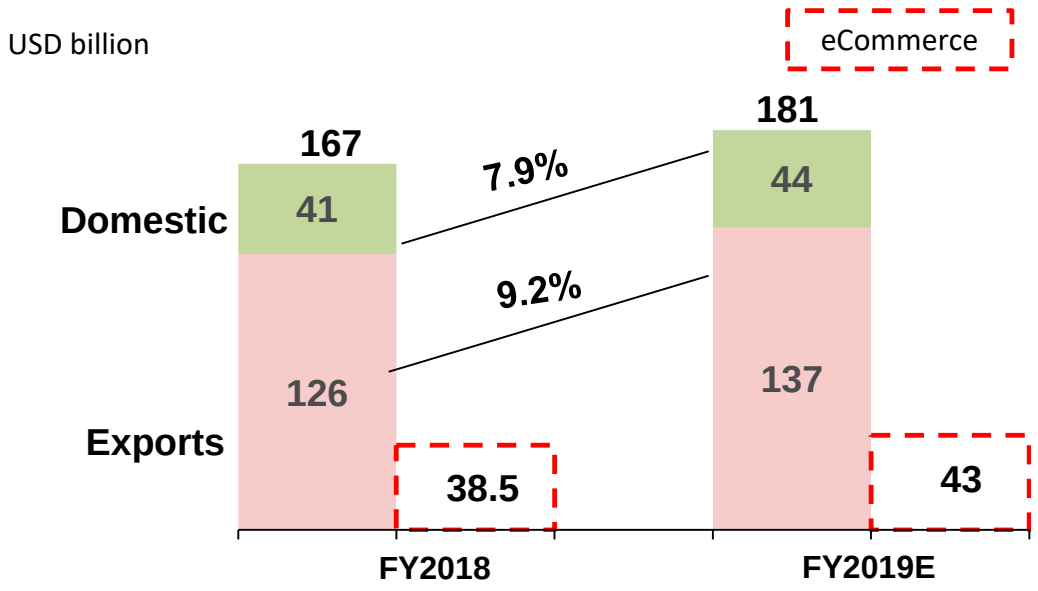
Indian Tech Sector – introduction

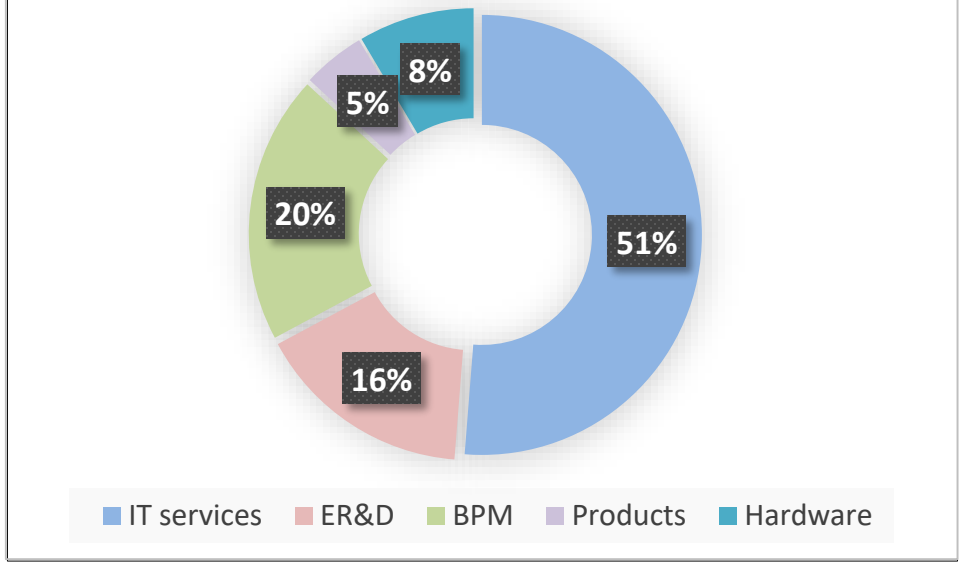
IT-BPM INDUSTRY IN INDIA – FY 2019

Revenue[1]: Industry expected to grow marginally above NASSCOM guidance of 7-9% in constant currency



E: Estimate

Diverse industry segments: Non IT Services almost half of industry revenues



FY2019 Reported Currency Revenues and Growth Rate

Exports	USD 135.9 billion	8.3%
Domestic	INR 2,861 billion USD 41 billion	7.9% (INR) 0% (USD)

Share of Export Revenue – well spread across Indian and MNC-GCC companies

Solution Providers from India	60-62%
MNCs and GCCs in India	38-40%

[1]: includes Hardware, exports include global revenues of Indian companies
Source: NASSCOM

VIBRANT TECH SECTOR – SNAPSHOT 2019

- **7.9%** Relative to India's GDP
- **>45%** Contributor to India's services export basket
- **28%** Share of India's forex reserves
- **~15 bn** FDI Inflows into India
- **1st** Largest employer of women in private sector
- **No. 1** Global Sourcing Destination – 55% share
- **177 USD bn** Industry revenue
- **2.9 INR tn** Fast growing domestic market
- **4.1 mn** Employees; 2.5X impact on indirect jobs
- **22-24%** Digital Revenues
- Firms in India **18000 +**
- Global In-house Centres **1250 +**
- Vibrant Start-up Ecosystem **3rd largest**
- Rapidly growing internet base **~465 mn**
- Strong focus on diversity and inclusion **~34% women**

Large headroom for innovative products/ solutions

Source: NASSCOM

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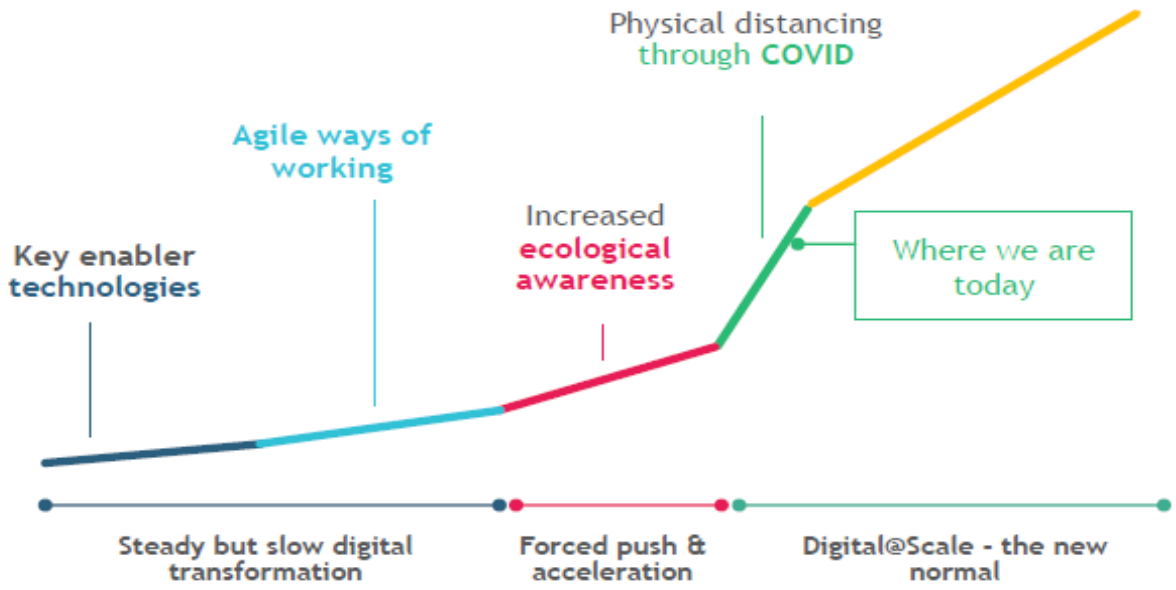
Promoting EU India Digital Partnership

PANDEMIC HAS ACCELERATED DIGITISATION ACROSS THE WORLD

COVID has accelerated digital trends...



...and forced a new normal

Organizations

- WFH / Dark factories
- e-recruitment / PMS

Households

- Spiked media consumption
- Home-office set-ups

Governments

- Push for connectivity
- Tele-health facilities

...and more

Source: BCG Analysis

Software is becoming ‘Core’

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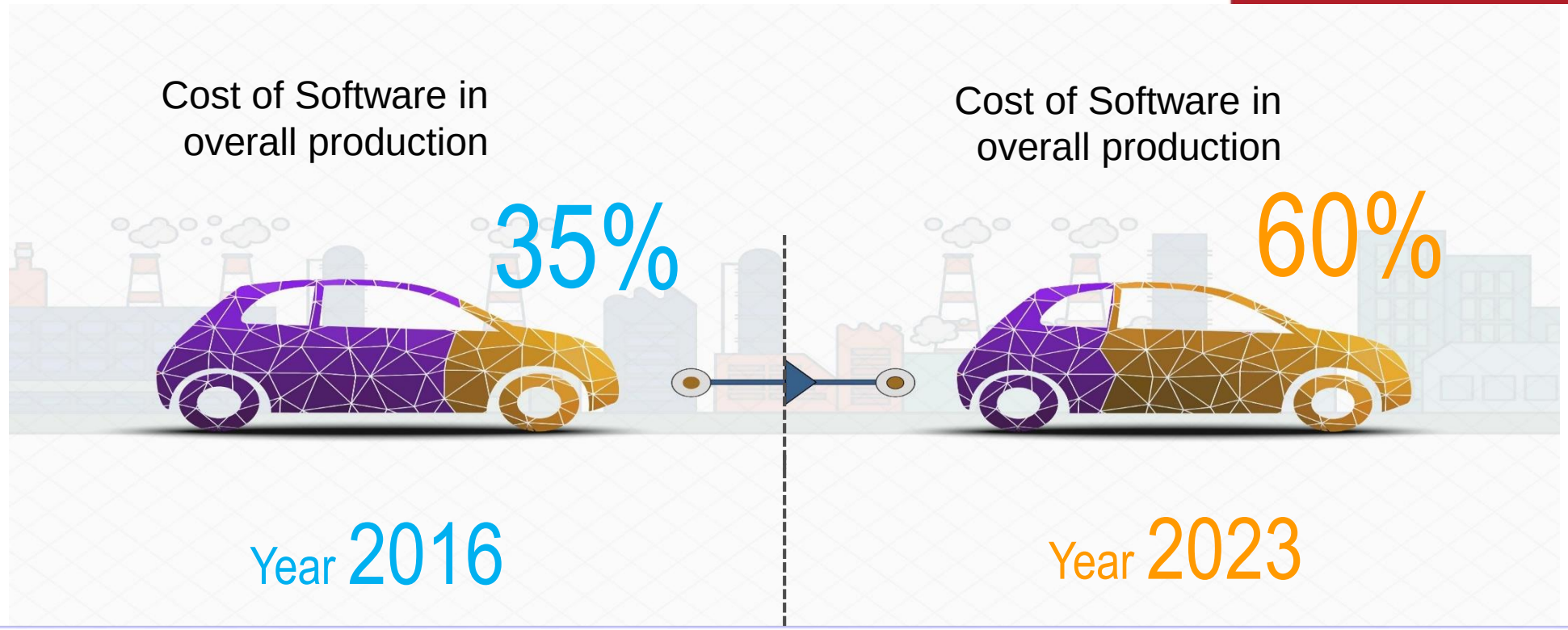


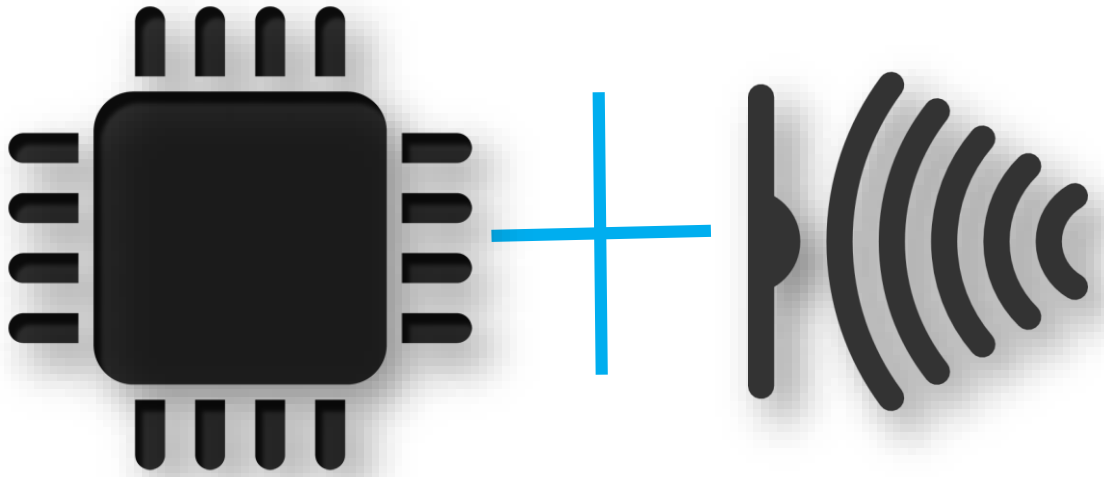
- Capable of performing concept to Go-To Market strategy for the product
- Retain the product in the computer as long as needed in the product development lifecycle
- Innovative solutions in the segment resulting in creation of IPs
- Niche capability built across Engineering, Embedded and Software services
- Joint development with the client by leveraging the local start-up ecosystem

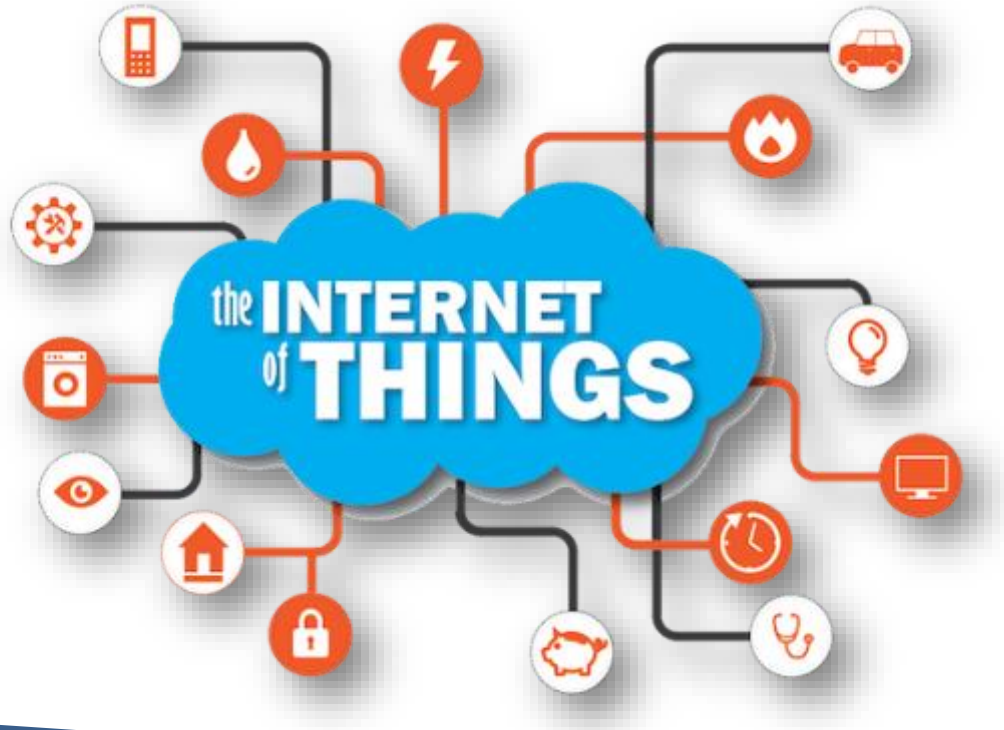
SMART PARTNERSHIP: LET'S CO-CREATE FOR GLOBAL MARKETS

EU

INDIA

COMBINE





HARDWARE / MANUFACTURING

SOFTWARE

Drivers of partnership

Industry 4.0

IOT/ AI

ER&D

Promote Co-create culture between host companies and Indian IT across these themes

USE CASE 1 AI: SMART FACTORY - PPE CHECK FOR MANUFACTURING COMPANY

Problem

Anti-static Attire: Noncompliance

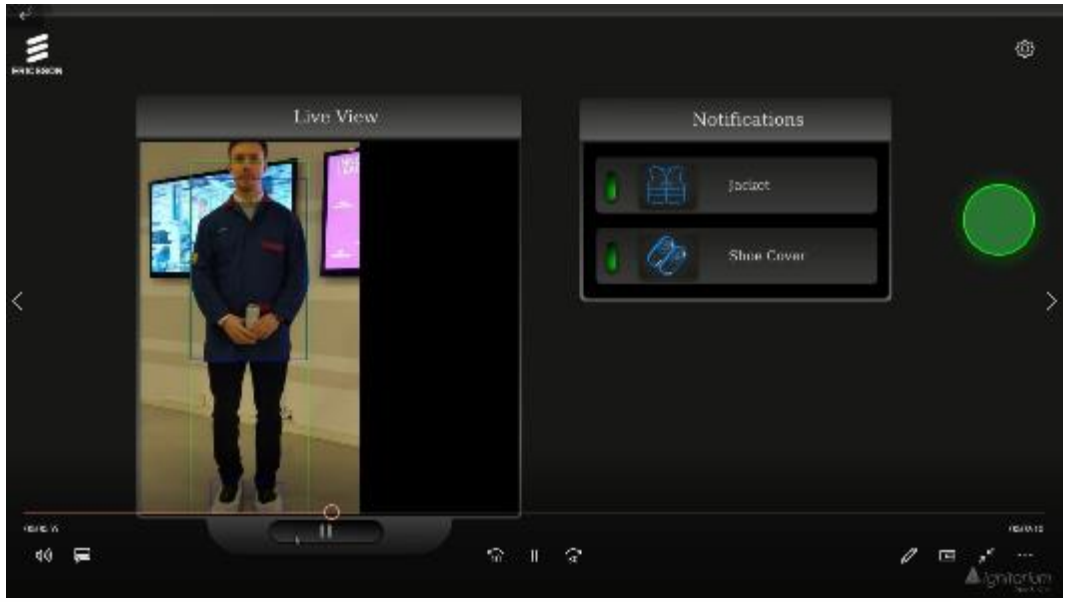
Solution

Automated A.I based Visual Inspection

Deployed in Europe

IP Camera

Nvidia Jetson TX2



USE CASE 2 DATA ANALYTICS : INFRASTRUCTURE MAINTENANCE FOR RAILWAYS

From Fixed Wing Aircraft or Drones

Deployed in US

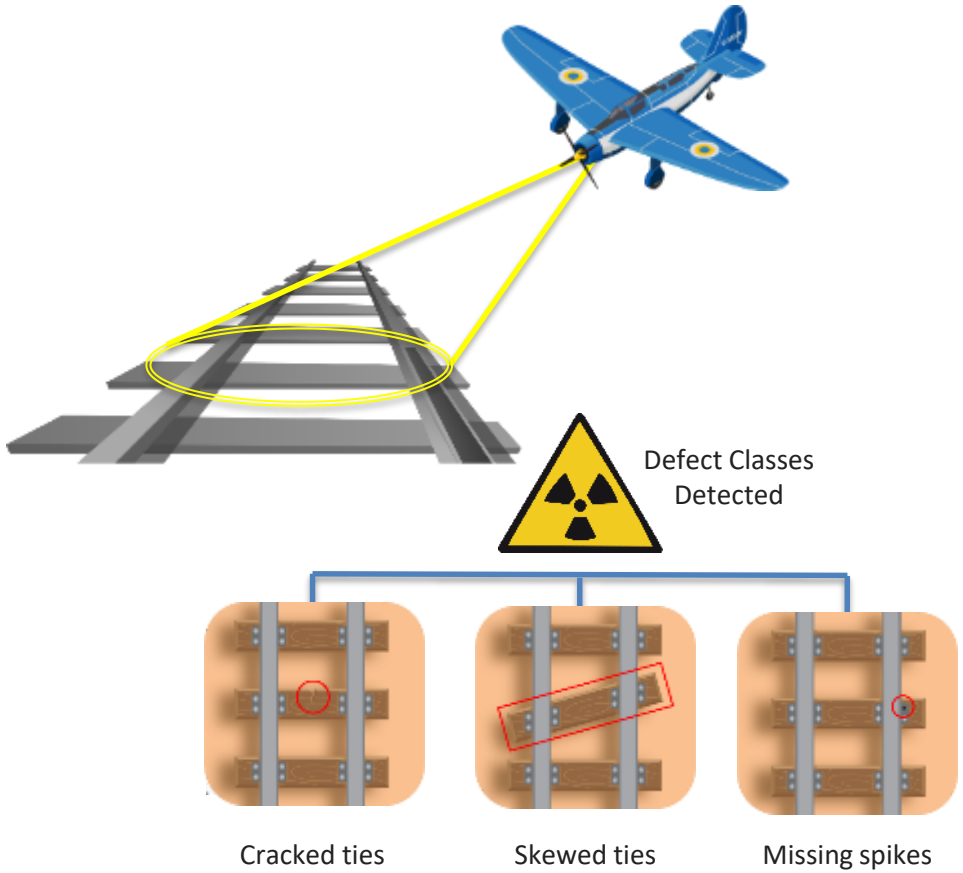
Advantages

- Wider coverage
- Non-intrusive

Structural Analysis of Power Transmission Towers

- Input: Image of transmission tower from drone
- Output: Identification of structural anomalies
  - Missing bolts
  - Loose bolts
  - Girder warpage

Anomaly Detection on Railway tracks



USE CASE 3 I4.0: SMART ENERGY MANAGEMENT FOR PLANTS AND BUILDINGS

Demand Forecast and optimize purchase cost

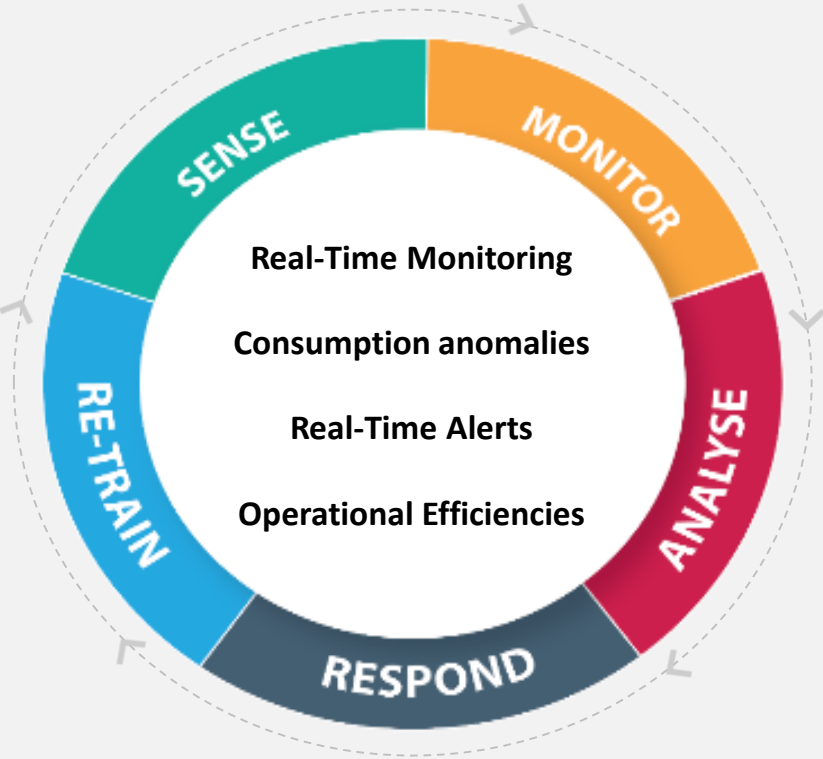
Eliminate inefficiencies based on your usage pattern

Reduce the peak Energy load for a Plant / Building

Enable Predictive Maintenance for Assets

Reduce your carbon footprint

TATA CONSULTANCY SERVICES

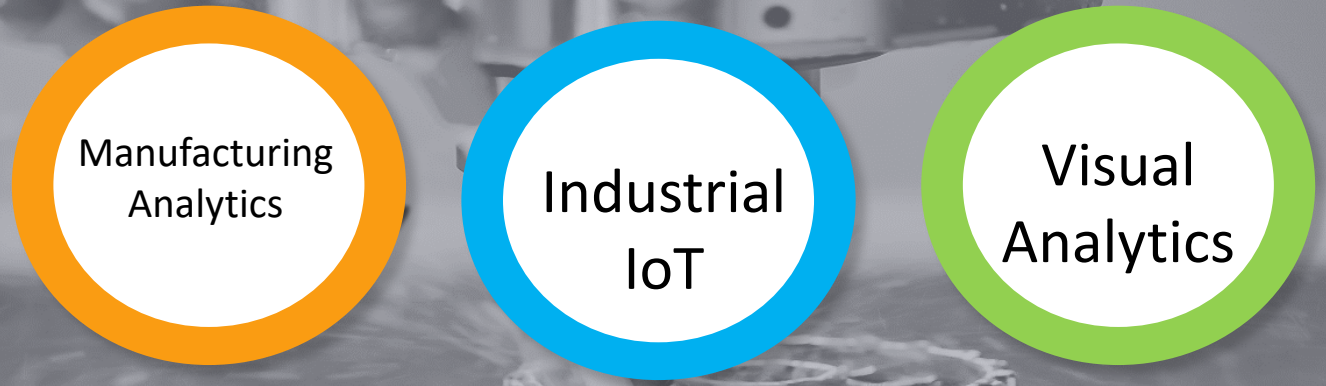


Opportunity to Save ~10% of your Energy Bill using TCS Smart Energy Management Platform

USE CASE 4, I4.0: PROGNOSTIC MAINTENANCE OF CUTTING TOOL

A leading US based CPG Customer, wants to have a mechanism to establish the life value of the product and to track the life of the tools

Solution



- **Predictive analysis to predict the life of the cutting tool using data and visual analytics.**
- **Tracking & tracing of the cutting tools**
- **Recommend right operating parameter and the right tool with RUL per production schedule.**

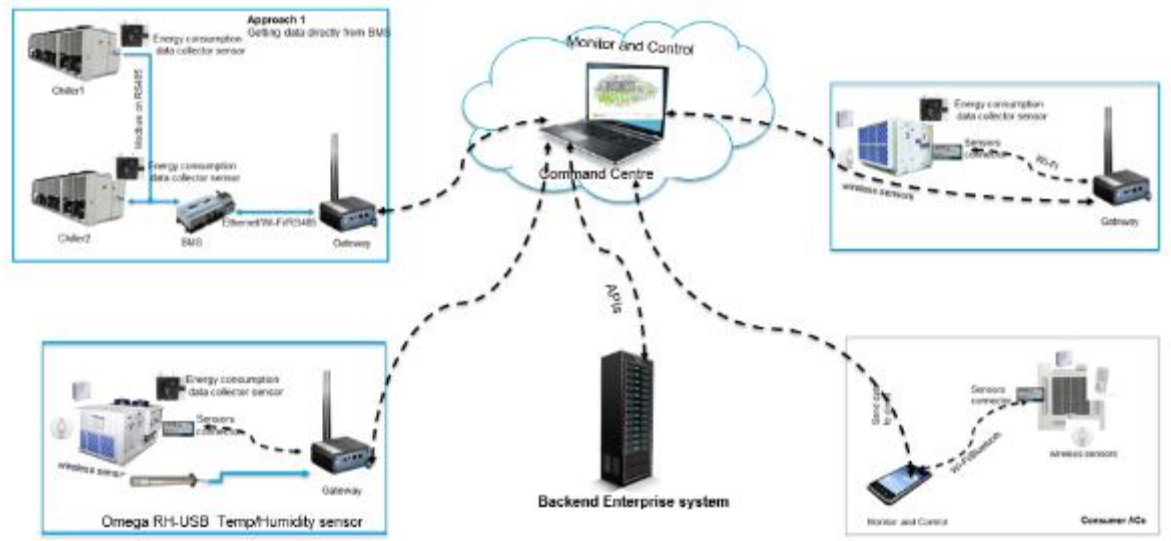
Benefits

- **Better utilization of the cutting tools**
- **Avoidance of time lost in optimizing the production parameter**
- **Avoidance of unwanted machine stoppage for tool change**
- **Cost Savings up to few millions of USD**

USE CASE 5 IOT: SMART AIR CONDITIONERS FOR CONSUMER PRODUCTS COMPANY

Customer need

Our Customer is a major AC manufacturer. They would like to implement connected Air Conditioners for their Consumers and Applied products. This will enable them to gain access of its equipment leading to remote monitoring, predictive maintenance, centralized asset management, achieve other data driven insights that will drive efficiencies and cost optimization.



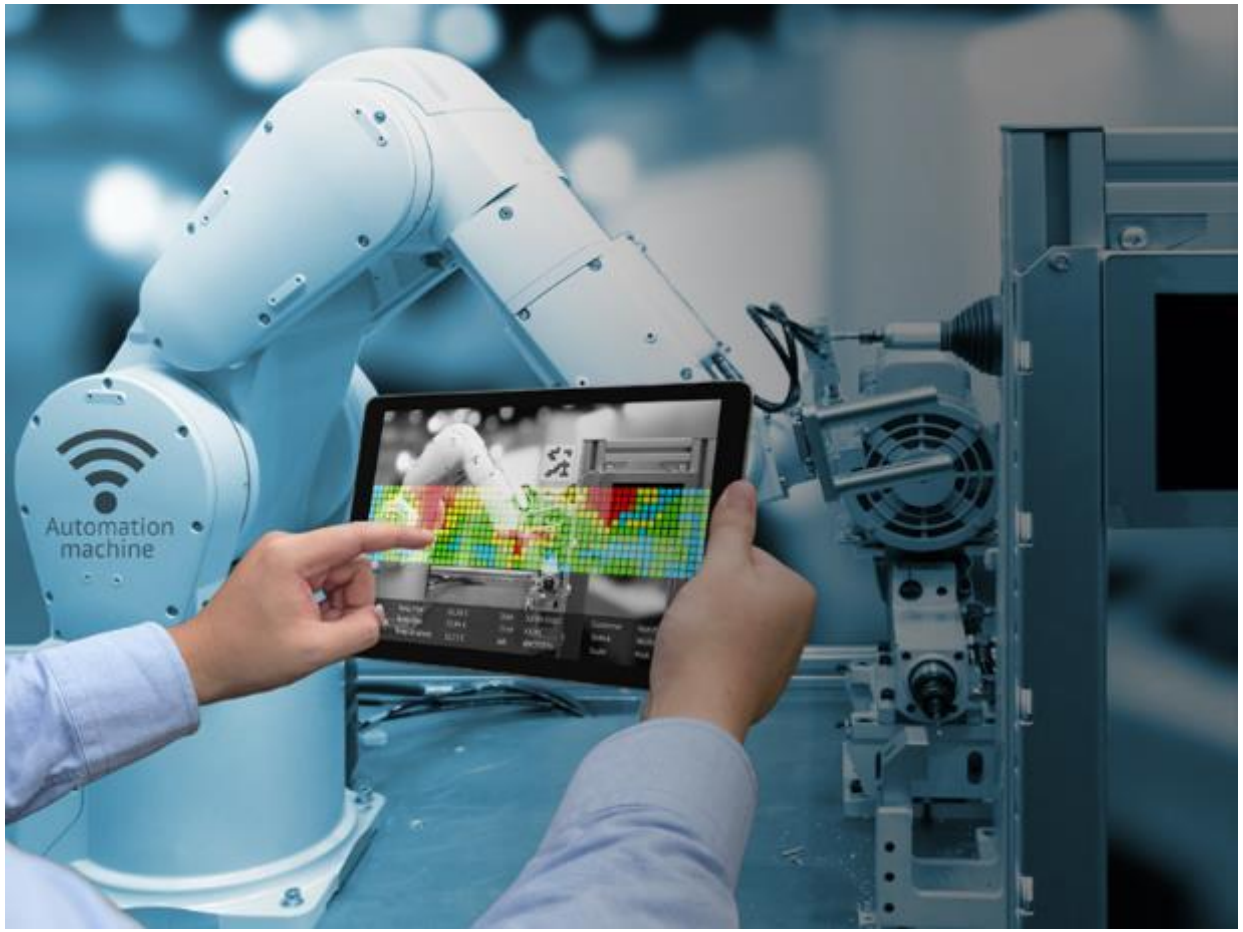
Wipro Solution

- Buildings Smart Air Conditioners, HVAC and Chiller system by making them IOT enabled by integrating sensors, gateway, Energy meter during device manufacturing which helps in Remote Monitoring and Control.
- Controlling devices from Smart Phone
- Cloud based Analytics to connect at enterprise level

Business Benefits

- Reduce Downtime
- Reduce Service Operation Costs
- Reduce on-field visit / Service calls
- Reduce Carbon emission
- Introducing mobility functionalities

USE CASE 6 ER&D: TRANSFORMING OPERATIONS FOR ROTATING EQUIPMENT OEM



The Global OEM has several lines of rotating equipment with applications across appliances, HVAC, industrial systems. The customer has a global manufacturing and delivery footprint, with equipment manufactured in several facilities and delivered around the world.

KEY BENEFITS

- The customer gets real-time data on the condition of their rotating equipment.
- Additional aftermarket revenue opportunities by providing predictive analytics and service support to their end customers.
- Better inventory control and R&D feedback for improving equipment design

Beginning with sensor design (conforming to FCC & CE Standards) to measure conditions such as Temperature and Vibration in the rotating equipment, leveraged comprehensive Analytics to detect patterns and predict potential failures for the equipment. We integrated with existing enterprise systems to automate service calls and spares, ensuring business uptime for end customers.

USE CASE 7 ER&D: EQUIPMENT DESIGN FOR A TURBINE OEM

CYIENT

Redesign of 2MW Wind Turbine Mainframe

Our customer, a global turbine OEM wanted us to redesign their 2MW wind turbine fabricated mainframe (structural component to which gear box, generator and brake are attached) from welded joints to casted parts so as to increase the fatigue life of the structure– a pre-requisite to get European Union certification and permission to sell in that market.

Key Challenges Addressed by Cyient

- Maintaining the same stiffness for fabricated & casted part was challenging as the Young's modulus for the steel variant is more than 20% as compared to the casted part

Solution Highlights

- Understand the current model and constraints
- Stiffness evaluation of the existing structure
- Casted model with rounded features was built keeping in view the draft angle required for manufacturing processes
- Topology optimization using Hyperworks was used to arrive at the zones where material could be removed
- The model was refined to meet the manufacturing requirements and casting drawings were provided

Tools used: - UG-NX, Ansys , Hyperworks Optistruct

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USE CASE 8 ER&D: ENGINE RE-DESIGN

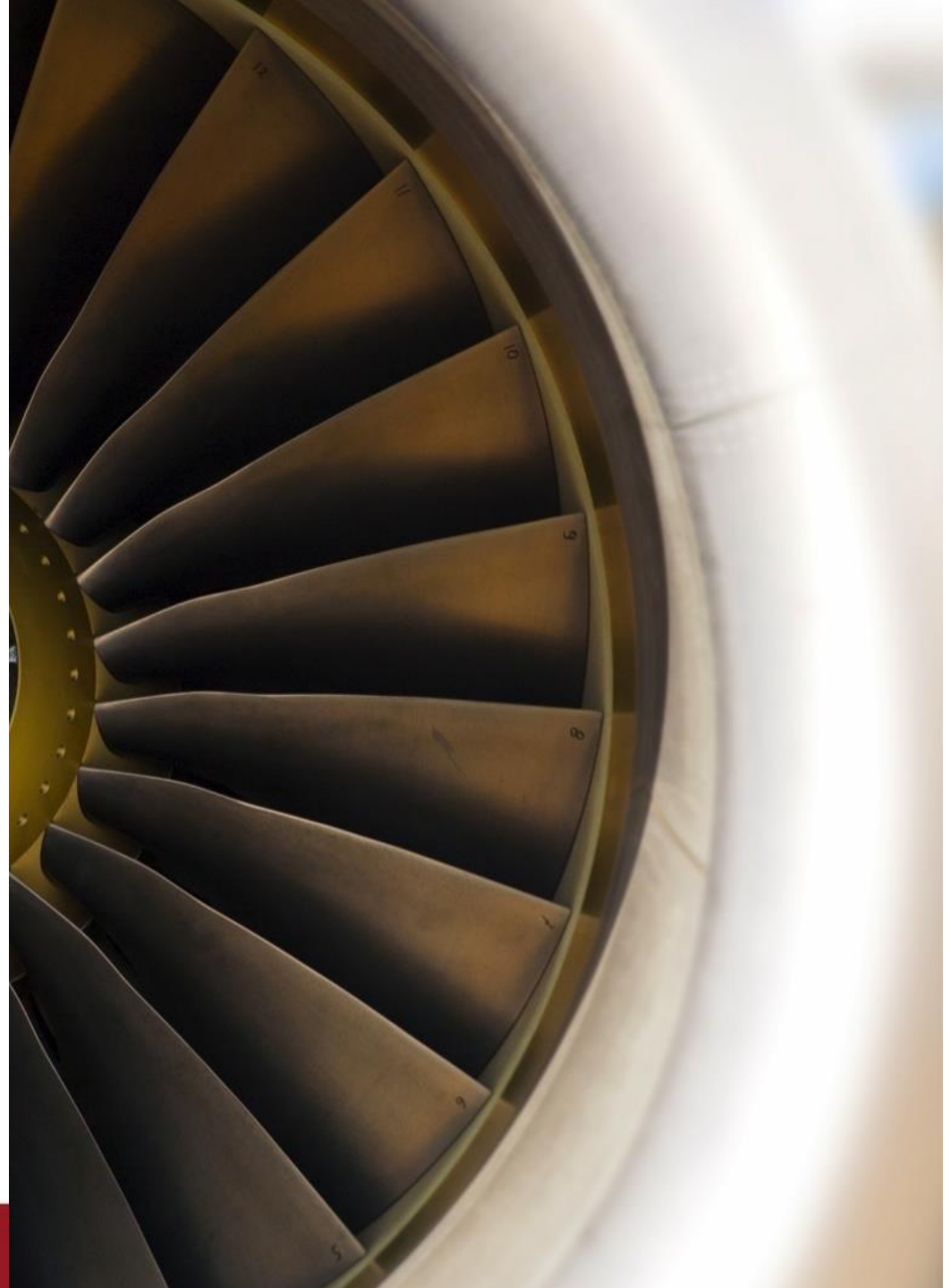
Quieter Engines for Calmer Journeys

We worked with a leading aero engine manufacturer and contributed to the innovation of the PurePower® engine.

The next generation engine:

- Improves fuel burn by 16%
- Slashes aircraft noise footprints by up to 75%
- Cuts carbon emissions by over 3,000 metric tonnes: equal to planting over 700,000 trees

This enables passengers to sleep and crew and the environment to stay healthy.



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Digital Transformation (DX) Business Matching Session

UPCOMING INDIA-EUROPE DIGITAL NETWORKING SESSIONS

Virtual business matching event to build partnerships between EU companies in automotive, Manufacturing, Retail, BFSI, Healthcare, etc. sectors with Indian digital tech companies

Starting from 18th Nov 2020

Introduce European companies to Indian digital tech companies for co-creation and business

Curated one on one B2B meetings; 4-5 meetings for each European company

European companies share directional approach / challenges / areas of collaboration that helps us map the right Indian tech company for meetings

European Company Registration: https://forms.gle/xyJkPLDaJ6qjmxPd9

VIRTUAL BUSINESS MATCHING SESSION – FORMAT

Event Title	India EU Digital Collaboration
Theme	Co-creation – Developing Smart Products for Global Markets leveraging India's strength in software and EU's strength in hardware, manufacturing, engineering and industrial side
Operation Style	Zoom
Number of Participating companies	10-15 from EU 20-30 from India
Targeted companies from EU	Companies looking for business-opportunities for offshore development, joint development, business collaboration with Indian companies in the field of digital technologies
Targeted companies from India side	Indian Large Companies and SMEs offering the below services
Focus Areas for the Meeting	Engineering Services, Embedded Systems, AI, IoT, M2M, Blockchain, Software Development, Big Data Management, Cloud Computing, Cybersecurity, Automation Tools, Digital Automation
Format	• Based on the areas of interest (mentioned above) of EU companies, NASSCOM will do match making before the event so that right companies from India can participate • Based on match making, opportunity will be given to each EU company to have one on one interaction with 3-4 Indian participants to discuss its requirements • We will have multiple virtual private rooms where Indian companies identified through match making will come and interact with each EU participant • Since Indian companies will interact with multiple EU companies; they would take rounds to enter those rooms in a prearranged sequence and timing • Duration of each meeting will be 20 minutes

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Thank you

Gagan Sabharwal
gagan@nasscom.in